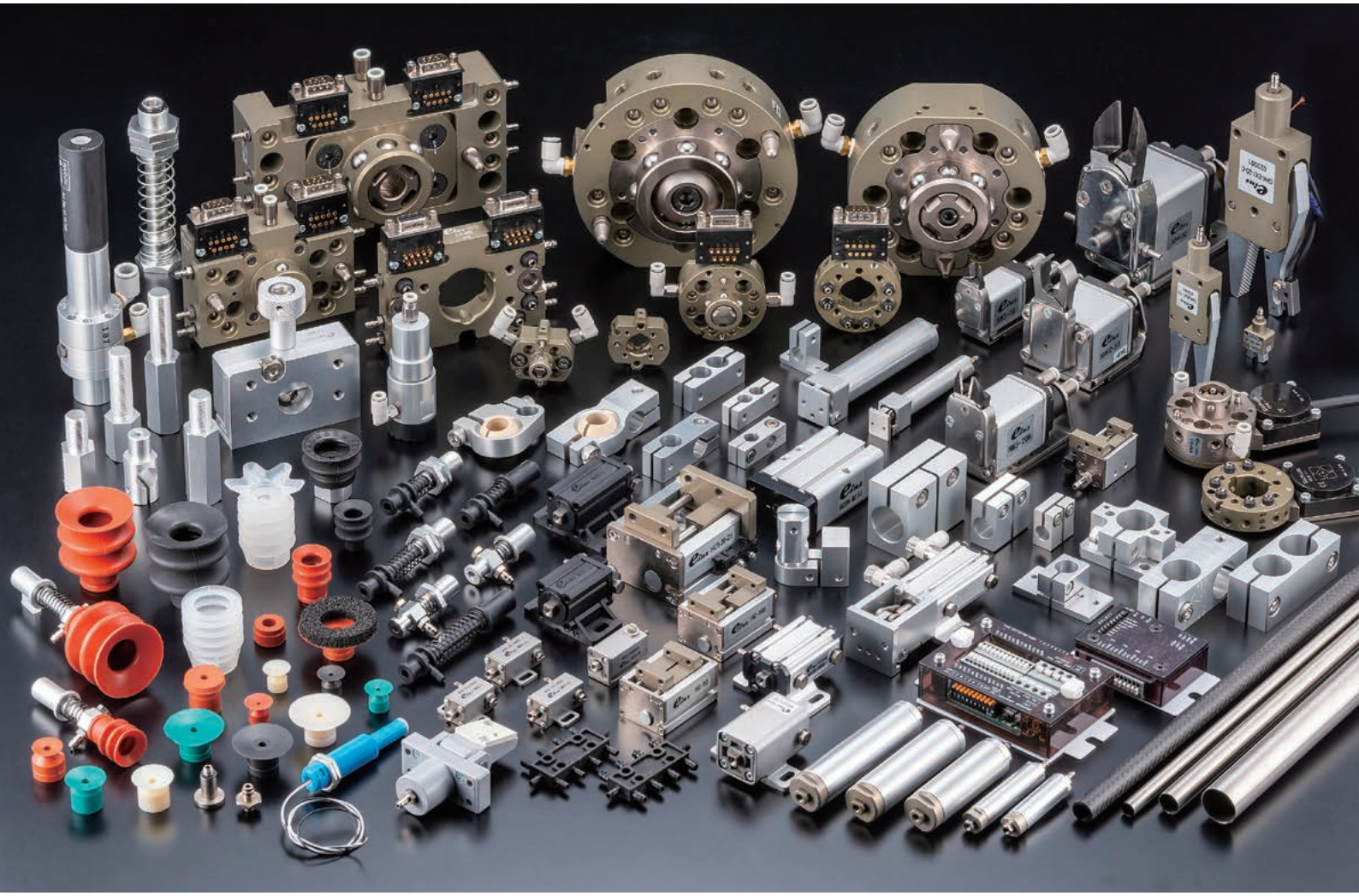
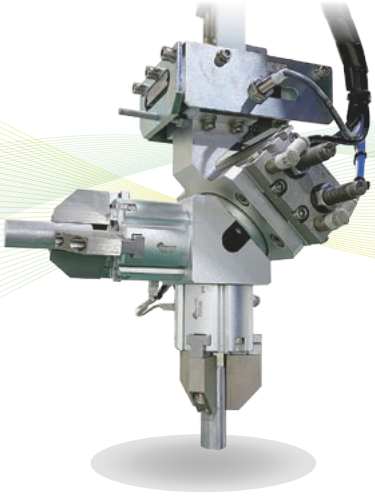
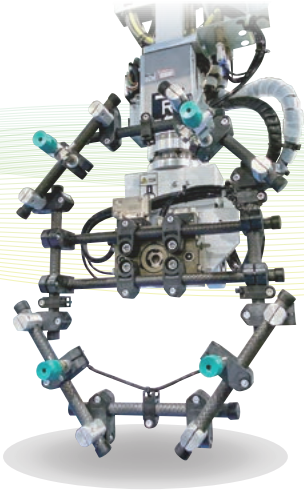
Robot End of Arm Tooling

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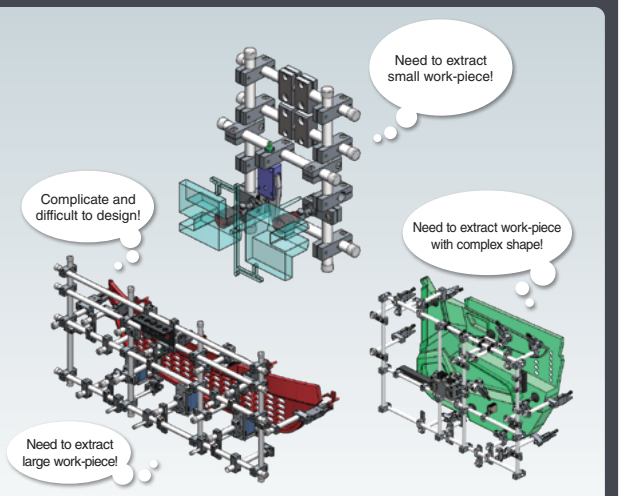


3 Features of Eins

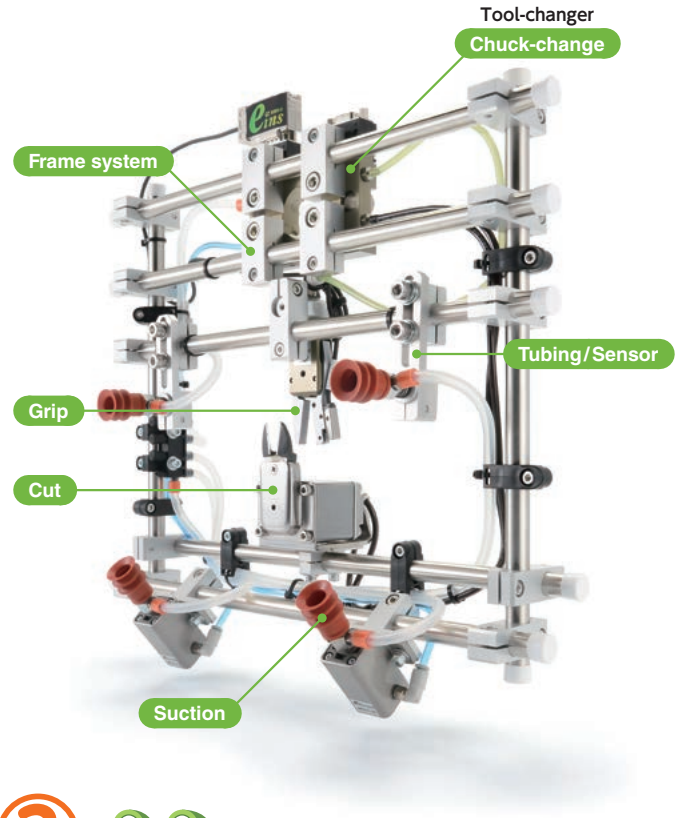
Amazing

① Extensive experience!

Experts of Eins chuck-plate will teach you how to assemble.



- *Extensive experience with over 16,000 types.*
- *Reliable management by 3D design.*



② Extensive parts for robo-hand more than 1,600 kinds!

Eins can cover all!



③ Field leader of Chuck tool changer!

Faster, Easier and inexpensively Chuck-change!

■ For unloader





■ For articulated robot



Sharply reduce labor and time for mold change!

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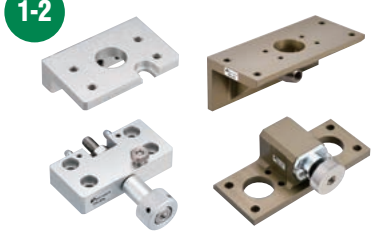
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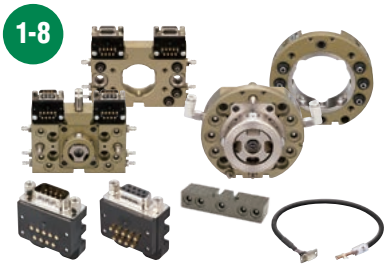
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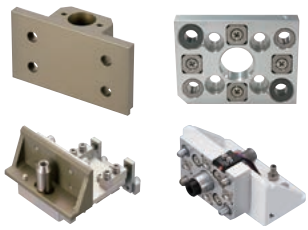
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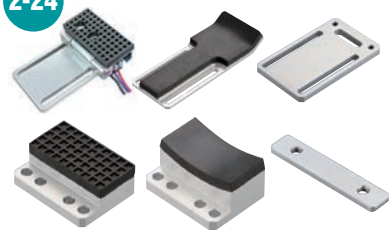
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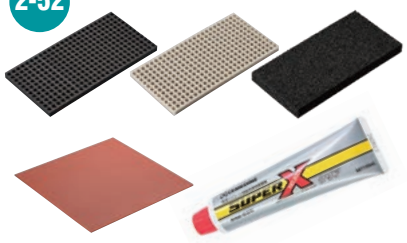
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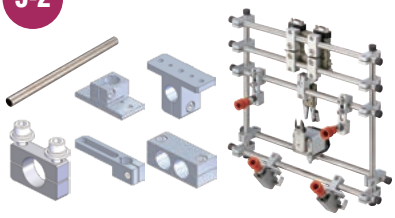
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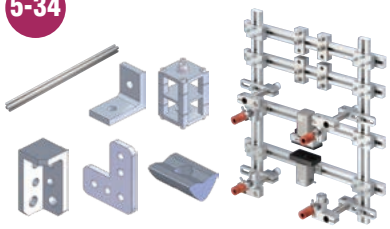
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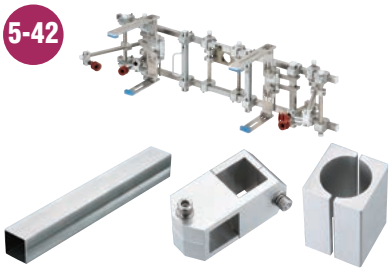
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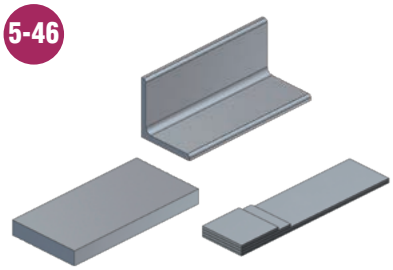
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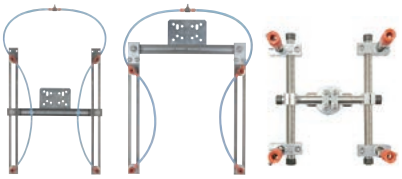
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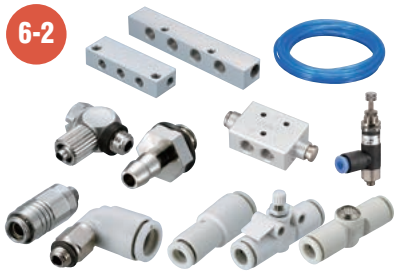
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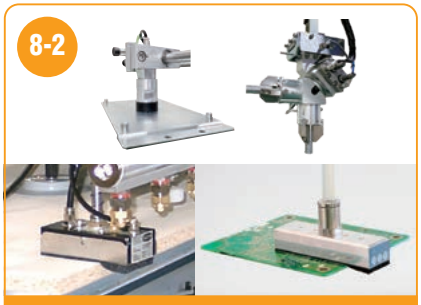
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Quick Chuck Change Manual

Order code No.	TYPE
140382	OM-50
140383	OM-50I
140384	OM-90
140385	OM-90I
140388	OMR-CBX20

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Air Opion Parts

Order code No.	TYPE
140391	OX-SCA-10
140392	OX-SCIA-10

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Tool Changer After Parts

Order code No.	TYPE
230117	XL0054-206A
110739	LX0219-203
152755	PHI.11
200320	UR10-10
221487	WRBC15-8-3
131773	NPB10

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Tool Changer For Articulated Robot

Order code No.	TYPE
140373	OX-120A
140374	OX-120AI
140314	OX-230A
140319	OX-230AI

1-31



Prove Connector

Order code No.	TYPE
140393	OXR-MPS0508
140394	OXR-MPS1304
140395	OXR-MPS0508-I
140396	OXR-MPS1304-I
140397	OXR-PCS

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Micro Mini Cylinder (Pull)

Order code No.	TYPE
200260	UMCD-5T
200261	UMCD-10T
023357	CPUM-10
023358	CPUM-11

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Mini Cylinder • Side Type

Order code No.	TYPE
123929	MCDP-10
123930	MCDP-20
123931	MCDP-AJBKT

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Container Cylinder W/ Guided • Double Action

Order code No.	TYPE
131686	NGCYL20＊20
131687	NGCYL20＊40
131688	NGCYL20＊50
131689	NGCYL20＊75
131690	NGCYL20＊100

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Runner Chuck (With Limit SW)

Order code No.	TYPE
023456	CHK-ES-08-C1
023457	CHK-EM-12-C1
023458	CHK-EL-12-C1
023459	CHK-EX-20-C1

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Runner Chuck EMR (W/O Sensor)

Order code No.	TYPE
023440	CHK-EMR-12
023443	CHK-EMR-CPE

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Runner Chuck Buffer Unit

Order code No.	TYPE
023439	CHK-BU

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Pipe Combination Chuck • Grip

Order code No.	TYPE
090262	J25410G-40
090263	J25410G-30

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Three Claws Chuck

Order code No.	TYPE
197258	TCC-16
197259	TCC-25
197260	TCC-32

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Parallel Chucks 20st

Order code No.	TYPE
073318	HC-20
073319	HC-20S

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Aluminum LAMIZIP

Order code No.	TYPE
002407	AL-22

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Suction Cups • Silicon (Vaccum)

Order code No.	TYPE
042095	EPJG-2-S
042096	EPJG-4-S
042097	EPJG-2-F-RA
042098	EPJG-4-F-RA
042099	EPJG-6-F-RA
042100	EPJG-8-F-RA

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Outer Stem Attachment Head

Order code No.	TYPE
042111	ETN-PS-2A-M5
042112	ETN-PS-10-M5

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Suction Cups • Bellows • Silicon

Order code No.	TYPE
042101	EPCG-3-S

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Suction Cups • Multistage Bellows • Silicon

Order code No.	TYPE
042102	EPLG-15-S5
042103	EPLG-20-S5

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Suction Cups • Star-shaped Pouch • Silicon

Order code No.	TYPE
042107	EPMG-56L-S4
042108	EPMG-24S-S4
042109	EPMG-40S-S4
042110	EPMG-56S-S4

Please refer to the relations pages for more information about the products.
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Suction Cups • Pouch • 2 stage Bellows

注文コードNo.	TYPE
042104	EPNG-132B-S4
042105	EPNG-133B-S4
042106	EPNG-134B-S4

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Non-Contact Suction Pad

注文コードNo.	TYPE
042113	ECOPS-40-Y
042114	ECOPS-60-Y
042115	ECOPS-80-Y

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Resin Suction Stem • Mini

注文コードNo.	TYPE
211144	VFILPL-SS-5
211145	VFILPL-SS-10
211146	VFILPL-SS-20
211147	VFILPL-SS-30

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Resin Suction Stem • Small

注文コードNo.	TYPE
211148	VFILPL-S-5
211149	VFILPL-S-10
211150	VFILPL-S-20
211151	VFILPL-S-30

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Air Ejectors

Order code No.	TYPE
042116	ESVP10-A
042129	ESVP10-A-20
042117	ESVP-A-PA
010749	B1.5/60-MU65-N6-G-F2-38M
010750	B1.5/60-MU80-N6-G-F2-38M
042118	ESVP-A-SA

Order code No.	TYPE
042119	ESVP-FILT
042130	ESVP10-BKTJT12
042131	ESVP10-BKTJT20
042132	ESVP10-SEAL
042133	ESVP10-NOZL-UT

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Mini Air Nipper • W/ Blade Open Adjust Mechanism

Order code No.	TYPE
131722	NW3-35-BAST
131723	NW3-35R-BAST
131724	NW3-20-BAST
131725	NW3-20R-BAST

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Nipper Adjustment Bracket

Order code No.	TYPE
131732	NW-ADJBKT
131770	NW-MOUNT12-20

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Mini Air Nipper • HNW

Order code No.	TYPE
073301	HNW-10
073302	HNW-101
073303	HNW-10R
073304	HNW-20
073305	HNW-201
073306	HNW-20-V001S
073307	HNW-20-01C
073308	HNW-20R

Order code No.	TYPE
073309	HNW-20R-V001S
073310	HNW-35
073311	HNW-35-V001S
073312	HNW-35-01C
073313	HNW-35R
073314	HNW-35R-V001S
073355	HNW1-50
073356	HNW1-50R

4-25



Rotation BRT (For NR Nipper)

Order code No.	TYPE
131712	NP-RTB-NR10
131713	NP-RTB-NR20
131714	NP-RTB-NR30

4-27



Sprue Cut Unit

Order code No.	TYPE
131717	NS20UR

5-51



Robot Hand

Order code No.	TYPE
171372	RHK10-150
171373	RHK10-200
171374	RHK10-250
171375	RHK10-FA
171376	RHK10-FB

6-6



Pipe Fixtures

Order code No.	TYPE
102051	KQ2L06-M6A
101596	KQ2T04-00A
101597	KQ2T06-00A
100817	KCH04-M5
100818	KCH06-M5

6-18
6-21



Limit Switch • Sensor

Order code No.	TYPE
250006	Z-15GW55-B
002433	ACH02LN
002434	ACH02LS

9-1



Tool • Static Elimination

Added the convenient tools for assembleing on the robot. Add the static elimination parts when extracting and releasing the work piece.
For details,see section 9-8

For specifics on the new parts.
Please access our home page of Our company business.

Notice of specification changes

▶ Product of specification change

Order Code No.	Product before change	Part Name		Order Code No.	Specification	Part Name	Detailed contents of change	Page
140311	OX-35A	Tool changer for Articulated robot・robot side	→	140398	OX-35B	Tool changer for Articulated robot・robot side	Change inside piston	1-27
140312	OX-35AT	Tool changer for Articulated robot・robot side	→	140399	OX-35BT	Tool changer for Articulated robot・robot side		1-29
131281	NCON-CP-06	Pad・for mini container cylinder	→	131677	NCON-CP-06A	Pad・for mini container cylinder	Change in shape of pad	2-25
131603	NW-50	Mini Air Nipper	→	131771	NW1-50	Mini Air Nipper	Blade fixing method change	4-8
131604	NW-50R	Mini Air Nipper	→	131772	NW1-50R	Mini Air Nipper		4-8
041955	EG-NW50	Mini Air Nipper Replacement Blades	→	042134	EG1-NW50	Mini Air Nipper Replacement Blades		4-17
041956	EG-NW50R	Mini Air Nipper Replacement Blades	→	042135	EG1-NW50R	Mini Air Nipper Replacement Blades		4-17
131045	N01913-104	Connector plate25·D	→	131408	N01913-104	Connector plate25·D	Change in material and thickness	5-37
131047	N01913-106	Connector plate25·F	→	131410	N01913-106	Connector plate25·F	Change in material, thickness and shape	5-37
131051	N01913-301	Connector plate25·A	→	131414	N01913-301	Connector plate50·A	Change in material and thickness	5-37
050794	FCK1-1006	Sliding holder(mini)	→	054323	FCK1-1006	Sliding holder	Change of material treatment	5-50
000012	AZ8166	Limit Switch	→	073334	HL-5300	Limit Switch	Change of manufacturer	6-18
371677	AX-139 (SUPER-X8008 135ML)	Adhesive cemedine 135ML	→	002481	AX-250 (SUPER-X8008 135ML)	Adhesive cemedine 135ML	Substitute product due to discontinuation of production	2-52 9-8
054352	FS600-3	Lead free solder	→	073361	HS-304	Lead free solder	Change of manufactured	9-6

Notification of changes to sales methods and completing sales order.

▶ The following module (set) is changed from set sale to individual item sale.

Order Code No.	Name	TYPE	Page
042024	Base frame for jungle gym	EFCK-2500B	5-28
041664	Base frame for jungle gym ϕ 8	EFCK-1005	5-28
041662	Base frame for jungle gym ϕ 8	EFCK-1003	5-28
041663	Base frame for jungle gym ϕ 8	EFCK-1004	5-28
041666	Base frame for jungle gym ϕ 20	EFCK-2003	5-28
041670	Base frame for jungle gym ϕ 20	EFCK-2005	5-28
041672	Base frame for jungle gym ϕ 20	EFCK-2501	5-28
041673	Base frame for jungle gym ϕ 20	EFCK-2502	5-28
041686	Base frame for let's joint	EFCK-7500	5-39
041689	Base frame for let's joint	EFCK-7600	5-39
041692	Base frame for let's joint	EFCK-8000	5-39
041684	Base frame for let's joint	EFCK-7001	5-39
110571	Base frame for let's joint	LSM-003	5-39

▶ Sales end

Order Code No.	Name	TYPE	Page
131086	Spacers 25・T5・P25	N01918-101	5-37
041686	Base frame for let's joint	EFCK-7500	5-39
041689	Base frame for let's joint	EFCK-7600	5-39
041692	Base frame for let's joint	EFCK-8000	5-39
042024	Base frame for jungle gym	EFCK-2500B	5-29
090171	Gripper module for jungle gym	JGM-009	5-31
090175	Gripper module for jungle gym	JGM-013	5-31
090178	Gripper module for jungle gym	JGM-016	5-32
090180	Gripper module for jungle gym	JGM-018	5-32
090190	Limit switch module for jungle gym	JLM-003	5-33
090216	Suction module for jungle gym	JSM-003B	5-30
090219	Limit switch module for jungle gym	JLM-001B	5-33
090235	Gripper module for jungle gym	JGM1-004	5-31
090245	Gripper module for jungle gym	JGM1-023	5-32
110569	Suction module for let's joint	LSM-001	5-40
110583	Gripper module for let's joint	LGM-008	5-41
110584	Gripper module for let's joint	LGM-009	5-41
110589	Gripper module for let's joint	LGM-014	5-42
110590	Gripper module for let's joint	LGM-015	5-42
110592	Gripper module for let's joint	LGM-017	5-42
110599	Limit switch module for let's joint	LLM-003	5-42

Notice Regarding Suction Cups

The suction cups will be changed to a silicone material that complies with the standards of the FDA (U.S. Food and Drug Administration) and BfR (German Federal Institute for Risk Assessment).
Please see the table below for the affected products. (Ordering codes, product names, models, and pad colors will be changed.)
There will be no change in the price.
We will switch over as soon as stock runs out.
Please check our website for the latest information.

Suction Cups (Standard / Screw Mount Type)

Suction Cups	Order code No.	Product name	TYPE
	210789	Suction Cups・Standard・Micro・Brown	VAPH-4M
	210790	Suction Cups・Standard・Micro・Brown	VAPH-6M
	210700	Suction Cups・Standard・Silicone・Brown	VAPH-4C
	210255	Suction Cups・Standard・Silicone・Brown	VAPH-6C
	210191	Suction Cups・Standard・Silicone・Brown	VAPH-8C
	210615	Suction Cups・Standard・Silicone・Brown	VAPH-10C
	210192	Suction Cups・Standard・Silicone・Brown	VAPH-12C
	210616	Suction Cups・Standard・Silicone・Brown	VAPH-14C
	210193	Suction Cups・Standard・Silicone・Brown	VAPH-15C
	210194	Suction Cups・Standard・Silicone・Brown	VAPH-20C
	210617	Suction Cups・Standard・Silicone・Brown	VAPH-25C
	210195	Suction Cups・Standard・Silicone・Brown	VAPH-30C
	210618	Suction Cups・Standard・Silicone・Brown	VAPH-35C
	210196	Suction Cups・Standard・Silicone・Brown	VAPH-40C
	210621	Suction Cups・Standard・Silicone・Brown	VAPH-45C
	210619	Suction Cups・Screw Mount・Silicone・Brown	VAPH-50F
	210311	Suction Cups・Screw Mount・Silicone・Brown	VAPH-60F
	210044	Suction Cups・Screw Mount・Free・Silicone・Brown	VAPH-60F-2
	210620	Suction Cups・Screw Mount・Silicone・Brown	VAPH-70F

Suction Cups (Standard / Screw Mount Type)

Suction Cups	Order code No.	Product name	TYPE
	211312	Suction Cups・Standard・Micro・φ 4	VAPS-4M
	211313	Suction Cups・Standard・Micro・φ 6	VAPS-6M
	211300	Suction Cups・Standard・φ 4	VAPS-4C
	211277	Suction Cups・Standard・φ 6	VAPS-6C
	211271	Suction Cups・Standard・φ 8	VAPS-8C
	211288	Suction Cups・Standard・φ 10	VAPS-10C
	211272	Suction Cups・Standard・φ 12	VAPS-12C
	211289	Suction Cups・Standard・φ 14	VAPS-14C
	211273	Suction Cups・Standard・φ 15	VAPS-15C
	211274	Suction Cups・Standard・φ 20	VAPS-20C
	211290	Suction Cups・Standard・φ 25	VAPS-25C
	211275	Suction Cups・Standard・φ 30	VAPS-30C
	211291	Suction Cups・Standard・φ 35	VAPS-35C
	211276	Suction Cups・Standard・φ 40	VAPS-40C
	211294	Suction Cups・Standard・φ 45	VAPS-45C
	211292	Suction Cups・Screw Mount・φ 50	VAPS-50F
	211280	Suction Cups・Screw Mount・φ 60	VAPS-60F
	211270	Suction Cups・Screw Mount・Free・φ 60	VAPS-60F-2
	211293	Suction Cups・Screw Mount・φ 70	VAPS-70F

Suction Cups (Bellows Type)

Suction Cups	Order code No.	Product name	TYPE
	210897	Suction Cups・Bellows・Silicone・Brown	VAPH-3C-3
	210697	Suction Cups・Bellows・Silicone・Brown	VAPH-15C-3
	210661	Suction Cups・Bellows・Silicone・Brown	VAPH-20C-3
	210662	Suction Cups・Bellows・Silicone・Brown	VAPH-30C-3
	210663	Suction Cups・Bellows・Silicone・Brown	VAPH-40C-3

Suction Cups (Bellows Type)

Suction Cups	Order code No.	Product name	TYPE
	211307	Suction Cups・Bellows・φ 3	VAPS-3C-3
	211311	Suction Cups・Bellows・φ 15	VAPS-15C-3
	211295	Suction Cups・Bellows・φ 20	VAPS-20C-3
	211296	Suction Cups・Bellows・φ 30	VAPS-30C-3
	211297	Suction Cups・Bellows・φ 40	VAPS-40C-3

Suction Cups (TR Type)

Suction Cups	Order code No.	Product name	TYPE
	196327	Suction Cups・TR・φ 6・Brown. Mini	TR-1062-1M (シリコン)
	196342	Suction Cups・TR・φ 8・Brown. Mini	TR-1062-2M (シリコン)
	196406	Suction Cups・TR・φ 10・Brown. Mini	TR-1062-3M (シリコン)
	196405	Suction Cups・TR・φ 12・Brown. Mini	TR-1062-4M (シリコン)
	193511	Suction Cups・TR・φ 6・Brown. Small	TR-1062-1 (シリコン)
	193512	Suction Cups・TR・φ 8・Brown. Small	TR-1062-2 (シリコン)
	196135	Suction Cups・TR・φ 10・Brown. Small	TR-1062-3 (シリコン)
	196136	Suction Cups・TR・φ 12・Brown. Small	TR-1062-4 (シリコン)

Suction Cups (TR Type)

Suction Cups	Order code No.	Product name	TYPE
	197513	Suction Cups・TRS・φ 6・Mini	TRS-1062-1M
	197514	Suction Cups・TRS・φ 8・Mini	TRS-1062-2M
	197516	Suction Cups・TRS・φ 10・Mini	TRS-1062-3M
	197515	Suction Cups・TRS・φ 12・Mini	TRS-1062-4M
	197509	Suction Cups・TRS・φ 6・Small	TRS-1062-1
	197510	Suction Cups・TRS・φ 8・Small	TRS-1062-2
	197511	Suction Cups・TRS・φ 10・Small	TRS-1062-3
	197512	Suction Cups・TRS・φ 12・Small	TRS-1062-4

Suction Cups (W/ Sponge Type・Standard)

Suction Cups	Order code No.	Product name	TYPE
	210664	Suction Cups・W/Sponge・Silicone・Brown	VAPH-8C-SP
	210665	Suction Cups・W/Sponge・Silicone・Brown	VAPH-12C-SP
	210534	Suction Cups・W/Sponge・Silicone・Brown	VAPH-15C-SP
	210535	Suction Cups・W/Sponge・Silicone・Brown	VAPH-20C-SP
	210536	Suction Cups・W/Sponge・Silicone・Brown	VAPH-30C-SP
	210537	Suction Cups・W/Sponge・Silicone・Brown	VAPH-40C-SP
	210538	Suction Cups・W/Sponge・Silicone・Brown	VAPH-60F-SP

Suction Cups (W/ Sponge Type・Standard)

Suction Cups	Order code No.	Product name	TYPE
	211298	Suction Cups・W/Sponge・φ 8	VAPS-8C-SP
	211299	Suction Cups・W/Sponge・φ 12	VAPS-12C-SP
	211283	Suction Cups・W/Sponge・φ 15	VAPS-15C-SP
	211284	Suction Cups・W/Sponge・φ 20	VAPS-20C-SP
	211285	Suction Cups・W/Sponge・φ 30	VAPS-30C-SP
	211286	Suction Cups・W/Sponge・φ 40	VAPS-40C-SP
	211287	Suction Cups・W/Sponge・φ 60	VAPS-60F-SP

Suction Cups (W/ Sponge Type・Bellows)

Suction Cups	Order code No.	Product name	TYPE
	210914	Suction Cups・w/sp Bellows・Silicone・Brown	VAPH-20C-10-3-SP
	210915	Suction Cups・w/sp Bellows・Silicone・Brown	VAPH-30C-15-3-SP
	210916	Suction Cups・w/sp Bellows・Silicone・Brown	VAPH-40C-20-3-SP

Suction Cups (W/ Sponge Type・Bellows)

Suction Cups	Order code No.	Product name	TYPE
	211308	Suction Cups・w/sp Bellows・φ 20	VAPS-20C-10-3-SP
	211309	Suction Cups・w/sp Bellows・φ 30	VAPS-30C-15-3-SP
	211310	Suction Cups・w/sp Bellows・φ 40	VAPS-40C-20-3-SP

Suction Cups (Flat Face Type)

Suction Cups	Order code No.	Product name	TYPE
	210389	Suction Cups・Flat Face・Silicone・Brown	VAPH-15C-1
	210390	Suction Cups・Flat Face・Silicone・Brown	VAPH-20C-1

Suction Cups (Flat Face Type)

Suction Cups	Order code No.	Product name	TYPE
	211281	Suction Cups・Flat Face・φ 15	VAPS-15C-1
	211282	Suction Cups・Flat Face・φ 20	VAPS-20C-1

Suction Cups (Free Type)

Suction Cups	Order code No.	Product name	TYPE
	210280	Suction Cups・Free・Silicone・Brown	VAPH-12C-2
	210310	Suction Cups・Free・Silicone・Brown	VAPH-20C-2

Suction Cups (Free Type)

Suction Cups	Order code No.	Product name	TYPE
	211278	Suction Cups・Free・φ 12	VAPS-12C-2
	211279	Suction Cups・Free・φ 20	VAPS-20C-2

Suction Stem Covers

Suction Cups	Order code No.	Product name	TYPE
	211023	Suction Stem Cover	VAPH-SC
	211024	Suction Stem Cover	VAPH-SSC

Suction Stem Covers

Suction Cups	Order code No.	Product name	TYPE
	211314	Suction Stem Cover	VAPS-SC
	211315	Suction Stem Cover	VAPS-SSC

Suction Cups (W/ EP Sponge・Standard)

Suction Cups	Order code No.	Product name	TYPE
	210859	Suction Cups・W/EPsponge・Silicone・Brown	VAPH-14C-EPSP
	210860	Suction Cups・W/EPsponge・Silicone・Brown	VAPH-20C-EPSP
	210861	Suction Cups・W/EPsponge・Silicone・Brown	VAPH-30C-EPSP
	210862	Suction Cups・W/EPsponge・Silicone・Brown	VAPH-40C-EPSP
	210863	Suction Cups・W/EPsponge・Silicone・Brown	VAPH-50F-EPSP
	210864	Suction Cups・W/EPsponge・Silicone・Brown	VAPH-60F-EPSP

Suction Cups (W/ EP Sponge・Standard)

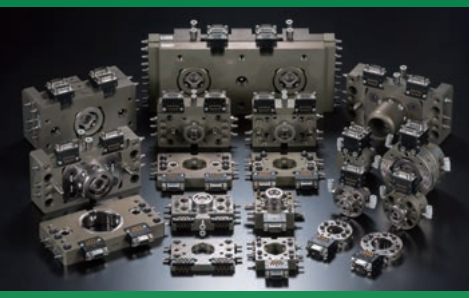
Suction Cups	Order code No.	Product name	TYPE
	211301	Suction Cups・W/EPsponge・φ 14	VAPS-14C-EPSP
	211302	Suction Cups・W/EPsponge・φ 20	VAPS-20C-EPSP
	211303	Suction Cups・W/EPsponge・φ 30	VAPS-30C-EPSP
	211304	Suction Cups・W/EPsponge・φ 40	VAPS-40C-EPSP
	211305	Suction Cups・W/EPsponge・φ 50	VAPS-50F-EPSP
	211306	Suction Cups・W/EPsponge・φ 60	VAPS-60F-EPSP

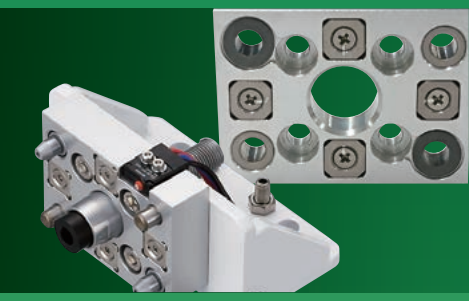
MEMO

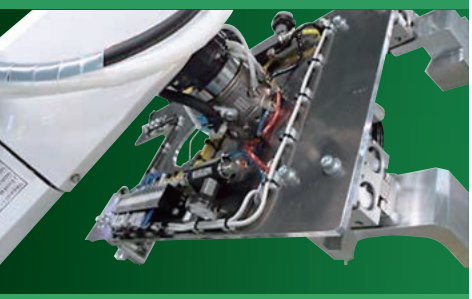
Quick Chuck (Hand) Change











Quick Chuck Change Manual •••• 1-2

- OA-SSL／OA-SSI ／OA1-SA／OA1-SAI ····· 1-3
- OA2-LA／OA-LAI ／Chuck Spacer (Plastic) ····· 1-4
- OA-SSL (SUS)／OA-SSI (SUS)／OC-LA／OC-LAII ··· 1-5

Quick Chuck Change Manual (OM Type) ••• 1-6

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- B／BN Type····· 1-11
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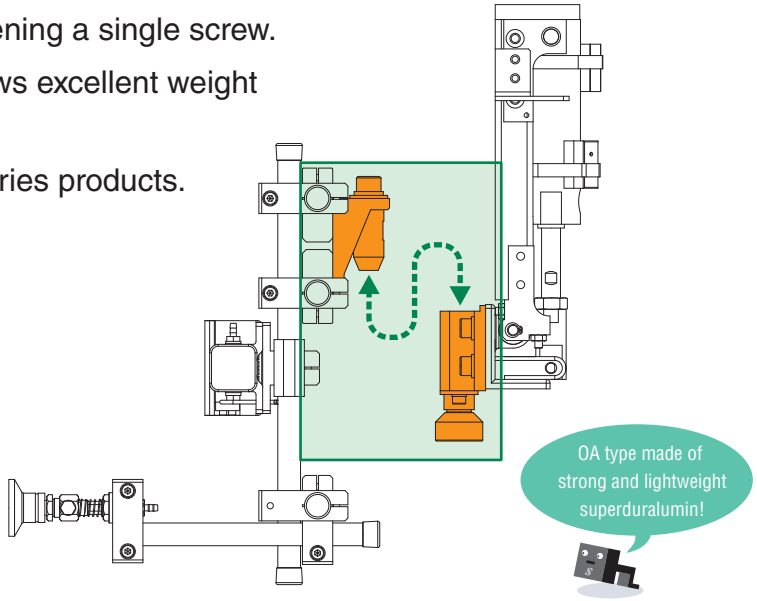
- Auto Quick Chuck Change Hanger／Hanger Tool····· 1-41
- Magnet Chuck Hanger ····· 1-42

Quick Chuck Change Manual

Please check the performance table on the web site.

- Switch Robot hands merely by tightening a single screw.
- Using super duralumin material allows excellent weight reduction and superior strength.
- Interchangeable with existing OC series products.



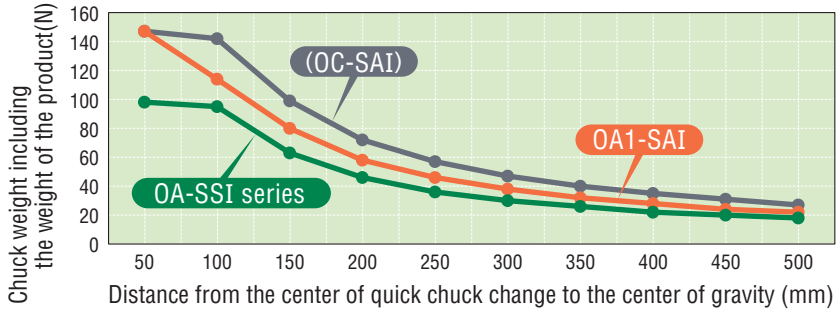


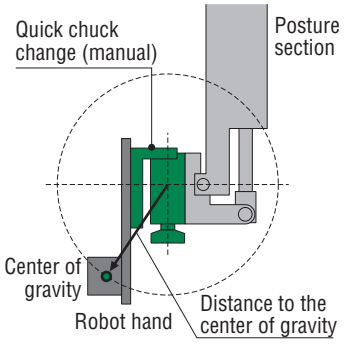
■ Specification

Product name	Order code No. / TYPE	Weight (g)	Weight capacity (kg)	Injection press range (ton)	Page of details
▶ Superduralumin					
Quick chuck change Manual	140219 / OA-SSL	166	～10	40～650	1-3
	140151 / OA-SSI	97			
	140290 / OA1-SA	190	～15		
	140257 / OA1-SAI	228			
▶ Stainless steel (SUS)					
Quick chuck change Manual	140271 / OA-SSL (SUS)	370	～10	40～650	1-5
	140272 / OA-SSI (SUS)	265			

Product name	Order code No. / TYPE	Weight (g)	Weight capacity (kg)	Injection press range (ton)	Page of details
▶ Superduralumin					
Quick chuck change Manual	140291 / OA2-LA	547	～35	650～1,600	1-4
	140155 / OA-LAI	548			
▶ Made of steel					
Quick Chuck Attachment	140042 / OC-LA	1,283	～35	650～1,600	1-5
	140043 / OC-LAII	1,000			
▶ Plastic					
Spacer	041645 / ECP-031	35	–	–	1-4

Allowable-load curve of OA-SSI, OA1-SAI (OC-SAI) (see➡ 1-4 for comparison between OA-LAI and OC-LAII)





Quick Chuck Change Manual (Super Duralumin)

Switch chucks merely by tightening a single screw.

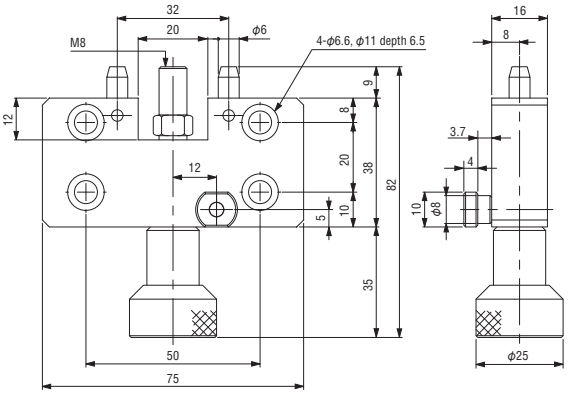
Mounting bolt for OA-SS was extended.



Robot Side

Order code No.	140219
TYPE	OA-SSL

- Superduralumin
- Weight : 166g
- Mounting position : robot side
- Weight capacity : ～10kg
- Thickness after connection : 24mm



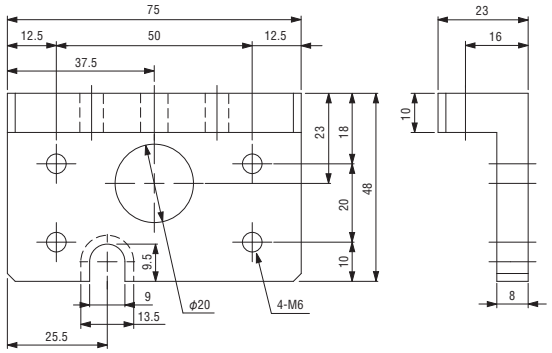
Compatible with OC type QCC for robot side.



Tool Side

Order code No.	140151
TYPE	OA-SSI

- Superduralumin
- Weight : 97g
- Mounting position : tool side
- Weight capacity : ～10kg
- Thickness after connection : 24mm



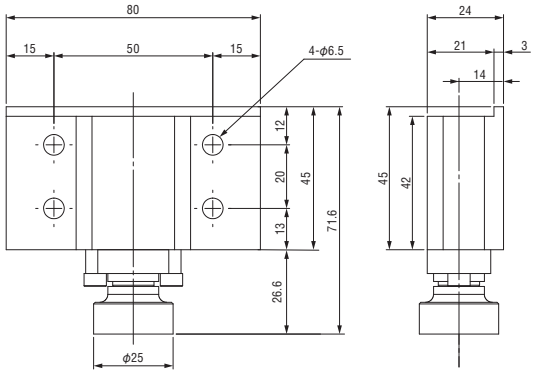
Because it is made of super duralumin, it's lightweight and has excellent rigidity.



Robot Side

Order code No.	140290
TYPE	OA1-SA

- Superduralumin
- Weight : 190g
- Mounting position : robot side
- Weight capacity : ～15kg
- Thickness after connection : 33mm



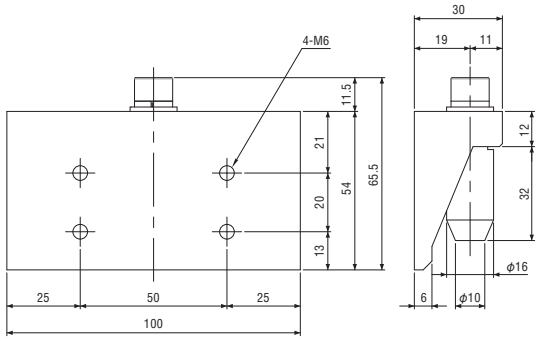
Compatible with OC type QCC for robot side.



Tool Side

Order code No.	140257
TYPE	OA1-SAI

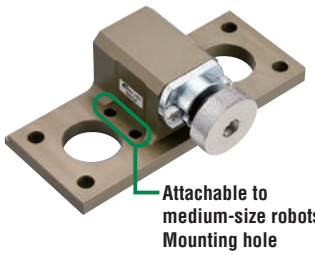
- Superduralumin
- Weight : 228g
- Mounting position : tool side
- Weight capacity : ～15kg
- Thickness after connection : 33mm



Quick Chuck Change Manual (Super Duralumin) / Chuck Spacer

Switch robot hands merely by tightening a single screw.

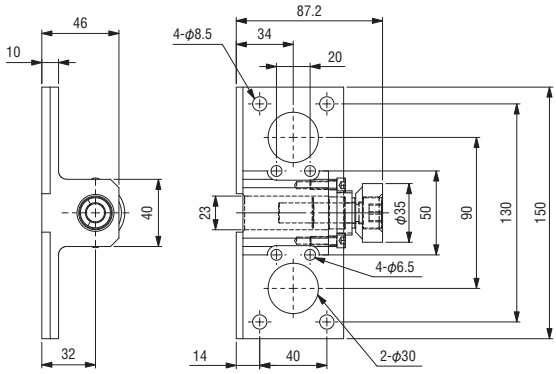
▶ Because it is made of super duralumin, it's lightweight and has excellent rigidity. suitable for medium-sized robots.



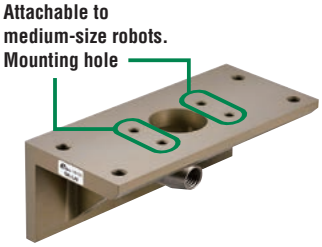
Robot Side

Order code No.	140291
TYPE	OA2-LA

- Superduralumin
- Weight:547g
- Mounting position:robot side
- Weight capacity: ～35kg
- Thickness after connection:61mm



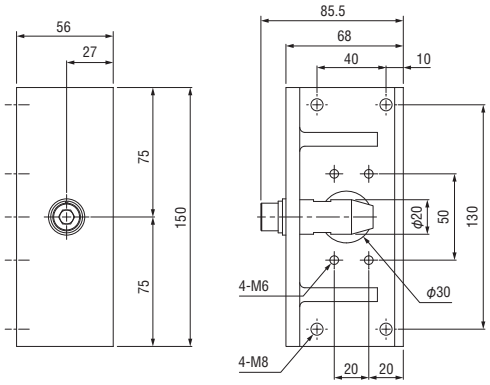
▶ Compatible with OC type for robot side.



Tool Side

Order code No.	140155
TYPE	OA-LAI

- Superduralumin
- Weight:548g
- Mounting position:tool side
- Weight capacity: ～35kg
- Thickness after connection:61mm



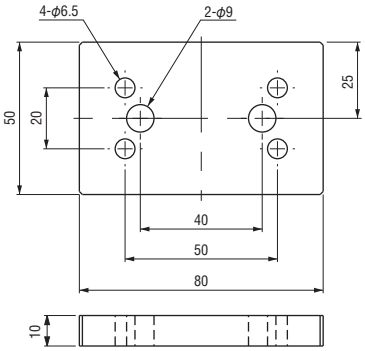
▶ Mounting spacer　Use it when changing the height.

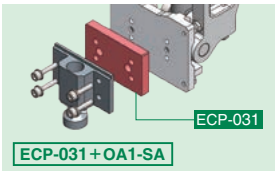


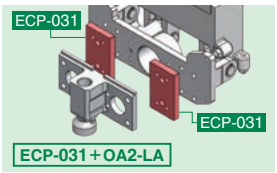
Chuck Spacer • Plastic • for chuck

Order code No.	041645
TYPE	ECP-031

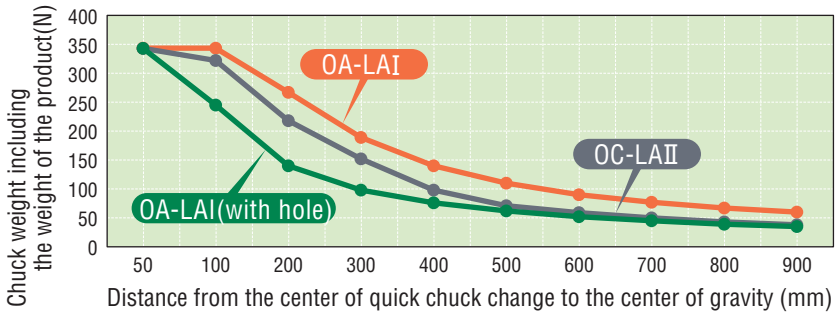
- Plastic (polypropylene)
- Weight:35g

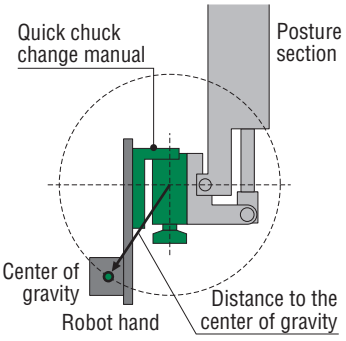






Allowable-load Curve of OA-LAI(with hole), OA-LAI, and OC-LAII





Quick Chuck Change Manual (Stainless) / Quick Chuck Attachment (Steel)

Switch robot hands merely by tightening a single screw.

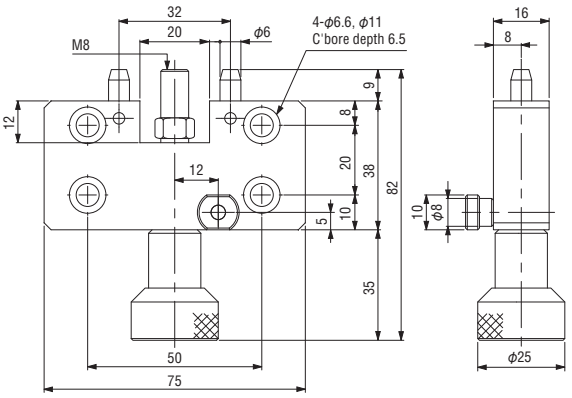
▶ Robot hands plate stainless steel(SUS) can be used for food and medicinal industries.



Robot Side

Order code No.	140271
TYPE	OA-SSL (SUS)

- Stainless steel
- Weight : 370g
- Mounting position : robot side
- Weight capacity : ～10kg
- Thickness after connection : 24mm

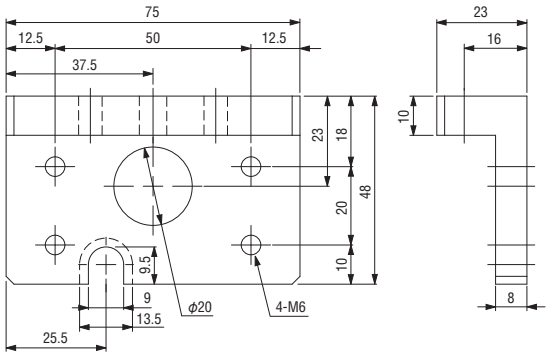




Tool Side

Order code No.	140272
TYPE	OA-SSI (SUS)

- Stainless steel
- Weight : 265g
- Mounting position : tool side
- Weight capacity : ～10kg
- Thickness after connection : 24mm



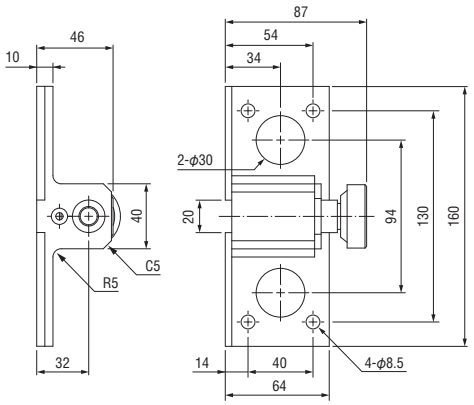
▶ Less deformation and excellent in rigidity.



Robot Side

Order code No.	140042
TYPE	OC-LA

- Steel
- Weight : 1,283g
- Mounting position : robot side
- Weight capacity : ～35kg
- Thickness after connection : 59.5mm

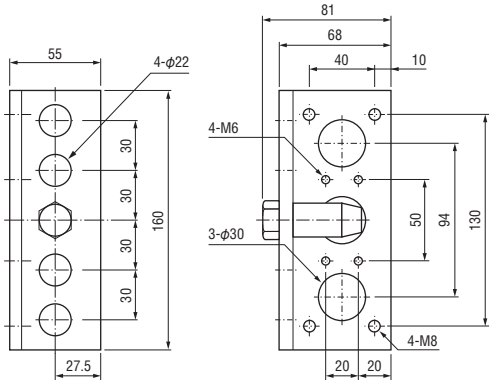




Tool Side

Order code No.	140043
TYPE	OC-LAII

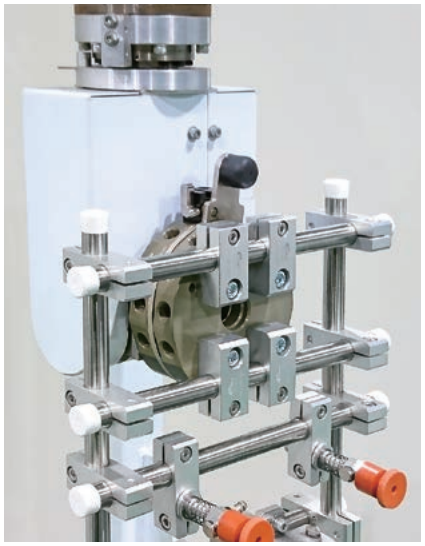
- Steel
- Weight : 1,000g
- Mounting position : tool side
- Weight capacity : ～35kg
- Thickness after connection : 59.5mm



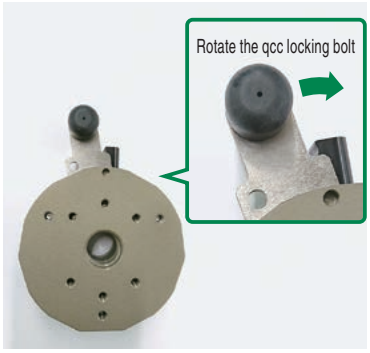
Quick Chuck Change Manual (OM Type)

Please check the performance table on the web site.

- The qcc can be replaced by rotating the locking bolt on the robot side chuck.
- Qcc can help eliminate air connection mistakes.

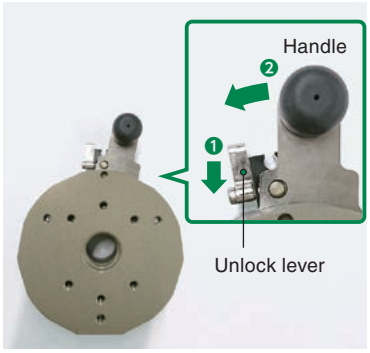


Mounting method



Attach the tool side qcc to the robot qcc by rotating the locking bolt on robot side qcc. Make sure the tool is secure and not loose.

Unlock method



To disengage the lock pin, press the release lever located adjacent to the handle with your finger, and then rotate the handle to the left.

■ Specification

Product name	Order code No.	TYPE	Weight (g)	Weight capacity (kg)	Connection pipe	Lever rotation angle	Fixed rotation torque	Unlock rotation torque	Electric contact Connector shape	Fixed pin number	Repeatability and Accuracy
NEW Quick Chuck Change Manual (OM Type)	140382	OM-50	105	～5	4pins (M5)	20°	30N·m	15N·m	9 pin 2A DC24V Max Connector sold separately	3	±0.02
	140383	OM-50Ⅰ	65								
	140384	OM-90	328	～20	6pins (PT1/8)	20°	180N·m	100N·m	11 pin 2A DC24V Max Connector sold separately	3	±0.02
	140385	OM-90Ⅰ	212						16 pin 2A DC24V Max Connector sold separately		

※Check the web site for allowable static load curves. (above the QR code)

Quick Chuck Attachment

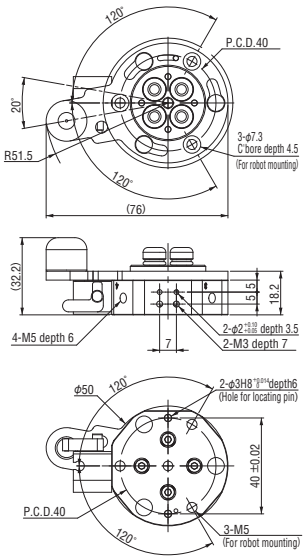
NEW



Robot Side

Order code No.	140382
TYPE	OM-50

- Superduralumin
- Weight: 105g
- Mounting position: robot side
- Weight capacity: 5kg
- Thickness after connection: 32.7mm
- Connection pipe: 4 circuits (M5)



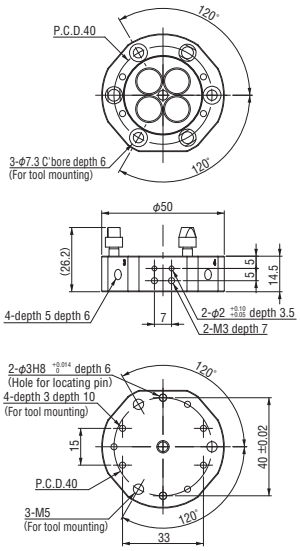
NEW



Tool Side

Order code No.	140383
TYPE	OM-50Ⅰ

- Superduralumin
- Weight: 65g
- Mounting position: tool side
- Weight capacity: 5kg
- Thickness after connection: 32.7mm
- Connection pipe: 4 circuits (M5)



Quick Chuck Change Manual (OM Type)

It can be replaced by simply rotating the locking bolt on the robot chuck.

Quick Chuck Change Manual (OM Type)

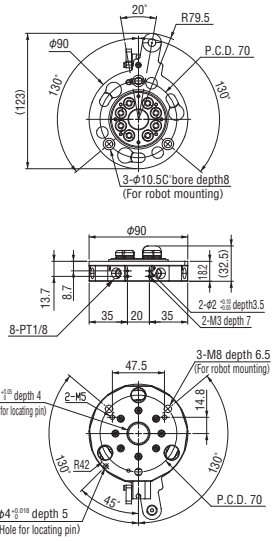


You can see moving images of products by using QR code reader of your smartphone.

Quick Chuck Attachment

NEW





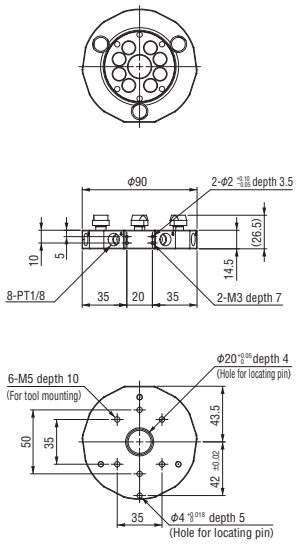
Robot Side

Order code No.	140384
TYPE	OM-90

- Superduralumin
- Weight : 328g
- Mounting position : robot side
- Weight capacity : 20kg
- Thickness after connection : 32.7mm
- Connection pipe : 8 circuits (PT1/8)

NEW





Tool Side

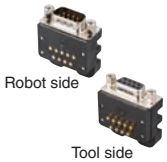
Order code No.	140385
TYPE	OM-90I

- Superduralumin
- Weight : 212g
- Mounting position : tool side
- Weight capacity : 20kg
- Thickness after connection : 32.7mm
- Connection pipe : 8 circuits (PT1/8)

Connecter drawing ➡ See 1-33.

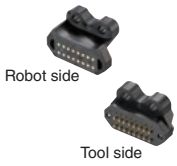
Connector Accessories

D-sub & probe connector	Robot side	Tool Side
Order code No.	140190	140192
TYPE	OXR-DPS09	OXR-DPS09-I
Weight	25g	
Wiring Specification	AWG22	
Electric contact	9 pin (2A)	
Attached screw	Flat head screw with cross recesse M4×10 [123515]	



● Connecter drawing ➡ See 1-33

Probe connector (solder)	Robot side	Tool Side
Order code No.	140264	140265
TYPE	OXR-PS16	OXR-PS16-I
Weight	8g	11g
Wiring Specification	AWG22	
Electric contact	16 pin (2A)	
Attached screw	Flat head screw with cross recesse M4×10 [123515]	



● Connecter drawing ➡ See 1-33

Probe connector	Robot side	Tool Side
Order code No.	140362	140363
TYPE	OXR-PSH11	OXR-PSH11-I
Weight	53g	
Wiring Specification	Solder-fix type (AWG23) 500mm	
Electric contact	11 pin (2A)	
Attached screw	Flat head screw with cross recesse M4×10 [123515]	



● Connecter drawing ➡ See 1-33

NEW

Probe connector bracket	
Order code No.	140388
TYPE	OMR-CBX20
Weight	10g



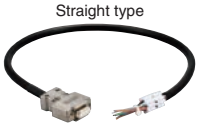
- Accessories : positioning pin, mounting bolt

● It is necessary when attaching the electrical contact connector. (Drawing ➡ 1-33)

Cable Accessories

D-SUB cable •for OX(for OX-B type)	Robot side		Tool Side	
Order code No.	140197	140247	140202	140364
TYPE	OX-DS09S-H	OX-DS09S-H (1.5M)	OX-DS09P-I-H	OX-DS09P-I-H (1.5M)
Weight	60g	138g	60g	140g
Cable length	0.5m	1.5m	0.5m	1.5m
Electric contact	9 pin			
Wiring Specification	Movable cable (AWG22), for UL			

Straight type



- Bending radius (mm) : R46

D-SUB cable •for OX(for OX-B type)	Robot side (L)		Tool Side (L)	
Order code No.	140203	140248	140204	140365
TYPE	OX-DS09SL-H	OX-DS09SL-H (1.5M)	OX-DS09PL-I-H	OX-DS09PL-I-H (1.5M)
Weight	60g	138g	60g	140g
Cable length	0.5m	1.5m	0.5m	1.5m
Electric contact	9 pin			
Wiring Specification	Movable cable (AWG22), for UL			

Type (L)



- Bending radius (mm) : R46

Patent # U.S. 7,559,265 Europe: EP 1 970 170

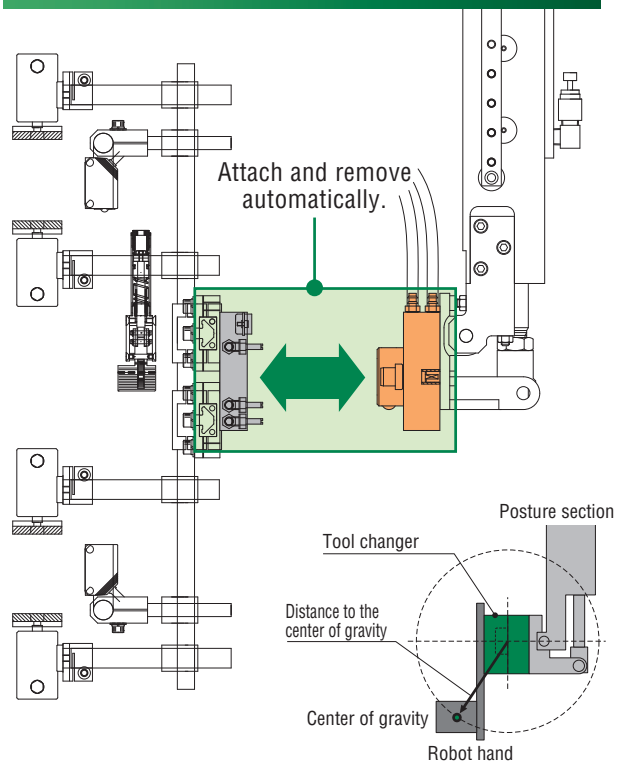
Tool Changer

"Multifunction of the robot" and "shortening the setup time" are two capabilities of the tool changer. We increase productivity and offer a range of small-quantity items.

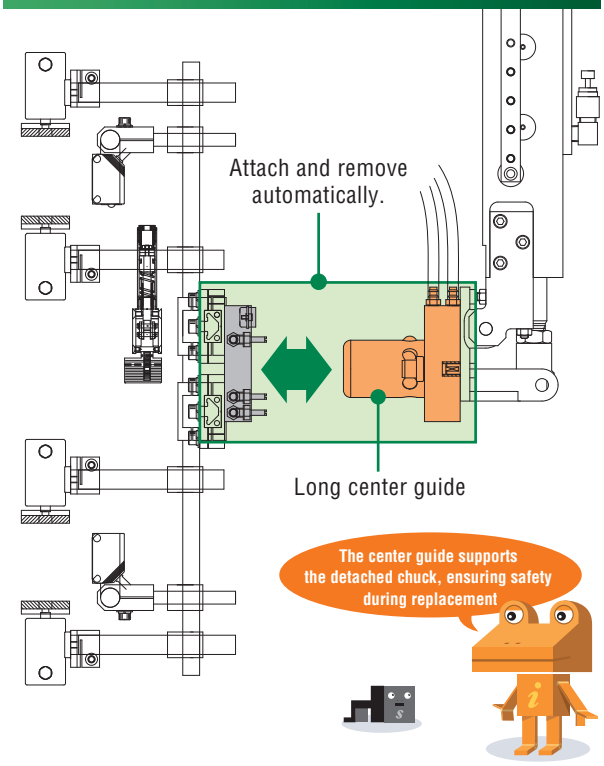
【Features】

- The connecting mechanism is the ball locking type, so it's convenient to assemble and disassemble.
- Equipped with "Pull in function" and "detachable function" when assembling and disassembling.
- With air cut-off circuit (stops air supplies when detached).
- Made of Super Duralumin-strong rigidity and long operating life.
- Safety is ensured by "fail safe mechanism (drop prevention)" when air intercepts.

A/B/BN Type

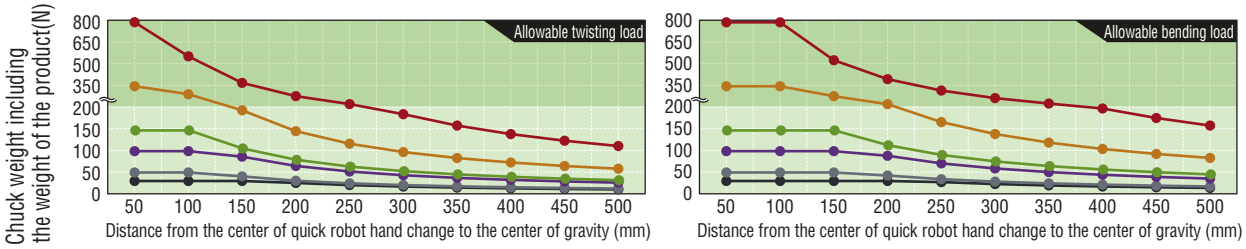


Long Center Guide



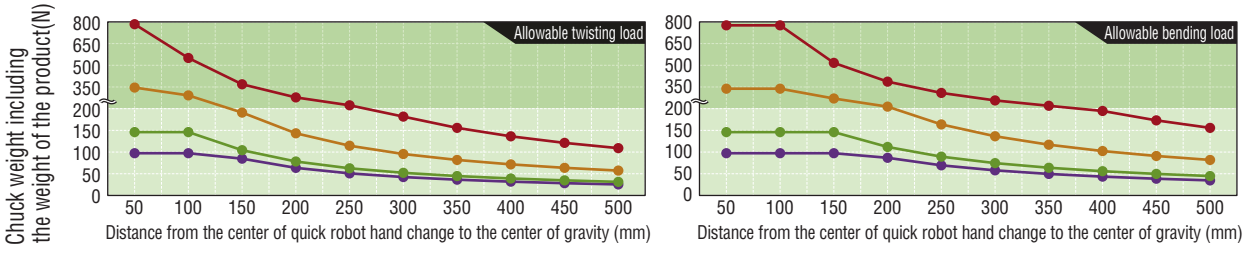
Allowable-load curve of OX-B series

OX-SSB | OX-SBS | OX-SB TYPE | OX-WSB | OX-LB | OX-WLB



Allowable-load curve of OX-A series

OX-SA | OX-WSA | OX-LA | OX-WLA

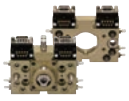


Description of type OX- SB N I

- Type (size): SB
- Connector: N (NONE) / No (w / connector)
- Installation side: None (ROBOT SIDE) / I (TOOL SIDE)

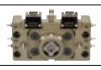
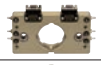
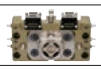
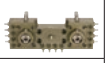
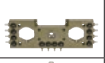
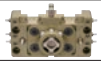
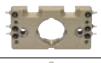
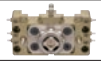
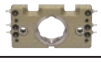
Please check the performance table on the web site.

Tool changer



You can see moving images of products by using QR code reader of your smartphone.

Specification

Product name			Order code No.	TYPE	Weight (g)	Weight capacity (kg)	Injection press range (ton)	Allowable bending moment (Nm)	Allowable torsional moment (Nm)	Power to draw(N) / Power to force(N)	Electric contact / Connector shape	Piping connect	Page of details
Tool changer	B type (with connector)		140266	OX-SSB	330	~ 3	40 ≀ 80	6.7	5.0	1500 / 480	7Pin×2 1A DC24V Max Prove connector Solder fixed type	4 port (M5)	1-11
			140268	OX-SSBI	120								
			140181	OX-SB	475	~ 10	80 ≀ 650	17.5	12.8	1700 / 550		6 port (M5)	1-11
			140182	OX-SBI	235								
			140299	OX-WSB	845	~ 15	200 ≀ 650	22.5	15.7	2,000 / 700		12 port (M5)	1-12
			140301	OX-WSBI	365								
			140183	OX-LB	1,290	~ 35	650 ≀ 1,600	41.2	28.7	4,000 / 750		6 port (M5)	
			140186	OX-LBI	615								
			140274	OX-LBF	1,485								1-13
			140273	OX-LBFI	760						9Pin×2 2A DC24V Max D-SUB Connector Prove connector		
			140184	OX-WLB	2,720	~ 80	1,600 ≀ 5,000	78.4	54.8	7,000 / 1,500		10 port (M5)	
			140187	OX-WLBI	1,385								
			140217	OX-SBY	475	~ 10	80 ≀ 650	17.5	12.8	1,700 / 500		6 port (M5)	1-14
			140218	OX-SBYI	235								
			140275	OX-SBH	440								
			140276	OX-SBHI	245								
			140233	OX-SBS	305	~ 5	80 ≀ 300	8.4	6.0	1,000 / 280	9Pin×1 2A DC24V Max D-SUB Connector Prove connector		1-15
			140234	OX-SBSI	122								
	B/BN type (w/o connector)		140280	OX-SSBN	318	~ 3	40 ≀ 80	6.7	5.0	1,500 / 480	—	6 port (M5)	1-11
			140281	OX-SSBNI	108								
			140225	OX-SBN	431	~ 10	80 ≀ 650	17.5	12.8	1,700 / 550			
			140226	OX-SBNI	197								
			140300	OX-WSBN	787	~ 15	200 ≀ 650	22.5	15.7	2,000 / 700		12 port (M5)	1-12
			140302	OX-WSBNI	320								
			140231	OX-LBN	1,250	~ 35	650 ≀ 1,600	41.2	28.7	4,000 / 750		6 port (M5)	
			140232	OX-LBNI	575								
			140258	OX-LBFN	1,478								1-13
			140259	OX-LBFNI	756								

Please use manual push button "PB1-E (152308), PBW1-E(152306)" for manual exchange (1-18 , 6-11).

Description of type OX- [SB] [N] [I]
- Type (size): SB
- Connector: N (NONE), No (w / connector)
- Installation side: None (ROBOT SIDE), I (TOOL SIDE)

Please check the performance table on the web site.

■ Specification

Product name			Order code No.	TYPE	Weight (g)	Weight capacity (kg)	Injection press range (ton)	Allowable bending moment (Nm)	Allowable torsional moment (Nm)	Power to draw(N) / Power to force(N)	Electric contact / Connector shape	Piping connect	Page of details
Tool changer	B/BN type (w/o connector)		140277	OX-WLBN	2,680	~ 80	1,600 ≀ 5,000	78.4	54.8	7,000 / 1,500	—	10 port (M5)	1-13
			140278	OX-WLBNI	1,345								
			140229	OX-SBYN	435	~ 10	80 ≀ 650	17.5	12.8	1,700 / 550		6 port (M5)	1-14
			140230	OX-SBYNI	195								
			140260	OX-SBHN	399								
			140261	OX-SBHNI	202								
	Long center guide (with connector)		140228	OX-LB-30	1,370	~ 35	650 ≀ 1,600	41.2	28.7	4,000 / 750	9Pin×2 2A DC24V Max D-SUB connector Probe connector	6 port (M5)	1-16
			140283	OX-WLB-30	2,905	~ 80	1,600 ≀ 5,000	78.4	54.8	7,000 / 1,500	9Pin×2 2A DC24V Max D-SUB connector	10 port (M5)	
	Long center guide (w/o connector)		140345	OX-SBN-30	470	~ 10	80 ≀ 650	17.5	12.8	1,700 / 550	—	6 port (M5)	
			140279	OX-LBN-30	1,330	~ 35	650 ≀ 1,600	41.2	28.7	4,000 / 750		6 port (M5)	
			140267	OX-WLBN-30	2,865	~ 80	1,600 ≀ 5,000	78.4	54.8	7,000 / 1,500		10 port (M5)	

Please use manual push button "PB1-E (152308), PBW1-E(152306)" for manual exchange (1-18 , 6-11).

■ Common specification

Positional reproduction Accuracy	Used air pressure	Drive piping	Acceptable electric wiring	Allowable temperature/humidity range
±0.02mm*1	0.5~0.7MPa	Clean air, piping of ϕ6 (ϕ4*2), double action type	AWG20 Max.	0℃ -55℃, 0% -95% (w/o condensation)

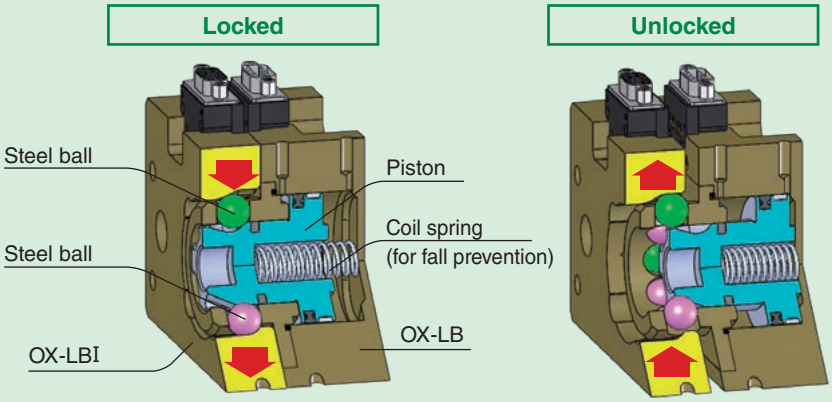
*1 Based on our measurement
*2 ϕ4 : OX-SB series (SSB, SB, SBY, SBH, SBS, SBN, SBYN, SBHN)

Features

- Original detachable mechanism (The U.S. US: 7,559,265 Europe: EP 1 970 170)
- Fail-safe mechanism (Prevention of falling off)
- Air check valve

Merits

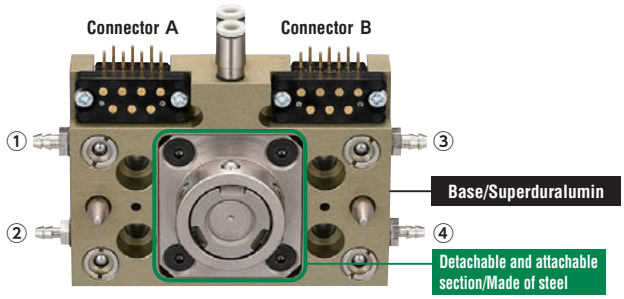
- Reduction of setup change time
- Reproducibility of mounting position
- Prevention of different piping/ wiring connection

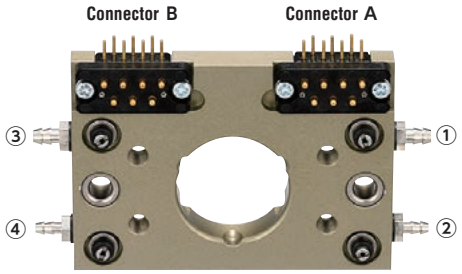


B/BN Type

The chuck on the robot and carrier loader can be easily replaced in a short time.

Weight capacity 3kg Type

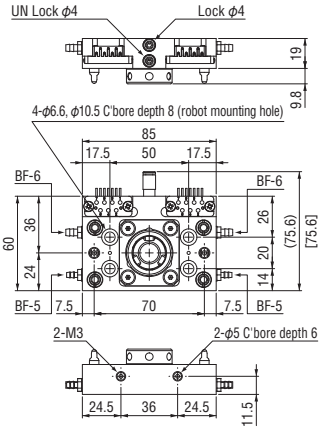




Robot Side

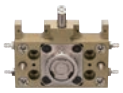
Order code No.	140266
TYPE	OX-SSB

- Weight: 330g
- Mounting position: robot side
- Weight capacity: ~ 3kg
- Thickness after connection: 29mm



W/o connector

Order code No.	140280
TYPE	OX-SSBN



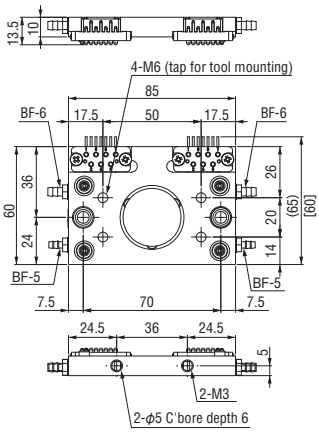
- Weight: 318g
- Mounting position: robot side
- Weight capacity: ~ 3kg
- Thickness after connection: 29mm

＊The value in [ ] shows the type w/o connector.

Tool Side

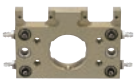
Order code No.	140268
TYPE	OX-SSBI

- Superduralumin
- Weight: 120g
- Mounting position: tool side
- Weight capacity: ~ 3kg
- Thickness after connection: 29mm



W/o connector

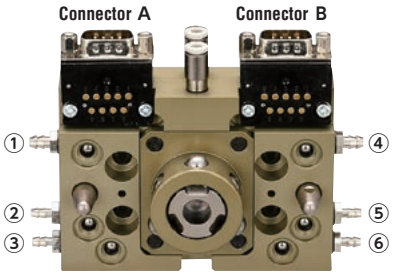
Order code No.	140281
TYPE	OX-SSBNI

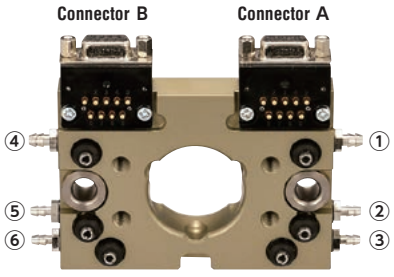


- Superduralumin
- Weight: 108g
- Mounting position: tool side
- Weight capacity: ~ 3kg
- Thickness after connection: 29mm

＊The value in [ ] shows the type w/o connector.

Weight capacity 10kg Type

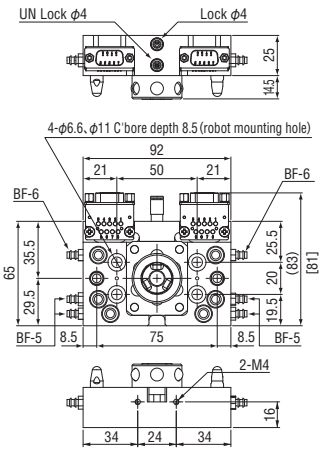




Robot Side

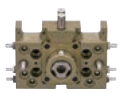
Order code No.	140181
TYPE	OX-SB

- Superduralumin
- Weight: 475g
- Mounting position: robot side
- Weight capacity: ~ 10kg
- Thickness after connection: 40mm



W/o connector

Order code No.	140225
TYPE	OX-SBN



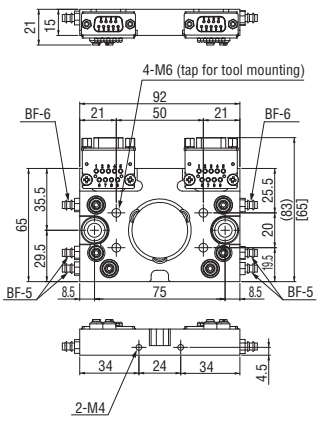
- Superduralumin
- Weight: 431g
- Mounting position: robot side
- Weight capacity: ~ 10kg
- Thickness after connection: 40mm

＊The value in [ ] shows the type w/o connector.

Tool Side

Order code No.	140182
TYPE	OX-SBI

- Superduralumin
- Weight: 235g
- Mounting position: tool side
- Weight capacity: ~ 10kg
- Thickness after connection: 40mm
- Can be installed on OX-SBY



W/o connector

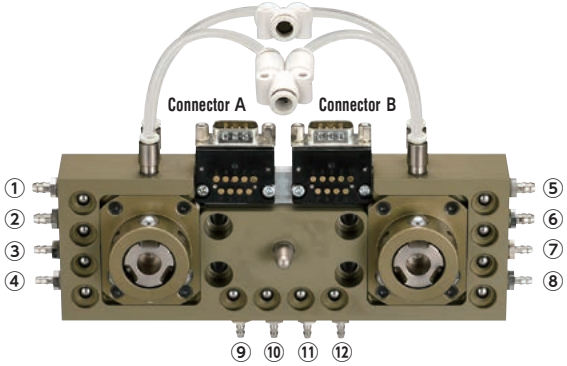
Order code No.	140226
TYPE	OX-SBNI

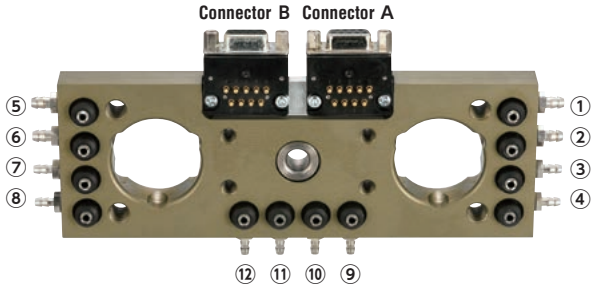


- Superduralumin
- Weight: 197g
- Mounting position: tool side
- Weight capacity: ~ 10kg
- Thickness after connection: 40mm
- Can be installed on OX-SBY

＊The value in [ ] shows the type w/o connector.

Weight capacity 15kg Type





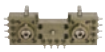
Robot Side

Order code No.	140299
TYPE	OX-WSB

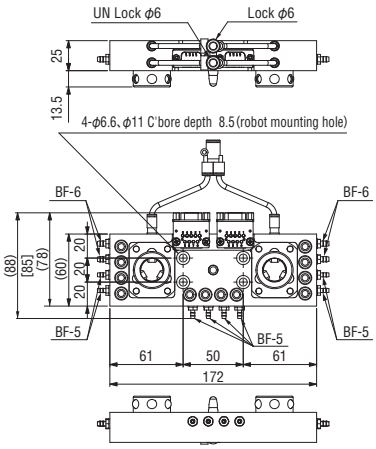
- Superduralumin
- Weight: 845g
- Mounting position: robot side
- Weight capacity: ～15kg
- Thickness after connection: 39mm

W/o connector

Order code No.	140300
TYPE	OX-WSBN



- Superduralumin
- Weight: 787g
- Mounting position: robot side
- Weight capacity: ～15kg
- Thickness after connection: 39mm



＊The value in [ ] shows the type w/o connector.

Tool Side

Order code No.	140301
TYPE	OX-WSBI

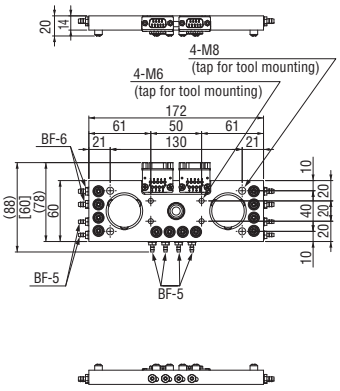
- Superduralumin
- Weight: 365g
- Mounting position: tool side
- Weight capacity: ～15kg
- Thickness after connection: 39mm

W/o connector

Order code No.	140302
TYPE	OX-WSBNI

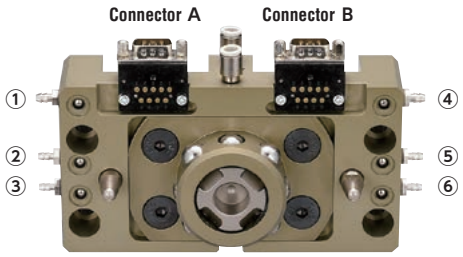


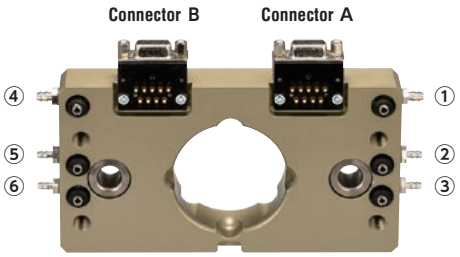
- Superduralumin
- Weight: 320g
- Mounting position: tool side
- Weight capacity: ～15kg
- Thickness after connection: 39mm



＊The value in [ ] shows the type w/o connector.

Weight capacity 35kg Type





Robot Side

Order code No.	140183
TYPE	OX-LB

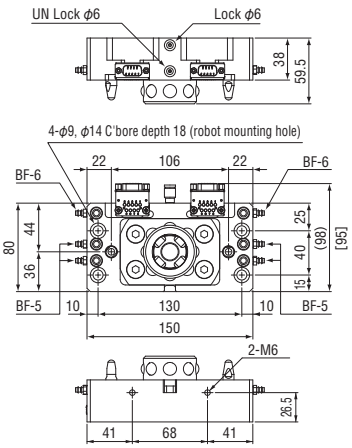
- Superduralumin
- Weight: 1,290g
- Mounting position: robot side
- Weight capacity: ～35kg
- Thickness after connection: 60mm

W/o connector

Order code No.	140231
TYPE	OX-LBN



- Superduralumin
- Weight: 1,250g
- Mounting position: robot side
- Weight capacity: ～35kg
- Thickness after connection: 60mm



＊The value in [ ] shows the type w/o connector.

Tool Side

Order code No.	140186
TYPE	OX-LBI

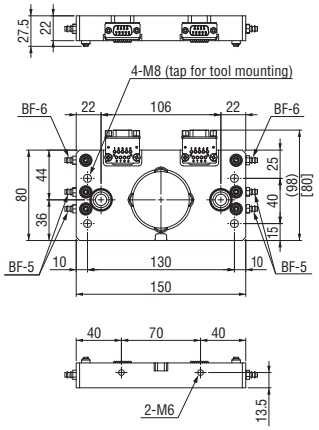
- Superduralumin
- Weight: 615g
- Mounting position: tool side
- Weight capacity: ～35kg
- Thickness after connection: 60mm

W/o connector

Order code No.	140232
TYPE	OX-LBNI



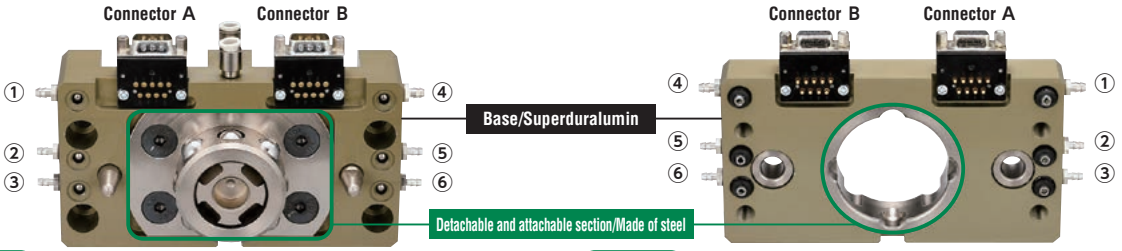
- Superduralumin
- Weight: 575g
- Mounting position: tool side
- Weight capacity: ～35kg
- Thickness after connection: 60mm



＊The value in [ ] shows the type w/o connector.

Weight capacity 35kg Type

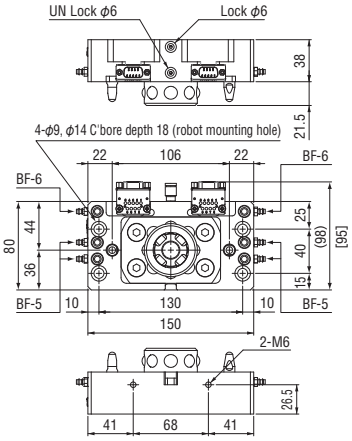
Super duralumin-made frame. Improved durability: steel hybrid structure of detachable and attachable section.



Robot Side

Order code No.	140274
TYPE	OX-LBF

- Weight: 1,485g
- Mounting position: robot side
- Weight capacity: ～35kg
- Thickness after connection: 60mm



W/o connector

Order code No.	140258
TYPE	OX-LBFN



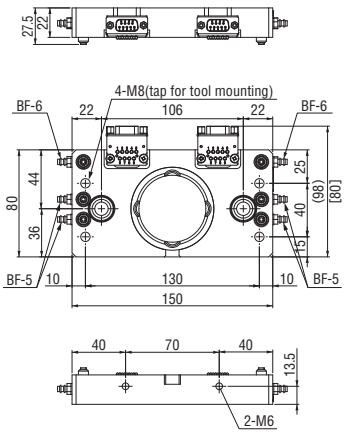
- Weight: 1,478g
- Mounting position: robot side
- Weight capacity: ～35kg
- Thickness after connection: 60mm

＊The value in [ ] shows the type w/o connector.

Tool Side

Order code No.	140273
TYPE	OX-LBFI

- Weight: 760g
- Mounting position: tool side
- Weight capacity: ～35kg
- Thickness after connection: 60mm



W/o connector

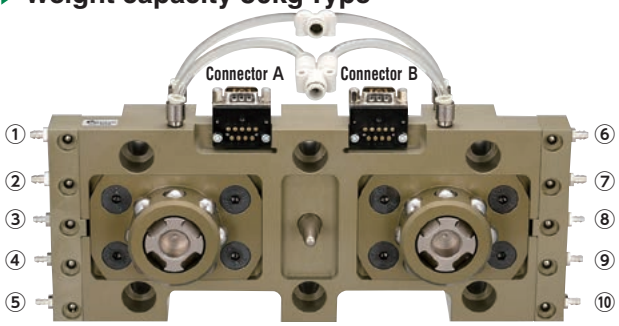
Order code No.	140259
TYPE	OX-LBFNI

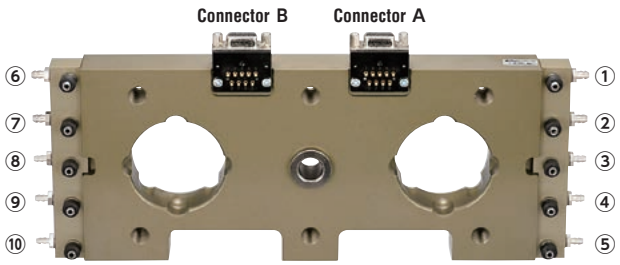


- Weight: 756g
- Mounting position: tool side
- Weight capacity: ～35kg
- Thickness after connection: 60mm

＊The value in [ ] shows the type w/o connector.

Weight capacity 80kg Type



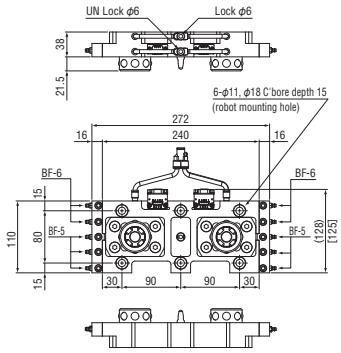


Robot Side

Order code No.	140184
TYPE	OX-WLB

- Superduralumin
- Weight: 2,720g
- Mounting position: robot side
- Weight capacity: ～80kg
- Thickness after connection: 60mm





W/o connector

Order code No.	140277
TYPE	OX-WLBN

- Superduralumin
- Weight: 2,680g
- Mounting position: robot side
- Weight capacity: ～80kg
- Thickness after connection: 60mm

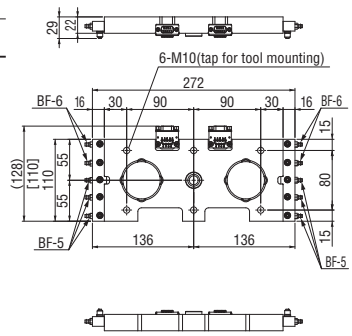
＊The value in [ ] shows the type w/o connector.

Tool Side

Order code No.	140187
TYPE	OX-WLBI

- Superduralumin
- Weight: 1,385g
- Mounting position: tool side
- Weight capacity: ～80kg
- Thickness after connection: 60mm





W/o connector

Order code No.	140278
TYPE	OX-WLBNI

- Superduralumin
- Weight: 1,345g
- Mounting position: tool side
- Weight capacity: ～80kg
- Thickness after connection: 60mm

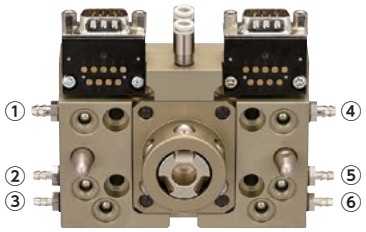
＊The value in [ ] shows the type w/o connector.

B/BN Type

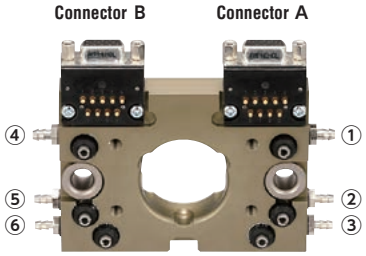
Also compatible with the mounting pattern of cartesian robots made by many other manufacturers.

Weight capacity 10kg Type

Mounting pitch **27×50**



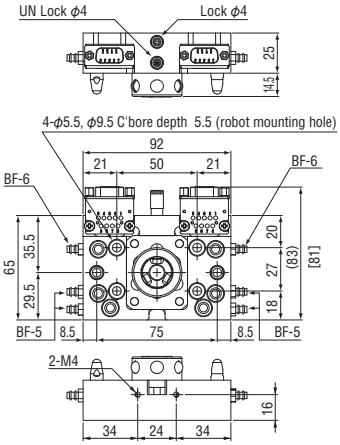
Mounting pitch **27×50**



Robot Side

Order code No.	140217
TYPE	OX-SBY

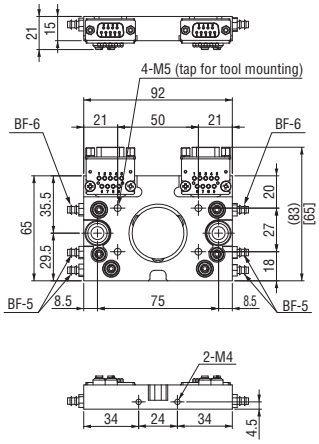
- Superduralumin
- Weight:475g
- Mounting position:robot side
- Weight capacity:～10kg
- Thickness after connection:40mm



Tool Side

Order code No.	140218
TYPE	OX-SBYI

- Superduralumin
- Weight:235g
- Mounting position:tool side
- Weight capacity:～10kg
- Thickness after connection:40mm
- Can be Installable on OX-SB



W/o connector

Order code No.	140229
TYPE	OX-SBYN



- Superduralumin
- Weight:435g
- Mounting position: robot side
- Weight capacity:～10kg
- Thickness after connection:40mm

＊The value in [ ] shows the type w/o connector.

W/o connector

Order code No.	140230
TYPE	OX-SBYNI

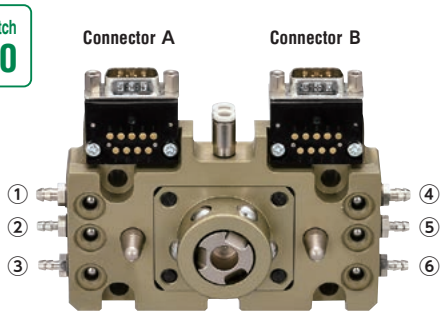


- Superduralumin
- Weight:195g
- Mounting position: tool side
- Weight capacity:～10kg
- Thickness after connection:40mm
- Can be Installable on OX-SB

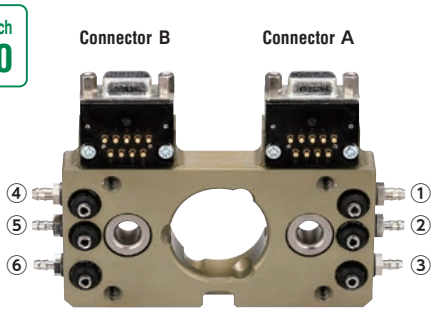
＊The value in [ ] shows the type w/o connector.

Weight capacity 10kg Type

Mounting pitch **40×70**



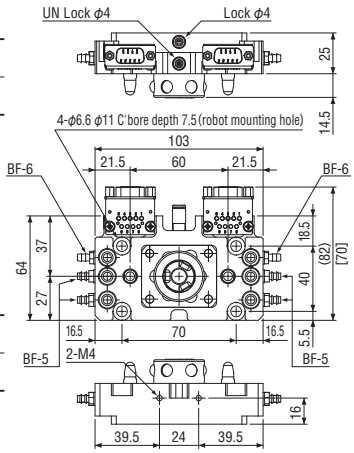
Mounting pitch **40×70**



Robot Side

Order code No.	140275
TYPE	OX-SBH

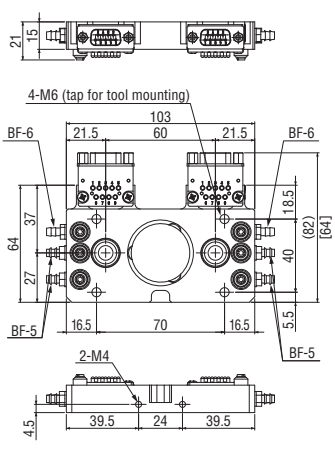
- Superduralumin
- Weight:440g
- Mounting position:robot side
- Weight capacity:～10kg
- Thickness after connection:40mm



Tool Side

Order code No.	140276
TYPE	OX-SBHI

- Superduralumin
- Weight:245g
- Mounting position:tool side
- Weight capacity:～10kg
- Thickness after connection:40mm



W/o connector

Order code No.	140260
TYPE	OX-SBHN



- Superduralumin
- Weight:399g
- Mounting position: robot side
- Weight capacity:～10kg
- Thickness after connection:40mm

＊The value in [ ] shows the type w/o connector.

W/o connector

Order code No.	140261
TYPE	OX-SBHNI

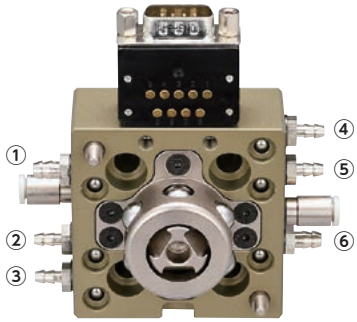


- Superduralumin
- Weight:202g
- Mounting position: tool side
- Weight capacity:～10kg
- Thickness after connection:40mm

＊The value in [ ] shows the type w/o connector.

Weight capacity 5kg Type

Mounting pitch **30×26**

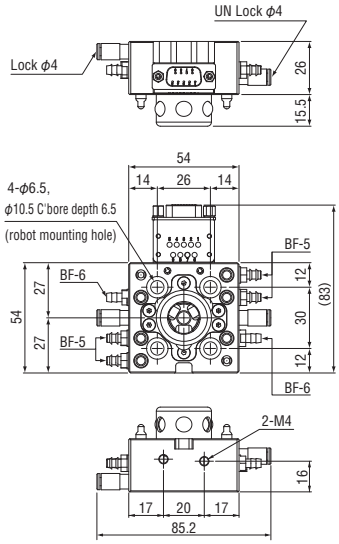


Robot Side

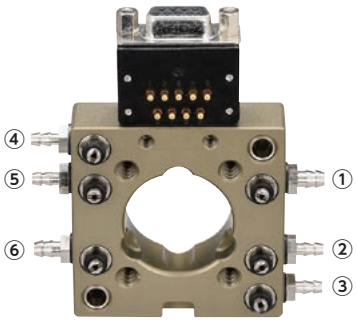
Order code No.	140233
TYPE	OX-SBS

- Superduralumin
- Weight : 305g
- Mounting position : robot side
- Weight capacity : ～ 5kg
- Thickness after connection : 42mm
- The connector used is OXR for articulation

➡ See 1-31



Mounting pitch **30×26**

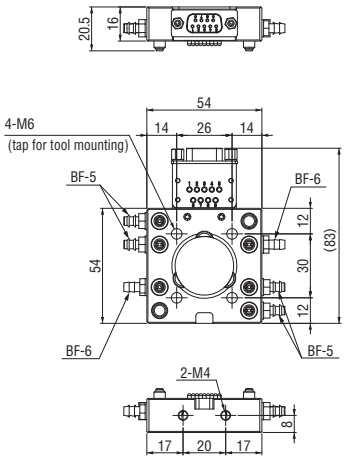


Tool Side

Order code No.	140234
TYPE	OX-SBSI

- Superduralumin
- Weight : 122g
- Mounting position : tool side
- Weight capacity : ～ 5kg
- Thickness after connection : 42mm
- The connector used is OXR for articulation

➡ See 1-31



Long Center Guide

Easy exchange of heavy chuck plate with long center guide.

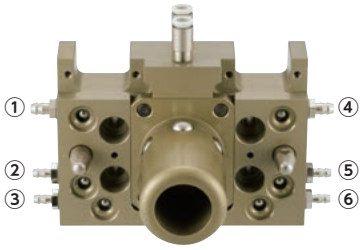
Tool changer
(Long center guide)



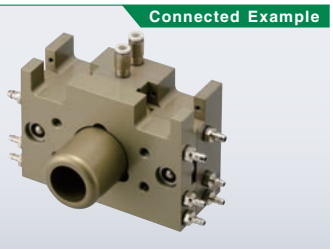
You can see moving images of products by using QR code reader of your smartphone.

● Since the center guide comes out of the tool mounting surface about 30 mm in combination, When assembled, the center guide protrudes about 30mm from the tool mounting surface, so it is necessary to be careful about EOAT/Chuck robot hand design.

Weight capacity 10kg Type



Connected Example

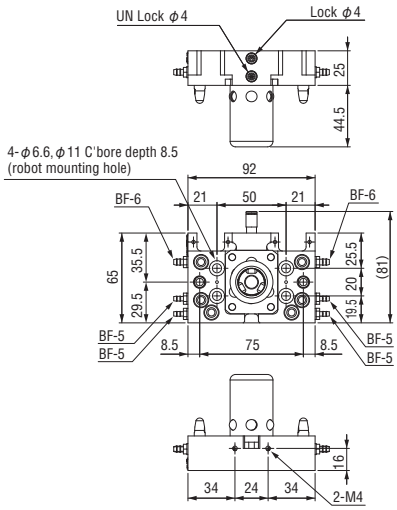


Robot Side

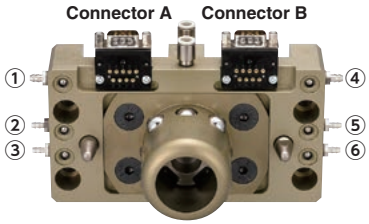
W/o connector

Order code No.	140345
TYPE	OX-SBN-30

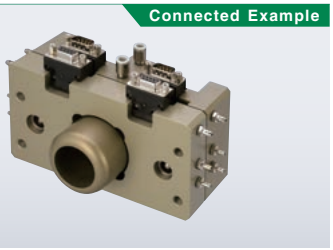
- Superduralumin
- Weight : 470g
- Mounting position : robot side
- Weight capacity : ～10kg
- Tools : OX-SBNI, OX-SBYNI



Weight capacity 35kg Type



Connected Example



Robot Side

Order code No.	140228
TYPE	OX-LB-30

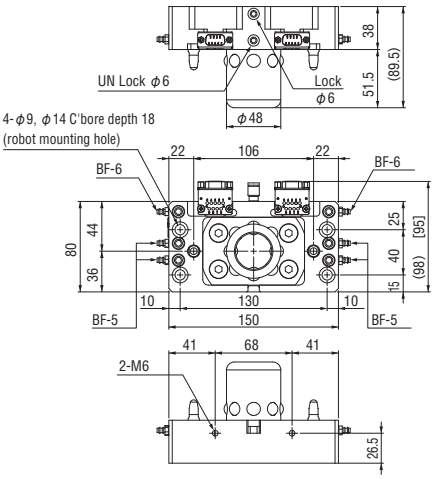
- Superduralumin
- Weight : 1,370g
- Mounting position : robot side
- Weight capacity : ～35kg
- Tools : OX-LBI

W/o connector

Order code No.	140279
TYPE	OX-LBN-30

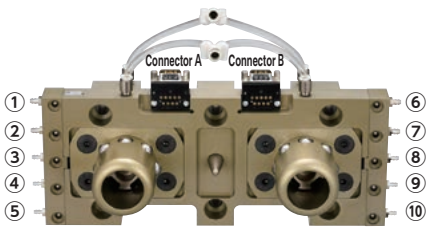


- Superduralumin
- Weight : 1,330g
- Mounting position : robot side
- Weight capacity : ～35kg
- Tools : OX-LBNI

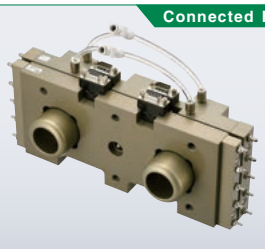


＊The value in [ ] shows the type w/o connector.

Weight capacity 80kg Type



Connected Example



Robot Side

Order code No.	140283
TYPE	OX-WLB-30

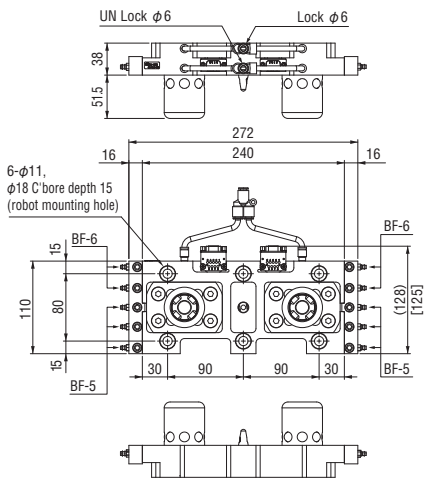
- Superduralumin
- Weight : 2,905g
- Mounting position : robot side
- Weight capacity : ～80kg
- Tools : OX-WLBI

W/o connector

Order code No.	140267
TYPE	OX-WLBN-30



- Superduralumin
- Weight : 2,865g
- Mounting position : robot side
- Weight capacity : ～80kg
- Tools : OX-WLBNI

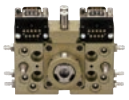


＊The value in [ ] shows the type w/o connector.

Additional Air Expansion

A Type / B Type / BN Type

OX-SB (ROBOT SIDE) + **OX-SBA (ROBOT SIDE)** → **Connected Example**

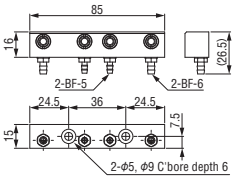




FOR OX-SSB Robot Side

Order code No.	140294
TYPE	OX-SSBA

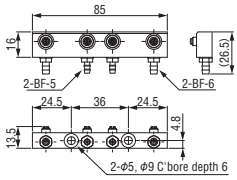
- Weight:56g
- Attachments:mounting bolt (M3)×2
- Air port :M5 hole×4
- 8 ports in total including the air port of robot side body



FOR OX-SSBI Tool Side

Order code No.	140295
TYPE	OX-SSBIA

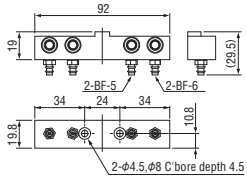
- Weight:33g
- Attachments:mounting bolt (M3)×2
- Air port :M5 hole×4
- 8 ports in total including the air port of tool side body



FOR OX-SA/OX-SB Robot Side

Order code No.	140193
TYPE	OX-SBA

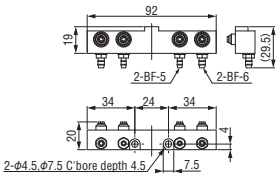
- Weight:90g
- Attachments:mounting bolt (M4)×2
- Air port:M5 hole×4
- 10 ports in total including the air port of robot side body



FOR OX-SAI/OX-SBI Tool Side

Order code No.	140194
TYPE	OX-SBIA

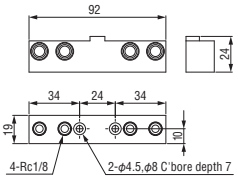
- Weight:70g
- Attachments:mounting bolt (M4)×2
- Air port:M5 hole×4
- 10 ports in total including the air port of tool side body



FOR OX-SA/OX-SB Robot Side

Order code No.	140251
TYPE	OX-SBA1

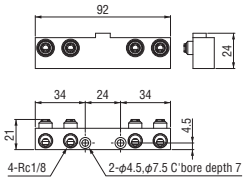
- Weight:91g
- Attachments:mounting bolt (M4)×2
- Air port:1/8 hole×4 . w/o check valve
- 10 ports in total including the air port of robot side body



FOR OX-SAI/OX-SBI Tool Side

Order code No.	140252
TYPE	OX-SBIA1

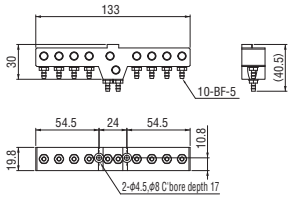
- Weight:72g
- Attachments:mounting bolt (M4)×2
- Air port:1/8 hole×4
- 10 ports in total including the air port of tool side body



NEW FOR OX-SB Robot Side

Order code No.	140391
TYPE	OX-SCA-10

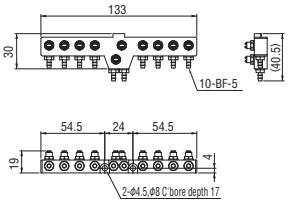
- Weight:144g
- Attachments:mounting bolt (M4)×2
- Air port:M5 hole×10
- 16 ports in total including the air port of robot side body



NEW FOR OX-SBI Tool Side

Order code No.	140392
TYPE	OX-SCIA-10

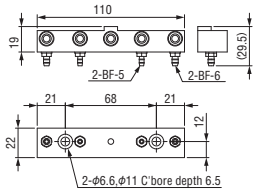
- Weight:90.7g
- Attachments:mounting bolt (M4)×2
- Air port:M5 hole×10
- 16 ports in total including the air port of tool side body



FOR X-LA/OX-LB Robot Side

Order code No.	140195
TYPE	OX-LBA

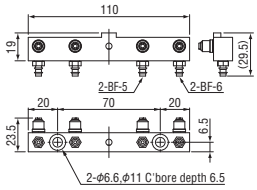
- Weight:115g
- Attachments:mounting bolt (M6)×2
- Air port :M5 hole×4
- 10 ports in total including the air port of robot side body



FOR OX-LAI/OX-LBI Tool Side

Order code No.	140196
TYPE	OX-LBIA

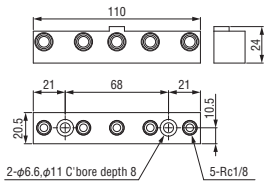
- Weight:82g
- Attachments:mounting bolt (M6)×2
- Air port :M5 hole×4
- 10 ports in total including the air port of robot side body



FOR OX-LA/OX-LB Robot Side

Order code No.	140253
TYPE	OX-LBA1

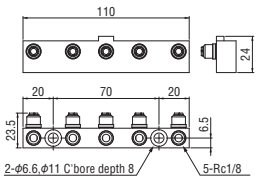
- Weight:113g
- Attachments:mounting bolt (M6)×2
- Air port:1/8 hole×5 . w/o check valve
- 11 ports in total including the air port of robot side body



FOR OX-LAI/OX-LBI Tool Side

Order code No.	140254
TYPE	OX-LBIA1

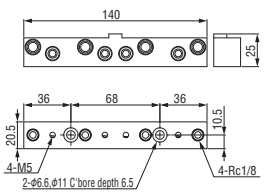
- Weight:77g
- Attachments:mounting bolt (M6)×2
- Air port:1/8 hole×5
- 11 ports in total including the air port of tool side body



FOR OX-LA/OX-LB Robot Side

Order code No.	140287
TYPE	OX-LBA3

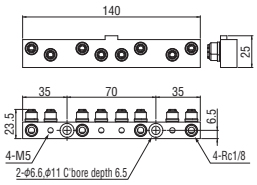
- Weight:160g
- Attachments:mounting bolt (M6)×2
- Air port:1/8 hole×5 . w/o check valve , hole (M5)×4
- 14 ports in total including the air port of robot side body



FOR OX-LAI/OX-LBI Tool Side

Order code No.	140288
TYPE	OX-LBIA3

- Weight:112g
- Attachments:mounting bolt (M6)×2
- Air port:1/8 hole×5 , hole (M5)×4
- 14 ports in total including the air port of tool side body



Accessories

A Type / B Type / BN Type

Remote valve for manual tool change actuation

Manual air valve push button (Return Type)	
	
Order code No.	152308
TYPE	PB1-E
Weight	65g

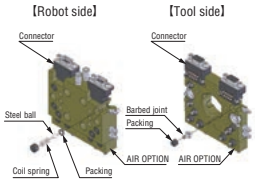
Manual air valve push slide button (Retention Type)	
	
Order code No.	152306
TYPE	PBW1-E
Weight	75g

Replacement Parts

Barbed joint	Tool side			
	For OX-*A/*B	For OX-SSB	NEW For OX-SBS	For WSBI
 Order code No.	110623	230116	230117	110722
TYPE	LX0004-101	XL0054-106A	XL0054-206A	LX0181-203
Weight	2g	1g	1g	1g

Steel ball *Material:SUS304	Robot side	
	For OX-*A/*B	For OX-SSB/SBS
 Order code No.	323000	310607
TYPE	ϕ6.35	ϕ5.5
Weight	1g	1g

Coil spring	Robot side			
	For OX-SB/SBY/LA	For OX-LB	OX-WLB/SBH/SA/WSA/ Additional air expansion	For OX-SSB/SBS
 Order code No.	110649	185221	110619	200223
TYPE	L00999-420	SAWANE5115	L00999-316	UR5-10
Weight	0.2g	0.4g	0.1g	0.1g



Packing *Material : CR (chloroprene rubber)	For OX-*A/*B		For OX-SSB/SBS	
	Tool side	Robot side	Tool side	Robot side
 L00999-313 XL0054-204  S6 1ASS-5 Order code No.	110551	184474	230077	271742
TYPE	L00999-313	S6 (C00503-A00X8)	XL0054-204	1ASS-5
Weight	0.2g	0.05g	0.1g	0.05g

Cable Accessories

D-SUB cable (OX-*A type)	Robot side	Tool side	Robot side	Tool side
 Order code No.	140168	140167	140170	140169
TYPE	OX-DS09-H	OX-DS09-I-H	OX-DS15-H	OX-DS15-I-H
Weight	40g			
Cable length	0.5m			
Electric contact	9Pin		15Pin	
Electrical wiring	Movable cable (AWG22), for UL			
● Bending radius (mm) : R46				

D-SUB cable for OX (OX-*B type)	Robot side	Robot side	Tool side	Tool side
Straight type  Order code No.	140197	140247	140202	140364
TYPE	OX-DS09S-H	OX-DS09S-H (1.5M)	OX-DS09P-I-H	OX-DS09P-I-H (1.5M)
Weight	60g	138g	60g	140g
Cable length	0.5m	1.5m	0.5m	1.5m
Electric contact	9Pin			
Electrical wiring	Movable cable (AWG22), for UL			
● Bending radius (mm) : R46				

D-SUB cable for OX (OX-*B type)	Robot side (L)	Robot side (L)	Tool side (L)	Tool side (L)
L type  Order code No.	140203	140248	140204	140365
TYPE	OX-DS09SL-H	OX-DS09SL-H (1.5M)	OX-DS09PL-I-H	OX-DS09PL-I-H (1.5M)
Weight	60g	138g	60g	140g
Cable length	0.5m	1.5m	0.5m	1.5m
Electric contact	9Pin			
Electrical wiring	Movable cable (AWG22), for UL			
● Bending radius (mm) : R46				

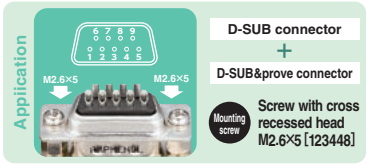
Connector Accessories

D-SUB connector (OX-A type)


Robot side


Tool side

＊Screws are not included.



＊D-SUB connector can be mounted on cable wiring.

	Robot side	Tool side	Robot side	Tool side
Order code No.	140172	140171	140174	140173
TYPE	OX-DS09	OX-DS09-I	OX-DS15	OX-DS15-I
Weight	4g			
Electrical wiring	AWG22			
Electric contact	9Pin (2A DC24V MAX)		15Pin (2A DC24V MAX)	
Mounting screw size	OX-A TYPE OX-B TYPE: Screw with cross recessed head M3×6[123446] D-SUB& prove connector: Screw with cross recessed head M2.6×5[123448]		Screw with cross recessed head M3×16 (NUT 4PCS) [123449] M3 NUT [123301]	Screw with cross recessed head M3×10 [123447]

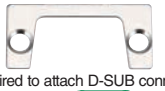
D-SUB connector (for WSB)


Robot side


Tool side

	Robot side	Tool side
Order code No.	140304	140305
TYPE	OX-DS15-WS	OX-DS15-I-WS
Weight	21g	13g
Electrical wiring	AWG22	
Electric contact	15Pin (2A)	
Attached screw	Bolt with Hexagon Socket M3×8	

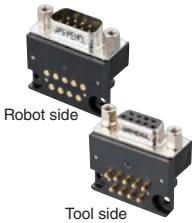
Connector plate


＊Required to attach D-SUB connector to OX-B type. ➡ 1-22,23


＊Required to attach D-SUB & probe connector (for OX-A/B) to OX-WSBN type.

Order code No.	140289
TYPE	OX-DS09CNP
Weight	2g
Order code No.	140303
TYPE	OX-DPS09WCNP
Weight	6g

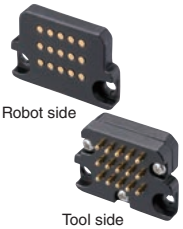
D-SUB & probe connector (for OX-*A/*B)


Robot side / Tool side

	Robot side	Tool side
Order code No.	140324	140325
TYPE	OX-DPS09A	OX-DPS09A-I
Weight	24g	
Electrical wiring	AWG22	
Electric contact	9Pin (2A)	
Attached screw	Screw with cross recessed head M3×6 [123446]	

● Connecter drawing ➡ See 1-33

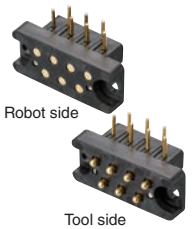
Probe connector (OX-*A/*B type) solder-fix type


Robot side / Tool side

	Robot side	Tool side
Order code No.	140361	140360
TYPE	OX-PS15	OX-PS15-I
Weight	5g	8g
Electrical wiring	AWG22	
Electric contact	15Pin (2A)	
Attached screw	Screw with cross recessed head M3×6 [123446]	

● Connecter drawing ➡ See 1-33

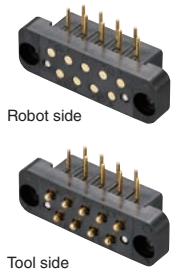
Probe connector (OX-SSB/*A/*B type) solder-fix type


Robot side / Tool side

	Robot side	Tool side
Order code No.	140286	140285
TYPE	OX-PLA-07	OX-PLA-07-I
Weight	6g	
Electrical wiring	AWG22	
Electric contact	7Pin (1A)	
Attached screw	Screw with cross recessed head M3×6 [123446]	

● Connecter drawing ➡ See 1-33

Probe connector (OX-WSA type) solder-fix type


Robot side / Tool side

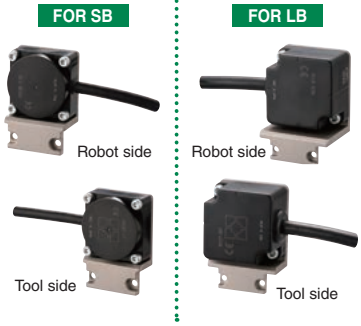
	Robot side	Tool side
Order code No.	140220	140221
TYPE	OX-PL09	OX-PL09-I
Weight	9g	
Electrical wiring	AWG22	
Electric contact	9Pin (1A)	
Attached screw	Screw with cross recessed head M3×16 (NUT 4PCS) [123449]	Screw with cross recessed head M3×10 [123447]

● Connecter drawing ➡ See 1-33

Wireless connector

Can be used for the place with moisture and dust with contactless design

Wireless connector



	FOR SB ROBOT SIDE	FOR SB TOOL SIDE	FOR LB ROBOT SIDE	FOR LB TOOL SIDE
Order code No.	140306	140307	140308	140378
TYPE	OX-RS04R-SB	OX-RS04T-SBI	OX-RS12R-LB	OX-RS12T1-LBI
Weight	195g	140g	417g	290g
Drive voltage	12V±1.5VDC	—	12V±1.5VDC	—
Input and output points	4 points + 1 point	4 points	12 points + 1 point	12 points
Attached screw	Screw with cross recessed head M3×8	Screw with cross recessed head M3×8	Screw with cross recessed head M3×8	Screw with cross recessed head M3×8

＊Check the specification and precautions concerning handling. ➡ 1-38 ＊Check the drawing. ➡ 1-35
＊OX-RS12 is basically for the tool changer with load capacity 35kg or more. ＊For protection structure IP67
＊The output type is NPN type. ＊Power supply voltage DC24V ＊Cable Length : robot side 2m tool side 1m
＊To avoid interference between wireless connectors, no more than 1 wireless connector should be installed per tool changer.

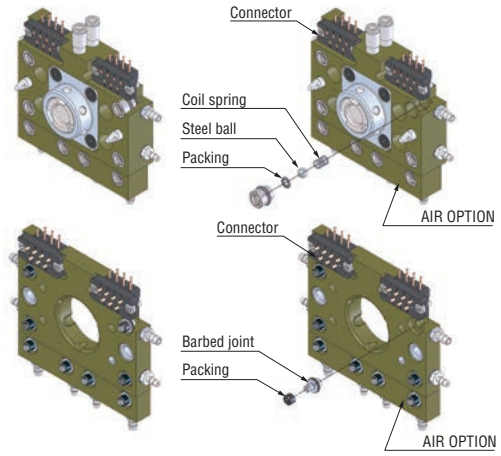
					Tool changer																					
					Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Robot side
				Order code No. Order code No. for connectorless type is shown in ()	140266 (140280)	140268 (140281)	140181 (140225)	140182 (140226)	140299 (140300)	140301 (140302)	140183 (140231)	140186 (140232)	140274 (140258)	140273 (140259)	140184 (140277)	140187 (140278)	140217 (140229)	140218 (140230)	140275 (140260)	140276 (140261)	140233	140234	(140345)	140228 (140279)	140283 (140267)
			Order code No.	TYPE	OX-SSB(N)	OX-SSB(N)I	OX-SB(N)	OX-SB(N)I	OX-WSB(N)	OX-WSB(N)I	OX-LB(N)	OX-LB(N)I	OX-LBF(N)	OX-LBF(N)I	OX-WLB(N)	OX-WLB(N)I	OX-SBY(N)	OX-SBY(N)I	OX-SBH(N)	OX-SBH(N)I	OX-SBS	OX-SBSI	OX-SBN-30	OX-LB(N)-30	OX-WLB(N)-30
Air option	Robot side		140294	OX-SSBA	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Tool side		140295	OX-SSBIA	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Robot side		140193	OX-SBA	—	—	○	—	—	—	—	—	—	—	—	—	○	—	○	—	—	—	○	—	—
	Tool side		140194	OX-SBIA	—	—	—	○	—	—	—	—	—	—	—	—	—	○	—	○	—	—	—	—	—
	Robot side		140251	OX-SBA1	—	—	○	—	—	—	—	—	—	—	—	—	○	—	○	—	—	—	○	—	—
	Tool side		140252	OX-SBIA1	—	—	—	○	—	—	—	—	—	—	—	—	—	○	—	○	—	—	—	—	—
	Robot side		140391	OX-SCA-10	—	—	○	—	—	—	—	—	—	—	—	—	○	—	○	—	—	—	○	—	—
	Tool side		140392	OX-SCIA-10	—	—	—	○	—	—	—	—	—	—	—	—	—	○	—	○	—	—	—	—	—
	Robot side		140195	OX-LBA	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	○	—
	Tool side		140196	OX-LBIA	—	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—
	Robot side		140253	OX-LBA1	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	○	—
	Tool side		140254	OX-LBIA1	—	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—
	Robot side		140287	OX-LBA3	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	○	—
	Tool side		140288	OX-LBIA3	—	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—
Maintenance parts	Barbed joint		110623	LX0004-101	—	—	—	○	—	—	—	○	—	○	—	○	—	○	—	○	—	—	—	—	—
			230116	XL0054-106A	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—
			230117	XL0054-206A	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—
			110722	LX0181-203	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Steel ball		323000	ϕ6.35	—	—	○	—	○	—	○	—	○	—	○	—	○	—	○	—	—	—	○	○	○
			310607	ϕ5.5	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—
	Coil spring		110649	L00999-420	—	—	○	—	○	—	—	—	—	—	—	—	○	—	—	—	—	—	○	—	—
			185221	SAWANE5115	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	○	—
			110619	L00999-316	—	—	—	—	—	—	—	—	—	—	○	—	—	—	○	—	—	—	—	—	○
			200223	UR5-10	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—
	Packing (Robot side)		184474	S6(C00503-A00X8)	—	—	○	—	○	—	○	—	○	—	○	—	○	—	○	—	—	—	○	○	○
			271742	1ASS-5	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—
	Packing (Tool side)		110551	L00999-313	—	—	—	○	—	○	—	○	—	○	—	○	—	○	—	○	—	—	—	—	—
			230077	XL0054-204	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—
Cable Accessories	Robot side		140168	OX-DS09-H	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	○※1	○※1	○※1
	Tool side		140167	OX-DS09-I-H	—	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	—	—
	Robot side		140197	OX-DS09S-H	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	○※1	○※1	○※1
			140247	OX-DS09S-H(1.5M)	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	○※1	○※1	○※1
	Tool side		140202	OX-DS09P-I-H	—	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	—	—
			140364	OX-DS09P-I-H(1.5M)	—	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	—	—
	Robot side		140203	OX-DS09SL-H	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	○※1	○※1	○※1
			140248	OX-DS09SL-H(1.5M)	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	○※1	○※1	○※1
	Tool side		140204	OX-DS09PL-I-H	—	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	—	—
			140365	OX-DS09PL-I-H(1.5M)	—	—	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○※1	—	○	—	—	—
Connector Accessories	Robot side		140172	OX-DS09	—	—	○※2	—	○※2	—	○※2	—	○※2	—	○※2	—	○※2	—	○※2	—	—	—	○※2	○※2	○※2
	Tool side		140171	OX-DS09-I	—	—	—	○※2	—	○※2	—	○※2	—	○※2	—	○※2	—	○※2	—	○※2	—	—	—	—	—
	Robot side		140174	OX-DS15	—	—	—	—	○※3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Tool side		140173	OX-DS15-I	—	—	—	—	—	○※3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Robot side		140304	OX-DS15-WS	—	—	—	—	○※3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Tool side		140305	OX-DS15-I-WS	—	—	—	—	—	○※3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Connector plate		140289	OX-DS09CNP	—	—	○※2	○※2	○※2	○※2	○※2	○※2	○※2	○※2	○※2	○※2	○※2	○※2	○※2	○※2	—	—	○※2	○※2	○※2
			140303	OX-DPS09WCNP	—	—	—	—	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Robot side	★	140324	OX-DPS09A	—	—	○	—	○※4	—	○	—	○	—	○	—	○	—	○	—	—	—	○	○	○
	Tool side		140325	OX-DPS09A-I	—	—	—	○	—	○※4	—	○	—	○	—	○	—	○	—	○	—	—	—	—	—
	Robot side		140361	OX-PS15	—	—	○	—	○※4	—	○	—	○	—	○	—	○	—	○	—	—	—	○	○	○
	Tool side		140360	OX-PS15-I	—	—	—	○	—	○※4	—	○	—	○	—	○	—	○	—	○	—	—	—	—	—
	Robot side		140286	OX-PLA-07	○	—	○	—	○※4	—	○	—	○	—	○	—	○	—	○	—	—	—	○	○	○
	Tool side		140285	OX-PLA-07-I	—	○	—	○	—	○※4	—	○	—	○	—	○	—	○	—	○	—	—	—	—	—
	Robot side	★	140190	OXR-DPS09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—
	Tool side		140192	OXR-DPS09-I	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—
Wireless connector	Robot side		140306	OX-RS04R-SB	—	—	○	—	—	—	○	—	○	—	○	—	○	—	○	—	—	—	○	○	○
	Tool side		140307	OX-RS04T-SBI	—	—	—	○	—	—	—	○	—	○	—	○	—	○	—	○	—	—	—	—	—
	Robot side		140321	OXR-RS04R-10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—
	Tool side		140323	OXR-RS04T-10I	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—
	Robot side		140308	OX-RS12R-LB	—	—	—	—	—	—	○※5	—	○※5	—	○※5	—	—	—	—	—	—	—	○※5	○※5	○※5
	Tool side		140378	OX-RS12T1-LBI	—	—	—	—	—	—	—	○※5	—	○※5	—	○	—	—	—	—	—	—	—	—	—

＊1 If you use a cable accessory with no connector, you will need the proper D-sub & probe connectors(★mark).
＊2 To install the D-SUB connector (140172, 140171), use the connector plate (140289) OX-DS09CNP as a set.
＊3 The D-SUB connectors (140304) OX-DS15WS, (140305) OX-DS15-I-WS, (140174) OX-DS15, and (140173) OX-DS15-I are dedicated to the OX-WSB・WSB I type.
＊4 The connector plate (140303) OX-DPS09WCNP is required for mounting on the type without a connector.
＊5 Because of the thickness of the wireless connector, it will come out or same as the mounting surface of the tool changer, please confirm the size.

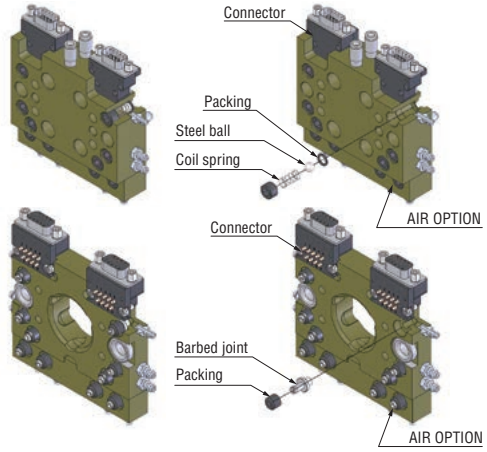
					Air option												
					Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side
				Order code No.	140294	140295	140193	140194	140251	140252	140195	140196	140253	140254	140287	140288
			Order code No.	TYPE	OX-SSBA	OX-SSB1A	OX-SBA	OX-SB1A	OX-SBA1	OX-SB1A1	OX-LBA	OX-LB1A	OX-LBA1	OX-LB1A1	OX-LBA3	OX-LB1A3 ※
Maintenance parts	Barbed joint		110623	LX0004-101	—	—	—	○	—	—	—	○	—	—	—	○
			230116	XL0054-106A	—	○	—	—	—	—	—	—	—	—	—	—
			110686	LX0120-202	—	—	—	—	—	○	—	—	—	○	—	○
	Steel ball		323000	ϕ6.35	—	—	○	—	—	—	○	—	—	—	○	—
			310607	ϕ5.5	○	—	—	—	—	—	—	—	—	—	—	—
	Coil spring		110649	L00999-420	—	—	—	—	—	—	—	—	—	—	—	—
			185221	SAWANE5115	○	—	—	—	—	—	—	—	—	—	—	—
			110619	L00999-316	—	—	○	—	—	—	○	—	—	—	○	—
			200223	UR5-10	○	—	—	—	—	—	—	—	—	—	–	—
	Packing (Robot side)		184474	S6(C00503-A00X8)	—	—	○	—	—	—	○	—	—	—	○	—
			271742	1ASS-5	○	—	—	—	—	—	—	—	—	—	—	—
	Packing (Tool side)		110551	L00999-313	—	—	—	○	—	—	—	○	—	—	—	○
			230077	XL0054-204	—	○	—	—	—	—	—	—	—	—	—	—
			110687	LX0120-203	—	—	—	—	—	○	—	—	—	○	—	○

※ (140288) OX-LB1A3 [for M5 port: (110623) LX0004-101+(110551) L00999-313, for M6 port: (110686) LX0120-202+(110687) LX0120-203]

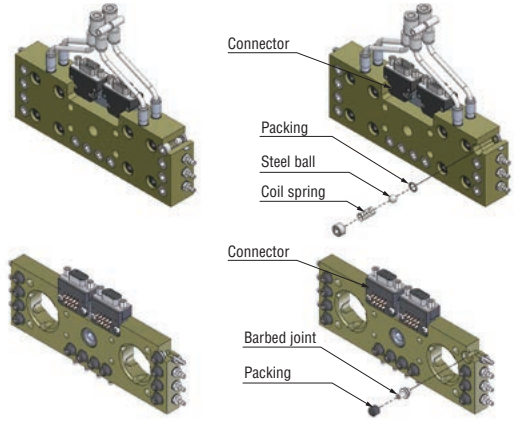
OX-SSB/SSB1



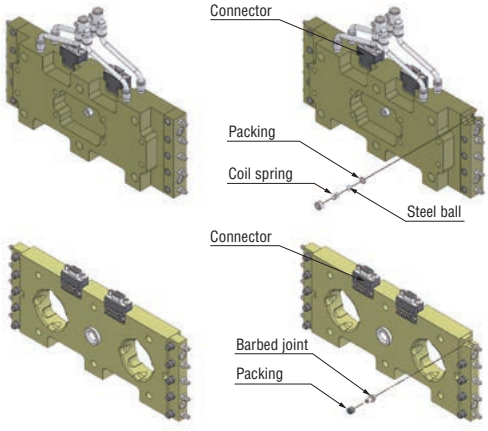
OX-SB/SB1



OX-WSB/WSB1



OX-WLB/WLB1

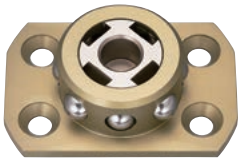


Substitute Product of Tool Changer（A type）

Repairing parts of tool changer（A type）

*For more information, please contact our sales office nearest you.

Piston		For OX-SA
	Order code No.	140249
	TYPE	OX-SAP
	Weight	94g
	Attachments PARTS	Piston set, Spring, Steel ball, Steel ball holder

Piston		For OX-LA
	Order code No.	140250
	TYPE	OX-LAP
	Weight	336g
	Attachments PARTS	Piston set, Spring, Steel ball, Steel ball holder

Substitute product of tool changerr（A type）

*For more information, please contact our sales office nearest you.

Production stopped		Substitute		
Order code No.	TYPE	Order code No.	TYPE	Thickness (mm)
140156	OX-SA	140225	OX-SBN	+5
140157	OX-SAI	140226	OX-SBNI	0
140158	OX-LA	140231	OX-LBN	+9
140159	OX-LAI	140232	OX-LBNI	0
140162	OX-WSA	140300	OX-WSBN	+4.5
140163	OX-WSAI	140302	OX-WSBNI	0
140160	OX-WLA	140277	OX-WLBN	+8
140161	OX-WLAI	140278	OX-WLBNI	0
140164	OX-SA-30	140345	OX-SBN-30	+5
140165	OX-LA-30	140279	OX-LBN-30	+8
140166	OX-WLA-30	140267	OX-WLBN-30	+7.5

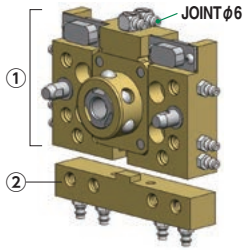
Subroutine product of additional air expansion for A type

*For more information, please contact our sales office nearest you.

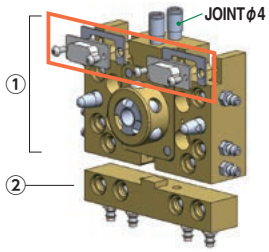
Production stopped		Substitute	
Order code No.	TYPE	Order code No.	TYPE
110547	L00999-306 SET	140193	OX-SBA
110548	L00999-207 SET	140194	OX-SBIA
110545	L00999-406 SET	140195	OX-LBA
110546	L00999-407 SET	140196	OX-LBIA

OX-SA (ROBOT SIDE)

A type



B type

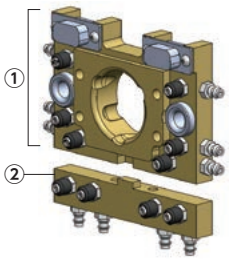


	Order code No.	TYPE	Remarks	Qty
①	140225	OX-SBN	Tool changer	1
	140289	OX-DS09CNP	Connector plate	2
	140172	OX-DS09	D-SUB connector	2
	123446	BKJ 3-6 (M3*6)	Screw with cross recessed head	4
②	140193	OX-SBA	Additional air expansion	1

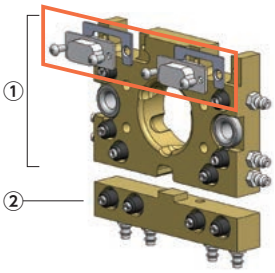
*②：If not used, purchase order is not required.

OX-SAI (TOOL SIDE)

A type



B type

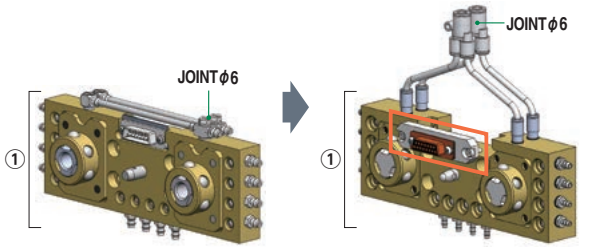


	Order code No.	TYPE	Remarks	Qty
①	140226	OX-SBNI	Tool changer	1
	140289	OX-DS09CNP	Connector plate	2
	140171	OX-DS09-I	D-SUB connector	2
	123446	BKJ 3-6 (M3*6)	Screw with cross recessed head	4
②	140194	OX-SBIA	Additional air expansion	1

*②：If not used, purchase order is not required.

OX-WSA (ROBOT SIDE)

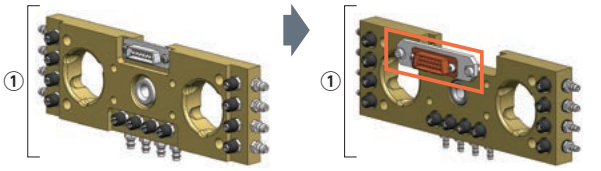
A type | B type



	Order code No.	TYPE	Remarks	Qty
①	140300	OX-WSBN	Tool changer	1
	140304	OX-DS15-WS	D-SUB connector	1

OX-WSAI (TOOL SIDE)

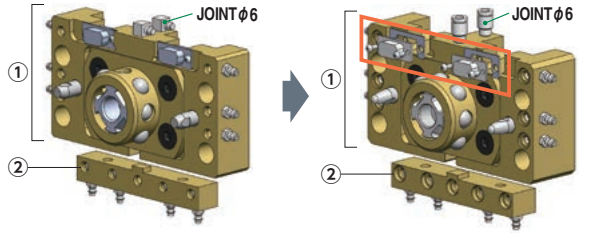
A type | B type



	Order code No.	TYPE	Remarks	Qty
①	140302	OX-WSBNI	Tool changer	1
	140305	OX-DS15-I-WS	D-SUB connector	1

OX-LA (ROBOT SIDE)

A type | B type

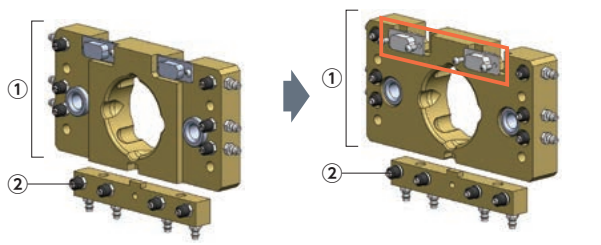


	Order code No.	TYPE	Remarks	Qty
①	140231	OX-LBN	Tool changer	1
	140289	OX-DS09CNP	Connector plate	2
	140172	OX-DS09	D-SUB connector	2
	123446	BKJ 3-6 (M3∗6)	Screw with cross recessed head	4
②	140195	OX-LBA	Additional air expansion	1

∗②: If not used, purchase order is not required.

OX-LAI (TOOL SIDE)

A type | B type

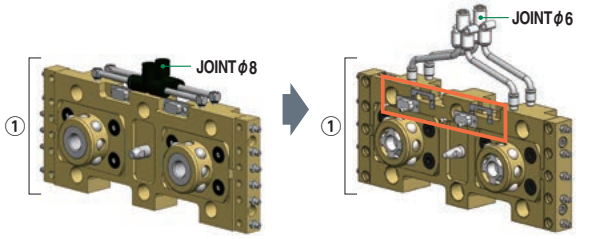


	Order code No.	TYPE	Remarks	Qty
①	140232	OX-LBNI	Tool changer	1
	140171	OX-DS09-I	D-SUB connector	2
	123446	BKJ 3-6 (M3∗6)	Screw with cross recessed head	4
②	140196	OX-LBIA	Additional air expansion	1

∗②: If not used, purchase order is not required.

OX-WLA (ROBOT SIDE)

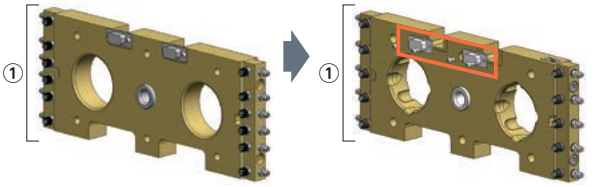
A type | B type



	Order code No.	TYPE	Remarks	Qty
①	140277	OX-WLBN	Tool changer	1
	140289	OX-DS09CNP	Connector plate	2
	140172	OX-DS09	D-SUB connector	2
	123446	BKJ 3-6 (M3∗6)	Screw with cross recessed head	4

OX-WLAI (TOOL SIDE)

A type | B type



	Order code No.	TYPE	Remarks	Qty
①	140278	OX-WLBNI	Tool changer	1
	140171	OX-DS09-I	D-SUB connector	2
	123446	BKJ 3-6 (M3∗6)	Screw with cross recessed head	4

For Articulated Robots

Essential tool for high performance of robot.

Please check the performance table on the web site.

Tool changer (for articulated robots)



You can see moving images of products by using QR code reader of your smartphone.

■ Specification

Product name	Order code No.	TYPE	Weight (g)	Weight capacity (kg)	Power to draw (N) / Power to force (N)	Allowable bending moment (Nm)	Allowable torsional moment (Nm)	Electric contact / Connector shape	Piping connect	Page of details
Tool changer	140310	OX-005A	38	~0.5	60/50	1.7	0.9	6Pin 2A DC24V Max Connector(option)	2port (M3)	1-25
	140315	OX-005AI	17							
	140235	OX-03A	125	~3	600/160	5.2	1.0	9Pin 2A DC24V Max Connector(option)	6port (M5)	
	140236	OX-03AI	45							
	140237	OX-05A	250	~5		6.5	1.2	11Pin 2A DC24V Max Connector(option)		
	140238	OX-05AI	115							
	140262	OX-10B	199	~10	1,350/400	17.5	12.8			1-26
	140263	OX-10BI	115							
	140292	OX-20B	507	~20	2,200/420	28.0	20.0	16Pin 2A DC24V Max Connector(option)		
	140293	OX-20BI	226							
	140398	OX-35B	1225	~35	4,000/750	91.8	55.5	9Pin 2A DC24V Max Connector(option)	6port (Rc1/8)	1-27
	140316	OX-35AI	545							
	140313	OX-60A※1	1440	~60	6,000/(180)※2	185.0	225.0	11Pin 2A DC24V Max Connector(option)	8port (Rc1/8)	
	140318	OX-60AI	734							
NEW	140373	OX-120A	3671	~120	14,000/(2,350)	750.0	750.0	16Pin 2A DC24V Max Connector(option)	8port (PT1/4)	1-28
NEW	140374	OX-120AI	1770							
Coming soon!	140314	OX-230A	6240	~230	20,000/(3,500)	15,000	15,000	8Pin 5A AC/DC200V Max Connector(option)	10port (Rc3/8)	
	140319	OX-230AI	3360							
	140399	OX-35BT	1445	~35	4,000/750	91.8	55.5	4Pin 13A AC/DC200V Max Connector(option)	6port (Rc1/8)	1-29
	140317	OX-35ATI	535							

※Please use manual push button "PB1-E(152308), PBW1-E(152306)" for manual exchange. ➜ 1-30 6-11

※1 There is no detachable mechanism for the OX-60A. ※2 The power to force (n) is the reaction value of the packing.

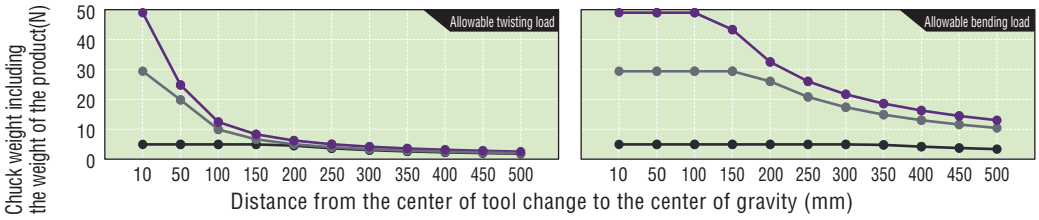
■ Common specification

Positional reproduction Accuracy	Used Air pressure	Drive piping	Acceptable electric wiring	Allowable temperature/humidity range
±0.02mm*1	0.5~0.7MPa	Clean air, piping of ϕ6(ϕ4*2), double action type	AWG20 Max.	0℃-55℃, 0%-95%(w/o condensation)

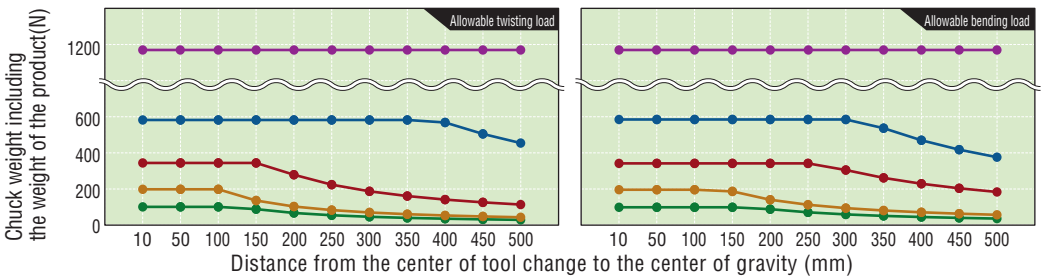
*1 Based on our measurement
*2 ϕ6 : OX-35A, OX-35AT, OX-60A, OX-120A, OX-230A

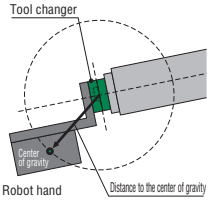
Allowable-load curve

OX-005A OX-03A OX-05A



OX-10B OX-20B OX-35A OX-60A OX-120A





Supports high-speed operation of parallel link robots. (Weight capacity 500g)



Robot Side

Order code No.	140310
TYPE	OX-005A

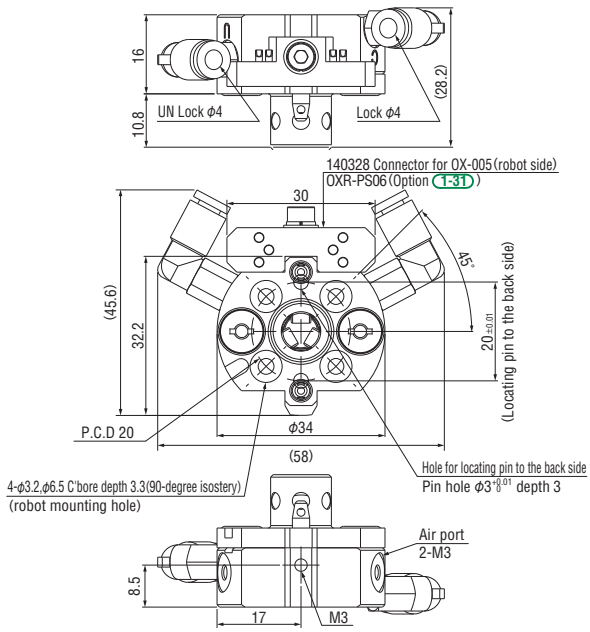
- Superduralumin
- Weight : 38g
- Mounting position : robot side
- Weight capacity : ～ 500g
- Thickness after connection : 27mm

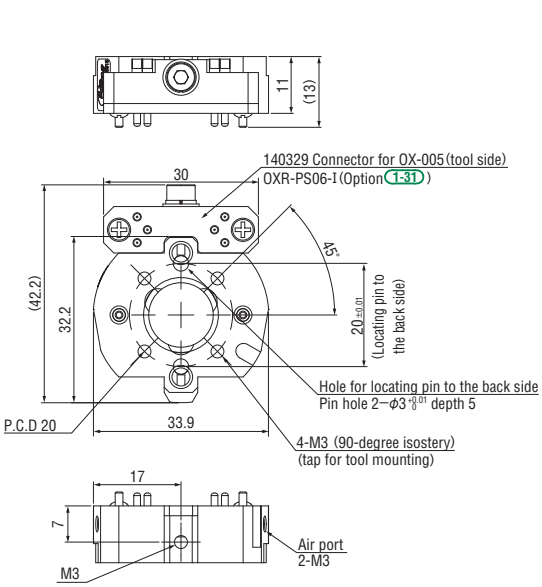


Tool Side

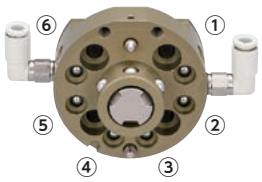
Order code No.	140315
TYPE	OX-005AI

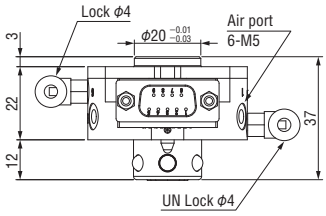
- Superduralumin
- Weight : 17g
- Mounting position : tool side
- Weight capacity : ～ 500g
- Thickness after connection : 27mm





For small-size robots. (Weight capacity 3kg, 5kg)





Robot Side

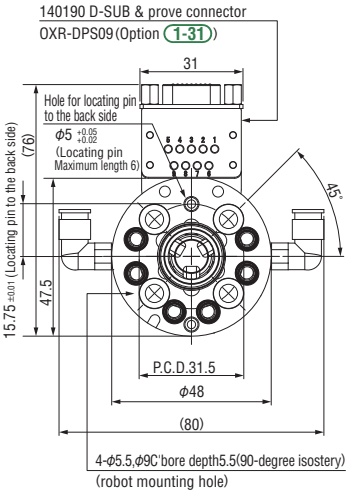
Order code No.	140235
TYPE	OX-03A

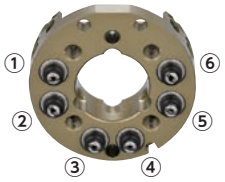
- Superduralumin
- Weight : 125g
- Mounting position : robot side
- Weight capacity : ～ 3kg
- Thickness after connection : 38mm

Robot Side

Order code No.	140237
TYPE	OX-05A

- Steel
- Weight : 250g
- Mounting position : robot side
- Weight capacity : ～ 5kg
- Thickness after connection : 38mm





Tool Side

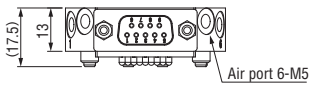
Order code No.	140236
TYPE	OX-03AI

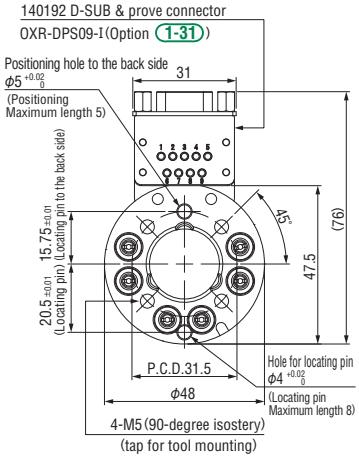
- Superduralumin
- Weight : 45g
- Mounting position : tool side
- Weight capacity : ～ 3kg
- Thickness after connection : 38mm

Tool Side

Order code No.	140238
TYPE	OX-05AI

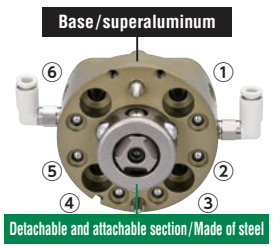
- Steel
- Weight : 115g
- Mounting position : tool side
- Weight capacity : ～ 5kg
- Thickness after connection : 38mm





For Articulated Robots

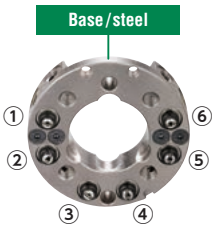
For small-size robots. (Weight capacity 10kg)



Robot Side

Order code No.	140262
TYPE	OX-10B

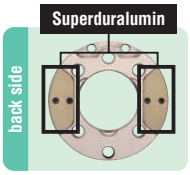
- Weight：199g
- Mounting position：robot side
- Weight capacity：～10kg
- Thickness after connection：43mm

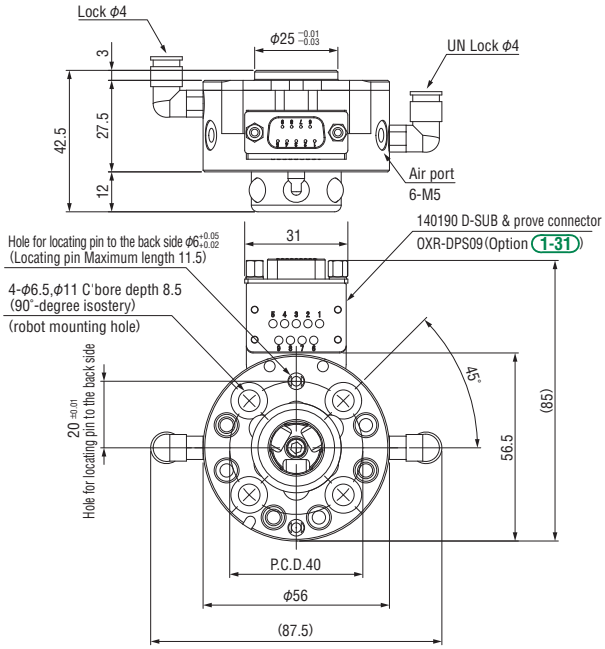


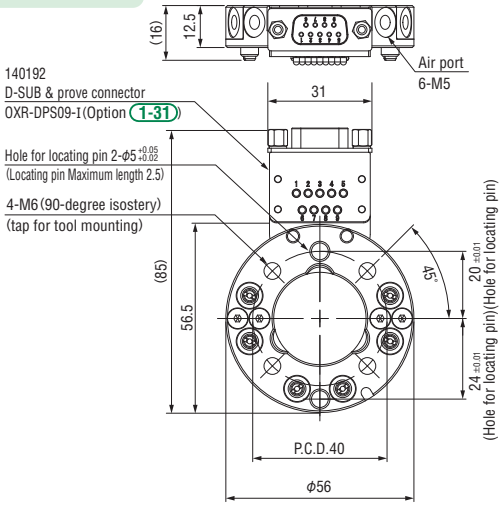
Tool Side

Order code No.	140263
TYPE	OX-10BI

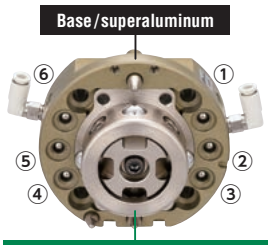
- Weight：115g
- Mounting position：tool side
- Weight capacity：～10kg
- Thickness after connection：43mm

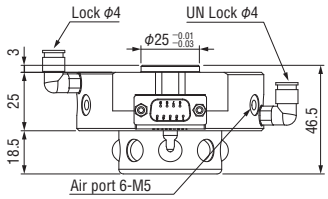






For small-size robots. (Weight capacity 20kg)

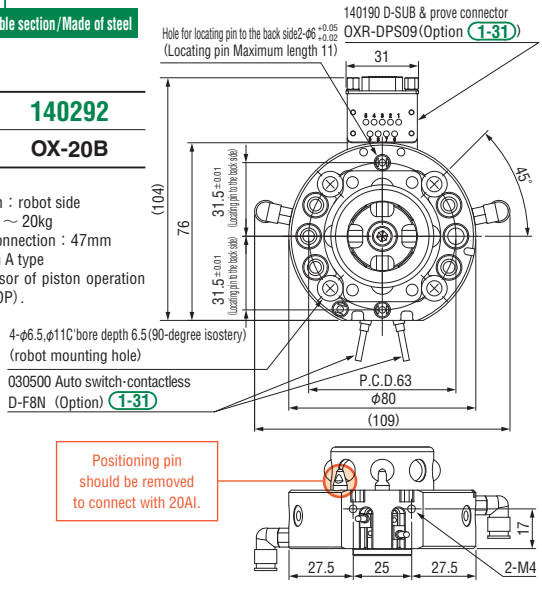


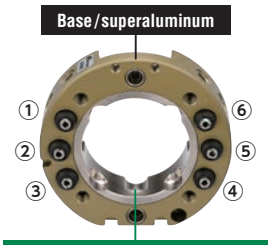


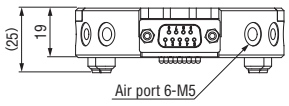
Robot Side

Order code No.	140292
TYPE	OX-20B

- Weight：507g
- Mounting position：robot side
- Weight capacity：～20kg
- Thickness after connection：47mm
- Compatibility with A type
- Confirmation sensor of piston operation can be attached (OP).



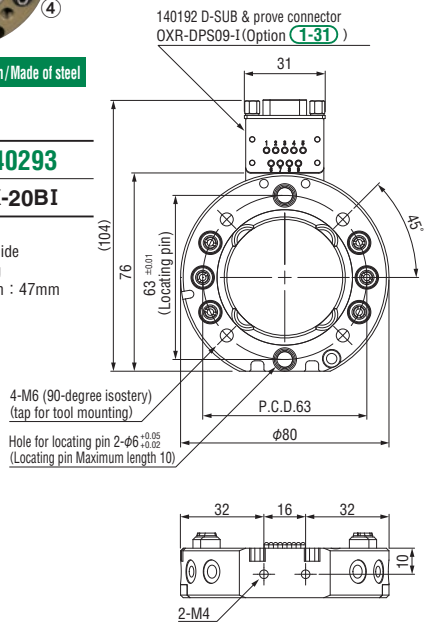




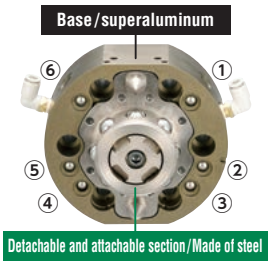
Tool Side

Order code No.	140293
TYPE	OX-20BI

- Weight：226g
- Mounting position：tool side
- Weight capacity：～20kg
- Thickness after connection：47mm
- Compatibility with A type



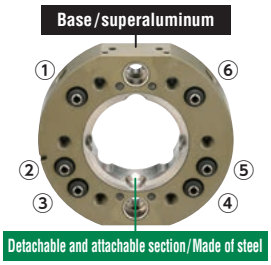
For middle-size robot. (Weight capacity 35kg)



Robot Side

Order code No.	140398
TYPE	OX-35B

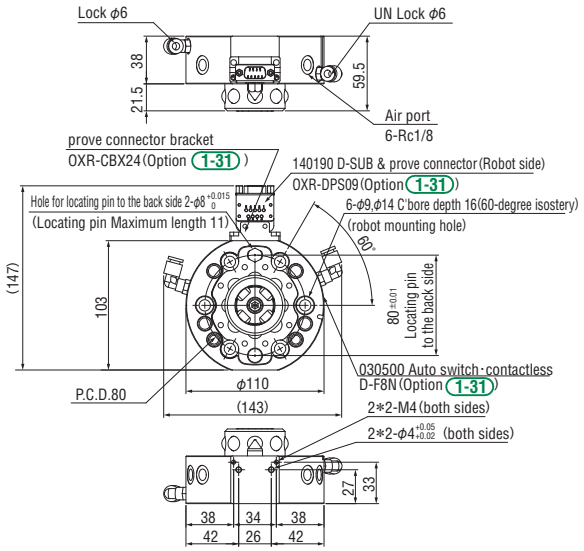
- Weight : 1225g
- Mounting position : robot side
- Weight capacity : ～ 35kg
- Thickness after connection : 60mm

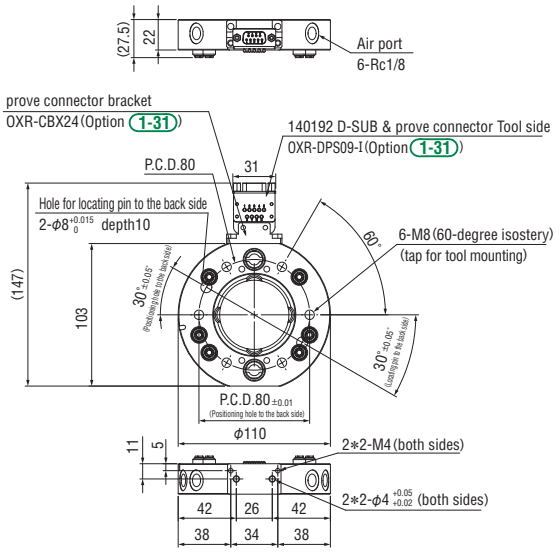


Tool Side

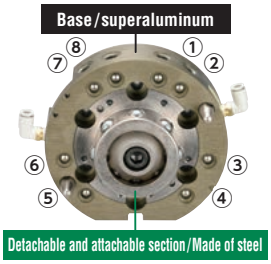
Order code No.	140316
TYPE	OX-35AI

- Weight : 545g
- Mounting position : tool side
- Weight capacity : ～ 35kg
- Thickness after connection : 60mm





For middle-size robot. (Weight capacity 60kg)

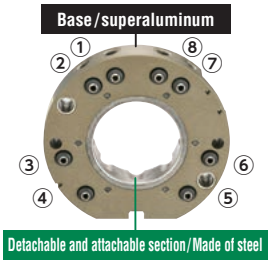


Robot Side

Order code No.	140313
TYPE	OX-60A

- Weight : 1440g
- Mounting position : robot side
- Weight capacity : ～ 60kg
- Thickness after connection : 56mm

Note: without detachable mechanism

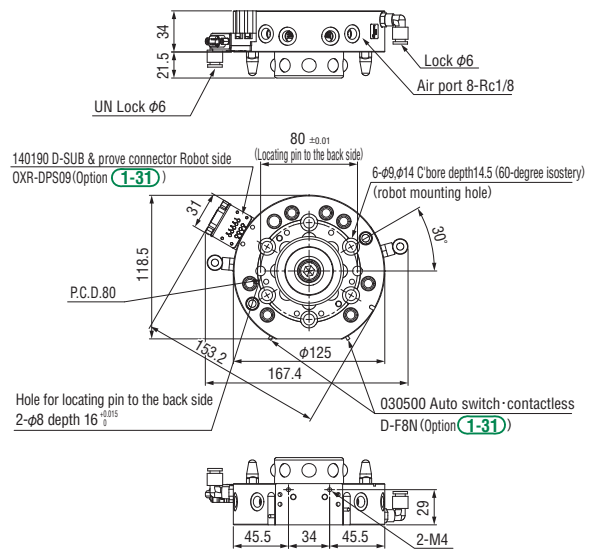


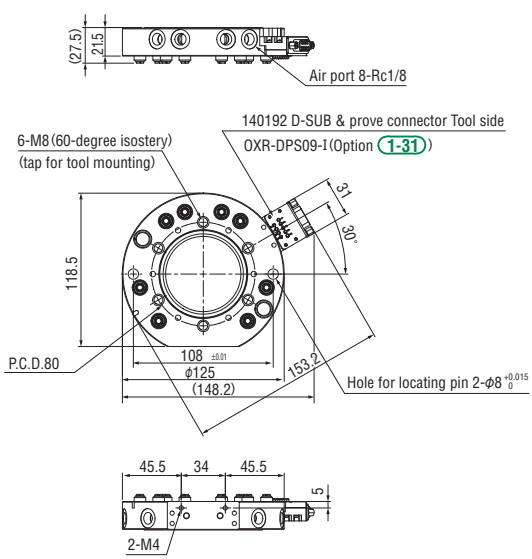
Tool Side

Order code No.	140318
TYPE	OX-60AI

- Weight : 734g
- Mounting position : tool side
- Weight capacity : ～ 60kg
- Thickness after connection : 56mm

Note: without detachable mechanism

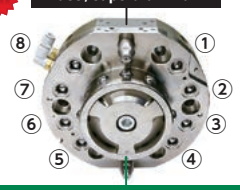




Quick Chuck Change Automatic for Articulated Robots

For large robot. (Weight capacity 120kg)

NEW **Base / superaluminum**

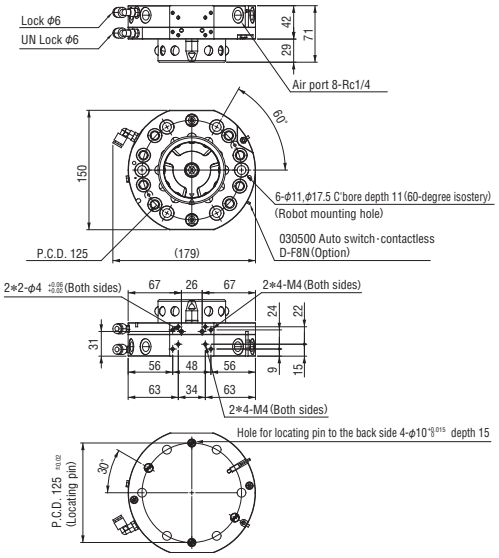


Detachable and attachable section / Made of steel

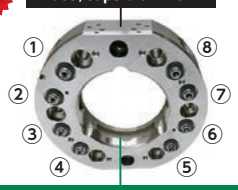
Robot Side

Order code No.	140373
TYPE	OX-120A

- Weight : 3,671g
- Mounting position : robot side
- Weight capacity : ～ 120kg
- Thickness after connection : 75mm



NEW **Base / superaluminum**

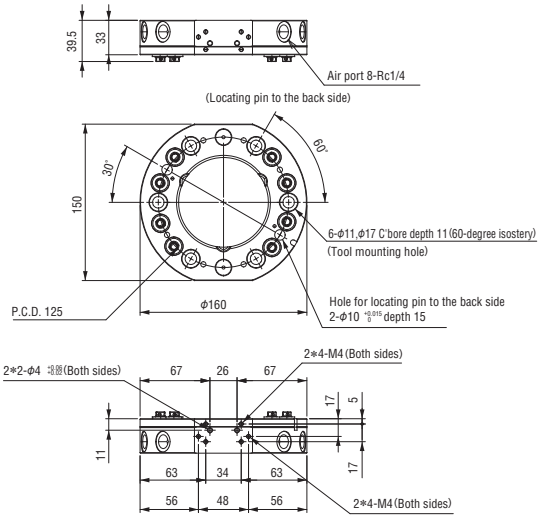


Detachable and attachable section / Made of steel

Tool Side

Order code No.	140374
TYPE	OX-120AI

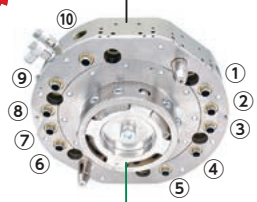
- Weight : 1,770g
- Mounting position : tool side
- Weight capacity : ～ 120kg
- Thickness after connection : 75mm



For large robot. (Weight capacity 230kg)

Will be on sale soon. Please contact us about the availability of the product.

NEW **Base / superaluminum**

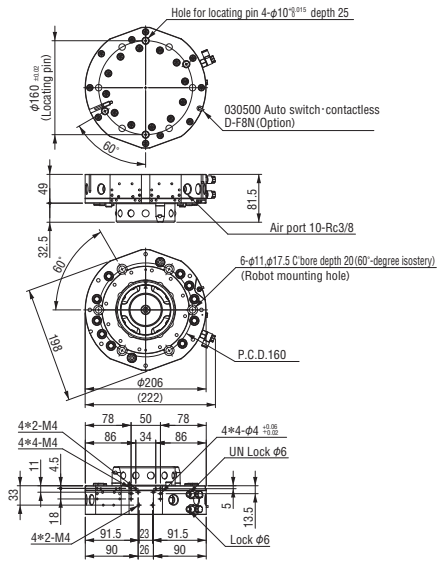


Detachable and attachable section / Made of steel

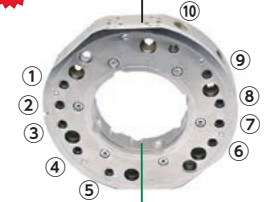
Robot Side

Order code No.	140314
TYPE	OX-230A

- Weight : 6,240g
- Mounting position : robot side
- Weight capacity : ～ 230kg
- Thickness after connection : 83mm



NEW **Base / superaluminum**

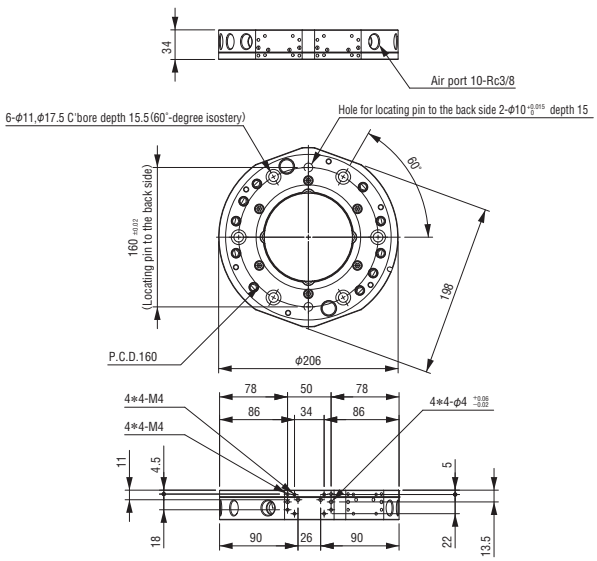


Detachable and attachable section / Made of steel

Tool Side

Order code No.	140319
TYPE	OX-230AI

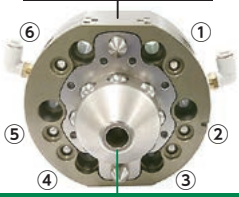
- Weight : 3,360g
- Mounting position : tool side
- Weight capacity : ～ 230kg
- Thickness after connection : 83mm



Junction error absorbing type in high speed operation（Weight capacity 35kg）

● The products are created after your order. Please contact our sales offices for more. information about delivery date / price.

Base/superaluminum



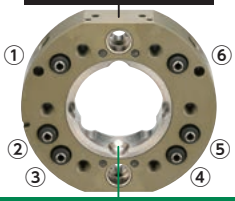
Detachable and attachable section/Made of steel

Robot Side

Order code No.	140399
TYPE	OX-35BT

- Weight：1445g
- Mounting position：robot side
- Weight capacity：～35kg
- Thickness after connection：60mm (max 74.5mm)
- Accomodates for errors up to ±10mm.

Base/superaluminum

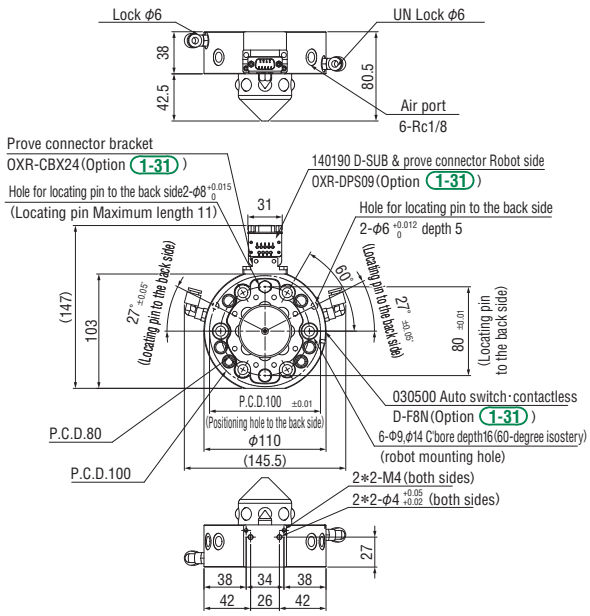


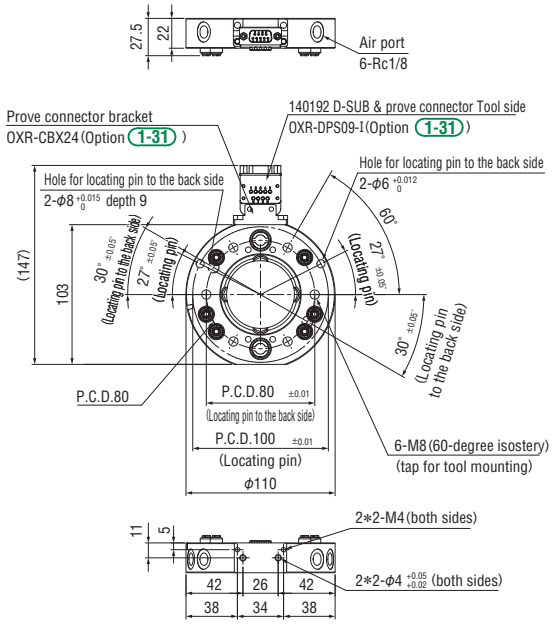
Detachable and attachable section/Made of steel

Tool Side

Order code No.	140317
TYPE	OX-35ATI

- Weight：535g
- Mounting position：tool side
- Weight capacity：～35kg
- Thickness after connection：60mm (max 74.5mm)





Accessories

For articulated robots

Remote valve for manual tool change actuation

Manual air valve push button (Return Type)



Order code No.	152308
TYPE	PB1-E
Weight	65g

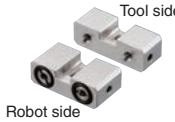
Manual air valve push slide button (Retention Type)



Order code No.	152306
TYPE	PBW1-E
Weight	75g

Air port Accessories

■OX-005A

Additional air expansion		For OX-005A	
		Robot side	Tool side
 Tool side / Robot side	Order code No.	140326	140327
	TYPE	OX-005AA	OX-005AIA
	Weight	12g	7g

● Attachments : mounting bolt (M3×8) ×1pic

■For OX-20B

Additional air expansion		For OX-20B	
		Robot side	Tool side
 Tool side / Robot side	Order code No.	140296	140297
	TYPE	OX-20BA	OX-20BIA
	Weight	76g	57g

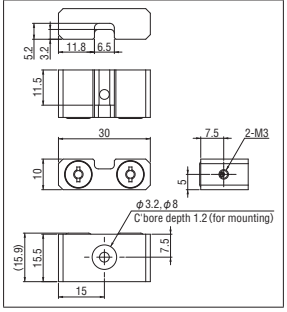
● Attachments : mounting bolt (M4×6) ×2pic

■For OX-35A、60A

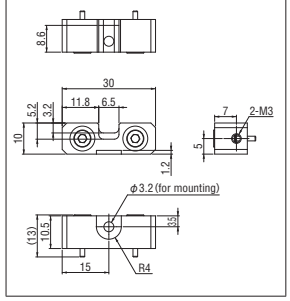
Additional air expansion		For OX-35/60	
		Robot side	Tool side
 Tool side / Robot side	Order code No.	140342	140343
	TYPE	OX-60AA	OX-60AIA
	Weight	147g	80g

● Attachments : mounting bolt (M4×25) ×2pic

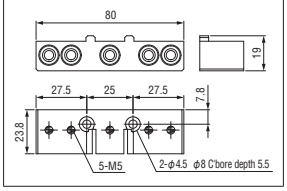
OX-005AA



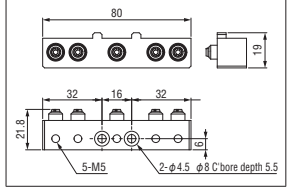
OX-005AIA



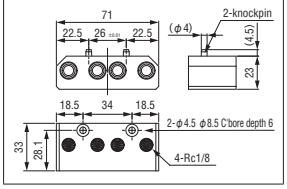
OX-20BA



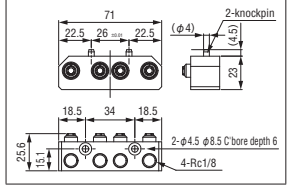
OX-20BIA



OX-60AA



OX-60AIA

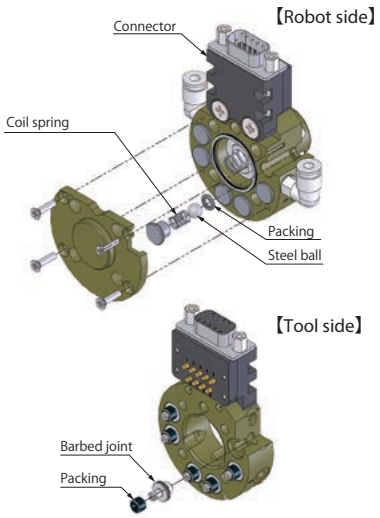


Replacement Parts

Barbed joint		Tool side				
		NEW For OX-03/05	For OX-10	For OX-20	For OX-35/60	NEW For OX-120A
	Order code No.	230117	230116	110623	110686	110739
	TYPE	XL0054-206A	XL0054-106A	LX0004-101	LX0120-202	LX0219-203
	Weight	1g	1g	2g	2g	3.5g

Steel ball *Material:SUS304		Robot side				
		For OX-005	For OX-03/05/10	For OX-20	For OX-35/60	NEW For OX-120AI
	Order code No.	382583	310607	323000	152561	152755
	TYPE	φ3	φ5.5	φ6.35	φ10	φ11
	Weight	1g	1g	1g	3g	5.5g

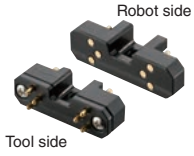
Coil spring		Robot side				
		For OX-005	For OX-03/05/10	For OX-20	For OX-35/60	NEW For OX-120A
	Order code No.	230115	200223	110649	200257	200320
	TYPE	XL0060-106-2	UR5-10	L00999-420	UR8-15	UR10-10
	Weight	1g	0.1g	0.2g	1g	1g



Packing		For OX-005		For OX-03/05/10		For OX-20		For OX-35/60		NEW For OX-120A	
		Robot side(piping)	Robot side(check valve)	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side
Tool side / Robot side	Order code No.	152547	186738	230077	271742	110551	184474	110687	152689	221487	131773
	TYPE	P5 (C000002-S7)	SS3 (C03700-A0)	XL0054-204	1ASS-5	L00999-313	S6 (C00503-A00X8)	LX0120-203	P8 NBR-70	WRBC15-8-3	NPB10
XL0054-204 L00999-313 LX0120-203 / S6 1ASS-5 P5、SS3 P8	Weight	1g	1g	0.1g	0.05g	0.2g	0.05g	1g	0.06g	1g	0.1g

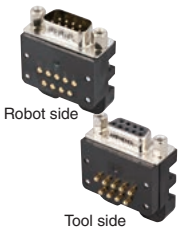
Connector Accessories

Connector for OX-005	Robot side	Tool side
Order code No.	140328	140329
TYPE	OXR-PS06	OXR-PS06-I
Weight	3g	
Electric contact	6Pin (2A)	



● Connecter drawing ➡ 1-33

D-SUB & Probe connector	Robot side	Tool side
Order code No.	140190	140192
TYPE	OXR-DPS09	OXR-DPS09-I
Weight	25g	
Wiring spceiflcation	AWG22	
Electric contact	9Pin (2A)	
Attached screw	Flat head screw with cross recesse M4×10 [123515]	



● Connecter drawing ➡ 1-33

Probe connector	Robot side	Tool side
Order code No.	140362	140363
TYPE	OXR-PSH11	OXR-PSH11-I
Weight	53g	
Wiring spceiflcation	solder-fix type (AWG23) 500mm	
Electric contact	11Pin (2A)	
Attached screw	Flat head screw with cross recesse M4×10 [123515]	



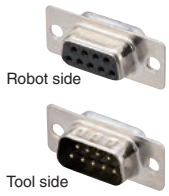
● Connecter drawing ➡ 1-33

Probe connector (solder)	Robot side	Tool side
Order code No.	140264	140265
TYPE	OXR-PS16	OXR-PS16-I
Weight	8g	11g
Wiring spceiflcation	AWG22	
Electric contact	16Pin (2A)	
Attached screw	Flat head screw with cross recesse M4×10 [123515]	

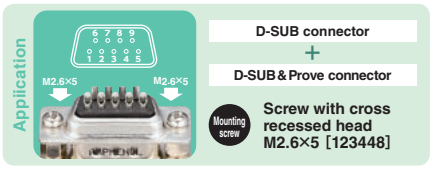


● Connecter drawing ➡ 1-33

D-SUB connector (OX-A type)	Robot side	Tool side
Order code No.	140172	140171
TYPE	OX-DS09	OX-DS09-I
Weight	4g	
Wiring spceiflcation	AWG22	
Electric contact	9Pin	

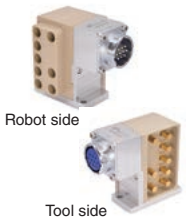


● Screws are not included.



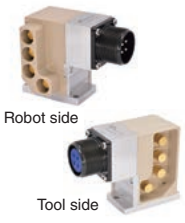
*D-SUB connector can be mounted on cable wiring.

NEW Probe connector 05A	Robot side	Tool side
Order code No.	140393	140395
TYPE	OXR-MPS0508	OXR-MPS0508-I
Weight	225g	195g
Electric contact	8Pin (5A)	
Electrical connector	NJC-2410-RM	NJC-2410-RF
Subject	OX-35 or higher	



● Connector drawings and aviation connector standards in cable side ➡ Please refer to 1-34

NEW Probe connector 13A	Robot side	Tool side
Order code No.	140394	140396
TYPE	OXR-MPS1304	OXR-MPS1304-I
Weight	240g	215g
Electric contact	4Pin (13A)	
Electrical connector	D/MS3102A-18-10-P	D/MS3102A-18-10-S
Subject	OX-35 or higher	



● Connector drawings and aviation connector standards in cable side ➡ Please refer to 1-34

NEW Probe connector mounting spacer	
Order code No.	140397
TYPE	OXR-PCS
Weight	35g
Subject	OX-35



● Connecter drawing ➡ 1-34

Required when attaching the probe connectors 05A, 13A to the OX-35B, OX-35AI .

Probe connector mounting bracket	
Order code No.	140344
TYPE	OXR-CBX24
Weight	33g



● Accessories : positioning pin, mounting bolt ● Connecter drawing ➡ 1-33

Required when attaching D-sub & probe connector to the OX-35B, OX-35AI , OX-35BT, OX-35ATI , OX-120A and OX-120AI .

Auto switch·contactless

Auto switch	
Order code No.	030500
TYPE	D-F8N
Weight	7g



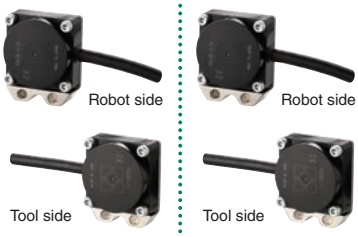
● Applied load : relay PLC ● Load voltage : DC24V
● Load electric current : 5 ~ 40mA ● Wiring : ➡ 6-20
● W/ indicator lamp
● Cable Length : 0.5m

Wireless connector

Can be used for the place with moisture and dust with contactless design

Wireless connector	For 03/05 Robot side	For 03/05 Tool side	For 10/20 Robot side	For 10/20 Tool side
Order code No.	140320	140322	140321	140323
TYPE	OXR-RS04R-03	OXR-RS04T-03I	OXR-RS04R-10	OXR-RS04T-10I
Weight	176g	122g	180g	115g
Drive voltage	12V±1.5VDC	—	12V±1.5VDC	—
Input and output points	4points+1point	4points	4points+1point	4points
Attached screw	Flat head screw with cross recesse M4×14		Flat head screw with cross recesse M4×20	

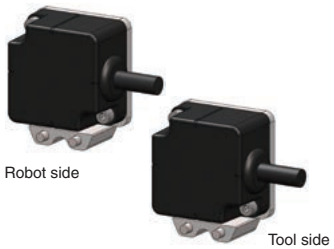
For 03/05 / For 10/20



∗Check the specification and precautions concerning handling. ➡ 1-38 ∗Check the drawing. ➡ 1-35 ∗For protection structure IP67
∗The output type is NPN type. ∗Power supply voltage DC24V ∗Cable Length : robot side 2m tool side 1m
∗To avoid interference between wireless connectors, no more than 1 wireless connector should be installed per tool changer.

	For 20 Robot side	For 20 Tool side
Order code No.	140330	140379
TYPE	OXR-RS12R-20	OXR-RS12T1-20I
Weight	366g	260g
Drive voltage	12V±1.5VDC	—
Input and output points	12points+1point	12points
Attached screw	Flat head screw with cross recesse M4×10	

For 20 (for weight capacity 20kg or more)



∗Please be sure to check the specifications and handling precautions. ➡ 1-38 ∗Please refer to the drawing. ➡ 1-35
∗For protection structure IP67
∗OXR-RS12 is basically for the tool changer with load capacity 20kg or more. ∗Power supply voltage DC24V
∗Cable Length : robot side 2m tool side 1m ∗The output type is NPN type.
∗To avoid interference between wireless connectors, no more than 1 wireless connector should be installed per tool changer.

Cable Accessories

D-SUB cable (OX-A type)	Robot side	Tool side
Order code No.	140168	140167
TYPE	OX-DS09-H	OX-DS09-I-H
Weight	40g	
Cable length	0.5m	
Electric contact	9Pin	
Wiring spceiflcation	Movable cable (AWG22), for UL	



● Bending radius (mm) : R46

D-SUB cable for OX (for OX-B)	Robot side		Tool side	
Order code No.	140197	140247	140202	140364
TYPE	OX-DS09S-H	OX-DS09S-H (1.5M)	OX-DS09P-I-H	OX-DS09P-I-H (1.5M)
Weight	60g	138g	60g	140g
Cable length	0.5m	1.5m	0.5m	1.5m
Electric contact	9Pin			
Wiring spceiflcation	Movable cable (AWG22), for UL			

Straight type



● Bending radius (mm) : R46

D-SUB cable for OX (for OX-B)	Robot side (L)		Tool side (L)	
Order code No.	140203	140248	140204	140365
TYPE	OX-DS09SL-H	OX-DS09SL-H (1.5M)	OX-DS09PL-I-H	OX-DS09PL-I-H (1.5M)
Weight	60g	138g	60g	140g
Cable length	0.5m	1.5m	0.5m	1.5m
Electric contact	9Pin			
Wiring spceiflcation	Movable cable (AWG22), for UL			

L type

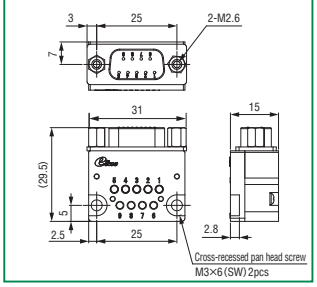


● Bending radius (mm) : R46

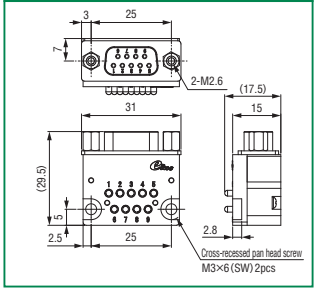
Drawing of Probe connector

A Type ／ B Type ／ BN Type (Take-out Robot) ➔1-19

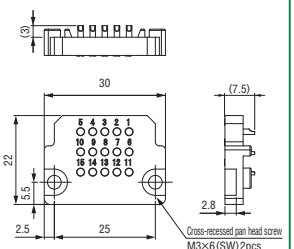
OX-DPS09A



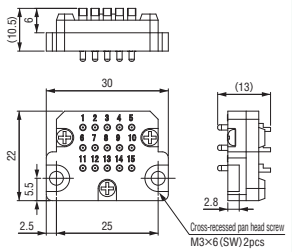
OX-DPS09A-I



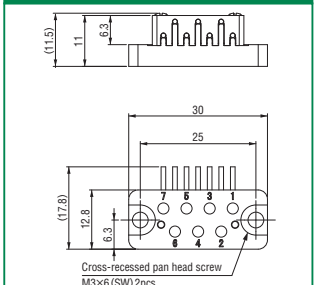
OX-PS15



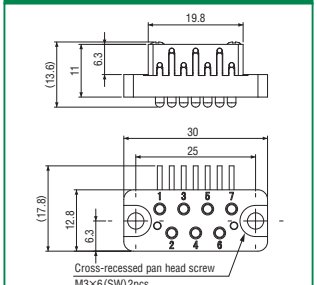
OX-PS15-I



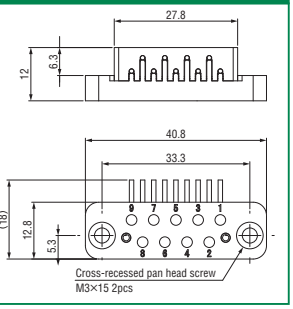
OX-PLA-07



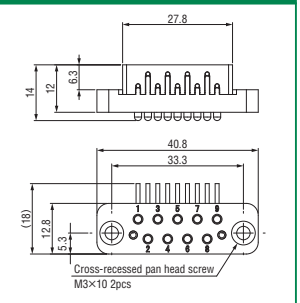
OX-PLA-07-I



OX-PL09

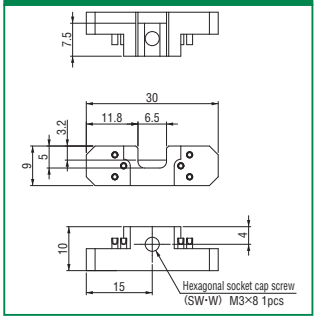


OX-PL09-I

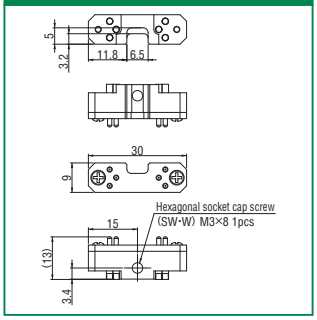


Quick Chuck Change Manual (OM Type) ➔1-7 ／ For Articulated Robots ➔1-31

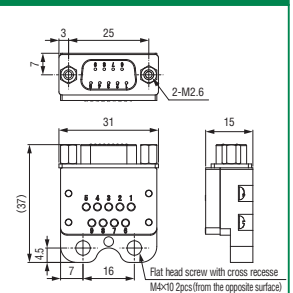
OXR-PS06



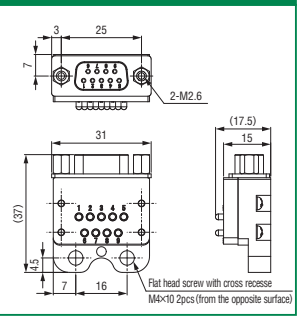
OXR-PS06-I



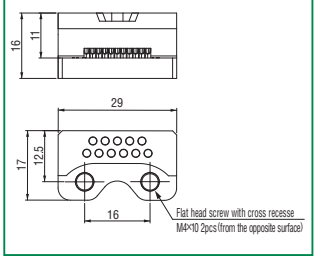
OXR-DPS09



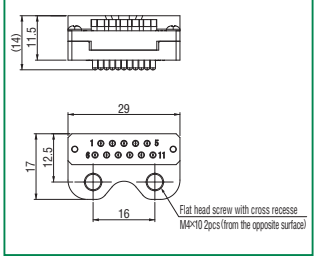
OXR-DPS09-I



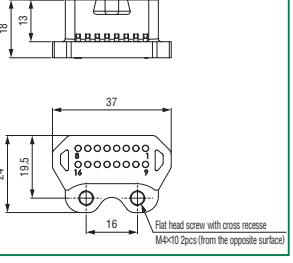
OXR-PSH11



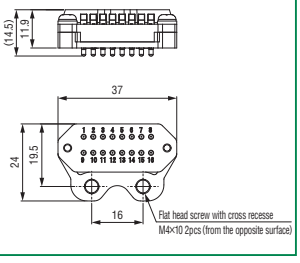
OXR-PSH11-I



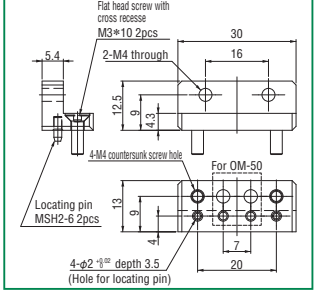
OXR-PS16



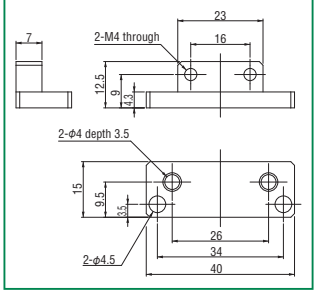
OXR-PS16-I



OXR-CBX20



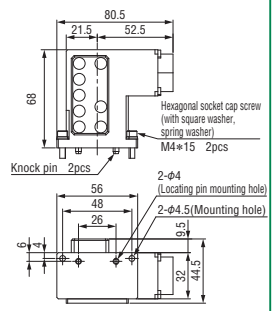
OXR-CBX24



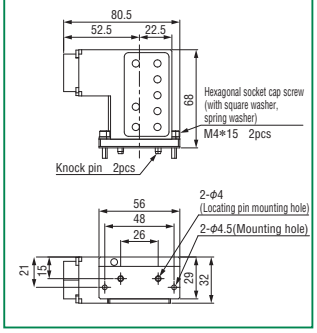
Drawing of Probe connector

For Articulated Robots ➔1-31

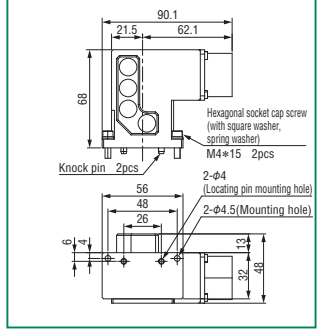
5A Robot side



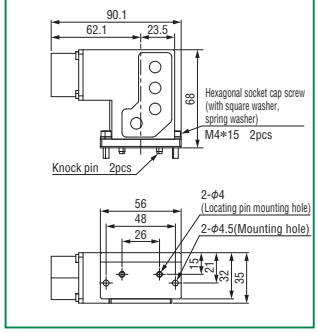
5A Tool side



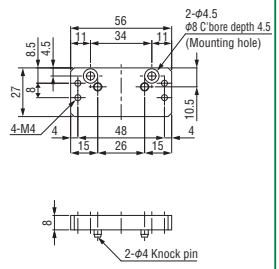
13A Robot side



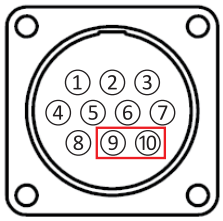
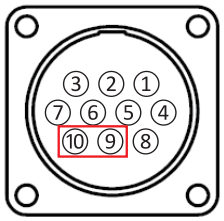
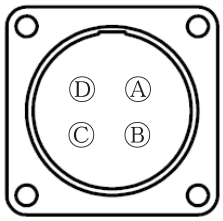
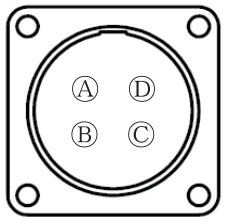
13A Tool side



Mounting spacer



■ List of high capacity connectors

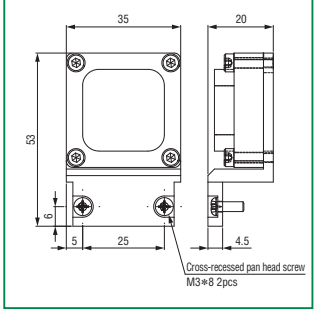
Order code No.	140393	140395	140394	140396
TYPE	OXR-MPS0508	OXR-MPS0508-I	OXR-MPS1304	OXR-MPS1304-I
Rating	5A AC200V/DC200V		13A AC200V/DC200V	
Electric contact	8Pin		4Pin	
Wiring specifications ※ 1	AWG19		AWG15	
Connector shape	Elecectrical connector NJC-2410-RM (NANABOSHI)	Elecectrical connector NJC-2410-RM (NANABOSHI)	Elecectrical connector D/MS3102A-18-10-P (DDK)	Elecectrical connector D/MS3102A-18-10-S (DDK)
Recommended electrical connecor on cable side	NJC-2410-PM (NANABOSHI)	NJC-2410-PF (NANABOSHI)	D/MS3106A-18-10-S (DDK)	D/MS3106A-18-10-P (DDK)
Wiring precautions (check the pin number from combined surface)				
	The electrical connector is 10 pin, but the 9,10 pin are blank, and the power won't be on even if connected.			
Subject tool changer ※ 2	OX-35B (with OXR-PCS) OX-60A OX-120A	OX-35AI (with OXR-PCS) OX-60AI OX-120AI	OX-35B (with OXR-PCS) OX-60A OX-120A	OX-35AI (with OXR-PCS) OX-60AI OX-120AI
Maintenance	Repeated use causes wear powder on the contact surface of the probe pin. The wear powder will cause the temperature rise, so please clean the surface regularly.			

※1 Wiring information in connectors
※2 OXR-PCS(140397)is needed when using large capacity connectors on OX-35B、35AI.

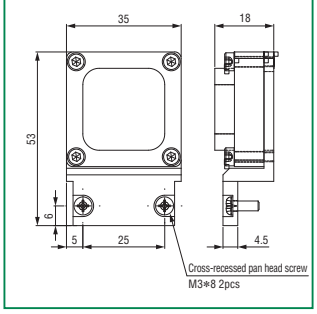
Drawing of Wireless connector

A Type ／ B Type ／ BN Type (Take-out Robot) ➔1-19

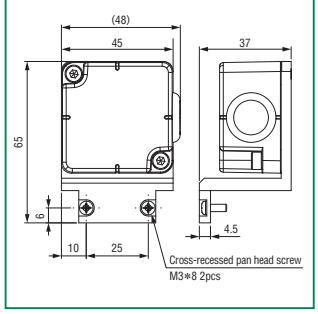
OX-RS04R-SB



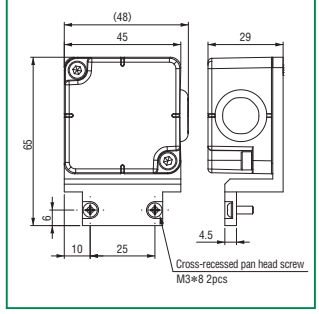
OX-RS04T-SBI



OX-RS12R-LB

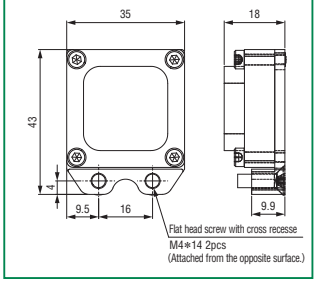


OX-RS12T1-LBI

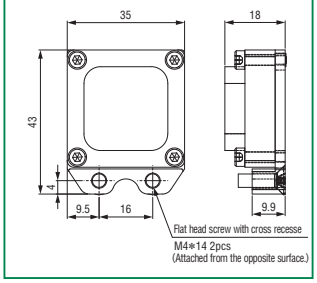


For Articulated Robots ➔1-32

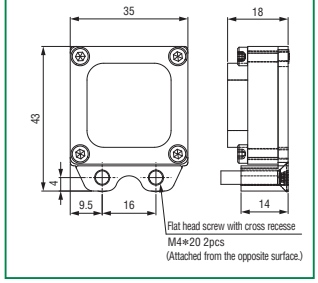
OXR-RS04R-03



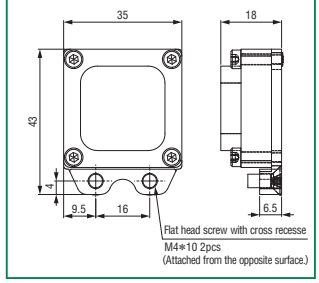
OXR-RS04T-03I



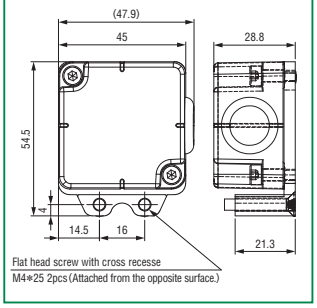
OXR-RS04R-10



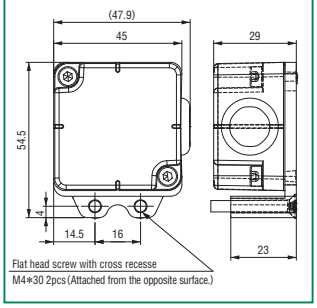
OXR-RS04T-10I



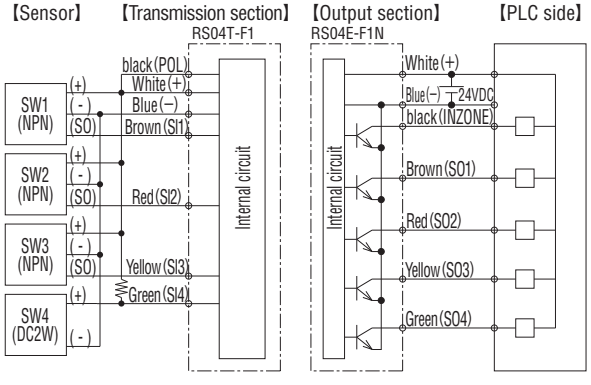
OXR-RS12R-20



OXR-RS12T1-20I

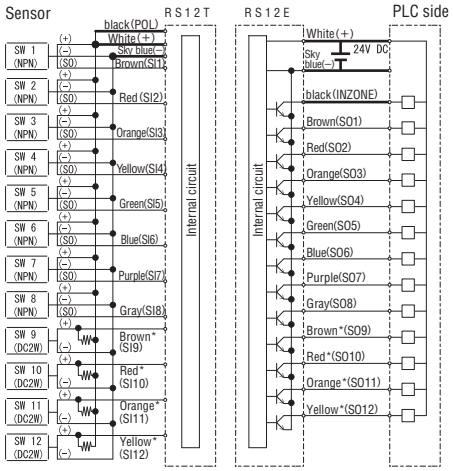


■ OXR-RS04 series Wiring diagram (NPN)



∗ SW4 in the above figure is a wiring example of a DC 2-wire sensor (wire a resistor of about 1 to 2 KΩ).
A DC 3-wire sensor can also be used.

■ OXR-RS12 series Wiring diagram (NPN)



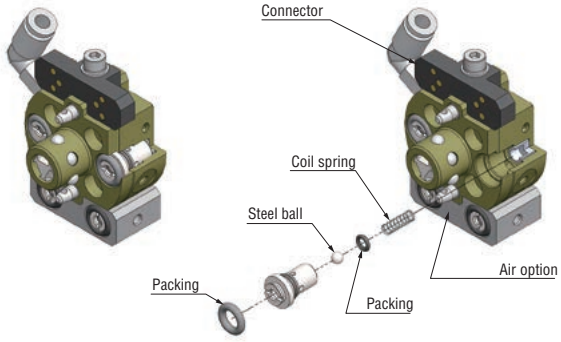
∗ SW9 to 12 in the above figure are wiring examples of the DC 2-wire sensor (wire the resistance to about 1 to 2 KΩ).
∗ The green*, blue*, and purple* cables of RS12E and RS12T are unused

			Order code No.		Tool changer																					
					Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side	Robot side	Tool side
			Order code No.	TYPE	140310	140315	140235	140236	140237	140238	140262	140263	140292	140293	140398	140316	140313	140318	140399	140317	140373	140374	140314	140319
					OX-005A	OX-005AI	OX-03A	OX-03AI	OX-05A	OX-05AI	OX-10B	OX-10BI	OX-20B	OX-20BI	OX-35B	OX-35AI	OX-60A	OX-60AI	OX-35BT	OX-35ATI	OX-120A	OX-120AI	OX-230A	OX-230AI
Air Option	Robot side		140326	OX-005AA	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Tool side		140327	OX-005AIA	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Robot side		140296	OX-20BA	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—
	Tool side		140297	OX-20BIA	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—
	Robot side		140342	OX-60AA	—	—	—	—	—	—	—	—	—	—	○	—	○	—	○	—	—	—	—	—
	Tool side		140343	OX-60AIA	—	—	—	—	—	—	—	—	—	—	—	○	—	○	—	○	—	—	—	—
Maintenance parts	Barbed joint		230116	XL0054-106A	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—
			230117	XL0054-206A	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			110623	LX0004-101	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—
			110686	LX0120-202	—	—	—	—	—	—	—	—	—	—	—	○	—	○	—	○	—	—	—	—
			110739	LX0219-203	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—
	Steel ball		382583	ϕ3	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			310607	ϕ5.5	—	—	○	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—
			323000	ϕ6.35	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—
			152561	ϕ10	—	—	—	—	—	—	—	—	—	—	○	—	○	—	○	—	—	—	—	—
			152755	ϕ11																	○	—	—	—
	Coil spring		230115	XL0060-106-2	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			200223	UR5-10	—	—	○	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—
			110649	L00999-420	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—
			200257	UR8-15	—	—	—	—	—	—	—	—	—	—	○	—	○	—	○	—	—	—	—	—
			200320	UR10-10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○			
	Packing (Robot side)		152547	P5(C000002-S7)	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			186738	SS3(C03700-A0)	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			271742	1ASS-5	—	—	○	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—
			184474	S6(C00503-A00X8)	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—
			152689	P8 NBR-70	—	—	—	—	—	—	—	—	—	—	○	—	○	—	○	—	—	—	—	—
			131773	NPB10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—
	Packing (Tool side)		230077	XL0054-204	—	—	—	○	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—	—
			110551	L00999-313	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—
			110687	LX0120-203	—	—	—	—	—	—	—	—	—	—	—	○	—	○	—	○	—	—	—	—
			221487	WRBC15-8-3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—
Cable Accessories	Robot side		140168	OX-DS09-H	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—
	Tool side		140167	OX-DS09-I-H	—	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1
	Robot side		140197	OX-DS09S-H	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—
			140247	OX-DS09S-H(1.5m)	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—
	Tool side		140202	OX-DS09P-I-H	—	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1
			140364	OX-DS09P-I-H(1.5m)	—	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1
	Robot side		140203	OX-DS09SL-H	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—
			140248	OX-DS09SL-H(1.5m)	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—
	Tool side		140204	OX-DS09PL-I-H	—	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1
			140365	OX-DS09PL-I-H(1.5m)	—	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1
Connector Accessories	Robot side		140328	OXR-PS06	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	Tool side		140329	OXR-PS06-I	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	Robot side		140190	OXR-DPS09	—	—	○	—	○	—	○	—	○	—	○*2	—	○	—	○*2	—	○*2	—	○*2	—
	Tool side		140192	OXR-DPS09-I	—	—	—	○	—	○	—	○	—	○	—	○*2	—	○	—	○*2	—	○*2	—	○*2
	Robot side		140264	OXR-PS16	—	—	○	—	○	—	○	—	○	—	○*2	—	○	—	○*2	—	○*2	—	○*2	—
	Tool side		140265	OXR-PS16-I	—	—	—	○	—	○	—	○	—	○	—	○*2	—	○	—	○*2	—	○*2	—	○*2
	Robot side		140362	OXR-PSH11	—	—	○	—	○	—	○	—	○	—	○*2	—	○	—	○*2	—	○*2	—	○*2	—
	Tool side		140363	OXR-PSH11-I	—	—	—	○	—	○	—	○	—	○	—	○*2	—	○	—	○*2	—	○*2	—	○*2
	Probe connector Mounting bracket		140344	OXR-CBX24	—	—	—	—	—	—	—	—	—	—	○	○	—	—	○	○	○	○	○	○
	Robot side		140172	OX-DS09	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—
	Tool side		140171	OX-DS09-I	—	—	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1	—	○*1
Auto switch			030500	D-F8N	—	—	—	—	—	—	—	—	○	—	○	—	○	—	○	—	○	—	○	—
Wireless connector	Robot side		140320	OXR-RS04R-03	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—		
	Tool side		140322	OXR-RS04T-03I	—	—	—	○*3	—	○*3	—	—	—	—	—	—	—	—	—	—	—	—		
	Robot side		140321	OXR-RS04R-10	—	—	—	—	—	—	○	—	○	—	○*2	—	○	—	○*2	—				
	Tool side		140323	OXR-RS04T-10I	—	—	—	—	—	—	—	○	—	○	—	○*2	—	○	—	○*2				
	Robot side		140330	OXR-RS12R-20	—	—	—	—	—	—	—	—	○*3	—	○*2	—	○	—	○*2	—				
	Tool side		140331	OXR-RS12T1-20I	—	—	—	—	—	—	—	—	—	○*3	—	○*2,3	—	○*3	—	○*2,3				
High capacity connectors	Robot side		140393	OXR-MPS0508	—	—	—	—	—	—	—	—	—	—	○*4	—	○*4	—	—	—	○*4	—	○*4	—
	Tool side		140395	OXR-MPS0508-I	—	—	—	—	—	—	—	—	—	—	—	○*4	—	○*4	—	—	—	○*4	—	○*4
	Robot side		140394	OXR-MPS1304	—	—	—	—	—	—	—	—	—	—	○*4	—	○*4	—	—	—	○*4	—	○*4	—
	Tool side		140396	OXR-MPS1304-I	—	—	—	—	—	—	—	—	—	—	—	○*4	—	○*4	—	—	—	○*4	—	○*4
Probe connector mounting spacer			140397	OXR-PCS	—	—	—	—	—	—	—	—	—	—	○	○	—	—	—	—	—	—	—	—

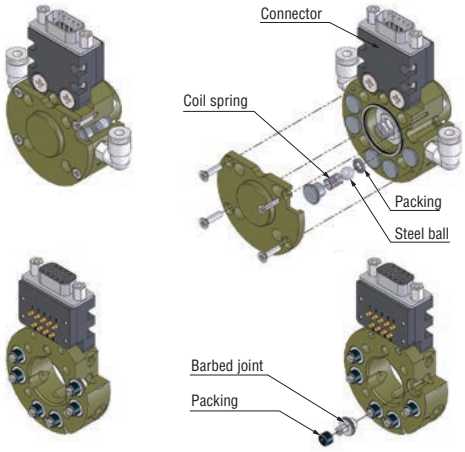
＊1 If you use a cable accessory with no connector, you will need the proper D-sub & probe connectors (★mark).
＊2 The probe connector mounting bracket (140344) is required for the installation of the electrical connector.
＊3 Because of the thickness of the wireless connector, it will come out from the mounting surface of the tool changer, please confirm the dimension.
＊4 Probe connector mounting spacer is needed when mounting the connector.

				Air option				
				Robot side	Robot side	Tool side	Robot side	Tool side
			Order code No.	140326	140296	140297	140342	140343
		Order code No.	TYPE	OX-005AA	OX-20BA	OX-20BIA	OX-60AA	OX-60AIA
Maintenance parts	Barbed joint	110623	LX0004-101	—	—	○	—	—
		110686	LX0120-202	—	—	—	—	○
	Steel ball	382583	ϕ3	○	—	—	—	—
		323000	ϕ6.35	—	○	—	—	—
		152561	ϕ10	—	—	—	○	—
	Coil spring	230115	XL0060-106-2	○	—	—	—	—
		110649	L00999-420	—	○	—	—	—
		200257	UR8-15	—	—	—	○	—
	Packing (Robot side)	152547	P5 (C000002-S7)	○	—	—	—	—
		186738	SS3 (C03700-A0)	○	—	—	—	—
		184474	S6 (C00503-A00X8)	—	○	—	—	—
		152689	P8 NBR-70	—	—	—	○	—
	Packing (Tool side)	110551	L00999-313	—	—	○	—	—
		110687	LX0120-203	—	—	—	—	○

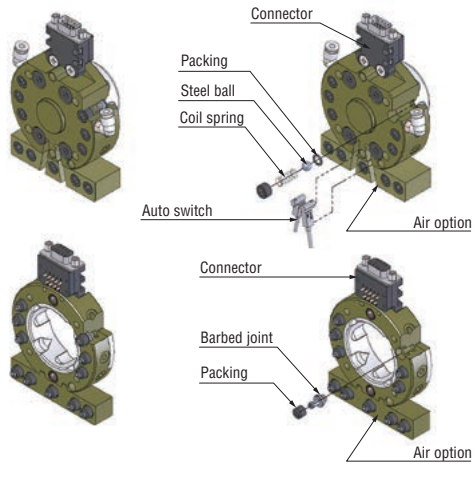
OX-005A/005AI



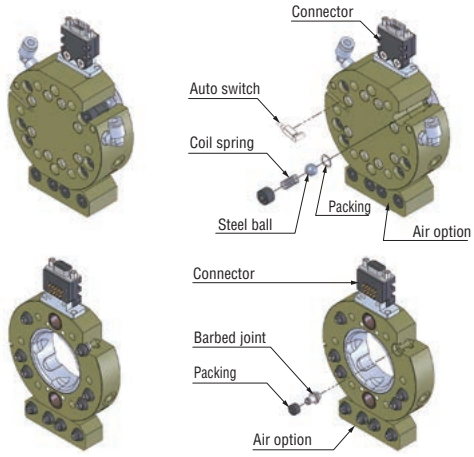
OX-03A (05A、10B) /03A (05A、10B) I



OX-20B/20BI

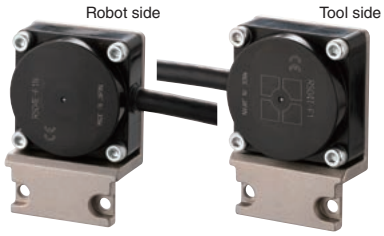


OX-35B (60A) /35A (60A) I



Wireless connector specification and precautions concerning handling

● See 1-19 and 1-32 for more information about wireless connector.



Cautions in installation (Please be sure to read before use.)

Please read this manual well to gain a thorough understanding of the contents to make safe and proper operation.

- Make installation / maintenance / measures at the failure after you turn off the power.
- Please use constant voltage power supply such as switching power supply.
  (Malfunction may occur if you use the power with ripple of more than the rated value such as full wave rectifying power.)
- Carry out wiring of each unit properly according to the wiring diagram.
- Carry out wiring of cable well away from power line and high voltage apparatus to prevent malfunction caused by induction noise.
- Be careful not splash organic solvent and such liquid on case and transmission face if they are made of resin (ABS or ABS +PBT).
- Be careful not splash water and cutting water on the cable end (wiring section).
  (Liquid penetration from cable core to the main body may cause problems such as short circuit and corrosion.)
- Install the output section not always faced with metal. Metal section may be overheated or internal element may be damaged.
- To avoid interference between wireless connectors, no more than 1 wireless connector should be installed per tool changer.

4 contact specification

Specification

TYPE	Tool side OXR-RS04T-_ _I	
Sensor	Direct current three-wire sensor	
Drive voltage	12V±1.5V DC	
No. of input signals	4 points	
Drive voltage	≦30mA	≦60mA
Transmission distance	0...3mm	0...2mm
Allowable axis misalignment	±2mm	±1mm
Ambient temperature	0...+50℃	
Protection structure	IP67	
Connection cable	PUR φ 6.3 7x0.259mm²	
Material	ABS	
Weight	Main body 25g + Cable 60g/m	

TYPE NPN output	Robot side OXR-RS04R-_ _
Power supply voltage	24V DC±10% (ripple included)
Current consumption	≦ 200mA
No. of input signals	4 points + 1 point
Load electric current	≦ 50mA/1 Output
LED display	Status (green), in-zone (orange)
Circuit protection	Short-circuit protection, reverse connection protection surge protection
Ambient temperature	0...+50℃
Protection structure	IP67
Connection cable	PUR φ 6.3 7x0.259mm²
Material	ABS
Weight	Main body 25g + Cable 60g/m

*Total current consumption value of each sensor should be less than the drive current value to use two or more sensors for detection.
*Decrease the number of connected sensors if the actual value exceeds the drive current value.

Allowed sensors

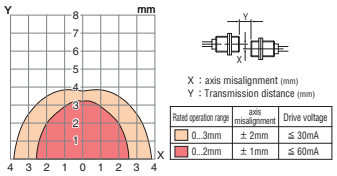
Power supply voltage	12V DC
Total consumption current	≦60mA
Residual voltage	≦3.5V
Load electric current	—

Use the sensor properly operates under the condition of above list.

Transmission area drawing

(Example : power supply voltage 24V / metal not imbedded)

OXR-RS04R-_ _ / OXR-RS04T-_ _I



12 contact specification

Specification

TYPE	Tool side OXR-RS12T-_ _I
Sensor	Direct current three-wire sensor
Drive voltage	12V±1.5V DC
No. of input signals	12 points
Drive voltage	≦230mA
Transmission distance	2...5mm
Allowable axis misalignment	±3mm
Ambient temperature	0...+50℃
Protection structure	IP67
Connection cable	PUR φ 8.6 2×0.5mm²+13×0.18mm²
Material	ABS
Weight	Main body 75g + Cable 105g/m

TYPE NPN output	Robot side OXR-RS12R-_ _
Power supply voltage	24V DC±10% (ripple included)
Current consumption	≦ 600mA
No. of output signals	12+1(status)
Load electric current	≦ 50mA/1 出力
LED display	Status (green), Output (orange)
Allowable axis misalignment	Short-circuit protection, reverse connection protection surge protection
Ambient temperature	0...+50℃
Protection structure	IP67
Connection cable	PUR φ 8.6 2×0.5mm²+13×0.18mm²
Material	ABS
Weight	Main body 80g + Cable 105g/m

*Total current consumption value of each sensor should be less than the drive current value to use two or more sensors for detection.
*Decrease the number of connected sensors if the actual value exceeds the drive current value.

Allowed sensors

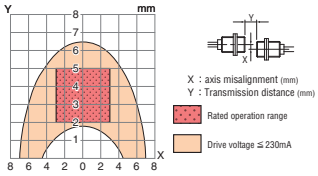
Power supply voltage	12V DC
Total consumption current	≦230mA
Residual voltage	≦3.5V
Load electric current	—

Use the sensor properly operates under the condition of above list.

Transmission area drawing

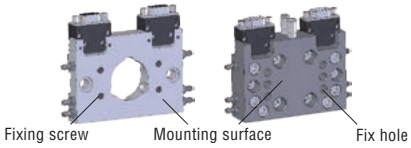
(Example : power supply voltage 24V / metal not imbedded)

OXR-RS12R-_ _ / OXR-RS12T-_ _I



Cautions when using tool changer

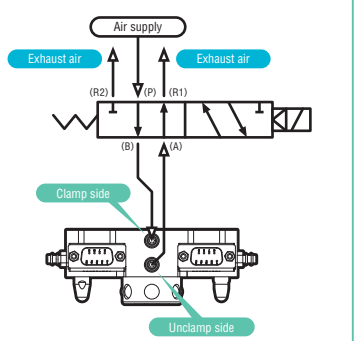
- Tool clamp / unclamp will cause tool pull and push. Please watch out for pinch point fingers / hands.
- To prevent equipment troubles, use clean air that has been dried through a dryer or mist separator and is free of oil. For the compressor, replace the hydraulic oil specified by each manufacturer at specified intervals. Inappropriate hydraulic oil may damage air equipment such as packing due to oil mixed in the air.
- Do not use the clamp / unclamp of tool changer rather than air supply of 0.5 to 0.7 MPa. There is a risk of damaging the tool changer mechanism and surrounding devices.
- When not using for prolong periods, please remove tool from robot.
- When restarting from the state that the air is not supplied, please make sure that the air is supplied to the clamp side , then start confirm air supply port.
- When assembling the tool changer to the robot or the hand, please fasten the surface so that there is no gap between the mounting surfaces where there are fixing holes and screw.
- We do not take any responsibility for any faults arising in the combination with improper product.



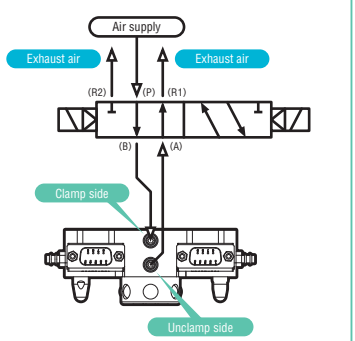
- If the robot side piston is repeatedly clamped / unclamped with the tool side of the tool changer disconnected, it may interfere with the clamping with the tool side, so please stop. If the piston is misaligned, align the △ mark.
- When using the air port for vacuum line, please remove the check valve on the robot side.
- If you would like restore the air port that is used for vacuum line, please assemble with the check valve parts coil spring, stainless ball and packing
- Please note that if the plug is tightened too much, it cannot be clamped normally and may come off.
- Before you start the operation of the assembled equipment, please do the safety-check to confirm the bolts and other parts are not loosen. Do not exceed the allowable value (moment torque) load of the product when using It may not only affects the function and life span of the product, but also causes an unexpected accident. Not only does it affect the function and life of the product, it can also cause unexpected accidents.
- As to the installment of the additional air option, please adjust the concave part of the main body and the convex part of the additional air option, and make it parallel to the connecting surface with the other side.
- If the electrical connector is installed, please make sure the electrical power is OFF during the tool changer clamp / unclamp process. If it is operated with power is on, the front of the probe pin will erode, and poor contact or melt may happen.
- Never connect the electrical power tool changer itself. It might cause electrical shock which lead to the product damage. There is a risk of electric shock and the product may be damaged due to a short circuit.
- It shall not be used in any of the following locations
  - Locations with ambient temperature lower than 0°C or higher than 55°C
  - Locations with liquid, dripping water, water vapor
  - Locations with humidity is more than 95% or condensation
  - Locations with corrosive gases
  - Locations with metal, carbon or spatter conductive dust
  - Locations with a strong electric field magnetic field

Reference Piping connection diagram

With two-position single



With two-position double



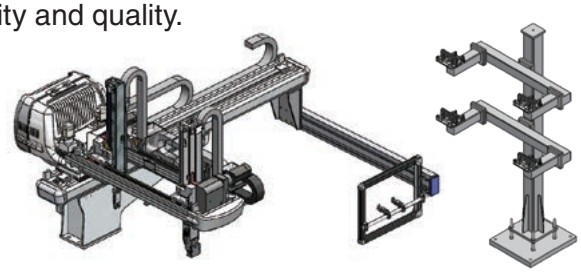
Automated Chuck Exchange System

'Shorten the setup time', 'Reduce the burden of the worker', 'Reduce the connection mistake' by automated robot exchange, will improve the productivity and quality.

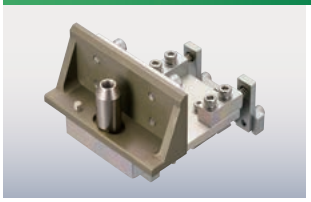
Example of tool station

Tool station types : floorstanding tree type, NT type (attached to traverse rail). Stations are created according to the number of setup changes and facility spaces.

＊Please contact our sales office nearest your office or Eins.



Auto Quick Chuck Change Hanger



Hanger unit attached to tool station. (Station Side)

1-41

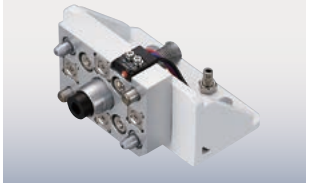
Hanger Tool



Hold unit attached to the tool side.

1-41

Magnet Chuck Hanger (Fix Side)



Hanger unit to use and hold the magnet power of Neodymium. (Station Side)

1-42

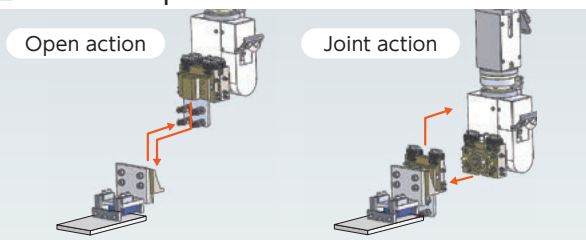
Magnet Chuck Hanger (Tool Side)



Hold unit attached to the tool side.

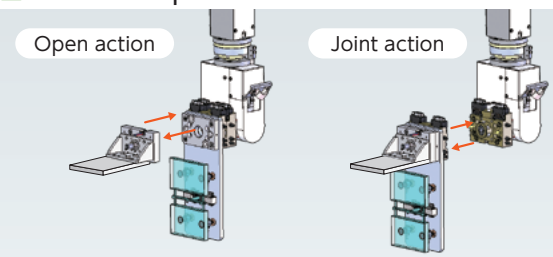
1-42

Action example



For the holding pin of the replacement hanger, insert the holding pin of the hanger tool and hold the chuck.

Action example



Holds the chuck by neodymium magnet.

Specification

	Product name	Order code No. / TYPE	Weight (g)	Weight capacity (kg)	Page of details
Auto Quick Robot hand Change Hanger		072600 / HSL	182	～3	1-41
		072601 / HSAL	1,300	～10	
		072602 / HLAL	2,800	～35	
Hanger tool		196532 / TS	43	～3	1-41
		196533 / TSA	99	～10	
		196656 / TLA1	356	～35	

	Product name	Order code No. / TYPE	Weight (g)	Weight capacity (kg)	Page of details
Magnet chuck Hanger (fix side)		072732 / HNE-48	540	～1 (9.8N)	1-42
		072733 / HNE-S	680		1-43
		072811 / HNE-SL	632		
Magnet chuck Hanger (tool side)		196636 / TNE-48I	70	～1 (9.8N)	1-42
		196637 / TNE-SI	140		1-43
		196727 / TNE-SLI	115		

Auto Quick Chuck Change Hanger / Hanger Tool

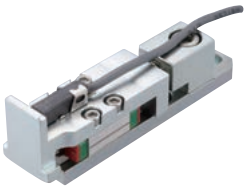
Auto quick robot hand change hanger attached to station side. And hanger tool attached to tool side.

Auto quick chuck change hanger (Hook Specification)



You can see moving images of products by using QR code reader of your smartphone.

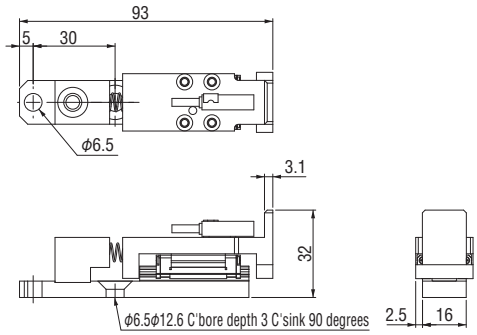
Station side



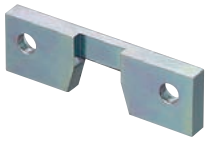
Auto quick chuck change hanger

Order code No.	072600
TYPE	HSL

- Weight: 182g
- Weight capacity: ~ 3kg
- The chuck has a risidual sensor (E2S-Q13)



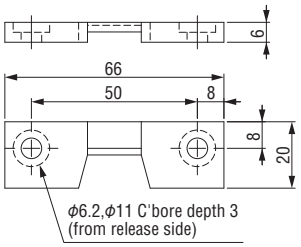
Tool side



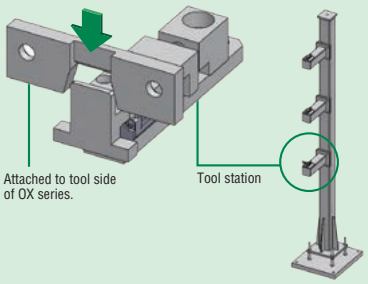
Hanger tool

Order code No.	196532
TYPE	TS

- Weight: 43g
- Weight capacity: ~ 3kg



Example of combination: HSL and TS



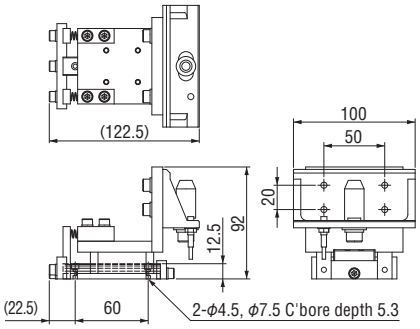
Station side



Auto quick chuck change hanger

Order code No.	072601
TYPE	HSAL

- Weight: 1,300g
- Weight capacity: ~ 10kg
- The chuck has a risidual sensor (E2E-S05S12-WC-C1)
- Detects sensor with mounting bolt of hanger tool.



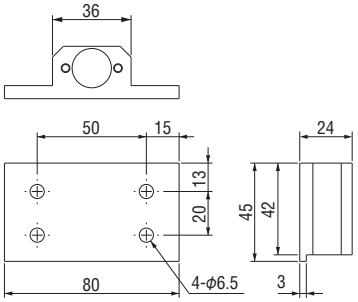
Tool side



Hanger tool

Order code No.	196533
TYPE	TSA

- Weight: 99g
- Weight capacity: ~ 10kg



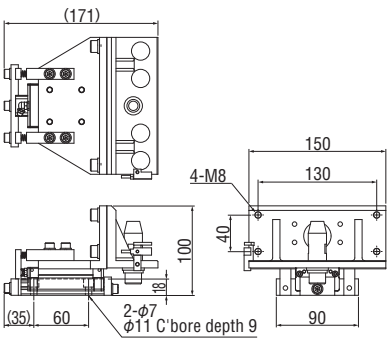
Station side



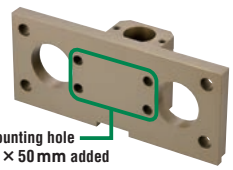
Auto quick chuck change hanger

Order code No.	072602
TYPE	HLAL

- Weight: 2,800g
- Weight capacity: ~ 35kg
- The chuck has a risidual sensor (E2S-W21)
- Detects sensor with mounting bolt of hanger tool.



Tool side

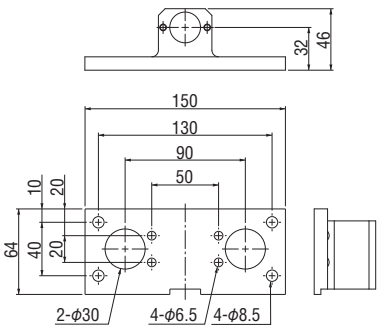


Mounting hole
20 × 50 mm added

Hanger tool

Order code No.	196656
TYPE	TLA1

- Weight: 356g
- Weight capacity: ~ 35kg



Magnet Chuck Hanger

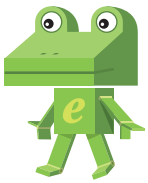
Perfect hanger unit for hand holding.

Auto quick chuck change hanger
(Neodymium specification)

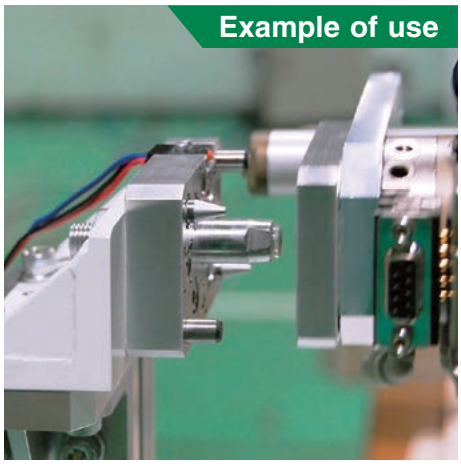


You can see moving images of products by using QR code reader of your smartphone.

Magnet chuck hanger doesn't use electricity or air, and holds the hand with neodymium magnet.



Example of use



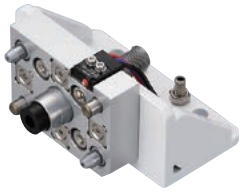
Chuck open

- Using the detachment mechanism of the tool changer, push the tool to the magnetic chuck hanger (fixed side), hold the chuck with the neodymium magnet.

Chuck connection

- With the clamp operation of tool changer, pull the chuck from magnet hanger.

▶ Station side



Magnet chuck hanger (fixed side)

Order code No.	072732
TYPE	HNE-48

- Weight : 540g
- Weight capacity : ～ 1kg (9.8N)
- The chuck has a risidual sensor (030317 D2JW-011-MD)
- Wiring : black (COM) blue (NO) red (NC)

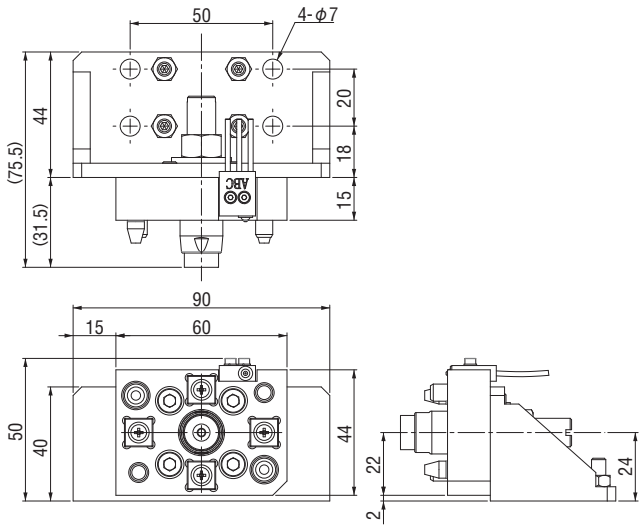
▶ Tool side

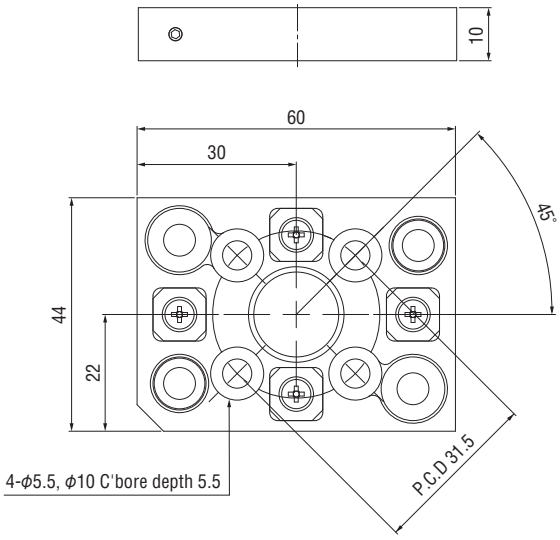


Magnet chuck hanger (tool side)

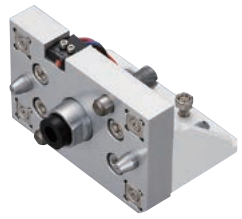
Order code No.	196636
TYPE	TNE-48I

- Weight : 70g
- Weight capacity : ～ 1kg (9.8N)





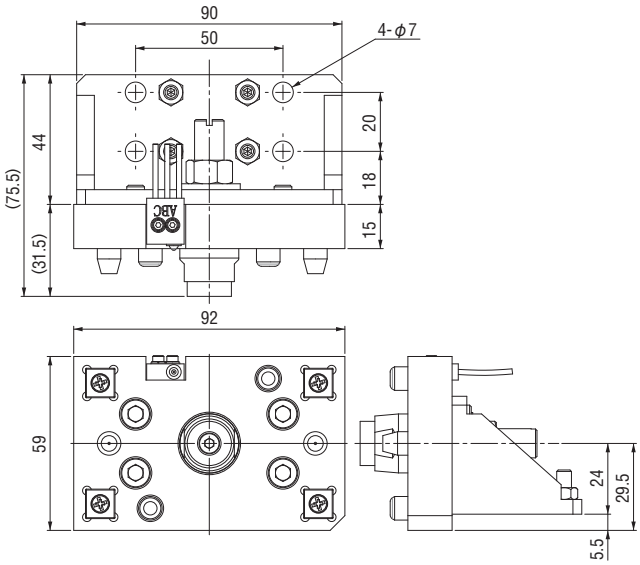
Station side



Magnet chuck hanger (fix side)

Order code No.	072733
TYPE	HNE-S

- Weight: 680g
- Weight capacity: ～1kg (9.8N)
- The chuck has a risidual sensor (030317 D2JW-011-MD)
- Wiring: black (COM) blue (NO) red (NC)



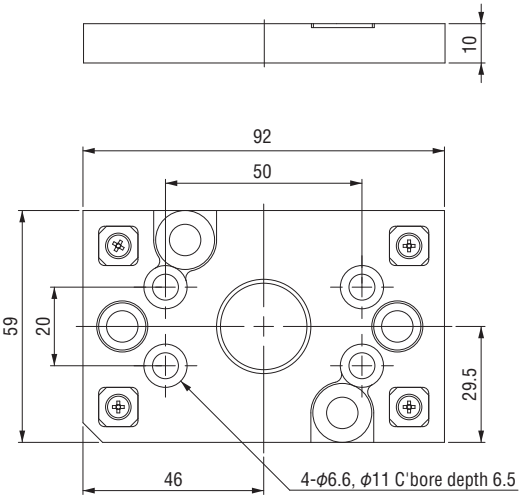
Tool side



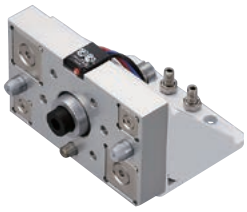
Magnet chuck hanger (tool side)

Order code No.	196637
TYPE	TNE-SI

- Weight: 140g
- Weight capacity: ～1kg (9.8N)



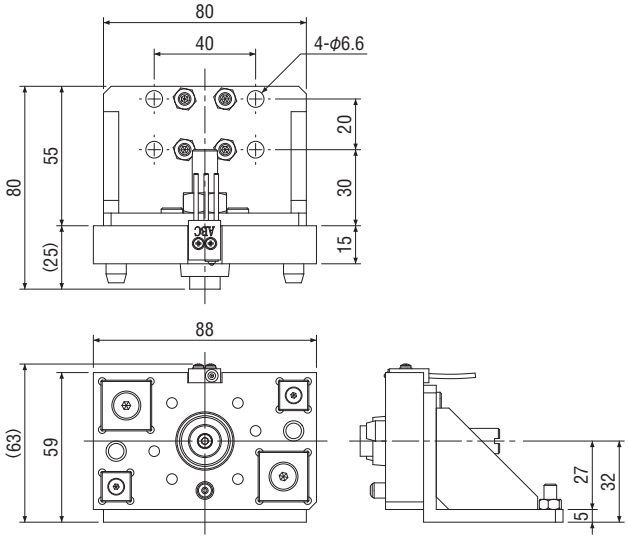
Station side



Magnet chuck hanger (fix side)

Order code No.	072811
TYPE	HNE-SL

- Weight: 632g
- Weight capacity: ～1kg (9.8N)
- The chuck has a risidual sensor (030317 D2JW-011-MD)
- Wiring: black (COM) blue (NO) red (NC)



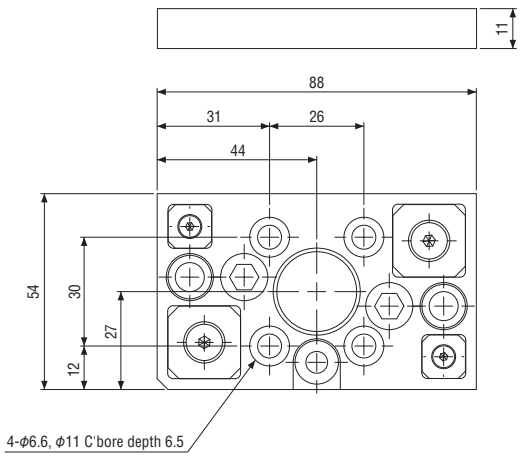
Tool side



Magnet chuck hanger (tool side)

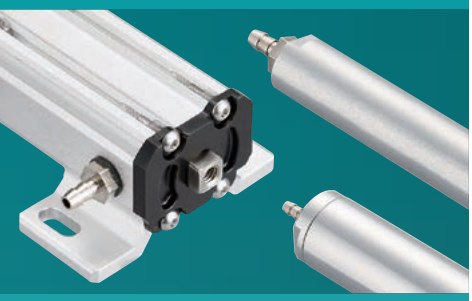
Order code No.	196727
TYPE	TNE-SLI

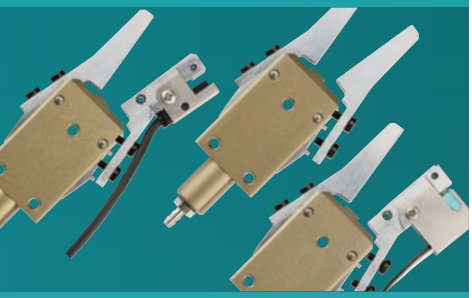
- Weight: 115g
- Weight capacity: ～1kg (9.8N)

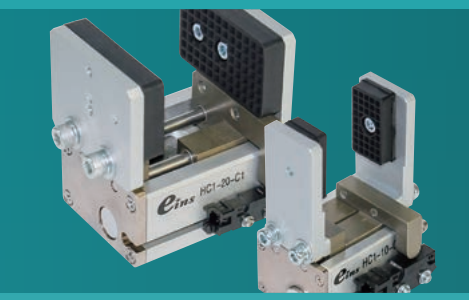


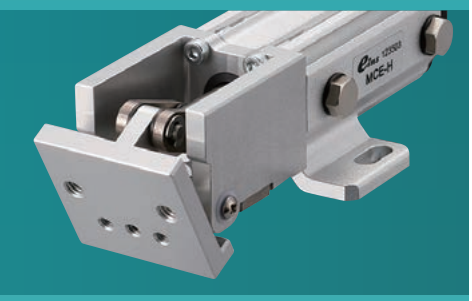
MEMO

Grip











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Rubber Material / Grip Pad ····· 2-52

- Rubber Pad / EP Sponge / Silicone Sponge ····· 2-52

Mini Cylinder

Please refer to the web site for performance table.

- Small and lightweight. Attach to plate or jungle gym.
- Non-rotate structure for cylinder rod (except for mini cylinder H)

■ Specification

Product name		Order code No.	TYPE	Structure	Used air pressure (Mpa)	Cylinder diameter (mm)	Output (N)		Stroke (mm)	Weight (g)	Page of details
Micro Mini Cylinder • UMCD		200122	UMCD-5	Single action type	0.3 ~ 0.5	ϕ10	Push 28	Pull 6	5	16	2-4
		200123	UMCD-10				Push 24	Pull 9	10	22	
	NEW 	200260	UMCD-5T	Single action type	0.3 ~ 0.5	ϕ10	Push 6	Pull 18	5	18	
	NEW 	200261	UMCD-10T				Push 9	Pull 14	10	21	
		200124	UMCD-5P	Single action type	0.3 ~ 0.5	ϕ10	Push 28	Pull 6	5	14	
		200125	UMCD-10P				Push 24	Pull 9	10	20	
Mini Cylinder • MCD1		123219	MCD1-10	Single action type	0.3 ~ 0.5	ϕ18	Push 98	Pull 19	10	65	2-4
		123220	MCD1-20						20	80	
Resin Cylinder • MCDR		123691	MCDR-10	Single action type	0.3 ~ 0.5	ϕ18	Push 98	Pull 19	10	40	2-4
		123692	MCDR-20						20	48	
Mini Cylinder • Slim • MCDP	NEW 	123929	MCDP-10	Single action type	0.3 ~ 0.5	ϕ18	Push 98	Pull 19	10	73	2-5
	NEW 	123930	MCDP-20	Single action type					20	90	
	NEW 	123931	MCDP-AJBKT	–	–	–	–		–	28	2-6
Mini Cylinder • MCE		123504	MCE-10S	Single action type	0.3 ~ 0.5	Equivalent to ϕ19	Push 110	Pull 20	10	58	2-5
		123505	MCE-10T				Push 20	Pull 85			
		123508	MCE-10W	Double action type			Push 130	Pull 108		62	

* Use conditions: Clean air, [Operation temperature] 5℃ - 40℃
* The output (N) is the value when used air pressure is 0.5 MPa.

Please refer to the web site for performance table.

Product name		Order code No.	TYPE	Structure	Used air pressure (Mpa)	Cylinder diameter (mm)	Output (N)		Stroke (mm)	Weight (g)	Page of details
Mini Cylinder • MCE		123506	MCE-20S	Single action type	0.3 ～ 0.5	Equivalent to ϕ19	Push 105	Pull 22	20	69	2-5
		123507	MCE-20T				Push 22	Pull 82			
		123509	MCE-20W	Double action type			Push 130	Pull 108		71	
Mini Cylinder H (with rubber pad)		120003	MCY-HS	Single action type	0.3 ～ 0.5	ϕ15	Push 78	Pull 10	20度	45	2-6
Replacement Rubber • w/ screw • for MCY-HS		370877	For MCY-HS	–	–	–	Push –	Pull –	–	1	2-6
Cylinder for Pipe Attachment • MCP1		123699	MCP1-1210	Single action type	0.3 ～ 0.5	ϕ10	Push 30	Pull 5	10	12	2-7
		123700	MCP1-1220				Push 31	Pull 3	20	14	
		123701	MCP1-2010			ϕ16	Push 85	Pull 7	10	40	
		123702	MCP1-2020				Push 84	Pull 8	20	46	
		123703	MCP1-2030				Push 83	Pull 9	30	50	
Suction Combination Cylinder • VMCP		211133	VMCP-10	Single action type	0.3 ～ 0.5	ϕ16	Push 54	Pull 20	10	51	2-7
		211134	VMCP-20				Push 62	Pull 20	20	60	
		211135	VMCP-30				Push 60	Pull 21	30	78	
		211137	VMCP-10-C				Push 54	Pull 20	10	69	
		211138	VMCP-20-C				Push 62	Pull 20	20	78	
		211139	VMCP-30-C				Push 60	Pull 21	30	96	

∗ Use conditions: Clean air, [Operation temperature] 5℃ - 40℃

Micro Mini Cylinder (UMCD) / Mini Cylinder (MCD) / Resin Cylinder (MCDR)

Mini cylinder series with lightweight body.

High performance for chucking small molded parts.



Micro Mini Cylinder

Order code No.	200122
TYPE	UMCD-5

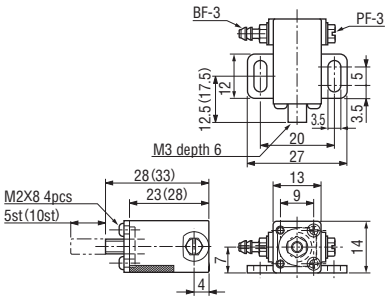
● Stroke: 5mm ● Weight: 16g
● Joint pipe fitting BF-3 included



Micro Mini Cylinder

Order code No.	200123
TYPE	UMCD-10

● Stroke: 10mm ● Weight: 22g
● Joint pipe fitting BF-3 included



∗Size in ( ) shows size of UMCD-10.

Pull type of small body.



Micro Mini Cylinder (pull)

Order code No.	200260
TYPE	UMCD-5T

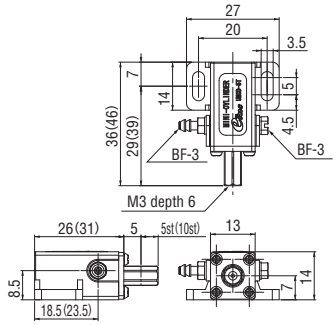
● Stroke: 5mm ● Weight: 17.9g
● Joint pipe fitting BF-3 included



Micro Mini Cylinder (pull)

Order code No.	200261
TYPE	UMCD-10T

● Stroke: 10mm ● Weight: 20.5g
● Joint pipe fitting BF-3 included



∗Size in ( ) shows size of UMCD-10T.

Can be mounted side by side.



Micro Mini Cylinder • slim type

Order code No.	200124
TYPE	UMCD-5P

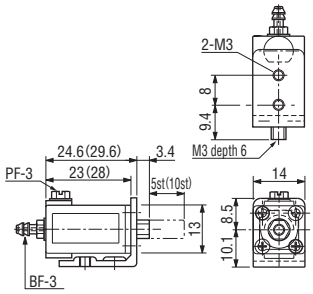
● Stroke: 5mm ● Weight: 14g
● Joint pipe fitting BF-3 included



Micro Mini Cylinder • slim type

Order code No.	200125
TYPE	UMCD-10P

● Stroke: 10mm ● Weight: 20g
● Joint pipe fitting BF-3 included



∗Size in ( ) shows size of UMCD-10P.

Mini cylinder series with lightweight body.



Mini Cylinder • MCD1

Order code No.	123219
TYPE	MCD1-10

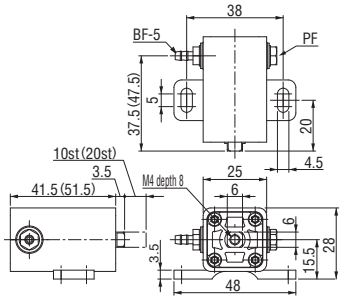
● Stroke: 10mm ● Weight: 65g
● Joint pipe fitting BF-5 included



Mini Cylinder • MCD1

Order code No.	123220
TYPE	MCD1-20

● Stroke: 20mm ● Weight: 80g
● Joint pipe fitting BF-5 included



∗Size in ( ) shows size of MCD1-20.

Weight saving achieved by using plastic for the body.



Resin Cylinder • MCDR

Order code No.	123691
TYPE	MCDR-10

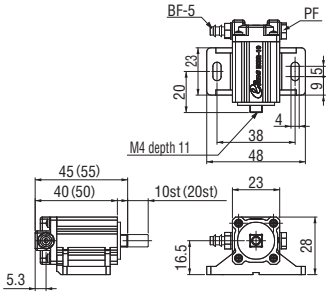
● Stroke: 10mm ● Weight: 40g
● Joint pipe fitting BF-5 included
● Include mounting washers.



Resin Cylinder • MCDR

Order code No.	123692
TYPE	MCDR-20

● Stroke: 20mm ● Weight: 48g
● Joint pipe fitting BF-5 included
● Include mounting washers.



∗Size in ( ) shows size of MCDR-20.

Mini Cylinder (MCDP／MCE)

Mini cylinder series with lightweight body.

Can be mounted side by side.



NEW

Mini Cylinder • Slim

Order code No.	123929
TYPE	MCDP-10

- Stroke: 10mm
- Weight: 73g
- Joint pipe fitting BF-5 included
- Angle adjustment bracket (OP) ➡ 2-6
- Please use M4 nut for cylinder installation.

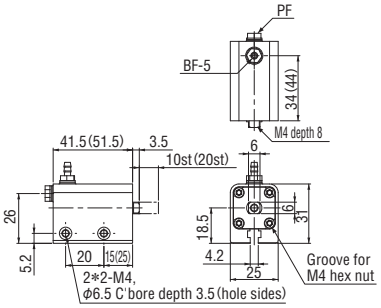


NEW

Mini Cylinder • Slim

Order code No.	123930
TYPE	MCDP-20

- Stroke: 20mm
- Weight: 96g
- Joint pipe fitting BF-5 included
- Angle adjustment bracket (OP) ➡ 2-6
- Please use M4 nut for cylinder installation.



✻Size in ( ) shows size of MCDP-20

Extrusion cylinder with auto switch for operation and return limit capabilities.



Mini Cylinder • MCE10st (push)

Order code No.	123504
TYPE	MCE-10S

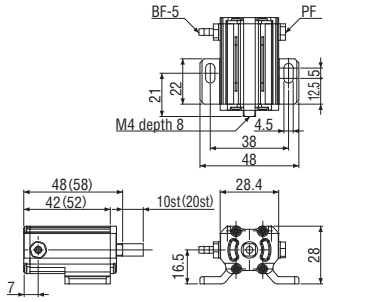
- Stroke: 10mm
- Weight: 58g
- Joint pipe fitting BF-5 included



Mini Cylinder • MCE20st (push)

Order code No.	123506
TYPE	MCE-20S

- Stroke: 20mm
- Weight: 69g
- Joint pipe fitting BF-5 included



✻Size in ( ) shows size of MCE-20S.

Pull-type cylinder with auto switch for operation and return limit capabilities.



Mini Cylinder • MCE10st (pull)

Order code No.	123505
TYPE	MCE-10T

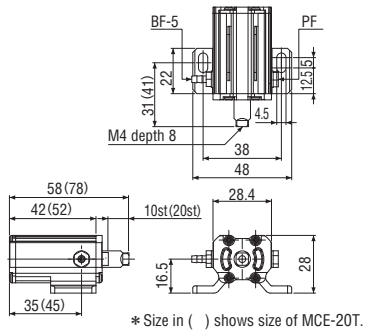
- Stroke: 10mm
- Weight: 58g
- Joint pipe fitting BF-5 included



Mini Cylinder • MCE20st (pull)

Order code No.	123507
TYPE	MCE-20T

- Stroke: 20mm
- Weight: 69g
- Joint pipe fitting BF-5 included



✻Size in ( ) shows size of MCE-20T.

Double-acting cylinder with auto switch for operation and return limit capabilities.



Mini Cylinder • MCE10st (double action)

Order code No.	123508
TYPE	MCE-10W

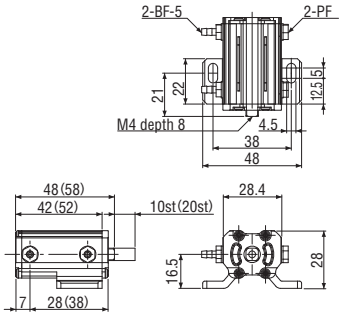
- Stroke: 10mm
- Weight: 62g
- Joint pipe fitting BF-5 included



Mini Cylinder • MCE20st (double action)

Order code No.	123509
TYPE	MCE-20W

- Stroke: 20mm
- Weight: 71g
- Joint pipe fitting BF-5 included



✻Size in ( ) shows size of MCE-20W.

Mini Cylinder H／Mini Cylinder Option Parts

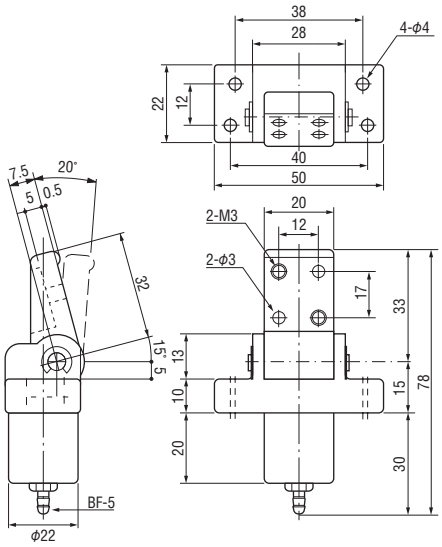
Hinge cylinder with compact body.



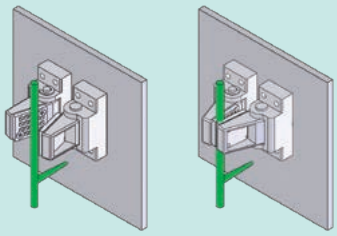
Mini Cylinder H (with rubber pad)

Order code No.	120003
TYPE	MCY-HS

- Body material: PBT polybutylene terephthalate
- Operating angle: 0-20 degrees
- Weight: 45g
- Joint pipe fitting BF-5 included



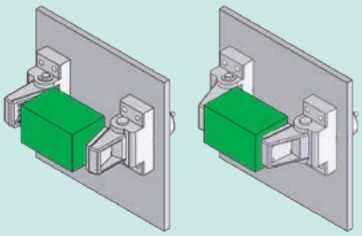
Example of use (runner grip)



Example of use (product grip) Chuck close state

∗ Direct attachment to jungle gym is impossible.

Example of use (product grip)



Example of use (product grip) Chuck close state

Mini Cylinder Option Parts

▶ Mini cylinder ・slim for MCDP series

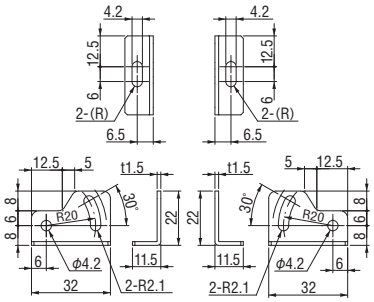
NEW



Angle adjustment bracket ・for MCDP

Order code No.	123931
TYPE	MCDP-AJBKT

- Weight: 28g
- L・R is sold in sets.
- Bolt x 4 (SW、falt W) included



Example of installation



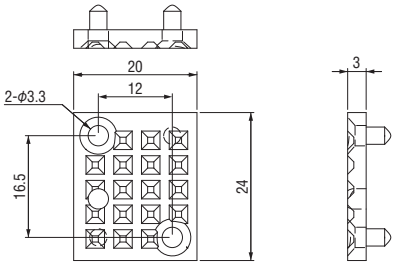
▶ For mini cylinder H (MCY-HS)



Replacement Rubber ・w/ screw ・for MCY-HS

Order code No.	370877
TYPE	For MCY-HS

- Weight: 1g
- Rubber pad material: natural rubber (NR) + Styrene-butadiene rubber (SBR)



▶ Mini Cylinder ・for MCE (MCE series)



Auto Switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g ● Applicable load: relay, PLC
- Load voltage: 24VDC ● Load current range: 5mA-40mA
- Lead wire: 0.5M OUT (+) brown OUT (−) blue
- Indicator light
- Wiring ➡ See 6-20
- Length: 0.5m



Auto Switch (contactless)

Order code No.	030425
TYPE	D-M9N

- Weight: 8g ● Applicable load: relay, PLC
- Load voltage: 24VDC ● Load current range: -40mA or lower
- Lead wire: 0.5M+V(brown), Load(black), OV(blue)
- Indicator light
- Wiring ➡ See 6-20
- Length: 0.5m

Cylinder for Pipe Attachment (MCP1) / Suction Combination Cylinder (VMCP)

Lightweight, high rigidity, and long operating life with superduralumin.

Direct connection to jungle gym series parts (ø12) is possible.



Cylinder for Pipe Attachment

Order code No.	123699
TYPE	MCP1-1210

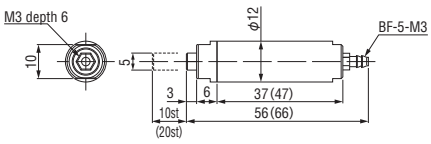
- Stroke: 10mm
- Weight: 12g
- Joint pipe fitting BF-5 included-M3 for piping



Cylinder for Pipe Attachment

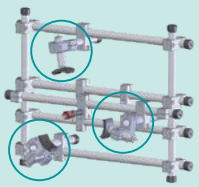
Order code No.	123700
TYPE	MCP1-1220

- Stroke: 20mm
- Weight: 14g
- Joint pipe fitting BF-5 included-M3 for piping



∗ Size in ( ) shows size of MCP-1220.

Example of use



Direct connection to jungle gym series parts (ø20) is possible.



Cylinder for Pipe Attachment

Order code No.	123701
TYPE	MCP1-2010

- Stroke: 10mm
- Weight: 40g
- Joint pipe fitting BF-5 included



Cylinder for Pipe Attachment

Order code No.	123702
TYPE	MCP1-2020

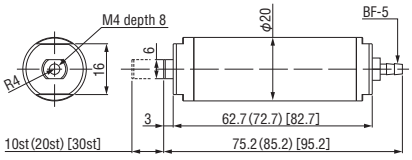
- Stroke: 20mm
- Weight: 46g
- Joint pipe fitting BF-5 included



Cylinder for Pipe Attachment

Order code No.	123703
TYPE	MCP1-2030

- Stroke: 30mm
- Weight: 50g
- Joint pipe fitting BF-5 included



∗ Size in ( ) shows size of MCP-2020.
∗ Size in [ ] shows size of MCP-2030.

Cylinder rod is machined through to allow for vacuum flow. Rod end to accept M5 vacuum accessorizes.



Suction Combination Cylinder (w/o sensor)

Order code No.	211133
TYPE	VMCP-10

- Stroke: 10mm
- Weight: 51g
- Joint pipe fitting BF-5 included



Suction Combination Cylinder (w/o sensor)

Order code No.	211134
TYPE	VMCP-20

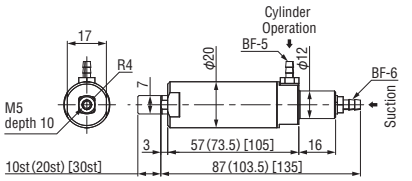
- Stroke: 20mm
- Weight: 60g
- Joint pipe fitting BF-5 included



Suction Combination Cylinder (w/o sensor)

Order code No.	211135
TYPE	VMCP-30

- Stroke: 30mm
- Weight: 78g
- Joint pipe fitting BF-5 included



∗ Size in ( ) shows size of VMCP-20.
∗ Size in [ ] shows size of VMCP-30.



Suction Combination Cylinder (w/ sensor)

Order code No.	211137
TYPE	VMCP-10-C

- Stroke: 10mm
- Weight: 69g
- Joint pipe fitting BF-5 included
- Sensor: D-M9N (030425)



Suction Combination Cylinder (w/ sensor)

Order code No.	211138
TYPE	VMCP-20-C

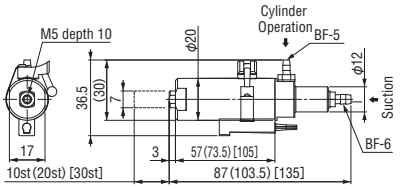
- Stroke: 20mm
- Weight: 78g
- Joint pipe fitting BF-5 included
- Sensor: D-M9N (030425)



Suction Combination Cylinder (w/ sensor)

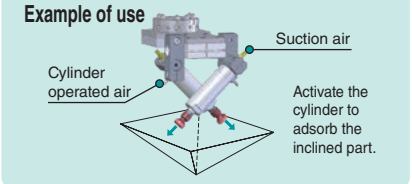
Order code No.	211139
TYPE	VMCP-30-C

- Stroke: 30mm
- Weight: 96g
- Joint pipe fitting BF-5 included
- Sensor: D-M9N (030425)



∗ Size in ( ) shows size of VMCP-20-C.
∗ Size in [ ] shows size of VMCP-30-C.

Example of use



- Attach suction attach head (131208 or 131209 ➡ 3-33) to cylinder rod head.

Accessories for Mini Cylinder

Pads



For micro mini cylinder and mini cylinder.

Claws



The best way for gripping sprues.

Nut Plates



For fixing mini cylinders.

Chuck Spacers (Plastic)

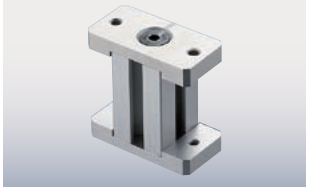


Spacer to install chuck plate and cylinder.

■ Specification

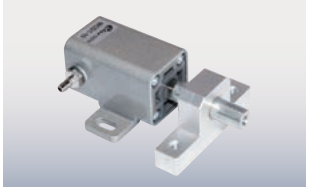
	Product name		Order code No.	TYPE	Weight (g)	Material	Page of details
Pads	Pad • rectangle • black • for micro mini cylinder		022797	CPUM-01	5	Nitrile rubber	2-10
	Pad • rectangle • black • micro • for pull NEW		023357	CPUM-10	4.5	Chloroprene rubber	
	Pad • round • black ϕ25 • for mini cylinder		370071	CP-015	13	Nitrile rubber	
	Pad • round • black ϕ50 • for mini cylinder		370070	CP-016	53		
	Pad • rectangle • black 2 holes • for mini cylinder		023336	CPL-060	22	Chloroprene rubber	
	Pad • curved • black • for mini cylinder		023359	CPL-018	19		2-11
	Pad • rectangle • black • for pull		023219	CP-077	39		
	Pad • rectangle • w/black SW • micro mini cylinder		110568	L1131-100	23	Nitrile rubber	
	Pad • rectangle • w/ black SW • for mini cylinder		101832	KRCR-5000	62		
	Pad • rectangle • white • for micro mini cylinder		023113	CPUM-01 (SR)	5	Silicone	2-10
	Pad • rectangle • white • micro • for pull NEW		023358	CPUM-11	4.5		
	Pad • round • white ϕ25 • for mini cylinder		022664	CP-074	13		
	Pad • round • white ϕ50 • for mini cylinder		370107	CP-071	53		
	Pad • rectangle • white 2 holes • for mini cylinder		023337	CPL-061	22		
	Pad • curved • white • for mini cylinder		023360	CPL-072	19		2-11
	Pad • rectangle • white• for pull		023220	CP-078	39		
	Pad • rectangle • w/ white SW • for micro mini cylinder		110654	L1131-200	23		
	Pad • rectangle • w/ white SW • for mini cylinder		101833	KRCWR-5000	62		
	Steel Pad		023211	CP-06F	37	Steel	
	Pad • rectangle • w/steer SW • mini cylinder		101834	KFCR-5000	76		2-12
	Pad • rectangle • w/SW • mini cylinder		101835	KPCR-5000	52		

Spacers (Aluminum)



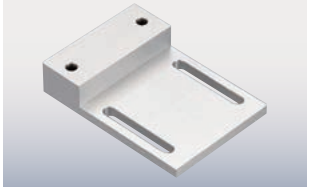
Used to change the mounting height of the mini cylinder.

Extension Shafts / Pillow Blocks



Extension of mini cylinder rod, used with pillow block for stability.

Slide Plates



Easy mini cylinder position adjustment. This makes possible to use the same chuck plate for several molds.

■ Specification

Product name			Order code No.	TYPE	Weight (g)	Material	Page of details
Pads	Pad with SW • Black replacement Plate		101836	KPB-5000	31	Nitrile rubber	2-12
	Pad with SW • White replacement Plate		101837	KPW-5000	31	Silicone	
	Pad with SW • steer replacement Plate		101838	KPF-5000	44	Steel	
	Pad with SW replacement Plate		101839	KP-5000	25		
	Micro limit switch • for KRC / KRCW		030317	D2JW-011-MD (0.1A,30VDC)	8	–	
Claws	Claw • L shape • for micro mini cylinder		022798	CPUM-02	3.6	Steel	2-13
	Claw • round shape ϕ 25 • for mini cylinder		370072	CP-013	11.4		
	Claw • L shape • for mini cylinder		370073	CP-014	28.4		
Nut plates	Nut plate • for micro mini cylinder		022801	CPUM-05	5.0	Steel	
	Nut plate • for mini cylinder		050033	CP-009	8.2		
	Nut plate • for H cylinder (M3)		050034	CP-010	5.2		
Chuck spacer	Chuck spacer • for micro mini cylinder		041646	ECPUM-03	1.7	PP material	2-14
	Chuck spacer • for mini cylinder		041647	ECP-011	8.6		
Spacer	Spacer • aluminum • 50H		230060	XL0002-050	73	Aluminum	
	Spacer • aluminum • 80H		230061	XL0002-080	93		
	Spacer • aluminum • 100H		230062	XL0002-100	106		
	Spacer • aluminum • 120H		230063	XL0002-120	119		
Mini cylinder extension shaft			370342	CP-033 (30mm)	11	Steel	2-15
			370711	CP-034 (45mm)	16		
Mini cylinder pillow block			370341	CP-007 (10mm)	20	Aluminum	
			370712	CP-008 (20mm)	40		
Mini cylinder slide plate			370793	CP-030 (10H)	53	Aluminum	
			370722	CP-030 (15H)	64		

Pads

Use the product by mounting to the tip of cylinder rod.



Pad·rectangle·black· for micro mini cylinder

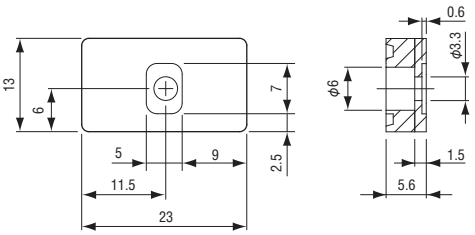
Order code No.	022797
TYPE	CPUM-01

- Material: nitrile rubber
- Weight: 5g
- Cylinder: UMCD, MCP1-12 series

Pad·rectangle·white· for micro mini cylinder

Order code No.	023113
TYPE	CPUM-01 (SR)

- Material: silicone
- Weight: 5g
- Cylinder: UMCD, MCP1-12 series





Pad • rectangle • black • for pull NEW

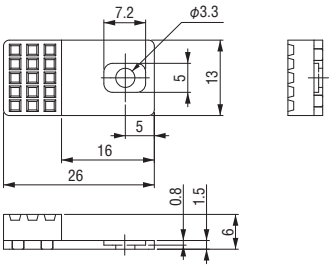
Order code No.	023357
TYPE	CPUM-10

- Material: chloroprene rubber
- Weight: 4.5g
- Cylinder: UMCD-5T,10T (pull type)

Pad • rectangle • white • for pull NEW

Order code No.	023358
TYPE	CPUM-11

- Material: silicone
- Weight: 4.5g
- Cylinder: UMCD-5T,10T (pull type)





Pad • round • black ϕ 25 • for mini cylinder

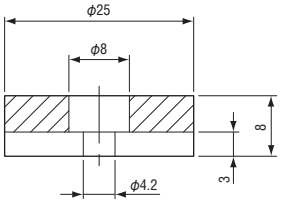
Order code No.	370071
TYPE	CP-015

- Material: nitrile rubber
- Weight: 13g
- Cylinder: MCD*, MCDR, MCDP, MCE, MCP*-20 series

Pad round white ϕ 25 • for mini cylinder

Order code No.	022664
TYPE	CP-074

- Material: silicone
- Weight: 13g
- Cylinder: MCD*, MCDR, MCDP, MCE, MCP*-20 series





Pad·round·black ϕ 50· for mini cylinder

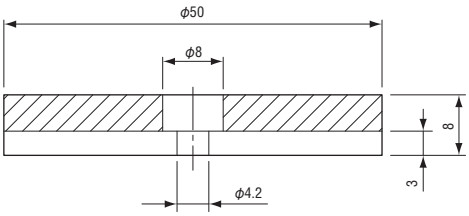
Order code No.	370070
TYPE	CP-016

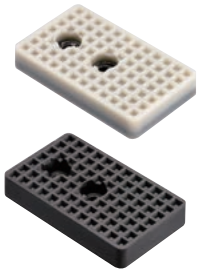
- Material: nitrile rubber
- Weight: 53g
- Cylinder: MCD*, MCDR, MCDP, MCE, MCP*-20 series

Pad·round·white ϕ 50· for mini cylinder

Order code No.	370107
TYPE	CP-071

- Material: silicone
- Weight: 53g
- Cylinder: MCD*, MCDR, MCDP, MCE, MCP*-20 series





Pad • rectangle • black 2 holes • for mini cylinder

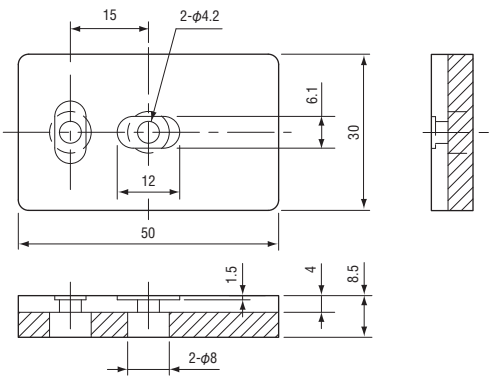
Order code No.	023336
TYPE	CPL-060

- Material: chloroprene rubber
- Weight: 22g
- Cylinder: MCD*, MCDR, MCDP, MCE, MCP*-20 series

Pad • rectangle • white 2 holes • for mini cylinder

Order code No.	023337
TYPE	CPL-061

- Material: silicone
- Weight: 22g
- Cylinder: MCD*, MCDR, MCDP, MCE, MCP*-20 series



Used when the parts has a curved surface.



Pad • curved • black • for mini cylinder

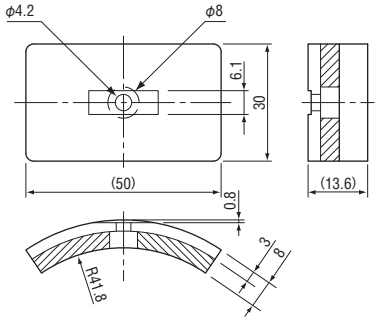
Order code No.	023359
TYPE	CPL-018

- Material: chloroprene rubber
- Weight: 19g
- Cylinder: MCD∗, MCDR, MCDP, MCE, MCP∗-20 series

Pad • curved • white • for mini cylinder

Order code No.	023360
TYPE	CPL-072

- Material: silicone
- Weight: 19g
- Cylinder: MCD∗, MCDR, MCDP, MCE, MCP∗-20 series





Pad • rectangle • black • for pull

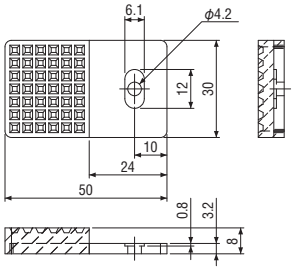
Order code No.	023219
TYPE	CP-077

- Material: chloroprene rubber
- Weight: 39g
- Cylinder: MCE series

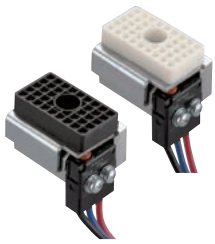
Pad • rectangle • white • for pull

Order code No.	023220
TYPE	CP-078

- Material: silicone
- Weight: 39g
- Cylinder: MCE series



Supplied with SW, sensor for product confirmation is not necessary.



Pad • rectangle • w/ black SW • for micro mini cylinder

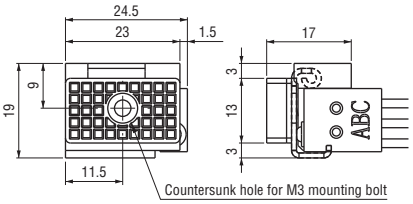
Order code No.	110568
TYPE	L1131-100

- Material: nitrile rubber
- Weight: 23g
- Cylinder: UMCD, MCP∗-12 series
- Sensor : D2JW-011-MD ➡ See (2-12)

Pad • rectangle • w/ white SW • for micro mini cylinder

Order code No.	110654
TYPE	L1131-200

- Material: silicone
- Weight: 23g
- Cylinder: UMCD, MCP∗-12 series



∗Unable to attach to UMCD-5P/10P.
∗Wiring: black (COM) blue (NO) red (NC)

A contact specification: black (COM) blue (NO)
B contact specification: black (COM) red (NC)

Supplied with SW, sensor for product confirmation is not necessary.



Pad • rectangle • w/ black SW • mini cylinder

Order code No.	101832
TYPE	KRCR-5000

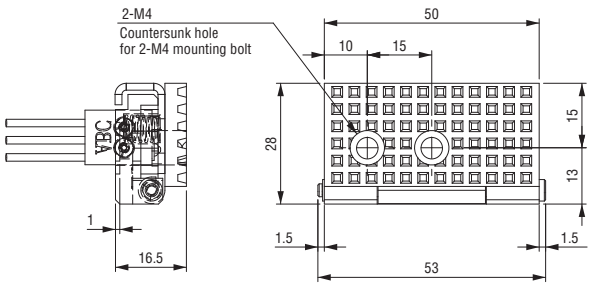
- Material: nitrile rubber
- Weight: 62g
- Cylinder: MCD∗, MCDR, MCDP, MCE, MCP∗-20 series



Pad • rectangle • w/ white SW • mini cylinder

Order code No.	101833
TYPE	KRCWR-5000

- Material: silicone
- Weight: 62g
- Cylinder: MCD∗, MCDR, MCDP, MCE, MCP∗-20 series

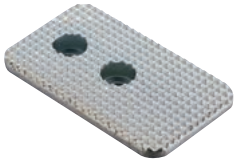


- Sensor : D2JW-011-MD ➡ See (2-12)

∗Wiring: black (COM) blue (NO) red (NC)

A contact specification: black (COM) blue (NO)
B contact specification: black (COM) red (NC)

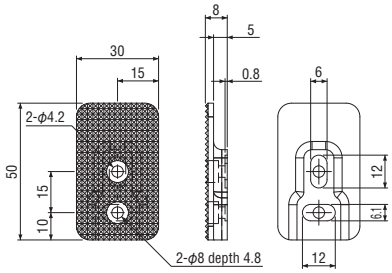
Best suited for sprue slide prevention by using knurling process.



Steel pad

Order code No.	023211
TYPE	CP-06F

- Weight: 37g
- Cylinder: MCD∗, MCDR, MCDP, MCE, MCP∗-20 series



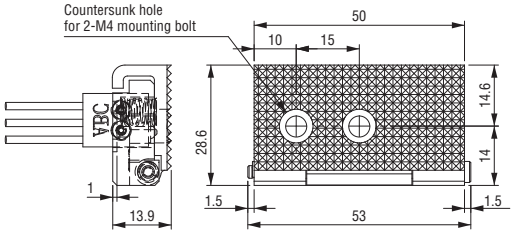
Add knurling to the plate with switch.



Pad • rectangle • w/ steer SW • mini cylinder

Order code No.	101834
TYPE	KFCR-5000

- Material: Steel ● Weight: 76g
- Cylinder: MCD∗, MCDR, MCDP, MCE, MCP∗-20 series
- Sensor : D2JW-011-MD ➡ See (2-12)



∗Wiring: black (COM) blue (NO) red (NC)

A contact specification: black (COM) blue (NO)
B contact specification: black (COM) red (NC)

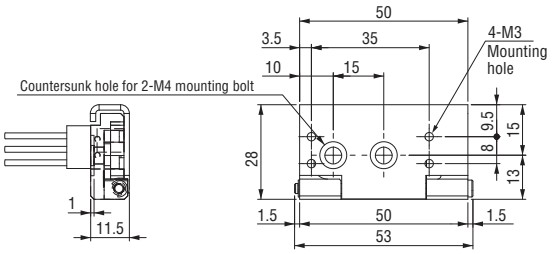
Add M3 tap hole to the pad with switch.



Pad • rectangle • w/ SW • mini cylinder

Order code No.	101835
TYPE	KPCR-5000

- Material: Steel ● Weight: 52g
- Cylinder: MCD∗, MCDR, MCDP, MCE, MCP∗-20 series
- Sensor : D2JW-011-MD ➡ See (2-12)



∗Wiring: black (COM) blue (NO) red (NC)

A contact specification: black (COM) blue (NO)
B contact specification: black (COM) red (NC)

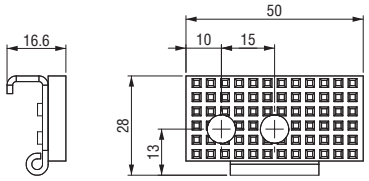
Pad with SW replacement Accessories



Pad with SW • Black replacement Plate

Order code No.	101836
TYPE	KPB-5000

- Weight: 31g
- E-ring attached
- KRCR-5000 (101832) for exchange

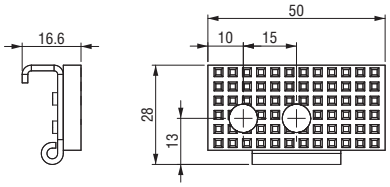




Pad with SW • White replacement Plate

Order code No.	101837
TYPE	KPW-5000

- Weight: 31g
- E-ring attached
- KRCWR-5000 (101833) for exchange

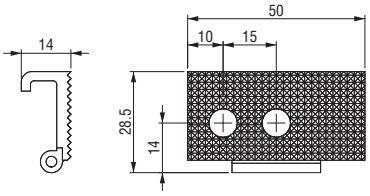




Pad with SW • steer replacement Plate

Order code No.	101838
TYPE	KPF-5000

- Weight: 44g
- E-ring attached
- KFCR-5000 (101834) for exchange

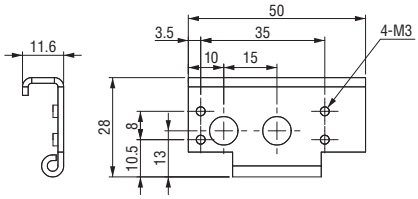




Pad with SW replacement Plate

Order code No.	101839
TYPE	KP-5000

- Weight: 25g
- E-ring attached
- KPCR-5000 (101835) for exchange



Micro limit switch • for KRC / KRCW



Order code No.	030317
TYPE	D2JW-011-MD (0.1A,30VDC)

- Weight: 8g
- Wiring: black (COM) blue (NO) red (NC)
- Pads : KRCR, KRCWR, KFCR, KPCR, L1131
- Length : 0.3m

Claws / Nut Plates

Claw is used for chucking sprue. and nut plate is used for fixing mini cylinder.

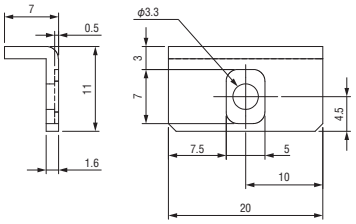
Claws

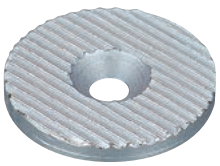


Claw • L shape • for micro mini cylinder

Order code No.	022798
TYPE	CPUM-02

- Weight: 3.6g
- Cylinder: UMCD, MCP∗-12 series

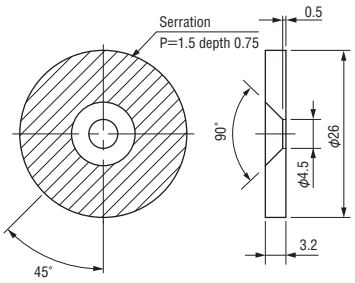




Claw • round shape ϕ25 • for mini cylinder

Order code No.	370072
TYPE	CP-013

- Weight: 11.4g
- Cylinder: MCD∗, MCDR, MCE, MCDP, MCP∗-20 series



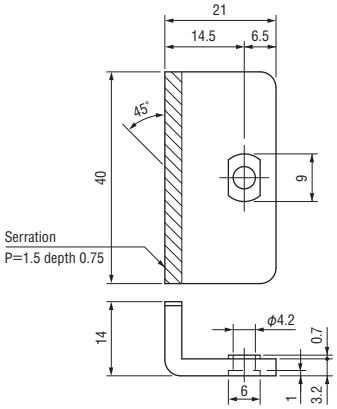
∗Clamp force is conveyed with serration processing.
This product is engaged in less deep than CP-014.



Claw • L shape • for mini cylinder

Order code No.	370073
TYPE	CP-014

- Weight: 28.4g
- Cylinder: MCD∗, MCDR, MCE, MCDP, MCP∗-20 series



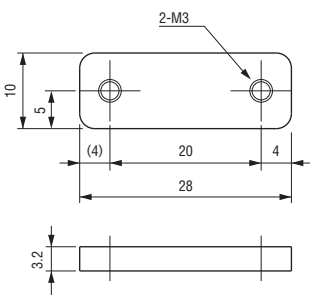
Nut Plates (micro mini cylinder,mini cylinder,H cylinder)



Nut plate • for micro mini cylinder

Order code No.	022801
TYPE	CPUM-05

- Weight: 5.0g
- Cylinder: UMCD series

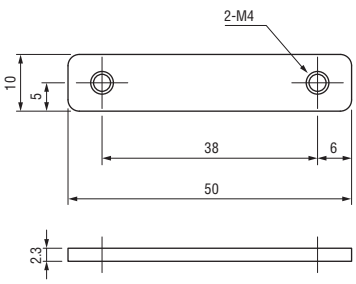




Nut plate • for mini cylinder

Order code No.	050033
TYPE	CP-009

- Weight: 8.2g
- Cylinder: MCD∗, MCDR, MCE series

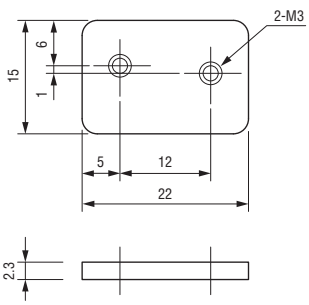




Nut plate • for H cylinder (M3)

Order code No.	050034
TYPE	CP-010

- Weight: 5.2g
- Cylinder: MCY-HS



Chuck Spacers : Plastic / Aluminum

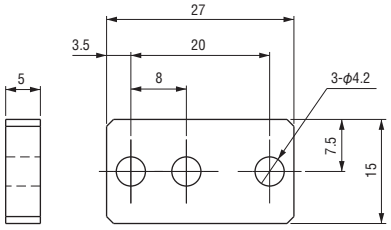
Spacer for height adjustment.



Chuck spacer • for micro mini cylinder

Order code No.	041646
TYPE	ECPUM-03

- Weight: 1.7g
- Material: Polypropylene

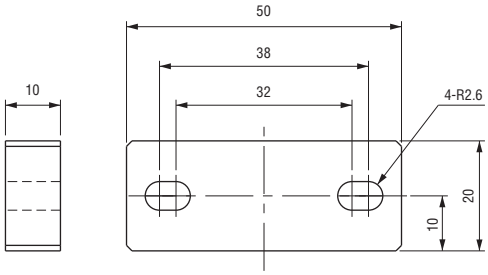




Chuck spacer • for mini cylinder

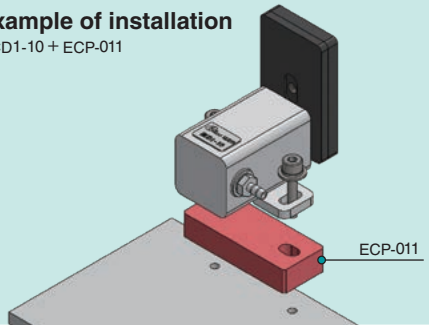
Order code No.	041647
TYPE	ECP-011

- Weight: 8.6g
- Material: Polypropylene



Example of installation

MCD1-10 + ECP-011



▶ Spacer for mini cylinder



Spacer • aluminum • 50H

Order code No.	230060
TYPE	XL0002-050

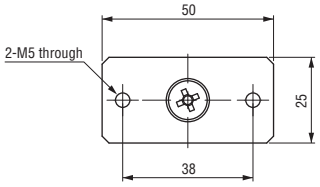
- Weight: 73g
- Size A: 50mm



Spacer • aluminum • 80H

Order code No.	230061
TYPE	XL0002-080

- Weight: 93g
- Size A: 80mm





Spacer • aluminum • 100H

Order code No.	230062
TYPE	XL0002-100

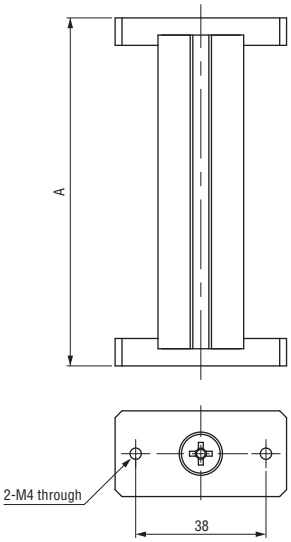
- Weight: 106g
- Size A: 100mm



Spacer • aluminum • 120H

Order code No.	230063
TYPE	XL0002-120

- Weight: 119g
- Size A: 120mm



Extension Shafts / Pillow Blocks / Slide Plate

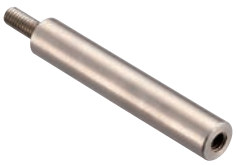
Extension of mini cylinder rod, used with pillow block for stability.
Easy to make the Mini cylinder move.



Mini cylinder • extension shaft

Order code No.	370342
TYPE	CP-033 (30mm)

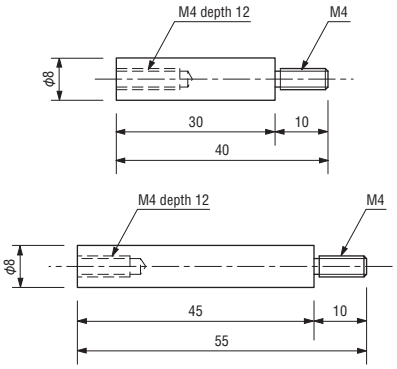
- Weight: 11g



Mini cylinder • extension shaft

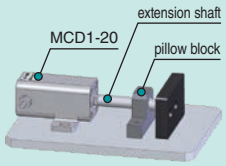
Order code No.	370711
TYPE	CP-034 (45mm)

- Weight: 16g



- Cylinder: MCD1 series

Example of use

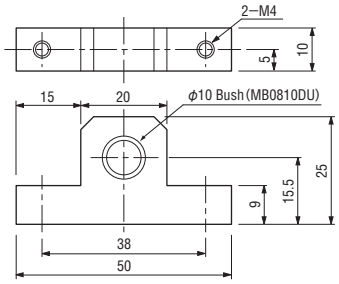




Mini cylinder • pillow block

Order code No.	370341
TYPE	CP-007 (10mm)

- Weight: 20g

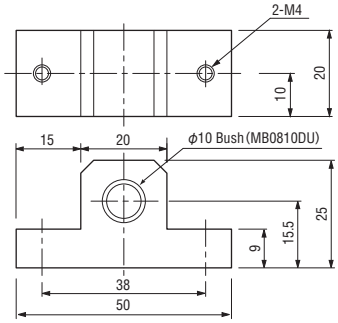




Mini cylinder • pillow block

Order code No.	370712
TYPE	CP-008 (20mm)

- Weight: 40g



- Cylinder: MCD∗ series



Mini cylinder • slide plate

Order code No.	370793
TYPE	CP-030 (10H)

- Weight: 53g
- Use nut plate to attach mini cylinder.

➡ See 2-13

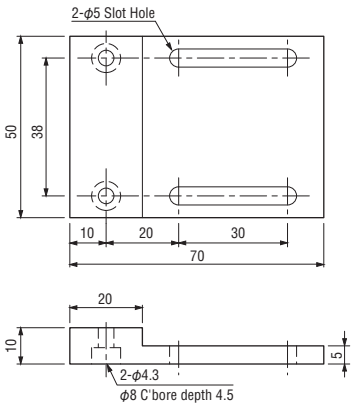


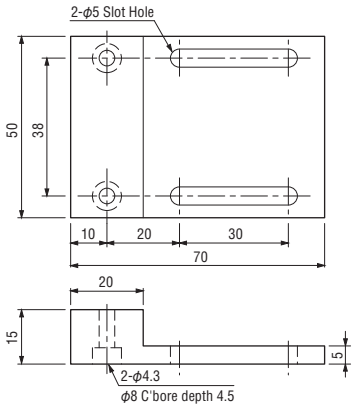
Mini cylinder • slide plate

Order code No.	370722
TYPE	CP-030 (15H)

- Weight: 64g
- Use nut plate to attach mini cylinder.

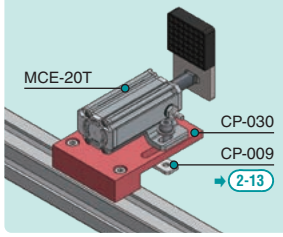
➡ See 2-13





Example of installation

MCE-20T + CP-030 + CP-009



Micro Mini Cylinder／Mini Cylinder↔Pads Selection Table

Pads / Cylinder (○: Installable —: Not Installable)		Micro mini cylinder (UMCD)						mini cylinder (MCD※)		Resin cylinder (MCDR)		Mini cylinder (MCDP)		Mini cylinder (MCE)						Pipe cylinder (MCP1)				
		200122	200123	200260	200261	200124	200125	123219	123220	123691	123692	123929	123930	123504	123506	123505	123507	123508	123509	123699	123700	123701	123702	123703
		UMCD-5	UMCD-10	UMCD-5T	UMCD-10T	UMCD-5P	UMCD-10P	MCD1-10	MCD1-20	MCDR-10	MCDR-20	MCDP-10	MCDP-20	MCE-10S	MCE-20S	MCE-10T	MCE-20T	MCE-10W	MCE-20W	MCP1-1210	MCP1-1220	MCP1-2010	MCP1-2020	MCP1-2030
	022797 CPUM-01 (Black)	○	○	—	—	○※2	○※2	—	—	—	—	—	—	—	—	—	—	—	—	○	○	—	—	—
	023113 CPUM-01 (SR) (White)	○	○	—	—	○※2	○※2	—	—	—	—	—	—	—	—	—	—	—	—	○	○	—	—	—
	023357 CPUM-10 (Black)	—	—	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	023358 CPUM-11 (White)	—	—	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	370071 CP-015 (Black)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	022664 CP-074 (White)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	370070 CP-016 (Black)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	370107 CP-071 (White)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	023336 CPL-060 (Black)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	023337 CPL-061 (White)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	023359 CPL-018 (Black)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	023360 CPL-072 (White)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	023219 CP-077 (Black)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	○	○	○	—	—	—	—	—
	023220 CP-078 (White)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	○	○	○	—	—	—	—	—
	101832 KRCR-5000 (Black)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	101833 KRCWR-5000 (White)	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	101834 KFCR-5000	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	101835 KPCR-5000	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	110568 L1131-100 (Black)	○※1	○※1	—	—	○※2	○※2	—	—	—	—	—	—	—	—	—	—	—	—	○	○	—	—	—
	110654 L1131-200 (White)	○※1	○※1	—	—	○※2	○※2	—	—	—	—	—	—	—	—	—	—	—	—	○	○	—	—	—
	023211 CP-06F	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	022798 CPUM-02	○	○	—	—	○※2	○※2	—	—	—	—	○	○	—	—	—	—	—	—	○	○	—	—	—
	370072 CP-013	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○
	370073 CP-014	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—	—	○	○	—	—	○	○	○

※1 The chuck spacer (ECPUM-03 ➡ 2-14) is required when mounting the pads.
※2 The long side is the longitudinal direction when mounting the pads.

MEMO

Container Cylinders

Please refer to the web site for performance table.

■Specification

Product name		Order code No.	TYPE	Structure	Used air pressure*2 (Mpa)	Cylinder diameter (mm)	Output*1 (N)	Stroke (mm)	Weight (g)	Page of Details
Mini container cylinder		131014	NCON-M10S	Single action type	0.4～0.5 (4～5kgf/cm²)	φ20	Push 114 Pull 30	10	135	2-19
		131015	NCON-M15S				Push 115 Pull 29	15	145	
		131016	NCON-M20S				Push 125 Pull 20	20	155	
		130709	NCON-M10W	Double action type		φ20	Push 154 Pull 129	10	135	
		130710	NCON-M15W					15	145	
		130711	NCON-M20W					20	155	
		130712	NCON-M25W					25	165	
		130713	NCON-M30W					30	175	
Container cylinder		130707	NCON-20W	Double action type	0.4～0.5 (4～5kgf/cm²)	φ20×2	Push 314 Pull 234	20	340	2-20
		130708	NCON-40W					40	415	
		130829	NCON-80W					80	557	

Product name		Order code No.	TYPE	Structure	Used air pressure*2 (Mpa)	Cylinder diameter (mm)	Output*3 (N)	Stroke (mm)	Weight (g)	Page of Details
Container cylinder reinforced		130869	NCON-40WK	Double action type	0.4 ～ 0.6	φ20×2	Push 314 Pull 200	40	688	2-20
Container cylinder w/ guided		060496	GCYL20*20	Double action type	0.4 ～ 0.6	φ20	Push 157 Pull 117	20	526	2-21
		060497	GCYL20*40					40	670	
		060498	GCYL20*50					50	746	
		060499	GCYL20*75					75	1,000	
		060500	GCYL20*100					100	1,192	
		060501	GCYL20*150					150	1,576	
NEW Container cylinder w/ guided(Double action type)		131686	NGCYL20*20	Double action type	0.4 ～ 0.6	φ16×2	Push 200 Pull 150	20	270	2-22
		131687	NGCYL20*40					40	370	
		131688	NGCYL20*50					50	410	
		131689	NGCYL20*75					75	520	
		131690	NGCYL20*100					100	640	

Auto switch (reed SW)		030282	D-A93	–	–	–	–	–	6	2-19,21
Auto switch (contactless)		030425	D-M9N	–	–	–	–	–	8	2-19,21

*1：Used air pressure (0.49Mpa)　*2：Fluid to be used/Clean air, Ambient temperature/5 ℃ - 40℃　*3：Used air pressure (0.5Mpa)

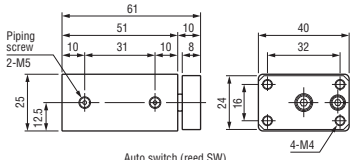
Mini Container Cylinder (Single Action / Double Action)

Smooth operation with fit drive guide.

Single Action Type

Installation of auto switch for act/return limit is possible.

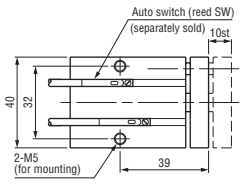




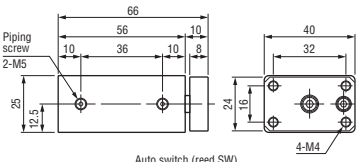
Order code No.	131014
TYPE	NCON-M10S

- Stroke: 10mm
- Weight: 135g
- Pipe joint is sold separately.

➡ See 6-5,6,7



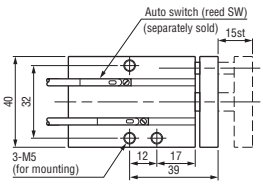




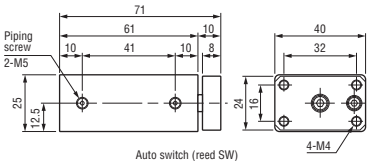
Order code No.	131015
TYPE	NCON-M15S

- Stroke: 15mm
- Weight: 145g
- Pipe joint is sold separately.

➡ See 6-5,6,7



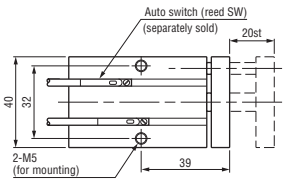




Order code No.	131016
TYPE	NCON-M20S

- Stroke: 20mm
- Weight: 155g
- Pipe joint is sold separately.

➡ See 6-5,6,7







Auto switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: 5mA-40mA
- Wiring: 0.5M OUT brown OUT (+) blue (–)
- With indicator lamp
- Terminal process is not made.
- Wiring: ➡ See 6-20
- Length: 0.5m

Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

- Weight: 8g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: -40mA or lower
- Wiring: 0.5M+V (brown), Load (black), OV(blue)
- With indicator lamp
- Terminal process is not made.
- Wiring: ➡ See 6-20
- Length: 0.5m

Example of mounting

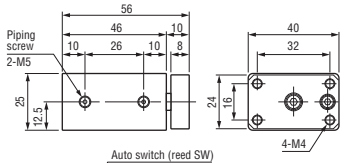


NCON-M10S

Double Action Type

Installation of auto switch for act/return limit is possible.

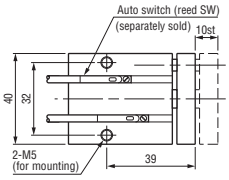




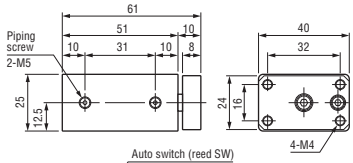
Order code No.	130709
TYPE	NCON-M10W

- Stroke: 10mm
- Weight: 135g
- Pipe joint is sold separately.

➡ See 6-5,6,7



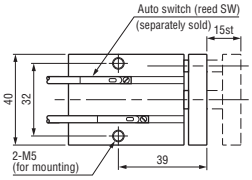




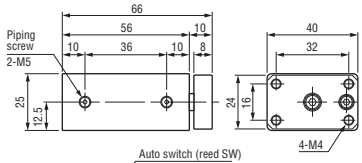
Order code No.	130710
TYPE	NCON-M15W

- Stroke: 15mm
- Weight: 145g
- Pipe joint is sold separately.

➡ See 6-5,6,7



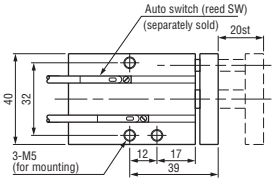




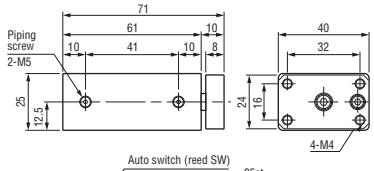
Order code No.	130711
TYPE	NCON-M20W

- Stroke: 20mm
- Weight: 155g
- Pipe joint is sold separately.

➡ See 6-5,6,7



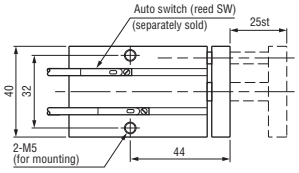




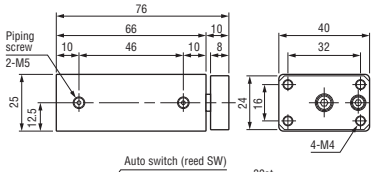
Order code No.	130712
TYPE	NCON-M25W

- Stroke: 25mm
- Weight: 165g
- Pipe joint is sold separately.

➡ See 6-5,6,7



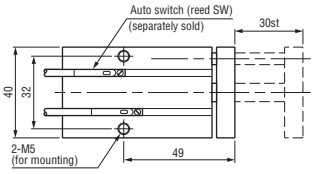




Order code No.	130713
TYPE	NCON-M30W

- Stroke: 30mm
- Weight: 175g
- Pipe joint is sold separately.

➡ See 6-5,6,7



Container Cylinder (Double Action／Reinforced)

Smooth operation with double rods.

Installation of auto switch for act/return limit is possible.



Order code No.	130707
TYPE	NCON-20W

- Stroke: 20mm
- Weight: 340g
- Pipe joint is sold separately.

➡ See 6-5,6,7



Order code No.	130708
TYPE	NCON-40W

- Stroke: 40mm
- Weight: 415g
- Pipe joint is sold separately.

➡ See 6-5,6,7



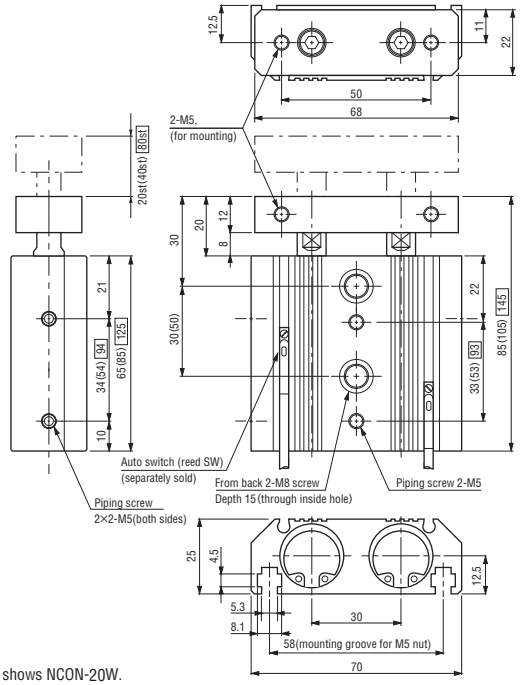
Order code No.	130829
TYPE	NCON-80W

- Stroke: 80mm
- Weight: 557g
- Pipe joint is sold separately.

➡ See 6-5,6,7

Example of mounting





∗Base drawing shows NCON-20W.
∗Size in ( ) shows size of NCON-40W.
∗Size in ▭ shows size of NCON-80W.

▶ High durability and long operation life with widemouthed cylinder and reinforcement of piston structure.

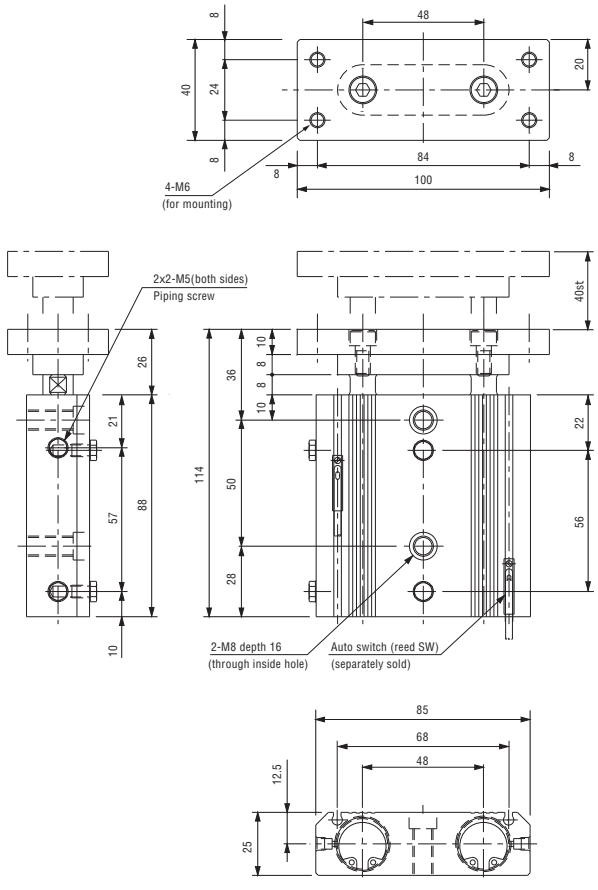


Container cylinder • reinforced (double)

Order code No.	130869
TYPE	NCON-40WK

- Stroke: 40mm
- Weight: 688g
- Pipe joint is sold separately.

➡ See 6-5,6,7



Container Cylinder w/Guided (Double Action) GCYLseries

Improved durability with integral-type aluminum body.

Installation of auto switch for act/return limit is possible.



Order code No.	060496
TYPE	GCYL20*20

- Stroke: 20mm
- Weight: 526g
- Pipe joint is sold separately.

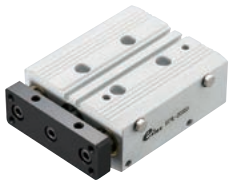
➡ See 6-5,6,7



Order code No.	060497
TYPE	GCYL20*40

- Stroke: 40mm
- Weight: 670g
- Pipe joint is sold separately.

➡ See 6-5,6,7



Order code No.	060498
TYPE	GCYL20*50

- Stroke: 50mm
- Weight: 746g
- Pipe joint is sold separately.

➡ See 6-5,6,7



Order code No.	060499
TYPE	GCYL20*75

- Stroke: 75mm
- Weight: 1,000g
- Pipe joint is sold separately.

➡ See 6-5,6,7



Order code No.	060500
TYPE	GCYL20*100

- Stroke: 100mm
- Weight: 1,192g
- Pipe joint is sold separately.

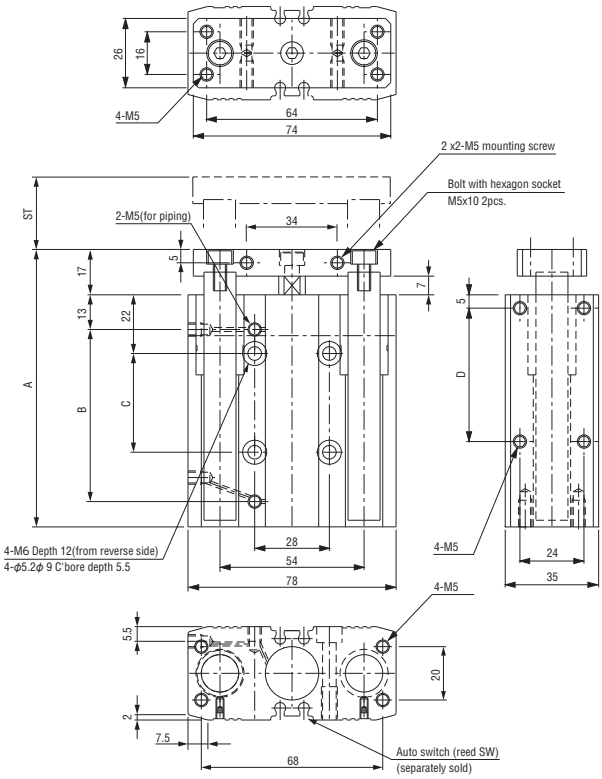
➡ See 6-5,6,7



Order code No.	060501
TYPE	GCYL20*150

- Stroke: 150mm
- Weight: 1,576g
- Pipe joint is sold separately.

➡ See 6-5,6,7



Dimensions (mm)

TYPE	GCYL20*20	GCYL20*40	GCYL20*50	GCYL20*75	GCYL20*100	GCYL20*150
ST	20	40	50	75	100	150
A	74	94	104	136.5	171.5	231.5
B	34.5	54.5	64.5	89.5	114.5	164.5
C	17	37	37	60	60	120
D	30	50	50	85	85	135



Auto switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: 5mA-40mA
- Wiring: 0.5M OUT brown OUT (+) blue (–)
- Indicator light
- Wiring: ➡ See 6-20
- Length: 0.5m



Auto switch (contactless)

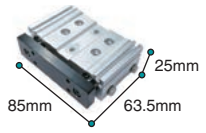
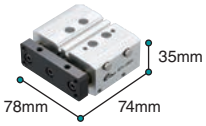
Order code No.	030425
TYPE	D-M9N

- Weight: 8g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: -40mA or lower
- Wiring: 0.5M + V (brown), Load (black), 0V (blue)
- Indicator light
- Wiring: ➡ See 6-20
- Length: 0.5m

Container Cylinder w/Guided (Double Action) NGCYLseries

New container cylinder with miniaturization and Lightweight.

- The proportions became more compact when compared to traditional container cylinders (GCYL series).
- The cylinder is lighter and thrust increased.

TYPE		Weight (Lightweight)	Body size (Compact)	Output (Enhance thrust)	
				Push	Pull
NEW NGCYL20＊20		270g	Height : 25mm Length : 63.5mm Width : 85	200N	150N
GCYL20＊20		526g	Height : 35mm Length : 74mm Width : 78mm	157N	117N

Installation of auto switch for act/return limit is possible.

NEW

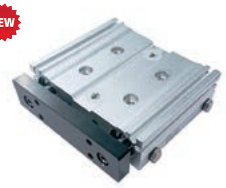


Order code No.	131686
TYPE	NGCYL20＊20

- Stroke: 20mm
- Weight: 270g
- Pipe joint is sold separately.

➡ See 6-5,6,7

NEW

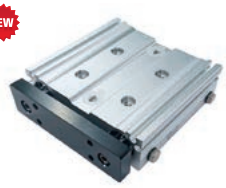


Order code No.	131687
TYPE	NGCYL20＊40

- Stroke: 40mm
- Weight: 370g
- Pipe joint is sold separately.

➡ See 6-5,6,7

NEW



Order code No.	131688
TYPE	NGCYL20＊50

- Stroke: 50mm
- Weight: 410g
- Pipe joint is sold separately.

➡ See 6-5,6,7

NEW



Order code No.	131689
TYPE	NGCYL20＊75

- Stroke: 75mm
- Weight: 520g
- Pipe joint is sold separately.

➡ See 6-5,6,7

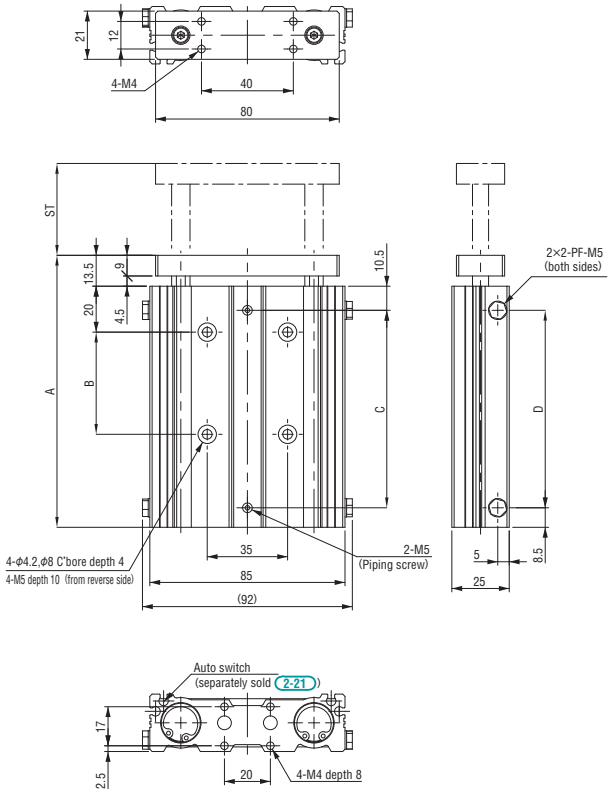
NEW



Order code No.	131690
TYPE	NGCYL20＊100

- Stroke: 100mm
- Weight: 1,192g
- Pipe joint is sold separately.

➡ See 6-5,6,7



■ Dimensions (mm)

TYPE	NGCYL20＊20	NGCYL20＊40	NGCYL20＊50	NGCYL20＊75	NGCYL20＊100
ST	20	40	50	75	100
A	63.5	83.5	93.5	118.5	143.5
B	17	27	32	44.5	57
C	31	51	61	86	111
D	31	51	61	86	111

MEMO

Accessories for Container Cylinder

Pads



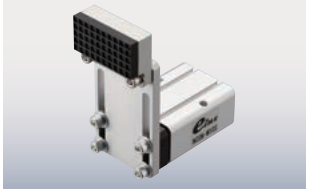
Used for work grip or positioning.

Nut Plates

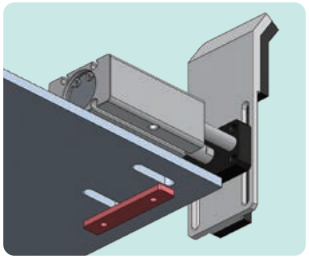


For fixing container cylinders.

Extension Plate



Setting position can be changed according to the work shape.



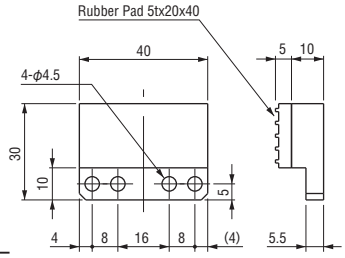
■Specification

Product name		Order code No.	TYPE	Weight (g)	Material	Page of details
Pad・for mini container cylinder		131256	NCON-CP-01	34	Nitrile rubber	2-25
		131257	NCON-CP-02	38		
		131258	NCON-CP-03	38	Steel	
		131259	NCON-CP-04	71	Nitrile rubber	
		131260	NCON-CP-05	71		
		131677	NCON-CP-06A	98		
Extended plate (for wear plate)		230071	XL0006-104	31	Aluminum	
Nut plate・for container cylinder		023196	CP-075	10	Steel	

Pads／Extension Plates／Nut Plates

Pads for mini container cylinder.

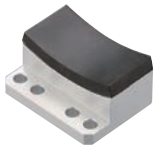


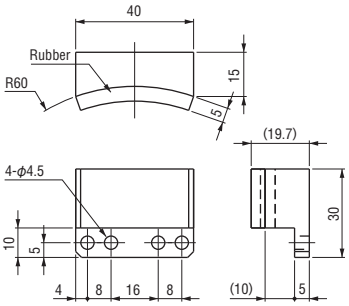


Pad • for mini container cylinder

Order code No.	131256
TYPE	NCON-CP-01

- Material: nitrile rubber
- Weight: 34g



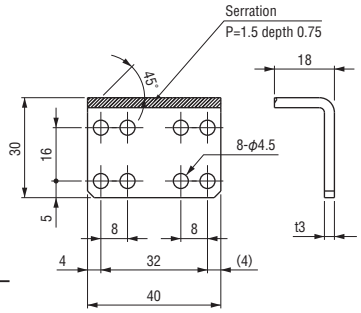


Pad • for mini container cylinder

Order code No.	131257
TYPE	NCON-CP-02

- Material: nitrile rubber
- Weight: 38g



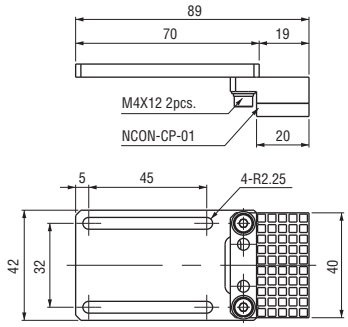


Claw • for mini container cylinder

Order code No.	131258
TYPE	NCON-CP-03

- Weight: 38g



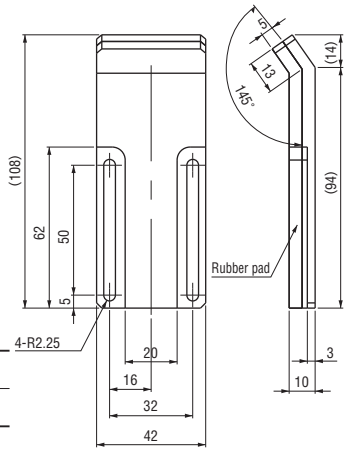


Pad • for mini container cylinder

Order code No.	131259
TYPE	NCON-CP-04

- Material: nitrile rubber
- Weight: 71g



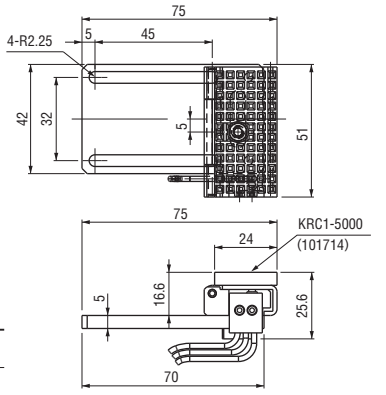


Pad • for mini container cylinder

Order code No.	131260
TYPE	NCON-CP-05

- Material: nitrile rubber
- Weight: 71g





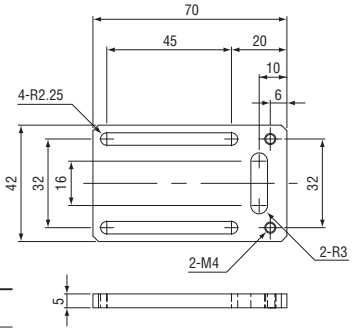
Pad • for mini container cylinder

Order code No.	131677
TYPE	NCON-CP-06A

- Material: nitrile rubber
- Weight: 98g
- Length: 0.3m

＊Wiring：black (COM) blue (NO) red (NC)
A contact specification：black (COM) blue (NO)
B contact specification：black (COM) red (NC)



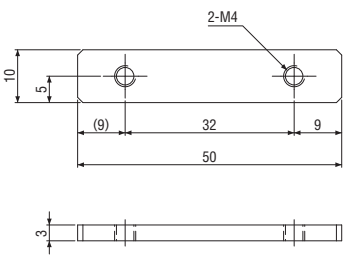


Extended plate (for wear plate)

Order code No.	230071
TYPE	XL0006-104

- Weight: 31g





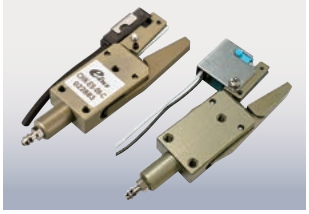
Nut plate·for container cylinder

Order code No.	023196
TYPE	CP-075

- Weight: 10g

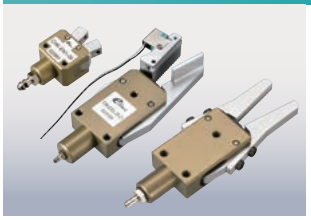
Grippers

Runner Chuck E Series (Claw Superduralumin)



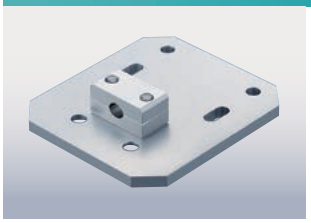
Lightweight, high rigidity, and long operating life with superduralumin.
Mounting selection for Tap type and Eins Parts (jungle-gym series) is possible.
Two types of check limits can be selected.

Runner Chuck E1 Series (Steel Type)



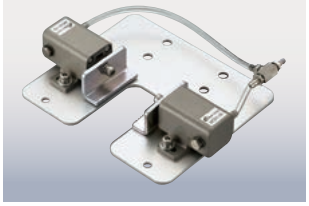
Using superduralumin body and steel claw allows a wide range of uses.
Two types of check limits can be selected.

Runner Module



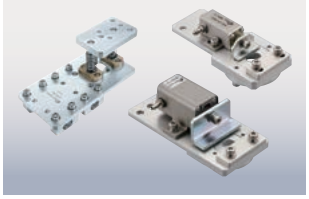
Module kit for runner extraction.
Use the runner chuck after fixing it.

Runner Chuck Plate



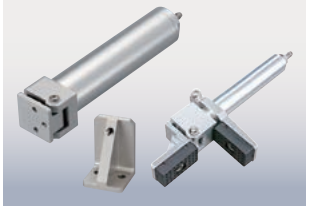
Extracts runners with MCD1-10 mini cylinder which is directly attached to the robot arm.

Runner Chuck Buffer Unit ／ Tunnel Gate Runner Chuck



Jumping tunnel gate is caught with tapered section.

Pipe Combination Chuck ／ Pipe Combination Chuck • Grip



Special cylinder of hinge structure which operates 90 degrees.
Used with jungle gym series parts.
There's also a type with a holding bracket.

Hinge Chuck Clamp Unit (Double Action)



Best Clamp Unit for Hinge Chuck for taking out auto parts of large-scale bumper and Instrument panel, etc.

Magnet Chuck



Neodymium magnet is embedded in the piston section. Using with magnet to transfer steel parts.

Parallel Chucks (Single Action ／ Double Action)



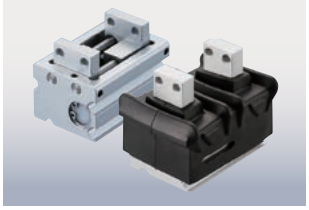
Compact design with low profile and small space.

Three Claws Chuck (Double Action Type)



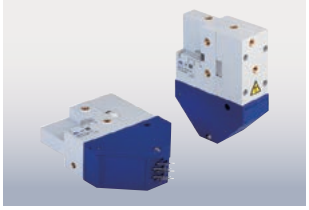
Perfect for gripping the work piece of cylindrical shape.
Grip at the cylinder center with 3 claws.

Parallel Hand 15st (Double Action)



Durable bush guide embedded.
Also available with rubber for clean rooms.

Needle Gripper



Embedded needle allows holding fiber workpiece with high air permeability.

Please refer to the web site for performance table.

Runner Chuck E series (manual, super duralumin)


w/o sensor (straight claw type)


With proximity sensor (straight claw type)


With Limit SW (straight claw type)

Runner Chuck E1 series (Steel claw type)


w/o sensor (straight claw type)


With proximity sensor (straight claw type)


With Limit SW (straight claw type)

Runner Chuck EMR


Claw rubber cap (straight claw type)

■Specification

	Product name		Order code No.	TYPE	Weight (g)	Used air pressure (Mpa)	Grip (N)	Remarks	Page of Details
E series (Super duralumin・straight claw type)	Runner chuck ES (w/o sensor)		022879	CHK-ES-08	18	0.3 ≀ 0.5	5	w/o sensor	2-32
	Runner chuck ES (With proximity sensor)		022883	CHK-ES-08-C	32			Proximity Sensor	
	NEW Runner chuck (With Limit SW)		023456	CHK-ES-08-C1	25			Limit switch	
	Runner chuck EM (w/o sensor)		022878	CHK-EM-12	46		28	W/o sensor	
	Runner chuck EM (With proximity sensor)		022882	CHK-EM-12-C	56			Proximity Sensor	
	NEW Runner chuck EM (With Limit SW)		023457	CHK-EM-12-C1	53			Limit switch	
	Runner chuck EL (w/o sensor)		022877	CHK-EL-12	94		45	W/o sensor	
	Runner chuck EL (With proximity sensor)		022881	CHK-EL-12-C	104			Proximity Sensor	
	NEW Runner chuck EL (With Limit SW)		023458	CHK-EL-12-C1	102			Limit switch	
	Runner chuck EX (w/o sensor)		022876	CHK-EX-20	180		80	W/o sensor	2-33
	Runner chuck EX (With proximity sensor)		022880	CHK-EX-20-C	190			Proximity Sensor	
	NEW Runner chuck EX (With Limit SW)		023459	CHK-EX-20-C1	191			Limit switch	
	NEW Runner chuck EMR (w/o sensor)		023440	CHK-EMR-12	44		28	W/o sensor	
	NEW Claw Cap		023443	CHK-EMR-CPE	0.6		–	–	
E1 series (Steel・straight claw type)	Runner chuck EN (w/o sensor)		022991	CHK-EN1-06	10	0.3 ≀ 0.5	2	W/o sensor	2-34
	Runner chuck ES (w/o sensor)		022992	CHK-ES1-08	22		5	W/o sensor	
	Runner chuck ES (With proximity sensor)		022998	CHK-ES1-08-C	38			Proximity Sensor	
	Runner chuck ES (With Limit SW)		023004	CHK-ES1-08-C1	33			Limit switch	
	Runner chuck EM (w/o sensor)		022993	CHK-EM1-12	67		28	W/o sensor	
	Runner chuck EM (With proximity sensor)		022999	CHK-EM1-12-C	79			Proximity Sensor	
	Runner chuck EM (With Limit SW)		023005	CHK-EM1-12-C1	73			Limit switch	
	Runner chuck EL (w/o sensor)		022994	CHK-EL1-12	143		45	W/o sensor	2-35
	Runner chuck EL (With proximity sensor)		023000	CHK-EL1-12-C	155			Proximity Sensor	
	Runner chuck EL (With Limit SW)		023006	CHK-EL1-12-C1	145			Limit switch	
	Runner chuck EX (w/o sensor)		022995	CHK-EX1-20	280		80	W/o sensor	
	Runner chuck EX (With proximity sensor)		023001	CHK-EX1-20-C	283			Proximity Sensor	
	Runner chuck EX (With Limit SW)		023007	CHK-EX1-20-C1	272			Limit switch	

Please refer to the web site for performance table.

Runner Chuck E1 series
(Steel claw type)


W/o sensor (steel L claw type)


With proximity sensor (steel L claw type)


With Limit SW (steel L claw type)


Runner chuck EM (Attachment/detachment claw)


Runner chuck EM (Proximity sensor·attachment/ detachment claw)


Runner chuck EM (Limit SW·attachment/ detachment claw)

■ Specification

	Product name		Order code No.	TYPE	Weight (g)	Used air pressure (Mpa)	Grip (N)	Remarks	Page of Details
E1 series (steel L claw type)	Runner chuck EL (w/o sensor)		022996	CHK-EL1L-12	170	0.3 ~ 0.5	45	W/o sensor	2-36
	Runner chuck EL (With proximity sensor)		023160	CHK-EL2L-12-C	196			Proximity sensor	
	Runner chuck EL (With Limit SW)		023161	CHK-EL2L-12-C1	186			Limit switch	
	Runner chuck EX (w/o sensor)		022997	CHK-EX1L-20	305		80	W/o sensor	
	Runner chuck EX (With proximity sensor)		023158	CHK-EX2L-20-C	335			Proximity sensor	
	Runner chuck EX (With Limit SW)		023159	CHK-EX2L-20-C1	325			Limit switch	
E1 series (Steel·attachable and detachable type claw)	Runner chuck EM (Detachable/attachable claw)		023284	CHK-EMBF-12	70	0.3 ~ 0.5	28	W/o sensor	2-37
	Runner chuck EM (Proximity sensor·detachable/ attachable claw)		023286	CHK-EMBF-12-C	85			Proximity sensor	
	Runner chuck EM (Limit SW·detachable/ attachable claw)		023288	CHK-EMBF-12-C1	77			Limit switch	
	Runner chuck EM (Attachment/detachment claw)		023285	CHK-EMF-12	12	–	–	W/o sensor	
	Runner chuck EM (Proximity sensor·detachable/ attachable claw)		023287	CHK-EMF-12-C	27	–	–	Proximity sensor	
	Runner chuck EM (Limit SW·detachable/ attachable claw)		023289	CHK-EMF-12-C1	20	–	–	Limit switch	
	Runner chuck EX (Detachable/attachable claw)		023290	CHK-EXBF-20	272	0.3 ~ 0.5	80	W/o sensor	2-38
	Runner chuck EX (Proximity sensor·detachable/ attachable claw)		023292	CHK-EXBF-20-C	287			Proximity sensor	
	Runner chuck EX (Limit SW·detachable/ attachable claw)		023294	CHK-EXBF-20-C1	278			Limit switch	
	Runner chuck EX (Attachment/detachment claw)		023291	CHK-EXF-20	40	–	–	W/o sensor	
	Runner chuck EX (Proximity sensor·attachment/ detachment claw)		023293	CHK-EXF-20-C	54	–	–	Proximity sensor	
	Runner chuck EX (Limit SW·attachment/ detachment claw)		023295	CHK-EXF-20-C1	40	–	–	Limit switch	

Please refer to the web site for performance table.

	Product name		Order code No.	TYPE	Weight (g)	Used air pressure (Mpa)	Grip (N)	Remarks	Page of Details
Sensor switch for exchange	Proximity sensor Ass'y (E series)		023086	CHK-ESE	10	–	–	For ES	2-33
			023087	CHK-EMLXE				For EM,EL,EX	
	Proximity sensor Ass'y (E1 series)		023014	CHK-E1SME	15			For ES1,EM1	2-35
			023015	CHK-E1LXE				For EL1,EX1, EL2L,EX2L	
	Limit switch Ass'y (E1 series)		023016	CHK-E1SW	7			For ES,EM,EL,EX, ES1,EM1, EL1,EX1, EL2L,EX2L	2-33, 35

Product name		Order code No.	TYPE	Weight (g)	Used air pressure (Mpa)	Torque (Nm)	Remarks	Page of Details
Runner module (w/o chuck)		171227	RM-08	111	0.3 ~ 0.5	–	For CHK-ES,ES1	2-39
		171228	RM-12	116			For CHK-EM,EM1, EL,EL2,EL2L	
		171229	RM-20	131			For CHK-EX, EX1,EX2L	
Runner chuck plate		022892	CHK-MCD01	396		19	MCD1-10/ CP-014	
NEW Runner chuck buffer unit		023439	CHK-BU	294.3		–	For CHK-EM,EL	2-40
Tunnel gate runner chuck		090140	J25411-100	76		24	UMCD-10/ CPUM-02	
		090141	J25411-000	185		98	MCD1-10/ CP-014	
Pipe combination chuck E • ϕ12 • 90 deg		090204	J25410-40A	29		0.03	BF-5 (Joint) attached	2-41
Pipe combination chuck D • ϕ20 • 90 deg		090264	J25410-30B	78		0.06		
90 degree flat A		131218	N01871-101	4.4		–	J25410-40A	
90 degree flat B		131479	N01871-102	10.4			J25410-30B MCE-HA	2-41, 42
NEW Pipe combination chuck • grip ϕ12		090262	J25410G-40	52		0.03	BF-5 (Joint) attached	2-41
NEW Pipe combination chuck • grip ϕ20		090263	J25410G-30	102		0.06		
Hinge cylinder		123711	MCE-HA	125		0.08	Double action type, speed control valve included.	2-42
Hinge chuck clamp unit Double action type		110688	L11540-000B	913		–	0 ~ 11.5(degree)	2-43
Hinge chuck suction stem		110567	L11540-109	7			–	

Please refer to the web site for performance table.

Product name		Order code No.	TYPE	Weight (g)	Used air pressure (Mpa)	Remarks	Page of Details
Magnet chuck		123218	MGC-20	95	0.3 ~ 0.5	Double-act-type Cylinder	
Magnet chuck end rubber		123571	MGC-C	3		For MGC-20 end rubber	
Magnet chuck		185352	SSGM 40G1/4-IG	240	0.35 ~ 0.6	W/o sensor	2-44
		185358	SSGM-S-40-G1/4-IG-NPN	260		W/ NPN output sensor	
		185355	SSGM-S-40-G1/4-IG-PNP			W/ PNP output sensor	
		185353	SSGM 50G1/4-IG	440		W/o sensor	
		185359	SSGM-S-50-G1/4-IG-NPN	460		W/ NPN output sensor	
		185356	SSGM-S-50-G1/4-IG-PNP			W/ PNP output sensor	
		185354	SSGM 70G1/4-IG	715		W/o sensor	
		185360	SSGM-S-70-G1/4-IG-NPN	735		W/ NPN output sensor	
		185357	SSGM-S-70-G1/4-IG-PNP			W/ PNP output sensor	
Parallel chuck 5st (single)		072172	HC-5S	32	0.3 ~ 0.6	5mm (stroke)	2-46
Parallel chuck 10st (single)		072171	HC-10S	70		10mm (stroke)	
Parallel chuck 10st (double)		072170	HC-10				
NEW Parallel chuck 20st (single)		073319	HC-20S	288		20mm (stroke)	
NEW Parallel chuck 20st (double)		073318	HC-20	284			
With two-wire-type limit switch: Parallel chuck 5st (single)		072702	HC1-5S-C1	50	0.4 ~ 0.6	5mm (stroke)	
With two-wire-type limit switch: Parallel chuck 10st (single)		072703	HC1-10S-C1	95		10mm (stroke)	
With two-wire-type limit switch: Parallel chuck 10st (double)		072705	HC1-10-C1				
With two-wire-type limit switch: Parallel chuck 20st (single)		072704	HC1-20S-C1	305		20mm (stroke)	
With two-wire-type limit switch: Parallel chuck 20st (double)		072706	HC1-20-C1	300			
Claws: Claw • for parallel chuck		023215	CP-HC10N	9	–	For HC1-10,10S	2-47
		023216	CP-HC20N	26		For HC1-20, 20S	

Please refer to the web site for performance table.

Product name		Order code No.	TYPE	Weight (g)	Used air pressure (Mpa)	Remarks	Page of Details
Spacer	Spacer • for parallel chuck	023217	CP-HC10S	1	–	For HC1-10, 10S	2-47
		023218	CP-HC20S	2		For HC1-20, 20S	
Auto switch (reed SW)		030282	D-A93	6		Reed Sw	2-42, 45,46,48
Auto switch (contactless)		030425	D-M9N	8		Contactless	2-42,45, 46,48,49
Limit switch Ass'y		072708	HC1-SW1	10		For HC1-5S/10/10S Mounting bolt nut attached	2-46
		072709	HC1-SW2			For HC1-20/20S Mounting bolt nut attached	
Parallel chuck 40st (double) ＊2		282205	2HC1-80	650	0.4 ～ 0.6	40mm × 2 (stroke)	2-48
NEW Three claws chuck		197258	TCC-16	60	0.2 ～ 0.7	4mm (stroke)	2-45
		197259	TCC-25	140		6mm (stroke)	
		197260	TCC-32	250		8mm (stroke)	
Parallel chuck (Single action type)	Standard type	123401	MHZ2-10S	55		4mm (stroke)	2-49
	Narrow type	122451	MHZ2-10SN				
Parallel hand 15st (double)		071996	HLA-12AS	152	0.3 ⌇ 0.7	15mm (stroke)	2-50
Parallel hand 20st (double)		070986	HLA-15AS	276		20mm (stroke)	
Parallel hand 25st (double)		071997	HLA-20AS	504		25mm (stroke)	
Parallel hand 15st w/ rubber cover		071999	HLAG-12AS	157		15mm (stroke)	
Parallel hand 20st w/ rubber cover		072000	HLAG-15AS	281		20mm (stroke)	
Auto switch (contactless)		010633	E16-M1	18	–	Contactless	
Needle gripper		186255	SNG-M-4-0.8	80	0.3 ⌇ 0.6	Diameter: 0.8mm	2-51
		186256	SNG-AP-10-0.8-V-10	225			
		186257	SNG-AP-10-1.2-V-10			Diameter: 1.2mm	
Needle piston set for exchange (4 pcs)		041925	ERS-SET-SNG-M-0.8	12	–	For SNG-M-4-0.8	
Needle holder set for exchange (2 pcs)		041926	ERS-SET-SNG-AP/AE-0.8-10	6		For SNG-AP-10-0.8-V-10	
		041927	ERS-SET-SNG-AP/AE-1.2-10			For SNG-AP-10-1.2-V-10	

Runner Chuck E Series (Claw Superduralumin)

Lightweight, high rigidity, and long operating life with superduralumin.

Attach with tapped hole or Eins connector parts (Jungle Gym ø8 series).



CHK-ES-08-C

Runner chuck ES w/o sensor

Order code No.	022879
TYPE	CHK-ES-08

- Weight: 18g ● Grip: 5N
- Joint pipe fitting BF-3 included

Runner chuck ES With proximity sensor

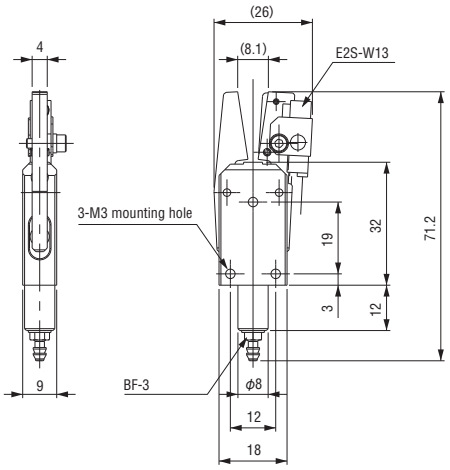
Order code No.	022883
TYPE	CHK-ES-08-C

- Weight: 32g ● Grip: 5N
- Joint pipe fitting BF-3 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

Runner chuck ES With Limit SW NEW

Order code No.	023456
TYPE	CHK-ES-08-C1

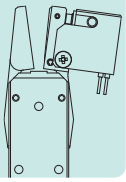
- Weight: 25g ● Grip: 5N
- Joint pipe fitting BF-3 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



W/o sensor



With Limit SW



Attach with tapped hole or Eins connector parts (Jungle Gym ø12 series).



CHK-EM-12-C

Runner chuck EM w/o sensor

Order code No.	022878
TYPE	CHK-EM-12

- Weight: 46g ● Grip: 28N
- Joint pipe fitting BF-5 included

Runner chuck EM With proximity sensor

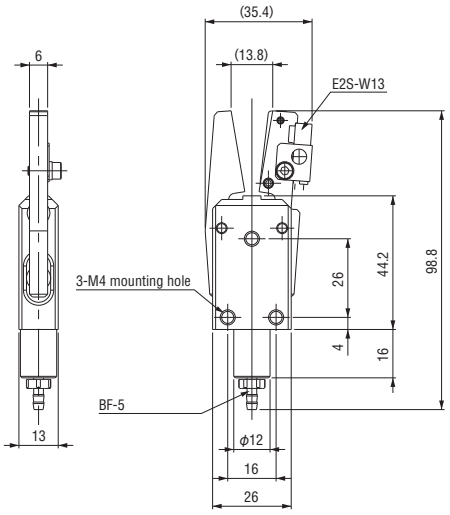
Order code No.	022882
TYPE	CHK-EM-12-C

- Weight: 56g ● Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

Runner chuck EM With Limit SW NEW

Order code No.	023457
TYPE	CHK-EM-12-C1

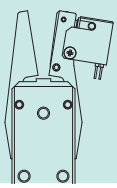
- Weight: 53g ● Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



W/o sensor



With Limit SW



Attach with tapped hole or Eins connector parts (Jungle Gym ø12 series).



CHK-EL-12-C

Runner chuck EL w/o sensor

Order code No.	022877
TYPE	CHK-EL-12

- Weight: 94g ● Grip: 45N
- Joint pipe fitting BF-5 included

Runner chuck EL With proximity sensor

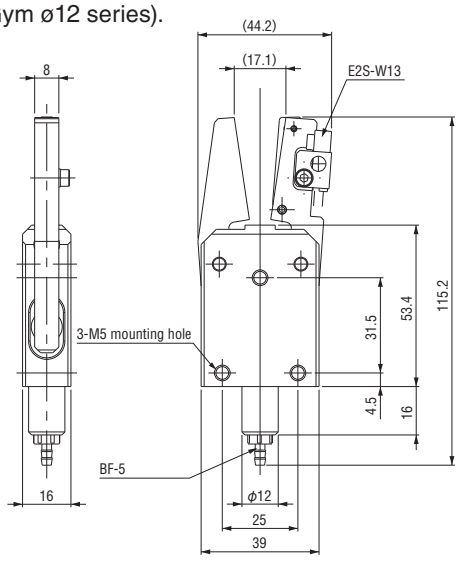
Order code No.	022881
TYPE	CHK-EL-12-C

- Weight: 104g ● Grip: 45N
- Joint pipe fitting BF-5 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

Runner chuck EL With Limit SW NEW

Order code No.	023458
TYPE	CHK-EL-12-C1

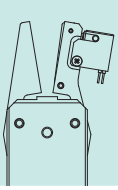
- Weight: 102g ● Grip: 45N
- Joint pipe fitting BF-5 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



W/o sensor



With Limit SW



▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 20 series).



CHK-EX-20-C

Runner chuck EX w/o sensor

Order code No.	022876
TYPE	CHK-EX-20

- Weight: 180g
- Grip: 80N
- Joint pipe fitting BF-6 included

Runner chuck EX With proximity sensor

Order code No.	022880
TYPE	CHK-EX-20-C

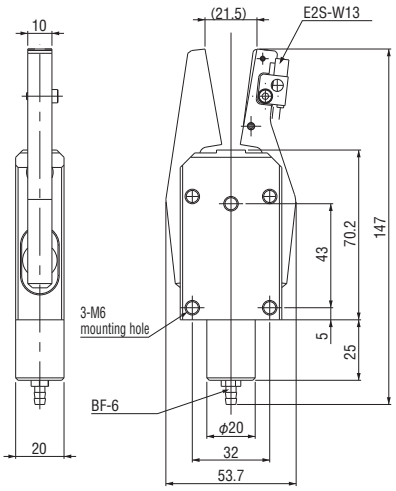
- Weight: 190g
- Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

Runner chuck With Limit SW

NEW

Order code No.	023459
TYPE	CHK-EX-20-C1

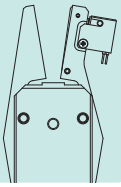
- Weight: 191g
- Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



W/o sensor



With Limit SW





Proximity sensor Ass'y

Order code No.	023086
TYPE	CHK-ESE

- Weight: 10g
- NPN Output
- For: for ES (Installation to E1 series is impossible).
- Set Includes: proximity sensor, mounting bracket, spring, mounting bolts
- Terminal process is not made.
- Harness length: 1,000mm

■Specifications of sensor section

TYPE	E2S-W13
Power supply voltage	DC12 - 24V
Current consumption	13mA or less
Control output	NPN
Lead wire	1M brown (+V) black (output) blue (0V)
Others	Indicator light



Proximity sensor Ass'y

Order code No.	023087
TYPE	CHK-EMLXE

- Weight: 10g
- NPN Output
- For: for EM/EL/EX (Installation to E1 series is impossible).
- Set Includes: proximity sensor, mounting bracket, spring, mounting bolts
- Terminal process is not made.
- Harness length: 1,000mm



Limit switch ass'y

Order code No.	023016
TYPE	CHK-E1SW

- Weight: 7g
- For: E1 series (ES1/EM1/EL1/EX1/EL2L/EX2L)
  E series (ES/EM/EL/EX)
- Set Includes: proximity sensor, mounting bracket, mounting bolts
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm

▶ A rubber cap is affixed to the head of the runner chuck. This feature serves to prevent both the runner and the product from slipping, as well as to protect the product from scratches.

NEW



Runner chuck EMR (w/o sensor)

Order code No.	023440
TYPE	CHK-EMR-12

- Weight: 44g
- Grip: 28N
- Joint pipe fitting BF-5 included
- The sensor cannot be installed.

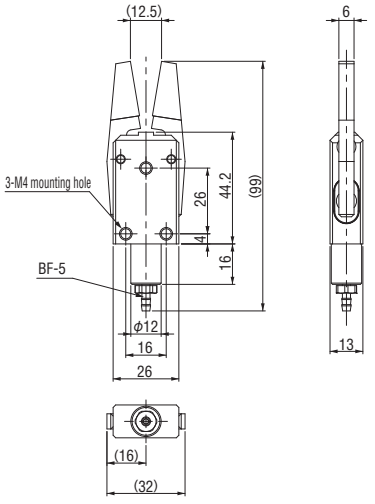
NEW

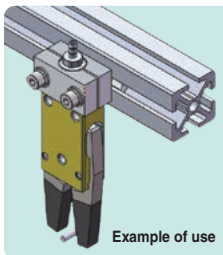


Claw Cap

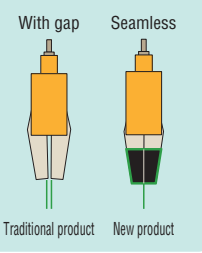
Order code No.	023443
TYPE	CHK-EMR-CPE

- Weight: 0.6g
- Material: Ethylene Propylene Rubber (EPDM)
- For CHK-EMR-12





Example of use



Runner Chuck E1 Series (Steel Type)

Higher wear resistance steel claws.

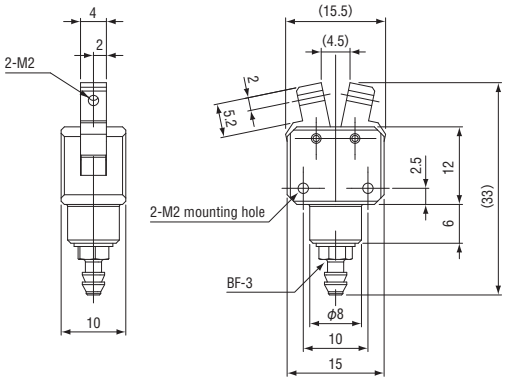
▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 8 series).



Runner chuck EN w/o sensor

Order code No.	022991
TYPE	CHK-EN1-06

- Weight: 10g
- Grip: 2N
- Joint pipe fitting BF-3 included
- Sensor cannot be retrofitted.



▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 8 series).



CHK-ES1-08

Runner chuck ES w/o sensor

Order code No.	022992
TYPE	CHK-ES1-08

- Weight: 22g
- Grip: 5N
- Joint pipe fitting BF-3 included
- Sensor cannot be retrofitted.

Runner chuck ES With proximity sensor

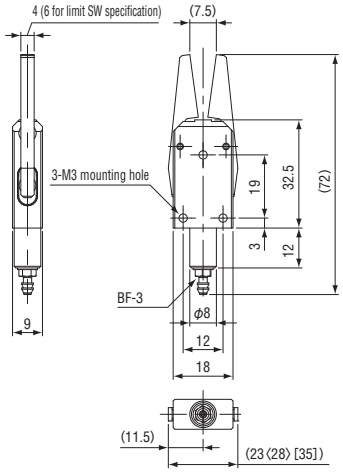
Order code No.	022998
TYPE	CHK-ES1-08-C

- Weight: 38g
- Grip: 5N
- Joint pipe fitting BF-3 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

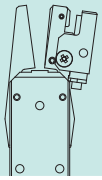
Runner chuck ES With Limit SW

Order code No.	023004
TYPE	CHK-ES1-08-C1

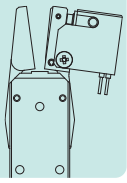
- Weight: 33g
- Grip: 5N
- Joint pipe fitting BF-3 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



With proximity sensor



With Limit SW



∗ Base drawing: CHK-ES1-08
∗ Dimension < >: CHK-ES1-08-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-ES1-08-C1 The dimension includes the size of the proximity switch.

▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 12 series).



CHK-EM1-12

Runner chuck EM w/o sensor

Order code No.	022993
TYPE	CHK-EM1-12

- Weight: 67g
- Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor cannot be retrofitted.

Runner chuck EM With proximity sensor

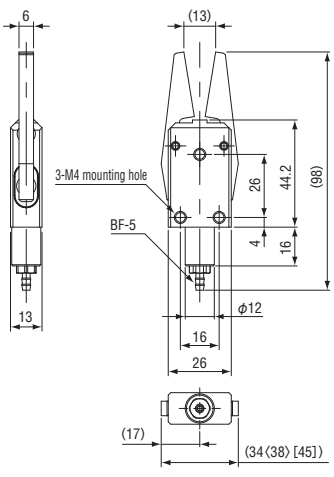
Order code No.	022999
TYPE	CHK-EM1-12-C

- Weight: 79g
- Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

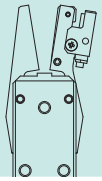
Runner chuck EM With Limit SW

Order code No.	023005
TYPE	CHK-EM1-12-C1

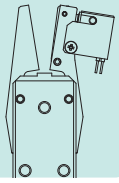
- Weight: 73g
- Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



With proximity sensor



With Limit SW



∗ Base drawing: CHK-EM1-12
∗ Dimension < >: CHK-EM1-12-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-EM1-12-C1 The dimension includes the size of the proximity switch.

Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 12 series).



CHK-EL1-12

Runner chuck EL w/o sensor

Order code No.	022994
TYPE	CHK-EL1-12

- Weight: 143g ● Grip: 45N
- Joint pipe fitting BF-5 included
- Sensor cannot be retrofitted.

Runner chuck EL With proximity sensor

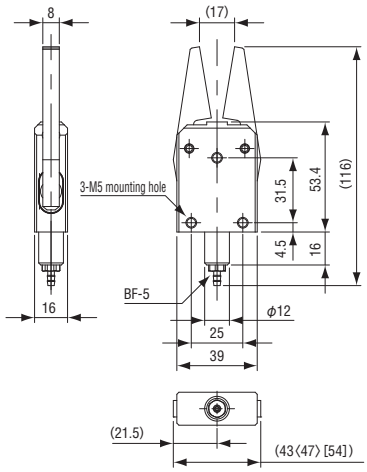
Order code No.	023000
TYPE	CHK-EL1-12-C

- Weight: 155g ● Grip: 45N
- Joint pipe fitting BF-5 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

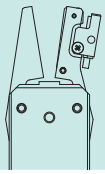
Runner chuck EL With Limit SW

Order code No.	023006
TYPE	CHK-EL1-12-C1

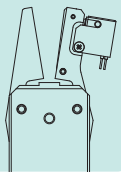
- Weight: 145g ● Grip: 45N
- Joint pipe fitting BF-5 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



With proximity sensor



With Limit SW



∗ Base drawing: CHK-EL1-12
∗ Dimension < >: CHK-EL1-12-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-EL1-12-C1 The dimension includes the size of the proximity switch.

Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 20 series).



CHK-EX1-20

Runner chuck EX w/o sensor

Order code No.	022995
TYPE	CHK-EX1-20

- Weight: 280g ● Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor cannot be retrofitted.

Runner chuck EX With proximity sensor

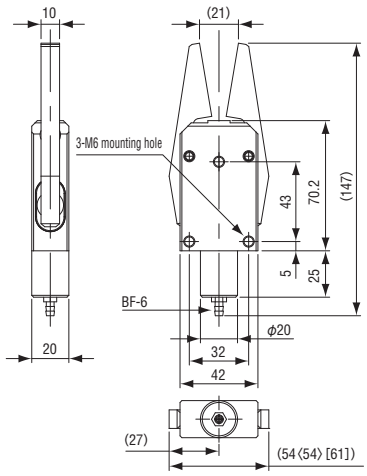
Order code No.	023001
TYPE	CHK-EX1-20-C

- Weight: 283g ● Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

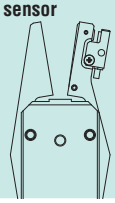
Runner chuck EX With Limit SW

Order code No.	023007
TYPE	CHK-EX1-20-C1

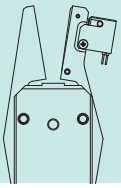
- Weight: 272g ● Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



With proximity sensor



With Limit SW



∗ Base drawing: CHK-EX1-20
∗ Dimension < >: CHK-EX1-20-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-EX1-20-C1 The dimension includes the size of the proximity switch.



Proximity sensor Ass'y

Order code No.	023014
TYPE	CHK-E1SME

- Weight: 15g ● NPN output
- For: ES1/EM1 (Installation to E series is impossible).
- Set Includes: proximity sensor, mounting bracket, mounting bolts
- Terminal process is not made.
- Harness length: 1,000mm



Proximity sensor Ass'y

Order code No.	023015
TYPE	CHK-E1LXE

- Weight: 15g ● NPN output
- For: EL1/EX1/EL2L/EX2L (Installation to E series is impossible).
- Set Includes: proximity sensor, mounting bracket, mounting bolts
- Terminal process is not made.
- Harness length: 1,000mm



Limit switch Ass'y

Order code No.	023016
TYPE	CHK-E1SW

- Weight: 7g
- For: E1 series (ES1/EM1/EL1/EX1/EL2L/EX2L)
  E series (ES/EM/EL/EX)
- Set Includes: proximity sensor, mounting bracket, mounting bolts
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm

Runner Chuck E1 Series (Steel L Claw Type)

Higher wear resistance steel claws.

▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 12 series).



CHK-EL1L-12

Runner chuck EL w/o sensor

Order code No.	022996
TYPE	CHK-EL1L-12

- Weight: 170g
- Grip: 45N
- Joint pipe fitting BF-5 included
- Sensor cannot be retrofitted.

Runner chuck EL With proximity sensor

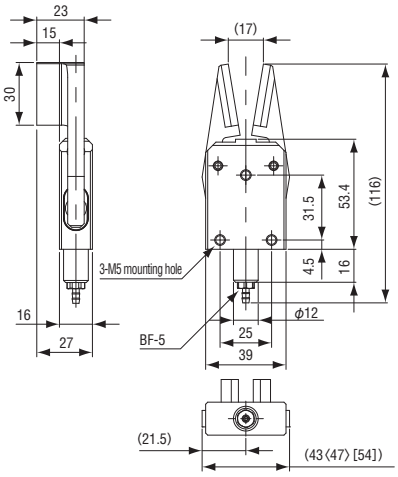
Order code No.	023160
TYPE	CHK-EL2L-12-C

- Weight: 196g
- Grip: 45N
- Joint pipe fitting BF-5 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

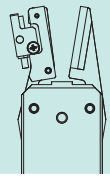
Runner chuck EL With Limit SW

Order code No.	023161
TYPE	CHK-EL2L-12-C1

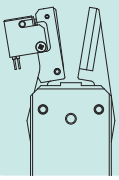
- Weight:186g
- Grip:45N
- Joint pipe fitting BF-5 included
- Sensor: direct current, two-wire system.
- Sensor mounting position was changed.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



With proximity sensor



With Limit SW



∗ Base drawing: CHK-EL1L-12
∗ Dimension < >: CHK-EL2L-12-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-EL2L-12-C1 The dimension includes the size of the proximity switch.

▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 20 series).



CHK-EX1L-20

Runner chuck EX w/o sensor

Order code No.	022997
TYPE	CHK-EX1L-20

- Weight: 305g
- Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor cannot be retrofitted.

Runner chuck EX With proximity sensor

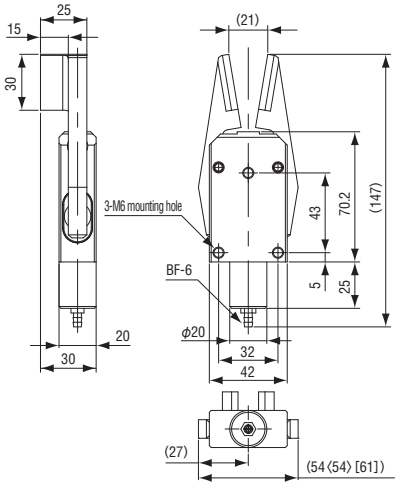
Order code No.	023158
TYPE	CHK-EX2L-20-C

- Weight: 335g
- Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

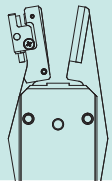
Runner chuck EX With Limit SW

Order code No.	023159
TYPE	CHK-EX2L-20-C1

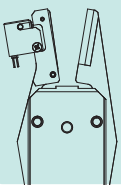
- Weight: 325g
- Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, two-wire system.
- Sensor mounting position was changed.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



With proximity sensor



With Limit SW

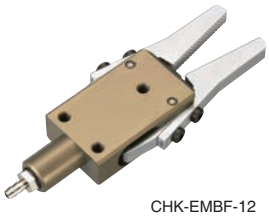


∗ Base drawing: CHK-EX1L-20
∗ Dimension < >: CHK-EX2L-20-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-EX2L-20-C1 The dimension includes the size of the proximity switch.

Runner Chuck E1 Series (Detachable / Attachable Claw)

Chuck claw exchange type newly added to product lineup.

▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 12 series).

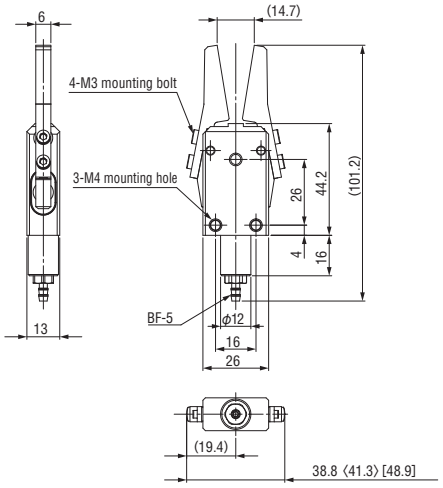


CHK-EMBF-12

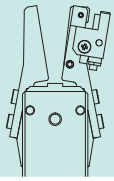
Runner chuck EM (Detachable/attachable claw)

Order code No.	023284
TYPE	CHK-EMBF-12

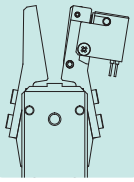
- Weight: 70g ● Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor cannot be retrofitted.



With proximity sensor



With Limit SW



Runner chuck EM (Proximity sensor·detachable/attachable claw)

Order code No.	023286
TYPE	CHK-EMBF-12-C

- Weight: 85g ● Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

Runner chuck EM (Limit SW·detachable/attachable claw)

Order code No.	023288
TYPE	CHK-EMBF-12-C1

- Weight: 77g ● Grip: 28N
- Joint pipe fitting BF-5 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm

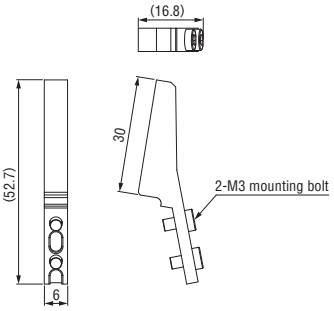
∗ Base drawing: CHK-EMBF-12
∗ Dimension < >: CHK-EMBF-12-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-EMBF-12-C1 The dimension includes the size of the proximity switch.



Runner chuck EM (Attachment/detachment claw)

Order code No.	023285
TYPE	CHK-EMF-12

- Weight: 12g
- Sensor cannot be retrofitted.

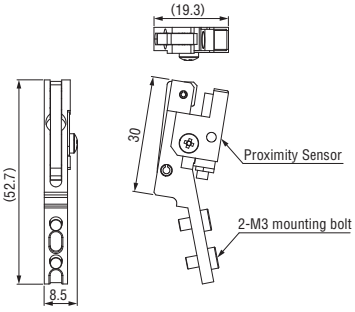




Runner chuck EM (Proximity sensor·attachment/detachment claw)

Order code No.	023287
TYPE	CHK-EMF-12-C

- Weight: 27g
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm
- Sensor Ass'y ➡ See 2-35 (Sensor: CHK-E1SME)

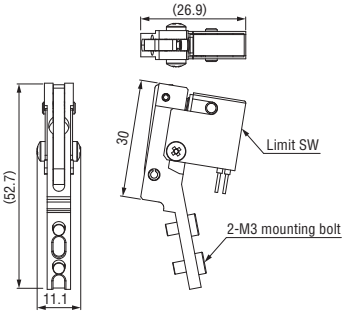




Runner chuck EM (Limit SW·attachment/detachment claw)

Order code No.	023289
TYPE	CHK-EMF-12-C1

- Weight: 20g
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm
- Sensor Ass'y ➡ See 2-35 (Sensor: CHK-E1SW)



▶ Attach with tapped hole or Eins connector parts (Jungle Gym ϕ 20 series).



CHK-EXBF-20

Runner chuck EX (Detachable/attachable claw)

Order code No.	023290
TYPE	CHK-EXBF-20

- Weight: 272g ● Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor cannot be retrofitted.

Runner chuck EX (Proximity sensor·detachable/attachable claw)

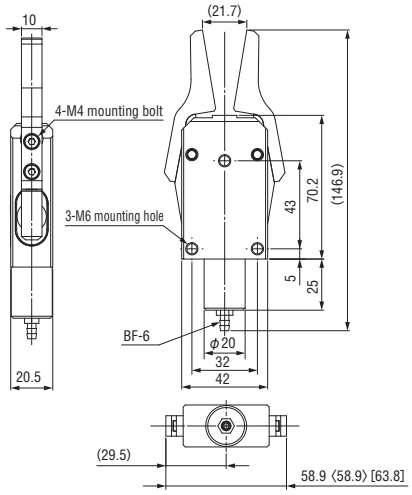
Order code No.	023292
TYPE	CHK-EXBF-20-C

- Weight: 287g ● Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm

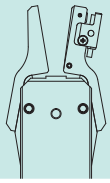
Runner chuck EX (Limit SW·detachable/attachable claw)

Order code No.	023294
TYPE	CHK-EXBF-20-C1

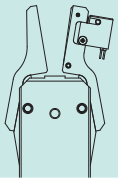
- Weight: 278g ● Grip: 80N
- Joint pipe fitting BF-6 included
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm



With proximity sensor



With Limit SW



∗ Base drawing: CHK-EXBF-20
∗ Dimension < >: CHK-EXBF-20-C The dimension includes the size of the proximity switch.
∗ Dimension [ ]: CHK-EXBF-20-C1 The dimension includes the size of the proximity switch.

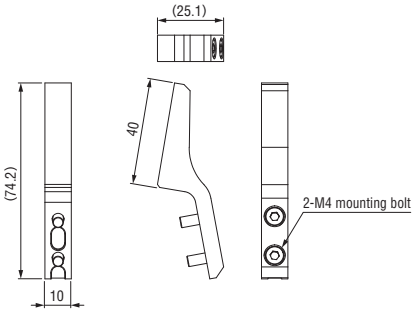
▶ Claw Ass'y with attachable and detachable claw.



Runner chuck EX (Attachment/detachment claw)

Order code No.	023291
TYPE	CHK-EXF-20

- Weight: 40g
- Sensor cannot be retrofitted.

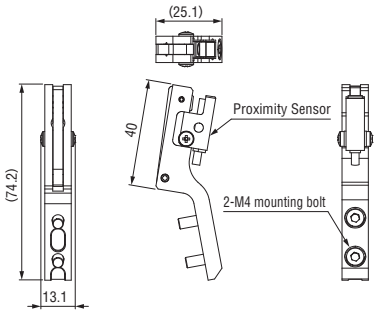




Runner chuck EX (Proximity sensor·attachment/detachment claw)

Order code No.	023293
TYPE	CHK-EXF-20-C

- Weight: 54g
- Sensor: direct current, three-wire system.
- Terminal process is not made.
- Harness length: 1,000mm
- Sensor Ass'y ➡ See (2-35)
  (sensor : CHK-E1LXE)

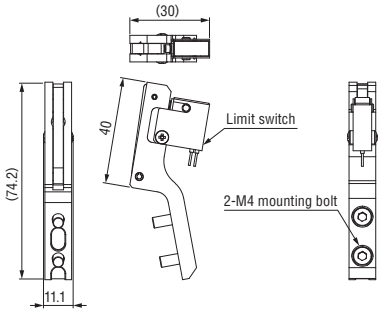




Runner chuck EX (Limit SW·attachment/detachment claw)

Order code No.	023295
TYPE	CHK-EXF-20-C1

- Weight: 40g
- Sensor: direct current, two-wire system.
- Rated current: 1mA 5VAC to 100mA 30VDC
- Terminal process is not made.
- Harness length: 300mm
- Sensor Ass'y ➡ See (2-35)
  (sensor : CHK-E1SW)



Runner Module / Runner Chuck Plate

Runner chuck unit directly detachable to the robot arm.

▶ Module unit with runner chuck.



Runner module w/o chuck

Order code No.	171227
TYPE	RM-08

- Runner chuck is sold separately.
- Runner chuck mounting bracket: Slide bracket Wϕ8
- Weight: 111g

Applicable chuck
CHK-ES/ES1 Type



Runner module w/o chuck

Order code No.	171228
TYPE	RM-12

- Runner chuck is sold separately.
- Runner chuck mounting bracket: Slide bracket Wϕ12
- Weight: 116g

Applicable chuck
CHK-EM/EM1/EL/EL1/EL2L/EMBF Type



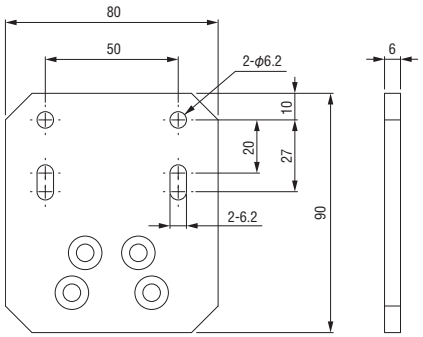
Runner module w/o chuck

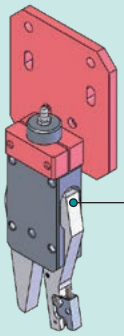
Order code No.	171229
TYPE	RM-20

- Runner chuck is sold separately.
- Runner chuck mounting bracket: Slide bracket Wϕ20
- Weight: 131g

Applicable chuck
CHK-EX/EX1/EX2L/EXBF Type

Three-point common plate



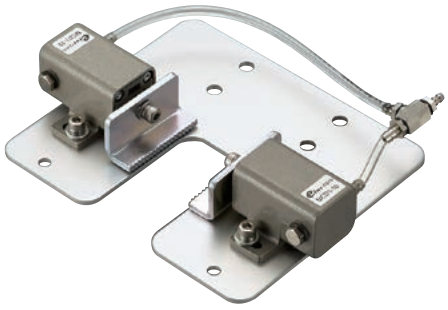


Example of installation

Select the runner chuck from (2-32) - (2-38).

* Select the chuck plate according to the size of the slide bracket for mounting runner chuck.
* Runner chuck is sold separately.

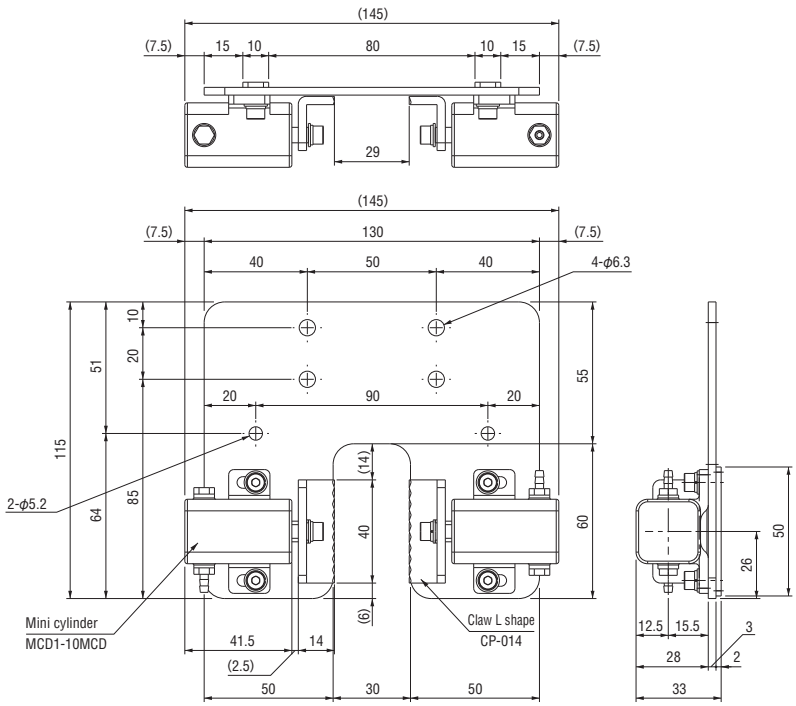
▶ Runner chuck which grips runners with mini cylinders.



Runner chuck plate

Order code No.	022892
TYPE	CHK-MCD01

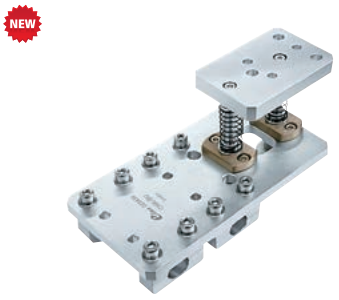
- Weight: 396g
- Joint pipe fitting BF-5 included

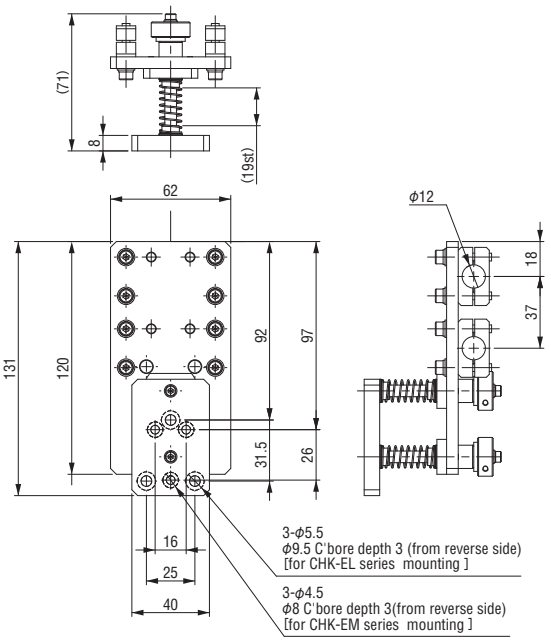


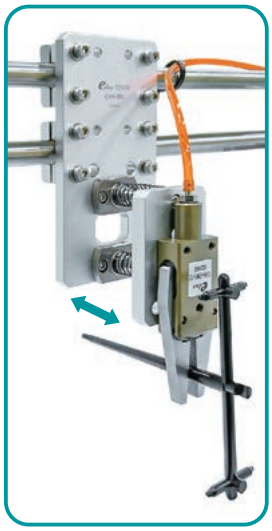
Runner Chuck Buffer Unit / Tunnel Gate Runner Chuck

Perfect for gripping the runner of tunnel gate type.

▶ The specific protruding ejector of tunnel gate is absorbed by buffer.







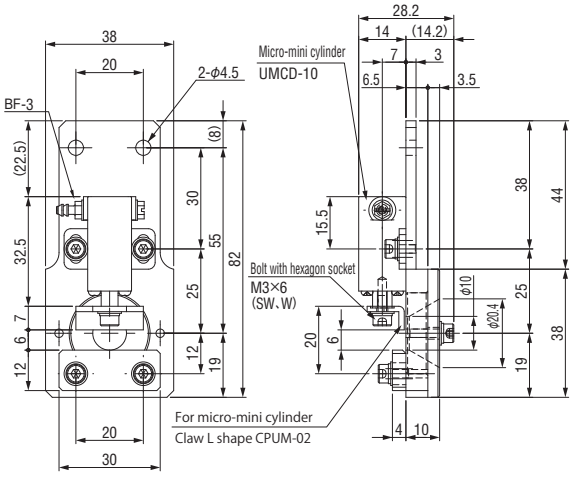
Runner chuck buffer unit

Order code No.	023439
TYPE	CHK-BU

- Weight: 294.3g
- Runner chuck is sold separately. For CHK-EM or ELType.
- Buffer stroke:19st (MAX)
- For Jungle Gym ϕ12
- When using the runner chuck EL type, please replace the mounting plate.

▶ Jumping tunnel gate is caught with tapered section.

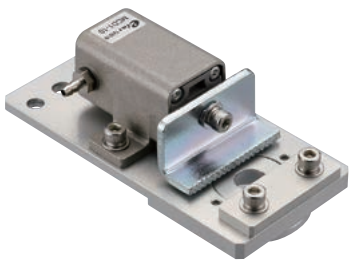


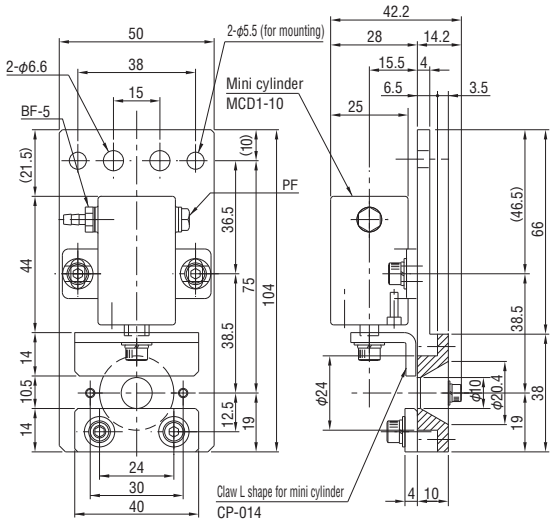


Tunnel gate runner chuck

Order code No.	090140
TYPE	J25411-100

- Weight: 76g
- Use Micro-mini cylinder





Tunnel gate runner chuck

Order code No.	090141
TYPE	J25411-000

- Weight: 185g
- Use mini cylinder

Pipe Combination Chuck / Pipe Combination Chuck • Grip

Special cylinder of hinge structure which operates 90 degrees. Connection to jungle gym is possible.

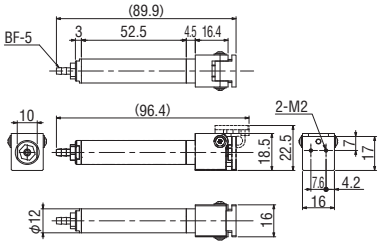
▶ High-strength specification of link section



Pipe combination chuck E• ϕ12 • 90 deg

Order code No.	090204
TYPE	J25410-40A

- Weight: 29g
- Joint pipe fitting BF-5 included
- Torque: 0.03Nm
- Structure : Single Action Type

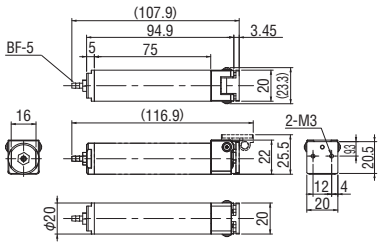




Pipe combination chuck D• ϕ20 • 90 deg

Order code No.	090264
TYPE	J25410-30B

- Weight: 78g
- Joint pipe fitting BF-5 included
- Torque: 0.06Nm
- Structure : Single Action Type



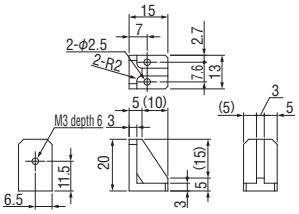
▶ Option

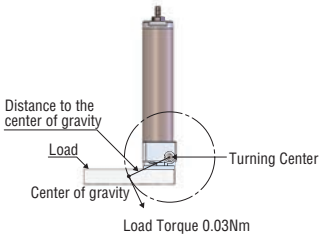


90 degree flat A

Order code No.	131218
TYPE	N01871-101

- Weight: 4.4g



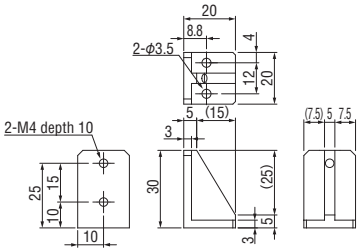


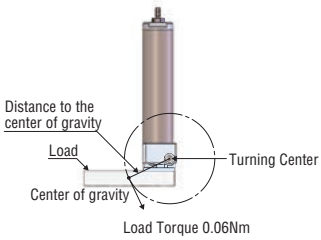


90 degree flat B

Order code No.	131479
TYPE	N01871-102

- Weight: 10.4g





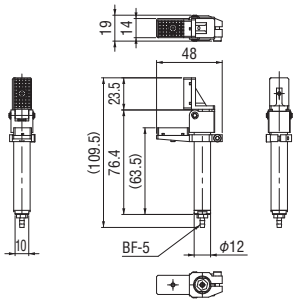
▶ The pipe combination chuck and holding bracket enable gripping of the product by hinge action.



Pipe combination chuck • grip ϕ12

Order code No.	090262
TYPE	J25410G-40

- Structure : Single Action Type
- Weight: 52g
- Gripping force:0.03Nm
- Joint pipe fitting BF-5 included
- Position of holding bracket is adjustable

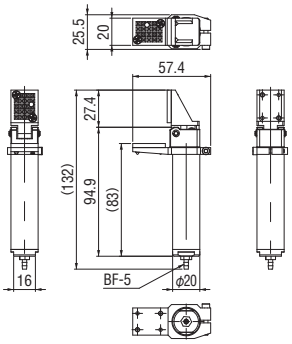




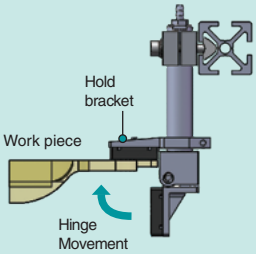
Pipe combination chuck • grip ϕ20

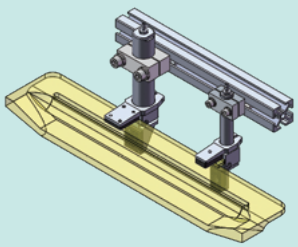
Order code No.	090263
TYPE	J25410G-30

- Structure : Single Action Type
- Weight: 102g
- Gripping force:0.06Nm
- Joint pipe fitting BF-5 included
- Position of holding bracket is adjustable



The product is held by the holding bracket and hinge action.





Hinge Cylinder

Special cylinder of hinge structure which operates 90 degrees.

Hinge cylinder



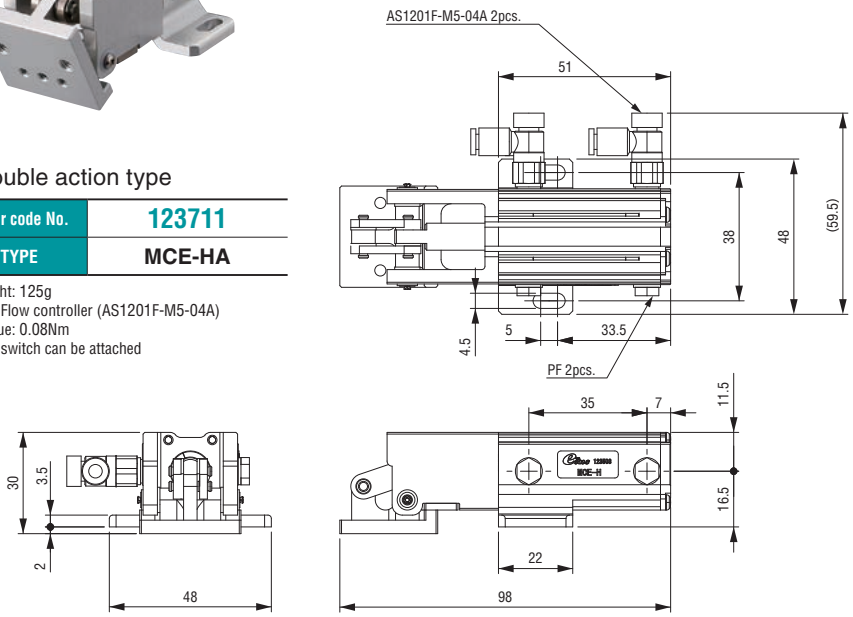
You can see moving images of products by using QR code reader of your smartphone.

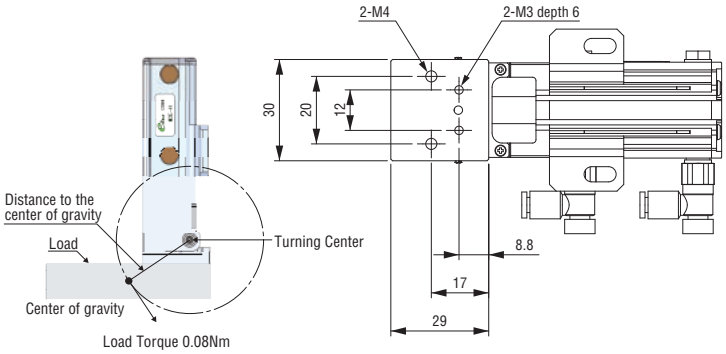


Double action type

Order code No.	123711
TYPE	MCE-HA

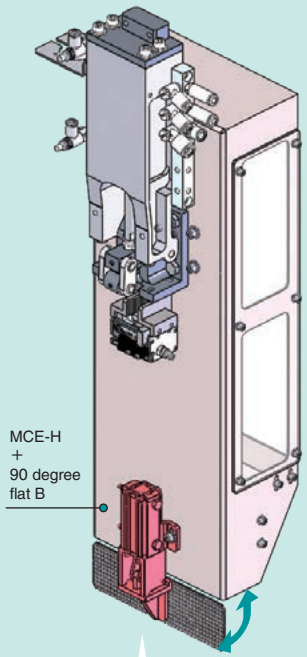
- Weight: 125g
- With Flow controller (AS1201F-M5-04A)
- Torque: 0.08Nm
- Auto switch can be attached

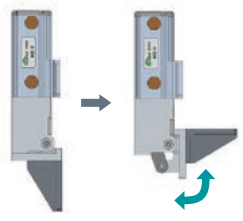




Example of use

[Used to open/close the bottom plate of BOX chuck.]



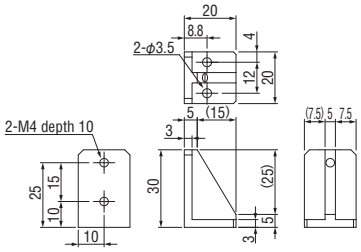




90 degree flat B

Order code No.	131479
TYPE	N01871-102

- Weight: 10.4g





Auto switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: 5mA-40mA
- Lead wire: 0.5M OUT (+) brown OUT (-) blue
- Indicator light
- Terminal process is not made.
- Wiring ➡ See 6-20
- Length: 0.5m



Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

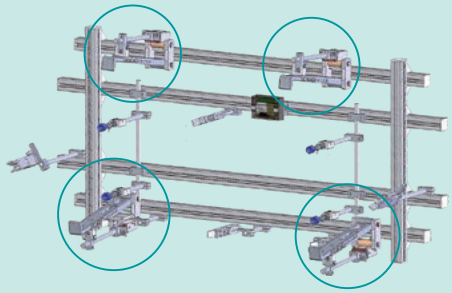
- Weight: 8g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: -40mA or lower
- Lead wire: 0.5m brown (+) blue (-)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See 6-20
- Length: 0.5m

Hinge Chuck Clamp Unit (Double Action)

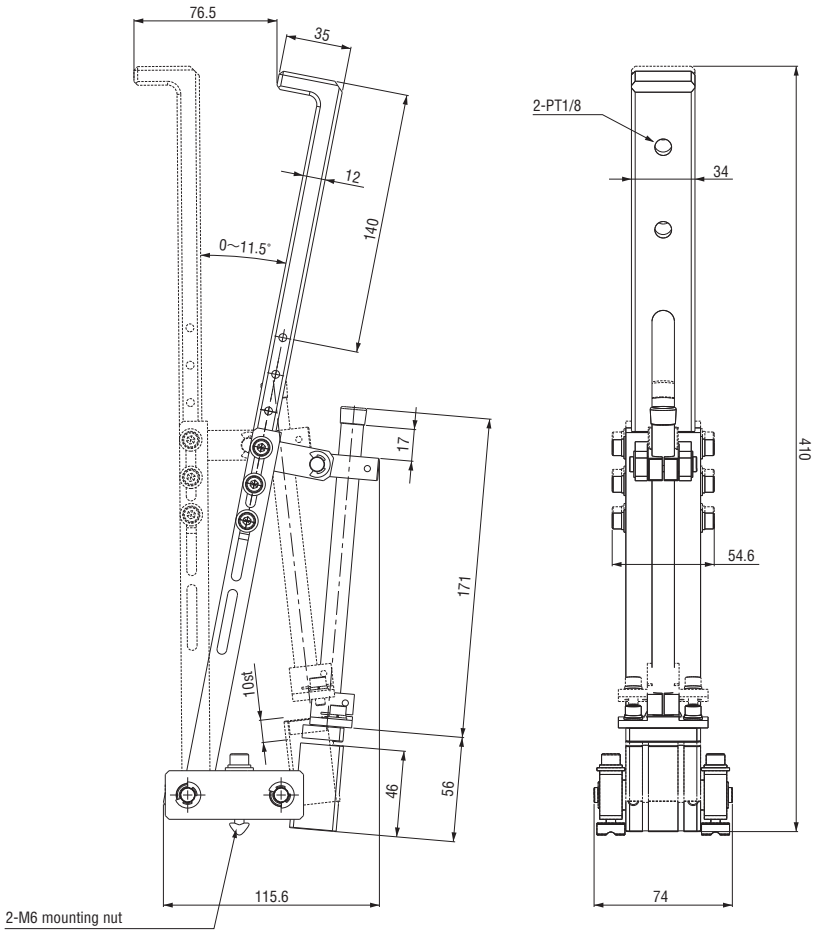
Best for extracting large parts.

- Double action type hinge chuck consist with mini container cylinder.
- Best solution for large parts extraction like automobile bumper or instrument panel, etc.

Example of use







Hinge chuck • clamp unit

Order code No.	110688
TYPE	L11540-000B

- Weight: 913g
- Pipe joint is sold separately. ➡ See 6-5,6,7

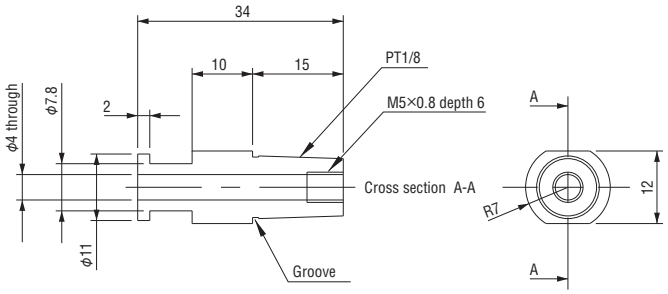
- Suction cup small series can be mounted.



Hinge chuck • suction stem

Order code No.	110567
TYPE	L11540-109

- Weight: 7g



Magnet Chucks

Neodymium magnet is embedded in the chuck parts.

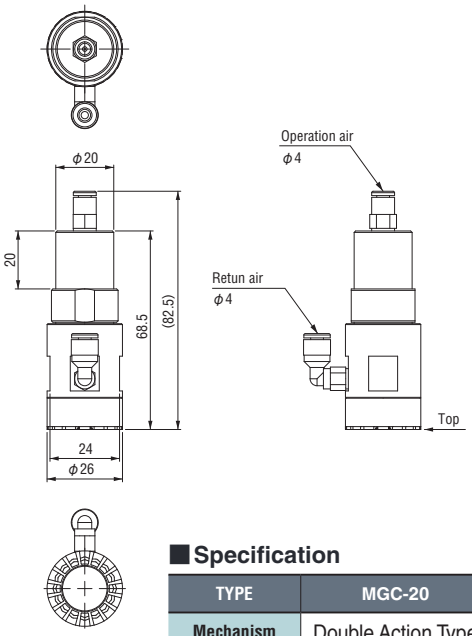
Magnet chucks



You can see moving images of products by using QR code reader of your smartphone.

- Powerful holding force with the magnet.
- Lightweight with compact design
- Jungle gym with ϕ 20 series
- Using with magnet to transfer steel parts.







Example of use for a steel plate transport chuck

Magnet chuck

Order code No.	123218
TYPE	MGC-20

- Double-act-type cylinder
- Weight: 95g
- Joint pipe fitting KQ2L04-M5N included



Magnet chuck end rubber

Order code No.	123571
TYPE	MGC-C

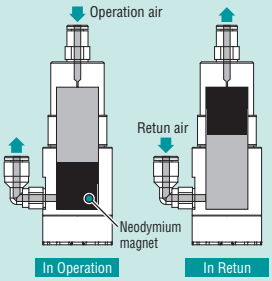
- Weight: 3g
- Material: urethane rubber

Specification

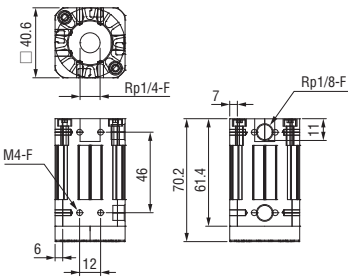
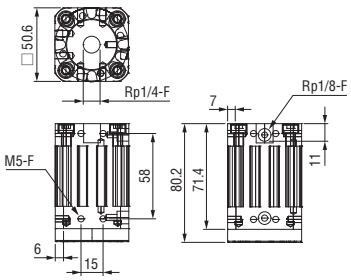
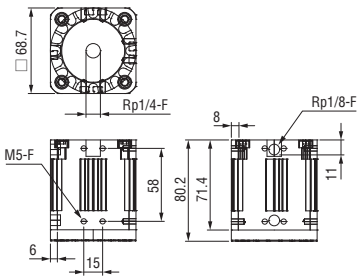
TYPE	MGC-20
Mechanism	Double Action Type
Air pressure	0.39 ~ 0.49Mpa
Holding force	25N
Residual magnet*	0.01N Max.

* Indicates the residual magnet at the top in return operation.

Operation image



- Strong holding of uneven / perforated steel plate with permanent magnet!
  Product with sensor to detect magnet position is also available.

Holding force		100N	180N	290N
Magnet chuck				
Drawing				
W/O sensor	Order code No.	185352	185353	185354
	TYPE	SSGM 40G 1/4-IG	SSGM 50G 1/4-IG	SSGM 70G 1/4-IG
	Weight	240g	440g	715g
W/ NPN output sensor	Order code No.	185358	185359	185360
	TYPE	SSGM-S-40-G1/4-IG-NPN	SSGM-S-50-G1/4-IG-NPN	SSGM-S-70-G1/4-IG-NPN
	Weight	260g	460g	735g
W/ PNP output sensor	Order code No.	185355	185356	185357
	TYPE	SSGM-S-40-G1/4-IG-PNP	SSGM-S-50-G1/4-IG-PNP	SSGM-S-70-G1/4-IG-PNP
	Weight	260g	460g	735g

- Material of non-slip ring : Polyurethane PU
- Pipe joint is sold separately. ➡ See 6-5,6,7

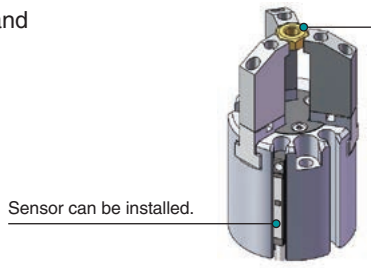
Three Claws Chuck (Double Action Type)

Perfect for gripping the work piece of cylindrical shape.

▶ It balances well at cylinder center, and grips the work piece accurately.

Accuracy of movement

±0.01mm



TCC-16 ／ TCC-25 ／ TCC-32



Use in gantry chuck

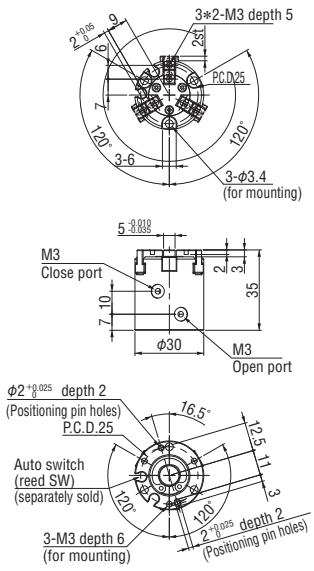
NEW



Three Claws Chuck

Order code No.	197258
TYPE	TCC-16

- Stroke: 4mm
- Weight: 60g
- Structure: Double Action Type
- Pipe joint is sold separately. ➡ See (6-5,6,7)
- Auto switch can be attached



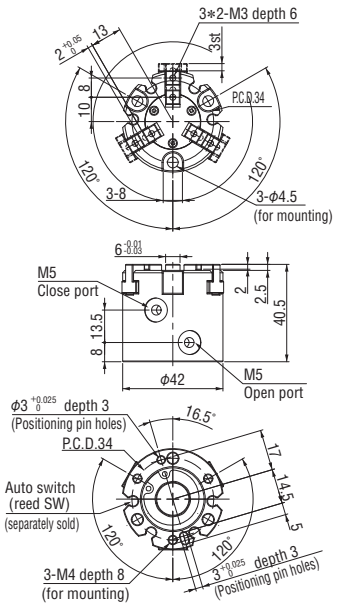
NEW



Three Claws Chuck

Order code No.	197259
TYPE	TCC-25

- Stroke: 6mm
- Weight: 140g
- Structure: Double Action Type
- Pipe joint is sold separately. ➡ See (6-5,6,7)
- Auto switch can be attached



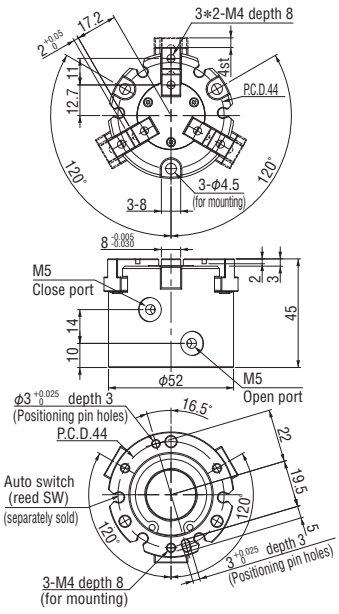
NEW



Three Claws Chuck

Order code No.	197260
TYPE	TCC-32

- Stroke: 8mm
- Weight: 250g
- Structure: Double Action Type
- Pipe joint is sold separately. ➡ See (6-5,6,7)
- Auto switch can be attached



■ Specification

Product name	TYPE	Used air pressure (MPa)	Motion stroke (mm)	Cylinder diameter (mm)	Gripping force of outside diameter 〈0.5MPa〉 (N)	Gripping force of Inner diameter 〈0.5MPa〉 (N)
Three claws chuck	TCC-16	0.2 ～ 0.7	4	16	14	16
	TCC-25		6	25	42	47
	TCC-32		8	32	74	82



Auto switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: 5mA-40mA
- Lead wire: 0.5M OUT brown OUT (+) blue (–)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m



Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range:-40mA or lower
- Lead wire: 0.5M＋V (brown), Load (black), OV(blue)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m



Auto switch (contactless)

Order code No.	030500
TYPE	D-F8N

- Weight: 7g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range:-40mA or lower
- Lead wire: 0.5M＋V (brown), Load (black), OV(blue)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m

Parallel Chucks (Single Action／Double Action)

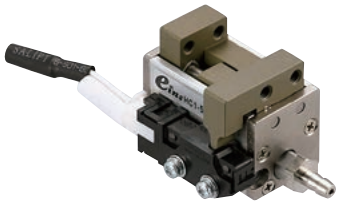
Compact design with low profile and small space.



Parallel chuck 5st (single)

Order code No.	072172
TYPE	HC-5S

- Stroke: 5mm
- Weight: 32g
- With joint BF-5-M3 for piping
- Auto switch for action/return end can be mounted (middle check is impossible).



＊ Rated current: 100mA 30VDC

Parallel chuck • single • 5st (With limit switch)

Order code No.	072702
TYPE	HC1-5S-C1

- Stroke: 5mm
- Weight: 50g
- With joint BF-5-M3 for piping
- Harness length: 500mm

Parallel chuck 10st (single)

Order code No.	072171
TYPE	HC-10S

- Stroke: 10mm
- Weight: 70g
- With joint BF-5 for piping
- Auto switch for action/return end can be mounted (middle check is impossible).

Parallel chuck 10st (double)

Order code No.	072170
TYPE	HC-10

- Stroke: 10mm
- Weight: 70g
- With joint BF-5*2 for piping
- Auto switch for action/return end can be mounted (middle check is impossible).

Parallel chuck • single • 10st (With limit switch)

Order code No.	072703
TYPE	HC1-10S-C1

- Stroke: 10mm
- Weight: 95g
- With joint BF-5 for piping
- Harness length: 500mm

Parallel chuck • double • 10st (With limit switch)

Order code No.	072705
TYPE	HC1-10-C1

- Stroke: 10mm
- Weight: 95g
- With joint BF-5*2 for piping
- Harness length: 500mm

NEW

Parallel chuck • 20st (single)

Order code No.	073319
TYPE	HC-20S

- Stroke: 20mm
- Weight: 288g
- With joint BF-6 for piping

NEW

Parallel chuck • 20st (double)

Order code No.	073318
TYPE	HC-20

- Stroke: 20mm
- Weight: 284g
- With joint BF-6 for piping

Parallel chuck • single • 20st (With limit switch)

Order code No.	072704
TYPE	HC1-20S-C1

- Stroke: 20mm
- Weight: 305g
- With joint BF-6 for piping
- Harness length: 500mm

Parallel chuck • double • 20st (With limit switch)

Order code No.	072706
TYPE	HC1-20-C1

- Stroke: 20mm
- Weight: 300g
- With joint BF-6*2 for piping
- Harness length: 500mm

■HC/HC1 series specification

TYPE	Mechanism	Used air pressure (MPa)	Ambient temperature (℃)	Motion stroke (mm)	Cylinder diameter (mm)	Grip power 〈0.4Mpa〉 Close(N)	Grip power 〈0.4Mpa〉 Open(N)
HC-5S	Single Action Type	0.3 ～ 0.6	5 ～ 60	5	φ 7	6	–
HC-10S				10	φ 10	14	–
HC-10	Double Action Type					15	15
HC-20S	Single Action Type			20	φ 15	17	–
HC-20	Double Action Type					28	28
HC1-5S-C1	Single Action Type	0.4 ～ 0.6		5	φ 7	5	–
HC1-10S-C1				10	φ 10	14	–
HC1-10-C1	Double Action Type					15	15
HC1-20S-C1	Single Action Type			20	φ 15	17	–
HC1-20-C1	Double Action Type					28	28



Auto switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: 5mA-40mA
- Lead wire: 0.5M OUT (+) brown OUT (-) blue
- Indicator light
- Terminal process is not made.
- Wiring ➡ See 6-20
- Length: 0.5m



Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

- Weight: 8g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range:-40mA or lower
- Lead wire: 0.5M＋V (brown), Load (black), 0V(blue)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See 6-20
- Length: 0.5m



Limit switch Ass'y

Order code No.	072708
TYPE	HC1-SW1

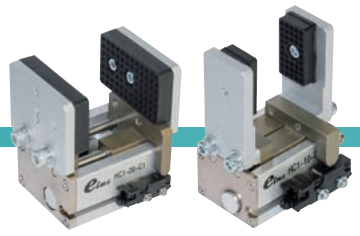
- Weight: 10g
- For HC1-5S/10(S)
- Mounting bolt and nut attached
- Rated current: 100mA 30VDC
- Terminal process is not made.
- Harness length: 500mm



Limit switch Ass'y

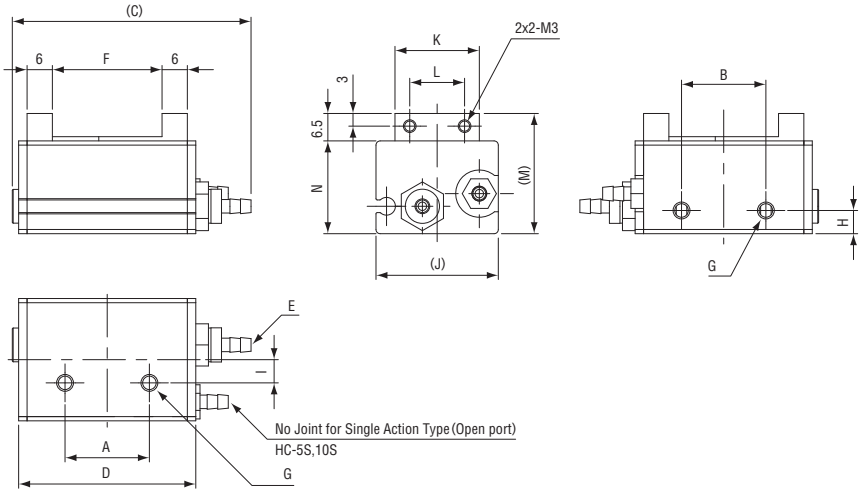
Order code No.	072709
TYPE	HC1-SW2

- Weight: 10g
- For HC1-20(S)
- Mounting bolt and nut attached
- Rated current: 100mA 30VDC
- Terminal process is not made.
- Harness length: 500mm



Example combination

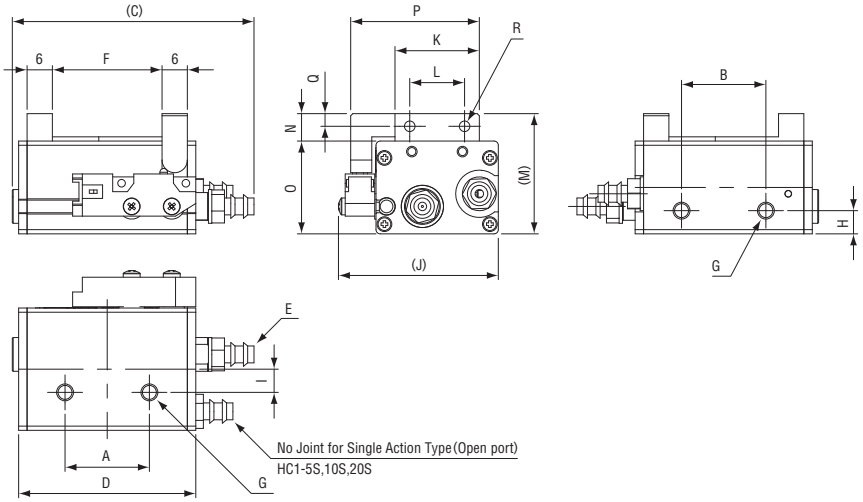
Outside dimension of HC series



Dimensions (mm)

TYPE	HC-5S	HC-10S	HC-10	HC-20S	HC-20
A	17	20		32	
B	10	20		32	
C	45	56.6		75	
D	32	42		60	
E	BF-5-M3	BF-5		BF-6	
F	max16/min11	max26/min16		max40/min20	
G	2-M3 depth 4	2-M4 depth 5		2-M5 depth 10	
H	5	5.5		8	
I	6	5.5		6	
J	18	29		48	
K	13	20		32	
L	8	13		20	
M	25.5	28.5		44	
N	19	22		31.5	

Outside dimension of HC1 series



Dimensions (mm)

TYPE	HC1-5S-C1	HC1-10(S)-C1	HC1-20(S)-C1
A	17	20	32
B	10	20	32
C	45	57	73
D	32	42	60
E	BF-5-M3	BF-5	BF-6
F	max16/min11	max26/min16	max40/min20
G	2-M3 depth 4	2-M4 depth 5	2-M5 depth 10
H	5	5.5	8
I	6	5.5	6
J	28	39	58
K	13	20	32
L	8	13	20
M	25.5	28.5	44
N	6.5	6.5	12.5
O	19	22	31.5
P	21.5	30.5	46
Q	3		5
R	2x2-M3		2x2-M5



Claw • for parallel chuck

Order code No.	023215
TYPE	CP-HC10N

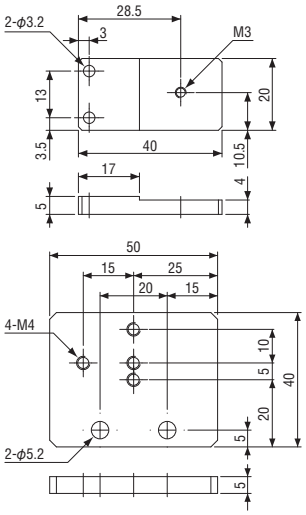
- Weight: 9g
- For HC,HC1-10, 10S
- Installation of CPUM-01 ➡ (2-10) to product positioning side is possible.



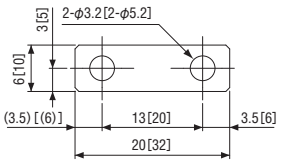
Claw • for parallel chuck

Order code No.	023216
TYPE	CP-HC20N

- Weight: 26g
- For HC1-20, 20S
- Installation of CPL-060, 061 ➡ (2-10) to product positioning side is possible.







t=2 ＊[ ] shows for CP-HC20S.

Spacer • for parallel chuck

Order code No.	023217
TYPE	CP-HC10S

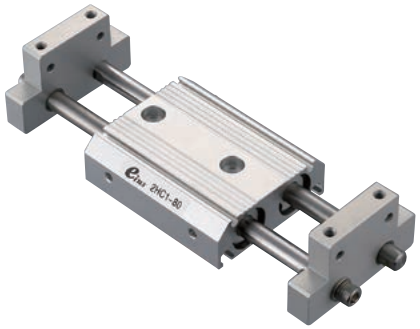
- Weight: 1g
- For HC,HC1-10, 10S

Order code No.	023218
TYPE	CP-HC20S

- Weight: 2g
- For HC1-20, 20S

Parallel Chucks (Double Action)

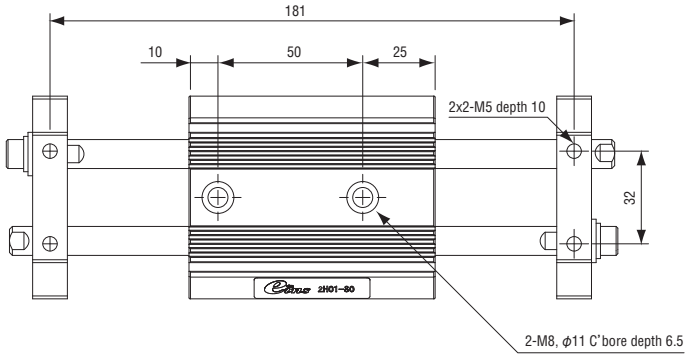
Single open/close of the claws of both sides is possible with the built-in two cylinders.

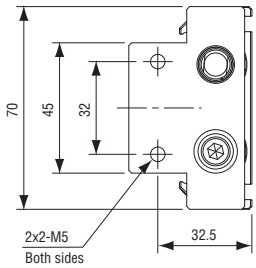


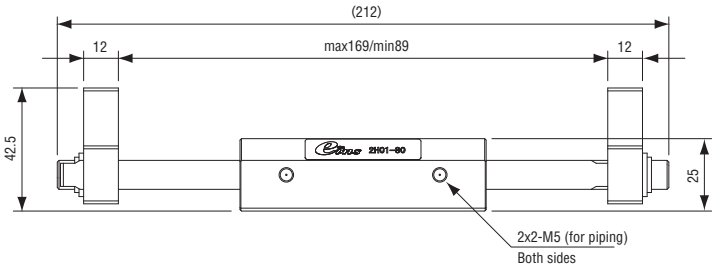
Parallel chuck 40st (double)＊2

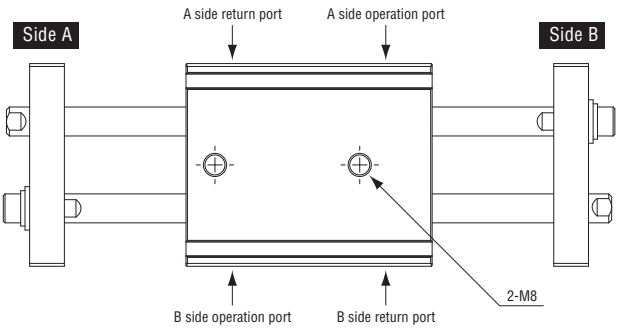
Order code No.	282205
TYPE	2HC1-80

- Stroke: 40mm×2
- Weight: 650g
- Installation of auto switch for act / return limit is possible.
- Pipe joint is sold separately. ➡ See (6-5,6,7)











Auto switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: 5mA-40mA
- Lead wire: 0.5M OUT (+) brown OUT (-) blue
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m



Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

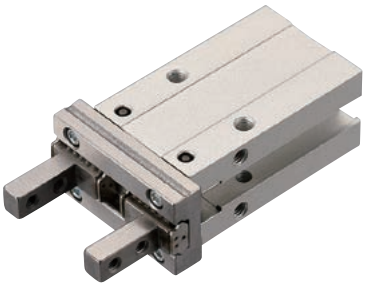
- Weight: 8g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: -40mA or lower
- Lead wire: 0.5M+V (brown), Load (black), OV(blue)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m

■Specification

Product name	TYPE	Mechanism	Used air pressure (Mpa)	Ambient temperature (℃)	Motion stroke (mm)	Cylinder diameter (mm)	Grip power 〈0.4Mpa〉	
							Close(N)	Open(N)
Parallel chuck	2HC1-80	Double action type	0.4 ～ 0.6	5 ～ 60	40 × 2	φ20 × 2	100	100

Parallel Chucks (Single Action)

High precision with linear guide!

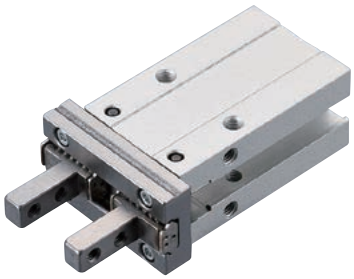


▶ Standard type (single)

Parallel chuck

Order code No.	123401
TYPE	MHZ2-10S

- Stroke: 4mm
- Weight: 55g
- Auto switch can be attached as optional*
- Pipe joint is sold separately ➡ See 6-5,6,7



▶ Narrow type (single)

Parallel chuck

Order code No.	122451
TYPE	MHZ2-10SN

- Stroke: 4mm
- Weight: 55g
- Auto switch can be attached as optional*
- Pipe joint is sold separately. ➡ See 6-5,6,7



Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

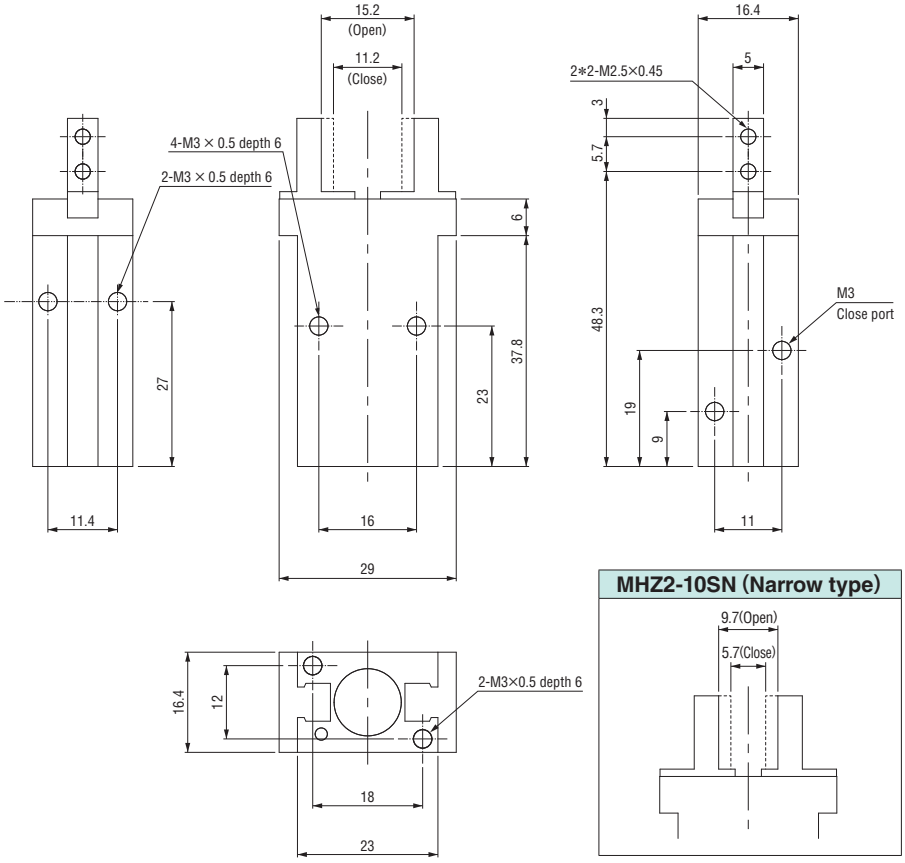
- Weight: 8g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: -40A or lower
- Lead wire: 0.5M ＋ V (brown), Load (black), 0V (blue)
- Indicator light
- Terminal process is not made.
- Special metal bracket (BMG2-012) is required to attach auto switch.
- Wiring ➡ See 6-20
- Length: 0.5m



Auto switch mounting bracket

Order code No.	010634
TYPE	BMG2-012

- Weight: 2g



MHZ2-10SN (Narrow type)

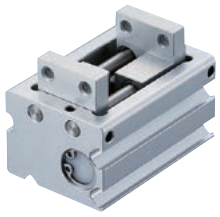
■ Specification

Product name	TYPE	Used air pressure (Mpa)	Ambient temperature (℃)	Motion stroke (mm)	Cylinder diameter (mm)	Gripping force 〈0.5MPa〉 (N)	Accuracy of movement (mm)
Parallel chuck	MHZ2-10S MHZ2-10SN	0.35 ～ 0.7	-10 ～ 60	4	φ10	7.1	±0.01

* Special metal bracket (BMG2-012) is required to attach auto switch (D-M9N). * Auto switch (D-A93) cannot be used.

Parallel Hand (Double Action)

Durable bush guide embedded.



Double action type
Parallel hand • 15st

Order code No.	071996
TYPE	HLA-12AS

- Stroke: 15mm
- Weight: 152g
- Auto switch can be attached(E-16-M1)
- Pipe joint is sold separately.

➡ See 6-5,6,7

Double action type
Parallel hand • 20st

Order code No.	070986
TYPE	HLA-15AS

- Stroke: 20mm
- Weight: 276g
- Auto switch can be attached(E-16-M1)
- Pipe joint is sold separately.

➡ See 6-5,6,7

Double action type
Parallel hand • 25st

Order code No.	071997
TYPE	HLA-20AS

- Stroke: 25mm
- Weight: 504g
- Auto switch can be attached(E-16-M1)
- Pipe joint is sold separately.

➡ See 6-5,6,7



Double action type
Parallel hand • 15st • w/ rubber cover

Order code No.	071999
TYPE	HLAG-12AS

- Stroke: 15mm
- Weight: 157g
- Auto switch can be attached(E-16-M1)
- Pipe joint is sold separately.

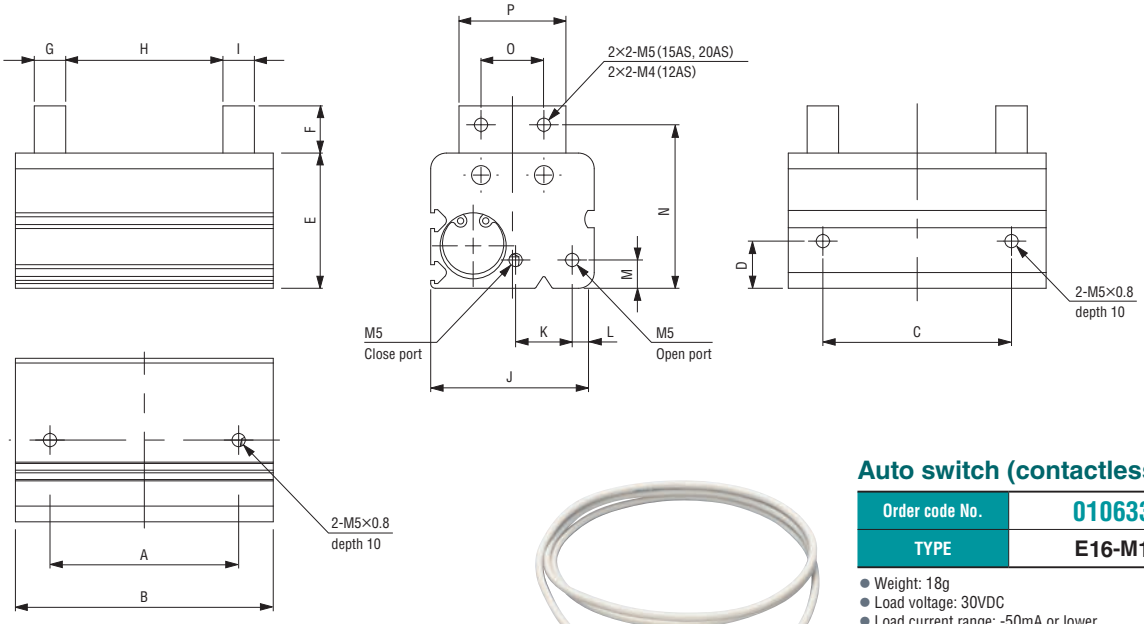
➡ See 6-5,6,7

Double action type
Parallel hand • 20st • w/ rubber cover

Order code No.	072000
TYPE	HLAG-15AS

- Stroke: 20mm
- Weight: 281g
- Auto switch can be attached(E-16-M1)
- Pipe joint is sold separately.

➡ See 6-5,6,7





Auto switch (contactless)

Order code No.	010633
TYPE	E16-M1

- Weight: 18g
- Load voltage: 30VDC
- Load current range: -50mA or lower
- Lead wire: 1m ＋(brown), load (black), －(blue)
- Indicator light
- Terminal process is not made.
- Length: 1m
- For HLA, HLAG

■ Dimensions

(mm)

TYPE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLA-12AS	30	54	30	12	29	10	6	max30/min15	6	37	13.5	4	8	35	14	22
HLA-15AS	40	70	40	13.5	34	12	10	max40/min20	10	43	14	5.5	9	41	18	30
HLA-20AS	60	82	60	15	43	15	10	max50/min25	10	52	18	7	9	52	20	34
HLAG-12AS	30	61	–	–	40	10	8	max30/min15	8	46.8	13.5	4	8	46	10	17
HLAG-15AS	40	81.1	–	–	46.5	12	10	max40/min20	10	57	14	5.5	9	53.5	14	24

Product name	TYPE	Used air pressure (MPa)	Ambient temperature (℃)	Motion stroke (mm)	Cylinder diameter (mm)	Inner capacity (round trip)	Accuracy of movement (mm)	Lubrication
Parallel hand	HLA,HLAG-12AS	0.3 ～ 0.7	5 ～ 60	15	ϕ 12	1.69cc/times	± 0.03	No lubrication or turbine oil class 1 [ISOVG32]
	HLA,HLAG-15AS			20	ϕ 15	3.53cc/times		
	HLA-20AS			25	ϕ 20	7.85cc/times		

Needle Gripper

Embedded needle allows holding fiber workpiece with high air permeability.



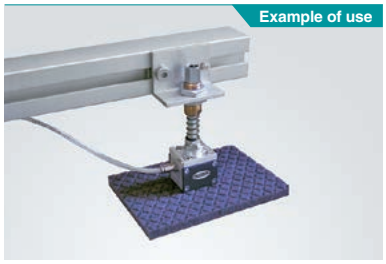


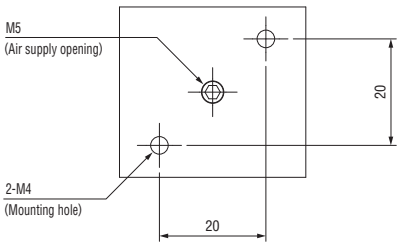
Needle gripper (diameter 0.8mm)

Order code No.	186255
TYPE	SNG-M-4-0.8

- Weight: 80g
- Air single action type
- Needle will be output with action.
- Pipe joint is sold separately.

➡ See 6-5,6,7



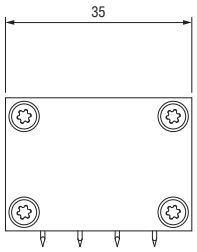


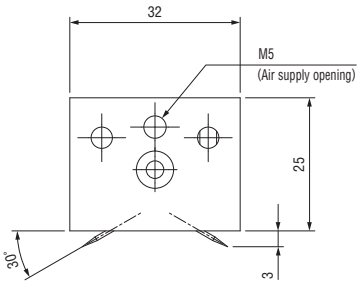


Needle piston set for exchange (4pcs)

Order code No.	041925
TYPE	ERS-SET-SNG-M-0.8

- Weight: 12g
- 4pcs
- For SNG-M-4-0.8







Needle gripper (diameter 0.8mm)

Order code No.	186256
TYPE	SNG-AP-10-0.8-V-10

- Weight: 225g
- Air double action type
- Needle will be output with action.
- Pipe joint is sold separately.

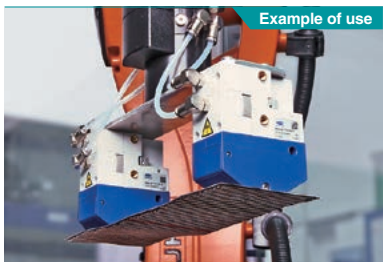
➡ See 6-5,6,7

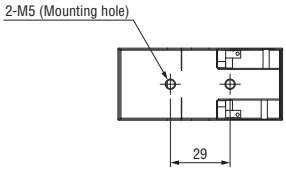
Needle gripper (diameter 1.2mm)

Order code No.	186257
TYPE	SNG-AP-10-1.2-V-10

- Weight: 225g
- Air double action type
- Needle will be output with action.
- Pipe joint is sold separately.

➡ See 6-5,6,7







Needle holder set for exchange (2pcs)

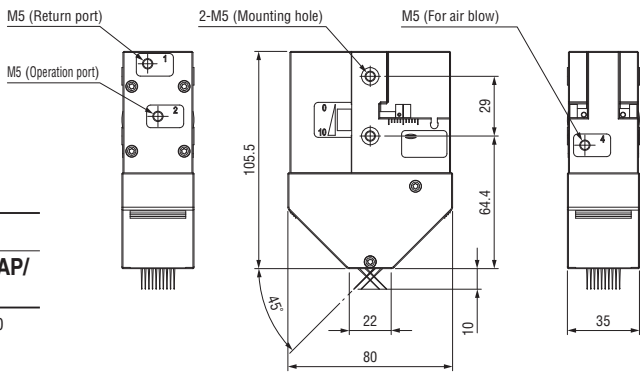
Order code No.	041926
TYPE	ERS-SET-SNG-AP/ AE-0.8-10

- Weight: 6g
- For SNG-AP-10-0.8-V-10

Needle holder set for exchange (2pcs)

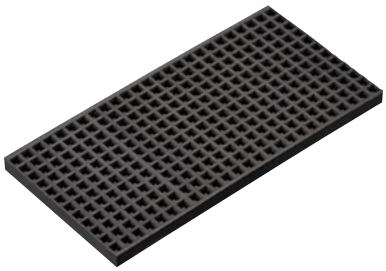
Order code No.	041927
TYPE	ERS-SET-SNG-AP/ AE-1.2-10

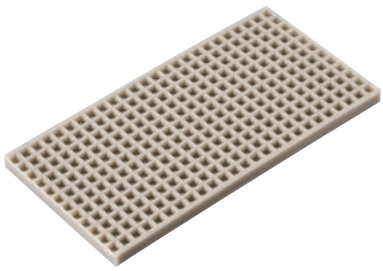
- Weight: 6g
- For SNG-AP-10-1.2-V-10

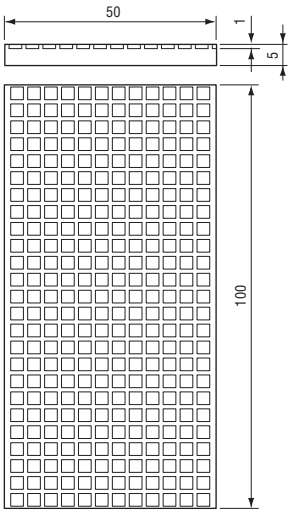


Rubber Pad／EP Sponge／Pad (Silicone Sponge)

Cut sheets to prevent scratches on products.







Rubber Pad (Nitrile)

Order code No.	370078
TYPE	5T＊50＊100

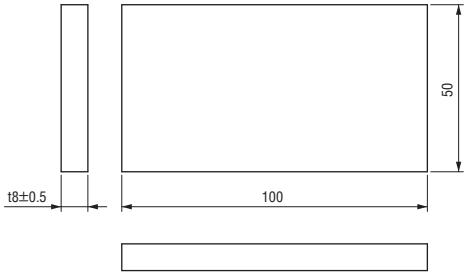
● Weight: 27.6g ● Material: nitrile rubber

Rubber Pad (Silicone)

Order code No.	310536
TYPE	5T＊50＊100

● Weight: 27.6g ● Material: silicon





(SD sheet, EP sponge)

Order code No.	340923
TYPE	8＊50＊100-EPSP

● Weight: 5g ● Material: EPDM ● The finished dimensions may be different from those of the drawing as sponge material is used.

Cautions for pasting
(SD sheet, EP sponge)

- Please use within 1 month after purchase. Adhesive strength is remarkably reduced after left for a long period of time. It is recommended to jointly use silicon series adhesive (371759 Bath Bond).
- Wipe the surface clean with ethanol before you stick it on the cup. Do not touch the surface with your hands.
- Hold the adhesive surface with sufficient adhesion to the surface for about 24 hours.
- Use silicon adhesive (371759 Bath Bond), if the adhesive strength is low.
- Double-sided tape is weak when the oblique tension force is added. Use the tape for the vertical direction force.



Pad (silicone sponge)

Order code No.	293463
TYPE	3T＊250＊250

● Weight: 102g ● Material: silicon sponge
● 250×250mm・T3mm



Adhesive (Sponge Pads)

Order code No.	371759
TYPE	Adhesive Q 50G Clear #4888

● NET: 50ml
● Silicon bond
● Use for adhesion to silicon rubber.



Adhesive Cemedine 20ML

Order code No.	371765
TYPE	AX-038 (SUPER X・20TM)

● NET: 50ml
● Use for adhesion to rubber plate.



Adhesive Cemedine 135ML

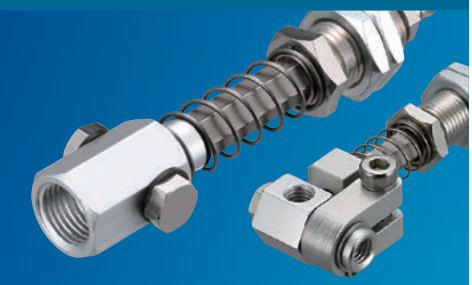
Order code No.	002481
TYPE	AX-250 (SUPER X8008・135ML)

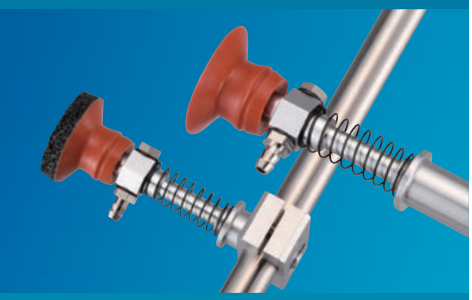
● NET: 135ml
● If you need a Material Safety Data Sheet (SDS), please purchase it.
● Use for adhesion to rubber plate.

TYPE	Standard	Heat resistance*	Hardness	Color
Nitrile rubber	5T＊50＊100	−10～＋100	shore A70 ± 10	Black
Silicone	5T＊50＊100	−60～＋250	shore A70 ± 10	White
Pad (silicone sponge)	3T＊250＊250	−60～＋200	Aska C23	Orange
EPDM	8＊50＊100-EPSP	−30～＋100	−	Black
Chloroprene rubber	CP-060	−35～＋100	shore A70 ± 10	Black

＊ General characteristics numerical value (reference value)











Suction

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Suction Cups

Please check the performance table on the web site.

Suction Cups (Standard / Screw Mount Type)



The most suitable one can be selected from wide range of products.

3-4

Suction Cups (Bellows / TR / TRN)



Use bellows cups for medium-sized angled parts. Fluorine type is also available. The most suitable one can be selected from wide range of products.

3-6

Suction Cups w/ Sponge



Use with parts with uneven suction surfaces. (For work piece with small unevenness)

3-7

Suction Cups (Flat Face/Bellows/w/ EP Sponge)



- Use for parts that are not easily released or require additional support. Also good with IML applications.
- Used for Angled parts
- Use with parts with uneven suction surfaces. (For work piece with big unevenness)

3-8

Suction Stems Covers (Mini / Small)



Used as a cap when suction cup is not used.

3-8

Accessories for Suction Cups



Stick it to the end of the suction cup according to its use.

3-9

Suction Cups(Fluorine Bellows/for Steel Sheet)



- Used for Angled parts
- for sheet metal conveyance.

3-10

Suction Cups(Vacuum/Multistage Bellows)



Supports work with high cushioning and unevenness.

3-11

Suction Cups (Pouches/Non-Contact Suction Pad)



Perfect for soft or bag shape workpiece.

3-13

Suction Cups(Flat /Bellows)



Flat basic type. Silicone type and a mark-free type are provided.

3-15

Oval Cups



Oval type. There are silicone and mark-less types.

3-19

Sheet Metal Suction Cups



Strong holding power in the horizontal direction and excellent balance of stability. Excellent follow-up ability to a curved surface. Excellent durability with original material.

3-20

Pad in Pad



Perfect for the parts that have holes. The pad within the assembly can effectively seal the central opening of the workpiece. It can be positioned to cover the hole located at the center of the component.

3-40

Vacuum Gripper



A single gripper could use for different shape of work piece.

3-44

Cup for Air Ejectors



Please use with air ejectors.

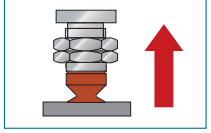
3-47

Please check the performance table on the web site.

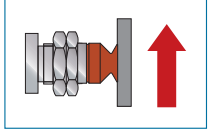
Theoretical suction power of suction cups

The theoretical suction power can be obtained with the area of cup and the degree of vacuum caused by using the cup.

Horizontal lifting



Vertical lifting



●kPa, N display

$$W=\frac{C\times P}{101}\times 10.13\times f$$

●mmHg , Kg display

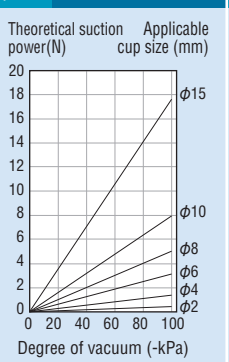
$$W=\frac{C\times P}{760}\times 1.0332\times f$$

Since the theoretical suction power is a value under static conditions, use the safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting in practical use.
Also for movement, take acceleration caused by the movement into consideration.

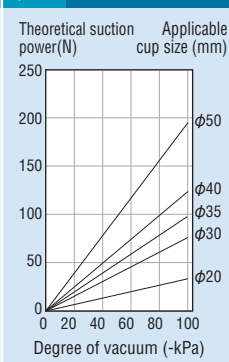
W : Theoretical suction power (N)・(Kg)　C : Area of cup (cm²)
P : Degree of vacuum (-kPa)・(-mmHg)　f : Safety factor

●General type cup (rubber cup)　*Safety factor is not considered.

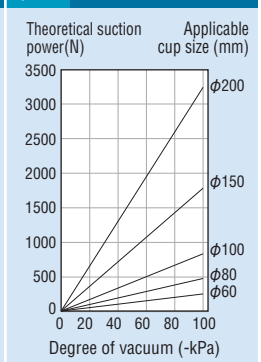
Applicable cup size ϕ2mm～ϕ15mm



Applicable cup size ϕ20mm～ϕ50mm



Applicable cup size ϕ60mm～ϕ200mm



Pad Shape and Uses

Pad shape		Uses
Flat type		If the surface of the part is flat and has no deformation.
Flat type (with rib)		● Part is easy to deform. ● Good for releasing the Part.
Groove		● Used for when the part has an oil film and is slippery. ● Used for parts that are curved.
Oval		Used for parts that have little suction surface and/or are long and unstable.

Pad shape		Uses
Bellows		● Used when there is no space for installing buffer. ● Suction surface is slanted. ● The surface is curved.
w/ Sponge		Parts with uneven suction surface.
Pouches		Film packaging and soft parts.
Non contact		For when printed circuit board and acrylic board, etc. cannot be absorbed and transported.

Properties of rubber used in our suction cups

○ : suitable　△ : Can be used according to the condition (specification).　× : Not suitable

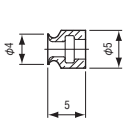
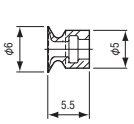
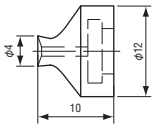
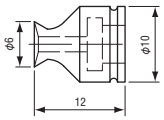
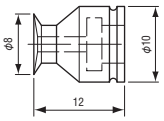
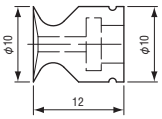
Characteristics \ Material	Silicone (brown)	Silicone (transparent white, white*)	Urethane (milk white)	Fluorine (black)	Nitrile (green)	Mark-free (blue)
Heat-resistance (°C)	− 60～250		− 20～75	− 10～230	− 30～150	− 10～140
Shore hardness (HS)	54～80		55	65	50	60
No mark of cup left	×		×	○	○	○
Food	×／○		×	×	×	×
Food packaging	○		○	○	○	○
Oil resistance	×		○	○	○	○
Weight	△		○	△	○	△
Antistatic agent	△		×	△	×	×
Rough surface (stone or wood)	×		○	×	×	×
Glass	×		○	○	×	○
Alcohol resistance	○		△	△	○	○
Acid resistance	△		×	○	△	×

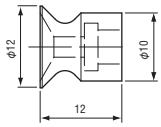
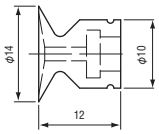
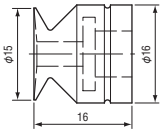
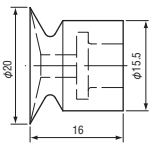
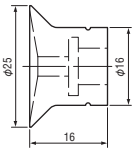
● Above shows the general characteristics of rubber, only. Check the shape of suction cup and operating conditions.
* Silicon pad (whitish transparent) conforms to the U.S. food and drug administration (FDA) and BfR (German Federal Institute for Risk Assessment) standard.

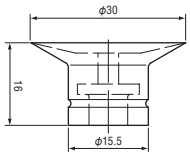
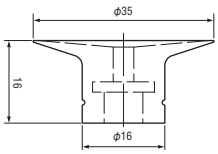
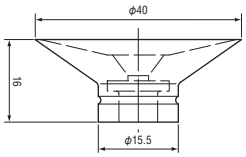
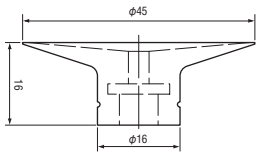
Suction Cups (Standard / Screw Mount Type)

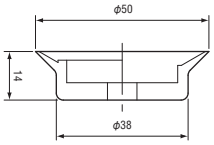
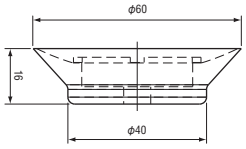
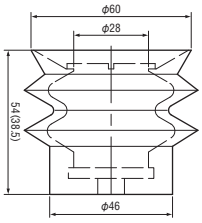
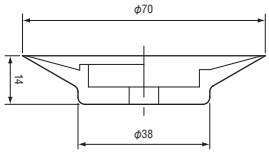
Utilize it as per your requirements from a range of products.

- **Reinforced silicone** — Excellent in durability and heat resistance (250℃).
- **Urethane** — Excellent in durability, oil resistance, chemical resistance, and flexible.
- **Fluorine** — The material exhibits outstanding durability, resistance to heat and chemicals, and is not prone to leaving suction marks, ensuring a prolonged service life.
- **Nitrile** — Excellent durability, heat resistant and chemical resistance, mostly resistant to suction marks and has long service life.

Applicable cup size		ϕ4mm	ϕ6mm	ϕ4mm	ϕ6mm	ϕ8mm	ϕ10mm
Suction Cups (standard)		 * Micro	 * Micro				
Drawing							
Reinforced silicone (brown)	Order code No.	210789	210790	210700	210255	210191	210615
	TYPE	VAPH-4M	VAPH-6M	VAPH-4C	VAPH-6C	VAPH-8C	VAPH-10C
	Weight	0.2g	0.3g	0.4g	0.5g	0.6g	0.7g
Urethane (milk white)	Order code No.	—	—	210701	210395	210396	210703
	TYPE	—	—	VAPU-4C	VAPU-6C	VAPU-8C	VAPU-10C
	Weight	—	—	0.4g	0.6g	0.7g	0.7g
Fluorine (black)	Order code No.	—	—	210702	210402	210403	210704
	TYPE	—	—	VAPF-4C	VAPF-6C	VAPF-8C	VAPF-10C
	Weight	—	—	0.9g	0.9g	1.0g	1.0g
Nitrile (green)	Order code No.	—	—	210791	210792	210793	210794
	TYPE	—	—	VAPN-4C	VAPN-6C	VAPN-8C	VAPN-10C
	Weight	—	—	0.7g	0.7g	0.6g	0.6g
Applicable stems		Micro : VFILB-M, MSH ➡ 3-23,30		Mini : VFIL-SS, or VFILB-SSH ➡ 3-23,24,25,30			

Applicable cup size		ϕ12mm	ϕ14mm	ϕ15mm	ϕ20mm	ϕ25mm
Suction Cups (standard)						
図面						
Reinforced silicone (brown)	Order code No.	210192	210616	210193	210194	210617
	TYPE	VAPH-12C	VAPH-14C	VAPH-15C	VAPH-20C	VAPH-25C
	Weight	0.8g	1.0g	2.2g	2.6g	3.3g
Urethane (milk white)	Order code No.	210397	210705	210398	210399	—
	TYPE	VAPU-12C	VAPU-14C	VAPU-15C	VAPU-20C	—
	Weight	0.8g	0.8g	2.4g	2.8g	—
Fluorine (black)	Order code No.	210404	210706	210405	210406	—
	TYPE	VAPF-12C	VAPF-14C	VAPF-15C	VAPF-20C	—
	Weight	1.2g	1.2g	3.5g	3.8g	—
Nitrile (green)	Order code No.	210795	210796	210797	210798	—
	TYPE	VAPN-12C	VAPN-14C	VAPN-15C	VAPN-20C	—
	Weight	1.0g	1.0g	3.1g	3.3g	—
Applicable stems		Mini : VFIL-SS, or VFILB-SSH ➡ 3-23,24,25,30		Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30		

Applicable cup size		ϕ30mm	ϕ35mm	ϕ40mm	ϕ45mm
Suction Cups (standard)					
Drawing					
Reinforced silicone (brown)	Order code No.	210195	210618	210196	210621
	TYPE	VAPH-30C	VAPH-35C	VAPH-40C	VAPH-45C
	Weight	3.6g	4.0g	5.7g	6.9g
Urethane (milk white)	Order code No.	210400	—	210401	—
	TYPE	VAPU-30C	–	VAPU-40C	–
	Weight	3.6g	–	6.0g	–
Fluorine (black)	Order code No.	210407	—	210408	—
	TYPE	VAPF-30C	–	VAPF-40C	–
	Weight	5.5g	–	8.8g	–
Nitrile (green)	Order code No.	210799	—	210800	—
	TYPE	VAPN-30C	–	VAPN-40C	–
	Weight	4.6g	–	7.6g	–
Applicable stems		Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30			

Applicable cup size		ϕ50mm	ϕ60mm	ϕ60mm	ϕ70mm
Suction cups (screw mount type)					
Drawing				 ∗ The value in ( ) indicates the dimension with suction.	
Reinforced silicone (brown)	Order code No.	210619	210311	210044	210620
	TYPE	VAPH-50F	VAPH-60F	VAPH-60F-2	VAPH-70F
	Weight	11.0g	17.0g	73.0g	17.0g
Fluorine (black)	Order code No.	—	210417	—	—
	TYPE	–	VAPF-60F	–	–
	Weight	–	28.0g	–	–
Nitrile (green)	Order code No.	—	210801	—	—
	TYPE	–	VAPN-60F	–	–
	Weight	–	23.8g	–	–
Applicable stems		Large : VFI-L, or VFIL-H ➡ 3-29,31			

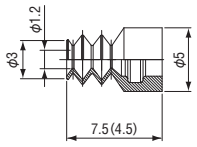
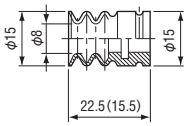
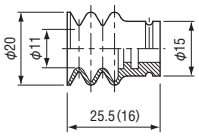
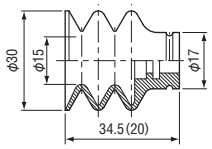
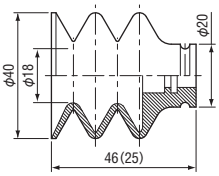
Suction Cups (Bellows / TR / TRN)

Utilize it as per your requirements from a range of products.

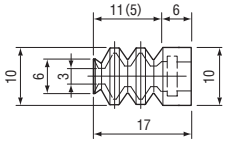
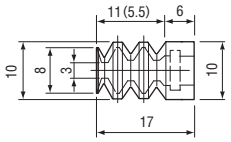
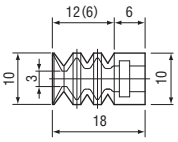
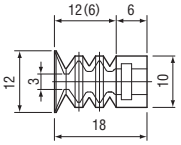
Reinforced silicone — Excellent in durability and heat resistance (250℃).

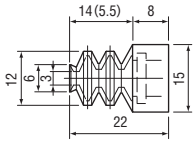
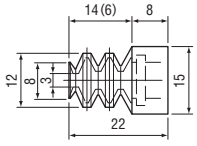
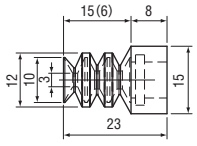
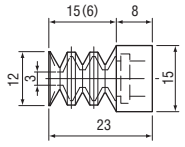
Nitrile — Excellent durability, heat resistant and chemical resistance, mostly resistant to suction marks and has long service life.

▶ Used for parts with curved surfaces and angles. Bring parts closer with the bellows distance.

Applicable cup size		ϕ3mm	ϕ15mm	ϕ20mm	ϕ30mm	ϕ40mm
Suction cups (Bellows)						
Drawing * The value in ( ) indicates the dimension with suction.						
Reinforced silicone (brown)	Order code No.	210897	210697	210661	210662	210663
	TYPE	VAPH-3C-3	VAPH-15C-3	VAPH-20C-3	VAPH-30C-3	VAPH-40C-3
	Weight	1.0g	2.7g	2.9g	7.0g	18.4g
Applicable stems		Micro : VFILB-M,MSH ➡ 3-23,30	Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30			

▶ Use for parts with curved surfaces and angles. Demonstrates the ability to follow the part's angle.

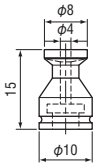
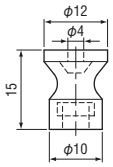
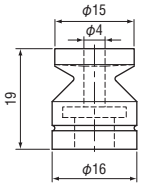
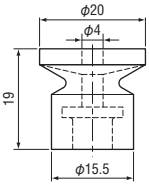
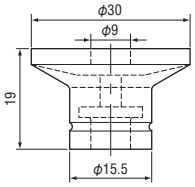
Applicable cup size		ϕ6mm	ϕ8mm	ϕ10mm	ϕ12mm
Suction cups (TR/TRN)					
Drawing * The value in ( ) indicates the dimension with suction.					
Reinforced silicone (brown)	Order code No.	196327	196342	196406	196405
	TYPE	TR-1062-1M	TR-1062-2M	TR-1062-3M	TR-1062-4M
	Weight	1.0g	1.0g	1.0g	1.1g
Nitrile (green)	Order code No.	196403	196401	196399	196397
	TYPE	TRN-1062-1M	TRN-1062-2M	TRN-1062-3M	TRN-1062-4M
	Weight	1.4g	1.4g	1.4g	1.5g
Applicable stems		Mini : VFIL-SS, or VFILB-SSH ➡ 3-23,24,25,30			

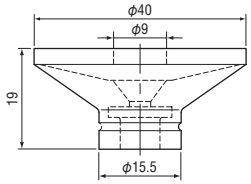
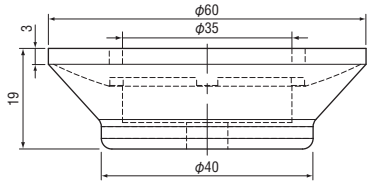
Applicable cup size		ϕ6mm	ϕ8mm	ϕ10mm	ϕ12mm
Suction cups (TR/TRN)					
Drawing * The value in ( ) indicates the dimension with suction.					
Reinforced silicone (brown)	Order code No.	193511	193512	196135	196136
	TYPE	TR-1062-1	TR-1062-2	TR-1062-3	TR-1062-4
	Weight	1.0g	1.0g	1.0g	1.1g
Nitrile (green)	Order code No.	196404	196402	196400	196398
	TYPE	TRN-1062-1	TRN-1062-2	TRN-1062-3	TRN-1062-4
	Weight	1.4g	1.4g	1.4g	1.5g
Applicable stems		Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30			

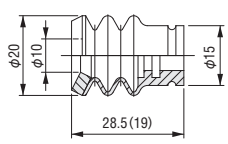
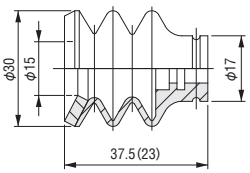
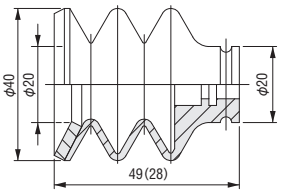
Suction Cups w/ Sponge

Used for work pieces with uneven suction surfaces. (For work piece with small unevenness)

- Please inquire for more information on cups with sponges of other sizes.
- Sponge material: closed-cell foam silicone
- Heat resistance (continuously used for a long time): 150℃

Applicable cup size		ϕ8mm	ϕ12mm	ϕ15mm	ϕ20mm	ϕ30mm
Suction Cups (w/ sponge)						
Drawing						
Reinforced silicone (brown)	Order code No.	210664	210665	210534	210535	210536
	TYPE	VAPH-8C-SP	VAPH-12C-SP	VAPH-15C-SP	VAPH-20C-SP	VAPH-30C-SP
	Weight	0.7g	0.9g	2.6g	2.9g	4.8g
	Heat-resistance	200℃		200℃		
Applicable stems		Mini : VFIL-SS, or VFILB-SSH ➡ 3-23,24,25,30		Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30		

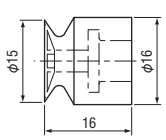
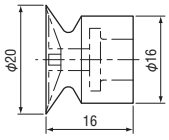
Applicable cup size		ϕ40mm	ϕ60mm
Suction Cups (w/ sponge)			 ※ Screw Mount Type
Drawing			
Reinforced silicone (brown)	Order code No.	210537	210538
	TYPE	VAPH-40C-SP	VAPH-60F-SP
	Weight	8.3g	22.0g
	Heat-resistance	200℃	200℃
Applicable stems		Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30	Large : VFI-L, or VFIL-H ➡ 3-29,31

Applicable cup size		ϕ20mm	ϕ30mm	ϕ40mm
Suction Cups (w/ sponge)				
Drawing				
Reinforced silicone (brown)	Order code No.	210914	210915	210916
	TYPE	VAPH-20C-10-3-SP	VAPH-30C-15-3-SP	VAPH-40C-20-3-SP
	Weight	3.0g	8.0g	19.0g
	Heat-resistance	200℃		
Applicable stems		Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30		

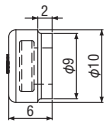
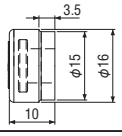
Suction Cups (Flat Face / Free / EP sponge) / Suction Stems Covers (Mini / Small)

Utilize it as per your requirements from a range of products.

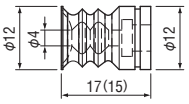
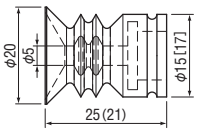
Used for work pieces that are not released easily from suction cup.

Applicable cup size		ϕ15mm	ϕ20mm
Suction Cups (flat face)			
Drawing			
Reinforced silicone (brown)	Order code No.	210389	210390
	TYPE	VAPH-15C-1	VAPH-20C-1
	Weight	2.0g	2.4g
Applicable stems		Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30	

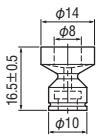
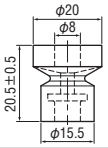
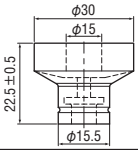
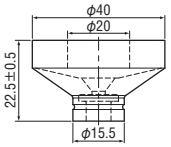
Used to be attached to the end of suction stem.

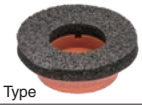
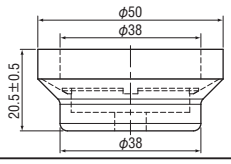
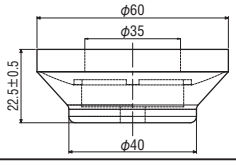
Applicable cup size		ϕ10mm	ϕ16mm
Suction stems cover			
Drawing			
Reinforced silicone (brown)	Order code No.	211024	211023
	TYPE	VAPH-SSC	VAPH-SC
	Weight	0.35g	1.70g
Applicable stems		Mini : VFIL-SS, or VFILB-SSH ➡ 3-23,24,25,30	Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30

Use bellows cups for medium-sized angled parts.

Applicable cup size		ϕ12mm	ϕ20mm
Bellows cups (Free)			
Drawing			
		∗ The value in ( ) indicates the dimension with suction. ∗ The value in [ ] indicates the dimension for reinforced silicone.	
Reinforced silicone (brown)	Order code No.	210280	210310
	TYPE	VAPH-12C-2	VAPH-20C-2
	Weight	1.1g	2.8g
Urethane (milk white)	Order code No.	210409	210410
	TYPE	VAPU-12C-2	VAPU-20C-2
	Weight	1.2g	3.0g
Fluorine (black)	Order code No.	210411	210412
	TYPE	VAPF-12C-2	VAPF-20C-2
	Weight	1.9g	4.3g
Nitrile (green)	Order code No.	210802	210803
	TYPE	VAPN-12C-2	VAPN-20C-2
	Weight	1.5g	3.9g
Applicable stems		Mini : VFIL-SS, or VFILB-SSH ➡ 3-23,24,25,30	Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30

Used for work pieces with uneven suction surfaces.(For work pieces with uneven suction surfaces.)

Applicable cup size		ϕ14mm	ϕ20mm	ϕ30mm	ϕ40mm
Suction Cups (EP sponge)					
Drawing					
Reinforced silicone (brown)	Order code No.	210859	210860	210861	210862
	TYPE	VAPH-14C-EPSP	VAPH-20C-EPSP	VAPH-30C-EPSP	VAPH-40C-EPSP
	Weight	1.1g	2.8g	4.0g	6.4g
	Heat-resistance	80℃	80℃		
Applicable stems		Mini : VFIL-SS, or VFILB-SSH ➡ 3-23,24,25,30	Small : VFIL-S, or VFILB-SH ➡ 3-26,27,28,30		

Applicable cup size		ϕ50mm	ϕ60mm
Suction Cups (EP sponge)		 ※ Screw Mount Type	 ※ Screw Mount Type
Drawing			
Reinforced silicone (brown)	Order code No.	210863	210864
	TYPE	VAPH-50F-EPSP	VAPH-60F-EPSP
	Weight	11.5g	18.2g
	Heat-resistance	80℃	
Applicable stems		Large : VFI-L, or VFIL-H ➡ 3-29,31	

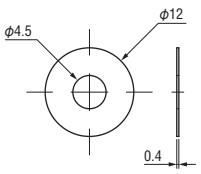
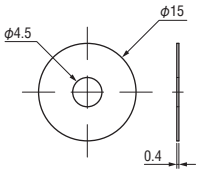
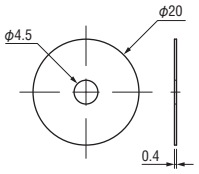
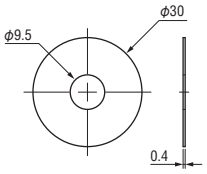
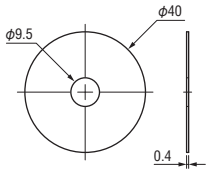
Precautions for Suction Cup

- Double-stick tape is used for adhesion to EP sponge. Use silicon adhesive if the adhesive strength is low.
- Double-sided tape is weak when the oblique tension force is added. Use the tape for the vertical direction force.
- Your diagram may have a slightly different layout as the component is made of sponge.

Accessories for Suction Cups

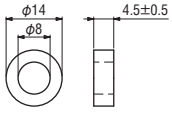
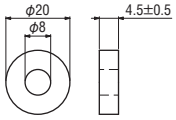
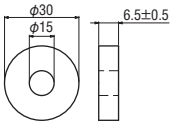
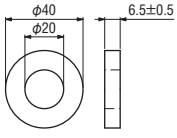
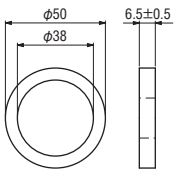
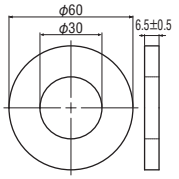
Use as your situation.

Static elimination sheet for suction cups surface.

Applicable cup size	ϕ12mm	ϕ15mm	ϕ20mm	ϕ30mm	ϕ40mm
Pad diameter SD sheet					
Drawing					
Order code No.	271682	271683	282552	297701	300485
TYPE	12C-SD	15C-SD	20C-SD	30C-SD	40C-SD
Weight	1.0g	1.0g	1.0g	1.0g	1.0g
Heat-resistance	80℃				

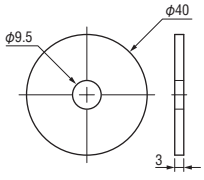
∗ The introduction of leakage results in a 40% decrease in vacuum force once the SD sheet is applied. ∗ With double-stick-tape processing.

EP sponge sheet to be attached at the tip of the suction cup. Perfect for parts with uneven suction surfaces.

Applicable cup size	ϕ14mm	ϕ20mm	ϕ30mm	ϕ40mm	ϕ50mm	ϕ60mm
EP sponge (black)						
Drawing						
Order code No.	271559	282010	294889	300386	310589	322949
TYPE	14C-EPSP	20C-EPSP	30C-EPSP	40C-EPSP	50C-EPSP	60C-EPSP
Weight	0.1g	0.2g	0.4g	0.7g	0.5g	1.2g
Heat-resistance	80℃					

∗ Your diagram may have a slightly different layout as the component is made of sponge.
∗ Please use the code No. 286172 "cutter" for peeling sponge sheet film. (Please check the details on the website.)

Sponge sheet to be attached at the tip of the Suction Cups (Bellow).

Applicable cup size	ϕ40mm
Silicon sponge ring (Brown)	
Drawing	
Order code No.	072746
TYPE	40C-SP
Weight	1.0g
Heat-resistance	200℃

NEW



TOP SHEET CUTTER

Order code No.	286172
TYPE	209B

- Ideal for removing EP sponge sheet coatings. The spring built into the main body keeps constant pressure on the blade allowing for stable cutting action.



Adhesive (sponge Pads)

Order code No.	371759
TYPE	Adhesive Q 50G Clear #4888

- NET : 50ml
- Silicon bond
- Use for adhesion to rubber system.

NEW



Aluminum LAMIZIP

Order code No.	002407
TYPE	AL-22

- Please use this for storing suction cups.

Precautions for sticking
(SD sheet, EP sponge)

- Use the purchases within one month after you buy them. Adhesive force of the double-sided tape will significantly reduce after stored for a long time. We recommend using with the silicone adhesive (371759 BATH BOND).
- Wipe the surface clean with ethanol before you stick it on the cup. Do not touch the surface with your hands.
- Hold the adhesive surface with sufficient adhesion to the surface for about 24 hours.
- If the adhesive strength is weak, please strengthen it with silicone adhesive (371759 bath bond).
- Double-sided tape is weak when the oblique tension force is added. Use the tape for the vertical direction force.

Precautions for sticking
Sponge sheet

- When apply the parts, please wipe the surface with ethanol and spread the silicone adhesive then attaches the parts without touching. (371759 Bath Bond)

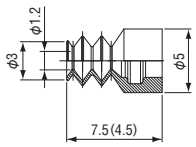
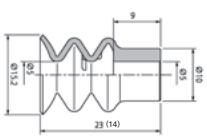
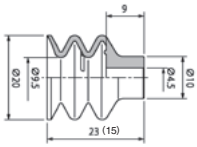
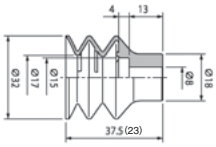
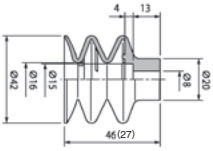
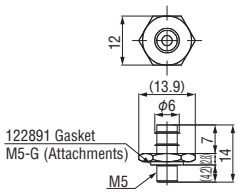
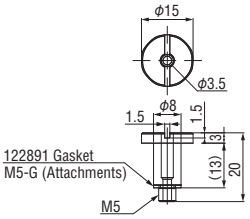
Suction Cups (Fluorine Bellows / Sheet Metal)

Use as your situation.

Fluorine The material exhibits outstanding durability, resistance to heat and chemicals, and is not prone to leaving suction marks, ensuring a prolonged service life.

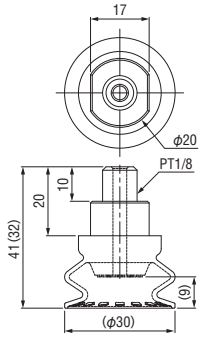
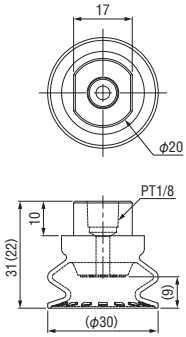
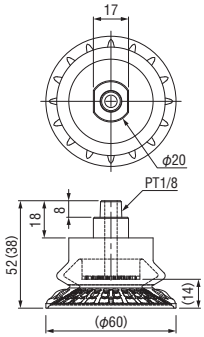
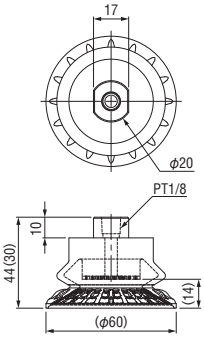
Nitrile Excellent durability, heat resistant and chemical resistance, mostly resistant to suction marks and has long service life.

▶ Used for parts with angle. High temperature resistance and reduce suction cup markings.

Applicable cup size		ϕ3mm	ϕ15mm	ϕ20mm	ϕ30mm	ϕ40mm
Suction Cups (Fluorine Bellows)						
Drawing * The value in ( ) indicates the dimension with suction.						
Fluorine (black)	Order code No.	211101	042042	042043	042044	042045
	TYPE	VAPF-3C-3	EPCG-15-F	EPCG-20-F	EPCG-30-F	EPCG-40-F
	Weight	0.1g	3g	4g	14g	32g
Applicable head	Names		Suction stems head • M5 • For EPCG15/20		Suction stems head • M5 • For EPCG30/40	
	Order code No.		211102		211103	
	TYPE		VFILK-AH01		VFILK-AH02	
	Weight		3.0g		8.0g	
Drawing						
Applicable stems		Micro : VFILB-M,MSH ➡ 3-23,30	VFILB2-SH system (used by replacing the head) ➡ 3-30			

* When using a fluorine pad ϕ 15 mm to ϕ 40 mm, a special suction head bracket is required.

▶ Use it for sheet metal conveyance. The grooves on the suction surface of the pad inhibit the lateral movement of the iron plate, which is coated with an oil film, while also accommodating the curved workpiece through a buffering effect.

Applicable cup size		ϕ30mm		ϕ60mm	
Suction Cups (Sheet Metal)					
Drawing * The value in ( ) indicates the dimension with suction.					
Fluorine (black)	Order code No.	210918	210919	210920	210921
	TYPE	VAPNP-30C-1-M	VAPNP-30C-1-F	VAPNP-60C-1-M	VAPNP-60C-1-F
	Weight	15.0g	12.0g	47.0g	45.0g
	Characteristics of rubber	Heat resistance : 85℃ / Shore hardness : 60		Heat resistance : 85℃ / Shore hardness : 60	
Applicable stems		Large : VFI-L, or VFIL-H ➡ 3-29,31	—	Large : VFI-L, or VFIL-H ➡ 3-29,31	—

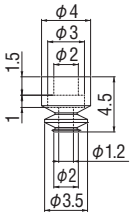
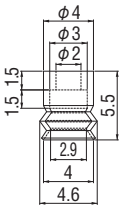
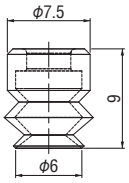
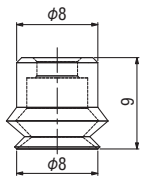
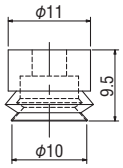
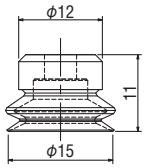
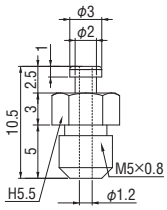
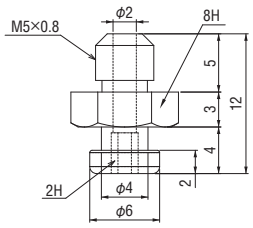
Suction Cups (Vacuum)

Utilize it as per your requirements from a range of products.

Silicone Excellent in durability and heat resistance (250℃).

Fluorine The material exhibits outstanding durability, resistance to heat and chemicals, and is not prone to leaving suction marks, ensuring a prolonged service life.

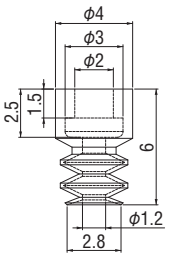
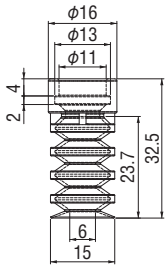
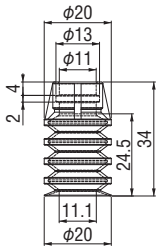
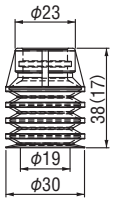
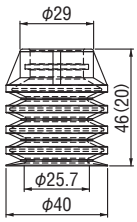
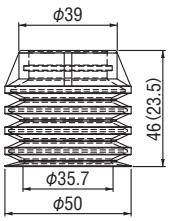
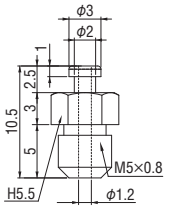
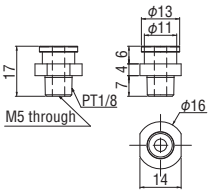
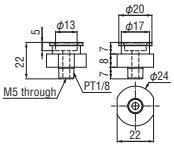
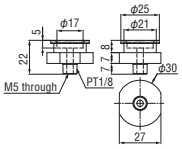
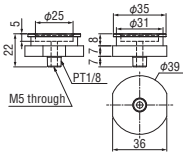
▶ The lip of bellows cup 2-stage is thin.

Applicable cup size		ϕ2mm	ϕ4mm	ϕ6mm	ϕ8mm	ϕ10mm	ϕ15mm
Suction Cups (Vacuum)		NEW 	NEW 				
Drawing							
Silicone (transparent white)	Order code No.	NEW 042095	NEW 042096	042038	042039	042040	042041
	TYPE	EPJG-2-S	EPJG-4-S	EPJG-6-S	EPJG-8-S	EPJG-10-S	EPJG-15-S
	Weight	0.1g	0.1g	0.15g	0.25g	0.45g	1.0g
Fluorine (black)	Order code No.	NEW 042097	NEW 042098	NEW 042099	NEW 042100	—	—
	TYPE	EPJG-2-F-RA	EPJG-4-F-RA	EPJG-6-F-RA	EPJG-8-F-RA	—	—
	Weight	0.1g	0.1g	0.2g	0.3g	—	—
Applicable head		NEW 		NEW 			
Drawing							
Order code No.		042111		042112			
TYPE		ETN-PS-2A-M5		ETN-PS-10-M5			
Weight		0.5g		0.8g			
Applicable stems		VFILB2-SSH, SH series (remove the attach head and use) ➡ 3-30					

Suction Cups (Multistage Bellows)

Utilize it as per your requirements from a range of products.

▶ The cushion is of exceptional quality and is well-suited for workpieces with irregular surfaces.

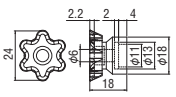
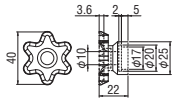
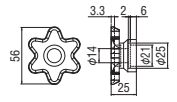
Applicable cup size	ϕ3mm	ϕ15mm	ϕ20mm	ϕ30mm	ϕ40mm	ϕ50mm
Suction Cups (Multistage Bellows)	NEW 	NEW	NEW 			
Drawing						
Order code No.	**042101**	**042102**	**042103**	**042071**	**042072**	**042073**
TYPE	**EPCG-3-S**	**EPLG-15-S5**	**EPLG-20-S5**	**EPLG-30-S5**	**EPLG-40-S5**	**EPLG-50-S5**
Weight	0.1g	1.6g	20.8g	6.9g	15.7g	20.8g
Applicable head	NEW 					
Drawing						
Order code No.	**042111**	**211114**		**211115**	**211116**	**211117**
TYPE	**ETN-PS-2A-M5**	**VFILA-PHA-1/8**		**VFILA-PHB-1/8**	**VFILA-PHC-1/8**	**VFILA-PHD-1/8**
Weight	0.5g	4.0g		13.0g	18.0g	34.0g
Applicable stems	VFILB-SSH➡ (3-30)	VFILB-1/8, VFI-L, VFIL-H➡ (3-29,31)				

Suction Cups (Pouches)

Use as your situation.

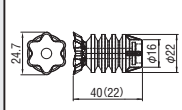
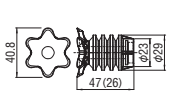
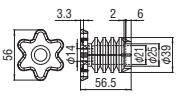
▶ The soft-bodied, bag-shaped workpiece is transported through the subsequent performance and gripping force.

Star-shaped Type

Applicable cup size	ϕ24mm (equivalent to ϕ20mm)	ϕ40mm (equivalent to ϕ34mm)	ϕ56mm (equivalent to ϕ48mm)
Suction Cups (Pouches)	NEW 	NEW 	NEW 
Drawing			
Order code No.	042108	042109	042110
TYPE	EPMG-24S-S4	EPMG-40S-S4	EPMG-56S-S4
Weight	2.5g	5.6g	20.3g
Applicable stems	① VFILA-PHA-1/8	② VFILA-PHB-1/8	③ VFILA-PHC-1/8

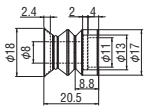
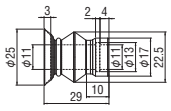
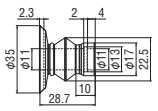
* The applicable suction head is necessary for using the suction cups.

Star-shaped Bellows Type

Applicable cup size	ϕ24mm (equivalent to ϕ20mm)	ϕ40mm (equivalent to ϕ34mm)	ϕ56mm (equivalent to ϕ48mm)
Suction Cups (Pouches)			NEW 
Drawing * The value in ( ) indicates the dimension with suction.			
Order code No.	042074	042075	042107
TYPE	EPMG-24L-S4	EPMG-40L-S4	EPMG-56L-S4
Weight	5.0g	10.0g	11.1g
Applicable stems	① VFILA-PHA-1/8	② VFILA-PHB-1/8	③ VFILA-PHC-1/8

* The applicable suction head is necessary for using the suction cups.

Round flat type

Applicable cup size	ϕ18mm	ϕ25mm	ϕ35mm
Suction Cups (Pouches)	NEW 	NEW 	NEW 
Drawing			
Order code No.	042104	042105	042106
TYPE	EPNG-132B-S4	EPNG-133B-S4	EPNG-134B-S4
Weight	0.5g	2.8g	3.3g
Applicable stems	① VFILA-PHA-1/8		

* The applicable suction head is necessary for using the suction cups.

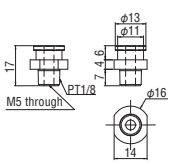
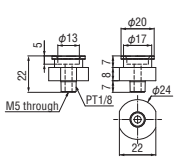
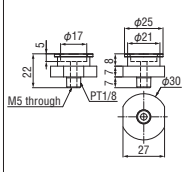
Star-shaped lip shapes could freely follow the soft and bag-shaped work piece.



Special lip structure enables tight suction.



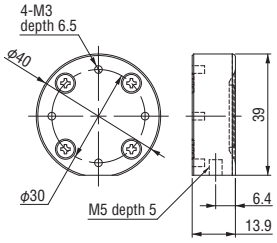
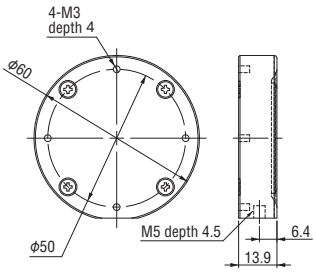
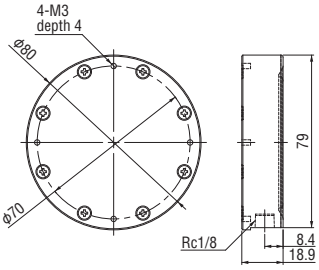
Suction head for star-shaped and round pouch cups

	1	2	3
Outside Stem			
Drawing			
Order code No.	211114	211115	211116
TYPE	VFILA-PHA-1/8	VFILA-PHB-1/8	VFILA-PHC-1/8
Weight	4.0g	13.0g	18.0g
Applicable stems	VFILB-1/8, VFI-L, VFIL-H➡ 3-29,31		

Non-Contact Suction Pad

Please choose based on the 3 types of lifting forces.

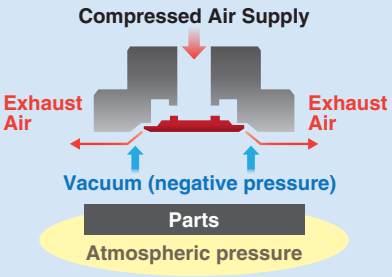
- It can transfer the work piece of different shapes with one gripper (wood, resin, cardboard, etc.).
- The absence of contact with the workpiece ensures that it is transported without any suction marks or damage

Applicable cup size	ϕ40mm	ϕ60mm	ϕ80mm
Non-Contact Suction Pad	NEW 	NEW 	NEW 
Drawing			
Order code No.	042113	042114	042115
TYPE	ECOPS-40Y	ECOPS-60Y	ECOPS-80Y
Weight	26g	66g	147g

■ Specification

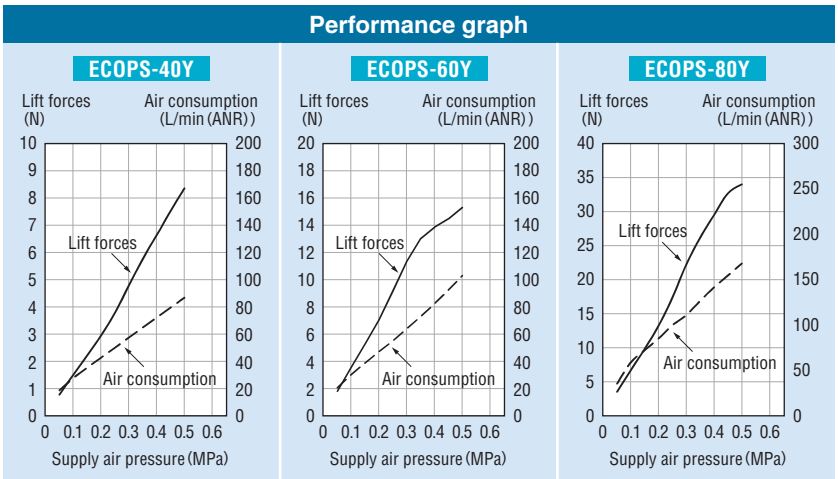
TYPE	Fluid used	Piping connection diameter	Pressure range (MPa)	Temperature range (℃)	Lift forces (N)	Air consumption (L/min (ANR))	Weight (g)
ECOPS-40Y	Air (Non corrosive and incombustible gas)	M5	0.15 ~ 0.5	0 ~ 45 (However, it doesn't freeze.)	8	88	26
ECOPS-60Y					15	105	66
ECOPS-80Y		Rc1/8			34	168	147

Schematic diagram



The air is released and sucked, so the inside is clean and it's sanitary to be used even the inside isn't disassembled and cleared up.

Performance graph



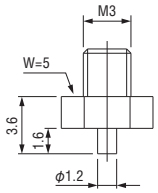
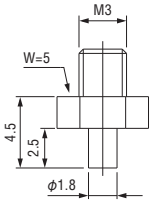
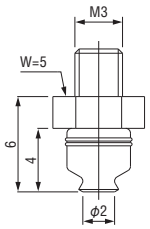
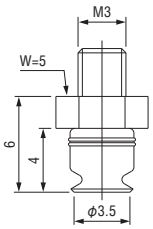
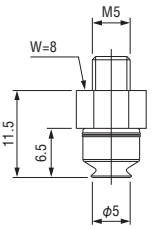
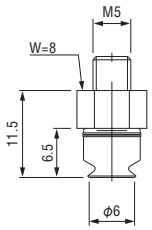
Flat Suction Cups

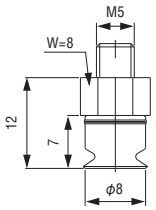
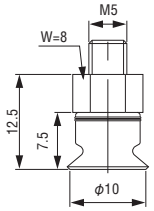
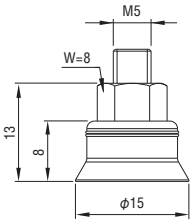
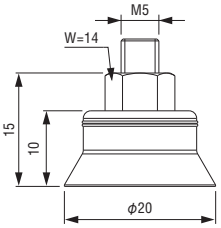
Flat basic type. Silicone type and a mark-free type are provided.

Silicone　Excellent in durability and heat resistance (250℃).　Mark-free　It demonstrates exceptional durability and heat resistance up to 140℃ , making it resistant to leaving suction marks.

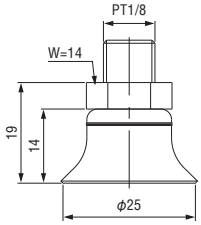
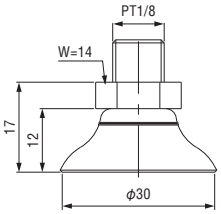
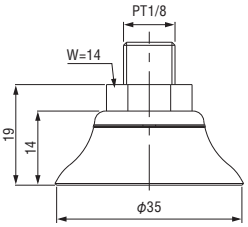
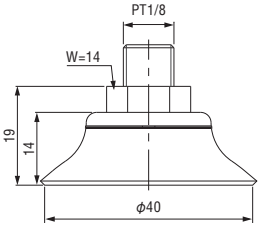
● Can be used by removing suction attach head of the suction stem non-rotate (VFILB,VFILB2).

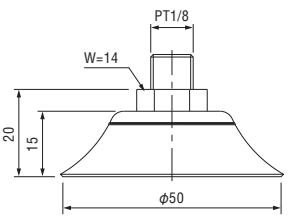
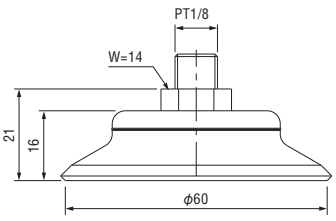
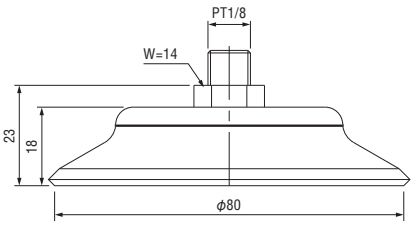
▶ It is appropriate for transmitting items that have a flat surface.

Applicable cup size		ϕ1.2mm	ϕ1.8mm	ϕ2mm	ϕ3.5mm	ϕ5mm	ϕ6mm
Flat Suction Cups							
Drawing							
Silicone (transparent white)	Order code No.	183823	183824	183825	183826	183827	183828
	TYPE	SQN 1 SI-M3 M	SQN 1.5 SI-M3 M	SQN 2 SI-M3 M	SQN 3.5 SI-M3 M	SQN 5 SI-M5 M	SQN 6 SI-M5 M
	Weight	1.0g	1.0g	1.0g	1.0g	1.1g	1.1g
Mark-free (blue)	Order code No.	—	—	—	—	183797	183798
	TYPE	—	—	—	—	SQN 5 HT1-M5 M	SQN 6 HT1-M5 M
	Weight	—	—	—	—	1.1g	1.1g
Applicable stems		Micro : VFILB-M, MSH ➡ 3-23,30				Non-rotate for mini / small or VFILB/VFILBR ➡ 3-30,31	

Applicable cup size		ϕ8mm	ϕ10mm	ϕ15mm	ϕ20mm
Flat Suction Cups					
Drawing					
Silicone (transparent white)	Order code No.	183829	183830	183831	183832
	TYPE	SQN 8 SI-M5 M	SQN 10 SI-M5 M	SQN 15 SI-M5 M	SQN 20 SI-M5 M
	Weight	1.2g	1.3g	4.5g	5.6g
Mark-free (blue)	Order code No.	183799	183800	183801	183802
	TYPE	SQN 8 HT1-M5 M	SQN 10 HT1-M5 M	SQN 15 HT1-M5 M	SQN 20 HT1-M5 M
	Weight	1.2g	1.3g	4.5g	5.6g
Applicable stems		Non-rotate for mini / small or VFILB/VFILBR ➡ 3-30,31			

Flat Suction Cups

Applicable cup size		ϕ25mm	ϕ30mm	ϕ35mm	ϕ40mm
Flat Suction Cups					
Drawing					
Silicone (transparent white)	Order code No.	183833	183834	183835	183836
	TYPE	SQN 25 SI-PT1/8 M	SQN 30 SI-PT1/8 M	SQN 35 SI-PT1/8 M	SQN 40 SI-PT1/8 M
	Weight	7.2g	7.9g	10.6g	12.2g
Mark-free (blue)	Order code No.	183803	183804	183805	183806
	TYPE	SQN 25 HT1-PT1/8 M	SQN 30 HT1-PT1/8 M	SQN 35 HT1-PT1/8 M	SQN 40 HT1-PT1/8 M
	Weight	7.2g	7.9g	10.6g	12.2g
Applicable stems		Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ 3-29,31			

Applicable cup size		ϕ50mm	ϕ60mm	ϕ80mm
Flat Suction Cups				
Drawing				
Silicone (transparent white)	Order code No.	183837	183838	183839
	TYPE	SQN 50 SI-PT1/8 M	SQN 60 SI-PT1/8 M	SQN 80 SI-PT1/8 M
	Weight	15.3g	34.2g	62.5g
Mark-free (blue)	Order code No.	183807	183808	183809
	TYPE	SQN 50 HT1-PT1/8 M	SQN 60 HT1-PT1/8 M	SQN 80 HT1-PT1/8 M
	Weight	15.3g	34.2g	62.5g
Applicable stems		Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ 3-29,31		

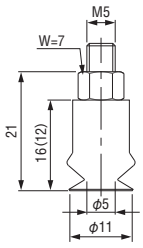
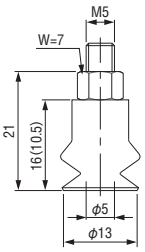
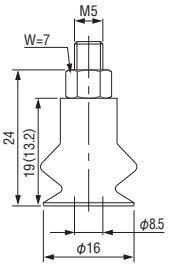
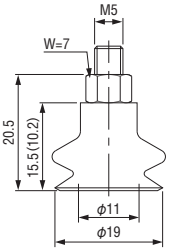
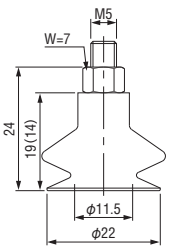
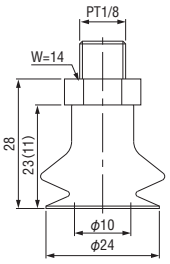
Bellows Type Suction Cups 1.5-stage

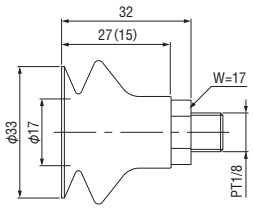
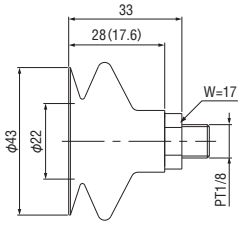
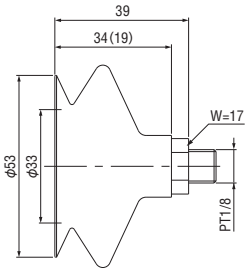
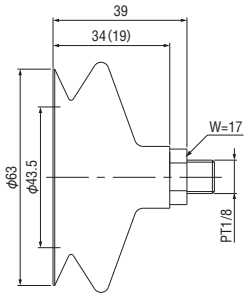
The bellows cups, characterized by their significant buffering effect, are ideally suited for transporting uneven workpieces.

Silicone — Excellent in durability and heat resistance (250℃).

Mark-free — It demonstrates exceptional durability and heat resistance up to 140℃, making it resistant to leaving suction marks.

● The suction attachment can be detached from the non-rotating suction stem (VFILB, VFILB2) for use.

Applicable cup size		ϕ11mm	ϕ13mm	ϕ16mm	ϕ19mm	ϕ22mm	ϕ24mm
Bellows type Suction Cups 1.5-stage							
Drawing ∗ The value in ( ) indicates the dimension with suction.							
Silicone (transparent white)	Order code No.	183874	183875	183876	183877	183878	183994
	TYPE	SFSGA 11 SI-M5 M	SFSGA 14 SI-M5 M	SFSGA 16 SI-M5 M	SFSGA 20 SI-M5 M	SFSGA 22 SI-M5 M	SFSGA 25 SI-PT1/8 M
	Weight	2.0g	2.1g	2.3g	2.7g	3.1g	6.4g
Mark-free (blue)	Order code No.	183857	183858	183859	183860	183861	183993
	TYPE	SFSGA 11 HT1-M5 M	SFSGA 14 HT1-M5 M	SFSGA 16 HT1-M5 M	SFSGA 20 HT1-M5 M	SFSGA 22 HT1-M5 M	SFSGA 25 HT1-PT1/8 M
	Weight	2.0g	2.1g	2.3g	2.7g	3.1g	6.4g
Applicable stems		Non-rotate for mini/small or VFILB/VFILBR ➡ 3-30,31					Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ 3-29,31

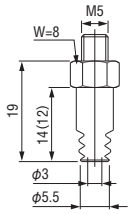
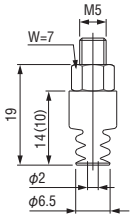
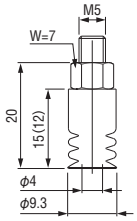
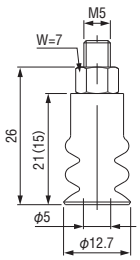
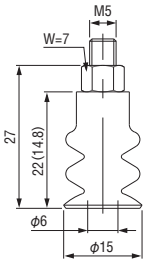
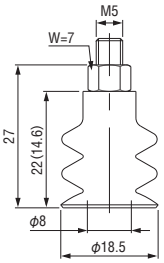
Applicable cup size		ϕ33mm	ϕ43mm	ϕ53mm	ϕ63mm
Bellows type Suction Cups 1.5-stage					
Drawing ∗ The value in ( ) indicates the dimension with suction.					
Silicone (transparent white)	Order code No.	183879	183880	183881	183882
	TYPE	SFSGA 33 SI-PT1/8 M	SFSGA 43 SI-PT1/8 M	SFSGA 53 SI-PT1/8 M	SFSGA 63 SI-PT1/8 M
	Weight	15.0g	18.0g	26.0g	33.0g
Mark-free (blue)	Order code No.	183862	183863	183864	—
	TYPE	SFSGA 33 HT1-PT1/8 M	SFSGA 43 HT1-PT1/8 M	SFSGA 53 HT1-PT1/8 M	—
	Weight	15.0g	18.0g	26.0g	—
Applicable stems		Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ 3-29,31			

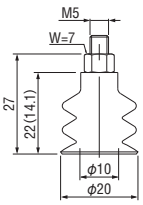
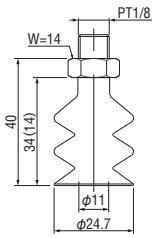
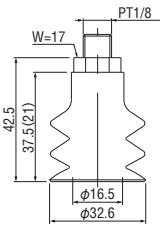
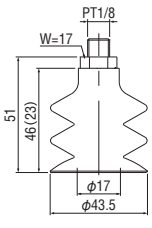
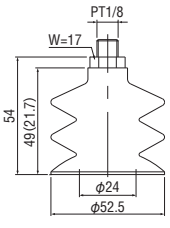
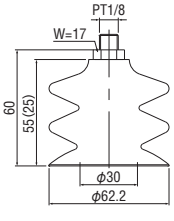
Bellows Type Suction Cups 2.5-stage

Bellows cups, characterized by their significant buffering effect, are ideally suited for transporting workpieces that are angled or uneven.

Silicone Excellent in durability and heat resistance (250℃). **Mark-free** It demonstrates exceptional durability and heat resistance up to 140℃, making it resistant to leaving suction marks.

● Can be used by removing suction attach head of the suction stem non-rotate (VFILB,VFILB2).

Applicable cup size		ϕ5.5mm	ϕ6.5mm	ϕ9.3mm	ϕ12.7mm	ϕ15mm	ϕ18.5mm
Bellows type Suction Cups 2.5-stage							
Drawing ∗ The value in ( ) indicates the dimension with suction.							
Silicone (transparent white)	Order code No.	183909	183910	183911	183912	183913	183914
	TYPE	SFSG 5 SI-M5 M	SFSG 7 SI-M5 M	SFSG 9 SI-M5 M	SFSG 12 SI-M5 M	SFSG 14 SI-M5 M	SFSG 18 SI-M5 M
	Weight	1.5g	1.6g	1.8g	2.2g	2.6g	2.9g
Mark-free (blue)	Order code No.	—	—	183893	183894	183895	183896
	TYPE	—	—	SFSG 9 HT1-M5 M	SFSG 12 HT1-M5 M	SFSG 14 HT1-M5 M	SFSG 18 HT1-M5 M
	Weight	—	—	1.8g	2.2g	2.6g	2.9g
Applicable stems		Non-rotate for mini/small or VFILB/VFILBR ➡ 3-30,31					

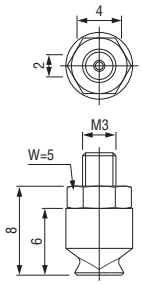
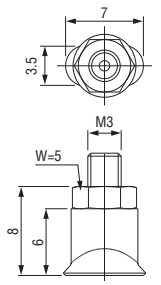
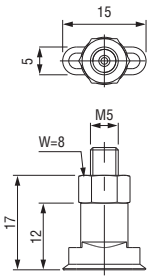
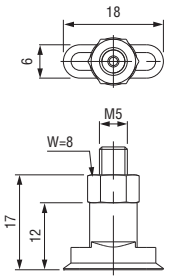
Applicable cup size		ϕ20mm	ϕ24.7mm	ϕ32.6mm	ϕ43.5mm	ϕ52.5mm	ϕ62.2mm
Bellows type Suction Cups 2.5-stage							
Drawing ∗ The value in ( ) indicates the dimension with suction.							
Silicone (transparent white)	Order code No.	183915	183916	183917	183918	183919	183920
	TYPE	SFSG 20 SI-M5 M	SFSG 25 SI-PT1/8 M	SFSG 32 SI-PT1/8 M	SFSG 42 SI-PT1/8 M	SFSG 52 SI-PT1/8 M	SFSG 62 SI-PT1/8 M
	Weight	3.3g	8.0g	16.0g	26.0g	31.0g	59.0g
Mark-free (blue)	Order code No.	183897	183898	183899	183900	—	—
	TYPE	SFSG 20 HT1-M5 M	SFSG 25 HT1-PT1/8 M	SFSG 32 HT1-PT1/8 M	SFSG 42 HT1-PT1/8 M	—	—
	Weight	3.3g	8.0g	16.0g	26.0g	—	—
Applicable stems		Non-rotate for mini/small or VFILB, VFILBR ➡ 3-30,31	Non-rotate for small or VFILB-1/8, large VFI-L ,VFIL-H ➡ 3-29,31		Large, VFI-L, or VFIL-H ➡ 3-29,31		

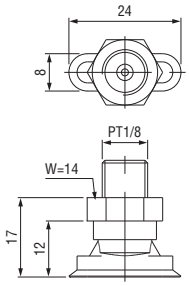
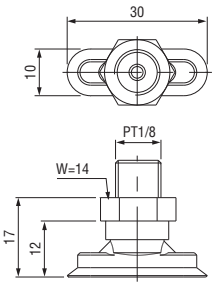
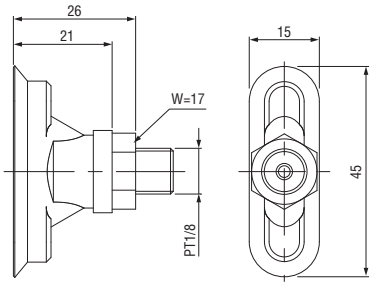
Oval Cups

Oval Cups are ideal for transporting elongated and slender workpieces.

Silicone Excellent in durability and heat resistance (250℃). Mark-free It demonstrates exceptional durability and heat resistance up to 140℃, making it resistant to leaving suction marks.

● Can be used by removing suction attach head of the suction stem non-rotate (VFILB,VFILB2).

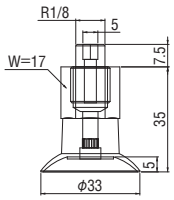
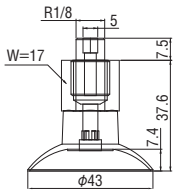
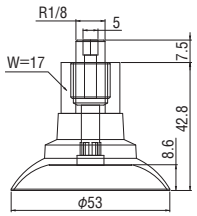
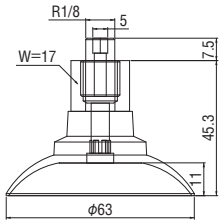
Applicable cup size		2×4mm	3.5×7mm	5×15mm	6×18mm
Oval cups					
Drawing					
Silicone (transparent white)	Order code No.	187222	187223	187224	—
	TYPE	SSGON-4＊2-SI-65-M3-M	SSGON-7＊3.5-SI-65-M3-M	SSGON-15＊5-SI-65-M5-M	—
	Weight	2.0g	2.0g	3.4g	—
Mark-free (blue)	Order code No.	183932	183933	183934	183935
	TYPE	SSGON 2＊4 HT1-M3 M	SSGON 3.5＊7 HT1-M3 M	SSGON 5＊15 HT1-M5 M	SSGON 6＊18 HT1-M5 M
	Weight	2.0g	2.0g	3.4g	3.7g
Applicable stems		Micro or VFILB-M,MSH ➡ 3-23,30		Non-rotate for mini/small or VFILB/VFILBR ➡ 3-30,31	

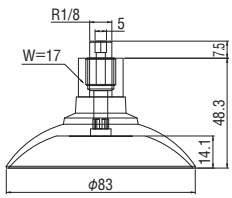
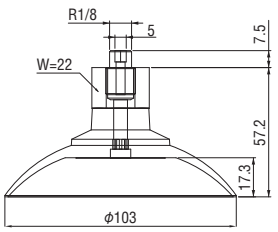
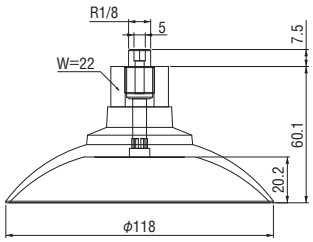
Applicable cup size		8×24mm	10×30mm	15×45mm
Oval cups				
Drawing				
Silicone (transparent white)	Order code No.	—	187225	187226
	TYPE	—	SSGON-30＊10-SI-65-PT1/8-M	SSGON-45＊15-SI-65-PT1/8-M
	Weight	—	6.8g	14.8g
Mark-free (blue)	Order code No.	183936	183937	183938
	TYPE	SSGON 8＊24 HT1-PT1/8 M	SSGON 10＊30 HT1-PT1/8 M	SSGON 15＊45 HT1-PT1/8 M
	Weight	6.7g	6.8g	14.8g
Applicable stems		Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ 3-29,31		

Sheet Metal Suction Cups

Best for high-speed conveyance of oil-filmed sheet metal.

▶ Strong holding power in the horizontal direction. Utilize the superior suction capability provided by the groove on the suction surface.

Applicable cup size	ϕ33mm	ϕ43mm	ϕ53mm	ϕ63mm
Suction Cups for sheet metal w/ screw				
Drawing				
Order code No.	187562	187563	187564	187565
TYPE	SSAXM-30-ED85-PT1/8AGJNT	SSAXM-40-ED85-PT1/8AGJNT	SSAXM-50-ED85-PT1/8AGJNT	SSAXM-60-ED85-PT1/8AGJNT
Holding force*1	39N	69N	109N	154N
Horizontal power (with oil)*2	41N	71N	110N	155N
Weight	23.2g	23.7g	36.3g	41.0g
Applicable stems	Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ 3-29,31			

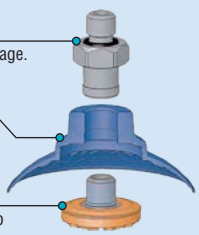
Applicable cup size	ϕ83mm	ϕ103mm	ϕ118mm
Suction Cups for sheet metal w/ screw			
Drawing			
Order code No.	187566	187567	187568
TYPE	SSAXM-80-ED85-PT1/8AGJNT	SSAXM-100-ED85-PT1/8AGJNT	SSAXM-115-ED85-PT1/8AGJNT
Holding force*1	270N	412N	549N
Horizontal power (with oil)*2	269N	414N	584N
Weight	50.5g	89.8g	109.9g
Applicable stems	Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ 3-29,31		

*1 Above holding force is calculated with dried workpiece with a smooth surface (vertical direction, vacuum pressure -60 kPa). Safety factor is not included.
*2 Above horizontal force is calculated with dried/oil-filmed workpiece with a smooth surface (vacuum pressure -60 kPa). Actual values may vary depending on the state of the work piece surface. Safety factor is not included.

Upper connector
A seal ring is included to prevent air leakage.

Rubber part
Composed of Elastodur, this material exhibits outstanding flexibility and exceptional resistance to wear.

Underside connector with brake foot
Prevents products from being drawn into the pad or deforming.



Suction Cups for Exchange

Suction Cups for exchange in 3-15 ～ 3-19.

Suction Cups for Flat Suction Cups.

Page	Order code No.	TYPE	Material	Cup color
3-15	183840	SQ 1 SI	silicone	Cloudy transparent
	183841	SQ 1.5 SI	silicone	Cloudy transparent
	183842	SQ 2 SI	silicone	Cloudy transparent
	183843	SQ 3.5 SI	silicone	Cloudy transparent
	183844	SQ 5 SI	silicone	Cloudy transparent
	183845	SQ 6 SI	silicone	Cloudy transparent
	183846	SQ 8 SI	silicone	Cloudy transparent
	183847	SQ 10 SI	silicone	Cloudy transparent
	183848	SQ 15 SI	silicone	Cloudy transparent
	183849	SQ 20 SI	silicone	Cloudy transparent
3-16	183850	SQ 25 SI	silicone	Cloudy transparent
	183851	SQ 30 SI	silicone	Cloudy transparent
	183852	SQ 35 SI	silicone	Cloudy transparent
	183853	SQ 40 SI	silicone	Cloudy transparent
	183854	SQ 50 SI	silicone	Cloudy transparent
	183855	SQ 60 SI	silicone	Cloudy transparent
	183856	SQ 80 SI	silicone	Cloudy transparent
3-15	183810	SQ 5 HT1	Mark-free	Blue
	183811	SQ 6 HT1	Mark-free	Blue
	183812	SQ 8 HT1	Mark-free	Blue
	183813	SQ 10 HT1	Mark-free	Blue
	183814	SQ 15 HT1	Mark-free	Blue
	183815	SQ 20 HT1	Mark-free	Blue
3-16	183816	SQ 25 HT1	Mark-free	Blue
	183817	SQ 30 HT1	Mark-free	Blue
	183818	SQ 35 HT1	Mark-free	Blue
	183819	SQ 40 HT1	Mark-free	Blue
	183820	SQ 50 HT1	Mark-free	Blue
	183821	SQ 60 HT1	Mark-free	Blue
	183822	SQ 80 HT1	Mark-free	Blue

Suction Cups for flat oval.

Page	Order code No.	TYPE	Material	Cup color
3-19	187227	SSGO-4*2-SI-65	silicone	White
	187228	SSGO-7*3.5-SI-65	silicone	White
	187229	SSGO-15*5-SI-65	silicone	White
	187230	SSGO-30*10-SI-65*	silicone	White
	187231	SSGO-45*15-SI-65*	silicone	White
3-19	183940	SSGO 2*4 HT1	Mark-free	Blue
	183941	SSGO 3.5*7 HT1	Mark-free	Blue
	183942	SSGO 5*15 HT1	Mark-free	Blue
	183943	SSGO 6*18 HT1*	Mark-free	Blue
	183944	SSGO 8*24 HT1*	Mark-free	Blue
	183945	SSGO 10*30 HT1*	Mark-free	Blue
	183946	SSGO 15*45 HT1*	Mark-free	Blue

* Incorporate the stem for securing the cups.

Bellows type Suction Cups 1.5-stage.

Page	Order code No.	TYPE	Material	Cup color
3-17	183883	SFGA 11 SI	silicone	Cloudy transparent
	183884	SFGA 14 SI	silicone	Cloudy transparent
	183885	SFGA 16 SI	silicone	Cloudy transparent
	183886	SFGA 20 SI	silicone	Cloudy transparent
	183887	SFGA 22 SI	silicone	Cloudy transparent
	183888	SFGA 25 SI	silicone	Cloudy transparent
	183889	SFGA 33 SI	silicone	Cloudy transparent
	183890	SFGA 43 SI	silicone	Cloudy transparent
	183891	SFGA 53 SI	silicone	Cloudy transparent
	183892	SFGA 63 SI	silicone	Cloudy transparent
3-17	183865	SFGA 11 HT 1	Mark-free	Blue
	183866	SFGA 14 HT1	Mark-free	Blue
	183867	SFGA 16 HT1	Mark-free	Blue
	183868	SFGA 20 HT1	Mark-free	Blue
	183869	SFGA 22 HT1	Mark-free	Blue
	183870	SFGA 25 HT1	Mark-free	Blue
	183871	SFGA 33 HT1	Mark-free	Blue
	183872	SFGA 43 HT1	Mark-free	Blue
	183873	SFGA 53 HT1	Mark-free	Blue

Bellows type Suction Cups 2.5-stage.

Page	Order code No.	TYPE	Material	Cup color
3-18	183921	SFG 5 SI	silicone	Cloudy transparent
	183922	SFG 7 SI	silicone	Cloudy transparent
	183923	SFG 9 SI	silicone	Cloudy transparent
	183924	SFG 12 SI	silicone	Cloudy transparent
	183925	SFG 14 SI	silicone	Cloudy transparent
	184085	SFG 18 SI	silicone	Cloudy transparent
	183926	SFG 20 SI	silicone	Cloudy transparent
	183927	SFG 25 SI	silicone	Cloudy transparent
	183928	SFG 32 SI	silicone	Cloudy transparent
	183929	SFG 42 SI	silicone	Cloudy transparent
	183930	SFG 52 SI	silicone	Cloudy transparent
	183931	SFG 62 SI	silicone	Cloudy transparent
3-18	183901	SFG 9 HT1	Mark-free	Blue
	183902	SFG 12 HT1	Mark-free	Blue
	183903	SFG 14 HT1	Mark-free	Blue
	183904	SFG 18 HT1	Mark-free	Blue
	183905	SFG 20 HT1	Mark-free	Blue
	183906	SFG 25 HT1	Mark-free	Blue
	183907	SFG 32 HT1	Mark-free	Blue
	183908	SFG 42 HT1	Mark-free	Blue

Suction stems

Can be selected according to the type of suction cup and allows secure suction.



Micro 3-23



Mini 3-23



Small 3-26



Large 3-29

Resin Suction stems

Weight saving achieved by using plastic for the body.



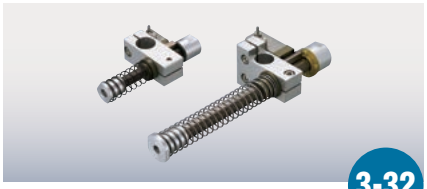
Mini 3-23



Small 3-26

Suction stems locking mechanism

Non-rotating suction stems. These feature a long stroke, holding unit in position at the stopper cylinder.



3-32

Suction stems non-rotate

Exchangeable head for suction stem.



Micro 3-30



Mini 3-30



Small 3-30



1/8 For connection 3-31

Suction stems non-rotate

Exchangeable head for suction stem.



Angle adjustment 3-31



Large 3-31

Fixed

Please use with a pad on the tip.



3-36

Suction Stems for Mini Cylinder

Used when suction cup is attached to the end of mini cylinder.



3-36

Adjuster

Height of suction stem can be adjusted.



3-37

Suction stems angle brackets

The angle can be adjusted by attaching a pad to the tip.



3-38

■spring constant value of suction stem

No.	TYPE	Spring constant (N/mm)	spring constant of suction stem (N)
1	VFILB-M/VFILB-M-P8	0.29	2.62
2	VFILB2-SSH/VFILB2-SSH-P12/ VFILB2-SH/VFILB2-SH-P12/ VFILB2-SH1/8/VFILB2-SH1/8-P12	0.65	7.76
3	VFILB2-SSH-20/VFILB2-SSH-20-P12/ VFILB2-SH-20/VFILB2-SH-20-P12/ VFILB2-SH1/8-20/VFILB2-SH1/ 8-20-P12	0.50	12.10
4	VFIL-H	0.80	16.87
5	VFIL1-SS-5/VFIL2-SS-5-P8/ VFIL2-SS-5-P12	0.50	3.99
6	VFIL1-SS-10/VFIL2-SS-10-P8/ VFIL2-SS-10-P12	0.25	3.99
7	VFIL1-SS-20/VFIL2-SS-20-P8/ VFIL2-SS-20-P12	0.17	4.16

No.	TYPE	Spring constant (N/mm)	spring constant of suction stem (N)
8	VFIL1-SS-30/VFIL2-SS-30-P8/ VFIL2-SS-30-P12	0.12	4.49
9	VFIL-S-5A/VFIL1-S-5-P12/ VFIL1-S-5-P20	0.27	2.46
10	VFIL-S-10A/VFIL1-S-10-P12/ VFIL1-S-10-P20	0.16	2.63
11	VFIL-S-20A/VFIL1-S-20-P12/ VFIL1-S-20-P20	0.11	2.81
12	VFIL-S-30A/VFIL1-S-30-P12/ VFIL1-S-30-P20	0.08	2.91
13	VFI-L-20-M17/VFI-L-20-P20	1.11	28.96
14	VFI-L-50-M17/VFI-L-50-P20	0.67	37.43
15	VFI-L-100-M22	0.19	19.81

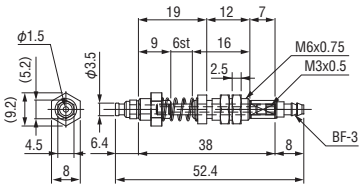
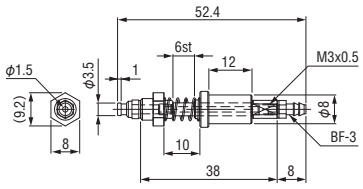
∗ Spring constant. The spring force during in compression is a reference value.

Suction Stems (Micro/Mini)

Can be selected according to the type of suction cup and allows secure suction.

Direct connection on jungle gym series parts is possible.

● The suction cup is sold separately. ● Cup fixing system : embedded

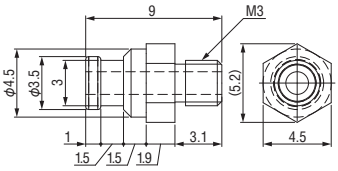
Suction stems (micro)		
Drawing		
Order code No.	**210785**	**210818**
TYPE	**VFILB-M**	**VFILB-M-P8**
Weight	5g	6g
Piping/Mounting	ϕ4 ／ M6 P=0.75	ϕ4 ／ϕ8
Applicable cup size	VAPH-4 (6) M ➡ 3-4 ／ VAPH (F)-3C-3 ➡ 3-6,10 ／ϕ1.2 ～ 3.5 ➡ 3-15	

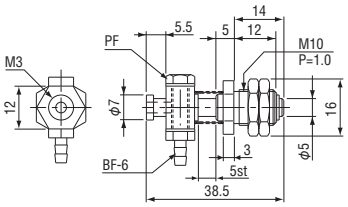
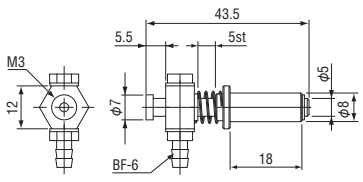
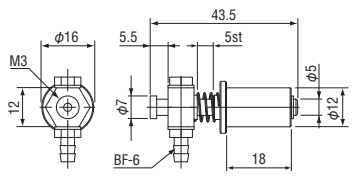


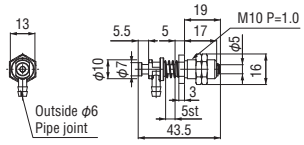
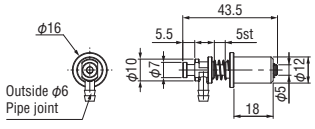
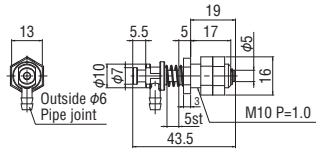
Suction fitting attach head/M3, micro

Order code No.	**131316**
TYPE	**N01891-201**

● Weight : 1g ● W/ gasket
● Target: suction stem (micro), suction stem non-rotate (micro)



Suction Stems (Mini)			
Drawing (5st)			
Order code No.	**211029**	**211030**	**211031**
TYPE	**VFIL1-SS-5**	**VFIL2-SS-5-P8**	**VFIL2-SS-5-P12**
Weight	14g	9g	13g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ8	ϕ6 ／ϕ12
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6 ／ϕ1.2 ～ 3.5 ➡ 3-15		

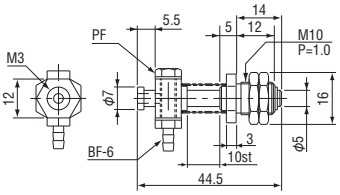
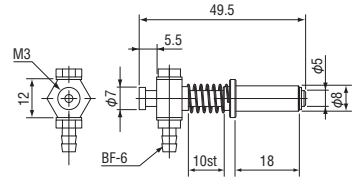
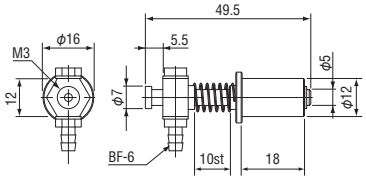
Resin Suction Stems (Mini)		 ＊1	NEW  ＊2
Drawing (5st)			
Order code No.	**211109**	**211105**	**211144**
TYPE	**VFILP-SS-5**	**VFILP-SS-5-P12**	**VFILPL-SS-5**
Weight	9g	4g	4.8g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6		

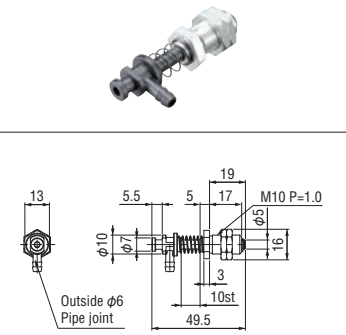
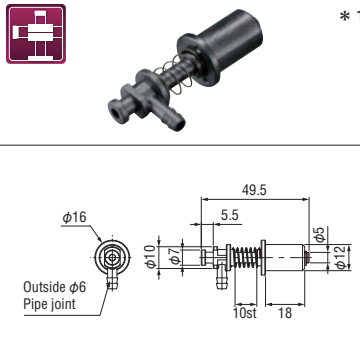
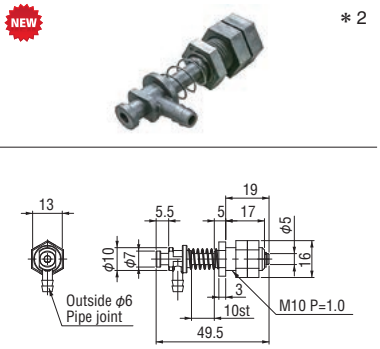
＊1 When fixing to the bracket, insert it all the way to the base.
＊2 Be careful not to tighten the nut too tightly. (Recommended tightening torque : 0.8 ～ 1.0N・m)

Suction Stems (Mini)

Can be selected according to the type of suction cup and allows secure suction.

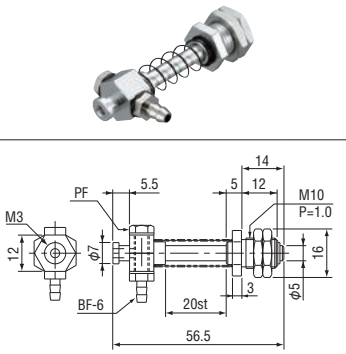
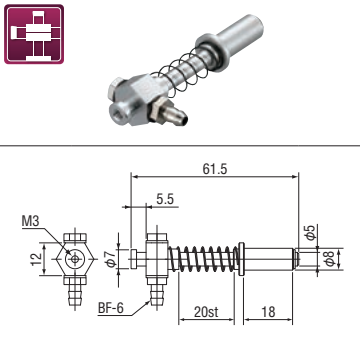
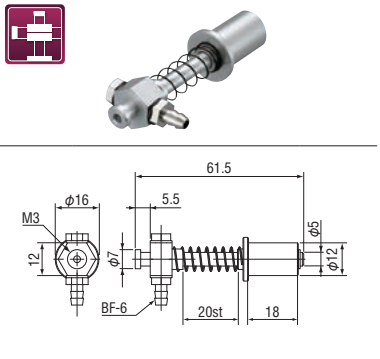
● The suction cup is sold separately. ● Cup fixing system : embedded

Suction Stems (Mini)			
Drawing (10st)			
Order code No.	211032	211033	211034
TYPE	VFIL1-SS-10	VFIL2-SS-10-P8	VFIL2-SS-10-P12
Weight	15g	9g	14g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ8	ϕ6 ／ϕ12
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6 ／ϕ1.2 ～ 3.5 ➡ 3-15		

Resin Suction Stems (Mini)			
Drawing (10st)			
Order code No.	211110	211106	211145
TYPE	VFILP-SS-10	VFILP-SS-10-P12	VFILPL-SS-10
Weight	9g	4g	5.1g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6		

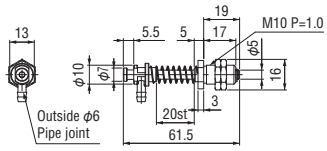
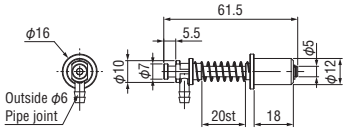
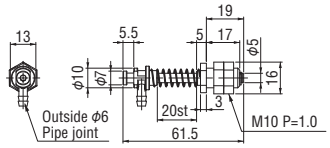
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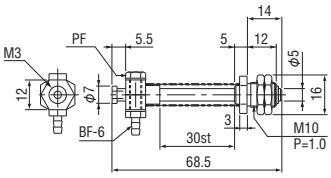
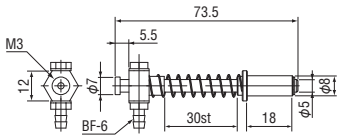
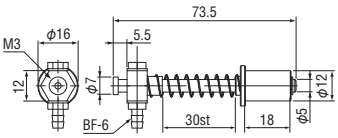
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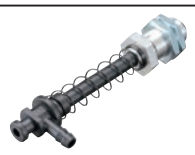
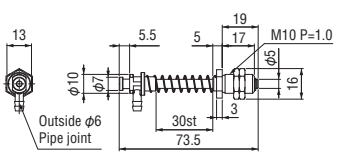
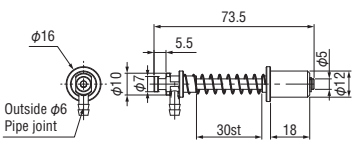
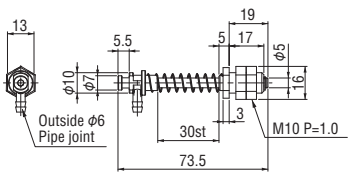
Suction Stems (Mini)			
Drawing (20st)			
Order code No.	211035	211036	211037
TYPE	VFIL1-SS-20	VFIL2-SS-20-P8	VFIL2-SS-20-P12
Weight	15g	10g	14g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ8	ϕ6 ／ϕ12
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6 ／ϕ1.2 ～ 3.5 ➡ 3-15		

＊1 When fixing to the bracket, insert it all the way to the base.
＊2 Be careful not to tighten the nut too tightly. (Recommended tightening torque：0.8 ～ 1.0N・m)

● The suction cup is sold separately. ● Cup fixing system : embedded

Resin Suction Stems (Mini)			
		 ＊1	 ＊2
Drawing (20st)			
Order code No.	211111	211107	211146
TYPE	VFILP-SS-20	VFILP-SS-20-P12	VFILPL-SS-20
Weight	10g	6g	5.85g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6		

Suction Stems (Mini)			
			
Drawing (30st)			
Order code No.	211038	211039	211040
TYPE	VFIL1-SS-30	VFIL2-SS-30-P8	VFIL2-SS-30-P12
Weight	17g	11g	15g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ8	ϕ6 ／ϕ12
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6 ／ϕ1.2 ～ 3.5 ➡ 3-15		

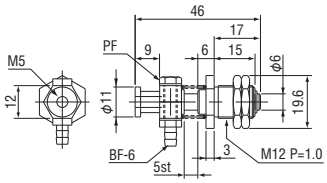
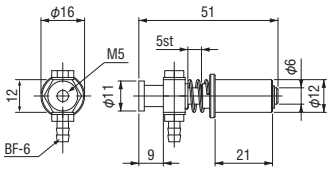
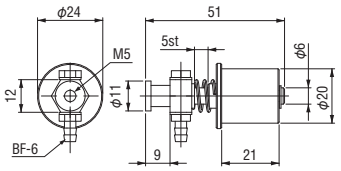
Resin Suction Stems (Mini)			
		 ＊1	 ＊2
Drawing (30st)			
Order code No.	211112	211108	211147
TYPE	VFILP-SS-30	VFILP-SS-30-P12	VFILPL-SS-30
Weight	11g	7g	6.4g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1M ～ 4M ➡ 3-6		

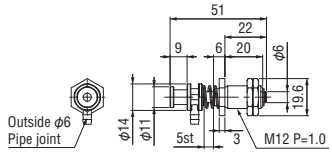
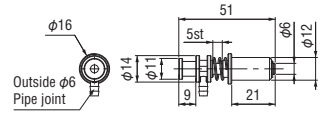
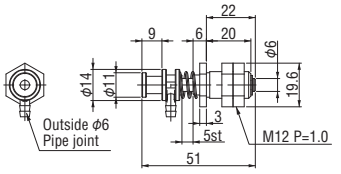
＊1 When fixing to the bracket, insert it all the way to the base.
＊2 Be careful not to tighten the nut too tightly. (Recommended tightening torque : 0.8 ～ 1.0N・m)

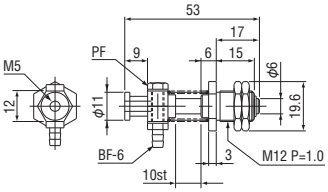
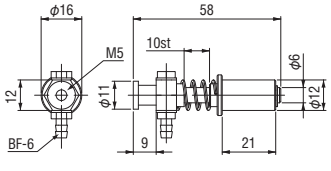
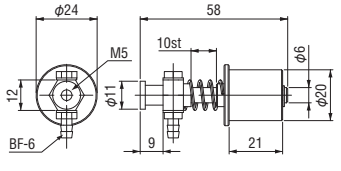
Suction Stems (Small)

Can be selected according to the type of suction cup and allows secure suction.

● The suction cup is sold separately. ● Cup fixing system : embedded

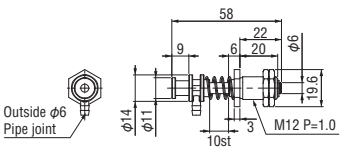
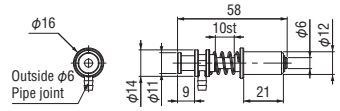
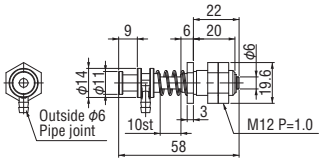
Suction stems (small)			
Drawing (5st)			
Order code No.	**210974**	**211006**	**211007**
TYPE	**VFIL-S-5A**	**VFIL1-S-5-P12**	**VFIL1-S-5-P20**
Weight	20g	15g	22g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ϕ20
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6 ／ SQN type is ϕ5 ～ 22 ➡ 3-17,18		

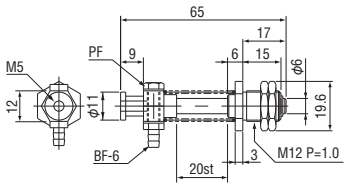
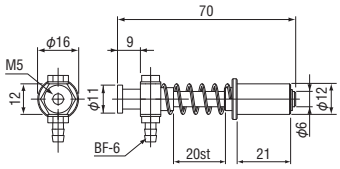
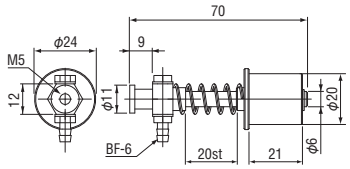
Resin Suction Stems (small)		 ＊1	NEW  ＊2
Drawing (5st)			
Order code No.	**211097**	**211092**	**211148**
TYPE	**VFILP-S-5**	**VFILP-S-5-P12**	**VFILPL-S-5**
Weight	16g	7g	8.35g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M12 P=1.0
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6		

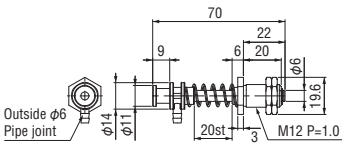
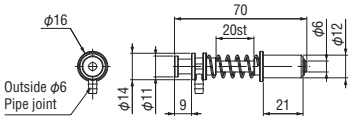
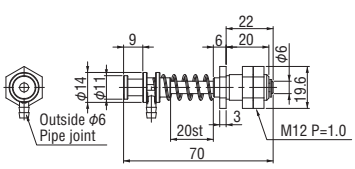
Suction stems (small)			
Drawing (10st)			
Order code No.	**210975**	**211008**	**211009**
TYPE	**VFIL-S-10A**	**VFIL1-S-10-P12**	**VFIL1-S-10-P20**
Weight	21g	16g	29g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ϕ20
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6 ／ SQN type is ϕ5 ～ 22 ➡ 3-17,18		

＊1 When fixing to the bracket, insert it all the way to the base.
＊2 Be careful not to tighten the nut too tightly. (Recommended tightening torque：0.8 ～ 1.0N・m)

● The suction cup is sold separately. ● Cup fixing system : embedded

Resin Suction Stems (small)		 ＊1	NEW  ＊2
Drawing (10st)			
Order code No.	**211098**	**211093**	**211149**
TYPE	**VFILP-S-10**	**VFILP-S-10-P12**	**VFILPL-S-10**
Weight	16g	7g	8.85g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M12 P=1.0
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6		

Suction stems (small)			
Drawing (20st)			
Order code No.	**210976**	**211010**	**211011**
TYPE	**VFIL-S-20A**	**VFIL1-S-20-P12**	**VFIL1-S-20-P20**
Weight	22g	18g	31g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ϕ20
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6 ／ SQN type is ϕ5 ～ 22 ➡ 3-17,18		

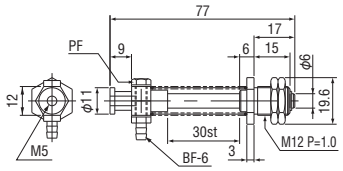
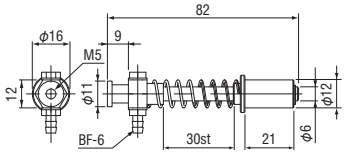
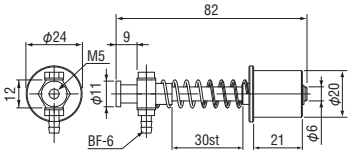
Resin Suction Stems (small)		 ＊1	NEW  ＊2
Drawing (20st)			
Order code No.	**211099**	**211094**	**211150**
TYPE	**VFILP-S-20**	**VFILP-S-20-P12**	**VFILPL-S-20**
Weight	17g	8g	9.7g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M12 P=1.0
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6		

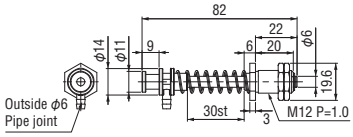
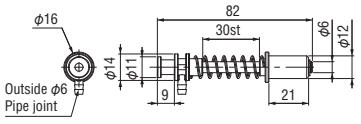
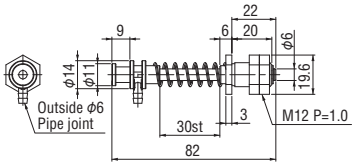
＊1 When fixing to the bracket, insert it all the way to the base.
＊2 Be careful not to tighten the nut too tightly. (Recommended tightening torque：0.8 ～ 1.0N・m)

Suction Stems (Small) / Taper Washer

Direct connection on jungle gym series parts is possible.

● The suction cup is sold separately. ● Cup fixing system : embedded

Suction stems (small)			
Drawing (30st)			
Order code No.	210977	211012	211013
TYPE	VFIL-S-30A	VFIL1-S-30-P12	VFIL1-S-30-P20
Weight	24g	19g	32g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ϕ20
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6 ／ SQN type is ϕ5 ～ 22 ➡ 3-17,18		

Resin Suction Stems (small)		 ＊1	NEW  ＊2
Drawing (30st)			
Order code No.	211100	211095	211151
TYPE	VFILP-S-30	VFILP-S-30-P12	VFILPL-S-30
Weight	18g	9g	10.5g
Piping/Mounting	ϕ6 ／ M12 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M12 P=1.0
Applicable cup size	ϕ15 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6		

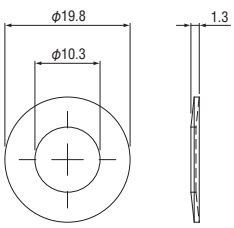
＊1 When fixing to the bracket, insert it all the way to the base.
＊2 Be careful not to tighten the nut too tightly. (Recommended tightening torque : 0.8 ～ 1.0N・m)

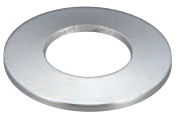


Taper washer (mini)

Order code No.	371362
TYPE	ϕ10 taper washer for VFIL-SS

● Use when fixing a suction stems to the plate.
● Target: suction stems(mini), suction stems non-rotate(mini, small)

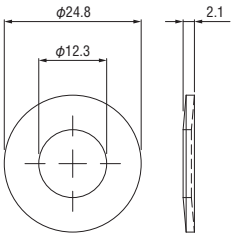




Taper washer (small)

Order code No.	370244
TYPE	ϕ12 taper washer for VFIL-S

● Use when fixing a suction stems to the plate.
● Target: suction stems (small)

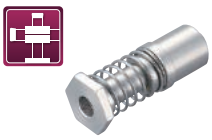
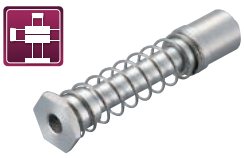
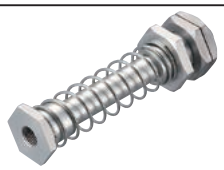
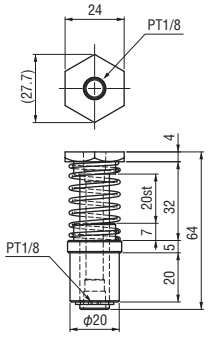
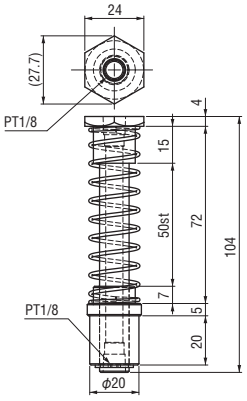
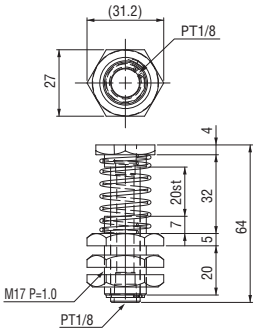
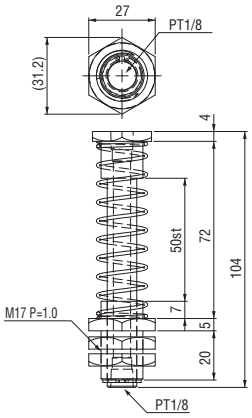


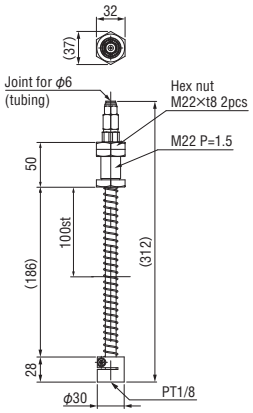
Suction Stems (Large)

Can be selected according to the type of suction cup and allows secure suction.

Direct connection on jungle gym series parts is possible.

- The suction cup is sold separately.
- Cup fixing system: embedded, screw mount
- The attach head of the suction metal fixture (large) is optionally available.

Suction stems (large)				
Drawing				
Order code No.	210886	210887	210888	210889
TYPE	VFI-L-20-P20	VFI-L-50-P20	VFI-L-20-M17	VFI-L-50-M17
Weight	45g	55g	50g	60g
Piping/Mounting	ϕ6 (RBF ➡ 6-6 and BF-6 ➡ 6-5 are necessary for piping) ／ ϕ20		ϕ6(RBF ➡ 6-6 and BF-6 ➡ 6-5 are necessary for piping) ／ M17 P=1.0	
Applicable cup size	ϕ15 ～ 118 ➡ 3-5,6,7,8,10,11,12,13,16,17,18,19,20			

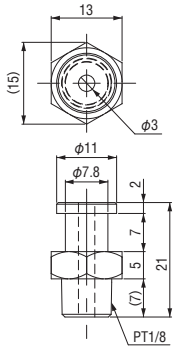
Suction stems (large)	
	＊Use within 100mm stroke.
Drawing	
Order code No.	210917
TYPE	VFI-L-100-M22
Weight	220g
Piping/Mounting	ϕ6 ／ M22 P=1.5
Applicable cup size	ϕ24 ～ 70



Suction stems attachment head, embedded type, small

Order code No.	230066
TYPE	XL0037-106

- Weight : 5g
- Target: suction stems (large), suction stems non-rotate (1/8 series), suction stems non-rotate (large)

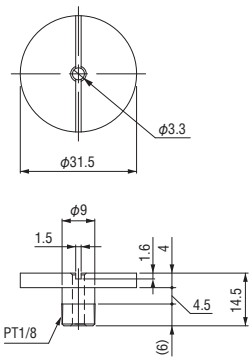




Suction stems attachment head, screw attach type

Order code No.	230067
TYPE	XL0037-103

- Weight : 10g
- Target: suction stems (large), suction stems non-rotate (1/8 series), suction stems non-rotate (large)

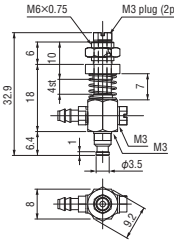
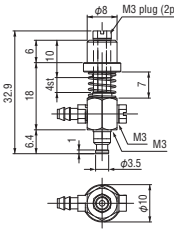


Suction Stems Non-Rotate (Micro/Mini/Small)

Direct connection on jungle gym series parts is possible.

Exchangeable head for suction stem.

● Suction cup is sold separately. ● Suction attach head is removable.

Suction stems non-rotate (micro)		
Drawing		
Order code No.	210823	210824
TYPE	VFILB-MSH	VFILB-MSH-P8
Weight	5g	6g
Piping/Mounting	ϕ4 ／ M6 P=0.75	ϕ4 ／ϕ8
Applicable cup size	VAPH-4 (6)M ➡ 3-4 ／ VAPH (F)-3C-3 ➡ 3-6 ／ ϕ1.2 ～ 3.5 ➡ 3-15,19	

＊ See 3-23 for more details about suction stem accouchement head M3 micro.

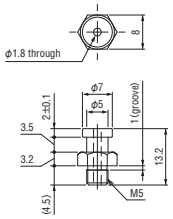
▶ Option of VFILB-SSH



Suction stems attachment head M5 mini

Order code No.	131208
TYPE	N01892-201

● Mounting screw M5 ● W/ gasket



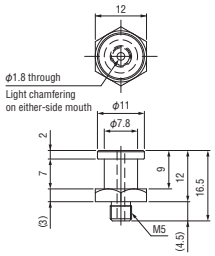
▶ Option of VFILB-SH

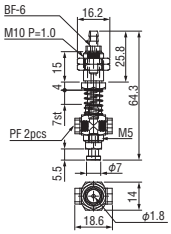
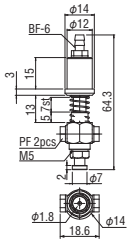
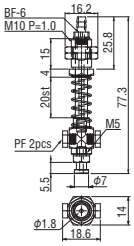
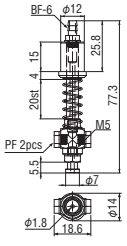


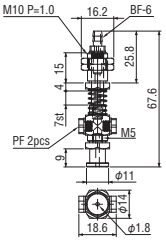
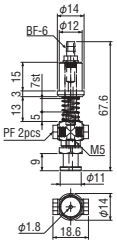
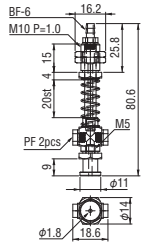
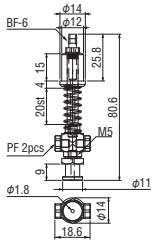
Suction stems attachment head M5 small

Order code No.	131209
TYPE	N01892-301

● Mounting screw M5 ● W/ gasket



Suction stems non-rotate (mini)				
Drawing				
Order code No.	211041	211042	211043	211044
TYPE	VFILB2-SSH	VFILB2-SSH-P12	VFILB2-SSH-20	VFILB2-SSH-20-P12
Weight	28g	20g	31g	24g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12
Applicable cup size	ϕ4 ～ 14 ➡ 3-4,7,8 ／ TR-1062-1 ～ 4M ➡ 3-6 ／ ϕ1.2 ～ 3.5 ➡ 3-15			

Suction stems non-rotate (small)				
Drawing				
Order code No.	211045	211046	211047	211048
TYPE	VFILB2-SH	VFILB2-SH-P12	VFILB2-SH-20	VFILB2-SH-20-P12
Weight	32g	25g	35g	27g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12
Applicable cup size	ϕ5 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6 ／ SQN type is ϕ5 ～ 22 ➡ 3-15,17,18			

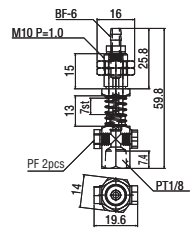
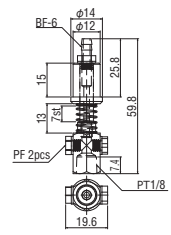
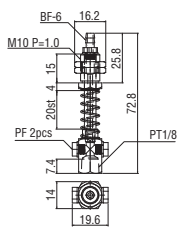
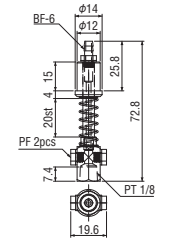
＊ Please remove the suction attach head when using suction cup with mounting bracket.

Suction Stems Non-Rotate (⅛Connection/Angle/Large)

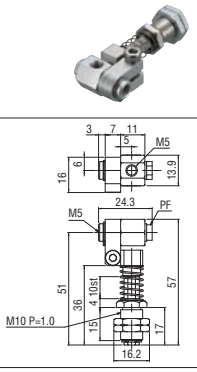
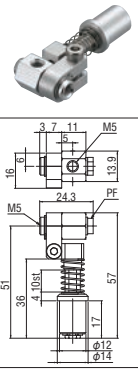
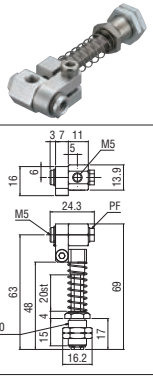
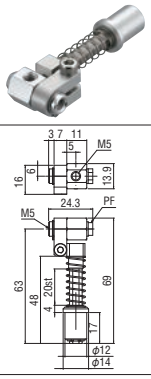
Direct connection on jungle gym series parts is possible.

Exchangeable head for suction stem.

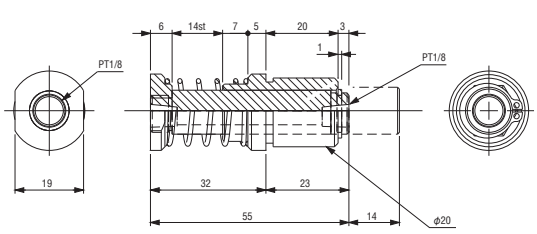
● Suction cup is sold separately. Ensure that the suction attachment head and the suction pad with metal fittings are securely attached prior to use.

Suction stems non-rotate mini (1/8)				
Drawing				
Order code No.	211049	211050	211051	211052
TYPE	VFILB2-SH 1/8	VFILB2-SH 1/8-P12	VFILB2-SH 1/8-20	VFILB2-SH 1/8-20-P12
Weight	25g	19g	27g	22g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12
Applicable cup size	ϕ15 ～ 118 ➡ 3-5,6,7,8,10,11,12,13,16,17,18,19,20			

＊ Mounting bracket of suction cup is not attached. Use suction attach head･embedded type･for small 3-29

Suction stems non-rotate (angle adjustment)				
Drawing				
Order code No.	210991	210993	210992	210994
TYPE	VFILBR-H-10	VFILBR-H-10-P12	VFILBR-H-20	VFILBR-H-20-P12
Weight	33g	27g	36g	30g
Piping/Mounting	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12	ϕ6 ／ M10 P=1.0	ϕ6 ／ϕ12
Applicable cup size	ϕ5 ～ 45 ➡ 3-4,5,6,7,8 ／ TR-1062-1 ～ 4 ➡ 3-6 ／ SQN type is ϕ5 ～ 22 ➡ 3-15,16,17,18,19,20			

＊ Joint for air supply hole is not included. ＊ Mounting bracket of suction cup is not attached. Use suction attach head M5 mini/small 3-30

Suction Stems Non-Rotate (Large)	
Drawing	
Order code No.	210788
TYPE	VFIL-H
Weight	102g
Piping/Mounting	ϕ6 (RBF ➡ 6-6 and BF-6 ➡ 6-5 are necessary for piping ／ϕ20
Applicable cup size	ϕ15 ～ 118 ➡ 3-20

＊ Joint for air supply hole is not included.
＊ Mounting bracket of suction cup is not attached. Use suction attach head 3-29.
● Since the tip is PT1/8 female screw, fixture 1/8G of special cup is supported.

Suction Stems with Locking Mechanism

Direct connection on jungle gym series parts is possible.

Non-rotating suction stems. These feature a long stroke, these feature a long stroke and the ability to lock the stems position.

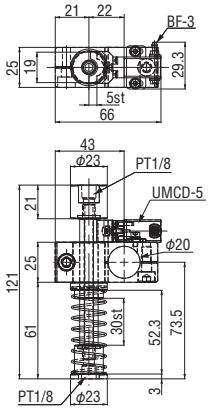


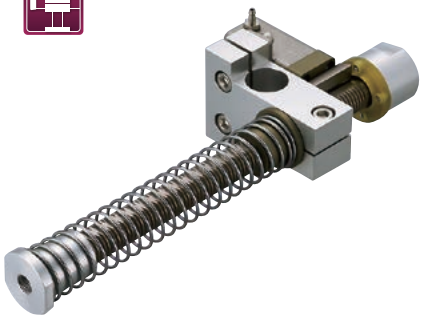
Suction stems locking mechanism 50mm

Order code No.	110556
TYPE	L10761-200

- Weight : 200g
- Piping : ϕ6 (RBF 6-6 and BF-6 6-5 are necessary for piping)
- Mounting : ϕ20

* Besides the piping for suction, it requires separated piping to the stopper cylinder.



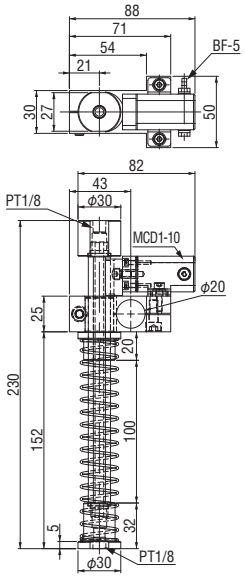


Suction stems locking mechanism 100mm

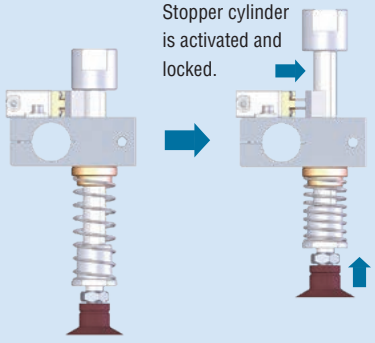
Order code No.	110565
TYPE	L10761-100

- Weight : 560g
- Piping : ϕ6 (RBF 6-6 and BF-6 6-5 are necessary for piping)
- Mounting : ϕ20

* Besides the piping for suction, it requires separated piping to the stopper cylinder.



Reference drawing





Suction stems attachment head,embedded type, small

Order code No.	230066
TYPE	XL0037-106

- Weight : 5g
- Target: suction stem (large), suction stem non-rotate (1/8series), suction stem non-rotate (large)



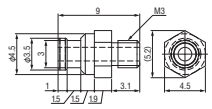
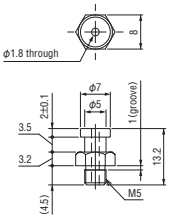
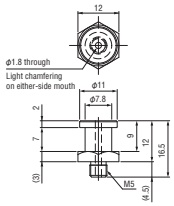
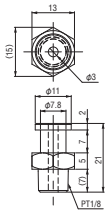
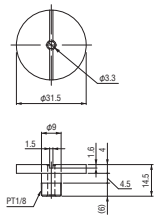
Suction stems attachment head,screw attach type

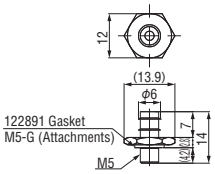
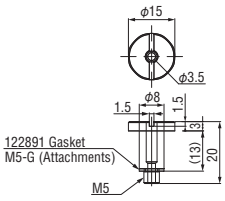
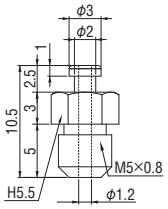
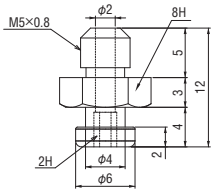
Order code No.	230067
TYPE	XL0037-103

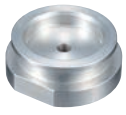
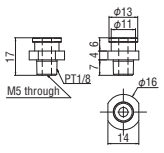
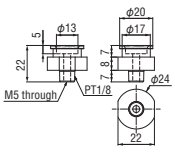
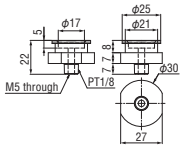
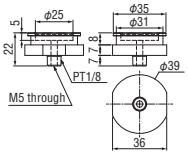
- Weight : 10g
- Target: suction stem (large), suction stem non-rotate (1/8series), suction stem non-rotate (large)

Suction Stems Attachment Head

Please use this on the suction cups.

	M3, micro	M5, mini	M5, small	PT1/8 • small	Screw attach type
Suction Attachment head					
Drawing					
Order code No.	131316	131208	131209	230066	230067
TYPE	N01891-201	N01892-201	N01892-301	XL0037-106	XL0037-103
Weight	1.0g	3.1g	7.8g	5.0g	10g
Mounting	M3	M5	M5	PT1/8	PT1/8
Applicable cup size	VAPH-4M,6M ／ VAPH-3C-3 ／ VAPF-3C-3	VAPH,VAPU,VAPF,VAPN ϕ4～14 ／ TR,TRN-1062-1M～4M	VAPH,VAPU,VAPF,VAPN ϕ15～45 ／ TR,TRN-1062-1～4		VAPH,VAPU,VAPF,VAPN ϕ50 or higher

	M5 • For EPCG15/20	M5 • For EPCG30/40	M5(for vacuum cups)	M5(for vacuum cups)
Suction Attachment head			NEW 	NEW 
Drawing				
Order code No.	211102	211103	042111	042112
TYPE	VFILK-AH01	VFILK-AH02	ETN-PS-2A-M5	ETN-PS-10-M5
Weight	3.0g	8.0g	0.5g	0.8g
Mounting	M5	M5	M5	M5
Applicable cup size	EPCG-15,20	EPCG-30,40	EPCG-3 ／ EPJG-2,4	EPJG-6,8,10,15

	For PT1/8 A (For Pouch, Multistage Cups)	For PT1/8 B (For Pouch, Multistage Cups)	For PT1/8 C (For Pouch, Multistage Cups)	For PT1/8 D (For Pouch, Multistage Cups)
Suction Attachment head				
Drawing				
Order code No.	211114	211115	211116	211117
TYPE	VFILA-PHA-1/8	VFILA-PHB-1/8	VFILA-PHC-1/8	VFILA-PHD-1/8
Weight	4.0g	13.0g	18.0g	34.0g
Mounting	M3	M5	M5	PT1/8
Applicable cup size	EPLG-15,20 ／ EPMG-24 ／ EPNG-132B,133B,134B	EPLG-30 ／ EPMG-40	EPLG-40 ／ EPMG-56	EPLG-50

Suction Stems↔Suction Cups Selection Table

Please choose the target products from pad size and suction stem.

○ : can be mounted
× : It can not be installed.

	bracket / Applicable cup size	Suction stems				Suction stems non-rotate					
		Suction stems(micro) VFILB-M	Suction Stems(mini) VFIL-SS VFILP-SS	Suction stems(small) VFIL-S VFILP-S	Suction stems(large) VFI-L	Suction stems non-rotate(micro) VFILB-MSH	Suction stems non-rotate(mini) VFILB2-SSH	Suction stems non-rotate(small) VFILB2-SH	Suction stems non-rotate mini(1/8) VFILB2-SH	Suction stems non-rotate(angle adjustment) VFILBR-H	Suction Stems Non-Rotate(Large) VFIL-H
Suction Cups	φ3mm	○	×	×	×	○	×	×	×	×	×
	φ4mm(micro)	○	×	×	×	○	×	×	×	×	×
	φ6mm(micro)	○	×	×	×	○	×	×	×	×	×
	φ4mm	×	○	×	×	×	○	×	×	○ Select C.	×
	φ6mm	×	○	×	×	×	○	×	×		×
	φ8mm	×	○	×	×	×	○	×	×		×
	φ10mm	×	○	×	×	×	○	×	×		×
	φ12mm	×	○	×	×	×	○	×	×		×
	φ14mm	×	○	×	×	×	○	×	×		×
	φ15mm	×	×	○	○ Select A.	×	×	○	○ Select A.	○ Select D.	○ Select A.
	φ20mm	×	×	○		×	×	○			
	φ25mm	×	×	○		×	×	○			
	φ30mm	×	×	○		×	×	○			
	φ35mm	×	×	○		×	×	○			
	φ40mm	×	×	○		×	×	○			
	φ45mm	×	×	○		×	×	○			
	φ50mm	×	×	×	○ Select B.	×	×	×	○ Select B.	×	○ Select B.
	φ60mm	×	×	×		×	×	×		×	
	φ70mm	×	×	×		×	×	×		×	
Suction Cups (mini)	φ6mm	×	○	×	×	×	○	×	×	○ Select C.	×
	φ8mm	×	○	×	×	×	○	×	×		×
	φ10mm	×	○	×	×	×	○	×	×		×
	φ12mm	×	○	×	×	×	○	×	×		×
Suction Cups (small)	φ6mm	×	×	○	○ Select A.	×	×	○	○ Select A.	○ Select D.	○ Select A.
	φ8mm	×	×	○		×	×	○			
	φ10mm	×	×	○		×	×	○			
	φ12mm	×	×	○		×	×	○			
Vacuum Caps	φ2mm	×	×	○＊2 Select I.	×	×	○＊1 Select I.	○＊1 Select I.	×	○ Select I.	×
	φ4mm	×	×		×	×			×		×
	φ6mm	×	×	○＊2 Select J.	×	×	○＊1 Select J.	○＊1 Select J.	×	○ Select J.	×
	φ8mm	×	×		×	×			×		×
	φ10mm	×	×		×	×			×		×
	φ15mm	×	×		×	×			×		×
Fluorine BellowsCups	φ3mm	○	×	×	×	○	×	×	×	×	×
	φ15mm	×	×	×	×	×	○＊1 Select K.	○＊1 Select K.	×	○ Select K.	×
	φ20mm	×	×	×	×	×			×		×
	φ30mm	×	×	×	×	×	○＊1 Select L.	○＊1 Select L.	×	○ Select L.	×
	φ40mm	×	×	×	×	×			×		×
Steel Sheet Cup	φ30mm	×	×	×	○	×	×	×	○	×	○
	φ60mm	×	×	×	○	×	×	×	○	×	○
Bellows Cup (transparent white silicone)	φ3mm	×	×	×	×	×	○＊1 Select I.	×	×	○ Select I.	×
Multistage Bellows	φ15mm	×	×	×	○ Select E.	×	×	×	○ Select E.	×	○ Select E.
	φ20mm	×	×	×		×	×	×		×	
	φ30mm	×	×	×	○ Select F.	×	×	×	○ Select F.	×	○ Select F.
	φ40mm	×	×	×	○ Select G.	×	×	×	○ Select G.	×	○ Select G.
	φ50mm	×	×	×	○ Select H.	×	×	×	○ Select H.	×	○ Select H.
Pouch Cups (round)	φ18mm	×	×	×	○ Select E.	×	×	×	○ Select E.	×	○ Select E.
	φ25mm	×	×	×		×	×	×		×	
	φ35mm	×	×	×		×	×	×		×	
Pouch Cups (Star-Shaped)	φ24mm	×	×	×	○ Select E.	×	×	×	○ Select E.	×	○ Select E.
	φ40mm	×	×	×	○ Select F.	×	×	×	○ Select F.	×	○ Select F.
	φ56mm	×	×	×	○ Select G.	×	×	×	○ Select G.	×	○ Select G.

＊ The cups in bold frame require the "attach head" when mounting. Choose A ～ L from the bottom of the next page.

○ : can be mounted × : It can not be installed.	bracket / Applicable cup size	Suction stems Suction stems(micro) VFILB-M	Suction Stems(mini) VFIL-SS VFILP-SS	Suction stems(small) VFIL-S VFILP-S	Suction stems(large) VFI-L	Suction stems non-rotate Suction stems non-rotate(micro) VFILB-MSH	Suction stems non-rotate(mini) VFILB2-SSH	Suction stems non-rotate(small) VFILB2-SH	Suction stems non-rotate mini(1/8) VFILB2-SH	Suction stems non-rotate(angle adjustment) VFILBR-H	Suction Stems Non-Rotate(Large) VFIL-H
Bellows type Suciton Cups	ϕ1.2mm	○＊1	○＊2	×	×	○＊1	×	×	×	×	×
	ϕ1.8mm			×	×		×	×	×	×	×
	ϕ2mm			×	×		×	×	×	×	×
	ϕ3.5mm			×	×		×	×	×	×	×
	ϕ5mm	×	×	○＊2	×	×	○＊1	○＊1	×	○	×
	ϕ5.5mm	×	×		×	×			×	○	×
	ϕ6mm	×	×		×	×			×	○	×
	ϕ6.5mm	×	×		×	×			×	○	×
	ϕ8mm	×	×		×	×			×	○	×
	ϕ9.3mm	×	×		×	×			×	○	×
	ϕ10mm	×	×		×	×			×	○	×
	ϕ11mm	×	×		×	×			×	○	×
	ϕ12.7mm	×	×		×	×			×	○	×
	ϕ13mm	×	×		×	×			×	○	×
	ϕ15mm	×	×		×	×			×	○	×
	ϕ16mm	×	×		×	×			×	○	×
	ϕ18.5mm	×	×		×	×			×	○	×
	ϕ19mm	×	×		×	×			×	○	×
	ϕ20mm	×	×		×	×			×	○	×
	ϕ22mm	×	×		×	×			×	○	×
	ϕ24mm	×	×	×	○	×	×	×	○	×	○
	ϕ24.7mm	×	×	×	○	×	×	×	○	×	○
	ϕ25mm	×	×	×	○	×	×	×	○	×	○
	ϕ30mm	×	×	×	○	×	×	×	○	×	○
	ϕ32.6mm	×	×	×	○	×	×	×	○	×	○
	ϕ33mm	×	×	×	○	×	×	×	○	×	○
	ϕ35mm	×	×	×	○	×	×	×	○	×	○
	ϕ40mm	×	×	×	○	×	×	×	○	×	○
	ϕ43mm	×	×	×	○	×	×	×	○	×	○
	ϕ43.5mm	×	×	×	○	×	×	×	○	×	○
	ϕ50mm	×	×	×	○	×	×	×	○	×	○
	ϕ52.5mm	×	×	×	○	×	×	×	○	×	○
	ϕ53mm	×	×	×	○	×	×	×	○	×	○
	ϕ60mm	×	×	×	○	×	×	×	○	×	○
	ϕ62.2mm	×	×	×	○	×	×	×	○	×	○
	ϕ63mm	×	×	×	○	×	×	×	○	×	○
	ϕ80mm	×	×	×	○	×	×	×	○	×	○
	ϕ83mm	×	×	×	○	×	×	×	○	×	○
	ϕ103mm	×	×	×	○	×	×	×	○	×	○
	ϕ118mm	×	×	×	○	×	×	×	○	×	○
Suction Cups (Oval with metal fittings)	2×4mm	○＊1	○＊2	×	×	○＊1	×	×	×	×	×
	3.5×7mm			×	×		×	×	×	×	×
	5×15mm	×	×	○＊2	×	×	○＊1	○＊1	×	○	×
	6×18mm	×	×		×	×			×	○	×
	8×24mm	×	×	×	○	×	×	×	○	×	○
	10×30mm	×	×	×	○	×	×	×	○	×	○
＊3	15×45mm	×	×	×	○	×	×	×	○	×	○

Attachment head to use											
A	B	C	D	E	F	G	H	I	J	K	L
Suction stems attachment head, embedded type, small	Suction stems attachment head, screw attach type	Suction stems attachment head M5 mini	Suction stems attachment head M5 small	Inner stems attachment head • For PT1/8 A	Inner stems attachment head • For PT1/8 B	Inner stems attachment head • For PT1/8 C	Inner stems attachment head • For PT1/8 D	Outer stems attachment head • 2A • M5	Outer stems attachment head • 10 • M5	Suction stems head • M5 • for EPCG 15/20	Suction stems head • M5 • for EPCG 30/40
PT1/8 mounting hole	PT1/8 mounting hole	M5 mounting hole	M5 mounting hole	PT1/8 mounting hole	PT1/8 mounting hole	PT1/8 mounting hole	PT1/8 mounting hole	M5 mounting hole	M5 mounting hole	M5 mounting hole	M5 mounting hole
230066	230067	131208	131209	211114	211115	211116	211117	042111	042112	211102	211103

＊1 Please remove the suction Stems attachment head at the tip before use.
＊2 Attach it to the head of the screw holes and use it. Can't be attached to the suction resin (VFILP).
＊3 The Photograph shows the silicon suction cups, It is applies for different materials (markless rubber).

Suction Stems Fixed/for Mini Cylinder

Use as your situation.

● Suction cup and joint are optionally available.

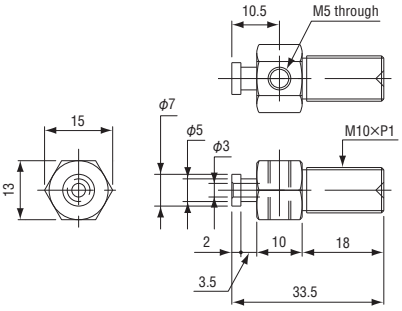
▶ Use by mounting a Bellows cups.



Suction stems fixed mini

Order code No.	210699
TYPE	VFILK-SS-M10

- Weight : 6g
- Applicable cup size : ϕ4 ~ 14
- Cup fixing system: embedded
- Suction stem nut (3-37) is not attached.
- Mounting screw part : M10×P1

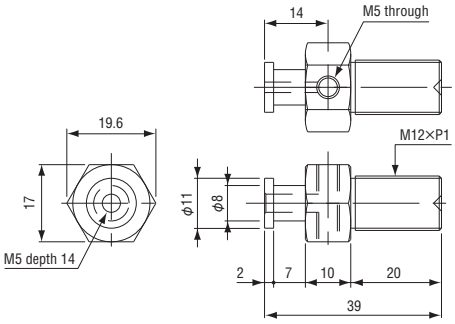




Suction stems fixed for small

Order code No.	210698
TYPE	VFILK-S-M12

- Weight : 9g
- Applicable cup size : ϕ15 ~ 45
- Cup fixing system: embedded
- Suction stem nut (3-37) is not attached.
- Mounting screw part : M12×P1



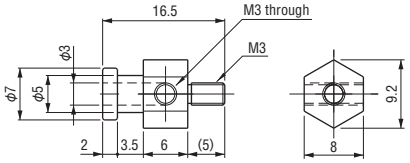
▶ Used when suction cups is attached to the end of mini cylinder.



Suction stems mini for micro mini cylinder

Order code No.	230058
TYPE	XL0010-105

- Weight : 1g
- Mounting screw part : M3

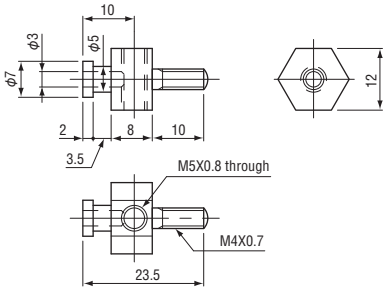




Suction stems mini for mini cylinder

Order code No.	020844
TYPE	CP-064

- Weight : 7g
- Mounting screw part : M4

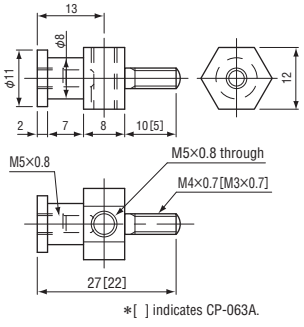




Suction stems small for micro mini cylinder

Order code No.	023128
TYPE	CP-063A

- Weight : 10g
- Mounting screw section M3

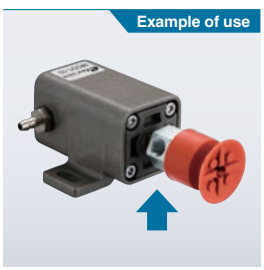




Suction stems small for mini cylinder

Order code No.	023195
TYPE	CP-063B

- Weight : 11g
- Mounting screw section M4



∗ Picture shows CP-063B assembled with MCD-10 and VAPH-20C-1.

Adjuster

Height of suction stem can be adjusted.

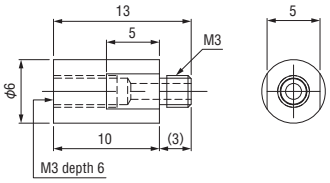
▶ Extension between suction cup and stem is possible.

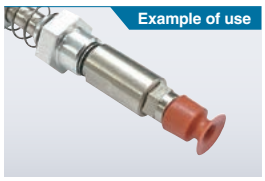


Suction stems bracket micro

Order code No.	230072
TYPE	XL0061-100

● 重量 : 2g ● Mounting screw part : M3



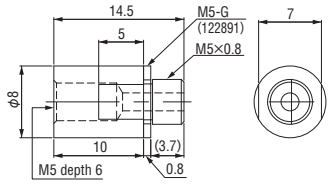


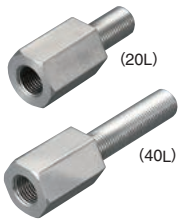


Suction stems bracket mini

Order code No.	230114
TYPE	XL0061-200

● 重量 : 3g ● Mounting screw part : M5

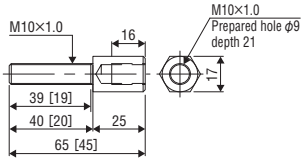




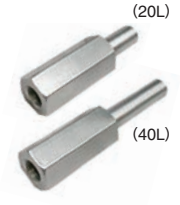
Suction stems bracket • mini (For Suction stems 5st)

	20L	40L
Order code No.	022544	022545
TYPE	CP-023AL (20L)	CP-024AL (40L)

● Weight : 17g (20L) 21g (40L)
● Targetsuction stem : VFIL1-SS-5
● Suction stem nut is not attached.



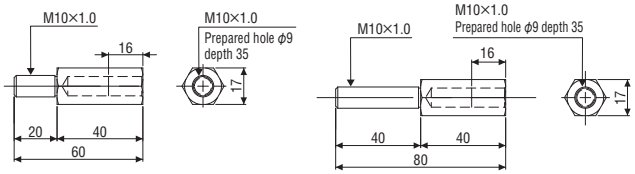
＊ Size in[ ] shows size of 20L.



Suction stems bracket • mini (For Suction stems 5/10/20st)

	20L	40L
Order code No.	023338	023339
TYPE	CP-AJM20	CP-AJM40

● Weight : 24g (20L) 28g (40L)
● Targetsuction stem : VFIL1-SS-5/10/20
● Suction stem nut is not attached.

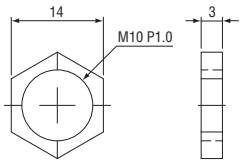


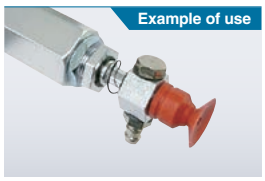


Suction stems nut • mini (trivalent white)

Order code No.	120482
TYPE	VFIL-M10 (10*14*3 P1.0)

● Weight : 2g ● Screw diameter : M10



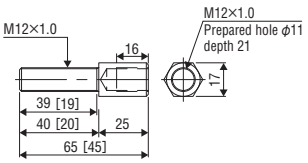




Suction stems bracket • small (For Suction stems 5st)

	20L	40L
Order code No.	022542	022543
TYPE	CP-021AL (20L)	CP-022AL (40L)

● Weight : 17g (20L) 23g (40L)
● Targetsuction stem : VFIL-S-5
● Suction stem nut is not attached.



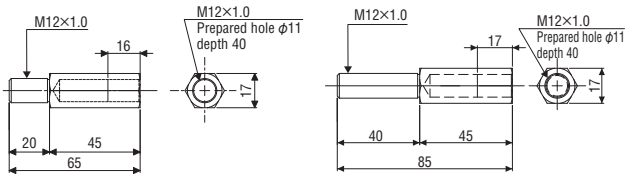
＊ Size in[ ] shows size of 20L.



Suction stems bracket • small (For Suction stems 5/10/20st)

	20L	40L
Order code No.	023340	023341
TYPE	CP-AJS20	CP-AJS40

● Weight : 25g (20L) 31g (40L)
● Targetsuction stem : VFIL1-S-5/10/20
● Suction stem nut is not attached.

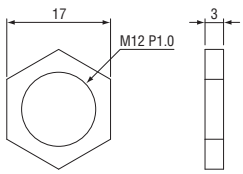




Suction stems nut • small (trivalent white)

Order code No.	120483
TYPE	VFIL-M12 (12*17*3 P1.0)

● Weight : 3g ● Screw diameter : M12



Suction Stems Angle Brackets

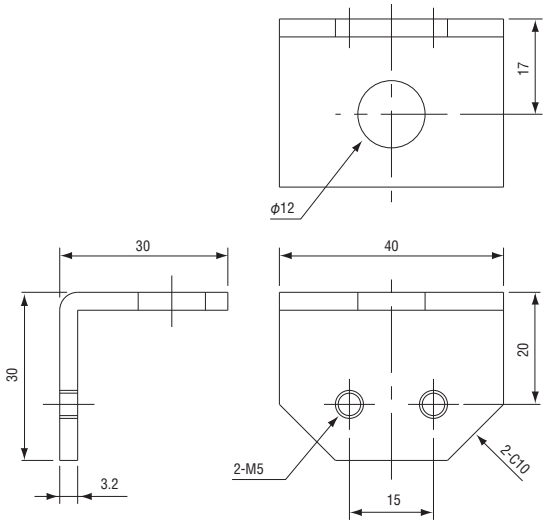
The angle can be adjusted according to the shape of workpiece.



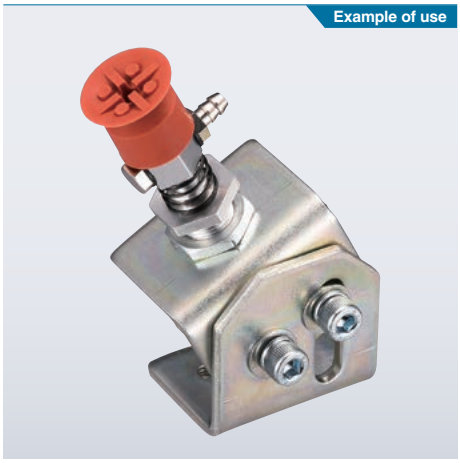
Suction stems angle bracket (upper)

Order code No.	370698
TYPE	CP-019

- Weight : 48g
- Fixing bolt M5x15 is available separately.
- Assembly of parts is not available in delivery for an order.
- Use with CP-019L or CP-019R.



Example of use



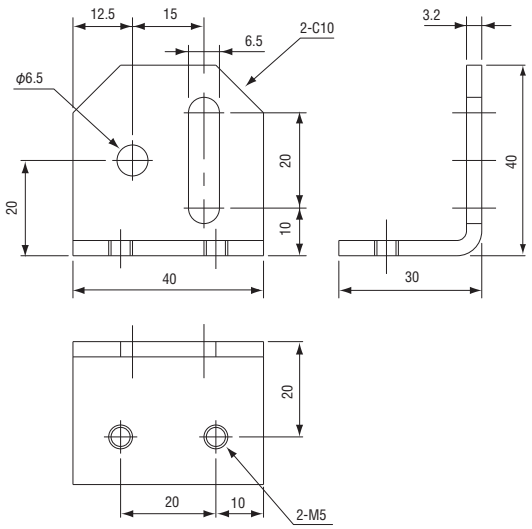
- Photo shows right-hand mount type (CP-019R).



Suction stems angle bracket (L-lower)

Order code No.	370789
TYPE	CP-019L

- Weight : 54g
- Fixing bolt M5x15 is available separately.
- Assembly of parts is not available in delivery for an order.
- Use with CP-019.

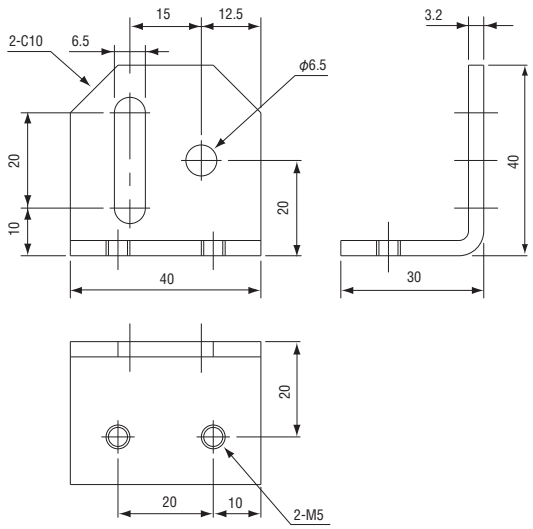




Suction stems angle bracket (R-lower)

Order code No.	370790
TYPE	CP-019R

- Weight : 54g
- Fixing bolt M5x15 is available separately.
- Assembly of parts is not available in delivery for an order.
- Use with CP-019.



MEMO

Pad in Pad can be used for molded parts with holes in them.

Pad in Pad

Do you have some problems with work piece with holes (food container, cap and inner stopper for cosmetic container, and small gear) which falls automatically? Pad in Pad can be used for molded parts with holes in them.

Example



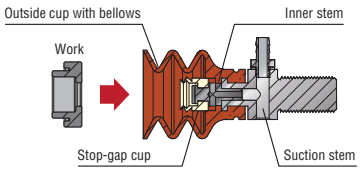
Example of combination



VAPH-30-3 Example of use

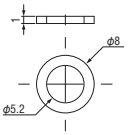
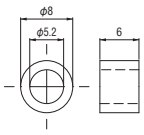


EPLG-50-SS

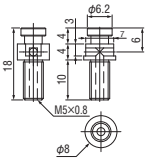
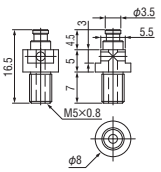
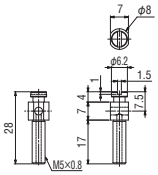
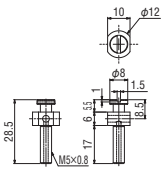
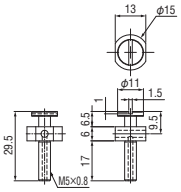
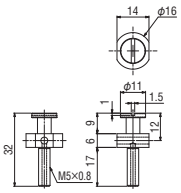


The flat face of a part is picked up the Bellows cap.
And holes are stopped up with the tamping cap.

Stems spacer

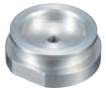
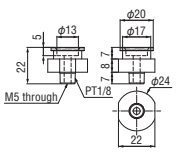
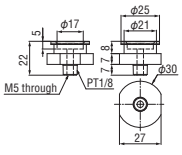
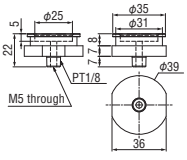
Stems spacer		
Drawing		
Order code No.	210913	187128
TYPE	VFILK-P-S	SP-S5-6
Weight	0.3g	2.0g
Applicable stem	—	

Inner Stems

Inner stems	 For mini	 For micro				
Drawing						
Order code No.	210911	210912	211118	211119	211120	211121
TYPE	VFILK-PS-M5	VFILK-PSS-M5	VFILK-PIA-M5	VFILK-PIB-M5	VFILK-PIC-M5	VFILK-PID-M5
Weight	1.5g	1.0g	1.0g	2.0g	4.0g	5.0g
Applicable inner pad	EPJG-(6,8,10,15)-S	Reinforced silicone (brown)	EPJG-(6,8)-S	EPJG-(10,15)-S	EPJG-(20,25)-S	EPJG-30-S
Applicable stem	Suction stem small (also for some suction stem mini products)		VFILA-(B,C,D)-1/8		VFILA-(C,D)-1/8	VFILA-D-1/8

∗ when ordering the inner stem, please purchase with gasket (122891). ➡ 6-8

Outside Stems

Outside stems			
Drawing			
Order code No.	211115	211116	211117
TYPE	VFILA-PHB-1/8	VFILA-PHC-1/8	VFILA-PHD-1/8
Weight	13.0g	18.0g	34.0g
Applicable inner pad	EPLG-30-S5、EPLG-40L	EPLG-40-S5	EPLG-50-S5
Applicable stem	Suction stems large,non-rotate (1/8 large)		

The combination of pad in pad, please refer to the selection table 3-42.

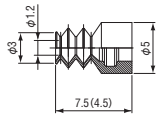
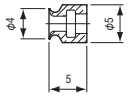
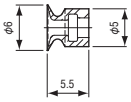
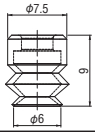
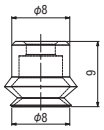
Please check the performance table on the web site.

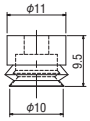
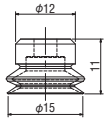
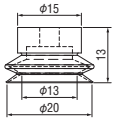
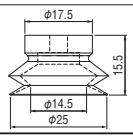
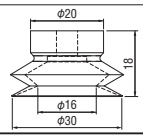
Pad in Pad



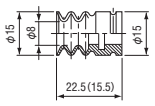
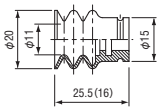
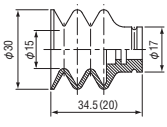
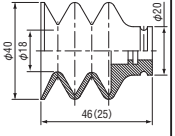
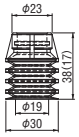
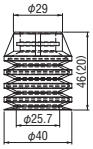
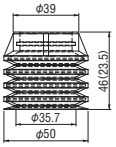
You can see moving images of products by using QR code reader of your smartphone.

Inner Cups

Material	Reinforced silicone (brown)			Silicone (transparent white)	
Applicable cup size	ϕ3mm	ϕ4mm	ϕ6mm	ϕ6mm	ϕ8mm
Inner cup		＊Micro	＊Micro		
Drawing ＊The value in ( ) indicates the dimension with suction.					
Order code No.	210897	210789	210790	042038	042039
TYPE	VAPH-3C-3	VAPH-4M	VAPH-6M	EPJG-6-S	EPJG-8-S
Weight	1.0g	0.2g	0.3g	0.15g	0.25g
Applicable stem	Micro, VFILK-PSS-M5			Mini, VFILK-PS-M5、VFILK-PIA-M5	

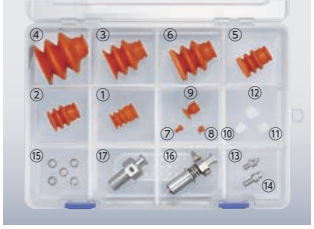
Material	Silicone (transparent white)				
Applicable cup size	ϕ10mm	ϕ15mm	ϕ20mm	ϕ25mm	ϕ30mm
Inner cup					
Drawing					
Order code No.	042040	042041	042068	042069	042070
TYPE	EPJG-10-S	EPJG-15-S	EPJG-20-S	EPJG-25-S	EPJG-30-S
Weight	0.45g	1.0g	1.6g	2.7g	5.0g
Applicable stem	Mini, VFILK-PS-M5、VFILK-PIB-M5		VFILK-PIC-M5		VFILK-PID-M5

Outside Cups

Material	Reinforced silicone (brown)				Silicone (transparent white)		
Applicable cup size	ϕ15mm	ϕ20mm	ϕ30mm	ϕ40mm	ϕ30mm	ϕ40mm	ϕ50mm
Outside cup							
Drawing ＊The value in ( ) indicates the dimension with suction.							
Order code No.	210697	210661	210662	210663	042071	042072	042073
TYPE	VAPH-15C-3	VAPH-20C-3	VAPH-30C-3	VAPH-40C-3	EPLG-30-S5	EPLG-40-S5	EPLG-50-S5
Weight	2.7g	2.9g	7.0g	18.4g	6.9g	15.7g	20.8g
Applicable inner pad	VAPH-4M/6M、VAPH-3C-3	EPJG-6-S/8-S	EPJG-6-S～EPJG10-S	EPJG-6-S～EPJG15-S	EPJG-(8,10)-S	EPJG-(8,15,20)-S	EPJG-(8～30)-S
Applicable stem	Small, VFIL-S, or VFILB-SH ➡ 3-26,27,28,30				VFILA-PHB-1/8	VFILA-PHC-1/8	VFILA-PHD-1/8

Pad in Pad test kit

Please try out Pad in Pad with our test kit!!



Pad in Pad test kit (1)

Order code No.	196688
TYPE	TEST KIT VERSION (1)

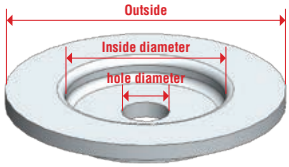
Contents

Page	Product name	Order code No.	TYPE	Qty	Applicable cup size
Outside cup with bellows	① Bellow Suction Cups (silicon, brown)	210697	VAPH-15C-3	1	⑦⑧
	② Bellow Suction Cups (silicon, brown)	210661	VAPH-20C-3	1	⑦⑧⑩⑪
	③ Bellow Suction Cups (silicon, brown)	210662	VAPH-30C-3	1	⑦⑧⑩⑪⑫
	④ Bellow Suction Cups (silicon, brown)	210663	VAPH-40C-3	1	⑦～⑫
	⑤ Bellow Suction Cup w/ sponge (silicon, brown)	210914	VAPH-20C-10-3-SP	1	⑦⑧⑩⑪
	⑥ Bellow Suction Cup w/ sponge (silicon, brown)	210915	VAPH-30C-15-3-SP	1	⑦⑧⑩⑪⑫
Stop-gap cup	⑦ Bellow Suction Cups (silicon, brown)	210897	VAPH-3C-3	1	①～⑥
	⑧ Suction Cups (standard/micro/brown)	210790	VAPH-6M (silicon)	1	①～⑥
	⑨ Suction Cups (standard/silicon/brown)	210616	VAPH-14C	1	④
	⑩ Suction Cup・Silicon	042038	EPJG-6-S	1	②～⑥
	⑪ Suction Cup・Silicon	042039	EPJG-8-S	1	②～⑥
	⑫ Suction Cup・Silicon	042040	EPJG-10-S	1	③④⑥
Inner stem	⑬ Pad-in inner stem for micro	210912	VFILK-PSS-M5	1	—
	⑭ Pad-in inner stem for mini	210911	VFILK-PS-M5	1	—
	⑮ Pad-in inner stem (spacer)	210913	VFILK-P-S	5	—
Suction stem	⑯ Suction stem for small	211006	VFIL1-S-5-P12	1	—
	⑰ Suction stem fixed for small	210698	VFILK-S-M12	1	—

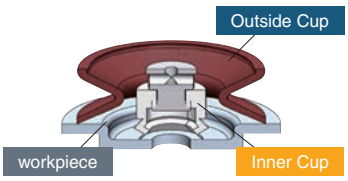
Pad in Pad Selection List

Through the combination of parts selection, make it possible to take out even the parts with hole.

Applied Parts Sample View



Suction state image View



Sample Assembly



VAPH-30-3 Example of use



EPLG-50-SS Example of use

				Outside cup						
			Order code No.	210697	210661	210662	210663	042071	042072	042073
			TYPE	VAPH-15C-3	VAPH-20C-3	VAPH-30C-3	VAPH-40C-3	EPLG-30-S5	EPLG-40-S5	EPLG-50-S5
			Applicable cup size	ϕ15	ϕ20	ϕ30	ϕ40	ϕ30	ϕ40	ϕ50
			Pad inner diameter	ϕ8	ϕ11	ϕ15	ϕ18	ϕ19	ϕ25.7	ϕ35.7
Inner cup	Order code No.	TYPE	Applicable cup size	Product outer diameter / Product hole diameter	ϕ12 or larger	ϕ15 or larger	ϕ19 or larger	ϕ22 or larger	ϕ21 or larger	ϕ26 or larger	ϕ37 or larger
	210897	VAPH-3C-3	ϕ3	ϕ0.1 ～ϕ1	A 1.2.3 4.0mm	A 1.2.3 3.5mm	A 1.2.3 －0.5mm	A 1.2.3 －5.5mm			
	210789	VAPH-4M	ϕ4	ϕ0.1 ～ϕ1.5		A 1.2.3 4.0mm	A 1.2.3 ±0mm	A 1.2.3 －4.0mm			
	210790	VAPH-6M	ϕ6	ϕ0.1 ～ϕ3		A 1.2.3 4.5mm	A 1.2.3 0.5mm	A 1.2.3 －4.5mm			
	042038	EPJG-6-S	ϕ6	ϕ0.1 ～ϕ3		B 1.2.3 2.8mm	B 1.2.3 －1.2mm	B 1.2.3 －6.2mm			
	042039	EPJG-8-S	ϕ8	ϕ0.1 ～ϕ4			B.C 1.2.3 －1.3mm	B.C 1.2.3 －6.3mm	B.C G 4.5.6 －4.1mm	B.C H 4.5.6 －5.8mm	B.C I 4.5.6 －6.8mm
	042040	EPJG-10-S	ϕ10	ϕ0.1 ～ϕ6			B.D 1.2.3 －0.3mm	B.D 1.2.3 －5.3mm	B.D G 4.5.6 －4.1mm	B.D H 4.5.6 －5.8mm	B.D I 4.5.6 －6.8mm
	042041	EPJG-15-S	ϕ15	ϕ0.1 ～ϕ10						D H 4.5.6 －5.2mm	D I 4.5.6 －6.2mm
	042068	EPJG-20-S	ϕ20	ϕ0.1 ～ϕ16						E H 4.5.6 －4.2mm	E I 4.5.6 －5.2mm
	042069	EPJG-25-S	ϕ25	ϕ0.1 ～ϕ20							E I 4.5.6 －4.1mm
	042070	EPJG-30-S	ϕ30	ϕ0.1 ～ϕ24							F I 4.5.6 －0.8mm

A table view

Parts are selected from the following parts list.

- Inner stem
- Outside cup
- Suction stem
- Height difference

＊ Please use this setting table as a reference example of the combination.

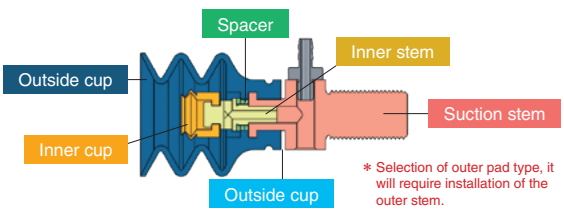
▶部品リスト

Inner stem		
code	Order code No.	TYPE
A	210912	VFILK-PSS-M5
B	210911	VFILK-PS-M5
C	211118	VFILK-PIA-M5
D	211119	VFILK-PIB-M5
E	211120	VFILK-PIC-M5
F	211121	VFILK-PID-M5

Outside cup		
code	Order code No.	TYPE
G	211115	VFILA-PHB-1/8
H	211116	VFILA-PHC-1/8
I	211117	VFILA-PHD-1/8

Suction stem		
code	Order code No.	TYPE
1		VFIL-S series
2		VFILB-2-SSH series
3		VFILB-SH series
4		VFI-L series
5		VFILB2-SH1/8 series
6	210788	VFIL-H

Stem spacer		
code	Order code No.	TYPE
210913	1mm	VFILK-P-S
187128	6mm	SP-S5-6



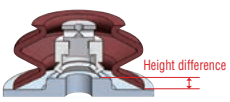
＊ Selection of outer pad type, it will require installation of the outer stem.

The height difference between outer pad and inner pad during suction ON.

＋: The inner pad suction surface exceeds the outer pad suction surface.

－: The inner pad suction surface does not exceed the outer pad suction surface.

＊ It can not be adjusted from + value to −value. Therefore, combinations with a large + value can only be used for concave products.

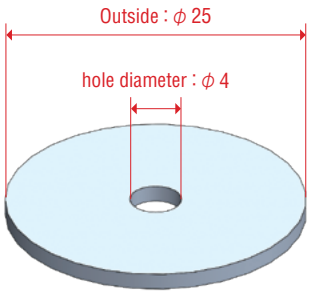




You can see moving images of products by using QR code reader of your smartphone.

Selection method

e.g.1 Products with through hole　Outside : ϕ 25　Hole diameter : ϕ 4　Height difference : 0mm



❶ Inner cup

The hole diameter of the product is ϕ 4, so please select the pad that its hole diameter is more than ϕ 4.

❷ Outside cup

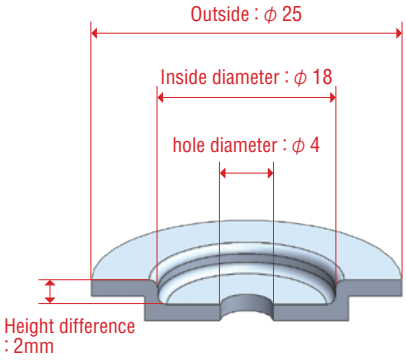
Since the outside diameter of the product is ϕ25, select a pad with an applicable-to-product outside diameter of ϕ25 or less.

❸ Spacer

Choose the pad that the value of the green frame in the form is minus from the selected pad, and please add the spacer to make sure the difference of height turn to ±0 when in suction.

* The tolerance of air leak: ± 0.5 mm height difference.
* If you have more options, please snarrowdown the selection of parts as meet to the conditions of pirce and/ or size of components.

e.g.2 Concave product　Outside : ϕ 25　Inside diameter : ϕ 18　Hole diameter : ϕ 4　Height difference : 2mm



❶ Inner cup

The hole diameter of the product is ϕ 4, so please select the pad that its hole diameter is more than ϕ 4.

❷ Outside cup

Since the outside diameter of the product is ϕ25 and the inside diameter of the product is ϕ18, select a pad with an applicable-to-product outside diameter of ϕ25 or less and the outside diameter is ϕ18 or more.

❸ Spacer

Add a spacer so that the numerical value in the green box in the pad selection box can be +2mm in length.

* Note with care that if the adjusted length is less than 2mm, air leak will occur.
* The tolerance of air leak: ± 0.5 mm height difference.
* If you have more options, please snarrowdown the selection of parts as meet to the conditions of pirce and/ or size of components.

Introduction of production examples

Example 1



Molded product cap

Main components		
	Outside cup with Bellows	VAPH-20C-3
	Stop-gap cup	TPJG-8-S
	Suction stem	VFIL-S-5A
	Inner stem	VFILK-PS-M5

Example 2



Outside cup with bellows

Main components		
	Outside cup with Bellows	VAPH-20C-3
	Stop-gap cup	TPJG-8-S
	Suction stem	VFIL-S-5A
	Inner stem	VFILK-PS-M5

Example 3

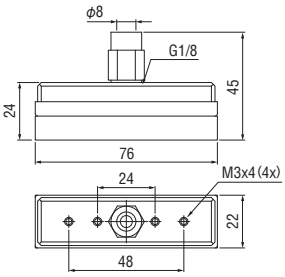


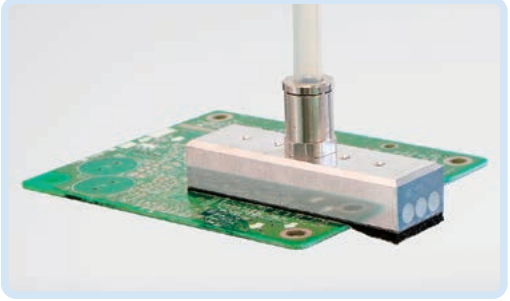
Molded product caster

Main components		
	Outside cup with Bellows	EPLG-30-S5
	Stop-gap cup	EPJG-10-S
	Suction stem	VFILA-PHB-1/8
	Inner stem	VFILK-PIB-M5

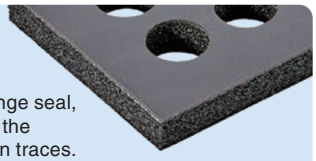
Vacuum Gripper

▶ A small vacuum gripper. Suitable for suction and transport of small workpieces.

Vacuum Gripper	 ejector not attached	
Drawing	＊Connect plastic ejector SSBP series (3-49) to φ8 (ejector not attached). 	
Product name	Vacuum gripper 76×22・10mm	Sponge seal 76×22 w/o valve (for exchange)
Order code No.	**183977**	**183978**
TYPE	**SFM-76/22-SW-10-B**	**SFMSEAL76/22SW10BW/OV**
Weight	50.0g	1.5g



About suction surface



It's coated with sponge seal, which could reduce the abrasion and suction traces.

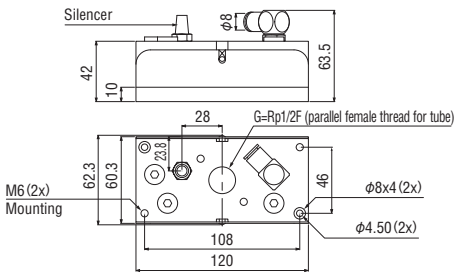
＊Sponge seal is replaceable.

■ Specification

TYPE	Vacuum Gripper	Valve	Holding power＊1 (N)	Required suction quantity＊2 (L/min)	Number of cells	Weight (g)
SFM-76/22-SW-10-B	External type	Throttle valve	40	40	26	60

＊1 -60 kPa. If the entire gripper is covered by hard work piece.
＊2 The amount of suction when the vacuum gripper is connected to -60 kPa.

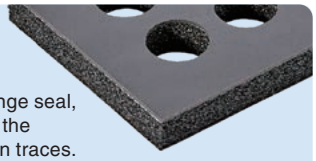
▶ It can transfer the work piece of different shapes with one gripper (wood, resin, cardboard, etc.).

Vacuum Gripper	 with ejector	
Drawing		
Product name	Vacuum gripper 120×60・10mm	Sponge seal 120×60 w/o valve (for exchange)
Order code No.	**183979**	**183980**
TYPE	**SFX-120/60-SW-1.5-10-B**	**SFXFMSEAL120/60SW10BW/OV**
Weight	500.0g	6.5g

＊ **Sales ends when it's out of stock.**



About suction surface



It's coated with sponge seal, which could reduce the abrasion and suction traces.

＊Sponge seal is replaceable.

■ Specification

TYPE	Load tolerance＊3 (N)	Holding power＊4 (N)	Max suction discharge＊5 (L/min)	Max vacuum (%)	Air consumption (L/min)	Number of cells	Noise level (dB (A))	Supply pressure (MPa)	Allowable temperature (℃)	Weight (g)
SFX-120/60-SW-1.5-10-B	92	98	69	80	117	10	65	0.3～0.5	+5～+50	500

＊3 When transporting horizontally.
＊4 The max holding power happen while the system air pressure is - 30 kPa When sucking on workpieces without ventilation. The safety rate is not included.
＊5 Supply air pressure 0.5 MPa.
＊ The max vacuum level, air consumption and noise level vary according to the external vacuum gripper.

MEMO

Air Ejector/Filter/Check Valve

Air Ejectors



- Perfect for transportation of heavy weight and cardboard.
- Small, lightweight, and long life.

3-47

Plastic Ejector



Lightweight and high-performance low-price ejector.

3-49

Small Air Filters



The product prevents water,oil, steel powder, and so on sucked from thevacuum side from entering the ejector.

3-48

Small Check Valve for Suction Cup



Small check valves. Please attach the pad before use.

3-50

■Specification

Product name		Order code No.	TYPE	Weight (g)	Page of details
Air ejectors	NEW 	042116	ESVP10-A	146	3-47
	NEW 	042129	ESVP10-A-20	169	
		042034	ECV-10HS	80	3-48
Air ejector w/ switch		042035	ECV-10HSCK	120	
Small air filters		042036	EVFL-44	20	
		042037	EVFL-66		
Plastic ejector	Plastic ejector nozzle 1.0mm 	183988	SSBP-10-S2-SDA	22	3-49
	Plastic ejector nozzle 1.5mm 	183989	SSBP-15-S2-SDA		
	Plastic ejector nozzle 2.0mm 	183991	SSBP-20-S3-SDA	50	
Plastic ejector clip mount base		183990	SBEF-PL-110＊45	–	
Small check valve for Suction Cup		184150	SSVK-M5	3	3-50
		184151	SSVK-G1/8	11	

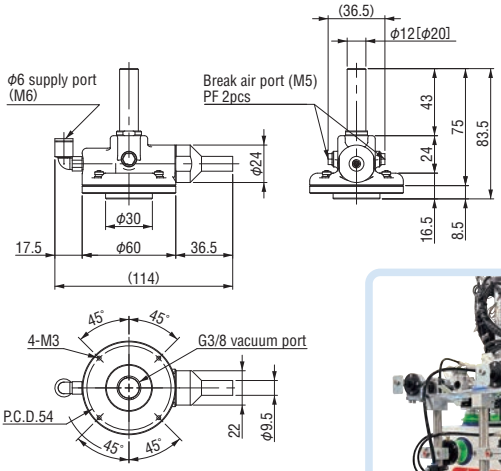
Air Ejectors

Perfect for transportation of heavy weight and cardboard.

NEW ▶ Air Ejectors







Air Ejectors(shaft ϕ 12)

Order code No.	042116
TYPE	ESVP10-A

● Weight : 146g

Air Ejectors(shaft ϕ 20)

Order code No.	042129
TYPE	ESVP10-A-20

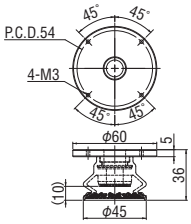
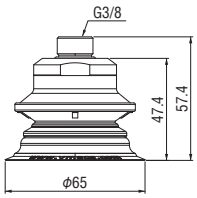
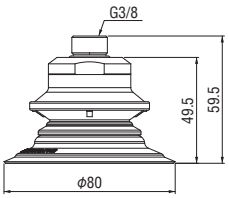
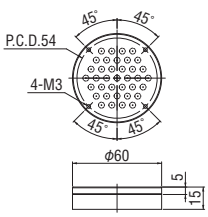
● Weight : 169g



■ Specification

TYPE	Max vacuum (−kPa)	Max suction discharge (NL/min)	Air supply pressure (MPa)	Air consumption (L/min)	Noise level (dBA)
ESVP10-A	−79.5	85	0.5	57	65 ～ 70

NEW ▶ Carrier Cup (for Ejector only)

Applicable cup size	ϕ45mm	ϕ65mm	ϕ80mm	ϕ60mm
Carrier cup	 for Holder plate			 for Holder plate
Drawing				
Order code No.	042117	010749	010750	042118
TYPE	ESVP-A-PA	B1.5/60-MU65-N6-G-F2-38M	B1.5/60-MU80-N6-G-F2-38M	ESVP-A-SA
Weight	56.4g	82g	88g	40.6g

NEW ▶ Maintenance Parts



Filter

Order code No.	042119
TYPE	ESVP-FILT

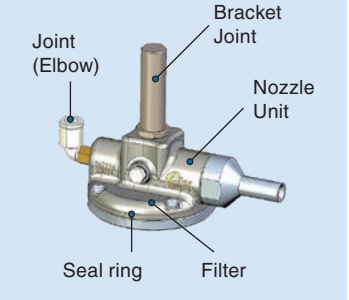
● Weight : 1.5g

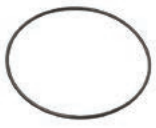


Nozzle unit

Order code No.	042133
TYPE	ESVP10-NOZL-UT

● Weight : 20g





Seal ring

Order code No.	042132
TYPE	ESVP10-SEAL

● Weight : 0.1g



Joint (Elbow)

Order code No.	102051
TYPE	K02L06-M6A

● Weight : 4.3g



Bracket joint ϕ 12

Order code No.	042130
TYPE	ESVP10-BKTJT12

● Weight : 16g



Bracket joint ϕ 20

Order code No.	042131
TYPE	ESVP10-BKTJT20

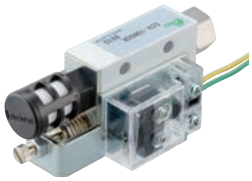
● Weight : 38g



Order code No.	042034
TYPE	ECV-10HS

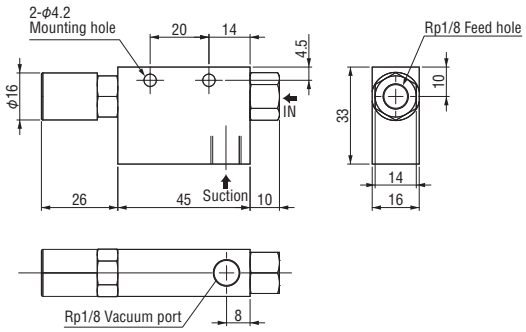
● Weight : 78g

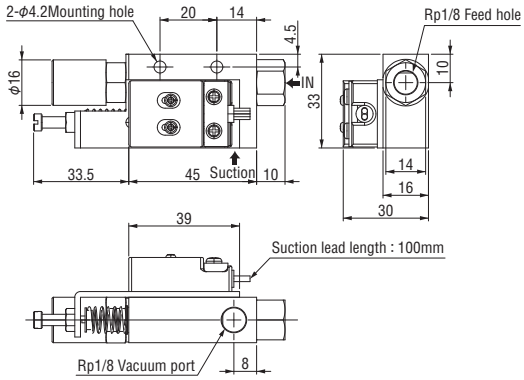
▶ With vacuum switch



Order code No.	042035
TYPE	ECV-10HSCK

● Weight : 120g





■ Specification

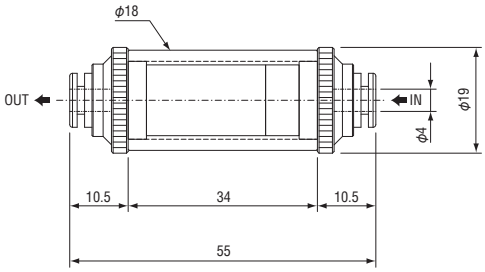
Product name	TYPE	Nozzle diameter (mm)	Quantity of suction (L/min)	Vacuum pressure (kPa)	Air consumption (L/min)	Supply air (MPa)
Air Ejectors	ECV-10HS	ϕ1.0	27 〈ANR〉	−92	44 〈ANR〉	0.5
	ECV-10HSCK					

▶ Small Air Filters



Order code No.	042036
TYPE	EVFL-44

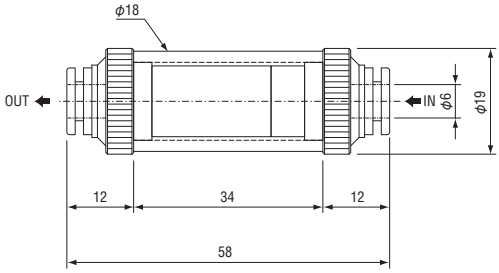
● Weight : 20g ● Directional





Order code No.	042037
TYPE	EVFL-66

● Weight : 20g ● Directional



■ Specification

Product name	TYPE	Tube size (mm)	Pressure resistance (MPa)	Pressure (kPa)	Nominal filtration rating (μm)
Small Air Filters	EVFL-44	ϕ4	0.5	−95.9~0	15
	EVFL-66	ϕ6			

∗ Vacuum filter

Plastic Ejector Nozzles

Lightweight and high-performance low-price ejector.



Plastic Ejector Nozzle 1.0mm

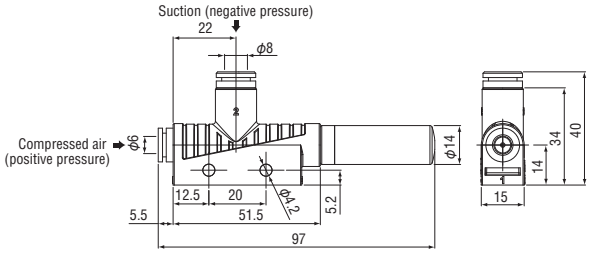
Order code No.	183988
TYPE	SSBP-10-S2-SDA

- Weight : 22g
- Recommended inner diameter of compressed air supply hose: 4mm (2m length)
- Recommended inner diameter of vacuum hose: 6mm (2m length)

Plastic Ejector Nozzle 1.5mm

Order code No.	183989
TYPE	SSBP-15-S2-SDA

- Weight : 22g
- Recommended inner diameter of compressed air supply hose: 4mm (2m length)
- Recommended inner diameter of vacuum hose: 6mm (2m length)

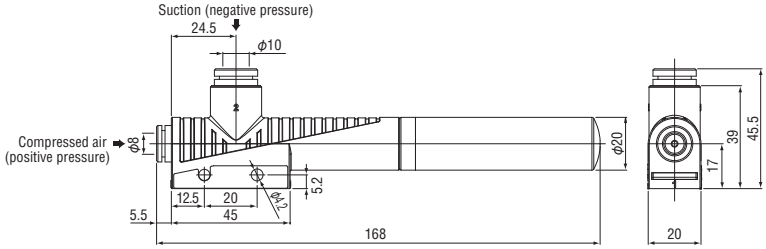




Plastic Ejector Nozzle 2.0mm

Order code No.	183991
TYPE	SSBP-20-S3-SDA

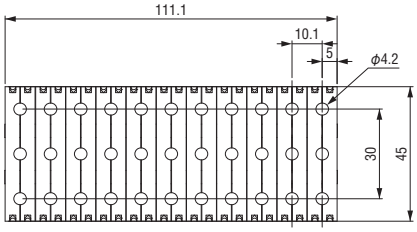
- Weight : 50g
- Recommended inner diameter of compressed air supply hose: 6mm (2m length)
- Recommended inner diameter of vacuum hose: 7mm (2m length)

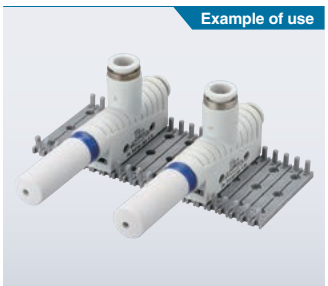




Plastic Ejector Clip Mount Base

Order code No.	183990
TYPE	SBEF-PL-110 ∗ 45





■Specification

Product name	TYPE	Nozzle diameter (mm)	Max. vacuum pressure (kPa)	Quantity of suction (L/min)	Working pressure (MPa)	Air consumption (L/min)∗	Noise level (db(A))	
							W/o suction	W/ suction
Plastic Ejector	SSBP-10-S2-SDA	ϕ1.0	−85	37.7	0.45	48	65	59
	SSBP-15-S2-SDA	ϕ1.5	−85	71.0	0.45	105	72	65
	SSBP-20-S3-SDA	ϕ2.0	−85	127.0	0.45	197	77	68

∗ When working pressure is 0.45 MPa.

Small Check Valve for Suction Cup



Small check valves. Please attach the pad before use.

- Remove the head of suction stem before installation.
- Used to attach to the position between suction stem head and main body to use the bracket for VFILB.

Use of check valves eliminates the need for repositioning vacuum cups when lifting workpieces of different sizes simultaneously.
The check valve cuts off the airflow to the vacuum cup when there is no contact between the cup and the workpiece.



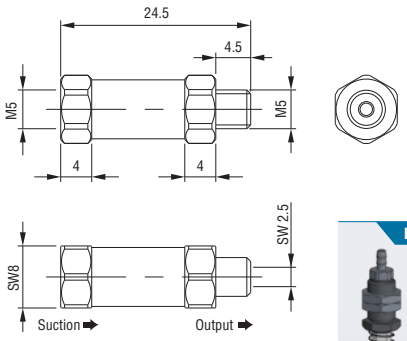
Order code No.	184150
TYPE	SSVK-M5

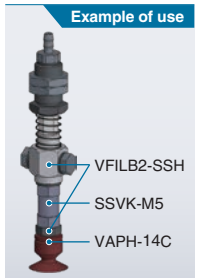
- Weight : 3g

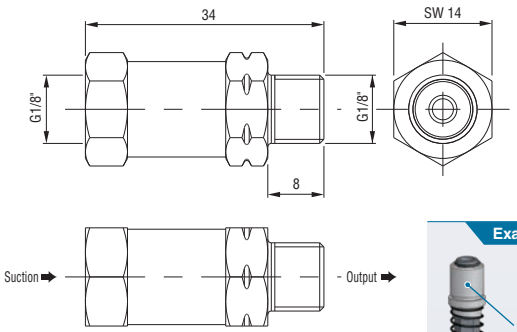


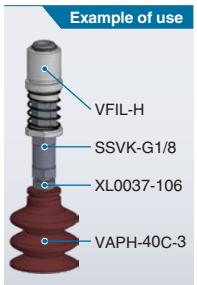
Order code No.	184151
TYPE	SSVK-G1/8

- Weight : 11g









Operation of check valve



The condition in which a vacuum cup is pressed against the work surface without permeability.
The ball in the valve is in the open position under vacuum.



When the work does not cover a vacuum pad completely or a pad is separated during handling.
A ball is pushed up in the direction of the sheet with airflow. And vacuum pressure in the system is maintained.



The condition in which the workpiece is released.The cross-sectional area of the valve is widened when the ball is pushed back. Much air is discharged. And the workpiece is released reliably and quickly.

〈Reference value〉

Suction cup	VAPH-15C
Check Valve	SSVK-M5
supply pressure	0.5MPa

(Unit : kPa)

Quantity of suctions / No. of uses	0 position	1 position	2 position	3 position	4 position
Check valve:0	-20.5	-20.5	-20.5	-20.5	-66.5
Check valve:1	-21.0	-21.0	-21.0	-61.0	-65.4
Check valve:2	-22.0	-22.0	-55.2	-61.9	-65.3
Check valve:3	-25.0	-47.6	-54.1	-59.2	-64.4

*Above list: with maximum degree of vacuum of -66.5 kPa.

MEMO

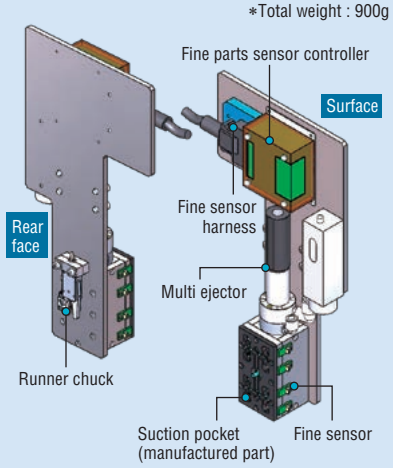
Ultra Small Part Take Out

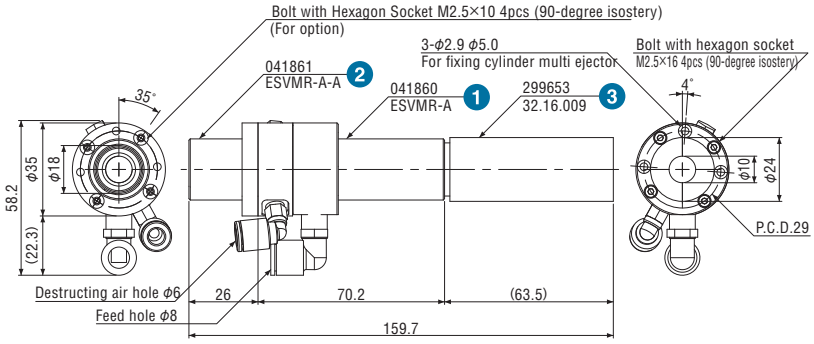
Please submit technical information beforehand for our effective design/manufacturing.

- Small molding machine It is effective for taking out ultra-small molded products of 20 tons or less.
- Compact and high-function multi ejector is used.
- Cylindrical multi ejector can be attached to jungle gym SUS pipe.
- Fine sensor unit best suited to check the micro workpieces.

Example of ultra-small molded product take-out chuck

*Total weight : 900g





1



Multi Ejector

Order code No.	041860
TYPE	ESVMR-A

- Weight : 104g
- Air consumption : 280 [L/min]
- Suction flow rate : 700 [L/min]
- Noise : 91.2 [dB]
- Attachments: sealing ring packing

2



Option parts A

Order code No.	041861
TYPE	ESVMR-A-A

- Weight : 19g
- Attachments: mounting bolt (M2.5 x 10) x 4
- Joint for hose connection

3



Silencer

Order code No.	299653
TYPE	32.16.009

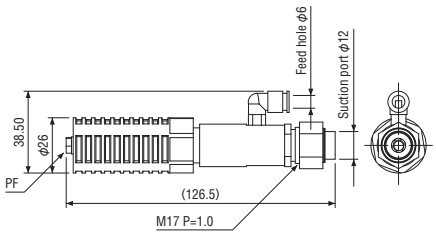
- Weight : 13g
- Silence, Amount of suction fluid flow: 400 [L/min]



In-line Cylinder Multi Ejector

Order code No.	041836
TYPE	ESVMR1-10-3

- Weight : 64g
- Air consumption : 210 [L/min]
- Suction flow rate : 260 [L/min]
- Noise : 85 [dB]





Silencer

Order code No.	110663
TYPE	L18382-106

- Weight : 22g



You can see moving images of products by using QR code reader of your smartphone.



Micro Parts Sensor Controller

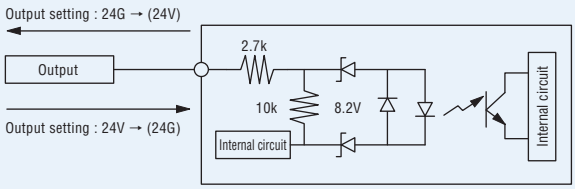
Order code No.	010521
TYPE	B-CONT-UNIT

● Weight : 145g

- Product detection level mode: automatic or manual
- Switching between AND output and OR (/OR) output is possible.
- Input and output for NPN / PNP.
- Up to 32 points can be detected (extension unit is used).
- The input condition of the sensor can be confirmed with the monitor LED.
- Method of product detection can be selected from level (product condition) and latch (product pass hold).
- Light ON / Dark ON can be selected.

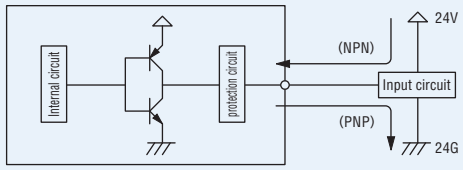
∗ The parts are subject to changes without notice.

Sensing input, OR switching input circuit configuration



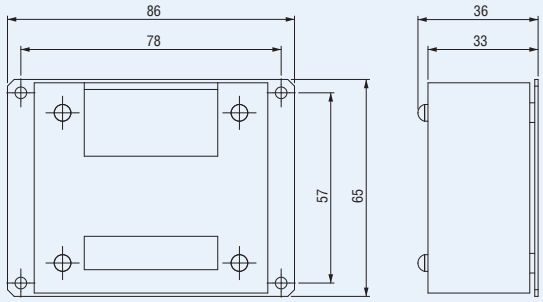
∗ Sensing input switching: change the input setting with the switch according to the output circuit specification of the customer (as shown in the drawing).

Configuration of output circuit



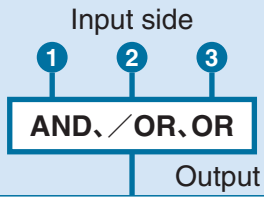
∗ Select NPN/PNP as illustrated above according to the input circuit specification of the customer.

Outside Dimension / Mounting Dimension



∗ Mounting hole : 4- ϕ 3.5

About "AND" , "/OR" , and "OR"



AND	／OR	OR
Output S is turned on when all the inputs (❶❷❸) are ON.	Output S is turned on when all the inputs (❶❷❸) are OFF.	Output S is turned on when either of input (❶❷❸) is ON.

■Specification

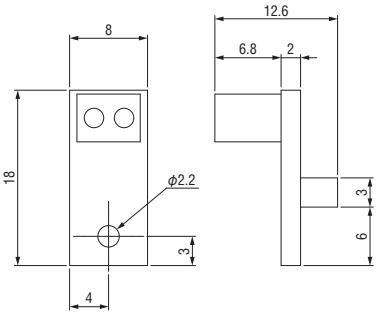
Power supply voltage (V)	Internal consumption current (mA)	Input current (mA)	Output current (mA)	Operating ambient humidity (%)	Ambient temperature (℃)	Operation condition
DC24 (±10%)	120 max. (DC24V)	10 or less / one point	100 (MAX)	35 ～ 80 (non-condensing)	0 ～ 40	There is no particulate and corrosive gas.



Fine sensor unit

Order code No.	010519
TYPE	B-SENS-UNIT

● Weight : 1g





Fine sensor harness

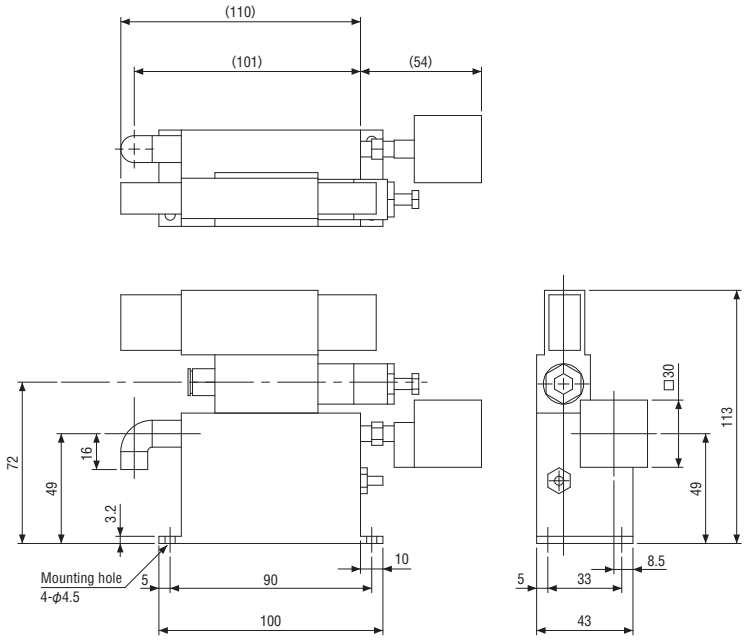
Order code No.	010522
TYPE	B-SENS-H

● Weight : 150g
● Length : 1m
● Harness connect the fine sensor unit and fine controller unit.

Vacuum Generator Unit

Supplying dry air allows easy generation of vacuum pressure.





Order code No.	210804
TYPE	V51-100-8283

- Weight : 800g
- The pressure sensor facilitates the verification of the achieved vacuum pressure.
- Vacuum pressure is adjustable.

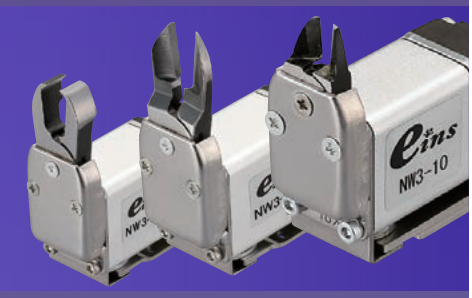
Specification

Fluid to be used	Pressure air regulated by air regulator with 74μ or less of filter.
Pressure	0.35 ~ 0.5MPa
Reaching vacuum pressure	-0.079MPa or more (supply pressure 0.5MPa)
Quantity of suction	18±1.5dm/min ANR (Supply pressure 0.4MPa)
Air consumption (L/min)	30 ~ 40dm/min ANR (Supply pressure 0.4MPa)
Weight	Approx.10kg
2-port magnet valve	2-port magnet valve
solenoid	double solenoid
Response time	0.05sec Max
Standard voltage	DC24V
Power consumption	1.8W
Allowable voltage volatility	±10%
Type of insulation	B type

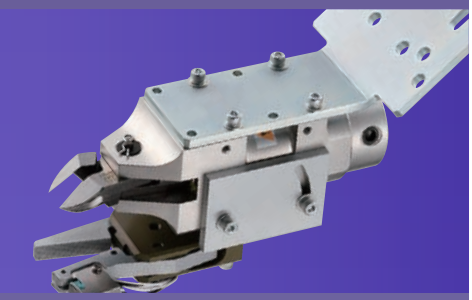
Vacuum pressure sensor with display

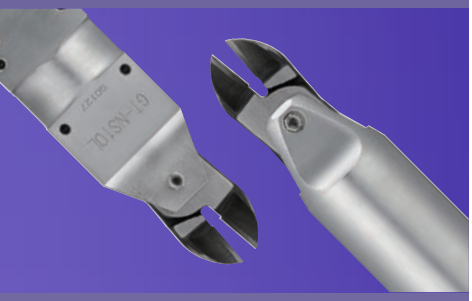
TYPE	PG-30-102R-N (Copal Electronics)
Power supply voltage	DC10.8~30V Ripple included
Protection grade	IP65 (connector not included)
Output	NPN open collector, 30 VDC max. (100 mA max.)
Residual voltage	1.2 VDC max. (load voltage 100 mA)
Output setting pressure	-53.3±5kPa (power supply voltage DC24V, ambient temperature 25±5℃)
Output hysteresis setting	13.3kPa
Operation Mode	Output transistor ON, red LED lighted when negative pressure exceeds the preset pressure. (Display screen is lighted with negative pressure).
Output	Linear output (1-5VDC)

Cut











Air Nipper (Small・Medium) ····· 4-2

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- NW Series ····· 4-4
- HNW Series ····· 4-10
- Air Nipper↔Replacement Blades Selection Table ··· 4-16
- Replacement Blades ····· 4-17
- Air Nipper↔Accessories Selection Table ····· 4-18
- Accessories ····· 4-19
- Nipper Mounting Brackets ····· 4-20
- NW One Touch Clip／Nipper Adjustment Bracket ··· 4-21

Air Nipper (Large) ····· 4-22

- NT Series ····· 4-23
- NS Series／NR Series／Booster Unit ····· 4-24
- Nipper Holders／Brackets／Rotation BRT ····· 4-25
- NB Series ····· 4-26
- Sprue Cut Unit／Timing Controller ····· 4-27
- Replacement Blades／Accessories ····· 4-28
- Heat Air Nipper (NTH Series／NKH Series) ····· 4-30

Air Nipper (Small・Medium)

How to select nipper

The air nipper is selected by material and cut diameter (cut area: mm²) of gate.

1. Check the material of cut gate and sprue.

soft resin

PVC (Poly vinyl chloride), PEs(polyester), PE (polyethylene), PS (polystyrene), etc

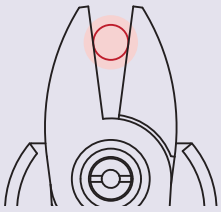
Hard resin

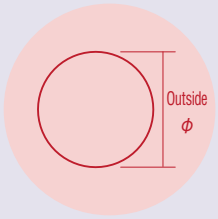
PP (polypropylene), PMMA (acrylic), PC (polycarbonate), ABS, Nylon, POM (polyacetal), glass fiber resin, etc

＊Cannot be used with copper/iron wire.

2. Check cut diameter (cut area).

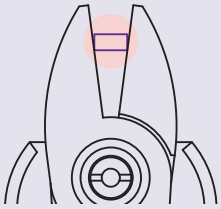
■To cut round gate

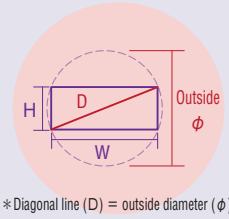




Select the nipper referring to the specification table (right):
Approximate cutting section diameter (ϕ) > outside diameter of gate.

■To cut square gate



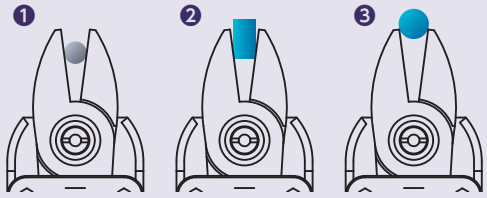


＊Diagonal line (D) = outside diameter (ϕ)

Select the nipper referring to the specification table (right):
Approximate cutting section diameter (ϕ) > Gate maximum width (D).

＊Cutting guide: (mm²) > H × W

■Gate cutting is impossible when:



❶ Gate is not made of resin.
❷ Gate (H) is longer than blade.
❸ Gate (H) is greater than blade opening.

When gate made of hard resin is cut:

- **Cutting capacity** will decrease by **35%.**
- Select the blade **with brazed cemented carbide tip.**

- Product temperature when the product is cut may influence the finishing state.
- Cutting guide value is for reference.

Please refer to the website for performance table.

- Pull push operation (a blade slides to a work surface to ensure the beautiful cut surface).
- Compatible with a variety of cuts to suit a variety of different applications.


Standard blade


Thin blade


Reverse blade


Standard long blade


Reversed long blade


Clip Type Blade

■仕　様

Product name	Shape of blade	Order code No.	TYPE	Operation	*Used air pressure (Mpa)	Withstand pressure (Mpa)	Cutting capacity Soft resin (mm)	Cutting capacity Hard resin (mm)	blade section Max opening width of blade(mm)	Weight (g)	Page
Air Nipper NW Series	Standard blade	131626	NW3-10	Pull (Max.2mm)	0.4 (4kgf/cm²) ~ 0.5 (5kgf/cm²)	0.7 (7kgf/cm²)	ϕ1.7 (2.26mm²)	ϕ1.1 (0.95mm²)	3	110	4-4
	Thin blade	131627	NW3-101								
	Reverse blade	131628	NW3-10R	Push (Max.2mm)							
	Standard blade	131629	NW3-20	Pull (Max.3mm)			ϕ2.8 (6.15mm²)	ϕ1.8 (2.54mm²)	6	222	
	NEW Standard blade	131724	NW3-20-BAST (W/ blade open adjust mechanism)							224	
	Thin blade	131630	NW3-201							221	
	Reverse blade	131631	NW3-20R	Push (Max.3mm)						222	4-5
	NEW Reverse blade	131725	NW3-20R-BAST (W/ blade open adjust mechanism)							224	
	Standard long blade	131632	NW3-20-V001S	Pull (Max.3mm)			ϕ2.0 (3.14mm²)	ϕ1.3 (1.32mm²)	6.5	235	
	Reversed long blade	131633	NW3-20R-V001S	Push (Max.3mm)						236	
	Clip Type Blade	131634	NW3-20-01C	Pull (Max.3mm)					7	237	4-6
	Standard blade	131643	NW3-35				ϕ3.5 (9.61mm²)	ϕ2.2 (3.80mm²)	9	305	
	NEW Standard blade	131722	NW3-35-BAST (W/ blade open adjust mechanism)							306	
	Reverse blade	131644	NW3-35R	Push (Max.3mm)						305	
	NEW Reverse blade	131723	NW3-35R-BAST (W/ blade open adjust mechanism)							309	4-7
	Standard long blade	131645	NW3-35-V001S	Pull (Max.3mm)			ϕ3.0 (7.06mm²)	ϕ1.9 (2.83mm²)	10	322	
	Reversed long blade	131646	NW3-35R-V001S	Push (Max.3mm)							
	Clip Type Blade	131647	NW3-35-01C	Pull (Max.3mm)					8	325	
	Standard blade	131771	NW1-50	Pull (Max.5mm)			ϕ5.0 (19.62mm²)	ϕ3.2 (8.03mm²)	15	743	4-8
	Reverse blade	131772	NW1-50R	Push (Max.5mm)						745	

*Reference value Changed according to the use conditions.

Air Nipper(Small・Medium) NW Series

Attaching an air nipper to the robot on the chuck plate will be very efficient and will save on labor cost.



Standard blade

Order code No.	131626
TYPE	NW3-10

- Weight : 110g
- Operation : Pull
- Cutting capacity : Soft resin ϕ1.7
  : Hard resin ϕ1.1



Thin blade

Order code No.	131627
TYPE	NW3-101

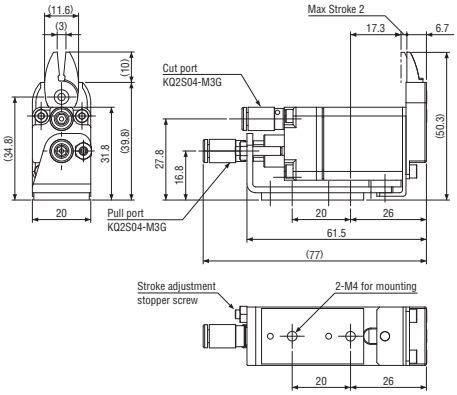
- Weight : 110g
- Operation : Pull
- Cutting capacity : Soft resin ϕ1.7
  : Hard resin ϕ1.1

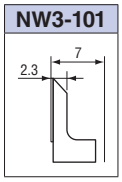


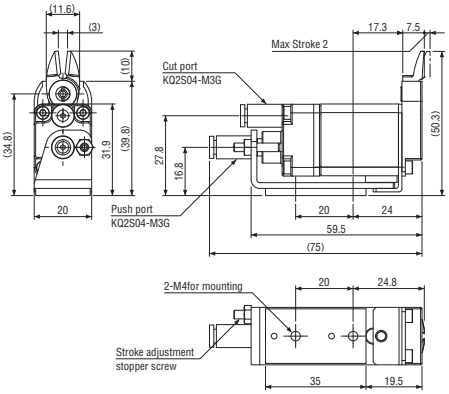
Reverse blade

Order code No.	131628
TYPE	NW3-10R

- Weight : 110g
- Operation : Push
- Cutting capacity : Soft resin ϕ1.7
  : Hard resin ϕ1.1









Standard blade

Order code No.	131629
TYPE	NW3-20

- Weight : 222g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8



Thin blade

Order code No.	131630
TYPE	NW3-201

- Weight : 221g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8

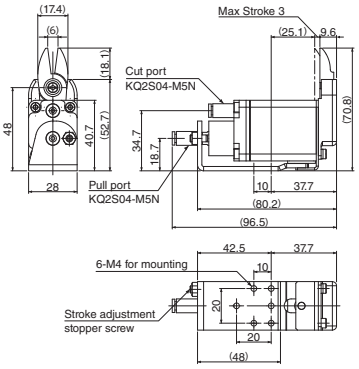
NEW

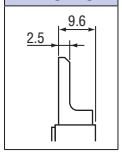


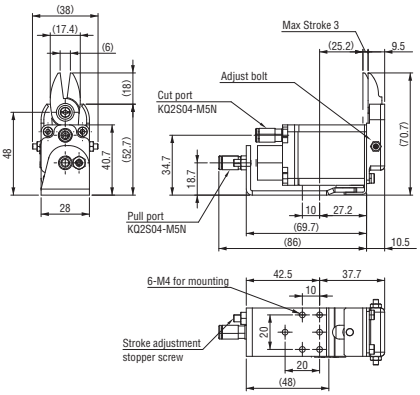
Standard blade (W/blade open adjust mechanism)

Order code No.	131724
TYPE	NW3-20-BAST

- Weight : 224g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8





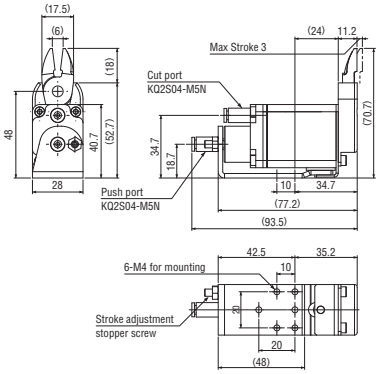




Reverse blade

Order code No.	131631
TYPE	NW3-20R

- Weight : 222g
- Operation : Push
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8

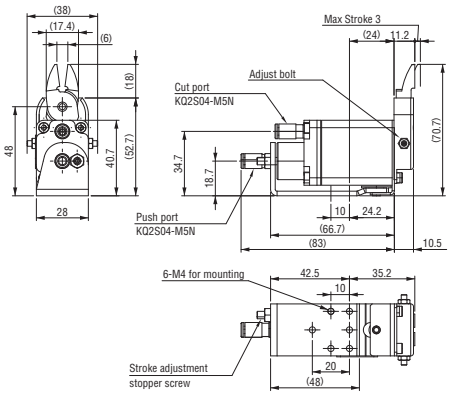




Reverse blade (W/blade open adjust mechanism)

Order code No.	131725
TYPE	NW3-20R-BAST

- Weight : 224g
- Operation : Push
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8

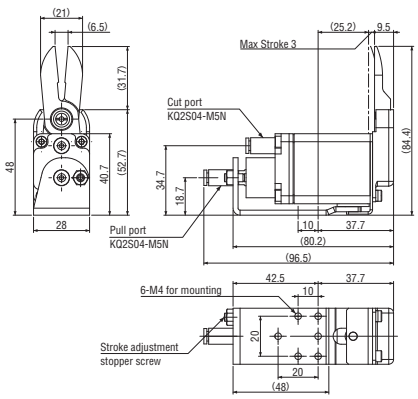




Standard long blade

Order code No.	131632
TYPE	NW3-20-V001S

- Weight : 235g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.0
  : Hard resin ϕ1.3

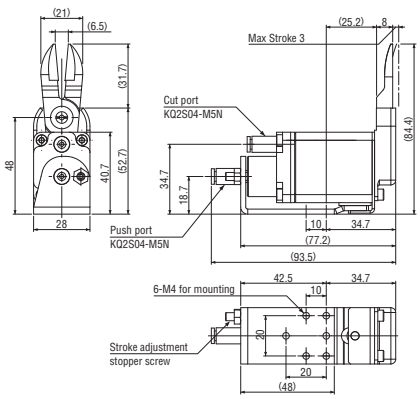




Reversed long blade

Order code No.	131633
TYPE	NW3-20R-V001S

- Weight : 236g
- Operation : Push
- Cutting capacity : Soft resin ϕ2.0
  : Hard resin ϕ1.3



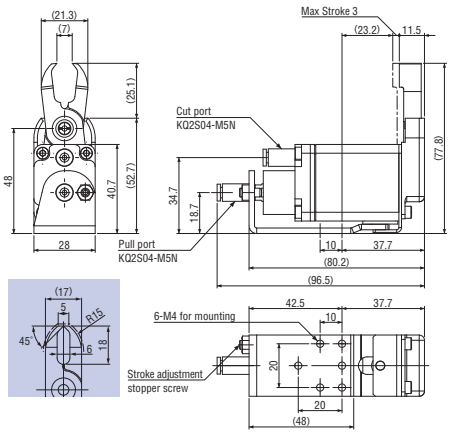
Air Nipper(Small • Medium) NW Series



Clip Type Blade

Order code No.	131634
TYPE	NW3-20-01C

- Weight : 237g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.0
  : Hard resin ϕ1.3

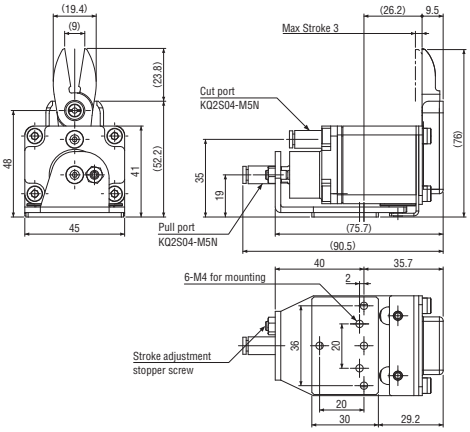




Standard blade

Order code No.	131643
TYPE	NW3-35

- Weight : 305g
- Operation : Pull
- Cutting capacity : Soft resin ϕ3.5
  : Hard resin ϕ2.2



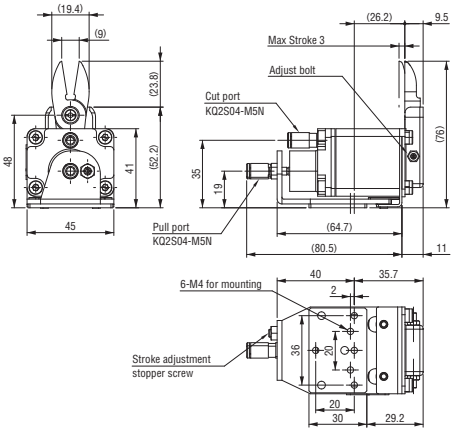
NEW



Standard blade (W/ blade open adjust mechanism)

Order code No.	131722
TYPE	NW3-35-BAST

- Weight : 306g
- Operation : Pull
- Cutting capacity : Soft resin ϕ3.5
  : Hard resin ϕ2.2

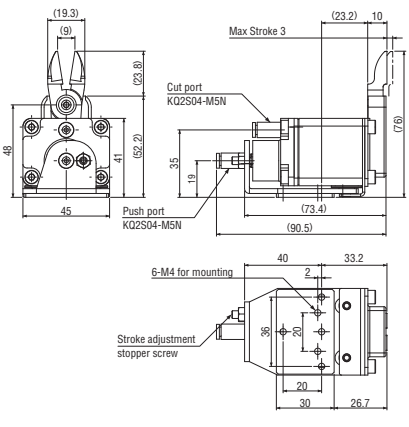




Reverse blade

Order code No.	131644
TYPE	NW3-35R

- Weight : 305g
- Operation : Pulsh
- Cutting capacity : Soft resin ϕ3.5
  : Hard resin ϕ2.2



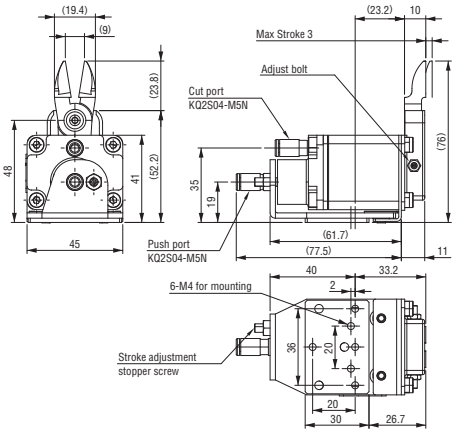
NEW



Reverse blade (W/ blade open adjust mechanism)

Order code No.	131723
TYPE	NW3-35R-BAST

- Weight : 309g
- Operation : Pulsh
- Cutting capacity : Soft resin ϕ3.5
  : Hard resin ϕ2.2

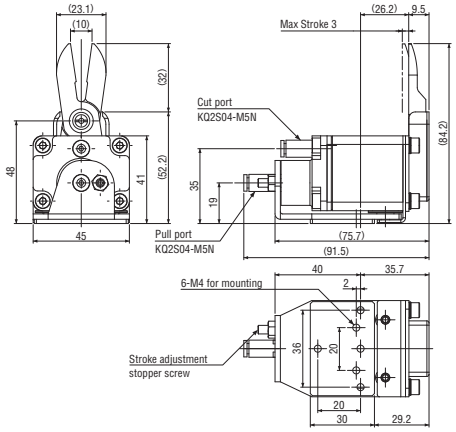




Standard long blade

Order code No.	131645
TYPE	NW3-35-V001S

- Weight : 322g
- Operation : Pull
- Cutting capacity : Soft resin ϕ3.0
  : Hard resin ϕ1.9

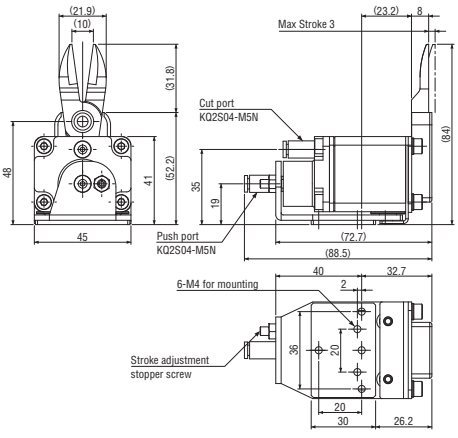




Reversed long blade

Order code No.	131646
TYPE	NW3-35R-V001S

- Weight : 322g
- Operation : Pulsh
- Cutting capacity : Soft resin ϕ3.0
  : Hard resin ϕ1.9

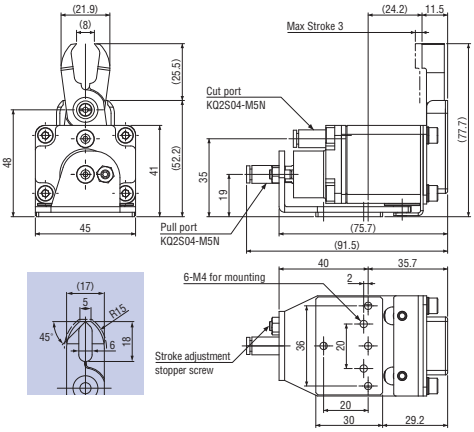




Clip Type Blade

Order code No.	131647
TYPE	NW3-35-01C

- Weight : 325g
- Operation : Pull
- Cutting capacity : Soft resin ϕ3.0
  : Hard resin ϕ1.9

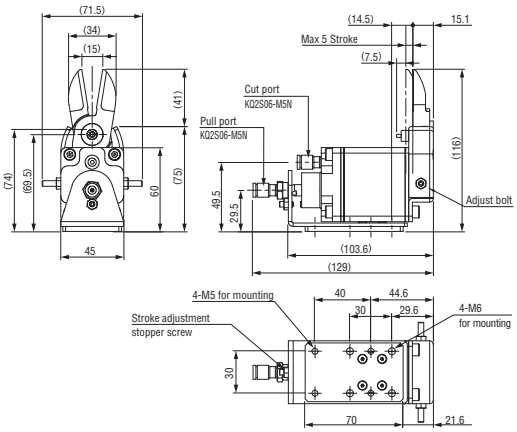




Standard blade

Order code No.	131771
TYPE	NW1-50

- W/ blade open adjust mechanism
- Weight : 743g ● Operation : Pull
- Cutting capacity : Soft resin ϕ5.0
  : Hard resin ϕ3.2

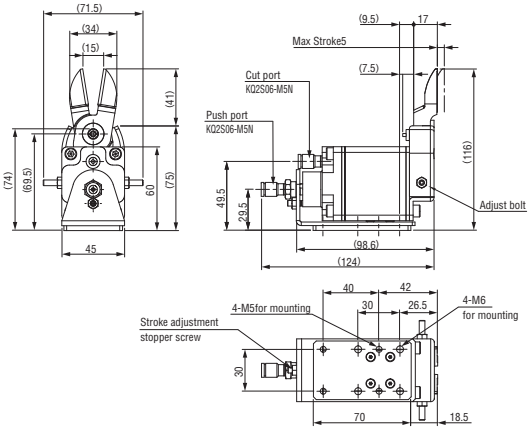




Reverse blade

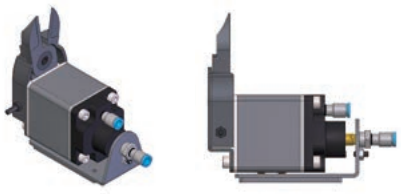
Order code No.	131772
TYPE	NW1-50R

- W/ blade open adjust mechanism
- Weight : 745g ● Operation : Push
- Cutting capacity : Soft resin ϕ5.0
  : Hard resin ϕ3.2

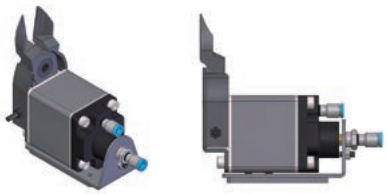


The conventional products NW-50 and the NW-50R, are on sale until the stock is gone.
Also, the fixing method of the blade as the subsequent product is changed to the nut type, and bolt protrudes, so please notice the interference with workpiece. (See following chart)

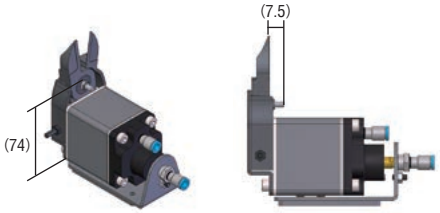
Conventional product NW-50



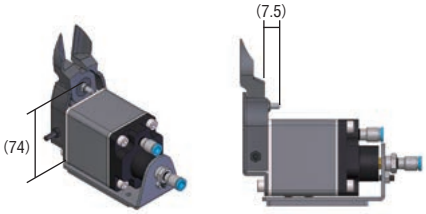
Conventional product NW-50R



Subsequent product NW1-50



Subsequent product NW1-50R



MEMO

Air Nipper(Small • Medium) HNW Series

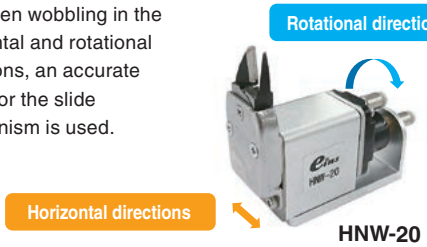
The achievement of high precision in gate cutting is attributed to minimal vibration during the sliding process and consistent load application.

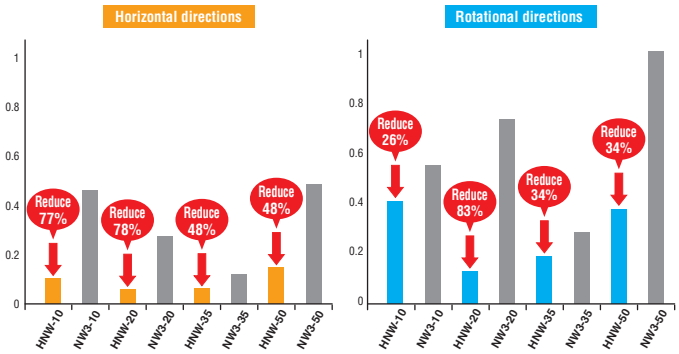
Please refer to the website for performance table.

▶ Lineup as well as the NW3 series. Mounting size is similar to the NW3 series.

New product features

To lessen wobbling in the horizontal and rotational directions, an accurate guide for the slide mechanism is used.





■ Specification

Product name	Shape of blade	Order code No.	TYPE	Operation	Used air pressure (Mpa)	Withstand pressure (Mpa)	Cutting capacity: Soft resin (mm)	Cutting capacity: Hard resin (mm)	blade section Max opening width of blade (mm)	Weight (g)	Page of details
Air Nipper(Small•Medium) HNW Series	Standard blade	073301	HNW-10	Pull (Max.2mm)	0.4 (4kgf/cm²) ≀ 0.5 (5kgf/cm²)	0.7 (7kgf/cm²)	ϕ1.7 (2.26mm²)	ϕ1.1 (0.95mm²)	3	80	4-11
	Thin blade	073302	HNW-101								
	Reverse blade	073303	HNW-10R	Push (Max.2mm)						85	
	Standard blade	073304	HNW-20	Pull (Max.3mm)			ϕ2.8 (6.15mm²)	ϕ1.8 (2.54mm²)	6	195	
	Thin blade	073305	HNW-201								
NEW	Reverse blade	073308	HNW-20R	Push (Max.3mm)						200	4-12
	Standard long blade	073306	HNW-20-V001S	Pull (Max.3mm)			ϕ2.0 (3.14mm²)	ϕ1.3 (1.32mm²)	6.5	214	
	Reversed long blade	073309	HNW-20R-V001S	Push (Max.3mm)						219	
	Clip Type Blade	073307	HNW-20-01C	Pull (Max.3mm)					7	214	4-13
	Standard blade	073310	HNW-35				ϕ3.5 (9.61mm²)	ϕ2.2 (3.8mm²)	9	212	
	Reverse blade	073313	HNW-35R	Push (Max.3mm)							
	Standard long blade	073311	HNW-35-V001S	Pull (Max.3mm)			ϕ3.0 (7.06mm²)	ϕ1.9 (2.83mm²)	10	229	4-14
	Reversed long blade	073314	HNW-35R-V001S	Push (Max.3mm)							
	Clip Type Blade	073312	HNW-35-01C	Pull (Max.3mm)					8	234	
	Standard blade	073355	HNW1-50	Pull (Max.5mm)			ϕ5.0 (19.62mm²)	ϕ3.2 (8.03mm²)	15	687	4-15
	Reverse blade	073356	HNW1-50R	Push (Max.5mm)						685	

*Reference value Changed according to the use conditions.

NEW



Standard blade

Order code No.	073301
TYPE	HNW-10

- Weight : 80g
- Operation : Pull
- Cutting capacity : Soft resin ϕ1.7
  : Hard resin ϕ1.1

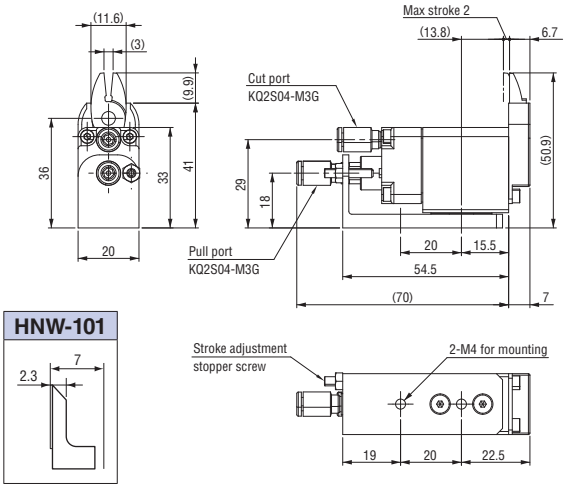
NEW



Thin blade

Order code No.	073302
TYPE	HNW-101

- Weight : 80g
- Operation : Pull
- Cutting capacity : Soft resin ϕ1.7
  : Hard resin ϕ1.1



HNW-101

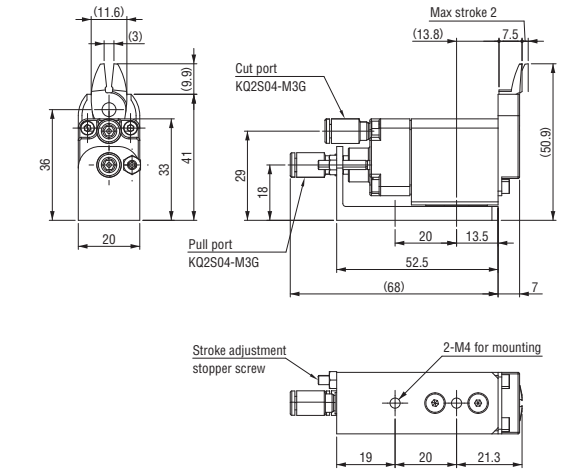
NEW



Reverse blade

Order code No.	073303
TYPE	HNW-10R

- Weight : 85g
- Operation : Push
- Cutting capacity : Soft resin ϕ1.7
  : Hard resin ϕ1.1



NEW



Standard blade

Order code No.	073304
TYPE	HNW-20

- Weight : 195g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8

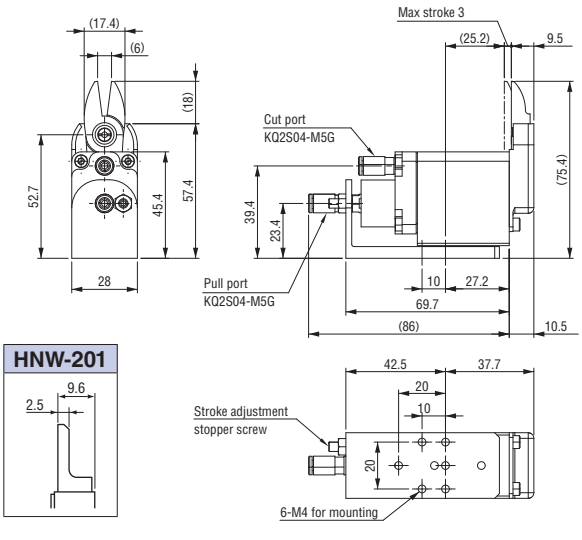
NEW



Thin blade

Order code No.	073305
TYPE	HNW-201

- Weight : 195g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8



HNW-201

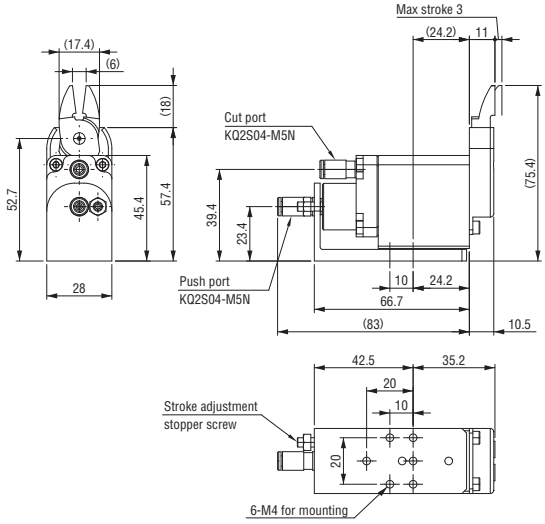
NEW



Reverse blade

Order code No.	073308
TYPE	HNW-20R

- Weight : 200g
- Operation : Push
- Cutting capacity : Soft resin ϕ2.8
  : Hard resin ϕ1.8



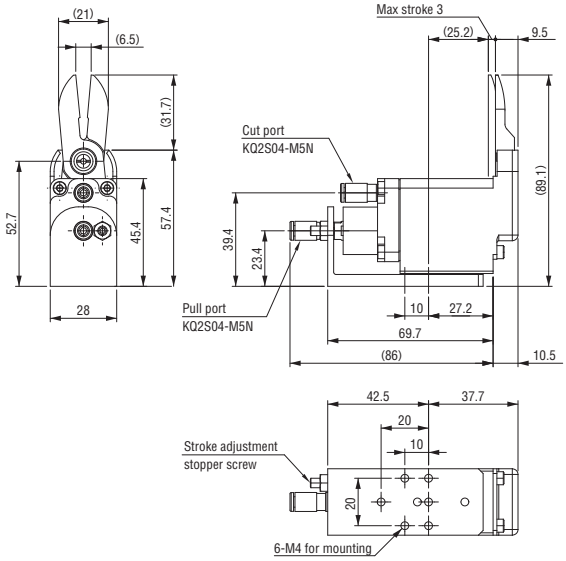
NEW



Standard long blade

Order code No.	073306
TYPE	HNW-20-V001S

- Weight : 214g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.0
  : Hard resin ϕ1.3



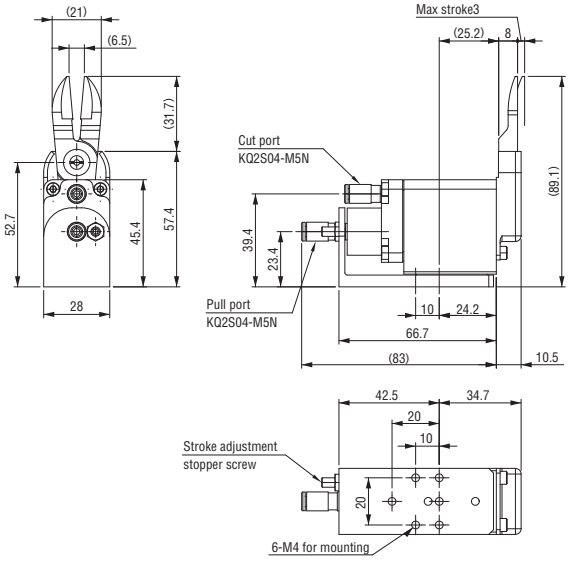
NEW



Reversed long blade

Order code No.	073309
TYPE	HNW-20R-V001S

- Weight : 219g
- Operation : Push
- Cutting capacity : Soft resin ϕ2.0
  : Hard resin ϕ1.3



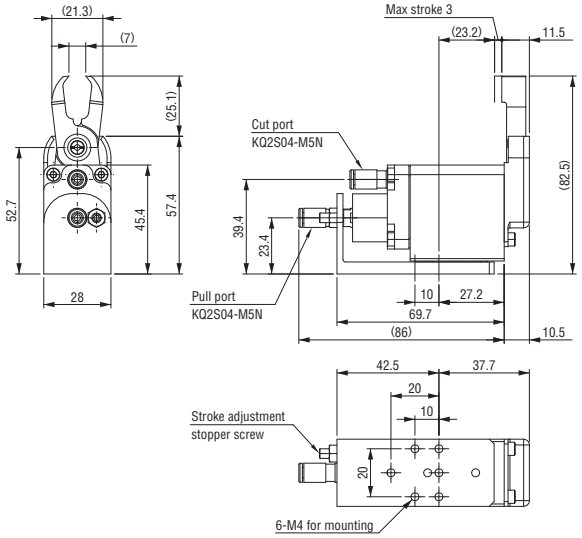
NEW



Clip Type Blade

Order code No.	073307
TYPE	HNW-20-01C

- Weight : 214g
- Operation : Pull
- Cutting capacity : Soft resin ϕ2.0
  : Hard resin ϕ1.3



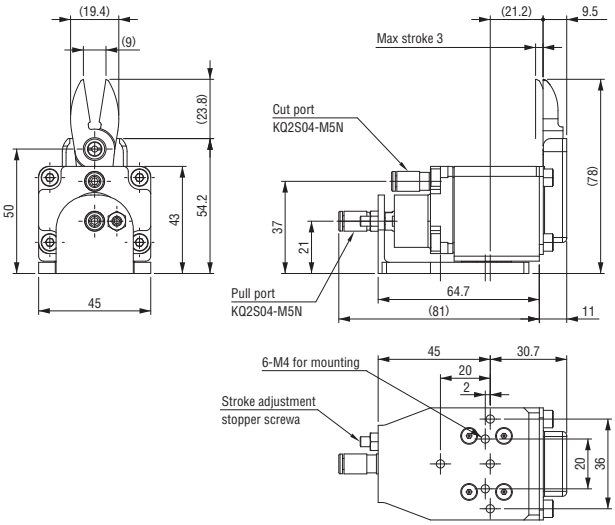
NEW



Standard blade

Order code No.	073310
TYPE	HNW-35

- Weight : 212g
- Operation : Pull
- Cutting capacity : Soft resin ϕ3.5
  : Hard resin ϕ2.2



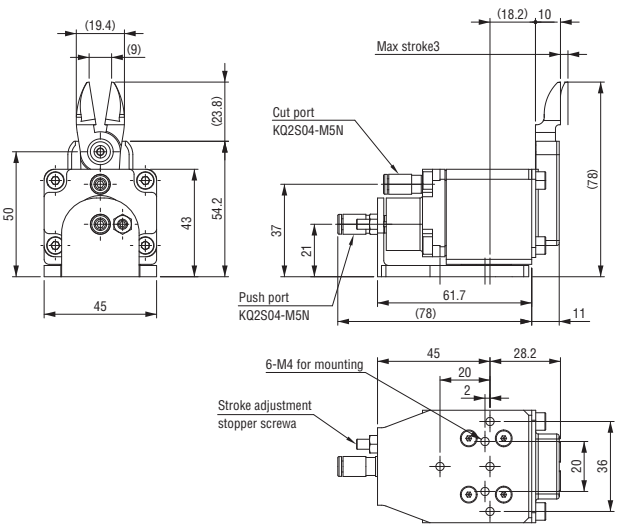
NEW



Reverse blade

Order code No.	073313
TYPE	HNW-35R

- Weight : 212g
- Operation : Push
- Cutting capacity : Soft resin ϕ3.5
  : Hard resin ϕ2.2



Air Nipper(Small • Medium) HNW Series

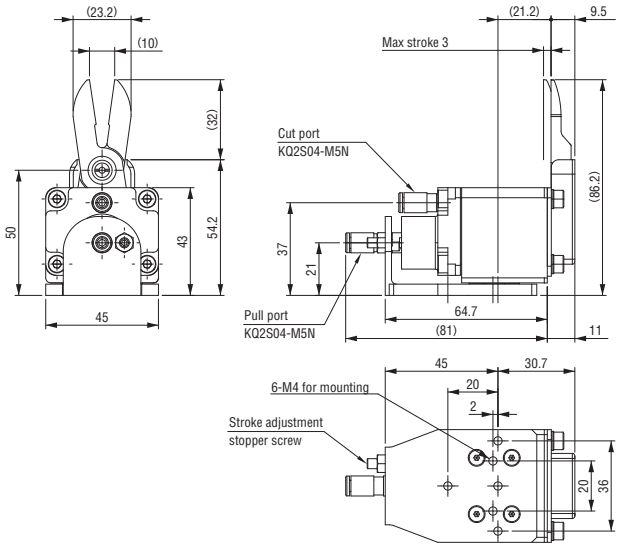
NEW



Standard long blade

Order code No.	073311
TYPE	HNW-35-V001S

- Weight : 229g
- Operation : Pull
- Cutting capacity : Soft resin ϕ3.0
  : Hard resin ϕ1.9



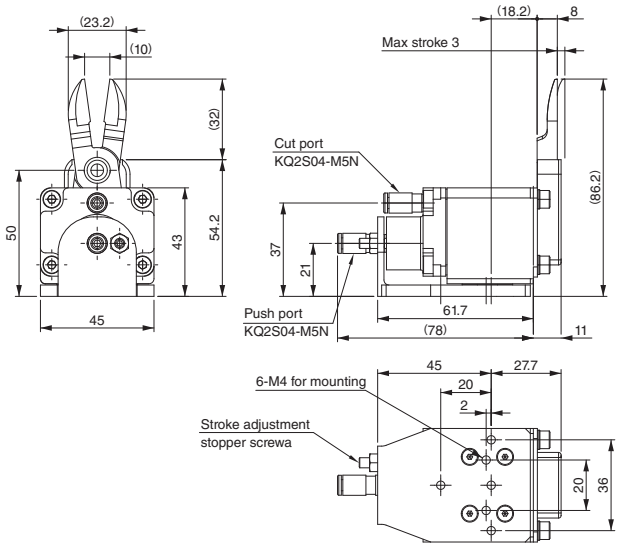
NEW



Reverse long blade

Order code No.	073314
TYPE	HNW-35R-V001S

- Weight : 229g
- Operation : Push
- Cutting capacity : Soft resin ϕ3.0
  : Hard resin ϕ1.9



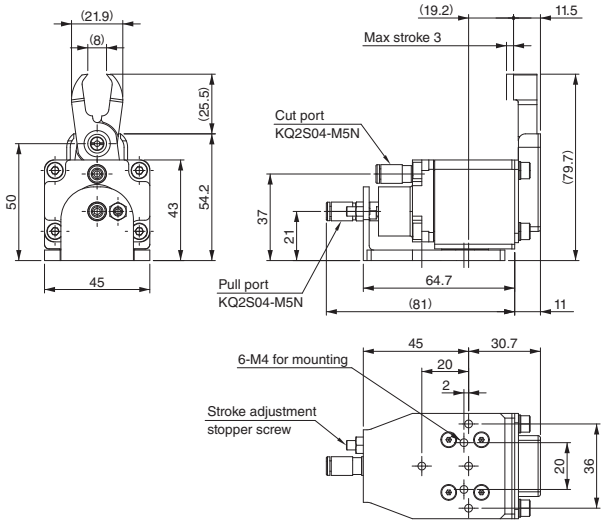
NEW



Clip Type Blade

Order code No.	073312
TYPE	HNW-35-01C

- Weight : 234g
- Operation : Pull
- Cutting capacity : Soft resin ϕ3.0
  : Hard resin ϕ1.9



▶ The ϕ 5 (soft resin) product can be cut. The slide includes the new mechanism.

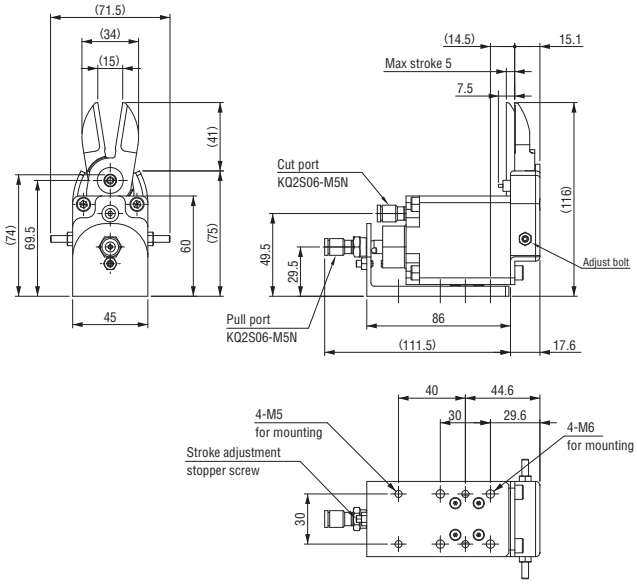
NEW



Standard blade

Order code No.	073355
TYPE	HNW1-50

- W/ blade open adjust mechanism
- Weight : 687g
- Operation : Pull
- Cutting capacity : Soft resin ϕ5.0
  : Hard resin ϕ3.2



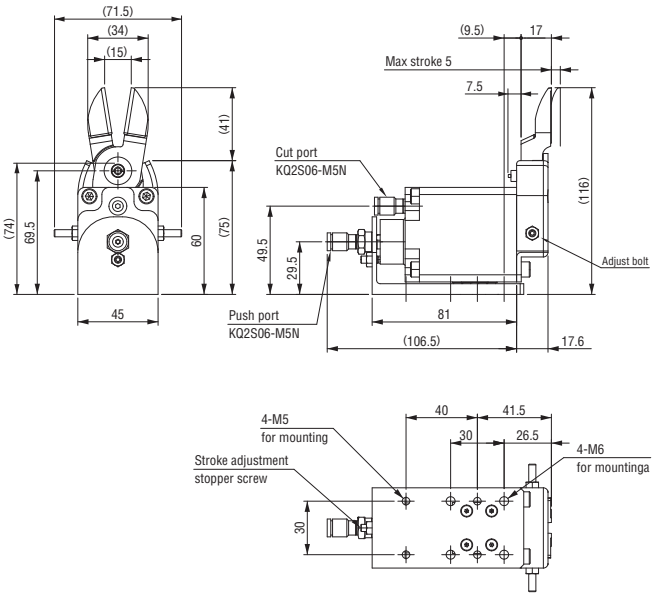
NEW



Reverse blade

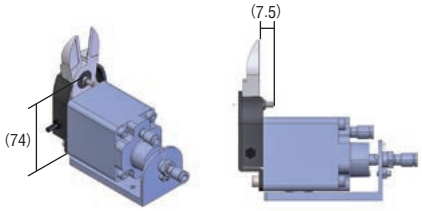
Order code No.	073356
TYPE	HNW1-50R

- W/ blade open adjust mechanism
- Weight : 685g
- Operation : Push
- Cutting capacity : Soft resin ϕ5.0
  : Hard resin ϕ3.2

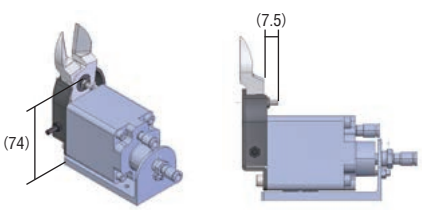


The conventional products HNW-50 and the HNW-50R, are on sale until the stock is gone.
Also, the fixing method of the blade as the subsequent product is changed to the nut type, and bolt protrudes, so please notice the interference with workpiece. (See following chart)

HNW1-50



HNW1-50R



Air Nipper (Small • Medium) ↔ Replacement Blades Selection Table

Air Nipper (Small • Medium) / Replacement Blades ○ : It can be installed — : Cannot be installed	Air nipper (10Series)					Air nipper (20Series)										Air nipper (35Series)									Air nipper (50Series)	
																										
	131626	073301	131627	073302	131628	073303	131629	131724	073304	131630	073305	131631	131725	073308	131632	073306	131633	073309	131634	073307	131643	131722	073310	131644	131723	073313	131645	073311	131646	073314	131647	073312	131771	073355	131772	073356
	NW※-10	HNW-10	NW※-101	HNW-101	NW※-10R	HNW-10R	NW※-20	NW※-20-BAST	HNW-20	NW※-201	HNW-201	NW※-20R	NW※-20R-BAST	HNW-20R	NW※-20-V001S	HNW-20-V001S	NW※-20R-V001S	HNW-20R-V001S	NW※-20-01C	HNW-20-01C	NW※-35	NW※-35-BAST	HNW-35	NW※-35R	NW※-35R-BAST	HNW-35R	NW※-35-V001S	HNW-35-V001S	NW※-35R-V001S	HNW-35R-V001S	NW※-35-01C	HNW-35-01C	NW※-50	HNW※-50	NW※-50R	HNW※-50R
041050 EG-NW10 (Standard blade)	○	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041051 EG-NW101 (Thin blade)	○	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041758 EG-NW10R (Reverse blade)	–	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041871 EG1-NW20 (Standard blade)	–	–	–	○	–	–	○	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041872 EG1-NW201 (Thin blade)	–	–	–	○	–	–	○	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041064 EG-NW20-V001S (Standard blade • Standard long blade)	–	–	–	○	–	–	○	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041066 EG-NW20-01C (Clip Type Blade)	–	–	–	○	–	–	○	–	○	–	○	○	–	○	–	○	○	–	○	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041876 EG1-NW20 (Standard blade • Carbide blade)	–	–	–	○	–	–	○	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041873 EG1-NW20-AST (Standard blade • Adjustable opening)	–	–	–	○	–	–	○	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041874 EG1-NW201-AST (Thin blade • Adjustable opening)	–	–	–	○	–	–	○	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041916 EG1-NW20R (Reverse blade)	–	–	–	–	–	–	–	–	–	–	–	○	–	–	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041361 EG-NW20R-V001S (Reverse blade • Standard long blade)	–	–	–	–	–	–	–	–	–	–	–	○	–	–	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041923 EG1-NW20R (Reverse blade • Carbide blade)	–	–	–	–	–	–	–	–	–	–	–	○	–	–	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041924 EG1-NW20R-AST (Reverse blade • Adjustable opening)	–	–	–	–	–	–	–	–	–	–	–	○	–	–	–	○	–	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
041851 EG1-NW35 (Standard blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–
041065 EG-NW35-V001S (Standard blade • Standard long blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–
041067 EG-NW35-01C (Clip Type Blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	○	○	–	○	–	○	–	○	–	○	–	–	–	–
041866 EG1-NW35 (Standard blade • Carbide blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–
041853 EG1-NW35 (Standard blade • Adjustable opening)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	○	–	–	○	–	○	–	○	–	○	–	–	–	–
041852 EG1-NW35R (Reverse blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	–	○	–	–	–	–	○	–	–	–	–	–	–
041310 EG-NW35R-V001S (Reverse blade • Standard long blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	–	○	–	–	–	–	○	–	–	–	–	–	–
041867 EG1-NW35R (Reverse blade • Carbide blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	–	○	–	–	–	–	○	–	–	–	–	–	–
041854 EG1-NW35R-AST (Reverse blade • Adjustable opening)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	–	○	–	–	–	–	○	–	–	–	–	–	–
042134 EG1-NW50 (Standard blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	–	–	–
042135 EG1-NW50R (Reverse blade)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○

Air Nipper (Small・Medium) Replacement Blades

Please use the replacement blade of the air nipper (small and medium type).

Please refer to the website for performance table.

Spare Blade



Order code No.	041050	041051	041758	041871
TYPE	EG-NW10	EG-NW101	EG-NW10R	EG1-NW20
Weight	20g	20g	22g	61g
Supported nipper	NW∗-10、HNW-10 (Standard blade)	NW∗-101、HNW-101 (thin blade)	NW∗-10R、HNW-10R (Reverse blade)	NW∗-20、HNW-20 (Standard blade)

Order code No.	041872	041916	041851	041852
TYPE	EG1-NW201	EG1-NW20R	EG1-NW35	EG1-NW35R
Weight	61g	62g	68g	68g
Supported nipper	NW∗-201、HNW-201 (thin blade)	NW∗-20R、HNW-20R (Reverse blade)	NW∗-35、HNW-35 (Standard blade)	NW∗-35R、HNW-35R (Reverse blade)

Standard long blade



Order code No.	041064	041361	041065	041310
TYPE	EG-NW20-V001S	EG-NW20R-V001S	EG-NW35-V001S	EG-NW35R-V001S
Weight	80g	80g	85g	85g
Supported nipper	NW∗-20、HNW-20 (Standard blade)	NW∗-20R、HNW-20R (Reverse blade)	NW∗-35、HNW-35 (Standard blade)	NW∗-35R、HNW-35R (Reverse blade)

Carbide blade



Order code No.	041876	041923	041866	041867
TYPE	EG1-NW20 (Carbide blade)	EG1-NW20R (Carbide blade)	EG1-NW35 (Carbide blade)	EG1-NW35R (Carbide blade)
Weight	61g	70g	68g	68g
Supported nipper	NW∗-20、HNW-20 (Standard blade)	NW∗-20R、HNW-20R (Reverse blade)	NW∗-35、HNW-35 (Standard blade)	NW∗-35R、HNW-35R (Reverse blade)

Clip Type Blade



Order code No.	041066	041067
TYPE	EG-NW20-01C	EG-NW35-01C
Weight	80g	90g
Supported nipper	NW∗-20、NW∗-20R HNW-20、HNW-20R	NW∗-35、NW∗-35R HNW-35、HNW-35R

Adjustable opening　∗Setscrew with hexagon socket and hexagon nut are included.



Blade opening can be adjusted by two screws.

Order code No.	041873	041874	041924
TYPE	EG1-NW20-AST	EG1-NW201-AST	EG1-NW20R-AST
Weight	63g	61g	63g
Supported nipper	NW∗-20、HNW-20 (Standard blade)	NW∗-201、HNW-201 (thin blade)	NW∗-20R、HNW-20R (Reverse blade)

Order code No.	041853	041854
TYPE	EG1-NW35-AST	EG1-NW35R-AST
Weight	69g	72g
Supported nipper	NW∗-35、HNW-35 (Standard blade)	NW∗-35R、HNW-35R (Reverse blade)

● If you would like another blade, please contact eins.

For NW-50、50R

Spare blade (w/blade opening adjusting)



Order code No.	042134	042135
TYPE	EG1-NW50	EG1-NW50R
Weight	265g	270g
Supported nipper	NW∗-50、HNW∗-50 (Standard blade)	NW∗-50R、HNW∗-50R (Reverse blade)

About Blade Exchange

Notice : Don't remove this bolt.

Remove the four bolts in four corners of the blade holder and replace it.



Air Nipper (Small • Medium) ↔ Accessories Selection Table

Air Nipper (Small • Medium) / Accessories ○ : It can be installed — : Cannot be installed			Air nipper (10Series)			Air nipper (20Series)							Air nipper (35Series)							Air nipper (50Series)	
																					
			131626	073301	131627	073302	131628	073303	131629	131724	073304	131630	073305	131631	131725	073308	131632	073306	131633	073309	131634	073307	131643	131722	073310	131644	131723	073313	131645	073311	131646	073314	131647	073312	131771	073355	131772	073356
			NW※-10	HNW-10	NW※-101	HNW-101	NW※-10R	HNW-10R	NW※-20	NW※-20-BAST	HNW-20	NW※-201	HNW-201	NW※-20R	NW※-20R-BAST	HNW-20R	NW※-20-V001S	HNW-20-V001S	NW※-20R-V001S	HNW-20R-V001S	NW※-20-01C	HNW-20-01C	NW※-35	NW※-35-BAST	HNW-35	NW※-35R	NW※-35R-BAST	HNW-35R	NW※-35-V001S	HNW-35-V001S	NW※-35R-V001S	HNW-35R-V001S	NW※-35-01C	HNW-35-01C	NW※-50	HNW※-50	NW※-50R	HNW※-50R
Blade Springs		130744 For NW-10	○	○	○				—			—		—			—		—		—		—			—			—		—		—		—		—	
		131536 For NW2-20.35	—	—	—				○			○		○			○		○		○		○			○			○		○		○		—		—	
		131618 NW-50.50R	—	—	—				—			—		—			—		—		—		—			—			—		—		—		○		○	
Piston		130767 For NW/NC-10	○	○	○				—			—		—			—		—		—		—			—			—		—		—		—		—	
		130768 For NW/NC-20.20	—	—	—				○			○		○			○		○		○		—			—			—		—		—		—		—	
		130769 For NW/NC-35.35	—	—	—				—			—		—			—		—		—		○			○			○		○		○		—		—	
		131654 For NW-50.50R	—	—	—				—			—		—			—		—		—		—			—			—		—		—		○		○	
Piston packing		131614 NW1-10.10R (LX0125-001-0)	○	○	○				—			—		—			—		—		—		—			—			—		—		—		—		—	
		131615 NW2-20.20R (LX0145-003-0)	—	—	—				○			○		○			○		○		○		—			—			—		—		—		—		—	
		131487 NW1-35.35R (LX0107-001-0)	—	—	—				—			—		—			—		—		—		○			○			○		○		○		—		—	
		131616 NW-50.50R (LX0153-110)	—	—	—				—			—		—			—		—		—		—			—			—		—		—		○		○	
Piston spring		130766 For NC/NW-10 (J09420-014-3)	○ 2 required	○ 2 required	○ 2 required				—			—		—			—		—		—		—			—			—		—		—		—		—	
		130770 NC/NW-20.20R (J07930-013-1)	—	—	—				○ 2 required			○ 2 required		○ 2 required			○ 2 required		○ 2 required		○ 2 required		—			—			—		—		—		—		—	
		130771 For NW-35.35R (NC-3506N-1)	—	—	—				—			—		—			—		—		—		○			○			○		○		○		—		—	
		131617 NW-50.50R (LX0153-111)	—	—	—				—			—		—			—		—		—		—			—			—		—		—		○		○	
Slide spring		130257 For NC/NW-10 (J09420-016-1)	○	○	—				—			—		—			—		—		—		—			—			—		—		—		—		—	
		131679 For NW-10R	—	—	○				—			—		—			—		—		—		—			—			—		—		—		—		—	
		130251 NC/NW-20.35 (J07930-015-0)	—	—	—				○			○		—			○		—		○		○			—			○		—		○		—		—	
		131255 NW-20R.35R (J0793R-004-0)	—	—	—				—			—		○			—		○		—		—			○			—		○		—		—		—	
		200254 UM8-25	—	—	—				—			—		—			—		—		—		—			—			—		—		—		○		—	
		200255 UM13-25	—	—	—				—			—		—			—		—		—		—			—			—		—		—		—		○	

Accessories

Please use for maintenance of the air nipper (small and medium type).

Blade Springs



Order code No.	130744	131536	131618
TYPE	For NW-10	For NW2-20.35	NW-50.50R
Weight	0.1g	0.2g	1g
Supported nipper	NW∗-10、10R Series HNW-10、10R	NW∗-20、20R、35、35R Series HNW-20、20R、35、35R	NW∗-50、50R Series HNW∗-50、50R

Piston



Order code No.	130767	130768	130769	131654
TYPE	For NW/NC-10	For NW/NC-20.20R	For NW/NC-35.35R	For NW-50.50R
Weight	3g	9g	11g	25g
Supported nipper	NC/NW∗-10、10R Series HNW-10、10R	NC/NW∗-20、20R Series HNW-20、20R	NC/NW∗-35、35R Series HNW-35、35R	NW∗-50、50R Series HNW∗-50、50R

Piston packing



Order code No.	131614	131615	131487	131616
TYPE	NW1-10.10R (LX0125-001-0)	NW2-20.20R (LX0145-003-0)	NW1-35.35R (LX0107-001-0)	NW-50.50R (LX0153-110)
Weight	0.3g	0.5g	1.2g	1g
Supported nipper	NC/NW∗-10、10R Series HNW-10、10R	NC/NW∗-20、20R Series HNW-20、20R	NW∗-35、35R Series HNW-35、35R	NW∗-50、50R Series HNW∗-50、50R

Piston spring



Order code No.	130766	130770
TYPE	For NC/NW-10 (J09420-014-3)	For NC/NW-20.20R (J07930-013-1)
Weight	0.2g	0.5g
Supported nipper	NC/NW∗-10、10R Series HNW-10、10R	NC/NW∗-20、20R Series HNW-20、20R

● Two pieces are used for a nipper



Order code No.	130771	131617
TYPE	For NW-35.35R (NC-3506N-1)	NW-50.50R (LX0153-111)
Weight	5.6g	13g
Supported nipper	NW∗-35、35R Series HNW-35、35R	NW∗-50、50R Series HNW∗-50、50R

● One piece be used for a nipper

Slide spring



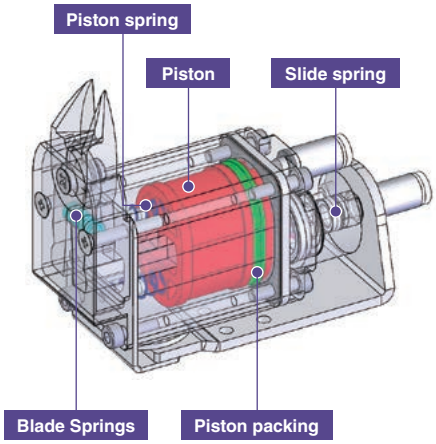
Order code No.	130257	131679
TYPE	For NC/NW-10 (J09420-016-1)	For NW-10R
Weight	0.1g	0.1g
Supported nipper	NW∗-10 Series HNW-10	NW∗-10R Series HNW-10R



Order code No.	130251	131255
TYPE	NC/NW-20.35 (J07930-015-0)	NW-20R.35R (J0793R-004-0)
Weight	0.4g	1g
Supported nipper	NW∗-20、35 Series HNW-20、35	NW∗-20R、35R Series HNW-20R、35R



Order code No.	200254	200255
TYPE	UM8-25	UM13-25
Weight	1g	3g
Supported nipper	NW∗-50 Series HNW∗-50	NW∗-50R Series HNW∗-50R



Nipper Mounting Brackets

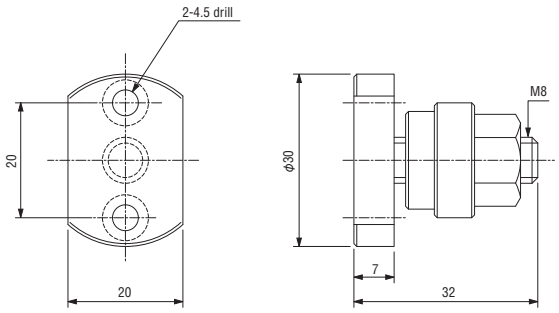
Metal fixture to fix an air nipper to a NT gate cut unit.





Order code No.	130216
TYPE	For NC/NW-10

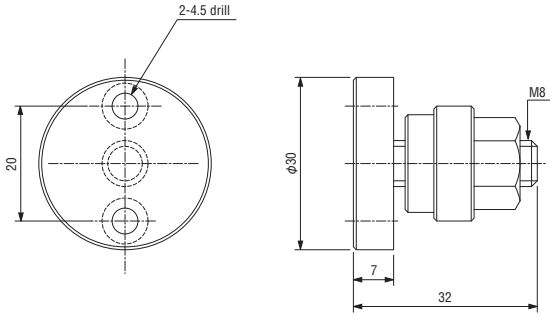
- Weight : 61g
- Also can be used for NW∗-20, NW∗-35, HNW-20, HNW-35 series.
- Accessories : taper washer 1 pc
  screw (M4) 2 pc





Order code No.	130162
TYPE	For NC/NW-20

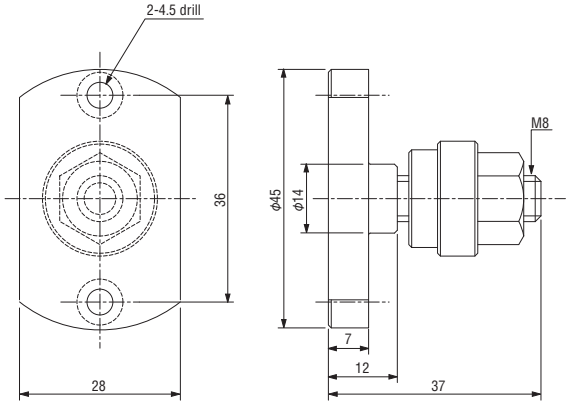
- Weight : 70g
- Also can be used for NW∗-35, HNW-35 series.
- Accessories : taper washer 1 pc
  screw (M4) 2 pc





Order code No.	130163
TYPE	For NC/NW-35

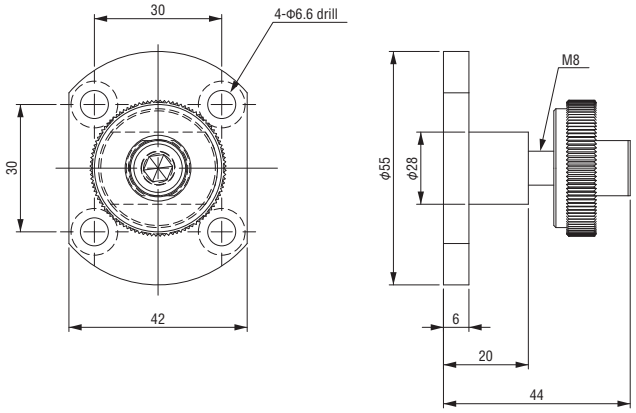
- Weight : 99g
- Cannot be used for NW∗-20, HNW-20 series.
- Accessories : taper washer 1 pc
  screw (M4) 2 pc





Order code No.	131621
TYPE	For NW-50

- Weight : 184g
- Only for NW∗-50, HNW∗-50 Series.
- Accessories : M6× 10 4 piece

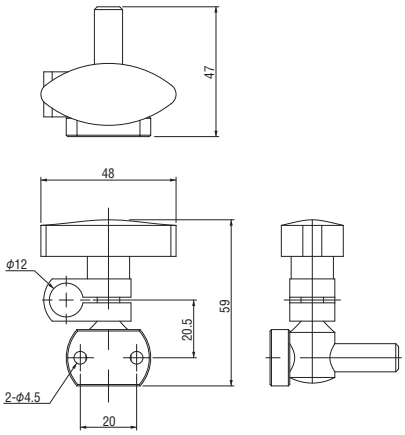


NW One Touch Clip／Nipper Adjustment Bracket

The mounting angle can be free adjusted without using the tool.

NW One Touch Clip







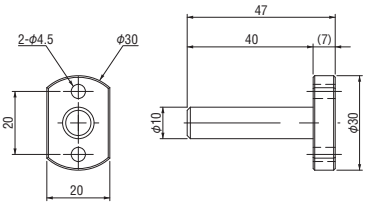
Air Nipper (Small・Medium) is mounted and attached to ϕ12 SS Jungle Gym

Order code No.	110558
TYPE	L10160-CL

- Weight : 80g ● Include nipper mounting bracket.
- Accessories : Mounting bolt (M4)*2piece
- Can be used for NW＊-10, NW＊-20, NW＊-35, HNW-10, HNW-20, HNW-35 Series.
- When using the HNW series, please use a taper washer(123940).



Nipper mounting brackets



Order code No.	110622
TYPE	L10160-000

- Weight : 20g ● Accessories : Mounting bolt (M4)*2piece
- Can be used for NW＊-10, NW＊-20, NW＊-35, HNW-10, HNW-20, HNW-35 Series.
- When using the HNW series, please use a taper washer(123940).



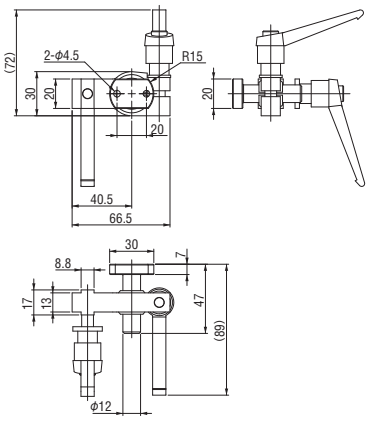
Taper washer

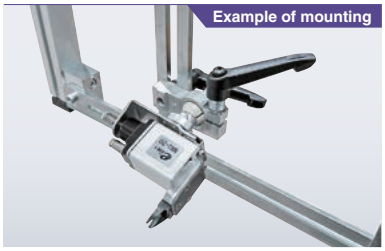
Order code No.	123940
TYPE	M4

- Weight : 0.15g ● Thickness : 0.5mm

NEW Nipper Adjustment Bracket







Install onto the frame of NT gate cut unit.

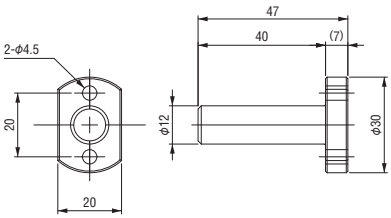
Order code No.	131732
TYPE	NW-ADJBKT

- Weight : 200g ● Include nipper mounting bracket 12.
- Accessories : Mounting bolt (M4)*2piece
- Can be used for NW＊-10, NW＊-20, NW＊-35, HNW-10, HNW-20, HNW-35 Series.
- When using the HNW series, please use a taper washer(123940).

NEW



Nipper mounting brackets 12



Order code No.	131770
TYPE	NW-MOUNT12-20

- Weight : 22.5g
- Accessories : Mounting bolt (M4)*2piece
- Can be used for NW＊-10, NW＊-20, NW＊-35, HNW-10, HNW-20, HNW-35 Series.
- When using the HNW series, please use a taper washer(123940).



Taper washer

Order code No.	123940
TYPE	M4

- Weight : 0.15g ● Thickness : 0.5mm

Air Nipper (Large)

Please refer to the website for performance table.

■Specifications

Product name		Order code No.	TYPE	Operation	Used air pressure (Mpa)	Applied pressure (N)	Cutting capacity [soft resin] round bar (mm)	Slidez amount (mm)	Weight (g)	Page of details
Air Nipper	Slide vertical・w/o blade	060207	GT-NT03	Pull	0.4～0.5	147	ϕ1.5	MAX3	178	4-23
		060208	GT-NT05	Pull	0.5～0.6	196	ϕ2.5		325	
		060225	GT-NT05R	Push						
		060209	GT-NT10	Pull		441	ϕ3.5		515	
		060226	GT-NT10R	Push						
		060227	GT-NT20	Pull		931	ϕ5	MAX8	930	
		060228	GT-NT20R	Push						
	Square type・w/o blade	060240	GT-NS10L	–		588	Different according to the spare blade.	–	230	4-24
		060241	GT-NS20			1,372			390	
		060242	GT-NS30			2,744			705	
	Round type・w/o blade	060083	GT-NR10L			588			160	
		060084	GT-NR20			1,372			280	
		060085	GT-NR30			2,744			510	
Booster unit		150793	P-20	–	～0.5	–	–	–	215	
		150786	P-30						330	
Nipper holder		370336	CP-035 (For GT-NR10L)	–	–	–	–	–	68	4-25
		370337	CP-036 (For GT-NR20)						87	
		370338	CP-037 (For GT-NR30)						105	
Nipper bracket		110656	LX0090-100 (L.R)	–	–	–	–	–	128	
Rotation BRT		NEW 131712	For NP-RTB-NR10	–	–	–	–	–	66	
		NEW 131713	For NP-RTB-NR20						76	
		NEW 131714	For NP-RTB-NR30						109	
Air Nipper	Slide bracket・w/o blade	130229	GT-NB20 5-HIKU	Pull	0.5～0.6	1,372	Different according to the spare blade.	MAX5	710	4-26
		130230	GT-NB20 5-OSHI	Push						
		130231	GT-NB20 10-HIKU	Pull				MAX10	720	
		130235	GT-NB30 10-HIKU	Pull		2,744			1,400	
		060477	GT-NB20LW-10TM	Pull		1,372			785	
		060478	GT-NB30LW-10TM	Pull		2,744			1,315	
Sprue cut unit		131565	NS20U	–		–	–	–	1,078	4-27
		NEW 131717	NS20UR						1,200	
Timing controller		060321	GT-TC-02	–		–	–	–	275	

Product name		Order code No.	TYPE	Operation	Used air pressure(Mpa)	Cutting capacity [soft resin] round bar (mm)	Slide amount (mm)	Weight (g)	Page of details
Heat air nipper	Slide vertical・w/ blade	060353	GT-NTH05	Pull	0.4～0.5	ϕ2.5	MAX3.5	325	4-30
		060354	GT-NTH10	Pull	0.5～0.6	ϕ3.5	MAX4.5	515	
	Flow controller type	060355	GT-NKH10	–		Thickness:1.5, Width:7	MAX12	715	
	Heat air nipper air hydro	131709	NKH20XL-25	–		Thickness:1.5, Width:10	MAX10	690	
	Desktop temperature controller for heat nipper	030492	DTC-001	–	–	–	–	900	

Air Nipper (Large) NT Series

Used for cutting large gate diameter products of direct gate or side gate.

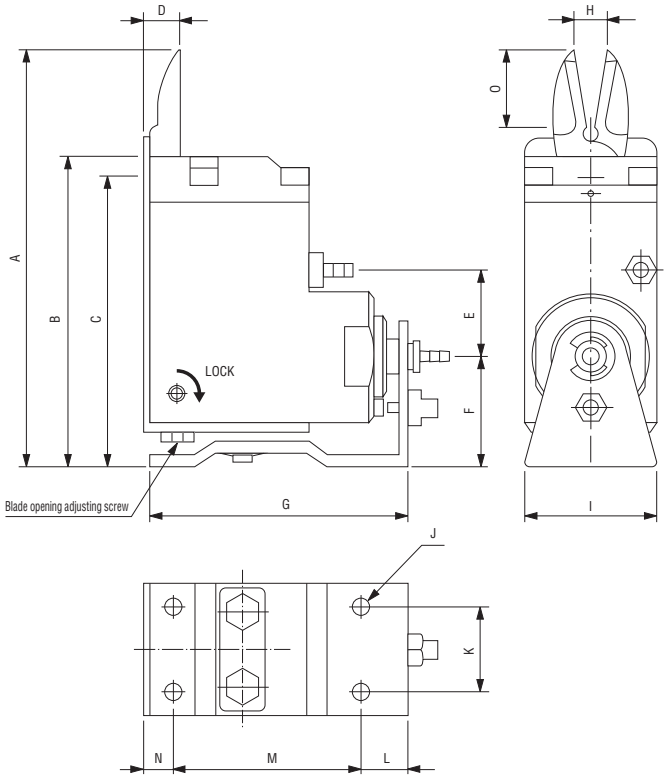
● Spare blades are sold separately. ● The photo shows an example of assembled.

Air nipper slide vertical

- Blade opening can be adjusted.
- Slide stroke can be adjusted.
- A workpiece can be cut by close contact.



Blade
Blade not included



Order code No.	060207
TYPE	GT-NT03

● Weight : 178g

Uses: Standard blade | Operation: Pull | Blade: Option

Order code No.	060208
TYPE	GT-NT05

● Weight : 325g

Uses: Standard blade | Operation: Pull | Blade: Option

Order code No.	060225
TYPE	GT-NT05R

● Weight : 325g

Uses: Reverse blade | Operation: Push | Blade: Option

Order code No.	060209
TYPE	GT-NT10

● Weight : 515g

Uses: Standard blade | Operation: Pull | Blade: Option

Order code No.	060226
TYPE	GT-NT10R

● Weight : 515g

Uses: Reverse blade | Operation: Push | Blade: Option

Order code No.	060227
TYPE	GT-NT20

● Weight : 930g

Uses: Standard blade | Operation: Pull | Blade: Option

Order code No.	060228
TYPE	GT-NT20R

● Weight : 930g

Uses: Reverse blade | Operation: Push | Blade: Option

Blade for GT-NT

Spare blade for GT-NT ＊The standard and reverse directions of spare blade can be changed.				
Order code No.	130403	130310	130311	130404
TYPE	NT03AJ	NE5AJ	NE10AJ	NT20AJ
Supported nipper	GT-NT03(R)	GT-NT05(R)	GT-NT10(R)	GT-NT20(R)

Dimensions (mm)

TYPE	GT-NT03	GT-NT05	GT-NT10	GT-NT20
A	87.1	90.1	110.1	136.1
B	68.1	71.1	88.1	102.1
C	63.1	66.1	83.1	96.1
D	9	9	11	14
E	15	20	21	21.9
F	23.1	25.1	29.1	33.1
G	62	64	73	103
H	MAX3	MAX6	MAX7	MAX9
I	19	32	38	44
J	M3	M4	M4	M5
K	14	20	24	28
L	12	12	12	13
M	43	45	53	80
N	7	7	8	10
O	12	13	14	21.5

Air Nipper (Large) NS/NR Series／Pressure Boosting Unit

Used for cutting large gate diameter products of direct gate or side gate.

● Spare blade and spring are sold separately. ● The photo shows an example of assembled.

Air nipper square type

Blade
Blade not included
➡4-28,29



Order code No.	060240
TYPE	GT-NS10L

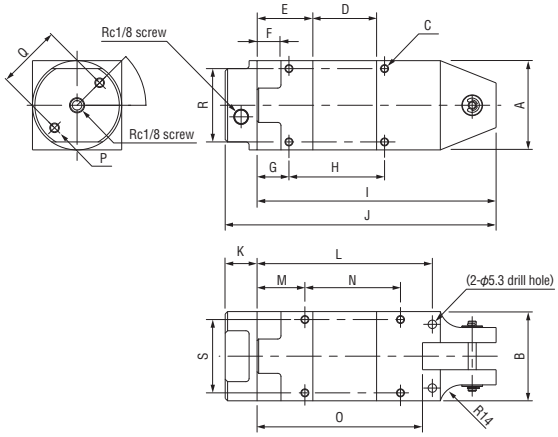
● Weight : 230g

Order code No.	060241
TYPE	GT-NS20

● Weight : 390g

Order code No.	060242
TYPE	GT-NS30

● Weight : 705g



Dimensions (mm)

TYPE	GT-NS10L	GT-NS20	GT-NS30
A	36	45	56
B	36	45	56
C	16-M4×0.7 screw depth 5.5	16-M4×0.7 screw depth 7	16-M5×0.8 screw depth 10
D	17	25	40
E	27	29	35
F	14	14	15
G	18	19	20
H	30	40	60
I	93	109	150
J	113	129	170
K	20	20	20
L	65	81	110
M	23	24	30
N	30	40	60
O	59.8	76.8	103.8
P	2-M4 screw depth 10	2-M5 screw depth 12	2-M6 screw depth 12
Q	24	30	40
R	28	36	46
S	28	36	46

Air nipper round type

Blade
Blade not included
➡4-28,29



Order code No.	060083
TYPE	GT-NR10L

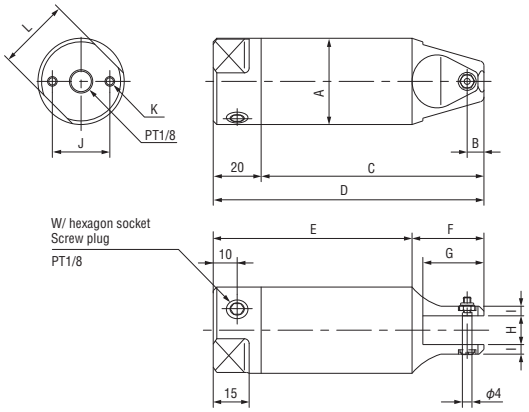
● Weight : 160g

Order code No.	060084
TYPE	GT-NR20

● Weight : 280g

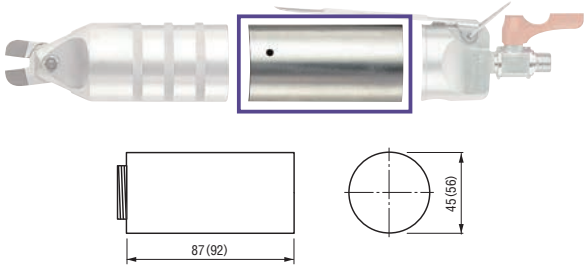
Order code No.	060085
TYPE	GT-NR30

● Weight : 510g



Dimensions (mm)

TYPE	GT-NR10L	GT-NR20	GT-NR30
A	φ 36	φ 45	φ 56
B	7	6	10
C	93	109	145
D	113	129	165
E	83	100	127
F	30	29	38
G	22.5	19	28.5
H	12	12	17
I	4	5.5	6.5
J	24	30	40
K	2-M4 screw depth 10	2-M5 screw depth 12	2-M6 screw depth 12
L	30	36	46



∗( ) inside indicates the dimension of P-30.

▶ When original welding pressure cannot be created with limitations of space and air pressure.

Booster unit

Order code No.	150793
TYPE	P-20

● Weight : 215g
● Air consumption : 508cm³
● Air pressure power : ～0.5MPa
● Applicable : NS20、NR20

Booster unit

Order code No.	150786
TYPE	P-30

● Weight : 330g
● Air consumption : 956cm³
● Air pressure power : ～0.5MPa
● Applicable : NS30、NR30

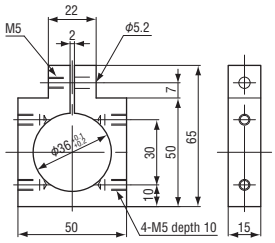
Air Nipper (Large) Holder／Bracket／Rotation BRT

Use the product by mounting to round nipper "GT-NR series."

Nipper Holder

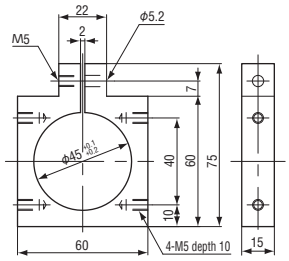
Order code No.	370336
TYPE	CP-035 (For GT-NR10L)

● Weight : 68g



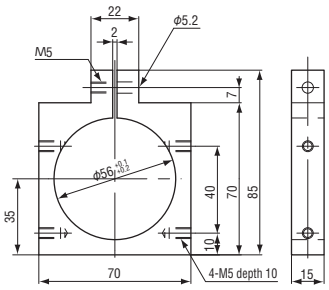
Order code No.	370337
TYPE	CP-036 (For GT-NR20)

● Weight : 87g



Order code No.	370338
TYPE	CP-037 (For GT-NR30)

● Weight : 105g

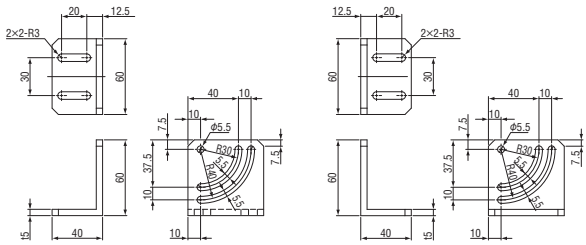


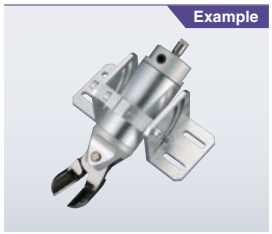
Nipper Bracket



Order code No.	110656
TYPE	LX0090-100 (L.R)

● Weight : 128g (Set Weight)
● Include L and R brackets





● The photo shows an example of assembled GT-NR20, CP-036, and LX0090-100.

Rotation BRT (for NR Nipper)

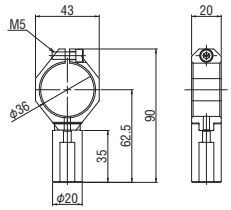
NEW



Rotation BRT • for NR10

Order code No.	131712
TYPE	For NP-RTB-NR10

● Weight : 66g



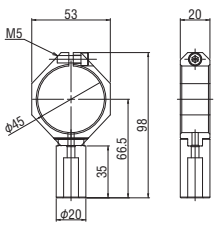
NEW



Rotation BRT • for NR20

Order code No.	131713
TYPE	For NP-RTB-NR20

● Weight : 76g



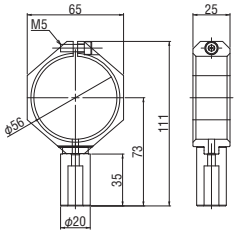
NEW

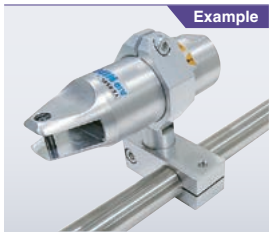


Rotation BRT • for NR30

Order code No.	131714
TYPE	For NP-RTB-NR30

● Weight : 109g





● Please use in combination with Jungle Gym Series ϕ20.

Air Nipper (Large) NB Series

Used for cutting large gate diameter products of direct gate or side gate.

- Spare blade and spring are sold separately. (The photo is an example of assembly.)
- Can not be sold separate.
- The spare blade is compatible with GT-NR.

Slide air nipper

- Can be used for gate cut devices with slide air nipper bracket type.
- Applicable with cutting of large sized molded parts.

Blade
Blade not included
➡ 4-28,29



Order code No.	130229
TYPE	GT-NB20 5-HIKU

- Weight : 710g
- Slide amount : 5mm

Operation: Pull | Blade: Option

Order code No.	130230
TYPE	GT-NB20 5-OSHI

- Weight : 710g
- Slide amount : 5mm

Operation: Push | Blade: Option

Order code No.	130231
TYPE	GT-NB20 10-HIKU

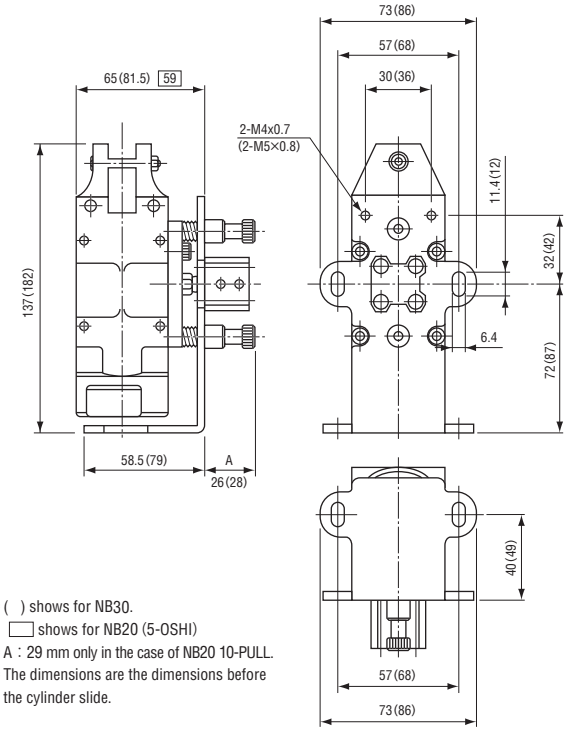
- Weight : 720g
- Slide amount : 10mm

Operation: Pull | Blade: Option

Order code No.	130235
TYPE	GT-NB30 10-HIKU

- Weight : 1,400g
- Slide amount : 10mm

Operation: Pull | Blade: Option



∗( ) shows for NB30.
□ shows for NB20 (5-OSHI)
∗A : 29 mm only in the case of NB20 10-PULL.
∗The dimensions are the dimensions before the cylinder slide.

- W/ slide mechanism with high precision.

Blade
Blade not included
➡ 4-28,29



High-precision slide mechanism

Order code No.	060477
TYPE	GT-NB20LW-10TM

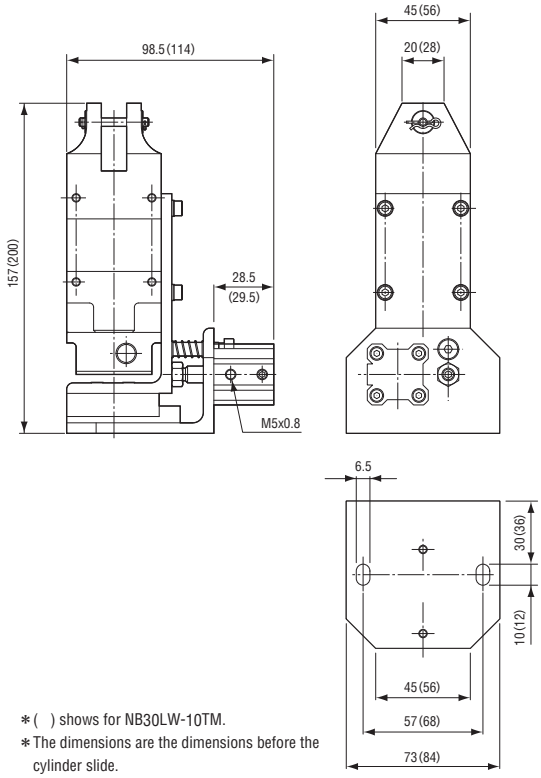
- Weight : 785g
- Slide amount : 10mm

Operation: Pull | Blade: Option

Order code No.	060478
TYPE	GT-NB30LW-10TM

- Weight : 1,315g
- Slide amount : 10mm

Operation: Pull | Blade: Option



∗( ) shows for NB30LW-10TM.
∗The dimensions are the dimensions before the cylinder slide.

Sprue Cut Unit／Timing Controller

Cutting with sprue chucking is possible.

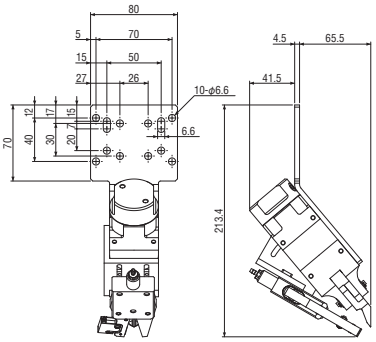
▶ Most suitable for plastic direct gate.

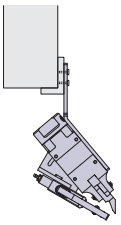


Sprue Cut Unit

Order code No.	131565
TYPE	NS20U

- Weight : 1,078g
- Sold as a set.
- Runner chuck: Limit SW type







Product name	Order code No.	TYPE	Qty	Page of details
Runner chuck EL (Limit SW)	023006	CHK-EL1-12-C1	1	2-35
Air nipper square type (w/o blade)	060241	GT-NS20	1	4-24
Blade for GT-20L flat	130726	N20PF	1	4-28
Sprue cut unit (parts)	–	–	1	–

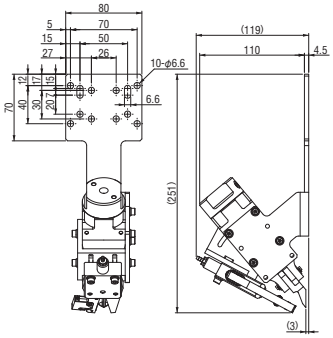
NEW

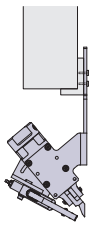


Sprue Cut Unit

Order code No.	131717
TYPE	NS20UR

- Weight : 1,200g
- Sold as a set.
- Runner chuck: Limit SW type

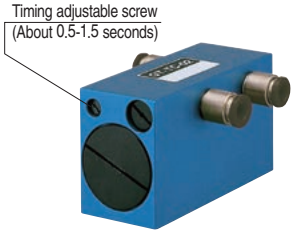






Product name	Order code No.	TYPE	Qty	Page of details
Runner chuck EL (Limit SW)	023006	CHK-EL1-12-C1	1	2-35
Air nipper square type (w/o blade)	060241	GT-NS20	1	4-24
Blade for GT-20L flat	130726	N20PF	1	4-28
Sprue cut unit (parts)	–	–	1	–

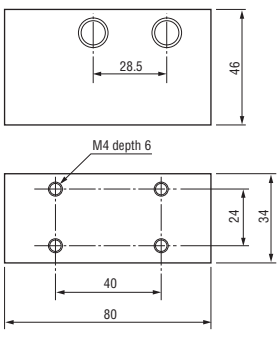
▶ Setting in tubing allows adjustment of slide conditions for slide nippers and cutting timing.
(About 0.5-1.5 seconds)



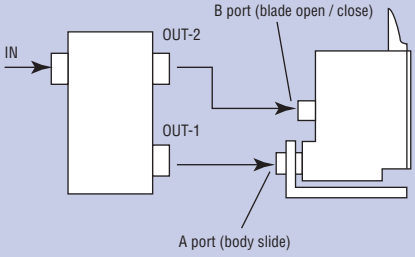
Timing controller

Order code No.	060321
TYPE	GT-TC-02

- Weight : 275g
- Air pressure power : 0.6MPa
- With tube joint : inner diameter φ4mm, outside-diameter φ6mm



Example of connection



3-port magnet valve (compressor side) → Timing controller → Slide Air nipper

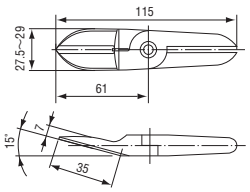
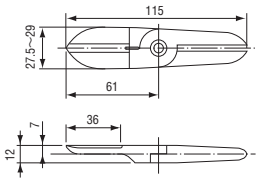
Air Nipper (Large) Replacement Blades／Accessories

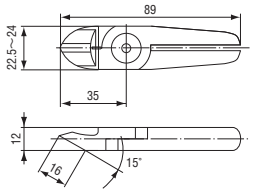
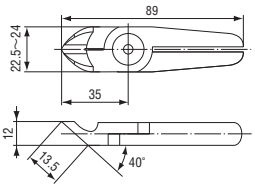
Spare blades for GT-NS/GT-NR/GT-NB.

Please refer to the website for performance table.

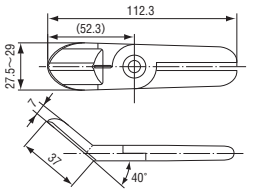
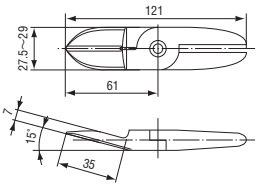
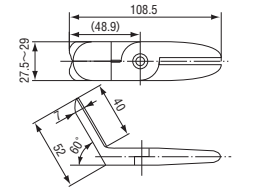
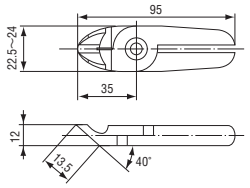
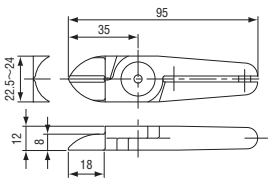
● The cutting capacity depends on the material.

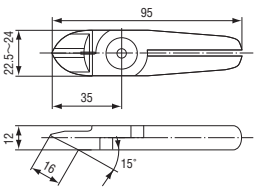
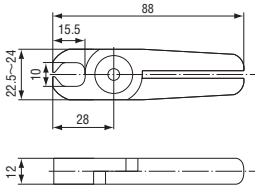
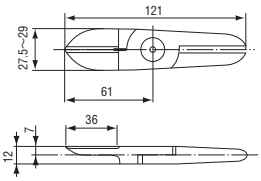
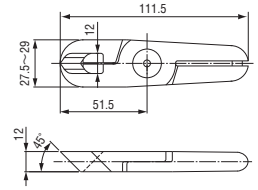
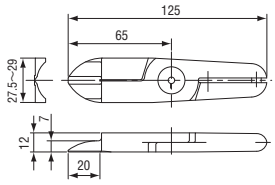
▶ Supported nipper：GT-NS10L/GT-NR10L

Dimensions	Specifications	
	Order code No.	130218
	TYPE	N10L1S
	Weight	165g
	Opened blade-to blade distance	10mm
	Cutting capacity (soft resin)	ϕ3.5
	Order code No.	130219
	TYPE	N10L2S
	Weight	170g
	Opened blade-to blade distance	10mm
	Cutting capacity (soft resin)	ϕ3.5

Dimensions	Specifications	
	Order code No.	130724
	TYPE	N10LAP
	Weight	132g
	Opened blade-to blade distance	5mm
	Cutting capacity (soft resin)	ϕ4
	Order code No.	130725
	TYPE	N10LPF
	Weight	136g
	Opened blade-to blade distance	5mm
	Cutting capacity (soft resin)	ϕ4

▶ Supported nipper：GT-NS20/GT-NR20/GT-NB20

Dimensions	Specifications	
	Order code No.	130222
	TYPE	N203S
	Weight	185g
	Opened blade-to blade distance	14mm
	Cutting capacity (soft resin)	ϕ6
	Order code No.	130220
	TYPE	N201S
	Weight	200g
	Opened blade-to blade distance	16mm
	Cutting capacity (soft resin)	ϕ6
	Order code No.	130221
	TYPE	N202S
	Weight	175g
	Opened blade-to blade distance	14mm
	Cutting capacity (soft resin)	ϕ6
	Order code No.	130726
	TYPE	N20PF
	Weight	130g
	Opened blade-to blade distance	11mm
	Cutting capacity (soft resin)	ϕ7
	Order code No.	130697
	TYPE	N20AJ
	Weight	125g
	Opened blade-to blade distance	11mm
	Cutting capacity (soft resin)	ϕ7

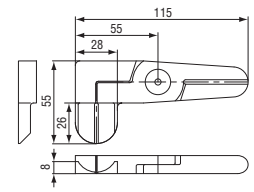
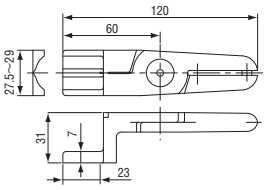
Dimensions	Specifications	
	Order code No.	130680
	TYPE	N20AP
	Weight	130g
	Opened blade-to blade distance	11mm
	Cutting capacity (soft resin)	ϕ7
	Order code No.	130727
	TYPE	N20AE
	Weight	145g
	Opened blade-to blade distance	8mm
	Cutting capacity (soft resin)	ϕ7
	Order code No.	130265
	TYPE	N206S
	Weight	170g
	Opened blade-to blade distance	14mm
	Cutting capacity (soft resin)	ϕ6
	Order code No.	131602
	TYPE	N207SA
	Weight	190g
	Opened blade-to blade distance	13mm
	Cutting capacity (soft resin)	ϕ6
	Order code No.	130655
	TYPE	N20AJL
	Weight	230g
	Opened blade-to blade distance	16mm
	Cutting capacity (soft resin)	ϕ6

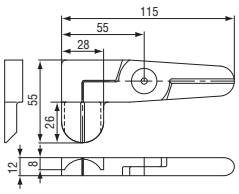
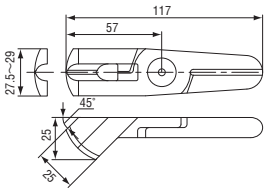

N201S


N301S

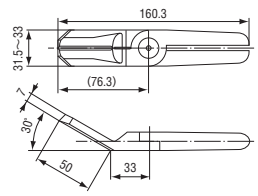
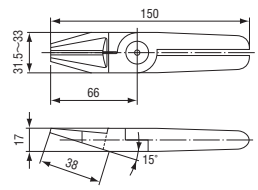
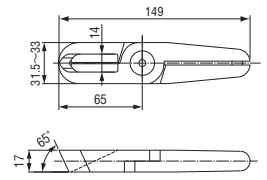
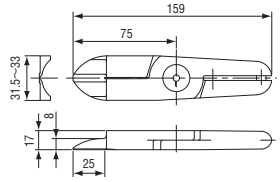

N30AE

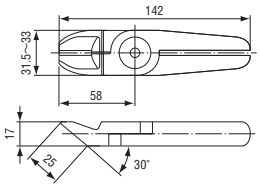
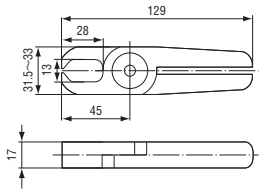
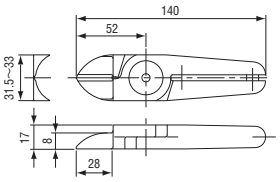
Supported nipper：GT-NS20/GT-NR20/GT-NB20

Dimensions	Specifications	
	Order code No.	131466
	TYPE	N20AML1498
	Weight	270g
	Opened blade-to blade distance	9.5mm
	Cutting capacity (soft resin)	10×1.5
	Order code No.	131467
	TYPE	N20AH
	Weight	240g
	Opened blade-to blade distance	16mm
	Cutting capacity (soft resin)	ϕ6

Dimensions	Specifications	
	Order code No.	131468
	TYPE	N20AMR1499
	Weight	270g
	Opened blade-to blade distance	9.5mm
	Cutting capacity (soft resin)	10×1.5
	Order code No.	131469
	TYPE	N20AK249
	Weight	240g
	Opened blade-to blade distance	14mm
	Cutting capacity (soft resin)	ϕ5.5

Supported nipper：GT-NS30/GT-NR30/GT-NB30

Dimensions	Specifications	
	Order code No.	130225
	TYPE	N301S
	Weight	390g
	Opened blade-to blade distance	20mm
	Cutting capacity (soft resin)	ϕ8
	Order code No.	130329
	TYPE	N30AP
	Weight	380g
	Opened blade-to blade distance	16mm
	Cutting capacity (soft resin)	ϕ10
	Order code No.	131601
	TYPE	N303SA
	Weight	390g
	Opened blade-to blade distance	16mm
	Cutting capacity (soft resin)	ϕ8
	Order code No.	131470
	TYPE	N30AJL
	Weight	470g
	Opened blade-to blade distance	19mm
	Cutting capacity (soft resin)	ϕ8

Dimensions	Specifications	
	Order code No.	130730
	TYPE	N30PF
	Weight	415g
	Opened blade-to blade distance	15mm
	Cutting capacity (soft resin)	ϕ10
	Order code No.	130729
	TYPE	N30AE
	Weight	440g
	Opened blade-to blade distance	12mm
	Cutting capacity (soft resin)	ϕ10
	Order code No.	130795
	TYPE	N30AJ
	Weight	370g
	Opened blade-to blade distance	14mm
	Cutting capacity (soft resin)	ϕ10

Blade Springs



Order code No.	060100
TYPE	GT-NR10L.20 (N10L.N20 Spare Blade)
Supported nipper	NS/NR 10L、NS/NR/NB 20



Order code No.	060101
TYPE	GT-NR30 (N30 Spare Blade)
Supported nipper	NS/NR/NB 30

Heat Air Nipper (NTH Series／NKH Series)

Used for cutting large gate diameter products of direct gate or side gate.

▶ Gate cut transparent products such as acrylic without whitening or cracking!

＊ Attachments: blade, temperature sensor harness, thermocouple harness



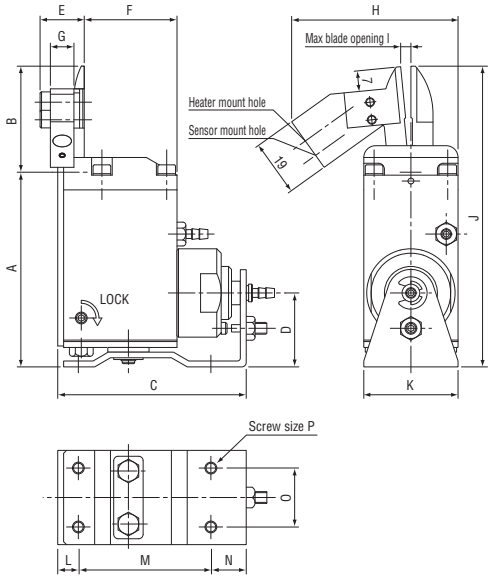
Heat air nipper slide vertical

Order code No.	060353
TYPE	GT-NTH05

- Weight : 325g

Order code No.	060354
TYPE	GT-NTH10

- Weight : 515g
- Heater specification : 80W/120V Length 300mm
- Sensor specifications : K thermocouple Length 1000mm



■ Dimensions (mm)

TYPE	GT-NTH05	GT-NTH10
A	66.1	83
B	36	47
C	64	73
D	25.1	29
E	15	16.2
F	31.5	37.5
G	8	8
H	56.5	63
I	3.5	4.5
J	102.1	130
K	32	38
L	7	8
M	45	53
N	12	12
O	20	24
P	M4	M4

▶ It is ideal for gate cutting of glass fibers and hard resins.

▶ There are few cracks in the workpiece, and the finished surface is clean.

＊Attachments: blade, temperature sensor harness, thermocouple harness





Flow Controller Type

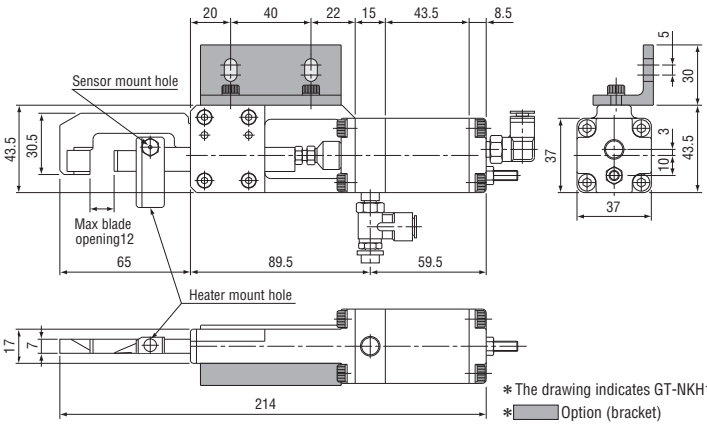
Order code No.	060355
TYPE	GT-NKH10

- Weight : 715g
- Opened blade-to blade distance : 10mm
- Heater specification : 80W/120V Length 300mm
- Sensor specifications : K thermocouple Length 1000mm

Air Hydro Type

Order code No.	131709
TYPE	NKH20XL-25

- Weight : 690g
- Opened blade-to blade distance : 20mm
- Heater specification : 80W/100V Length300mm
- Sensor specifications : K thermocouple Length300mm
- Two Hydro converters are required. Hydro converter(Recommended product) : KOGANEI CO.,LTD. Type : AHC 32× 50



＊The drawing indicates GT-NKH10.

＊ Option (bracket)

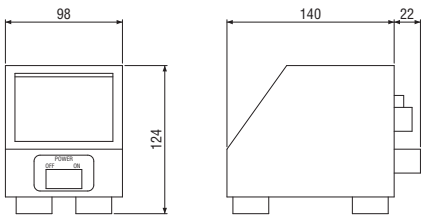
▶ Desktop temperature controller for heat nipper

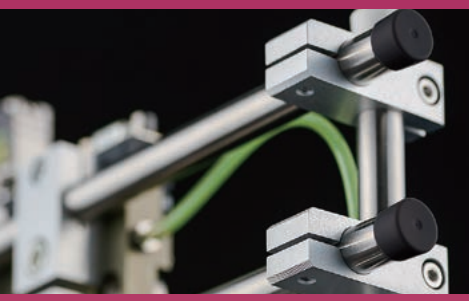


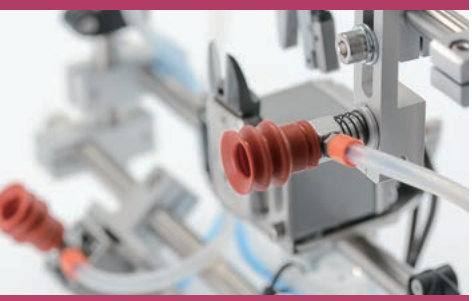
Desktop temperature controller for heat nipper

Order code No.	030492
TYPE	DTC-001

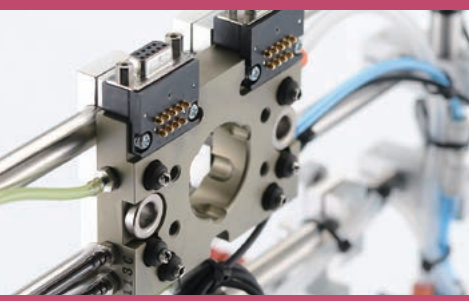
- Weight : 900g
- Power supply voltage : AC100-240V
- Power consumption:about 3W or 5VA (no-load condition)
- Output capacity: 12A MAX (～1.2kw) resistance load
- Ambient operating temperature: 0-40℃ RH35-85% (non-condensing)
- The power supply voltage is output to the heater as it is,
- so check the heater voltage.
- When using the 200V power supply , change the heater line to 200V specification.

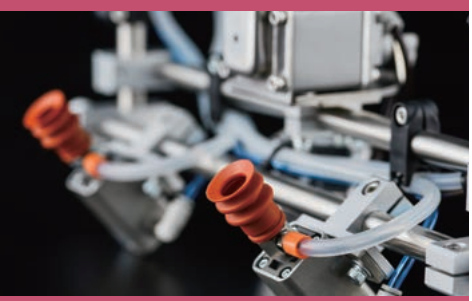












Frame ／ Module

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- Rectangular Tube Series Parts ····· 5-44

Base Aluminum Material ····· 5-46

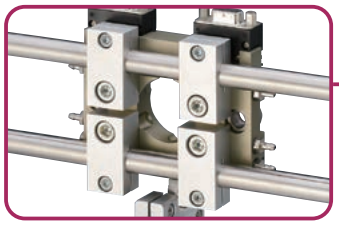
Sliding Chuck ····· 5-48

- Robot Hand (for Aricualted Robots) ····· 5-51

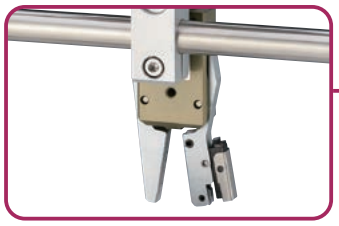
Jungle Gym

- Super lightweight, adjustable and reusable frame.
- Features rigidity and weight reduction. Frame is made of thin-wall stainless. Connectors are made fro super Duralumin.
- It is simple to adjust the components loacation,which cuts down on working time.
- The combination of multifarious chuck parts will meet a variety needs.

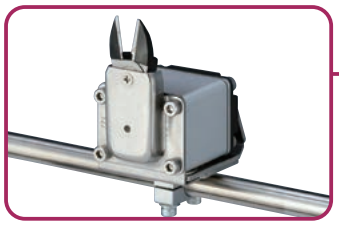
Frame ／ Module



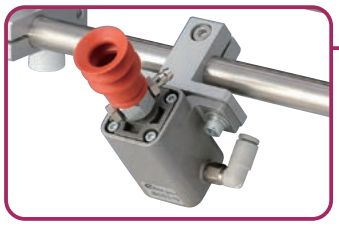
Grip

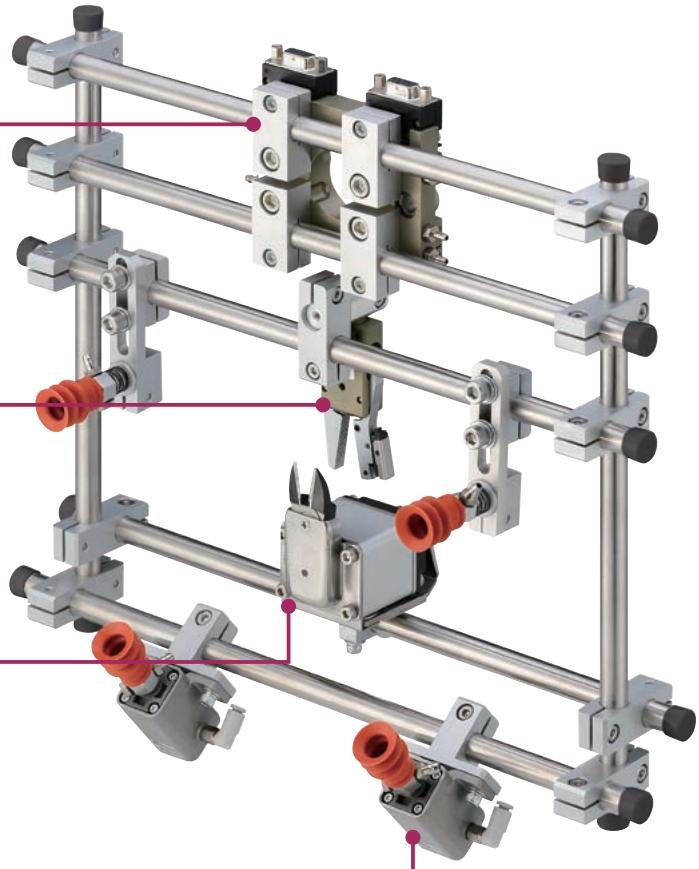


Cut



Suction



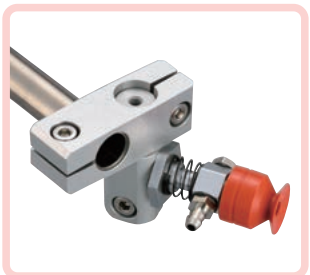


Tubing 6-1

Three Kinds of SUS pipes (φ8 / φ12 / φ20) are available for you to use as a base for your end of arm tool.
Determine extract method first. And choose your favorite parts from the product list.

■Example of using other components parts

- Suction cups + Suction stems + Rotation bracket + Cross connector





Order code No.	210193
TYPE	VAPH-15C



Order code No.	131173
TYPE	N01864-306



Order code No.	210974
TYPE	VFIL-S-5A



Order code No.	131099
TYPE	N01861-202

List of Jungle Gym

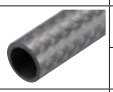
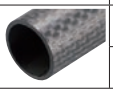
Various parts can be attached to jungle gym SUS ϕ8, ϕ12, and ϕ20.

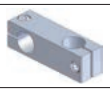
Jungle gym



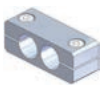
You can see moving images of products by using QR code reader of your smartphone.

■Specification

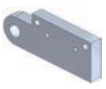
	Product name		Order code No. / TYPE	Page of details
Frame	Jungle gym SUS pipe ϕ8		340905 / 8*0.6*500	5-8
			340906 / 8*0.6*1000	
			340907 / 8*0.6*1500	
	Jungle gym SUS pipe ϕ12		271527 / 12*0.6*500	
			271528 / 12*0.6*1000	
			271529 / 12*0.6*1500	
	Jungle gym SUS pipe ϕ20		281812 / 20*0.8*500	
			281813 / 20*0.8*1000	
			281814 / 20*0.8*1500	
	Jungle gym CFRP pipe ϕ12		023361 / CFRP 12 * 1.5 * 1500	
	Jungle gym CFRP pipe ϕ20		023362 / CFRP 20 * 1.5 * 1500	
Resin Fixture	Resin Fixture ϕ12 (Cable Ties)		171210 / RCA12	5-9
	Resin Fixture ϕ20 (Cable Ties)		171211 / RCA20	
	Resin Fixture ϕ12 (M4)		171212 / RCB12	
	Resin Fixture ϕ20 (M4)		171213 / RCB20	
Pipe end cap	Pipe end cap ϕ8		171338 / R-CAP-8	
	Pipe end cap ϕ12		171339 / R-CAP-12	
	Pipe end cap ϕ20		171340 / R-CAP-20	
Pipe cutter	SUS pipe cutter		101206 / K-203	
	Spare blade for pipe cutter		101207 / K-203-1	

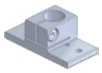
	Product name		Order code No. / TYPE	Page of details
Pipe reamer	Pipe reamer		197173 / TSR-2	5-9
Clip	Clip • TMA • ϕ20 * ϕ20		196559 / TMA-CL (20*20)	
	Clip • TMA • ϕ20 * ϕ12		196560 / TMA-CL (20*12)	
	Clip • TMA • ϕ12 * ϕ12		196561 / TMA-CL (12*12)	
	Clip • TMA • ϕ12 * ϕ8		196562 / TMA-CL (12*8)	
	Clip • TMA • ϕ8 * ϕ8		196563 / TMA-CL (8*8)	
	Clip • TMA • ϕ12 * ϕ10		196564 / TMA-CL (12*10)	
Connector	Cross connector ϕ8 ϕ8		131102 / N01861-207	5-10
	Cross connector ϕ12 ϕ8		131098 / N01861-201	
	Cross connector ϕ12 ϕ12		131099 / N01861-202	
	Cross connector ϕ20 ϕ12		131100 / N01861-204	
	Cross connector ϕ20 ϕ20		131101 / N01861-206	
	Cross connector • long • ϕ20 ϕ20		131573 / N01861-206B	
	Cross connector ϕ12 ϕ12 (rear entrance)		131569 / N01861-202A	
	Cross connector ϕ20 ϕ20 (rear entrance)		131570 / N01861-206A	
	Floating Cross Connector ϕ12		054346 / F-CROSS-12	
	Floating Cross Connector ϕ20		054347 / F-CROSS-20	
	T Connector # 1 • ϕ8 ϕ8		131108 / N01861-306	
	T Connector # 1 • ϕ8 ϕ12		131105 / N01861-303	
	T Connector # 1 • ϕ12 ϕ8		131104 / N01861-302	5-11

List of Jungle Gym

	Product name		Order code No. / TYPE	Page of details
Connector	T Connector ＃1・φ12 φ12		131103 / N01861-301	5-11
	T Connector ＃1・φ12 φ20		131109 / N01861-307	
	T Connector ＃1・φ20 φ12		131106 / N01861-304	
	T Connector ＃1・φ20 φ20		131107 / N01861-305	
	T Connector ＃2・φ8 φ8		131115 / N01861-406	
	T Connector ＃2・φ8 φ12		131112 / N01861-403	
	T Connector ＃2・φ12 φ8		131111 / N01861-402	
	T Connector ＃2・φ12 φ12		131110 / N01861-401	
	T Connector ＃2・φ12 φ20		131116 / N01861-407	5-12
	T Connector ＃2・φ20 φ12		131113 / N01861-404	
	T Connector ＃2・φ20 φ20		131114 / N01861-405	
	Parallel connector・φ8 φ8		131096 / N01861-107	
	Parallel connector・φ8 φ12		131092 / N01861-101	
	Parallel connector・φ12 φ12		131093 / N01861-102	
	Parallel connector・φ20 φ12		131094 / N01861-104	
	Parallel connector・φ20 φ20		131095 / N01861-106	
	Connector・for SSW		131097 / N01861-108	5-13
	Floating Paraller Connector φ12		054344 / F-PARA-12	

	Product name		Order code No. / TYPE	Page of details
Connector	Floating Paraller Connector φ20		054345 / F-PARA-20	5-13
	Straight connector・φ8		131488 / N01868-501	
	Straight connector・φ12		131489 / N01868-502	
	Straight connector・φ20		131490 / N01868-503	
Bracket	Access bracket・φ12・M6		131125 / N01862-210	
	Access bracket・φ20・M6		131126 / N01862-211	
	Attachment bracket・φ8・M5		131306 / N01862-208	
	Attachment bracket・φ8・M6		131121 / N01862-205	
	Attachment bracket・φ12・M5		131305 / N01862-204	
	Attachment bracket・φ12・M6		131118 / N01862-201	
	Attachment bracket・φ12・M8		131225 / N01862-213	5-14
	Attachment bracket・φ20・M6		131123 / N01862-207	
	Attachment bracket・φ20・M8		131226 / N01862-214	
	Suction bracket・φ8・M5		131122 / N01862-206	
	Suction bracket・φ8・M6		131124 / N01862-209	
	Suction bracket・φ12・M5		131119 / N01862-202	
	Suction bracket・φ12・M6		131127 / N01862-212	
	Suction bracket・φ12・PT1/8		131120 / N01862-203	

	Product name		Order code No. / TYPE	Page of details
Bracket	Cylinder bracket • ϕ8		131075 / N01915-113	5-14
	Cylinder bracket • ϕ12		131074 / N01915-112	5-15
	Cylinder bracket • ϕ20		131066 / N01915-103	
	Swing Bracket		131065 / N01915-102	
	Slide bracket • ϕ8		131151 / N01863-207	
	Slide bracket • ϕ12		131145 / N01863-201	
	Slide bracket • ϕ20		131149 / N01863-205	
	Slide bracket • W • ϕ8		131217 / N01863-113	
	Slide bracket • W • ϕ12		131128 / N01863-101	
	Slide bracket • W • ϕ20		131134 / N01863-111	
	Sensor bracket • ϕ12		131189 / N01867-101	5-16
	Sensor bracket		131077 / N01915-201	
	Chuck bracket • TH • ϕ8		131188 / N01866-502	
	Chuck bracket • TH • ϕ12		131187 / N01866-501	
	Chuck bracket • ϕ12		131067 / N01915-105	
	Nipper bracket • A		131078 / N01915-301	
	Nipper bracket • B		131216 / N01915-302	
	Nipper bracket • C		131080 / N01915-303	

	Product name		Order code No. / TYPE	Page of details
Bracket	Nipper bracket • D		131081 / N01915-304	5-17
	Nipper bracket • E		131082 / N01915-305	
	Bracket • L • ϕ8 • for UMCD		131180 / N01866-202	
	Bracket • L • ϕ12 • for MCD		131179 / N01866-201	
	Bracket • T • ϕ12 • for MCD		131176 / N01866-101	
	Bracket • T • ϕ20 • for MCD		131554 / N01866-103A	
	Bracket • T • ϕ8 • for UMCD		131177 / N01866-102	
	Bracket • TH • ϕ8 • for UMCD		131182 / N01866-302	
	Bracket • TH • ϕ12 • for MCD		131181 / N01866-301	
	Bracket • TH • ϕ20 • for MCD		131183 / N01866-303	5-18
	Bracket • TV • ϕ8 • for UMCD		131185 / N01866-402	
	Bracket • TV • ϕ12 • for MCD		131184 / N01866-401	
	Bracket • TV • ϕ20 • for MCD		131186 / N01866-403	
	Bracket • ϕ8		131073 / N01915-111	
	Bracket • ϕ12		131071 / N01915-109	
	Bracket • ϕ20		131072 / N01915-110	
	Bracket • W • ϕ8		131070 / N01915-108	
	Bracket • W • ϕ12		131068 / N01915-106	

List of Jungle Gym

	Product name		Order code No. / TYPE	Page of details
Bracket	Bracket • W • ϕ20		131069 / N01915-107	5-19
	Bracket • NCON		131083 / N01915-401	
	Rotation bracket • ϕ20		131064 / N01915-101	
	Rotation bracket • M10 • 8A		131434 / N01864-305	
	Rotation bracket • M12 • 12A		131173 / N01864-306	
	Rotation bracket • M17 • 20A		131174 / N01864-307	
	Rotation bracket • PT1/8 • 8A		131175 / N01864-401	
	Rotation bracket • ϕ8 • 8A		131170 / N01864-303	
	Rotation bracket • ϕ8 • 8B		131606 / N01864-103A	
	Rotation bracket • ϕ8 • M5A		131164 / N01864-202	5-20
	Rotation bracket • ϕ8 • M10A		131435 / N01864-201	
	Rotation bracket • ϕ8 • M12A		131433 / N01864-205	
	Rotation bracket • ϕ12 • PT1/8A		131166 / N01864-204	
	Rotation bracket • ϕ12 • 8A		131169 / N01864-302	
	Rotation bracket • ϕ12 • 8B		131600 / N01864-101A	
	Rotation bracket • ϕ12 • 12A		131168 / N01864-301	
	Rotation BKT • ϕ12 • 12AL		131567 / N01864-301L	
	Rotation bracket • ϕ12 • 12B		131605 / N01864-102A	

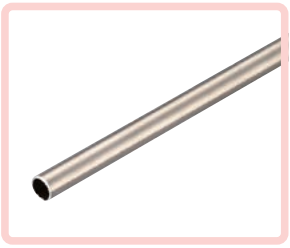
	Product name		Order code No. / TYPE	Page of details
Bracket	Rotation bracket • ϕ20 • 20A		131171 / N01864-304	5-20
	Rotation BKT • ϕ20 • 20AL		131568 / N01864-304L	
Rotation	Suction rotate # A • ϕ8		131194 / N01868-104	
	Suction rotate # A • ϕ12		131191 / N01868-101	
	Suction rotate # B • M5 • ϕ12		131192 / N01868-102	
Bracket	Slide bracket 40 • M3		131158 / N01863-214	5-21
	Slide bracket 40 • M5		131147 / N01863-203	
	Slide bracket 40 • M6		131156 / N01863-212	
	Slide bracket 40 • PT1/8		131154 / N01863-210	
	Slide bracket 40 • W • M10		131139 / N01863-117	
	Slide bracket 40 • W • M12		131140 / N01863-118	
	Slide bracket 40 • W • M17		131143 / N01863-122	5-22
	Slide bracket 40 • ϕ8		131152 / N01863-208	
	Slide bracket 40 • W • ϕ8		131131 / N01863-106	
	Slide bracket 40 • W • ϕ12		131132 / N01863-107	
	Slide bracket 40 • W • ϕ20		131137 / N01863-114	
	Slide bracket 40 • T • W • ϕ8		230051 / XL0005-102	
	Slide bracket 40 • T • ϕ8		230056 / XL0005-107	

	Product name		Order code No. / TYPE	Page of details
Bracket	Slide bracket 40 • T • ϕ12		230052 / XL0005-103	5-22
	Slide bracket 40 • T • ϕ20		230054 / XL0005-105	
	Slide bracket 70 • M3		131159 / N01863-217	5-23
	Slide bracket 70 • M5		131148 / N01863-204	
	Slide bracket 70 • M6		131157 / N01863-213	
	Slide bracket 70 • PT1/8		131155 / N01863-211	
	Slide bracket 70 • W • M10		131141 / N01863-120	
	Slide bracket 70 • W • M12		131142 / N01863-121	
	Slide bracket 70 • W • M17		131144 / N01863-124	
	Slide bracket 70 • ϕ8		131153 / N01863-209	
	Slide bracket 70 • W • ϕ8		131133 / N01863-110	
	Slide bracket 70 • W • ϕ12		131130 / N01863-103	5-24
	Slide bracket 70 • W • ϕ20		131138 / N01863-115	
	Slide bracket 70 • T • W • ϕ8		230053 / XL0005-104	
	Slide bracket 70 • T • ϕ8		230057 / XL0005-108	
	Slide bracket 70 • T • ϕ12		230050 / XL0005-101	
	Slide bracket 70 • T • ϕ20		230055 / XL0005-106	
Washer	Slide washer • ϕ8 / ϕ12		131146 / N01863-202	

	Product name		Order code No. / TYPE	Page of details
Washer	Slide washer • W • ϕ8 / ϕ12		131129 / N01863-102	5-24
	Slide washer • ϕ20		131150 / N01863-206	
	Slide washer • W • ϕ20		131135 / N01863-112	
Nut plate	Nut plate for slide bracket		023197 / CP-076	
Nut	Bushing nut • ϕ8 • M5		131200 / N01868-401	5-25
	Bushing nut • ϕ8 • M6		131206 / N01868-410	
	Bushing nut • ϕ12 • M5		131202 / N01868-403	
	Bushing nut • ϕ12 • M10		131201 / N01868-402	
	Bushing nut • ϕ12 • PT1/8		131207 / N01868-411	
	Bushing nut • ϕ20 • M12		131205 / N01868-409	
	Bushing nut • ϕ20 • PT1/8		131199 / N01868-305	
	Bushing nut • M5-M3		131204 / N01868-407	
Bushing	Bushing • ϕ12 ϕ8		131196 / N01868-301	
	Bushing • ϕ20 ϕ8		131197 / N01868-302	
	Bushing • ϕ20 ϕ12		131198 / N01868-303	

Jungle Gym SUS • CFRP Pipe ／ Resin Fixture

Using thin-walled stainless steel pipes allows weight reduction and structural rigidity.



Jungle gym SUS pipe ϕ 8

Order code No.	340905
TYPE	8∗0.6∗500

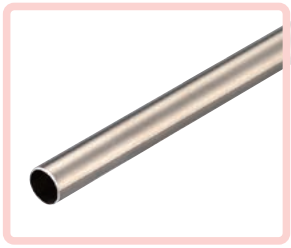
● Weight : 56g

Order code No.	340906
TYPE	8∗0.6∗1000

● Weight : 112g

Order code No.	340907
TYPE	8∗0.6∗1500

● Weight : 144g



Jungle gym SUS pipe ϕ 12

Order code No.	271527
TYPE	12∗0.6∗500

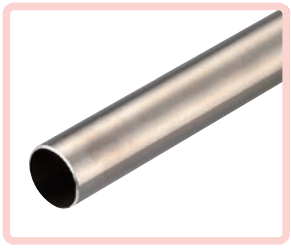
● Weight : 88g

Order code No.	271528
TYPE	12∗0.6∗1000

● Weight : 169g

Order code No.	271529
TYPE	12∗0.6∗1500

● Weight : 250g



Jungle gym SUS pipe ϕ 20

Order code No.	281812
TYPE	20∗0.8∗500

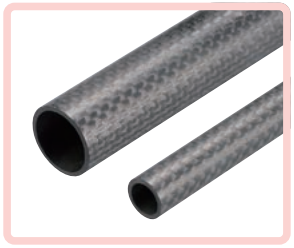
● Weight : 172g

Order code No.	281813
TYPE	20∗0.8∗1000

● Weight : 352g

Order code No.	281814
TYPE	20∗0.8∗1500

● Weight : 543g



Jungle gym CFRP pipe ϕ 12

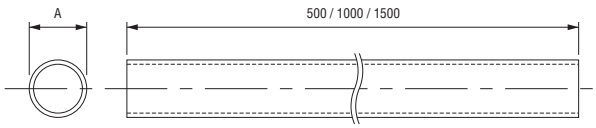
Order code No.	023361
TYPE	CFRP 12∗1.5∗1500

● Weight : 121g

Jungle gym CFRP pipe ϕ 20

Order code No.	023362
TYPE	CFRP 20∗1.5∗1500

● Weight : 200g



■ Specification

Product name	A	Thickness	Material	Outside diameter tolerance
Jungle gym SUS pipeϕ8	ϕ 8	0.6mm	SUS304	0 ～− 0.06
Jungle gym SUS pipeϕ12	ϕ 12			
Jungle gym SUS pipeϕ20	ϕ 20	0.8mm		0 ～− 0.10
Jungle gym CFRP pipeϕ12	ϕ 12	1.5mm	CFRP	− 0.05 ～ − 0.15
Jungle gym CFRP pipeϕ20	ϕ 20			

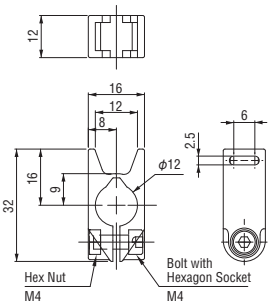
∗The tolerance of outside diameter is a rough standard.
∗When cutting pipes, burrs may occur on the cut surface.



Resin Fixture ϕ 12 (Cable ties)

Order code No.	171210
TYPE	RCA12

● Weight : 5g

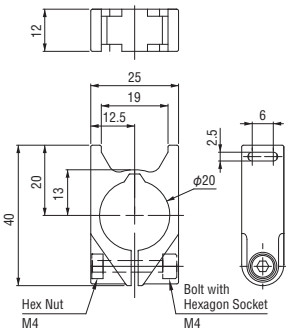




Resin Fixture ϕ 20 (Cable ties)

Order code No.	171211
TYPE	RCA20

● Weight : 7g

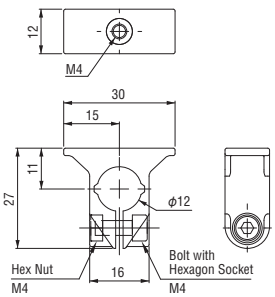




Resin Fixture ϕ 12 (M4)

Order code No.	171212
TYPE	RCB12

● Weight : 6g

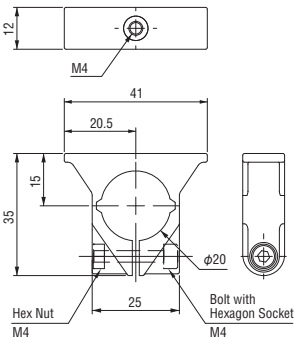




Resin Fixture ϕ 20 (M4)

Order code No.	171213
TYPE	RCB20

● Weight : 9g



Pipe End Cap ／ SUS Pipe Cutter ／ Clip

Caps, pipe cutters, and clips compatible with SUS / CFRP pipes.

● Use Semedine Super X Series to fix the pipe end cap to jungle gym SUS pipe.



Pipe end cap ϕ8

Order code No.	171338
TYPE	R-CAP-8

● Weight : 0.2g

Pipe end cap ϕ12

Order code No.	171339
TYPE	R-CAP-12

● Weight : 0.4g

Pipe end cap ϕ20

Order code No.	171340
TYPE	R-CAP-20

● Weight : 3.0g



SUS pipe cutter

Order code No.	101206
TYPE	K-203

● Weight : 205g
● Coping with stainless steel pipe, capper tubes

SUS pipe cutter blade

Order code No.	101207
TYPE	K-203-1

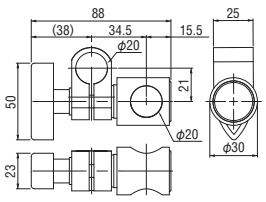
● Weight : 3g
● Pipe cutter (K-203) spare blade



Clip • TMA • ϕ20 * ϕ20

Order code No.	196559
TYPE	TMA-CL (20*20)

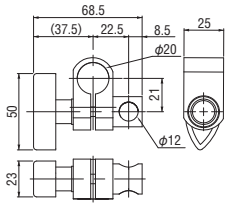
● Weight : 270g



Clip • TMA • ϕ20 * ϕ12

Order code No.	196560
TYPE	TMA-CL (20*12)

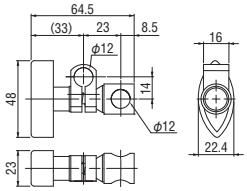
● Weight : 160g



Clip • TMA • ϕ12 * ϕ12

Order code No.	196561
TYPE	TMA-CL (12*12)

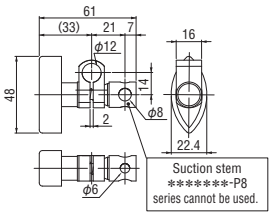
● Weight : 75g



Clip • TMA • ϕ12 * ϕ8

Order code No.	196562
TYPE	TMA-CL (12*8)

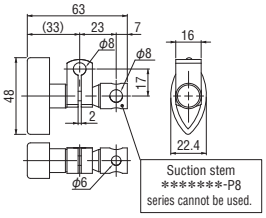
● Weight : 85g



Clip • TMA • ϕ8 * ϕ8

Order code No.	196563
TYPE	TMA-CL (8*8)

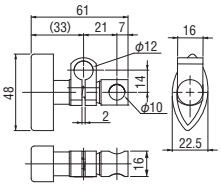
● Weight : 55g



Clip • TMA • ϕ12 * ϕ10

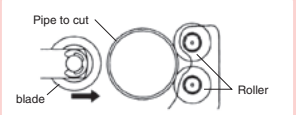
Order code No.	196564
TYPE	TMA-CL (12*10)

● Weight : 62g



How to use

1 When you turn the handle clockwise, the blade moves forward, when you turn the handle counterclockwise, the blade moves backward.Put the pipe onto the two rollers parallel as shown .Turn the handle to the point where the blade contacts with the pipe. Turn the handle to the point where the blade contacts with the pipe.



2 Take the pipe as center and rotate the pipe cutter in the direction of the arrow in the figure. Turn the handle clockwise a little by one rotation, and move the blade forward. Repeat the operation, the pipe will be cut off.

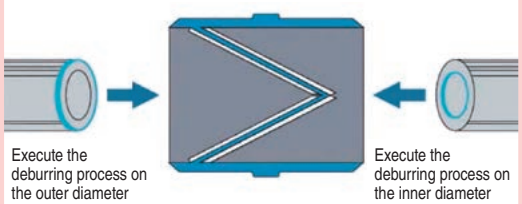




Pipe Reamer (Copper / Stainless Tube)

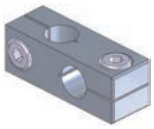
Order code No.	197173
TYPE	TSR-2

● Weight : 200g
● Suitable for pipe : ϕ8 ～ 35mm



Jungle Gym Series Parts

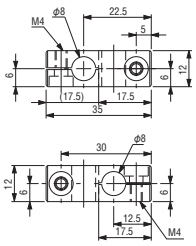
Various parts can be attached to jungle gym SUS φ8, φ12, and φ20.

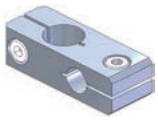


Cross connector • φ8 φ8

Order code No.	131102
TYPE	N01861-207

● Weight : 9.0g

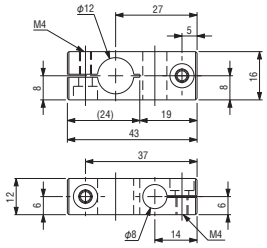


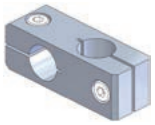


Cross connector • φ12 φ8

Order code No.	131098
TYPE	N01861-201

● Weight : 16.8g

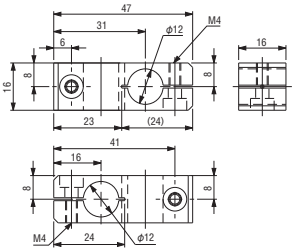


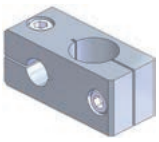


Cross connector • φ12 φ12

Order code No.	131099
TYPE	N01861-202

● Weight : 20.5g

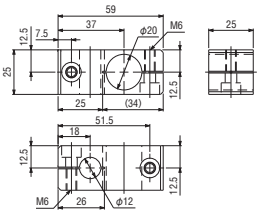


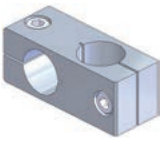


Cross connector • φ20 φ12

Order code No.	131100
TYPE	N01861-204

● Weight : 72.0g

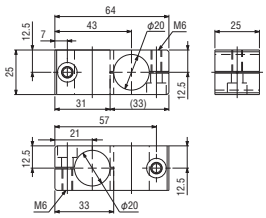


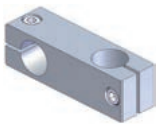


Cross connector • φ20 φ20

Order code No.	131101
TYPE	N01861-206

● Weight : 50.3g

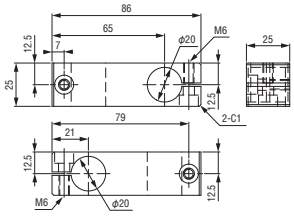




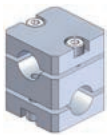
Cross connector • long • φ20 φ20

Order code No.	131573
TYPE	N01861-206B

● Weight : 109.0g



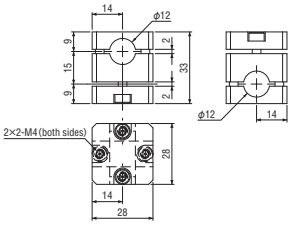
▶ Convenient for addition of components after assembly.



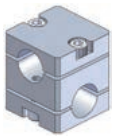
Cross connector • φ12 φ12 (rear entrance)

Order code No.	131569
TYPE	N01861-202A

● Weight : 51.3g



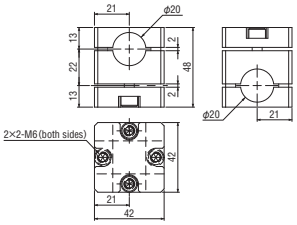
▶ Convenient for addition of components after assembly.



Cross connector • φ20 φ20 (rear entrance)

Order code No.	131570
TYPE	N01861-206A

● Weight : 160.0g

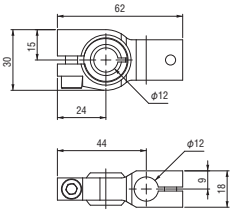




Floating Cross Connector φ12

Order code No.	054346
TYPE	F-CROSS-12

● Weight : 45.0g

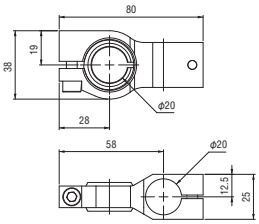


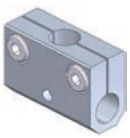


Floating Cross Connector φ20

Order code No.	054347
TYPE	F-CROSS-20

● Weight : 72.0g

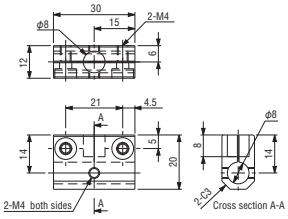


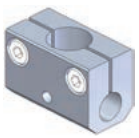


T Connector#1 • φ8 φ8

Order code No.	131108
TYPE	N01861-306

● Weight : 12.5g

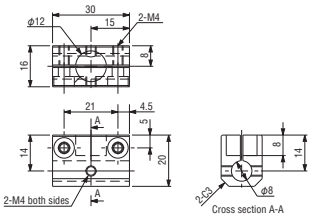


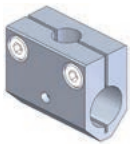


T Connector#1 • φ8 φ12

Order code No.	131105
TYPE	N01861-303

● Weight : 22.6g

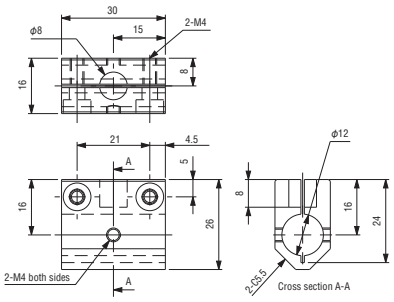


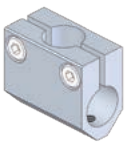


T Connector # 1 • φ12 φ8

Order code No.	131104
TYPE	N01861-302

● Weight : 18.7g

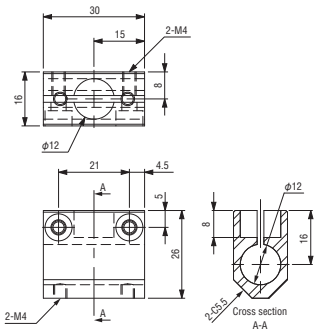


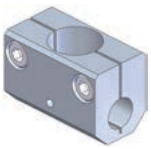


T Connector # 1 • φ12 φ12

Order code No.	131103
TYPE	N01861-301

● Weight : 17.5g

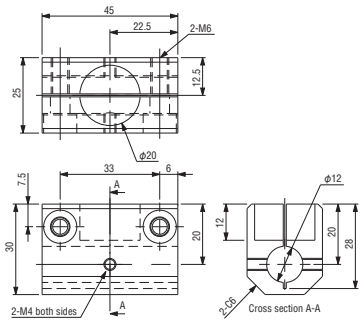


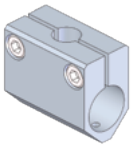


T Connector # 1 • φ12 φ20

Order code No.	131109
TYPE	N01861-307

● Weight : 57.8g

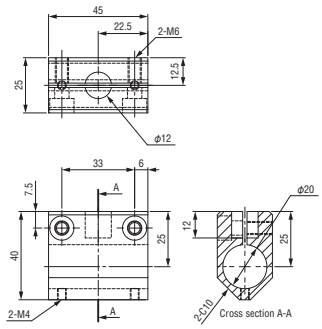


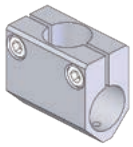


T Connector # 1 • φ20 φ12

Order code No.	131106
TYPE	N01861-304

● Weight : 62.4g

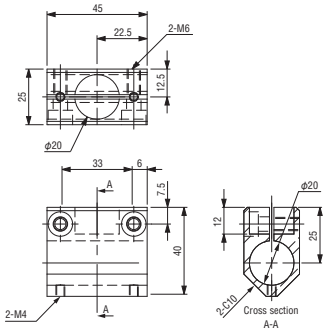


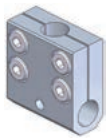


T Connector # 1 • φ20 φ20

Order code No.	131107
TYPE	N01861-305

● Weight : 55.9g

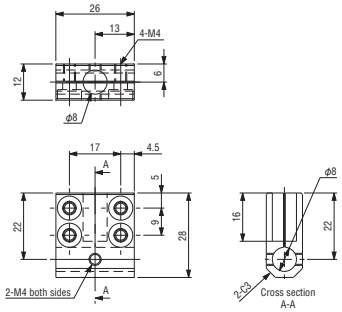


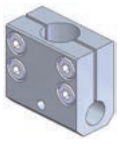


T Connector # 2 • φ8 φ8

Order code No.	131115
TYPE	N01861-406

● Weight : 14.6g

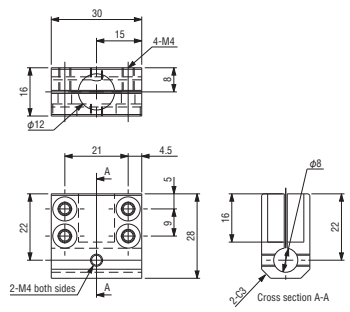


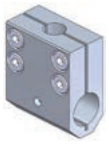


T Connector # 2 • φ8 φ12

Order code No.	131112
TYPE	N01861-403

● Weight : 30.8g

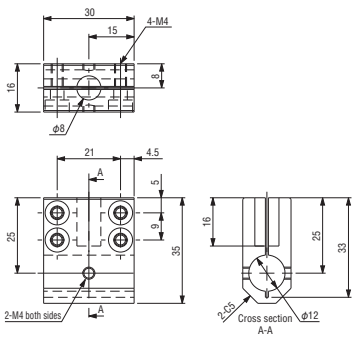


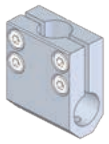


T Connector # 2 • φ12 φ8

Order code No.	131111
TYPE	N01861-402

● Weight : 28.3g

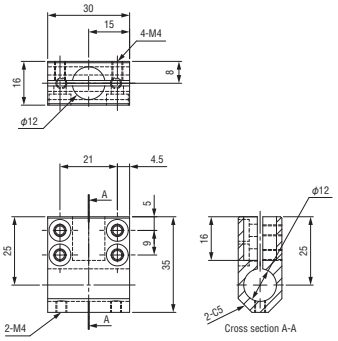




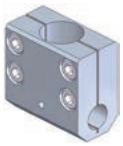
T Connector # 2 • φ12 φ12

Order code No.	131110
TYPE	N01861-401

● Weight : 25.7g



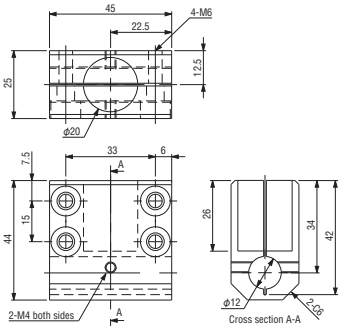
Jungle Gym Series Parts

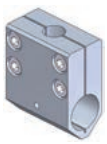


T Connector # 2 • φ12 φ20

Order code No.	131116
TYPE	N01861-407

● Weight : 87.2g

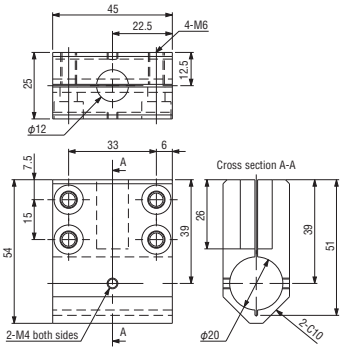


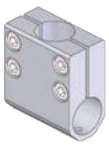


T Connector # 2 • φ20 φ12

Order code No.	131113
TYPE	N01861-404

● Weight : 107.4g

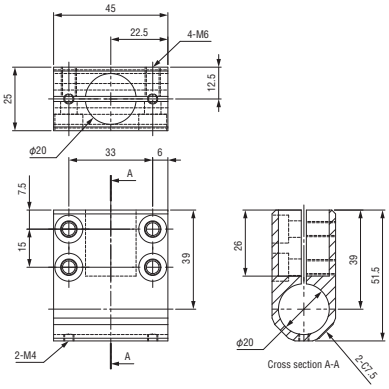


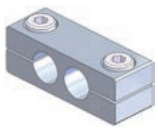


T Connector # 2 • φ20 φ20

Order code No.	131114
TYPE	N01861-405

● Weight : 77.3g

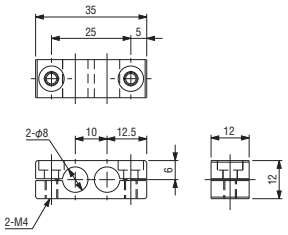


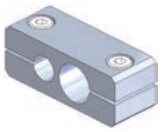


Parallel connector • φ8 φ8

Order code No.	131096
TYPE	N01861-107

● Weight : 9.1g

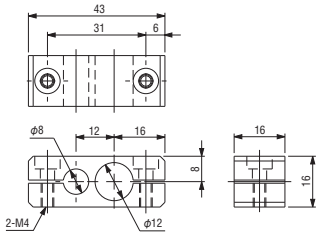


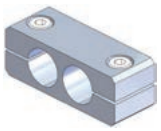


Parallel connector • φ8 φ12

Order code No.	131092
TYPE	N01861-101

● Weight : 20.6g

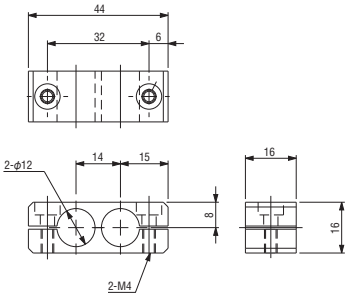


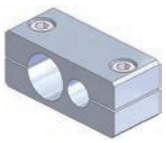


Parallel connector • φ12 φ12

Order code No.	131093
TYPE	N01861-102

● Weight : 18.6g

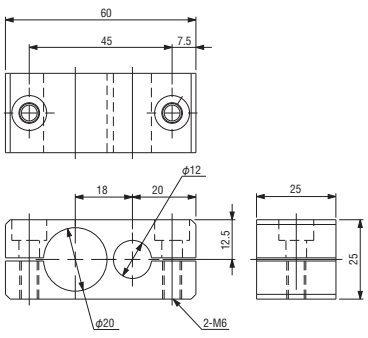


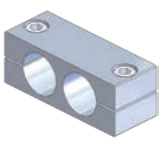


Parallel connector • φ20 φ12

Order code No.	131094
TYPE	N01861-104

● Weight : 67.2g

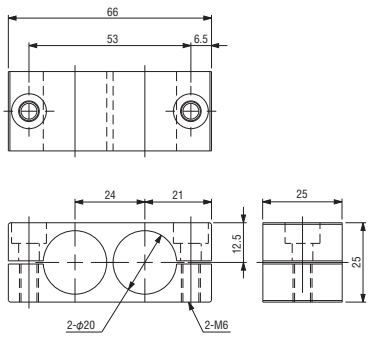


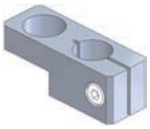


Parallel connector • φ20 φ20

Order code No.	131095
TYPE	N01861-106

● Weight : 60.7g

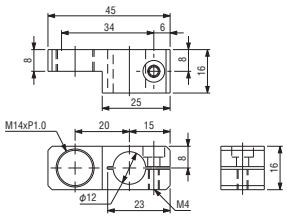




Connector • for SSW

Order code No.	131097
TYPE	N01861-108

● Weight : 15.5g

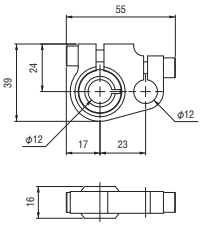


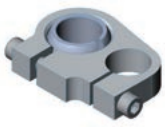


Floating Paraller Connector ϕ12

Order code No.	054344
TYPE	F-PARA-12

● Weight : 40.0g

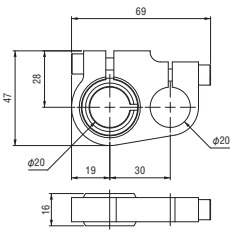


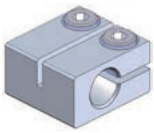


Floating Paraller Connector ϕ20

Order code No.	054345
TYPE	F-PARA-20

● Weight : 56.0g

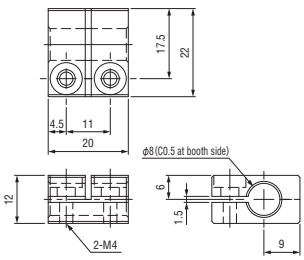


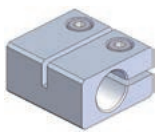


Straight connector • ϕ8

Order code No.	131488
TYPE	N01868-501

● Weight : 12.2g

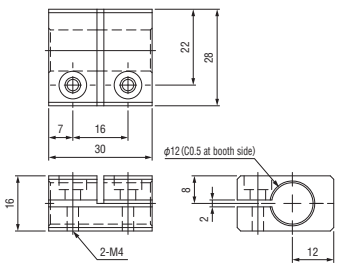


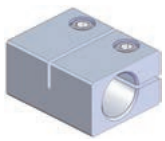


Straight connector • ϕ12

Order code No.	131489
TYPE	N01868-502

● Weight : 26.8g

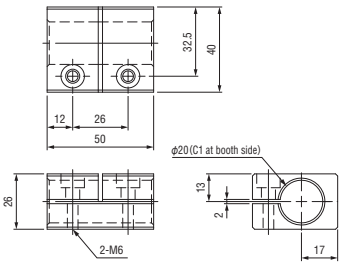


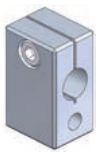


Straight connector • ϕ20

Order code No.	131490
TYPE	N01868-503

● Weight : 102.1g

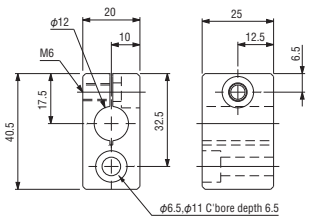


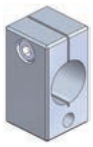


Access bracket • ϕ12 • M6

Order code No.	131125
TYPE	N01862-210

● Weight : 41.5g

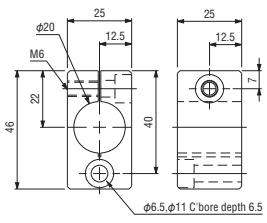




Access bracket • ϕ20 • M6

Order code No.	131126
TYPE	N01862-211

● Weight : 50.8g

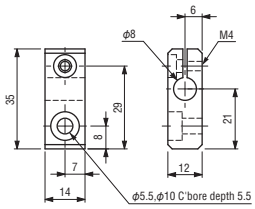




Attachment bracket • ϕ8 • M5

Order code No.	131306
TYPE	N01862-208

● Weight : 15.0g

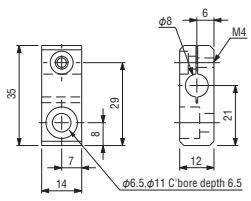


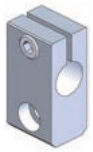


Attachment bracket • ϕ8 • M6

Order code No.	131121
TYPE	N01862-205

● Weight : 11.1g

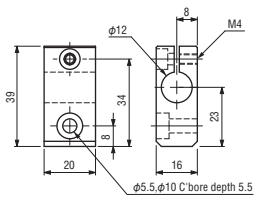




Attachment bracket • ϕ12 • M5

Order code No.	131305
TYPE	N01862-204

● Weight : 30.0g

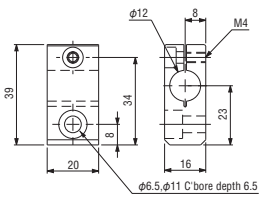




Attachment bracket • ϕ12 • M6

Order code No.	131118
TYPE	N01862-201

● Weight : 24.1g



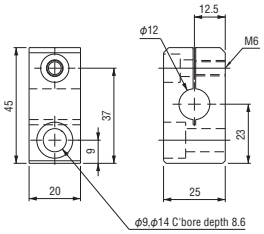
Jungle Gym Series Parts



Attachment bracket • ϕ12 • M8

Order code No.	131225
TYPE	N01862-213

● Weight : 41.5g

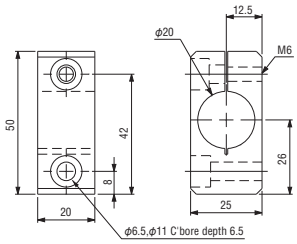




Attachment bracket • ϕ20 • M6

Order code No.	131123
TYPE	N01862-207

● Weight : 44.7g

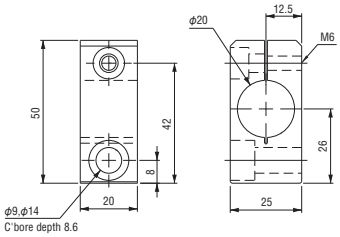


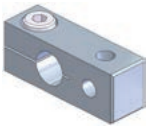


Attachment bracket • ϕ20 • M8

Order code No.	131226
TYPE	N01862-214

● Weight : 50.7g

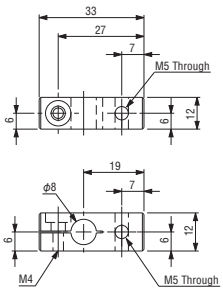


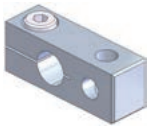


Suction bracket • ϕ8 • M5

Order code No.	131122
TYPE	N01862-206

● Weight : 8.1g

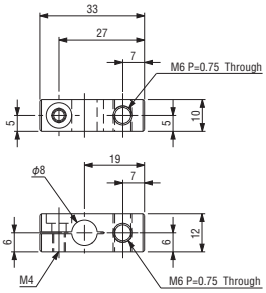


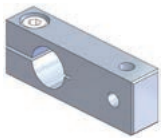


Suction bracket • ϕ8 • M6

Order code No.	131124
TYPE	N01862-209

● Weight : 7.8g ● M6 (fine)

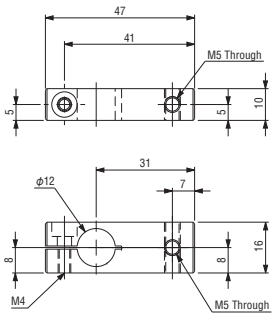


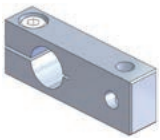


Suction bracket • ϕ12 • M5

Order code No.	131119
TYPE	N01862-202

● Weight : 15.7g

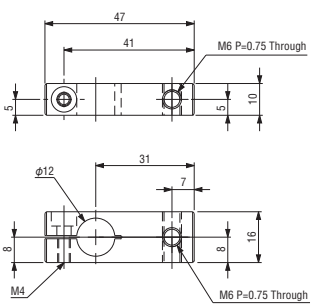




Suction bracket • ϕ12 • M6

Order code No.	131127
TYPE	N01862-212

● Weight : 15.4g ● M6 (fine)

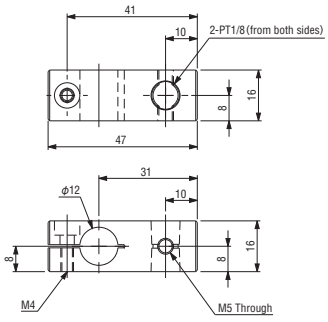


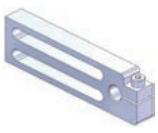


Suction bracket • ϕ12 • PT1/8

Order code No.	131120
TYPE	N01862-203

● Weight : 24.1g

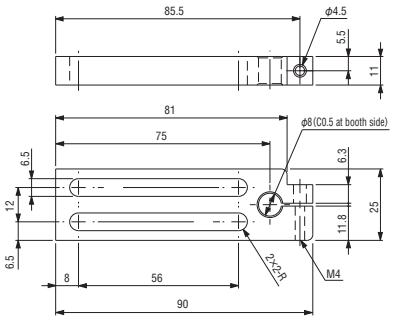


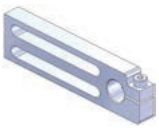


Cylinder bracket • ϕ8

Order code No.	131075
TYPE	N01915-113

● Weight : 44g

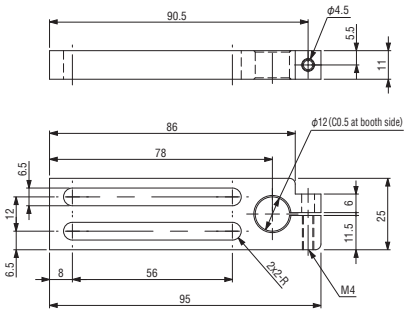


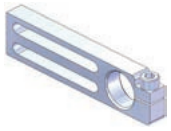


Cylinder bracket • ϕ12

Order code No.	131074
TYPE	N01915-112

● Weight : 45g

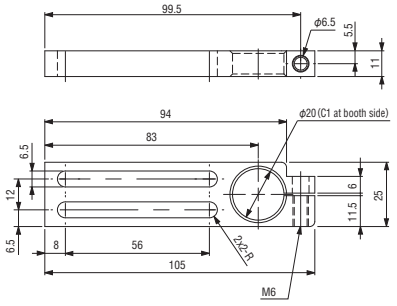


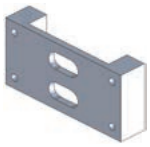


Cylinder bracket • ϕ20

Order code No.	131066
TYPE	N01915-103

● Weight : 49g

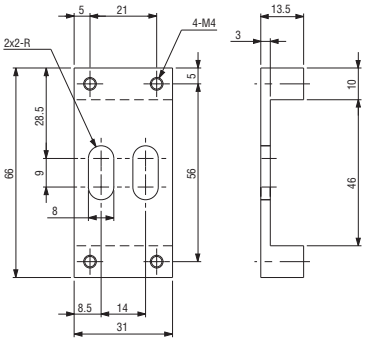


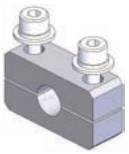


Swing Bracket

Order code No.	131065
TYPE	N01915-102

● Weight : 32.1g

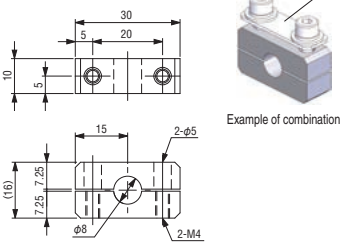


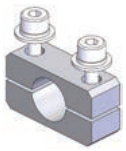


Slide bracket • ϕ8

Order code No.	131151
TYPE	N01863-207

● Weight : 10.4g

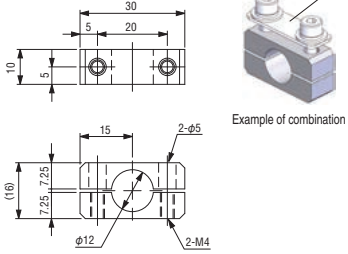


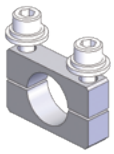


Slide bracket • ϕ12

Order code No.	131145
TYPE	N01863-201

● Weight : 8.5g

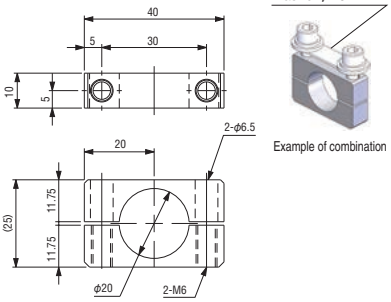


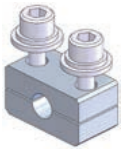


Slide bracket • ϕ20

Order code No.	131149
TYPE	N01863-205

● Weight : 15.0g

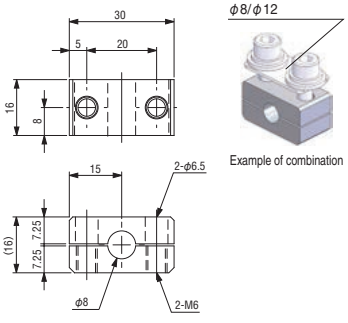


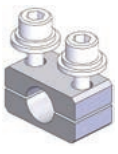


Slide bracket • W • ϕ8

Order code No.	131217
TYPE	N01863-113

● Weight : 12.0g

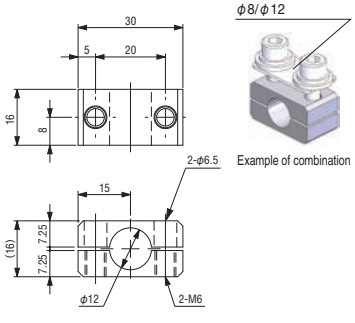


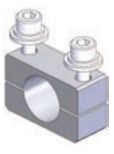


Slide bracket • W • ϕ12

Order code No.	131128
TYPE	N01863-101

● Weight : 13.3g

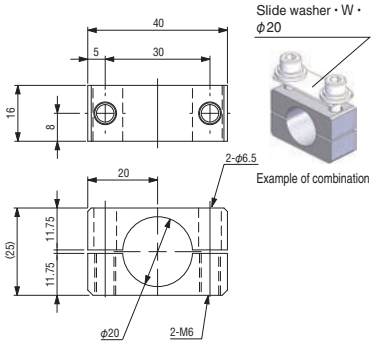


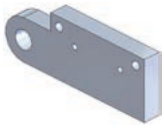


Slide bracket • W • ϕ20

Order code No.	131134
TYPE	N01863-111

● Weight : 26.2g

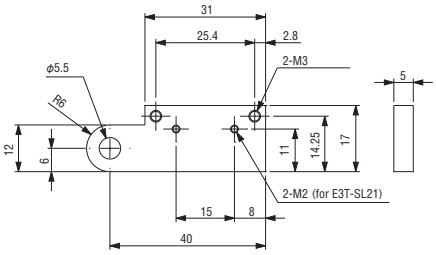




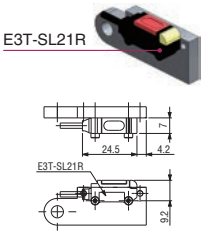
Sensor bracket • ϕ12

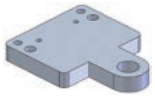
Order code No.	131189
TYPE	N01867-101

- Weight : 9.2g
- Limit switch ➡ 6-18 ,
  Photo sensor ➡ 6-22 could be installed.



Sensor Mounting Example

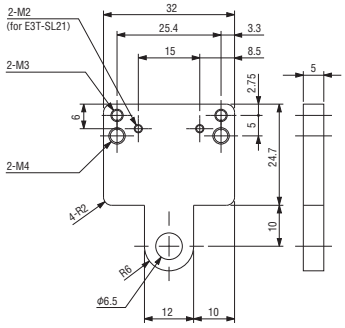




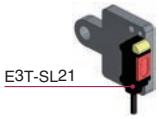
Sensor bracket

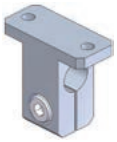
Order code No.	131077
TYPE	N01915-201

- Weight : 12.6g
- Limit switch ➡ 6-18 ,
  Photo sensor ➡ 6-22 could be installed.



Sensor Mounting Example

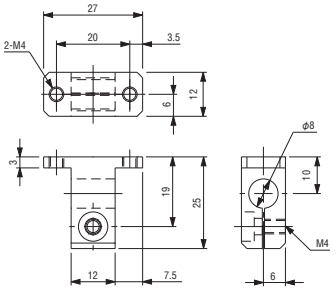




Chuck bracket • TH • ϕ8

Order code No.	131188
TYPE	N01866-502

- Weight : 8.6g
- If base frame ϕ8 is used, this product may be loosened and rotated.
- Check the length of mounting bolt

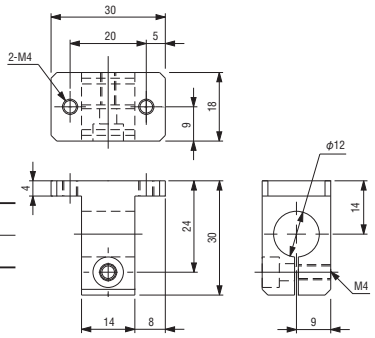


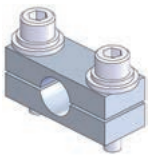


Chuck bracket • TH • ϕ12

Order code No.	131187
TYPE	N01866-501

- Weight : 18.3g
- Check the length of mounting bolt

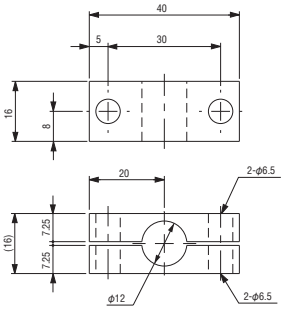


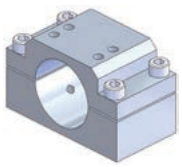


Chuck bracket • ϕ12

Order code No.	131067
TYPE	N01915-105

- Weight : 19.6g

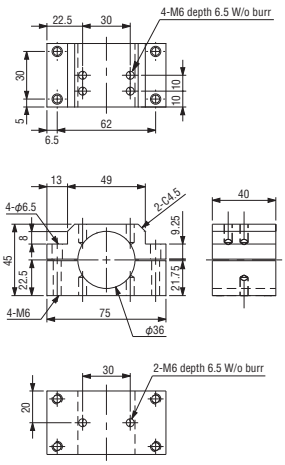


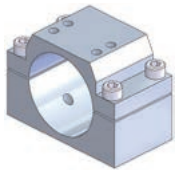


Nipper bracket • A

Order code No.	131078
TYPE	N01915-301

- Weight : 208.8g

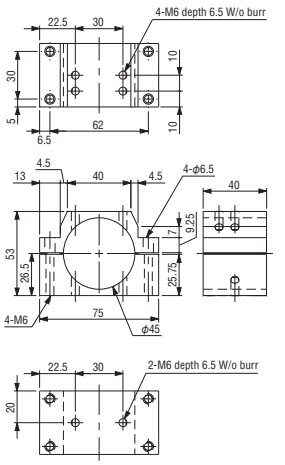


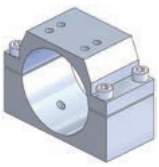


Nipper bracket • B

Order code No.	131216
TYPE	N01915-302

- Weight : 198.4g

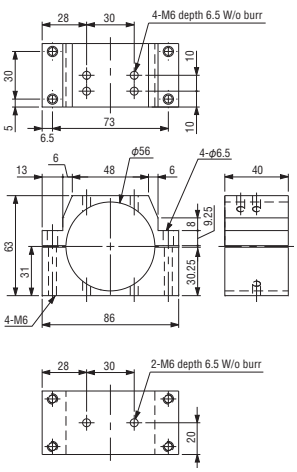


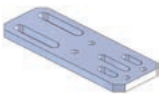


Nipper bracket • C

Order code No.	131080
TYPE	N01915-303

- Weight : 241.3g

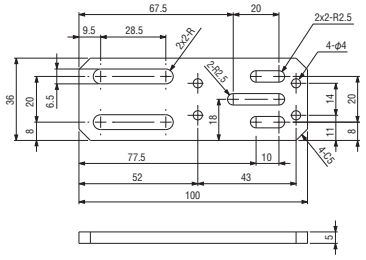




Nipper bracket • D

Order code No.	131081
TYPE	N01915-304

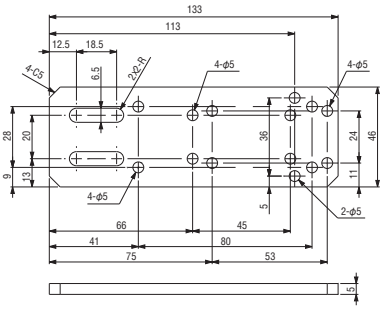
- Weight : 109.4g
- for NW-10, NW-20, GT-NT3



Nipper bracket • E

Order code No.	131082
TYPE	N01915-305

- Weight : 214.0g
- for NW-35, GT-NT05, GT-NT10、GT-NT20

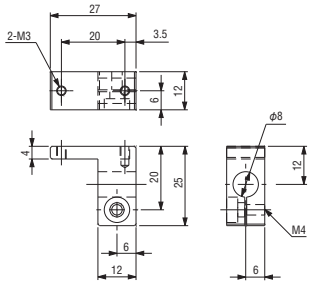


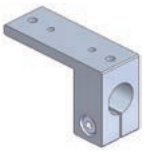


Bracket • L • φ8 • for UMCD

Order code No.	131180
TYPE	N01866-202

- Weight : 9.3g
- If base frame ø8 is used, this product may be loosened and rotated.
- Check the length of mounting bolt

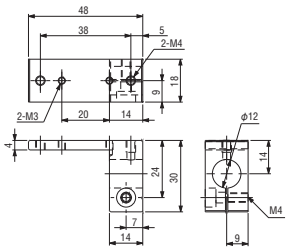


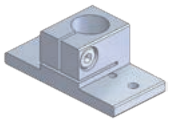


Bracket • L • φ12 • for MCD

Order code No.	131179
TYPE	N01866-201

- Weight : 21.8g
- Check bolt length.

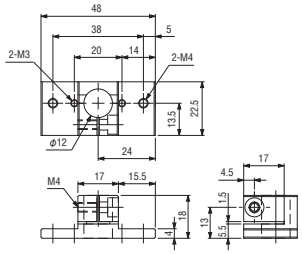


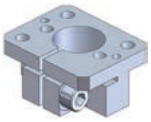


Bracket • T • φ12 • for MCD

Order code No.	131176
TYPE	N01866-101

- Weight : 19.3g

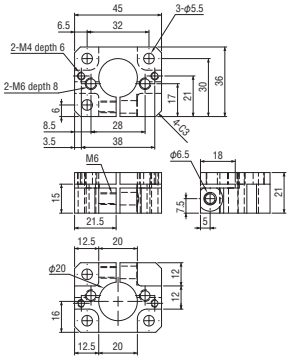


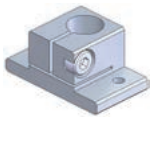


Bracket • T • φ20 • for MCD

Order code No.	131554
TYPE	N01866-103A

- Weight : 49.0g

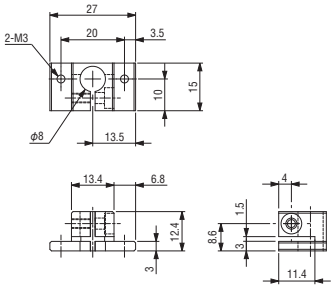


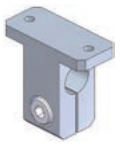


Bracket • T • φ8 • for UMCD

Order code No.	131177
TYPE	N01866-102

- Weight : 6.1g
- If base frame ø8 is used, this product may be loosened and rotated.

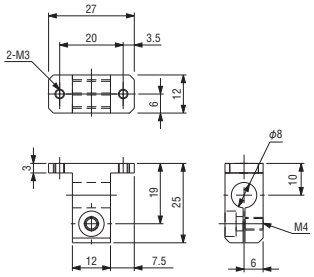


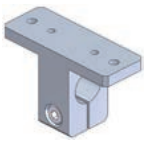


Bracket • TH • φ8 • for UMCD

Order code No.	131182
TYPE	N01866-302

- Weight : 8.2g
- If base frame ø8 is used, this product may be loosened and rotated.
- Check the length of mounting bolt

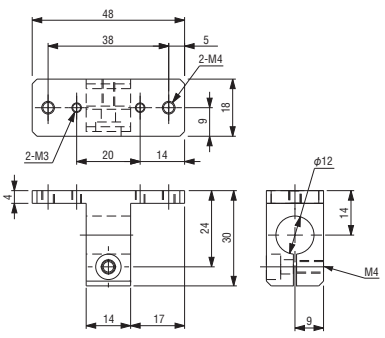




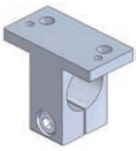
Bracket • TH • φ12 • for MCD

Order code No.	131181
TYPE	N01866-301

- Weight : 21.8g
- Check the length of mounting bolt



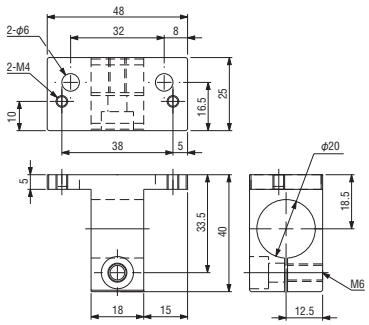
Jungle Gym Series Parts

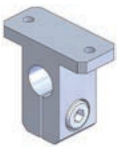


Bracket • TH • ϕ20 • for MCD

Order code No.	131183
TYPE	N01866-303

- Weight : 40.6g
- Check the length of mounting bolt for mini cylinder.
- There may be interference between pipe and bolt when you attach mini container cylinder.

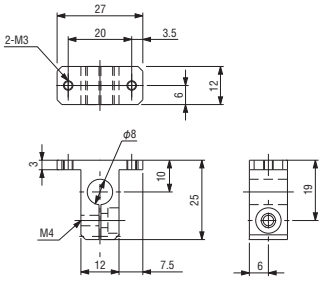


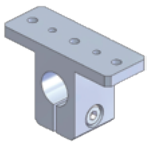


Bracket • TV • ϕ8 • for UMCD

Order code No.	131185
TYPE	N01866-402

- Weight : 8.7g
- If base frame ϕ8 is used, this product may be loosened and rotated.

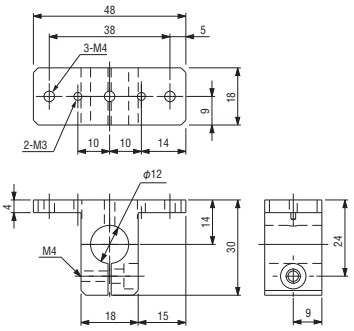


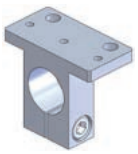


Bracket • TV • ϕ12 • for MCD

Order code No.	131184
TYPE	N01866-401

- Weight : 25.6g

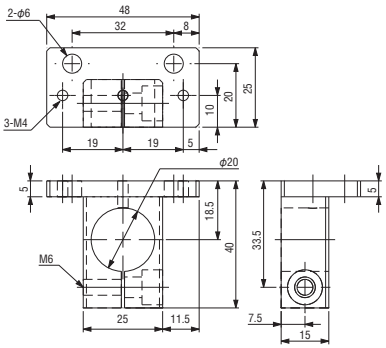


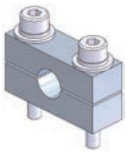


Bracket • TV • ϕ20 • for MCD

Order code No.	131186
TYPE	N01866-403

- Weight : 35.9g

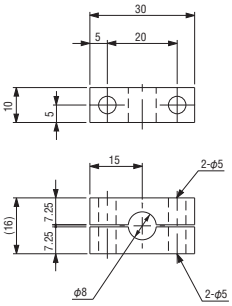


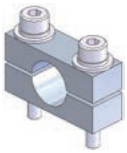


Bracket • ϕ8

Order code No.	131073
TYPE	N01915-111

- Weight : 10.0g

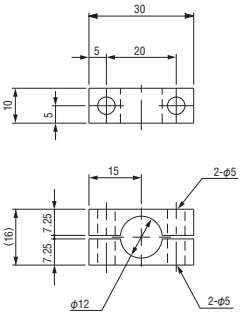


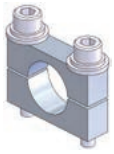


Bracket • ϕ12

Order code No.	131071
TYPE	N01915-109

- Weight : 8.2g

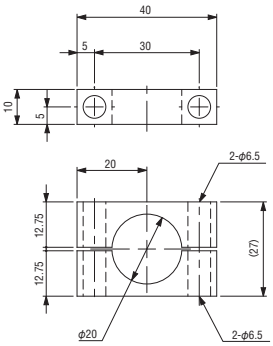


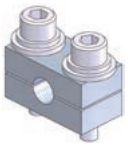


Bracket • ϕ20

Order code No.	131072
TYPE	N01915-110

- Weight : 16.1g

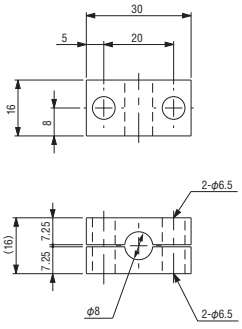


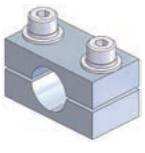


Bracket • W • ϕ8

Order code No.	131070
TYPE	N01915-108

- Weight : 15.8g

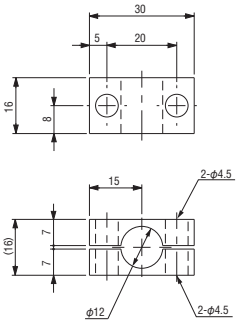


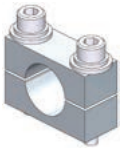


Bracket • W • ϕ12

Order code No.	131068
TYPE	N01915-106

- Weight : 12.9g

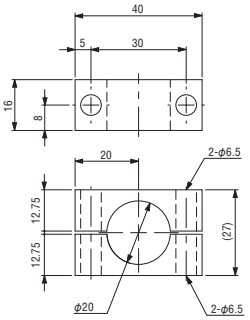


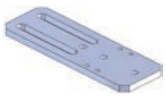


Bracket • W • ϕ20

Order code No.	131069
TYPE	N01915-107

- Weight : 28.6g

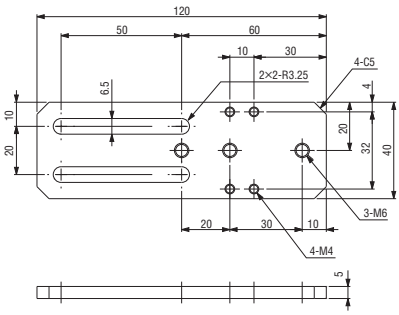


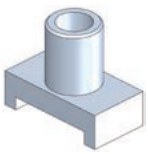


Bracket • NCON

Order code No.	131083
TYPE	N01915-401

- Weight : 153.7g
- for NCON-20W, 40W, 80W

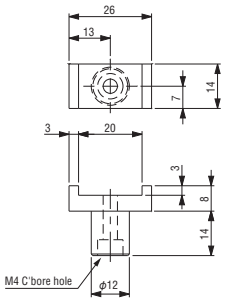


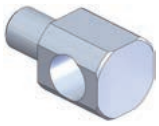


Rotation bracket • ϕ20

Order code No.	131064
TYPE	N01915-101

- Weight : 8.9g

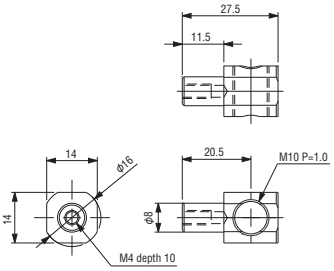


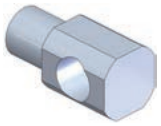


Rotation bracket • M10 • 8A

Order code No.	131434
TYPE	N01864-305

- Weight : 7.0g

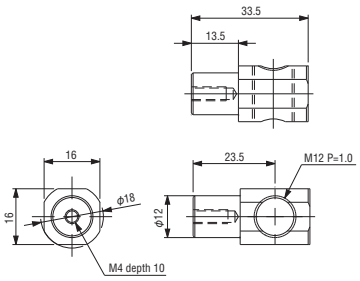


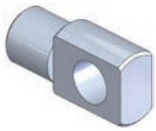


Rotation bracket • M12 • 12A

Order code No.	131173
TYPE	N01864-306

- Weight : 12.9g

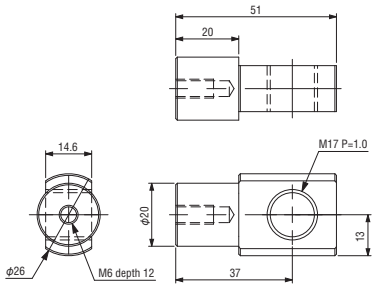


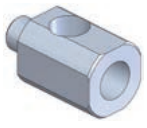


Rotation bracket • M17 • 20A

Order code No.	131174
TYPE	N01864-307

- Weight : 59.3g

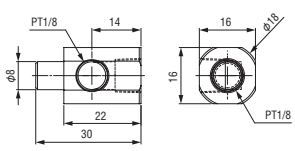


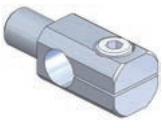


Rotation bracket • PT1/8 • 8A

Order code No.	131175
TYPE	N01864-401

- Weight : 11.8g

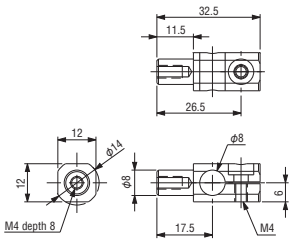




Rotation bracket • ϕ8 • 8A

Order code No.	131170
TYPE	N01864-303

- Weight : 6.6g

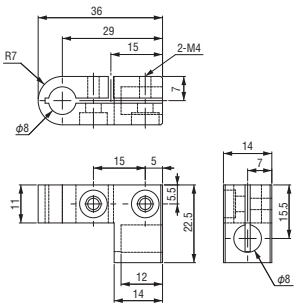




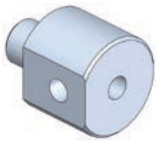
Rotation bracket • ϕ8 • 8B

Order code No.	131606
TYPE	N01864-103A

- Weight : 18.0g



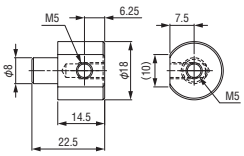
Jungle Gym Series Parts

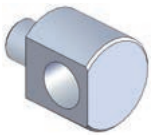


Rotation bracket • ϕ8 • M5A

Order code No.	131164
TYPE	N01864-202

● Weight : 10.0g

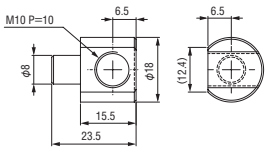


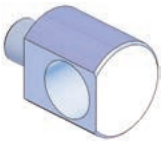


Rotation bracket • ϕ8 • M10A

Order code No.	131435
TYPE	N01864-201

● Weight : 8.0g

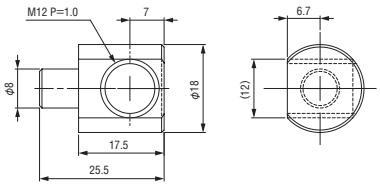


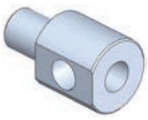


Rotation bracket • ϕ8 • M12A

Order code No.	131433
TYPE	N01864-205

● Weight : 7.6g

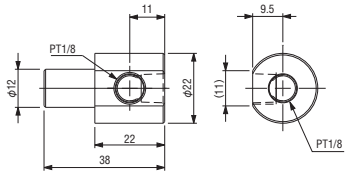


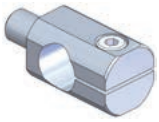


Rotation bracket • ϕ12 • PT1/8A

Order code No.	131166
TYPE	N01864-204

● Weight : 24.6g

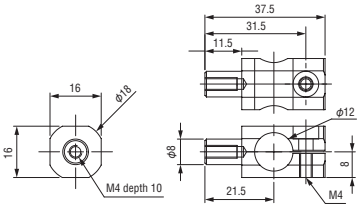


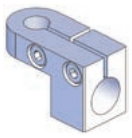


Rotation bracket • ϕ12 • 8A

Order code No.	131169
TYPE	N01864-302

● Weight : 11.9g

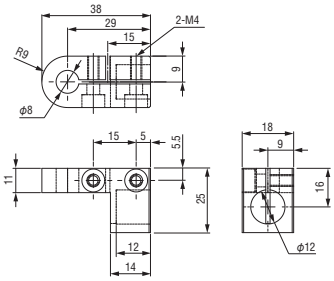


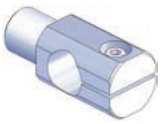


Rotation bracket • ϕ12 • 8B

Order code No.	131600
TYPE	N01864-101A

● Weight : 24.0g

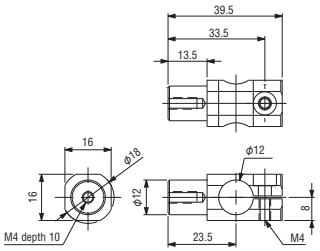




Rotation bracket • ϕ12 • 12A

Order code No.	131168
TYPE	N01864-301

● Weight : 14.6g

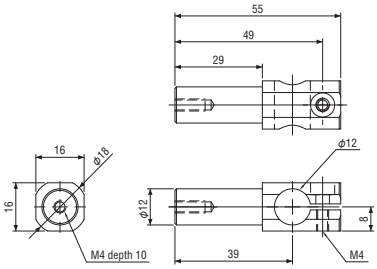


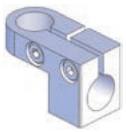


Rotation bracket • ϕ12 • 12AL

Order code No.	131567
TYPE	N01864-301L

● Weight : 15.0g

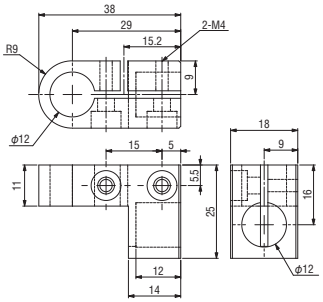


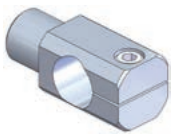


Rotation bracket • ϕ12 • 12B

Order code No.	131605
TYPE	N01864-102A

● Weight : 22.0g

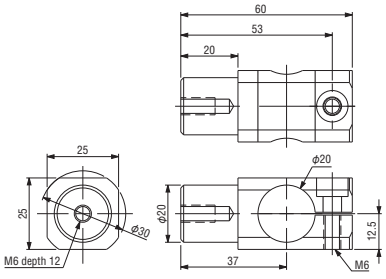


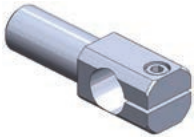


Rotation bracket • ϕ20 • 20A

Order code No.	131171
TYPE	N01864-304

● Weight : 50.7g

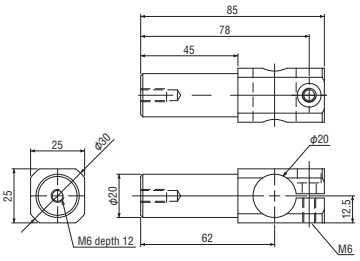


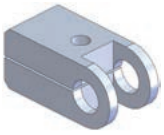


Rotation bracket • ϕ20 • 20AL

Order code No.	131568
TYPE	N01864-304L

● Weight : 80.0g

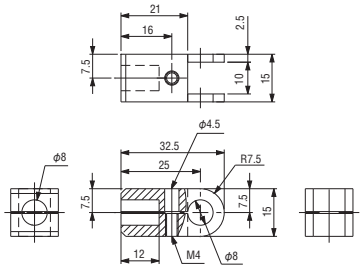


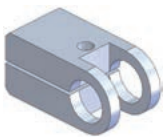


Suction rotate # A • ϕ8

Order code No.	131194
TYPE	N01868-104

● Weight : 11.6g

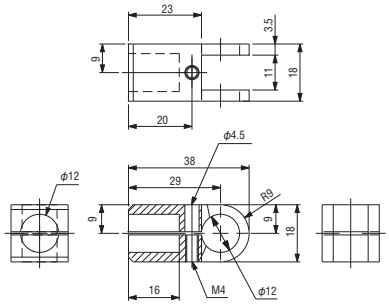




Suction rotate # A • ϕ12

Order code No.	131191
TYPE	N01868-101

● Weight : 17.1g

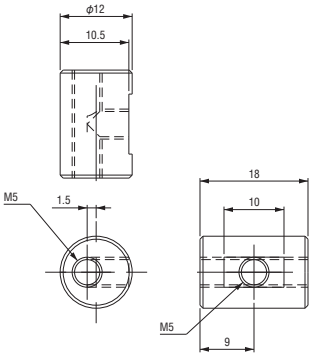


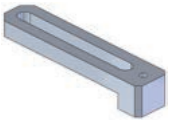


Suction rotate # B • M5 • ϕ12

Order code No.	131192
TYPE	N01868-102

● Weight : 4.8g

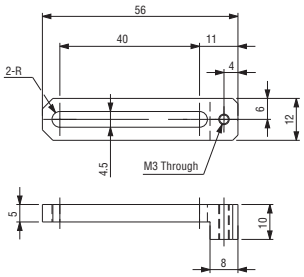


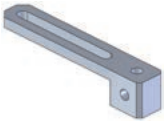


Slide bracket 40 • M3

Order code No.	131158
TYPE	N01863-214

● Weight : 6.5g

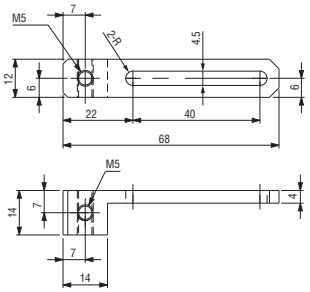


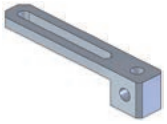


Slide bracket 40 • M5

Order code No.	131147
TYPE	N01863-203

● Weight : 8.6g

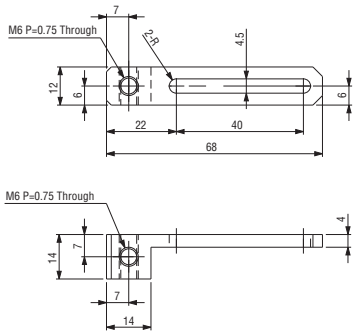


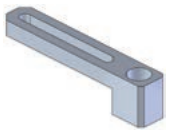


Slide bracket 40 • M6

Order code No.	131156
TYPE	N01863-212

● Weight : 10.3g ● M6 (fine)

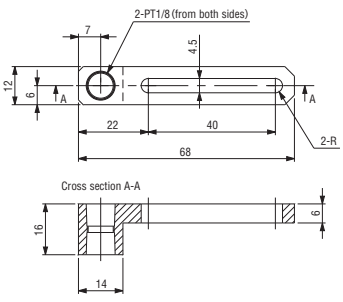


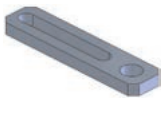


Slide bracket 40 • PT1/8

Order code No.	131154
TYPE	N01863-210

● Weight : 12.0g

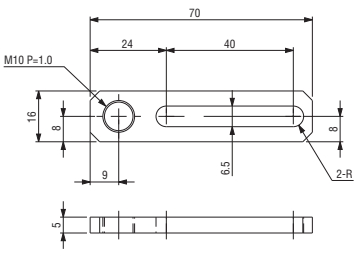




Slide bracket 40 • W • M10

Order code No.	131139
TYPE	N01863-117

● Weight : 10.5g ● M10 (fine)

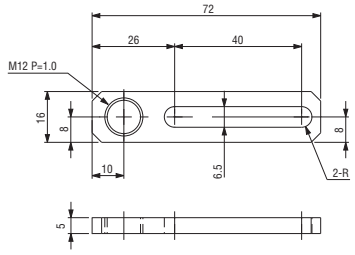




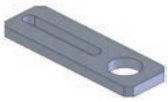
Slide bracket 40 • W • M12

Order code No.	131140
TYPE	N01863-118

● Weight : 10.6g ● M12 (fine)



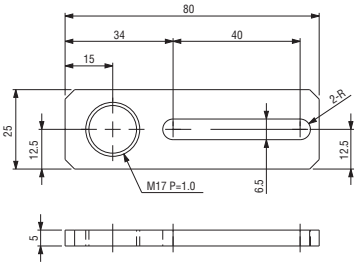
Jungle Gym Series Parts

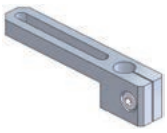


Slide bracket 40 • W • M17

Order code No.	131143
TYPE	N01863-122

● Weight : 21.2g ● M17 (fine)

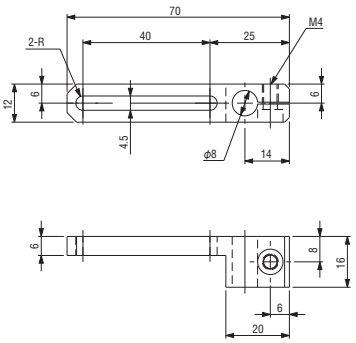


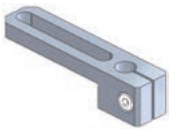


Slide bracket 40 • φ8

Order code No.	131152
TYPE	N01863-208

● Weight : 16.7g

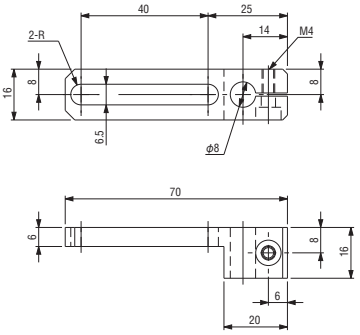


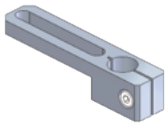


Slide bracket 40 • W • φ8

Order code No.	131131
TYPE	N01863-106

● Weight : 22.7g

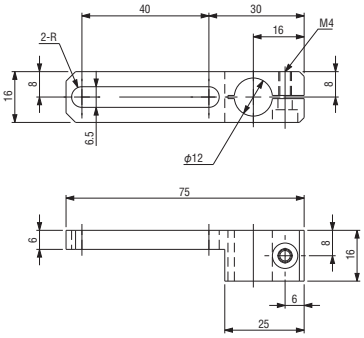


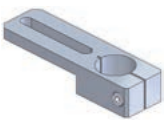


Slide bracket 40 • W • φ12

Order code No.	131132
TYPE	N01863-107

● Weight : 20.0g

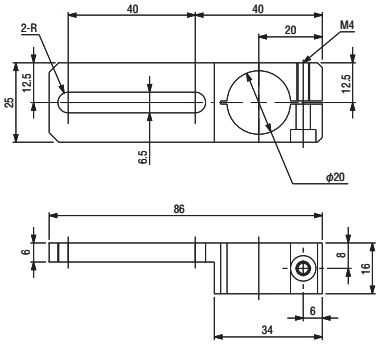


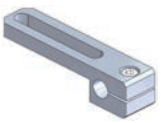


Slide bracket 40 • W • φ20

Order code No.	131137
TYPE	N01863-114

● Weight : 40.0g

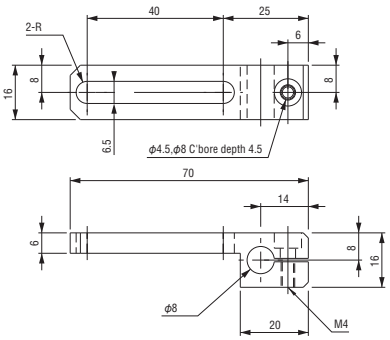


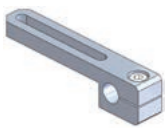


Slide bracket 40 • T • W • φ8

Order code No.	230051
TYPE	XL0005-102

● Weight : 20.7g

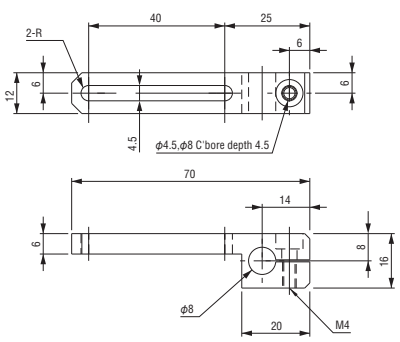


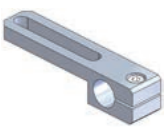


Slide bracket 40 • T • φ8

Order code No.	230056
TYPE	XL0005-107

● Weight : 16.2g

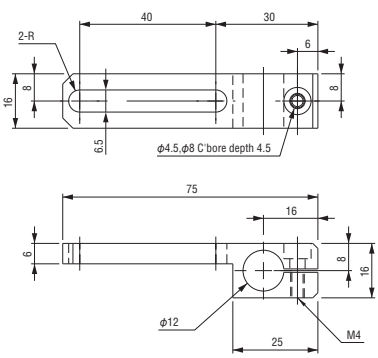


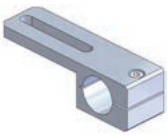


Slide bracket 40 • T • φ12

Order code No.	230052
TYPE	XL0005-103

● Weight : 21.4g

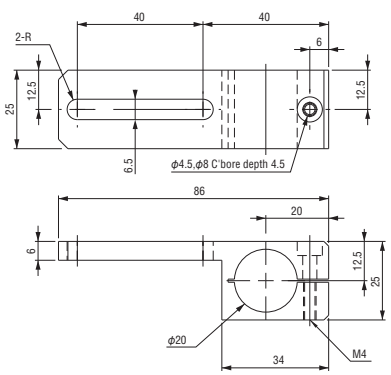




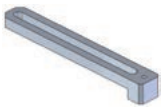
Slide bracket 40 • T • φ20

Order code No.	230054
TYPE	XL0005-105

● Weight : 54.4g

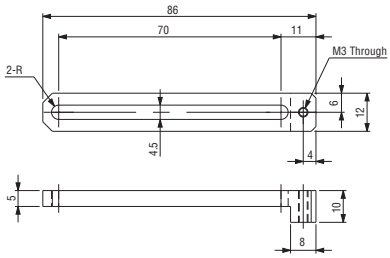


Slide bracket 70 • M3

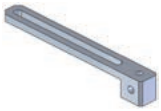


Order code No.	131159
TYPE	N01863-217

● Weight : 9.6g

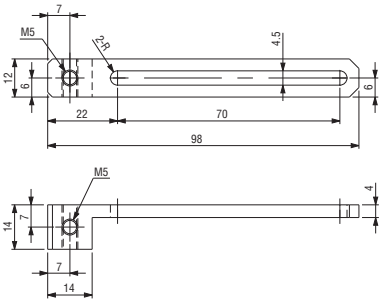


Slide bracket 70 • M5

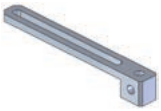


Order code No.	131148
TYPE	N01863-204

● Weight : 13.2g

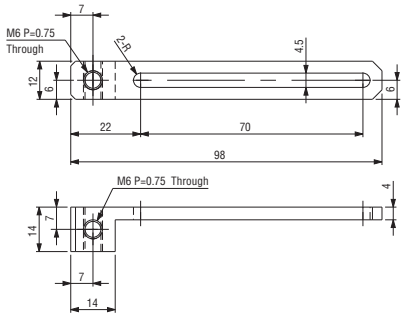


Slide bracket 70 • M6

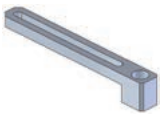


Order code No.	131157
TYPE	N01863-213

● Weight : 12.8g ● M6 (fine)

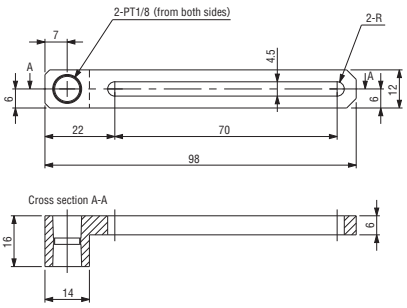


Slide bracket 70 • PT1/8



Order code No.	131155
TYPE	N01863-211

● Weight : 15.8g

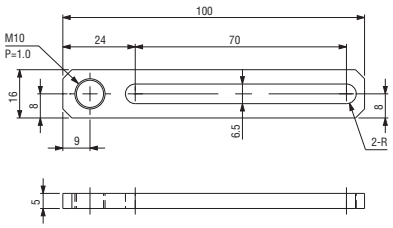


Slide bracket 70 • W • M10

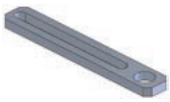


Order code No.	131141
TYPE	N01863-120

● Weight : 14.5g ● M10 (fine)

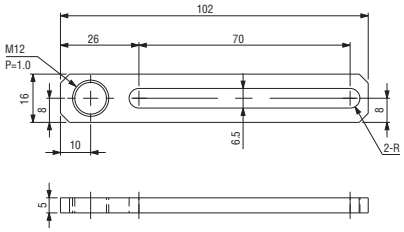


Slide bracket 70 • W • M12



Order code No.	131142
TYPE	N01863-121

● Weight : 14.6g ● M12 (fine)

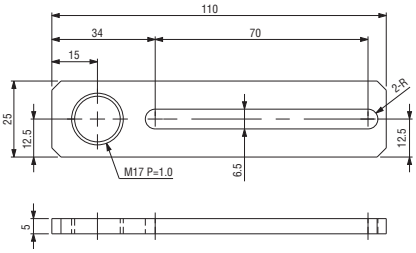


Slide bracket 70 • W • M17

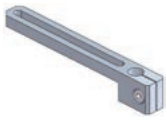


Order code No.	131144
TYPE	N01863-124

● Weight : 29.0g ● M17 (fine)

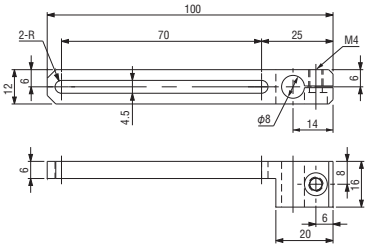


Slide bracket 70 • ϕ8

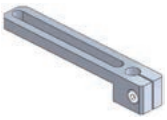


Order code No.	131153
TYPE	N01863-209

● Weight : 20.5g

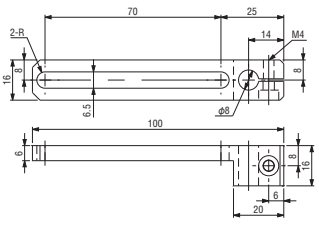


Slide bracket 70 • W • ϕ8

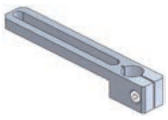


Order code No.	131133
TYPE	N01863-110

● Weight : 27.4g



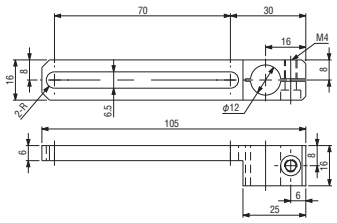
Jungle Gym Series Parts

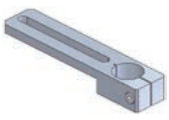


Slide bracket 70 • W • ϕ 12

Order code No.	131130
TYPE	N01863-103

● Weight : 24.7g

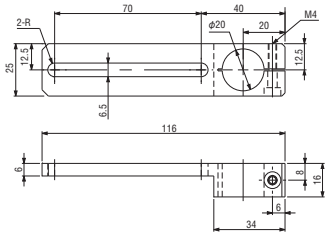


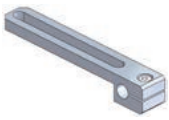


Slide bracket 70 • W • ϕ 20

Order code No.	131138
TYPE	N01863-115

● Weight : 48.3g

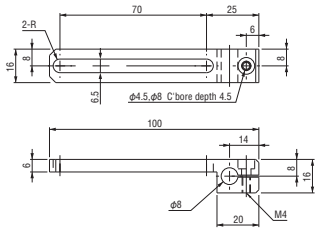


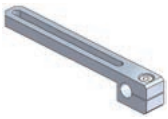


Slide bracket 70 • T • W • ϕ 8

Order code No.	230053
TYPE	XL0005-104

● Weight : 25.4g

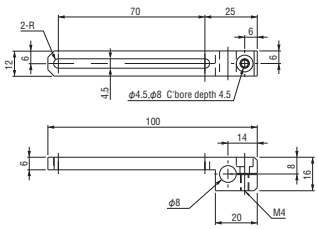


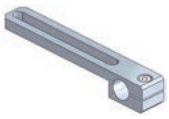


Slide bracket 70 • T • ϕ 8

Order code No.	230057
TYPE	XL0005-108

● Weight : 20.0g

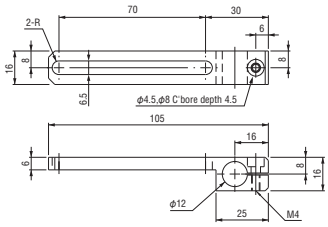




Slide bracket 70 • T • ϕ 12

Order code No.	230050
TYPE	XL0005-101

● Weight : 26.2g

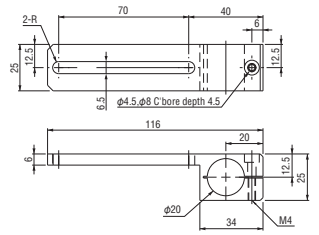




Slide bracket 70 • T • ϕ 20

Order code No.	230055
TYPE	XL0005-106

● Weight : 63.7g

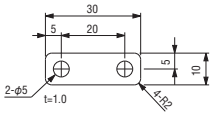




Slide washer • ϕ 8 / ϕ 12

Order code No.	131146
TYPE	N01863-202

● Weight : 1.0g

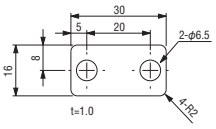




Slide washer • W • ϕ 8 / ϕ 12

Order code No.	131129
TYPE	N01863-102

● Weight : 1.7g

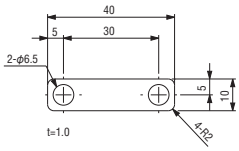




Slide washer • ϕ 20

Order code No.	131150
TYPE	N01863-206

● Weight : 1.4g

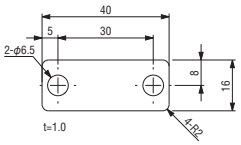




Slide washer • W • ϕ 20

Order code No.	131135
TYPE	N01863-112

● Weight : 2.3g

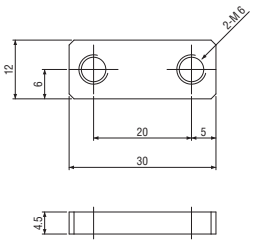




Nut plate for slide bracket

Order code No.	023197
TYPE	CP-076

● Weight : 15.0g

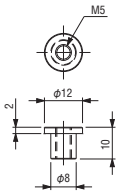




Bushing nut • ϕ8 • M5

Order code No.	131200
TYPE	N01868-401

● Weight : 1.4g

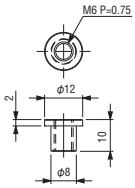




Bushing nut • ϕ8 • M6

Order code No.	131206
TYPE	N01868-410

● Weight : 1.3g ● M6 (fine)

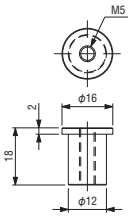




Bushing nut • ϕ12 • M5

Order code No.	131202
TYPE	N01868-403

● Weight : 5.5g

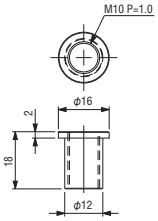




Bushing nut • ϕ12 • M10

Order code No.	131201
TYPE	N01868-402

● Weight : 3.0g ● M10 (fine)

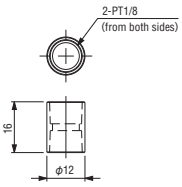




Bushing nut • ϕ12 • PT1/8

Order code No.	131207
TYPE	N01868-411

● Weight : 1.7g

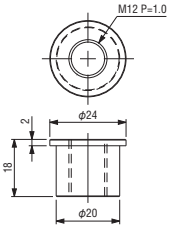




Bushing nut • ϕ20 • M12

Order code No.	131205
TYPE	N01868-409

● Weight : 12.3g ● M12 (fine)

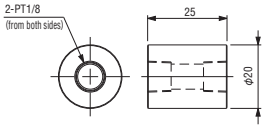




Bushing nut • ϕ20 • PT1/8

Order code No.	131199
TYPE	N01868-305

● Weight : 40.0g

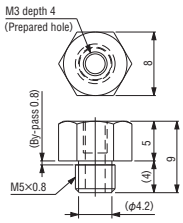


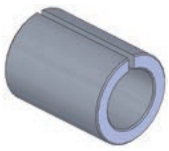


Bushing nut • M5-M3

Order code No.	131204
TYPE	N01868-407

● Weight : 2.6g

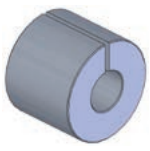




Bushing • ϕ12 ϕ8

Order code No.	131196
TYPE	N01868-301

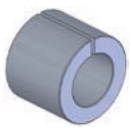
● Weight : 2.8g



Bushing • ϕ20 ϕ8

Order code No.	131197
TYPE	N01868-302

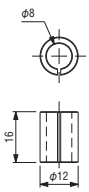
● Weight : 11.6g

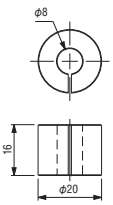


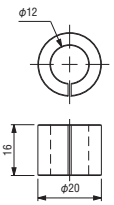
Bushing • ϕ20 ϕ12

Order code No.	131198
TYPE	N01868-303

● Weight : 8.9g



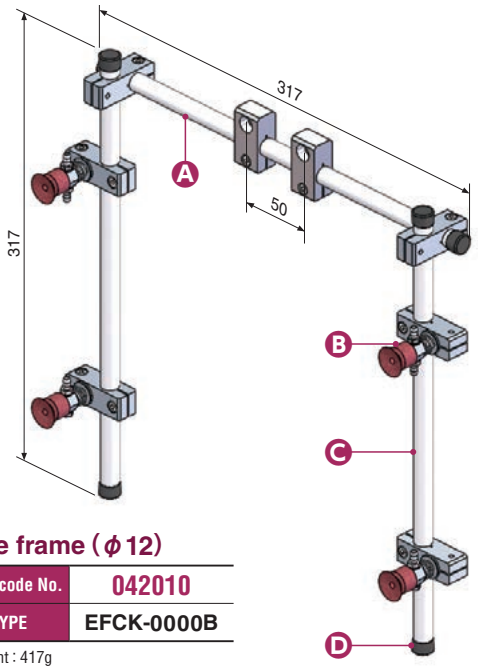




Base Frame Module

Modularized Robot hand parts for jungle gym

● Pipe lengths of SUS pipes specified in each configuration module and components are different from that of base frame.

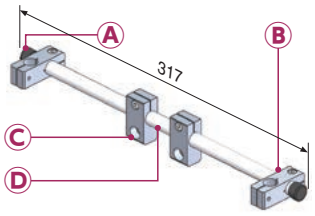


Base frame (φ12)

Order code No.	042010
TYPE	EFCK-0000B

● Weight : 417g

Configuration module		TYPE	Order code No.	No. of uses	Details
A	Base frame for jungle gym	EFCK-0001B	042011	1	5-26
B	Suction module for jungle gym (φ12)	JSM-004	090158	4	5-26
C	Jungle gym SUS pipe φ12	12*0.6*1000	271528	1	5-8
D	Pipe end cap・φ12	R-CAP-12	171339	4	5-9

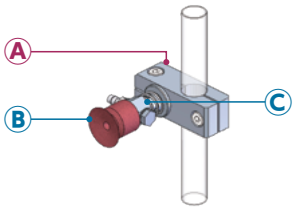


components of EFCK-0000B…A

Order code No.	042011
TYPE	EFCK-0001B

● Weight : 148g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Pipe end cap・φ12	R-CAP-12	171339	2	5-9
B	Cross connector・φ12φ12	N01861-202	131099	2	5-10
C	Attachment bracket・φ12・M6	N01862-201	131118	2	5-13
D	Jungle gym SUS pipe φ12	12*0.6*500	271527	1	5-8



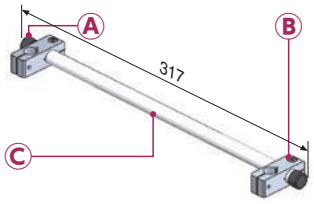
components of EFCK-0000B…B

Order code No.	090158
TYPE	JSM-004

● Weight : 39g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Cross connector・φ12φ12	N01861-202	131099	1	5-10
B	Suction cups (standard/silicon/brown)	VAPH-20C	210194	1	3-4
C	Suction stem for small	VFIL1-S-5-P12	211006	1	3-26

Base frame for jungle gym

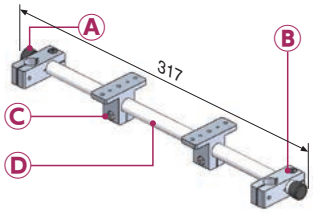


Order code No.	042012
TYPE	EFCK-0002B

● Weight : 96g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Pipe end cap・φ12	R-CAP-12	171339	2	5-9
B	Cross connector・φ12φ12	N01861-202	131099	2	5-10
C	Jungle gym SUS pipe φ12	12*0.6*500	271527	1	5-8

Base frame for jungle gym

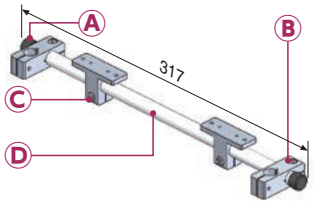


Order code No.	042013
TYPE	EFCK-0003B

● Weight : 151g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Pipe end cap・φ12	R-CAP-12	171339	2	5-9
B	Cross connector・φ12φ12	N01861-202	131099	2	5-10
C	Bracket・TV・φ12・for MCD	N01866-401	131184	2	5-18
D	Jungle gym SUS pipe φ12	12*0.6*500	271527	1	5-8

Base frame for jungle gym

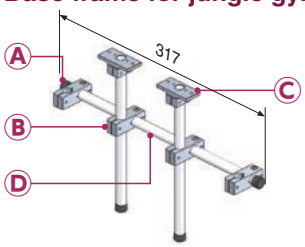


Order code No.	042014
TYPE	EFCK-0004B

● Weight : 144g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Pipe end cap・φ12	R-CAP-12	171339	2	5-9
B	Cross connector・φ12φ12	N01861-202	131099	2	5-10
C	Bracket・TH・φ12・for MCD	N01866-301	131181	2	5-17
D	Jungle gym SUS pipe φ12	12*0.6*500	271527	1	5-8

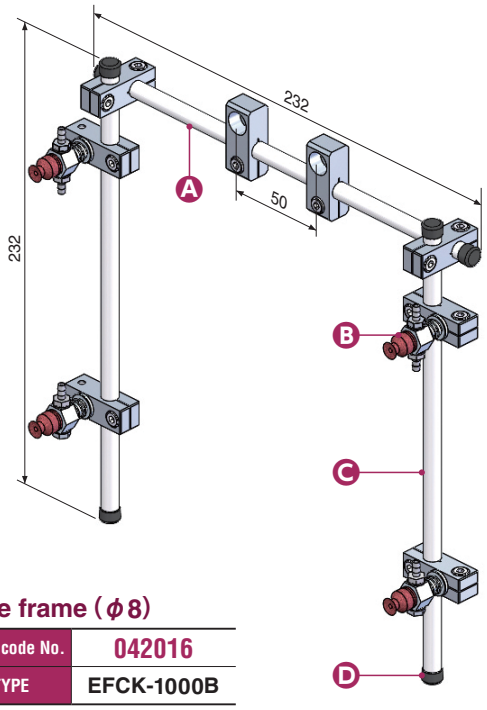
Base frame for jungle gym



Order code No.	042015
TYPE	EFCK-0005B

● Weight : 247g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Pipe end cap・φ12	R-CAP-12	171339	4	5-9
B	Cross connector・φ12φ12	N01861-202	131099	4	5-10
C	Bracket・T・φ12・for MCD	N01866-101	131176	2	5-17
D	Jungle gym SUS pipe φ12	12*0.6*1000	271528	1	5-8

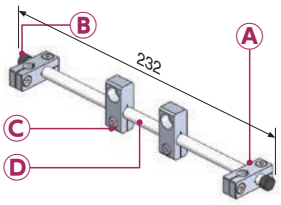


Base frame (ϕ8)

Order code No.	042016
TYPE	EFCK-1000B

● Weight : 202g

Configuration module		TYPE	Order code No.	No. of uses	Details
A	Base frame for jungle gym	EFCK-1001B	042017	1	5-27
B	Suction module for jungle gym (ϕ8)	JSM-001	090155	4	5-27
C	Jungle gym SUS pipeϕ8	8*0.6*500	340905	1	5-8
D	Pipe end cap・ϕ8	R-CAP-8	171338	4	5-9

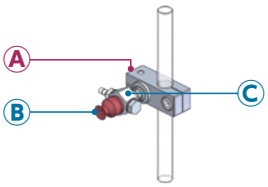


components of EFCK-1000B···A

Order code No.	042017
TYPE	EFCK-1001B

● Weight : 72g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Cross connector・ϕ8ϕ8	N01861-207	131102	2	5-10
B	Pipe end cap・ϕ8	R-CAP-8	171338	2	5-9
C	Attachment bracket・ϕ8・M6	N01862-205	131121	2	5-13
D	Jungle gym SUS pipeϕ8	8*0.6*500	340905	1	5-8

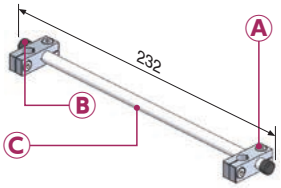


components of EFCK-1000B···B

Order code No.	090155
TYPE	JSM-001

● Weight : 21g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Cross connector・ϕ8ϕ8	N01861-207	131102	1	5-10
B	Suction cups (standard/silicon/brown)	VAPH-8C	210191	1	3-4
C	Suction stem for mini	VFIL2-SS-5-P8	211030	1	3-23

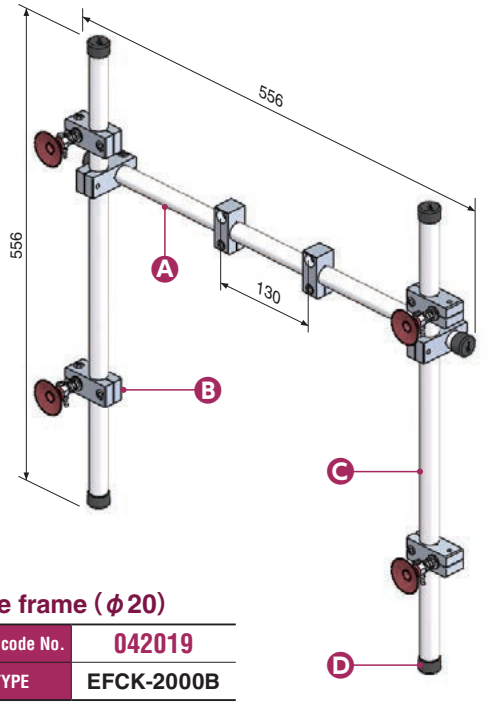


Base frame for jungle gym

Order code No.	042018
TYPE	EFCK-1002B

● Weight : 47g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Cross connector・ϕ8ϕ8	N01861-207	131102	2	5-10
B	Pipe end cap・ϕ8	R-CAP-8	171338	2	5-9
C	Jungle gym SUS pipeϕ8	8*0.6*500	340905	1	5-8

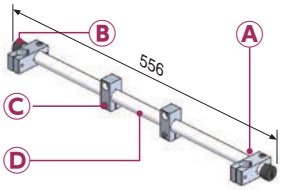


Base frame (ϕ20)

Order code No.	042019
TYPE	EFCK-2000B

● Weight : 1,293g

Configuration module		TYPE	Order code No.	No. of uses	Details
A	Base frame for jungle gym	EFCK-2001B	042020	1	5-27
B	Suction module for jungle gym (ϕ20)	JSM-008	090162	4	5-27
C	Jungle gym SUS pipeϕ20	20*0.8*1500	281814	1	5-8
D	Pipe end cap・ϕ20	R-CAP-20	171340	4	5-9

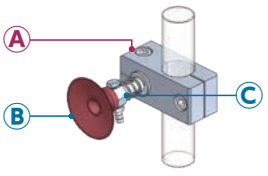


components of EFCK-2000B···A

Order code No.	042020
TYPE	EFCK-2001B

● Weight : 452g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Cross connector・ϕ20ϕ20	N01861-206	131101	2	5-10
B	Pipe end cap・ϕ20	R-CAP-20	171340	2	5-9
C	Attachment bracket・ϕ20・M8	N01862-214	131226	2	5-14
D	Jungle gym SUS pipeϕ8	20*0.8*1000	281813	1	5-8

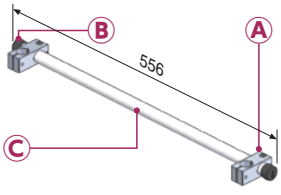


components of EFCK-2000B···B

Order code No.	090162
TYPE	JSM-008

● Weight : 102g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Cross connector・ϕ20ϕ12	N01861-204	131100	1	5-10
B	Suction cups (standard/silicon/brown)	VAPH-40C	210196	1	3-5
C	Suction stem for small	VFIL1-S-5-P12	211006	1	3-26



Base frame for jungle gym

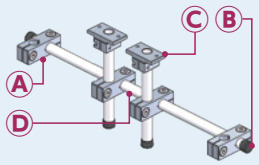
Order code No.	042021
TYPE	EFCK-2002B

● Weight : 358g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Cross connector・ϕ20ϕ20	N01861-206	131101	2	5-10
B	Pipe end cap・ϕ20	R-CAP-20	171340	2	5-9
C	Jungle gym SUS pipeϕ20	20*0.8*1000	281813	1	5-8

Change Method of Sales（Change to Single Sale)

Base frame module（ϕ 8)

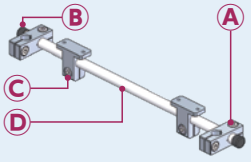


Base frame for jungle gym

Order code No.	041664
TYPE	EFCK-1005

● Weight : 101g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Cross connector・ϕ8ϕ8	N01861-207	131102	4	5-10
Ⓑ Pipe end cap・ϕ8	R-CAP-8	171338	4	5-9
Ⓒ Bracket・T・ϕ8・for UMCD	N01866-102	131177	2	5-17
Ⓓ Jungle gym SUS pipeϕ8	8*0.6*500	340905	1	5-8

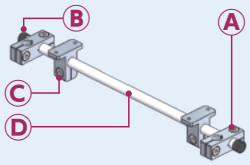


Base frame for jungle gym

Order code No.	041663
TYPE	EFCK-1004

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Cross connector・ϕ8ϕ8	N01861-207	131102	2	5-10
Ⓑ Pipe end cap・ϕ8	R-CAP-8	171338	2	5-9
Ⓒ Bracket・TH・ϕ8・for UMCD	N01866-302	131182	2	5-17
Ⓓ Jungle gym SUS pipeϕ8	8*0.6*500	340905	1	5-8

*Pipe length is 500mm if only SUS pipe ϕ8 is ordered.



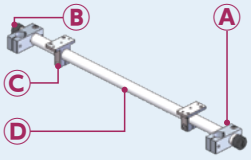
Base frame for jungle gym

Order code No.	041662
TYPE	EFCK-1003

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Cross connector・ϕ8ϕ8	N01861-207	131102	2	5-10
Ⓑ Pipe end cap・ϕ8	R-CAP-8	171338	2	5-9
Ⓒ Bracket・TV・ϕ8・for UMCD	N01866-402	131185	2	5-18
Ⓓ Jungle gym SUS pipeϕ8	8*0.6*500	340905	1	5-8

*Pipe length is 500mm if only SUS pipe ϕ8 is ordered.

Base frame module（ϕ 20)

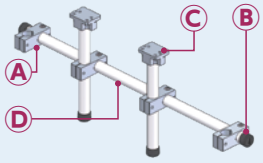


Base frame for jungle gym

Order code No.	041668
TYPE	EFCK-2003

● Weight : 379g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Cross connector・ϕ20ϕ20	N01861-206	131101	2	5-10
Ⓑ Pipe end cap・ϕ20	R-CAP-20	171340	2	5-9
Ⓒ Bracket・TV・ϕ20・for UMCD	N01866-403	131186	2	5-18
Ⓓ Jungle gym SUS pipeϕ20	20*0.8*1000	281813	1	5-8



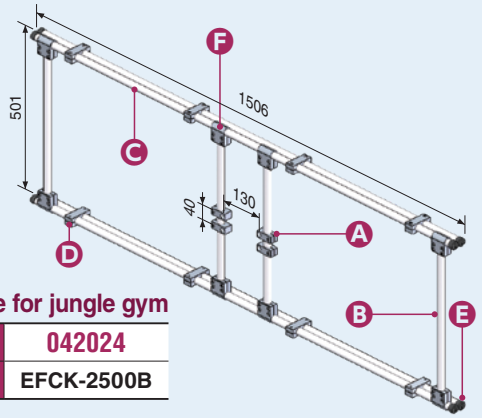
Base frame for jungle gym

Order code No.	041670
TYPE	EFCK-2005

● Weight : 767g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Cross connector・ϕ20ϕ20	N01861-206	131101	4	5-10
Ⓑ Pipe end cap・ϕ20	R-CAP-20	171340	4	5-9
Ⓒ Bracket・T・ϕ20・for UMCD	N01866-103A	131554	2	5-17
Ⓓ Jungle gym SUS pipeϕ20	20*0.8*1000	281813	1	5-8

Base frame（ϕ 20)

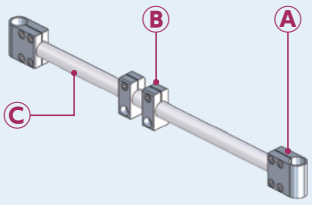


Base frame for jungle gym

Order code No.	042024
TYPE	EFCK-2500B

● Weight : 4,282g

Configuration module	TYPE	Order code No.	No. of uses	Details
Ⓐ Attachment bracket・ϕ20・M8	NO1862-214	131226	4	5-14
Ⓑ Jungle gym SUS pipeϕ20	20*0.8*500	281812	4	5-8
Ⓒ Jungle gym SUS pipeϕ20	20*0.8*1500	281814	4	5-8
Ⓓ Parallel connector・ϕ20ϕ20	N01861-106	131095	8	5-12
Ⓔ Pipe end cap・ϕ20	R-CAP-20	171340	8	5-9
Ⓕ T Connector#2・ϕ20ϕ20	N01861-405	131114	4	5-12

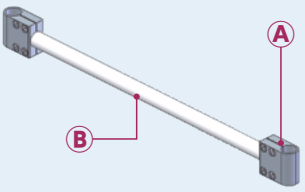


components of EFCK-2500B

Order code No. 041672 / TYPE EFCK-2501

● Weight : 457g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ T Connector#2・ϕ20ϕ20	N01861-405	131114	2	5-12
Ⓑ Attachment bracket・ϕ20・M8	N01862-214	131226	2	5-14
Ⓒ Jungle gym SUS pipeϕ20	20*0.8*500	281812	1	5-8



components of EFCK-2500B

Order code No. 041673 / TYPE EFCK-2502

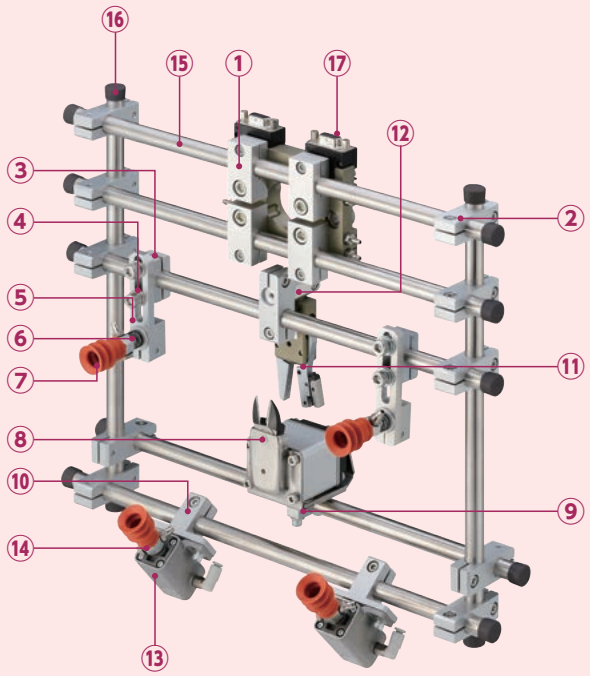
● Weight : 363g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ T Connector#2・ϕ20ϕ20	N01861-405	131114	2	5-12
Ⓑ Jungle gym SUS pipeϕ20	20*0.8*500	281812	1	5-8

Examples of Robot Chuck Production

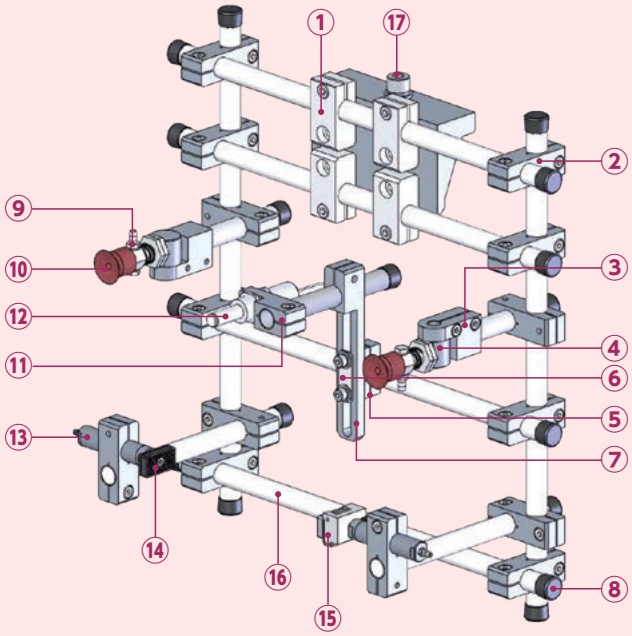
Chuck products based on jungle gym parts.

Examples of Chuck products ①



Configuration parts		TYPE	Order code No.	No. of uses
①	Attachment bracket・φ12・M6	N01862-201	131118	4
②	Cross connector・φ12φ12	N01861-202	131099	11
③	Slide bracket・W・φ12	N01863-101	131128	2
④	Slide washer・W・φ8/φ12	No1863-102	131129	2
⑤	Slide bracket 40・W・φ12	N01863-107	131132	2
⑥	Suction stem for small	VFIL1-S-5-P12	211006	2
⑦	Suction cups	VAPH-20C-3	210661	4
⑧	Mini air nipper・Body・Reverse blade	NW3-35R	131644	1
⑨	Bracket・W・φ12	N01915-106	131068	1
⑩	Bracket・TH・φ12・for MCD	N01866-301	131181	2
⑪	Runner chuck EM (with sensor)	CHE-EM1-12-C	022999	1
⑫	Rotation bracket・φ12・12A	N01864-301	131168	1
⑬	Mini cylinder・MCD	MCD1-10	123219	2
⑭	Suction stem for small・mini cylinder	CP-063B	023195	2
⑮	Jungle gym SUS pipeφ12	12＊0.5＊500	271527	7
⑯	Pipe end cap (black)・φ12	R-CAP-12	171339	14
⑰	Tool Changer・tool side	OX-SBI	140182	1

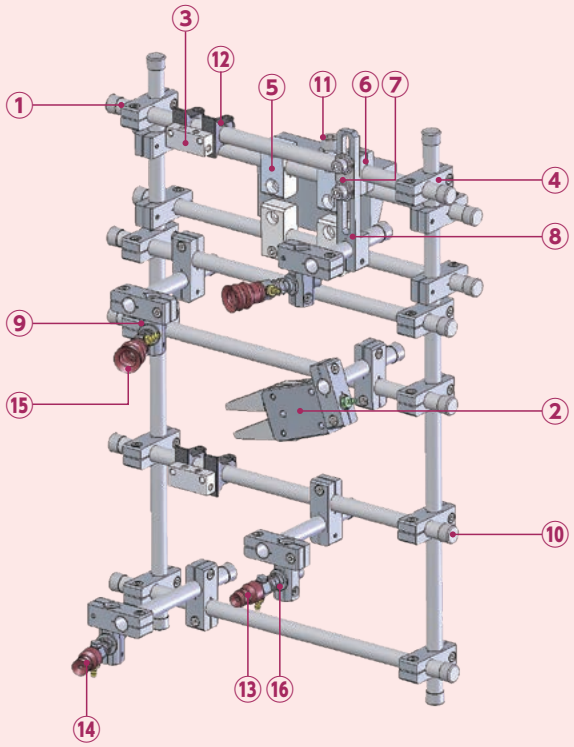
Examples of Chuck products ②



Configuration parts		TYPE	Order code No.	No. of uses
①	Attachment bracket・φ12・M6	N01862-201	131118	4
②	Cross connector・φ12φ12	N01861-202	131099	14
③	Rotation bracket・φ12・8B	N01864-101A	131600	2
④	Rotation bracket・φ8・M12A	N01864-205-2	131433	2
⑤	Slide bracket・W・φ12	N01863-101	131128	1
⑥	Slide washer・W・φ8/φ12	No1863-102	131129	1
⑦	Slide bracket 70・W・φ12	N01863-103	131130	1
⑧	Pipe end cap (black)・φ12	R-CAP-12	171339	17
⑨	Suction stem for small	VFIL-S-5A	210974	2
⑩	Suction cups	VAPH-20C	210194	2
⑪	Connector・for SSW	N01861-108	131097	1
⑫	Star sensor	SSW-15	181139	1
⑬	Cylinder for pipe attachment	MCP1-1210	123699	2
⑭	Pad rectangle black for micro mini cylinder	CPUM-01	022797	1
⑮	Pad rectangle SW for micro mini cylinder	L1131-100	110568	1
⑯	Jungle gym SUS pipeφ12	12＊0.5＊500	271527	7
⑰	Quick Chuck Change・Manual・tool side	OA1-SAI	140257	1

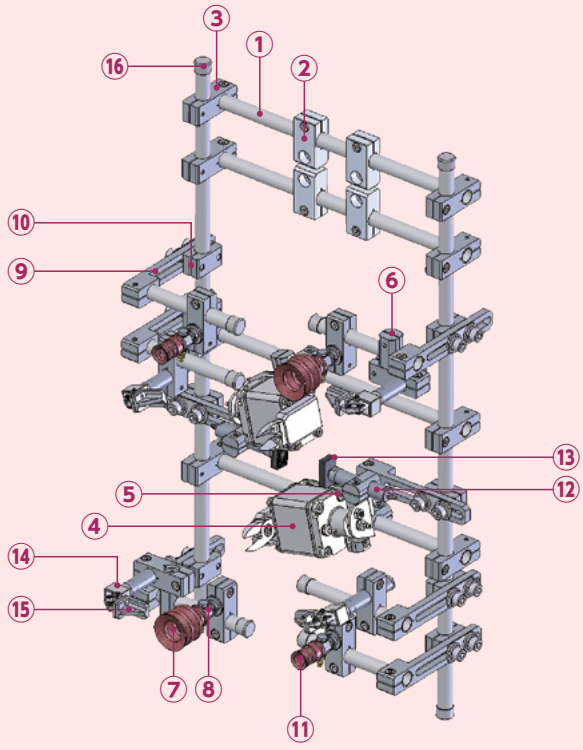
Examples of Robot Chuck Production

Examples of Chuck products ③



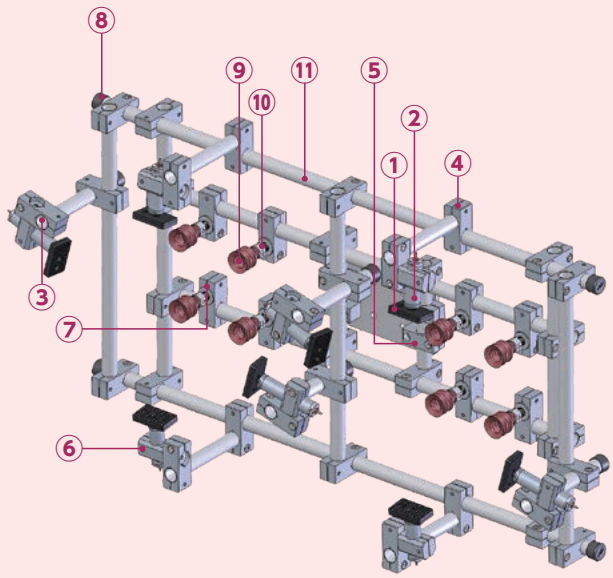
Configuration parts		TYPE	Order code No.	No. of uses
①	Jungle gym SUS pipe φ12	12＊0.6＊500	271527	12
②	Runner chuck EL (w/o sensor)	CHK-EL1-12	022994	1
③	Manifold	MM-6P	122034	2
④	φ12φ12 Cross connector	N01861-202	131099	23
⑤	Attachment bracket・φ12・M6	N01862-201	131118	4
⑥	Attachment bracket・W・φ12	N01863-101	131128	1
⑦	Slide bracket・W・φ8/φ12	N01863-102	131129	1
⑧	Slide bracket 70・W・φ12	N01863-103	131130	1
⑨	Rotation bracket・φ12・12A	N01864-301	131168	4
⑩	Pipe end cap (black)・φ12	R-CAP-12	171339	23
⑪	Quick Chuck Change・Manual・tool side	OA1-SAI	140257	1
⑫	Plastic Fixture (M4)	RCB12	171212	4
⑬	Suction cups	TR-1062-3	196135	1
⑭	Suction cups	TR-1062-4	196136	1
⑮	Bellows cup	VAPH-20C-3	210661	2
⑯	Suction stem for small	VFIL1-S-10-P12	211008	4

Examples of Chuck products ④



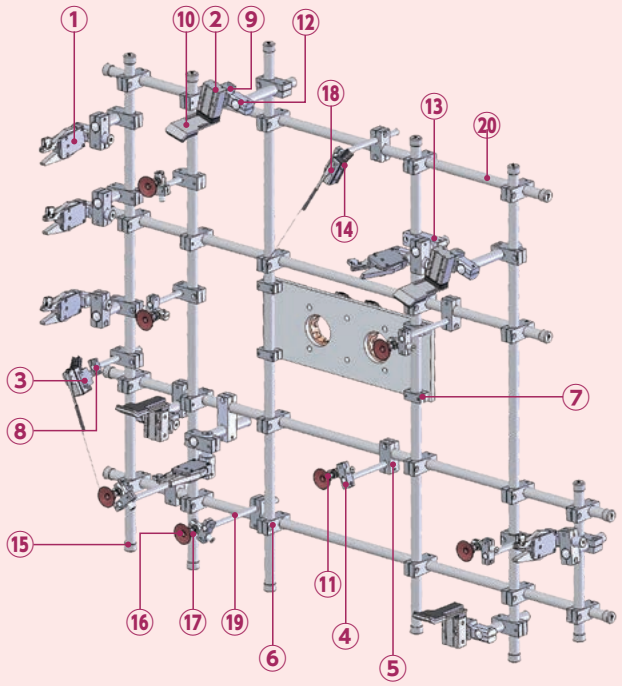
Configuration parts		TYPE	Order code No.	No. of uses
①	Jungle gym SUS pipe φ12	12＊0.6＊500	271527	7
②	Attachment bracket・φ12・M6	N01862-201	131118	4
③	Cross connector・φ12φ12	N01861-202	131099	16
④	Mini air nipper・Body・Reverse blade	NW3-35	131643	2
⑤	Bracket・W・φ12	N01915-106	131068	2
⑥	Rotation bracket・φ12・12A	N01864-301	131168	8
⑦	Bellows cup	VAPH-30C-3	210662	2
⑧	Suction stem for small	VFIL1-S-5-P12	211006	4
⑨	Slide bracket 70・W・φ12	N01863-103	131130	8
⑩	Slide bracket・W・φ12	N01863-101	131128	8
⑪	Bellows cup	VAPH-15C-3	210697	2
⑫	Cylinder for pipe attachment	MCP1-1220	123700	2
⑬	Pad rectangle for micro mini cylinder	CPUM-01	022797	2
⑭	Pipe combination chuck Eφ12・90°	J25410-40A	090204	4
⑮	90 degree flat A	N01871-101	131218	4
⑯	Pipe end cap・φ12	N01902-002	131211	10

Examples of Chuck products ⑤



Configuration parts		TYPE	Order code No.	No. of uses
①	Pad rectangle black 2 holes for mini cylinder	CPL-060	023336	8
②	Cylinder for pipe attachment	MCP1-2010	123701	4
③	Cylinder for pipe attachment	MCP1-2030	123703	4
④	Cross connector・φ20φ20	N01861-206	131101	42
⑤	Attachment bracket・φ20・M6	N01862-207	131123	4
⑥	Rotation bracket・φ20・20A	N01864-304	131171	8
⑦	φ20 Bushing nut M12	N01868-409	131205	8
⑧	Pipe end cap (black)・φ20	R-CAP-20	171340	8
⑨	Bellows cup	VAPH-30C-3	210662	8
⑩	Suction stem・fixed	VFILK-S-M12	210698	8
⑪	Jungle gym SUS pipe	20∗0.8∗1000	281813	8

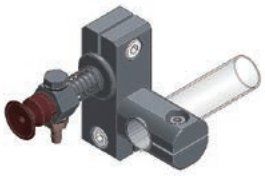
Examples of Chuck products ⑥



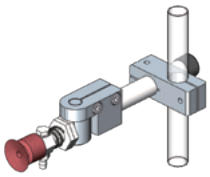
Configuration parts		TYPE	Order code No.	No. of uses
①	Runner chuck EX (with Limit SW)	CHK-EX1-20-C1	023007	6
②	Mini Container Cylinder	NCON-M20W	130711	4
③	Sensor bracket	N01915-201	131077	2
④	Cross connector・φ12φ12	N01861-202	131099	7
⑤	Cross connector・φ20φ12	N01861-204	131100	9
⑥	Cross connector・φ20φ20	N01861-206	131101	36
⑦	Slide bracket・W・φ20	N01863-111	131134	4
⑧	Slide bracket・φ12	N01863-201	131145	2
⑨	bracket・T・φ20・for MCD	N01866-303	131183	4
⑩	Pad・for mini container cylinder	NCON-CP-05	131260	4
⑪	Rotation bracket・φ12・12AL	N01864-301L	131567	7
⑫	Rotation bracket・φ20・20AL	N01864-304L	131568	10
⑬	Cross connector long・φ20・φ20	N01861-206B	131573	2
⑭	Limit switch micro case	OM-1	140039	2
⑮	Pipe end cap・φ20	R-CAP-20	171340	20
⑯	Suction Cups (Standard)	VAPH-40C	210196	7
⑰	Suction stem for small	VFIL1-S-5-P12	211006	7
⑱	Limit switch hinge lever	Z-15GW55-B	250017	2
⑲	Jungle gym SUS pipe φ12	12∗0.6∗1500	271529	1
⑳	Jungle gym SUS pipe φ20	20∗0.8∗1000	281813	4

Use Cases of Parts

Suction Cups Mounting Example

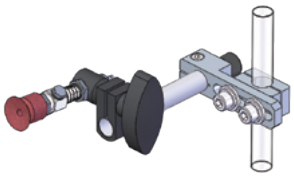


Configuration parts	TYPE	Order code No.
Suction stem mini	VFIL2-SS-10-P12	211034
Suction cups (standard/silicon/brown)	VAPH-14C	210616
Cross connector・φ12φ12	N01861-202	131099
Rotation bracket・φ12・12A	N01864-301	131168



Configuration parts	TYPE	Order code No.
Cross connector・φ12φ12	N01861-202	131099
Rotation bracket・φ12・8B	N01864-101A	131600
Rotation bracket・φ8・M12A	N01864-205	131433
Suction stem for small (M5)	VFIL-S-5A	210974
Suction cups (standard/silicon/brown)	VAPH-20C	210194
Pipe end cap (black)・φ12	R-CAP-12	171339
Jungle gym SUS pipe φ12 ＊	12＊0.6＊500	271527

＊Please cut it at 80mm before use.

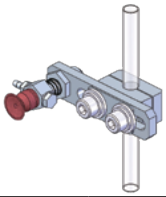


Configuration parts	TYPE	Order code No.
Slide bracket・W・φ12	N01863-101	131128
Slide bracket 40・W・φ12	N01863-107	131132
Pipe end cap (black)・φ12	R-CAP-12	171339
Slide washer・W・φ8／φ12	N01863-102	131129
Suction Stem Non-Rotate for small	VFILB2-SH	211045
Suction cups (standard/silicon/brown)	VAPH-20C	210194
Clip・TMA・φ12＊φ10	TMA-CL (12*10)	196564
Jungle gym SUS pipe φ12 ＊	12＊0.6＊500	271527

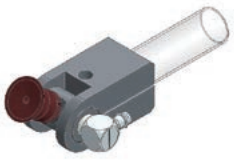
＊Please cut it at 100mm before use.



Configuration parts	TYPE	Order code No.
Suction stem mini	VFIL2-SS-10-P12	211034
Suction cups (standard/silicon/brown)	VAPH-14C	210616
Slide bracket・W・φ12	N01863-101	131128
Slide bracket 40・W・φ12	N01863-107	131132
Slide washer・W・φ8φ12	N01863-102	131129



Configuration parts	TYPE	Order code No.
Slide bracket・W・φ8	N01863-113	131217
Slide washer・W・φ8／φ12	N01863-102	131129
Slide bracket 40・W・M10	N01863-117	131139
Suction stem for mini	VFIL1-SS-5	211029
Suction cups (standard/silicon/brown)	VAPH-14C	210616



Configuration parts	TYPE	Order code No.
Suction cups (standard/silicon/brown)	VAPH-14C	210616
Suction stem attachment head for mini	N01392-201	131208
Suction rotate # B・M5・φ12	N01868-102	131192
Suction rotate # A・φ12	N01868-101	131191

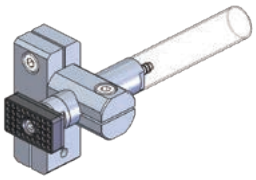
Air Cylinder Mounting Example



Configuration parts	TYPE	Order code No.
Pad rectangle black 2 holes for mini cylinder	CPL-060	023336
Mini cylinder・for MCD	MCD1-10	123219
Bracket・T・φ12・for MCD	N01866-101	131176

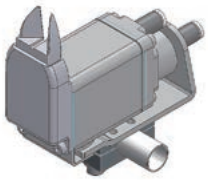


Configuration parts	TYPE	Order code No.
Pad rectangle black SW for mini cylinder	KRCR-5000	101832
Mini cylinder・for MCD	MCD1-10	123219
Bracket・TH・φ12・for MCD	N01866-301	131181



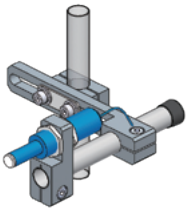
Configuration parts	TYPE	Order code No.
Cylinder for pipe attachment	MCP1-1210	123699
Pad rectangle black for micro mini cylinder	CPUM-01	022797
Cross connector・φ12φ12	N01861-202	131099
Rotation bracket・φ12・12A	N01864-301	131168
Bolt with hexagon socket (trivalent chromate white)	M3＊6	123231

Air Nipper Mounting Example



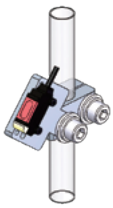
Configuration parts	TYPE	Order code No.
Bracket・W・φ12	N01915-106	131068
Mini air nipper・Body・Standard blade	NW3-20	131629

Sensor Mounting Example



Configuration parts	TYPE	Order code No.
Slide bracket・W・φ12	N01863-101	131128
Slide washer・W・φ8／φ12	N01863-102	131129
Slide bracket 70・W・φ12	N01863-103	131130
Connector・for SSW	N01861-108	131097
Star sensor	SSW-15	181139
Pipe end cap (black)・φ12	R-CAP-12	171339
Jungle gym SUS pipe φ12 ＊	12＊0.6＊500	271527

＊Please cut it at 100mm before use.



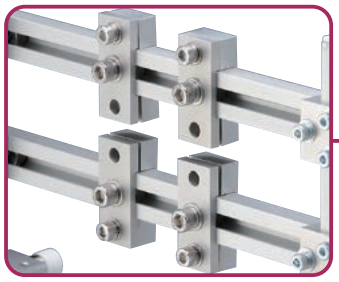
Configuration parts	TYPE	Order code No.
Slide bracket・W・φ12	N01863-101	131128
Sensor bracket	N01915-201	131077
Photo sensor	E3T-SL21R (NPN)	041412

MEMO

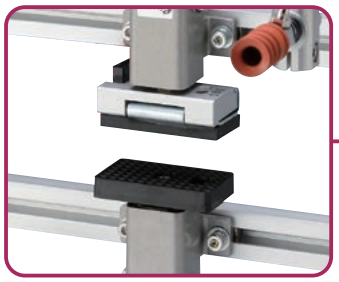
Let's Joint

- Combination of various parts makes it easy to create the robot hand suitable for the shapes of work piece.
- Light weight and easy fabrication.

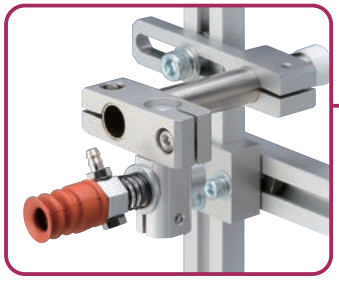
Frame ／ Module

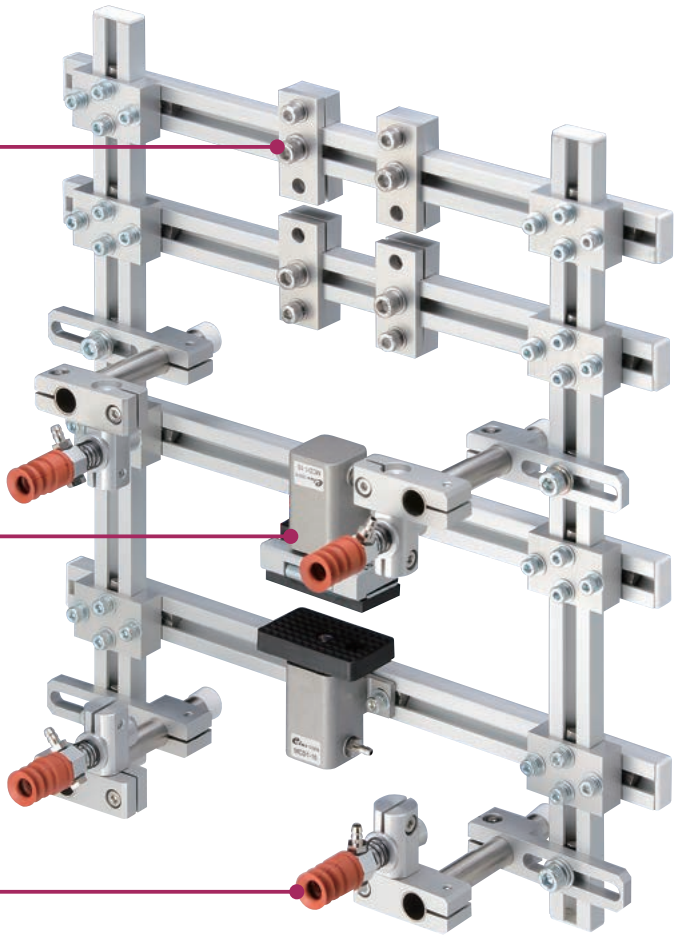


Grip



Suction



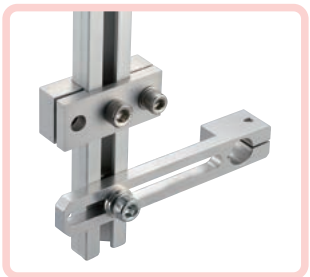


Tubing 6-1

Let's Joint series parts based on three different size of aluminum profile extrusions to buildthe robot hand.
Determine extract method first. And choose your favorite parts from the product list

■Example of using other components parts

- Let's Joint + Connector + Bracket + Nut





Order code No.	271520
TYPE	10＊20＊500



Order code No.	131130
TYPE	N01863-103



Order code No.	131222
TYPE	N01911-204-205SET



Order code No.	131056
TYPE	N01914-103

List of Let's Joint

Various parts can be attached to let's joint frame.

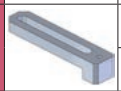
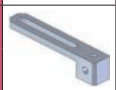
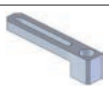
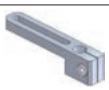


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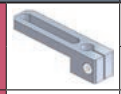
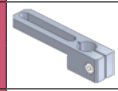
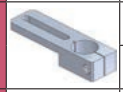
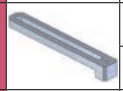
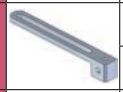
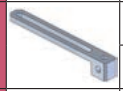
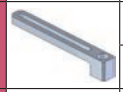
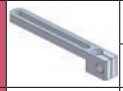
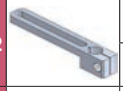
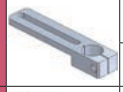
Specification

	Product name		Order code No. TYPE
Frame	Let's joint profile		271520
			10*20*500
			271521
			10*20*1000
			271515
			10*20*1500
			281807
			25*25*500
			281809
			25*25*1000
			281753
			25*25*1500
			281808
			25*50*500
			281810
			25*50*1000
			281754
			25*50*1500
Profile end cap	Profile end cap • 10-20		131213
			N01902-004
	Profile end cap • 25-25		131214
			N01902-005
	Profile end cap • 25-50		131215
			N01902-006
Connector set	Connector 20 • set B		131221
			N01911-201-203SET
	Connector 20 • set C		131222
			N01911-204-205SET
	Connector • 20/25 • set A		131223
			N01911-208-106-201SET
	Connector 25 • set A		131224
			N01911-101-102SET
Connector	Cross connector • 20		131028
			N01911-206
	Cross connector • 25		131019
			N01911-103
	Cross connector • 25/50		131033
			N01911-401

	Product name		Order code No. TYPE
Connector	Cross connector • 50		131032
			N01911-301
	Connector 20 • F		131029
			N01911-207
	Connector 20 • G		131031
			N01911-209
	Cylinder connector 25 • A		131020
			N01911-104
	Cylinder connector 25 • B		131021
			N01911-105
Block	Connector block 50 • B		131040
			N01912-203
	Connector block • for GCYL		131039
			N01912-202
	Connector block • light		131038
			N01912-106
	Connector block 25/50 • A		131041
			N01912-301
	Connector block 25 • C		131035
			N01912-103
	Connector block 25 • D		131036
			N01912-104
Bracket	Slide bracket 40 • M3		131158
			N01863-214
	Slide bracket 40 • M5		131147
			N01863-203
	Slide bracket 40 • M6		131156
			N01863-212
	Slide bracket 40 • PT1/8		131154
			N01863-210
	Slide bracket 40 • W • M10		131139
			N01863-117
	Slide bracket 40 • W • M12		131140
			N01863-118
	Slide bracket 40 • W • M17		131143
			N01863-122
	Slide bracket 40 • ϕ8		131152
			N01863-208

List of Let's Joint

You can check more details such as drawing by eins online shop.

	Product name		Order code No. TYPE
Bracket	Slide bracket 40 • W • ϕ8		131131 N01863-106
	Slide bracket 40 • W • ϕ12		131132 N01863-107
	Slide bracket 40 • W • ϕ20		131137 N01863-114
	Slide bracket 40 • T • W • ϕ8		230051 XL0005-102
	Slide bracket 40 • T • ϕ8		230056 XL0005-107
	Slide bracket 40 • T • ϕ12		230052 XL0005-103
	Slide bracket 40 • T • ϕ20		230054 XL0005-105
	Slide bracket 70 • M3		131159 N01863-217
	Slide bracket 70 • M5		131148 N01863-204
	Slide bracket 70 • M6		131157 N01863-213
	Slide bracket 70 • PT1/8		131155 N01863-211
	Slide bracket 70 • W • M10		131141 N01863-120
	Slide bracket 70 • W • M12		131142 N01863-121
	Slide bracket 70 • W • M17		131144 N01863-124
	Slide bracket 70 • ϕ8		131153 N01863-209
	Slide bracket 70 • W • ϕ8		131133 N01863-110
	Slide bracket 70 • W • ϕ12		131130 N01863-103
	Slide bracket 70 • W • ϕ20		131138 N01863-115
	Slide bracket 70 • T • W • ϕ8		230053 XL0005-104

	Product name		Order code No. TYPE
Bracket	Slide bracket 70 • T • ϕ8		230057 XL0005-108
	Slide bracket 70 • T • ϕ12		230050 XL0005-101
	Slide bracket 70 • T • ϕ20		230055 XL0005-106
	Swing Bracket		131065 N01915-102
	Connector bracket 25 • E		131037 N01912-105
	Suction link bracket • M12		131090 N01918-201
	Cylinder bracket • ϕ8		131075 N01915-113
	Cylinder bracket • ϕ12		131074 N01915-112
	Cylinder bracket • ϕ20		131066 N01915-103
	Link bracket 25/50		131034 N01911-402
	Chuck bracket • ϕ12		131067 N01915-105
	Sensor bracket		131077 N01915-201
	Nipper bracket • D		131081 N01915-304
	Nipper bracket • E		131082 N01915-305
	Bracket • NCON		131083 N01915-401
	Bracket • ϕ8		131073 N01915-111
	Bracket • ϕ12		131071 N01915-109
	Bracket • ϕ20		131072 N01915-110
	Bracket • W • ϕ8		131070 N01915-108



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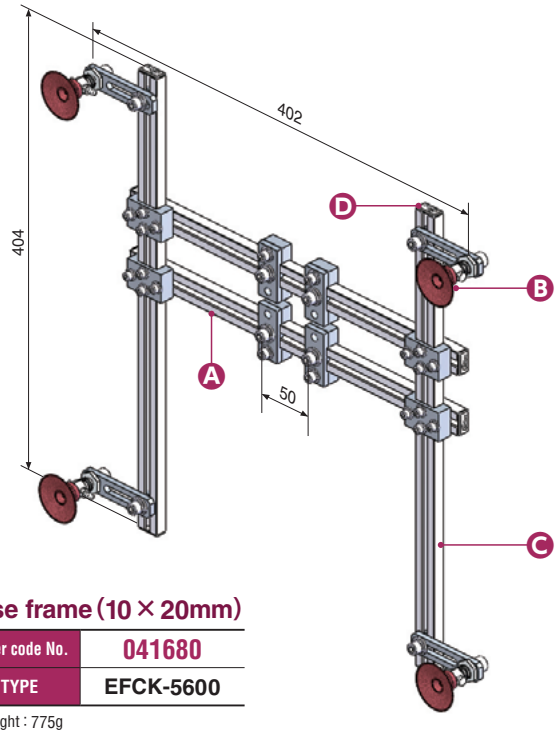
	Product name		Order code No. TYPE
Bracket	Bracket • W • ϕ12		131068 N01915-106
	Bracket • W • ϕ20		131069 N01915-107
	Rotation bracket • ϕ20		131064 N01915-101
Plate	Connect plate 20 • A		131413 N01913-201
	Connect plate 25 • A		131406 N01913-101
	Connect plate 25 • B		131407 N01913-102
	Connect plate 25 • C		131405 N01913-103
	Connect plate 25 • D		131408 N01913-104
	Connect plate 25 • F		131410 N01913-106
	Connect plate 25 • G		131411 N01913-107
	Connect plate 25 • H		131412 N01913-108
	Connect plate 25/50 • A		131416 N01913-401
	Connect plate 50 • A		131414 N01913-301
	Connect plate 50 • B		131415 N01913-302
Washer	Washer A • for let's joint		131087 N01918-102
	Washer B • for let's joint		131088 N01918-103
Nut	Nut • M4		131061 N01914-108
	Nut • M4 • 2P • 32、M5 • 2P • 28		131063 N01914-202
	Nut • M4 • 2P • 38、M3 • 2P • 20		131062 N01914-201

	Product name		Order code No. TYPE
Nut	Nut • M6		131056 N01914-103
	Nut • M6 • 2P • 12		131055 N01914-102
	Nut • M6 • 2P • 15		131054 N01914-101
	Nut • M6 • 2P • 20		131058 N01914-105
	Nut • M6 • 2P • 25		131059 N01914-106
	Nut • M6 • 3P • 15		131057 N01914-104
	Nut • M6 • 3P • 30		131060 N01914-107
Guide bar	Guide bar • 100		131084 N01916-201
	Guide bar • 200		131085 N01916-202
Spacer	Spacer 25 • T5 • P25		131086 N01918-101
Plate	Attach plate • A		131091 N01918-301

Base Frame Module

Modularized hand parts for let's joint.

You can check more details such as drawing by eins online shop.

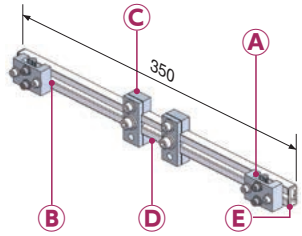


Base frame (10 × 20mm)

Order code No.	041680
TYPE	EFCK-5600

● Weight : 775g

Configuration module		TYPE	Order code No.	No. of uses	Details
A	Base frame for let's joint.	EFCK-5601	041681	2	5-38
B	Suction module for let's joint.	LSM-003	110571	4	5-39
C	Let's joint profile	10*20*500	271520	2	5-35
D	Profile end cap・10-20	N01902-004	131213	4	5-35



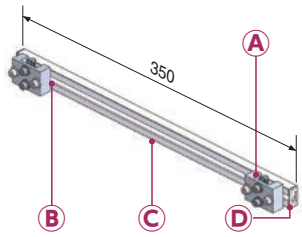
components of EFCK-5600…A

Order code No.	041681
TYPE	EFCK-5601

● Weight : 180g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Connector 20・F	N01911-207	131029	2	5-35
B	Nut・M4	N01914-108	131061	8	5-37
C	Connector 20・set C	N01911-204-205set	131222	2	5-35
D	Let's joint profile	10*20*500	271520	1	5-35
E	Profile end cap・10-20	N01902-004	131213	2	5-35

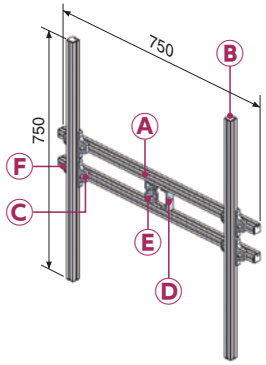
Base frame for let's joint.



Order code No.	041682
TYPE	EFCK-5602

● Weight : 130g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Connector 20・F	N01911-207	131029	2	5-35
B	Nut・M4	N01914-108	131061	8	5-37
C	Let's joint profile	10*20*500	271520	1	5-35
D	Profile end cap・10-20	N01902-004	131213	2	5-35

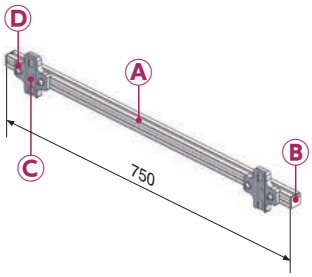


Base frame (25 × 25mm)

Order code No.	041683
TYPE	EFCK-7000

● Weight : 3,114g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Let's joint・25*25*1500	25*25*1500	281753	2	5-35
B	Profile end cap・25・25	N01902-005	131214	8	5-35
C	Cross connector・25	N01911-103	131019	4	5-35
D	Connector block 25・C	N01912-103	131035	4	5-35
E	Nut・M6・2P・15	N01914-101	131054	4	5-37
F	Nut・M6	N01914-103	131056	16	5-37



Base frame for let's joint.

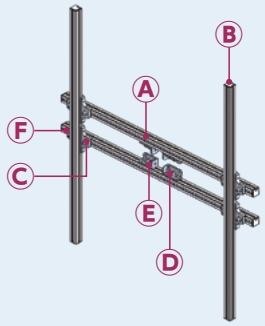
Order code No.	041685
TYPE	EFCK-7002

● Weight : 961g

Configuration parts		TYPE	Order code No.	No. of uses	Details
A	Let's joint・25*25*1000	25*25*1000	281809	1	5-35
B	Profile end cap・25・25	N01902-005	131214	2	5-35
C	Cross connector・25	N01911-103	131019	2	5-35
D	Nut・M6	N01914-103	131056	8	5-37

Switch to a single sale as the sales method.

Change in sales method



Base frame

Order code No.	041686
TYPE	EFCK-7500

● Weight : 3,476g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Let's joint・25＊25＊1500	25＊25＊1500	281753	2	5-35
Ⓑ Profile end cap・25・25	N01902-005	131214	8	5-35
Ⓒ Cross connector・25	N01911-103	131019	4	5-35
Ⓓ Connector block 25・D	N01912-104	131036	4	5-35
Ⓔ Nut・M6・2P・15	N01914-101	131054	4	5-37
Ⓕ Nut・M6	N01914-103	131056	16	5-37

＊PROFILE length is 1,500mm if only PROFILE is ordered.



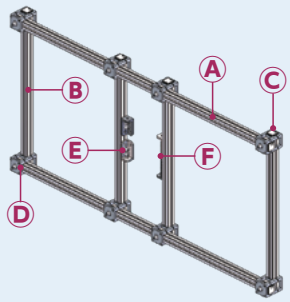
Base frame for let's joint.

Order code No.	041684
TYPE	EFCK-7001

● Weight : 1,030g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Cross connector・25	N01911-103	131019	2	5-35
Ⓑ Connector block 25・D	N01912-104	131036	2	5-35
Ⓒ Nut・M6・2P・15	N01914-101	131054	2	5-37
Ⓓ Profile end cap・25・25	N01902-005	131214	2	5-35
Ⓔ PROFILE25＊25	25＊25＊500	281807	1	5-35

＊PROFILE length is 500mm if only PROFILE is ordered.



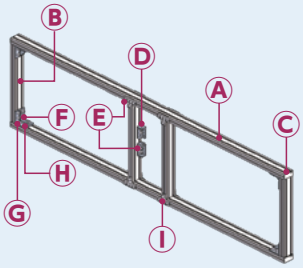
Base frame

Order code No.	041689
TYPE	EFCK-7600

● Weight : 3,992g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Let's joint・25＊25＊1000	25＊25＊1000	281809	2	5-35
Ⓑ Let's joint・25＊25＊500	25＊25＊500	281807	4	5-35
Ⓒ Profile end cap・25・25	N01902-005	131214	12	5-35
Ⓓ Connector 25・set A	N01911-101-102SET	131224	8	5-35
Ⓔ Connector block 25・D	N01912-104	131036	4	5-35
Ⓕ Nut・M6・2P・15	N01914-101	131054	4	5-37

＊PROFILE length is 1,000 and 500mm if only PROFILE is ordered.



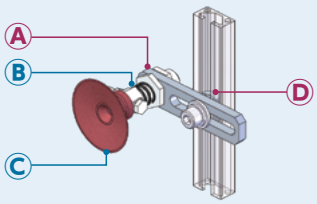
Base frame

Order code No.	041692
TYPE	EFCK-8000

● Weight : 7,612g

Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Let's joint・25＊50＊1500	25＊50＊1500	281754	2	5-35
Ⓑ Let's joint・25＊50＊500	25＊50＊500	281808	4	5-35
Ⓒ Profile end cap・25・50	N01902-006	131215	4	5-35
Ⓓ Connector block 25・D	N01912-104	131036	4	5-35
Ⓔ Nut・M6・2P・15	N01914-101	131054	20	5-37
Ⓕ Connector block 50・B	N01912-203	131040	4	5-35
Ⓖ Nut・M6・2P・20	N01914-105	131058	8	5-37
Ⓗ Nut・M6・2P・25	N01914-106	131059	8	5-37
Ⓘ Connector plate 25・D	N01913-104	131408	8	5-37

＊PROFILE length is 1,500 and 500mm if only PROFILE is ordered.



Suction module for let's joint.

Order code No.	110571
TYPE	LSM-003

● Weight : 50g

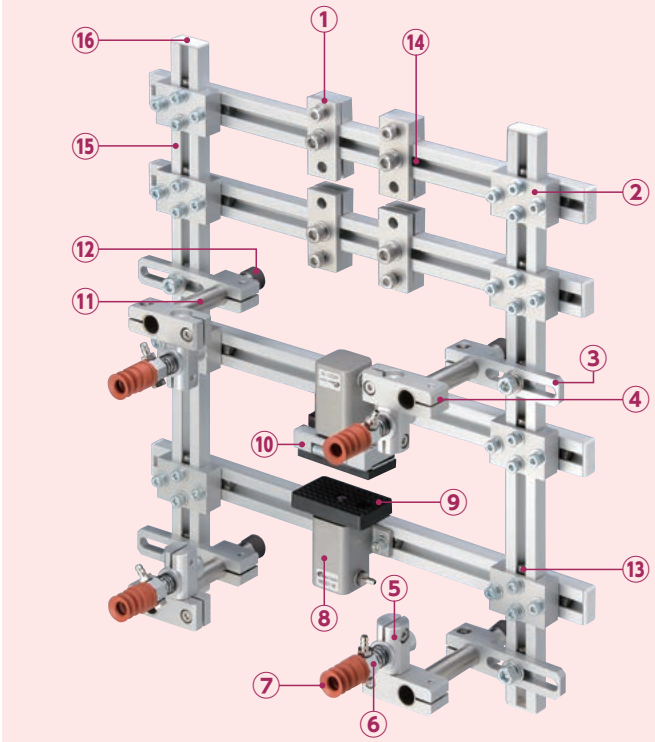
Configuration parts	TYPE	Order code No.	No. of uses	Details
Ⓐ Slide bracket 40・W・M12	N01863-118	131140	1	5-35
Ⓑ Suction stem for small	VFIL-S-5A	210974	1	3-26
Ⓒ Suction cups (standard/silicon/brown)	VAPH-40C	210196	1	3-5
Ⓓ Nut・M6	N01914-103	131056	1	5-37

＊Components of EFCK-5600 Ⓑ

Examples of Robot Chuck Production

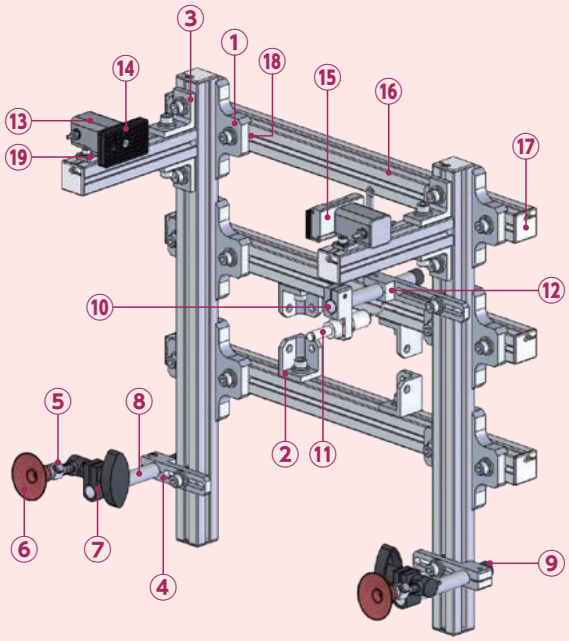
Chuck parts based on Lets's joint parts.

Examples of Chuck products ①



Configuration parts		TYPE	Order code No.	No. of uses
①	Connector 20・set C	N01911-201-203SET	131222	4
②	Connector 20F	N01911-207	131029	8
③	Slide 40BKT・W・φ12	N01863-107	131132	4
④	Cross connector・φ12φ12	N01861-202	131099	4
⑤	Rotation bracket・φ12・12A	N01864-301	131600	4
⑥	Suction stem for small	VFIL1-S-5-P12	211006	4
⑦	Suction cups	VAPH-20C-3	210661	4
⑧	Mini cylinder・MCD	MCD1-10	123219	2
⑨	Pad rectangle black 2 holes for mini cylinder	CPL-060	023336	1
⑩	Pad rectangle w/ SW for mini cylinder	KRCR-5000	101832	1
⑪	SUS pipe φ12	12＊0.5＊500	271527	1
⑫	Pipe end cap (Black)・φ12	R-CAP-12	171339	4
⑬	Nut・M4	N01914-108	131061	36
⑭	Nut・M6	N01914-103	131056	4
⑮	Frame (Let's joint)	10*20*1000	271515	3
⑯	Profile end cap・10-20	N01902-004	131213	12

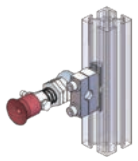
Examples of Chuck Production ②



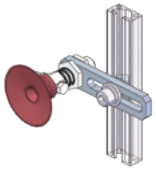
Configuration parts		TYPE	Order code No.	No. of uses
①	Cross connector・20	N01911-103	131019	6
②	Connector block・25・D	N01912-104	131036	4
③	Connector block Light	N01912-106	131038	4
④	Slide 40BKT・W・φ12	N01863-107	131132	2
⑤	Suction stem for small	VFIL1-S-5-P12	211006	2
⑥	Suction cups	VAPH-40C	210196	2
⑦	Clip・TMA・φ12＊φ12	TMA-CL(12＊12)	196562	2
⑧	SUS pipe φ12	12*0.5*500	271527	1
⑨	Pipe end cap (Black)・φ12	R-CAP-12	171339	3
⑩	Connector・for SSW	N01861-108	131097	1
⑪	Star sensor	SSW-15	181139	1
⑫	Bracket・W・φ12	N01915-106	131068	1
⑬	Mini cylinder・MCD	MCD1-10	123219	2
⑭	Pad rectangle black 2 holes for mini cylinder	CPL-060	023336	1
⑮	Pad rectangle w/ SW for mini cylinder	KRCR-5000	101832	1
⑯	Frame (Let's joint)	25＊25＊500	281807	6
⑰	Profile end cap・25-25	N01902-005	131214	12
⑱	Nut・M6	N01914-103	131056	40
⑲	Nut・M4　2P32.M3 2P28	N01914-202	131063	2

Use Cases of Parts

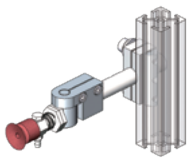
Suction Cups Mounting Example



Configuration parts	TYPE	Order code No.
Bracket・ϕ8	N01915-111	131073
Rotation bracket・ϕ8・M12A	N01864-205	131433
Suction stem for small	VFIL-S-5A	210974
Suction cups (standard/silicon/brown)	VAPH-20C	210194
Nut・M4	N01914-108	131061
Slide washer・ϕ8／ϕ12	N01863-202	131146
Bolt with hexagon socket (trivalent chromate white)	M4＊25	122798
for M4 SW、flat W	M4	122773、122778



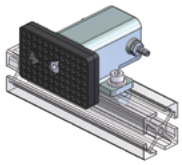
Configuration parts	TYPE	Order code No.
Slide bracket 40・W・M12	N01863-118	131140
Suction stem for small	VFIL-S-5A	210974
Suction cups (standard/silicon/brown)	VAPH-40C	210196
Nut・M6	N01914-103	131056
Bolt with hexagon socket (SW＋flat W) (trivalent chromate white)	M6＊15 (E)	122821



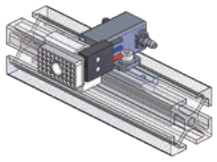
Configuration parts	TYPE	Order code No.
Nut・M6・3P・15	N01914-104	131057
Chuck bracket・ϕ12	N01915-105	131067
Rotation bracket・ϕ12・8B	N01864-101A	131600
Rotation bracket・ϕ8・M12A	N01864-205	131433
Suction stem for small	VFIL-S-5A	210974
Suction cups (standard/silicon/brown)	VAPH-20C	210194
Pipe end cap (black)・ϕ12	R-CAP-12	171339
Jungle gym SUS pipe ϕ12 ＊	12＊0.6＊500	271527
Bolt with hexagon socket (trivalent chromate white)	M6＊25	122969
for M6 SW、flat W	M6	122775、122780

＊Please cut it at 80mm before use.

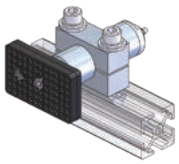
Air Cylinder Mounting Example



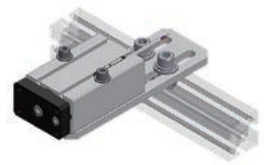
Configuration parts	TYPE	Order code No.
Mini cylinder・MCD1	MCD1-10	123219
Pad rectangle black 2 holes for mini cylinder	CPL-060	023336
Nut・M4・2P・38、M3・2P・20	N01914-201	131062
Fitting	BF-5	190109
Bolt with hexagon socket (SW＋flat W) (trivalent chromate white)	M4＊12 (E)	122812
Bolt with hexagon socket (trivalent chromate white)	M4＊10	122795



Configuration parts	TYPE	Order code No.
Micro mini cylinders	UMCD-10	200123
Pad rectangle w/ SW for micro mini cylinder	L1131-100	110568
Nut・M4・2P・38、M3・2P・20	N01914-201	131062
Fitting	BF-3	010473
Bolt with hexagon socket (trivalent chromate white)	M3＊10	122790
for M3 SW、flat W	M3	122772、122777
Bolt with hexagon socket (trivalent chromate white)	M3＊8	123232

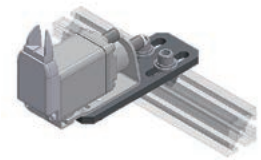


Configuration parts	TYPE	Order code No.
Cylinder for pipe attachment	MCP1-2010	123701
Pad rectangle black 2 holes for mini cylinder	CPL-060	023336
Bracket・W・ϕ20	N01915-107	131069
Nut・M6・3P・15	N01914-104	131057
Bolt with hexagon socket (trivalent chromate white)	M6＊35	122989
for M6 SW、flat W	M6	122775、122780
Bolt with hexagon socket (trivalent chromate white)	M4＊10	122795



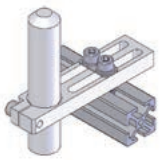
Configuration parts	TYPE	Order code No.
Pad・for mini container cylinder	NCON-CP-01	131256
Mini container cylinder	NCON-M15S	131015
Bracket・NCON	N01915-401	131083
Nut・M6・2P・20	N01914-105	131058

Air Nipper Mounting Example



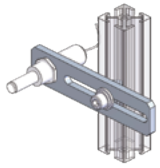
Configuration parts	TYPE	Order code No.
Mini air nipper・Body・Standard blade	NW3-20	131629
Nipper bracket・D	N01915-304	131081
Nut・M6・2P・20	N01914-105	131058

Guide bar Mounting Example

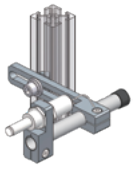


Configuration parts	TYPE	Order code No.
Guide bar・100	N01916-201	131084
Cylinders bracket・ϕ20	N01915-103	131066
Nut・M6・2P・20	N01914-105	131058
Washer B for let's joint	N01918-103	131088

Sensor Mounting Example

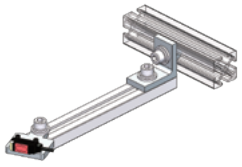


Configuration parts	TYPE	Order code No.
Slide bracket 70・W・M17	N01863-124	131144
Star sensor	SSW-15	181139
Nut・M6	N01914-103	131056
Bolt with hexagon socket (SW＋flat W) (trivalent chromate white)	M6＊15 (E)	122821



Configuration parts	TYPE	Order code No.
Slide bracket 70・W・ϕ12	N01863-103	131130
Connector・for SSW	N01861-108	131097
Star sensor	SSW-15	181139
Pipe end cap (Black)・ϕ12	R-CAP-12	171339
Nut・M6	N01914-103	131056
Jungle gym SUS pipe ϕ12 ＊	12＊0.6＊500	271527
Bolt with hexagon socket (SW＋flat W) (trivalent chromate white)	M6＊15 (E)	122821

＊Please cut it at 100mm before use.

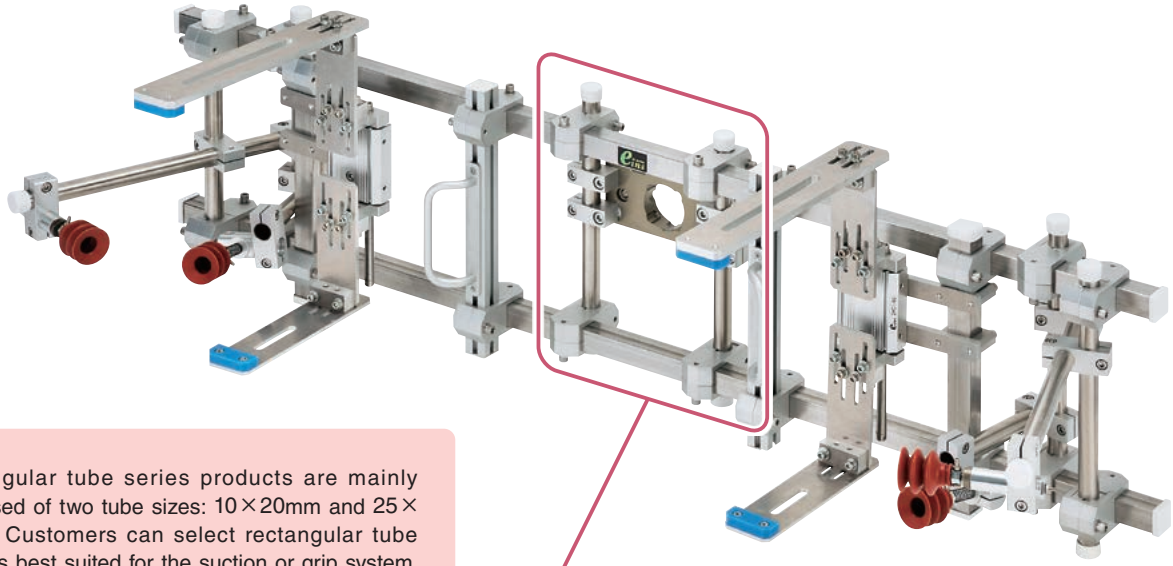


Configuration parts	TYPE	Order code No.
Connector block・light	N01912-106	131038
Sensor bracket	N01915-201	131077
Photo sensor	E3T-SL21R (NPN)	041412
Nut・M6	N01914-103	131056
Let's joint profile ＊	10＊20＊500	271520
Bolt with hexagon socket (SW＋flat W) (trivalent chromate white)	M6＊15 (E)	122821

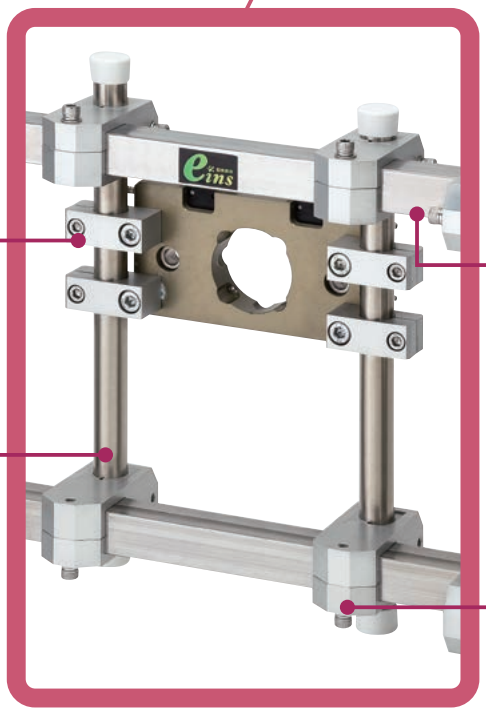
＊Please cut it at 150mm before use.

Rectangular Tube

- Light weight, strong,and better rotate resistance.
- Combination of various parts makes it easy to create the robot hand suitable for the shapes of work piece.



Rectangular tube series products are mainly composed of two tube sizes: 10×20mm and 25×25mm. Customers can select rectangular tube products best suited for the suction or grip system. Using the transformation block allows combinations of jungle gym parts.



Attachment bracket • ϕ20 • M8 5-14



Tubing 6-1

Rectangular tube

5-45



Cross connector • 25-25



Conversion block • 25-ϕ20

5-8

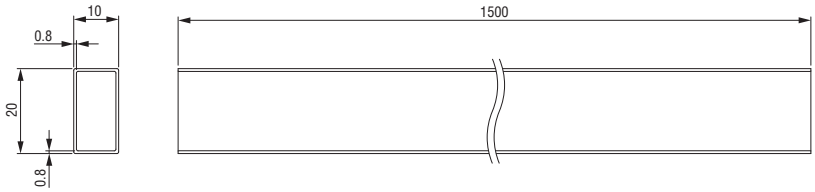


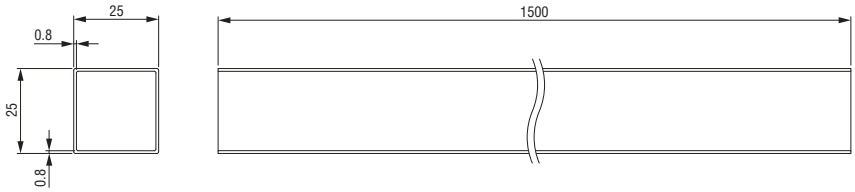
Jungle gym SUS pipe ϕ20

Rectangular Tube ／ Pipe End Cap

Attaches various kinds of components based on the rectangular tube.







Rectangular tube

＊Diameter of a pipe may expand when you cut the pipe.

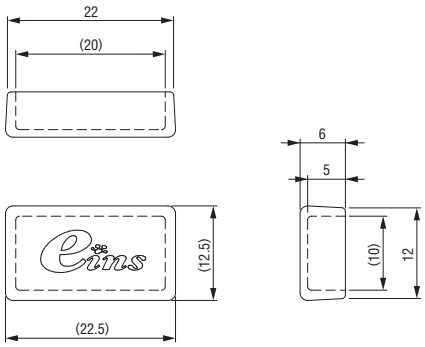
Order code No.	185124
TYPE	S10＊20＊1500

● Weight : 535g

Order code No.	185125
TYPE	S25＊25＊1500

● Weight : 895g



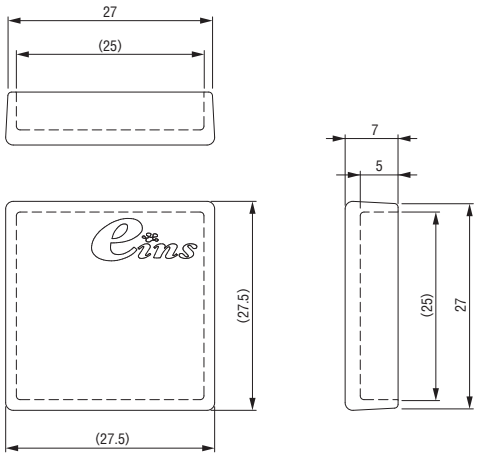


Pipe end cap • 10＊20

Order code No.	185219
TYPE	S-CAP 10-20

● Weight : 1g





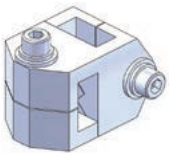
Pipe end cap • 25＊25

Order code No.	185218
TYPE	S-CAP 25-25

● Weight : 3g

Rectangular Tube Series Parts

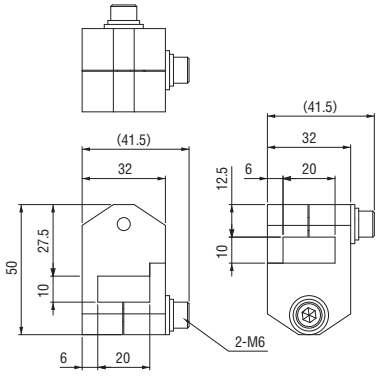
Securely fixes the Let's SUS square pipe by precision processing.

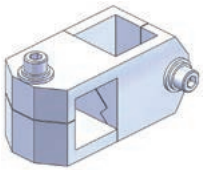


Cross connector • 10-20

Order code No.	185126
TYPE	S-CROSS 10-20

● Weight : 102g

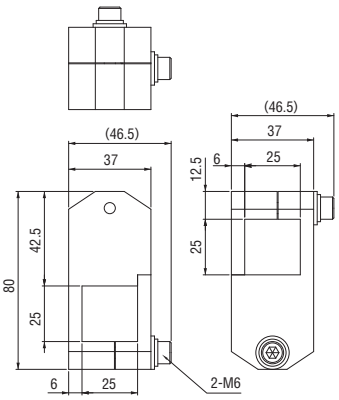


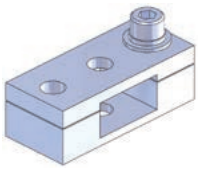


Cross connector • 25-25

Order code No.	185127
TYPE	S-CROSS 25-25

● Weight : 170g

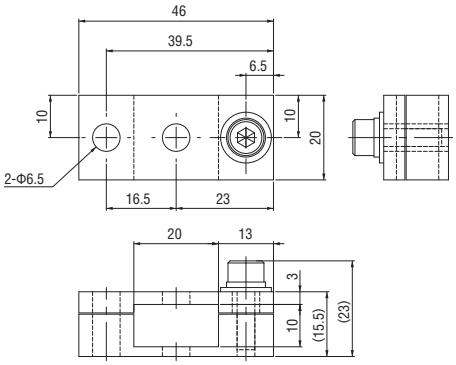


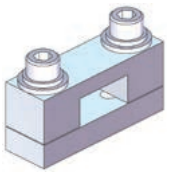


Attachment bracket • 10-20 • M6

Order code No.	185128
TYPE	S-ATBR 10-20 • M6

● Weight : 30g

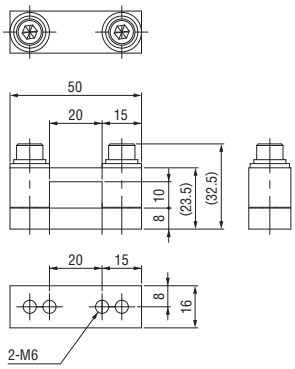


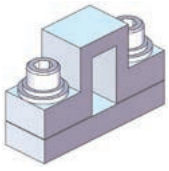


Slide bracket • 10-20

Order code No.	185129
TYPE	S-SLBR 10-20

● Weight : 55g

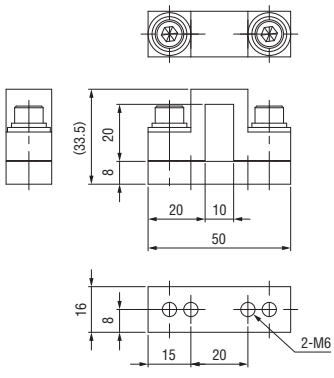


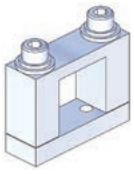


Slide bracket • 20-10

Order code No.	185130
TYPE	S-SLBR 20-10

● Weight : 57g

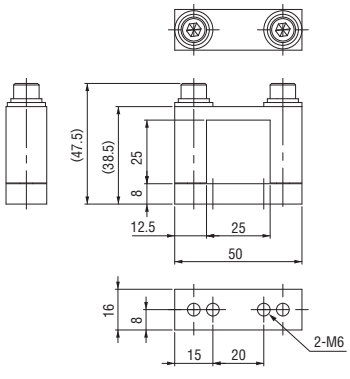


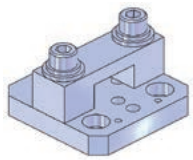


Slide bracket • 25-25

Order code No.	185131
TYPE	S-SLBR 25-25

● Weight : 73g

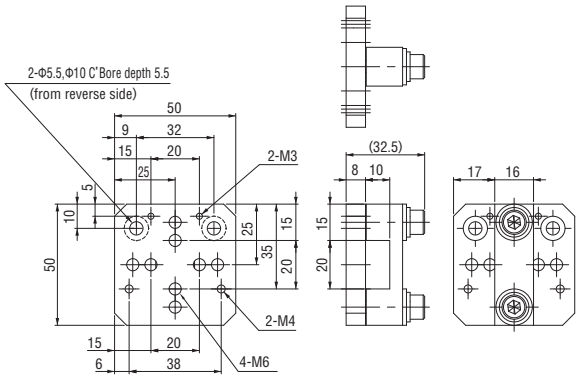


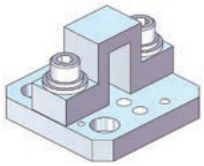


Bracket • 10 • MCD

Order code No.	185132
TYPE	S-BR10 MCD

● Weight : 87g

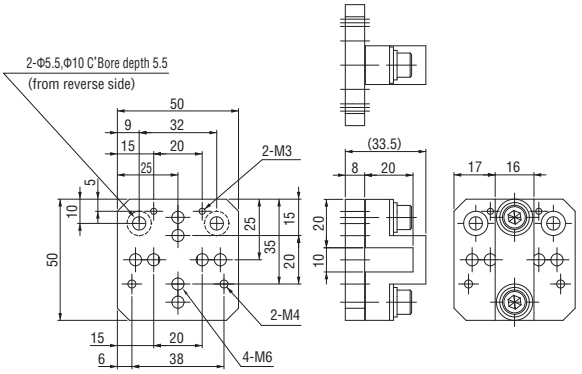


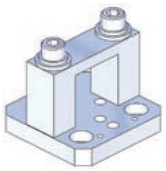


Bracket • 20 • MCD

Order code No.	185133
TYPE	S-BR20 MCD

● Weight : 90g

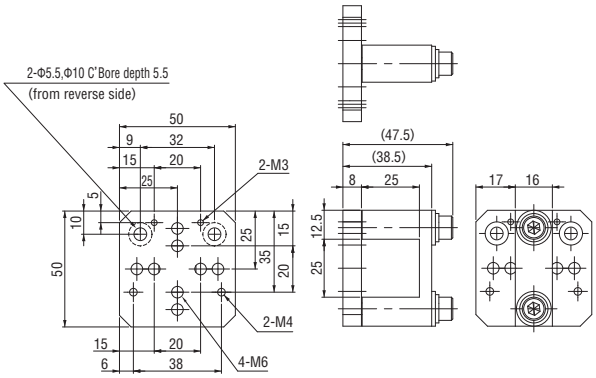


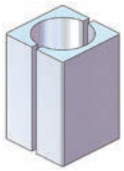


Bracket • 25 • MCD

Order code No.	185134
TYPE	S-BR25 MCD

● Weight : 105g



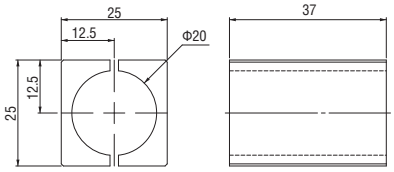


Conversion block • 25- ϕ 20

Order code No.	185135
TYPE	S-CBL25-D20

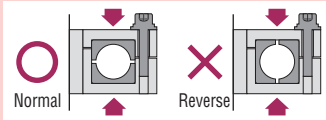
● Weight : 31g

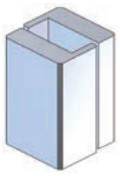
Convert to rectangular tube 25x25 inner dimension to jungle gym ϕ 20.



Notes on use

Reverse attachment prevents fixing of conversion block.



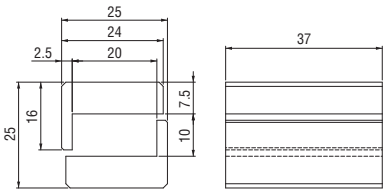


Conversion block • 25-10-20

Order code No.	185136
TYPE	S-CBL25-10-20

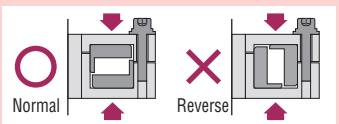
● Weight : 42g

Convert to rectangular tube 25x25 inner dimension to rectangular tube 10x20.



Notes on use

Reverse attachment prevents fixing of conversion block.

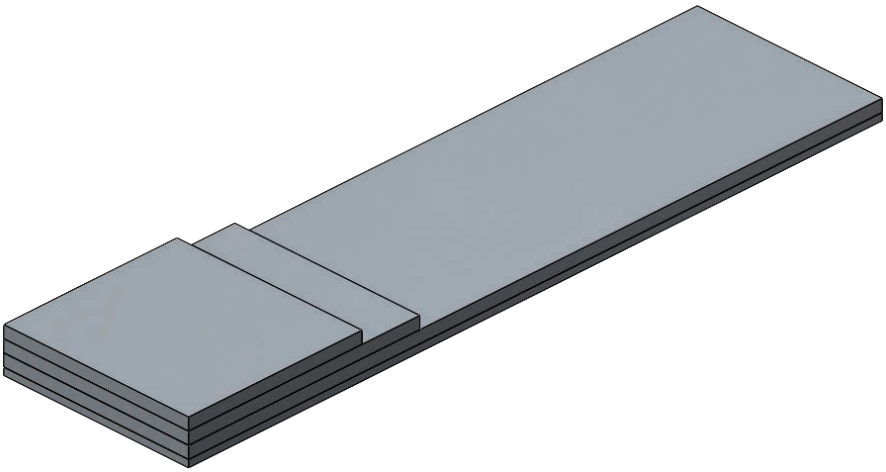


■Leading connection

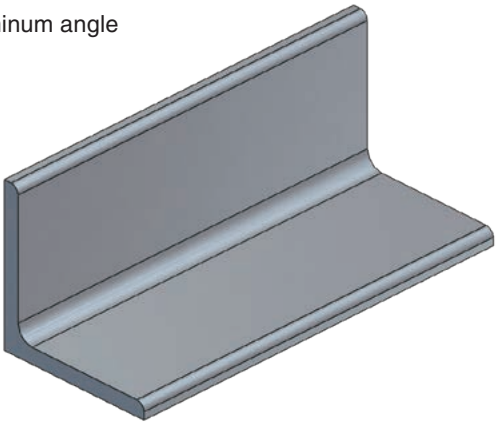
	Countermeasures	Page of details
Pitch 20-M3	Micro mini cylinders	2-4
Pitch 38-M4	Mini cylinder	2-4
Pitch 32-C'Bore	Mini container cylinder	2-19
Pitch 20-M6	Slide bracket ϕ 8, ϕ 12	5-15
	Slide bracket	5-21,22,23,24
	Nipper bracket	5-36
	Bracket • NCON	5-36

Base Aluminum Material

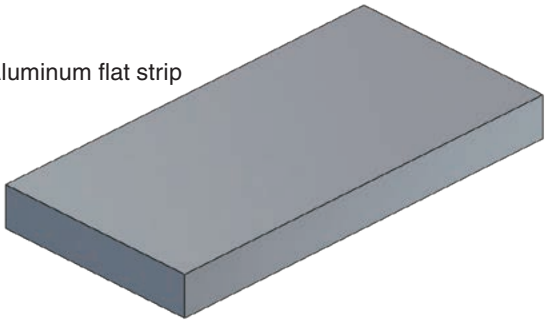
▶ Aluminum plate



▶ Aluminum angle



▶ Aluminum flat strip

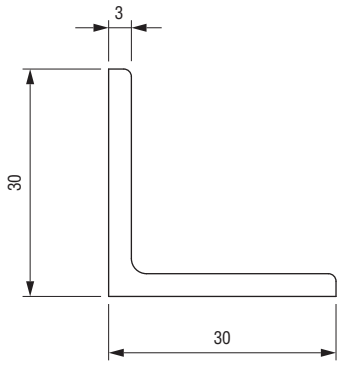


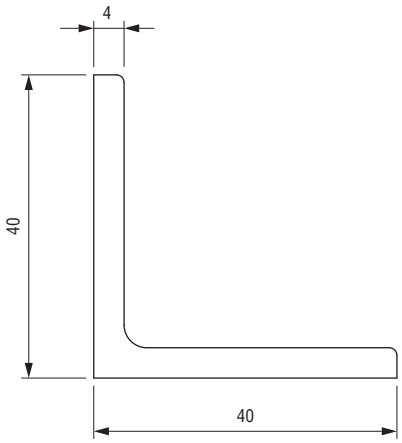
■ Specification

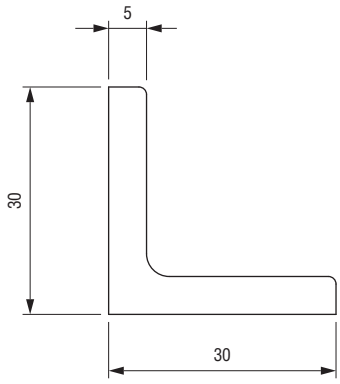
Product name	TYPE	Order code No.	Weight (g)	Remarks
Aluminum plate	3T*400*1200	370029	3,920	Material code : A5052
	5T*400*300	370028	1,630	Material code : A5052
	5T*400*400	370027	2,180	Material code : A5052
	5T*400*1200	370026	6,530	Material code : A5052
Aluminum angle	3T*30*30*2M	370074	900	Material code : A5052
	4T*40*40*2M	370075	1,670	Material code : A6063
	5T*30*30*2M	370077	1,400	Material code : A6063
	5T*50*50*2M	370076	2,440	Material code : A6063
Aluminum flat strip	10T*30*2M	370373	1,470	Material code : A6063
	10T*50*2M	370374	2,630	Material code : A6063

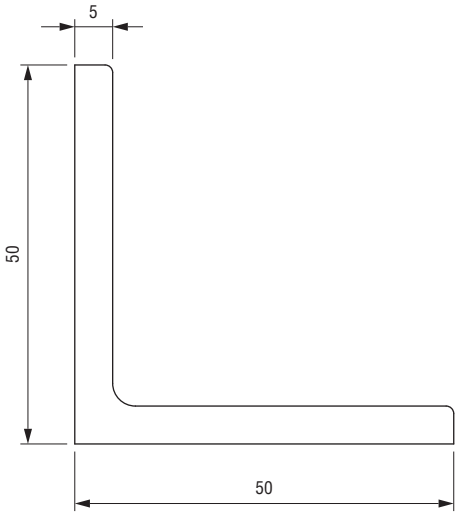
● The dimensional accuracy is +0.2mm.

Aluminum angle

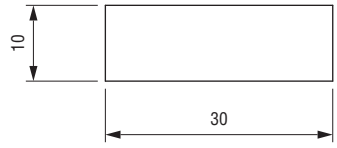


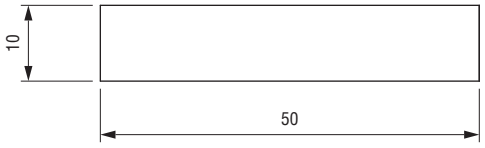






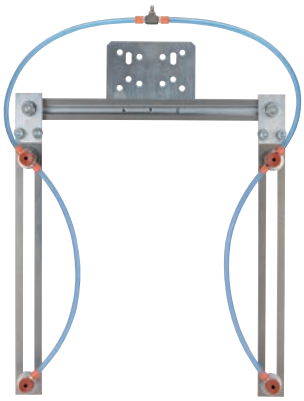
Aluminum flat strip





Sliding Chuck

- Suction stem can be moved freely according to the shape of workpiece.
- The chuck mounting section is compatible with robots from other manufacturers.



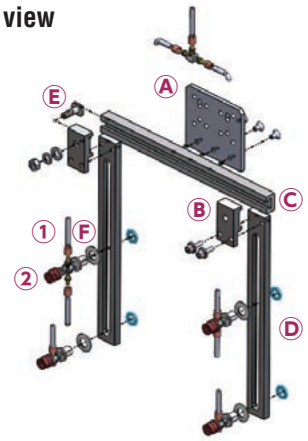
▶ Suction stems: for small

Sliding chuck

Order code No.	054285
TYPE	FCK1-0000

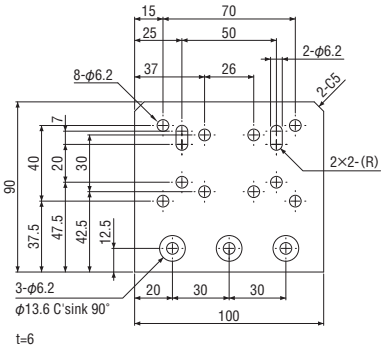
● Weight : 1,150g

Exploded view



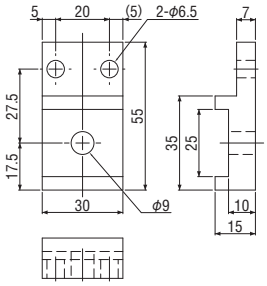
A Chuck mounting base



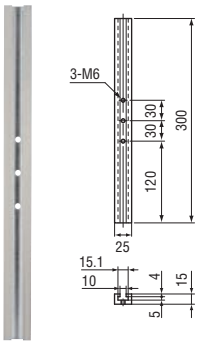


B Sliding holder





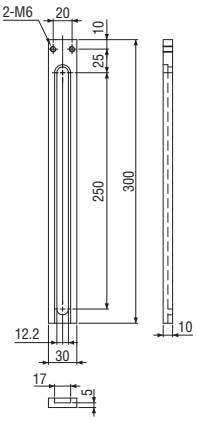
C Universal chuck slide base



D Vertical bar (L)

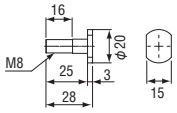


Length of FCK1-0003L-400:400mm



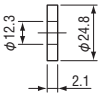
E Sliding chuck fastening bolt





F Taper washer (small)



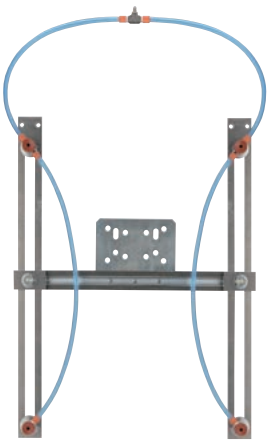


Specification

	Product name		TYPE	Order code No.	Weight (g)	Qty
A	Chuck mounting base		FCK1-0001	054287	393	1
B	Sliding holder		FCK1-0002S	054288	41	2
C	Universal chuck slide base		FCK2-0004	054325	213	1
D	Vertical bar (L)	300mm (standard)	FCK1-0003L	054289	139	2
		400mm	FCK1-0003L-400	054290	183	–
E	Sliding chuck fastening bolt		FCK1-0005	054326	11	2
1	Suction stem for small (M5)		VFIL-S-5A	210974	20	4
2	Suction cup (standard/silicon/brown)		VAPH-15C	210193	2.2	4
F	Taper washer・for small		φ12 (for VFIL-S)	370244	4	4

Information of used bolt

	Product name	TYPE	Order code No.	Qty
A+C	Flat head screw with hexagon socket	M6*10	122786	3
B+C	Nut class 1	M8	122783	2
	Spring washer	M8	122776	2
	Flat washer	M8	122781	2
B+D	Bolt with hexagon socket (SW+flat W)	M6*20	122822	4



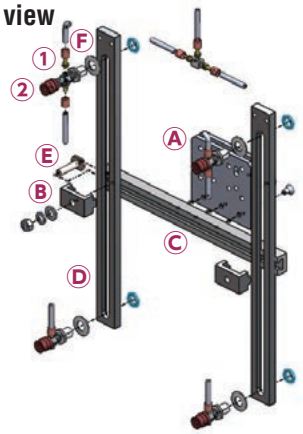
▶ Suction stems: for small

Universal chuck (H type)

Order code No.	054286
TYPE	FCKH-0000

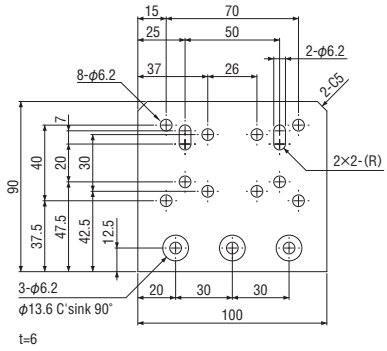
● Weight : 1,185g

Exploded view



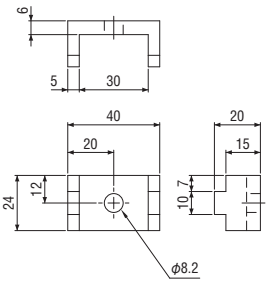
A Chuck mounting base



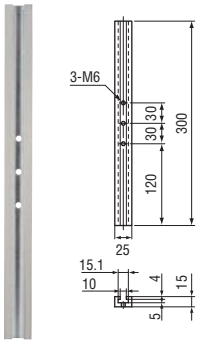


B Sliding holder H





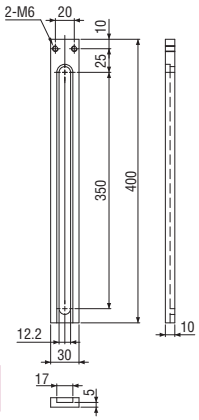
C Universal chuck slide base



D Vertical bar (L)

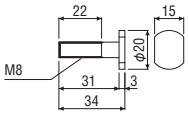


Length of FCK-0003L : 300mm



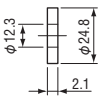
E Sliding chuck fastening bolt H





F Taper washer (small)





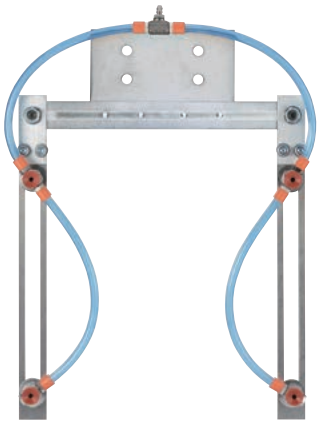
Specification

	Product name		TYPE	Order code No.	Weight (g)	Qty
A	Chuck mounting base		FCK1-0001	054287	393	1
B	Sliding holder H		FCKH-0007	054291	21	2
C	Universal chuck slide base		FCK2-0004	054325	213	1
D	Vertical bar (L)	400mm (standard)	FCK1-0003L-400	054290	183	2
		300mm	FCK1-0003L	054289	139	—
E	Sliding chuck fastening bolt H		FCKH-0005L	054292	16	2
1	Suction stem for small (M5)		VFIL-S-5A	210974	20	4
2	Suction cup (standard/silicon/brown)		VAPH-15C	210193	2.2	4
F	Taper washer • for small		φ12 (for VFIL-S)	370244	4	4

Information of used bolt

	Product name	TYPE	Order code No.	Qty
A+C	Flat head screw with hexagon socket	M6*10	122786	3
B+C	Nut class 1	M8	122783	2
	Spring washer	M8	122776	2
	Flat washer	M8	122781	2

Sliding Chuck



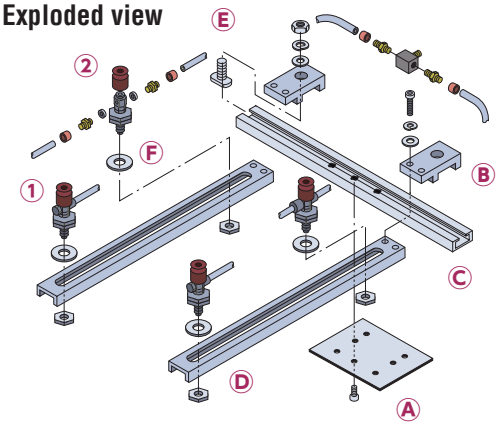
▶ Suction stem mini

Sliding chuck (mini)

Order code No.	054324
TYPE	FCK1-1000

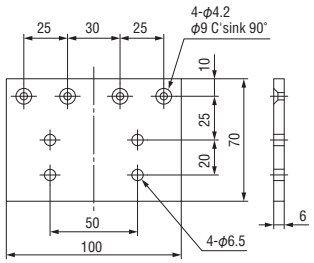
● Weight : 616g

Exploded view



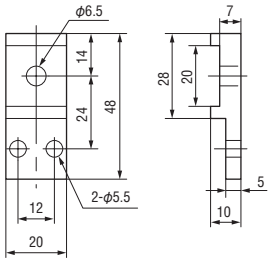
A Chuck mounting base





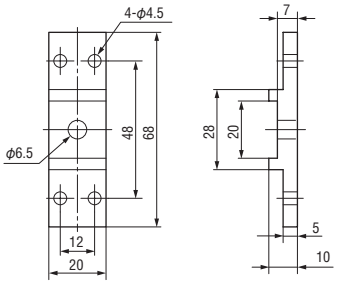
B Sliding holder





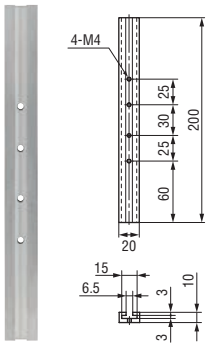
★ Sliding holder



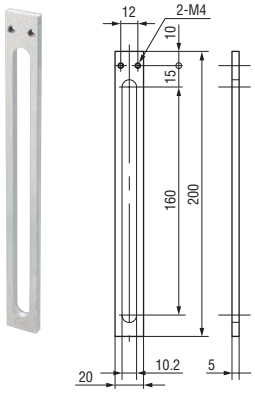


＊Used to change to H type.

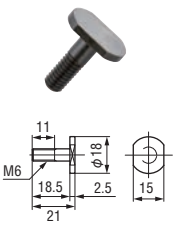
C Universal chuck slide base



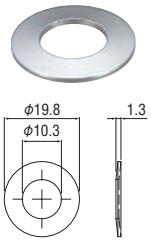
D Vertical bar



E Sliding chuck fastening bolt



F Taper washer (mini)



■ Specification

	Product name	TYPE	Order code No.	Weight (g)	Qty
A	Chuck mounting base	FCK1-1001	054340	313	1
B	Sliding holder	FCK1-1002	054321	16	2
C	Universal chuck slide base	FCK-1004	370735	69	1
D	Vertical bar 200mm	FCK1-1003	054322	32	2
E	Sliding chuck fastening bolt	FCK-1005	370736	8	2
1	Suction cups (standard/silicon/brown)	VAPH-12C	210192	0.8	4
2	Suction stem mini	VFIL1-SS-5	211029	14	4
F	Taper washer・for mini	ϕ10 (for VFIL-SS)	371362	1.9	4
★	Sliding holder	FCK1-1006	054323	18	–

＊Used to change to H type.

■ Information of used bolt

	Product name	TYPE	Order code No.	Qty
A+C	Flat head screw with hexagon socket	M4＊8	122785	4
B+C	Nut class 1	M6	122782	2
	Spring washer	M6	122775	2
	Flat washer	M6	122780	2
B+D	Bolt with hexagon socket (SW+flat W)	M4＊12	122812	4

Robot Hand (for Articulated Robot)

Capable of handling a large number of workpieces in a short amount time.

Robot hand



You can see moving images of products by using QR code reader of your smartphone

- The suction stem could be easily moved to match the contours of the workpieces.
- The scale is marked on the SUS pipe.
- It can fulfill a variety of purposes when combined with chuck parts.



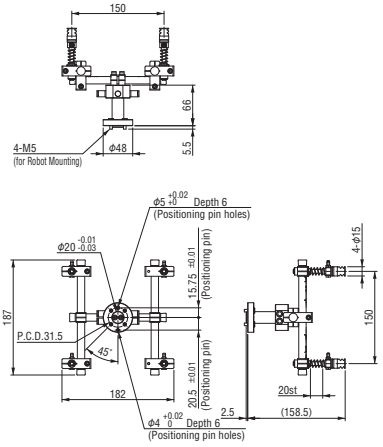
NEW



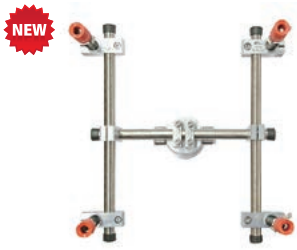
Robot hand

Order code No.	171372
TYPE	RHK10-150

- Weight : 490g
- Suction cups : VAPH-15C-3 (4pcs)
- Air supply port : Rc 1/8
- Mounting pitch (mm) : P.C.D 31.5
- Mounting boss diameter (mm) : outer diameter ϕ20, height 2.5
- Positioning pin holes (mm) : ϕ4・ϕ5
- Suction stem pitch (mm) : 50-150



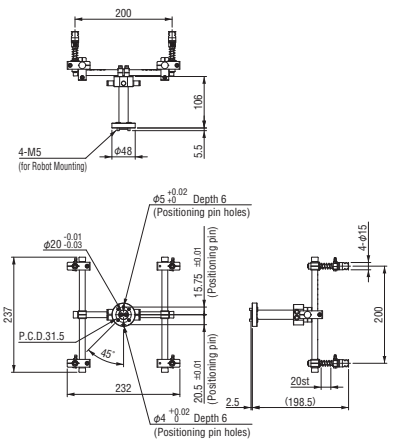
NEW



Robot hand

Order code No.	171373
TYPE	RHK10-200

- Weight : 545g
- Suction cups : VAPH-15C-3 (4pcs)
- Air supply port : Rc 1/8
- Mounting pitch (mm) : P.C.D 31.5
- Mounting boss diameter (mm) : outer diameter ϕ20, height 2.5
- Positioning pin holes (mm) : ϕ4・ϕ5
- Suction stem pitch (mm) : 100-200



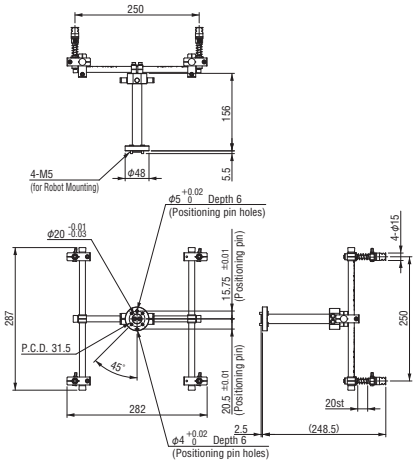
NEW



Robot hand

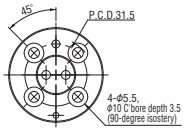
Order code No.	171374
TYPE	RHK10-250

- Weight : 612g
- Suction cups : VAPH-15C-3 (4pcs)
- Air supply port : Rc 1/8
- Mounting pitch (mm) : P.C.D 31.5
- Mounting boss diameter (mm) : outer diameter ϕ20, height 2.5
- Positioning pin holes (mm) : ϕ4・ϕ5
- Suction stem pitch (mm) : 150-250



NEW

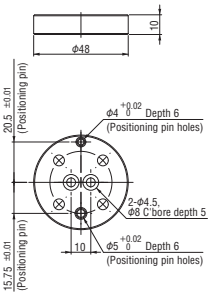




Mounting flange

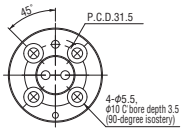
Order code No.	171375
TYPE	RHK10-FA

- Weight : 41.6g
- Mounting pitch (mm) : P.C.D 31.5
- Mounting boss diameter (mm) : no (Flat)
- Positioning pin holes (mm) : ϕ4・ϕ5
- Mounting bolt : M5



NEW

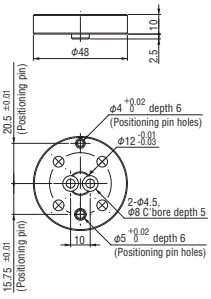


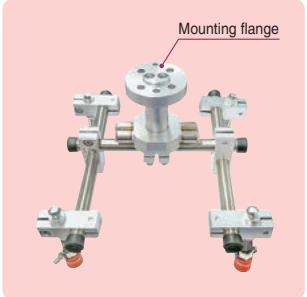


Mounting flange

Order code No.	171376
TYPE	RHK10-FB

- Weight : 41.8g
- Mounting pitch (mm) : P.C.D 31.5
- Mounting boss diameter (mm) : outer diameter ϕ12, height 2.5
- Positioning pin holes (mm) : ϕ4・ϕ5
- Mounting bolt : M5





MEMO

Pneumatic Components / Sensors











Pneumatic Components ····· 6-2

- Manifold ····· 6-3
- Light Weight Plastic Manifold ····· 6-4
- Fitting ····· 6-5
- Gasket / Air Coupler / Micro Coupler ····· 6-8
- Tube / Sleeve ····· 6-9
- Cable Ties / Cable Tie Mount / Tube Cutter ····· 6-10
- Regulator / Manual Air Valve Push Button / Manual Air Valve Push Slide Button ····· 6-11
- Flow Controller ····· 6-12
- Valve Joint (Quick Exhaust Valve / Finger Valve) ····· 6-13
- Mini Pressure Regulator ····· 6-14
- Bolt / Nut / Washer ····· 6-15

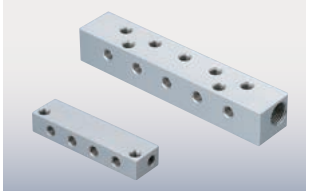
Sensors / Multi AND Board ····· 6-16

- Star Sensor ····· 6-17
- Micro Switch / Limit Switch ····· 6-18
- Limit Switch Mounting Bracket ····· 6-19
- Auto Switch (Reed·Contactless) ····· 6-20
- High-Precision Cylinder Sensor ····· 6-21
- Photo Sensor ····· 6-22
- Photo Area Sensor ····· 6-24
- Fiber Units ····· 6-25
- Fiber Amplifier Unit ····· 6-26
- Proximity Sensor ····· 6-30
- Multi AND Board ····· 6-32

PCIO Communication Unit ····· 6-34

Pneumatic Components

Manifold



Air circuit can be branched to two or more.

6-3

Light Weight Plastic Manifold



Air circuit can be branched to two or more.

6-4

Fitting



Used for connection of chuck device and air tube.

6-5

Gasket／Air Coupler／Micro Coupler



Used for pipe connection of chuck device.

6-8

Tube／Sleeve



Used for pipe connection of chuck device. The product is flexible and can follow hard action of robot.

6-9

Cable Ties／Cable Tie mount／Tube Cutter



Use to secure your tubing on plate or jungle gym.

6-10

Regulator／Manual Air Valve Push Button／Manual Air Valve Push slide Button



Used for air pressure regulations and switches.

6-11

Flow Controller



Speed of air cylinder can be adjusted.

6-12

Valve Joint (Quick Exhaust Valve／Finger Valve)



Used to control air flow.

6-13

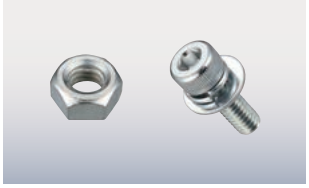
Mini Pressure Regulator



Grips work piece gently by decreasing gripping force.

6-14

Bolt／Nut／Washer



Use for fixing parts.

6-15

Manifold

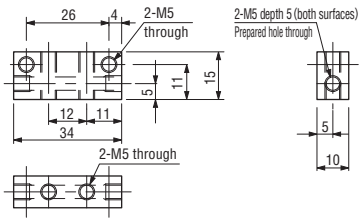
Air circuit is branched off in two or more directions.



Manifold • mini

Order code No.	122034
TYPE	MM-6P

● Weight : 10g ● Mounting : M5/P26

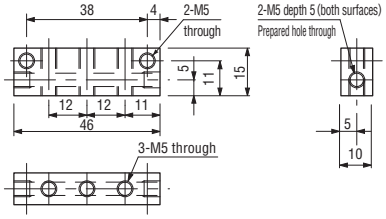




Manifold mini

Order code No.	122035
TYPE	MM-8P

● Weight : 14g ● Mounting : M5/P38

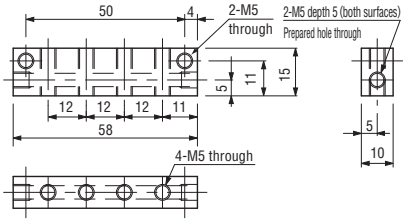




Manifold mini

Order code No.	122036
TYPE	MM-10P

● Weight : 17g ● Mounting : M5/P50

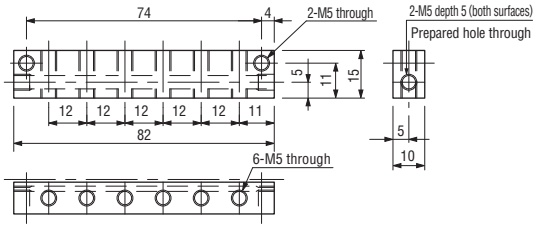




Manifold mini

Order code No.	122037
TYPE	MM-14P

● Weight : 25g
● Mounting : M5/P74

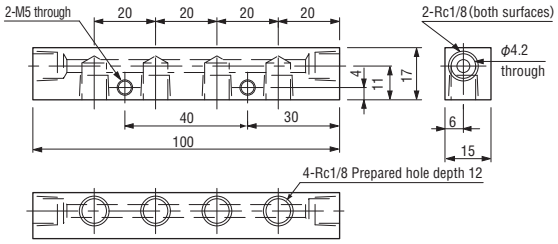




Manifold small

Order code No.	122040
TYPE	MS-6P (1/8)

● Weight : 52g
● Mounting : M5/P40

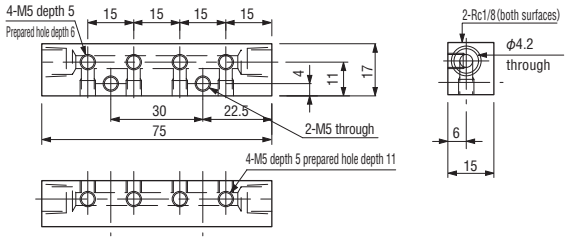


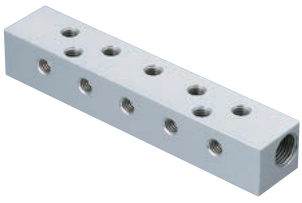


Manifold small

Order code No.	122038
TYPE	MS-10P

● Weight : 41g
● Mounting : M5/P30

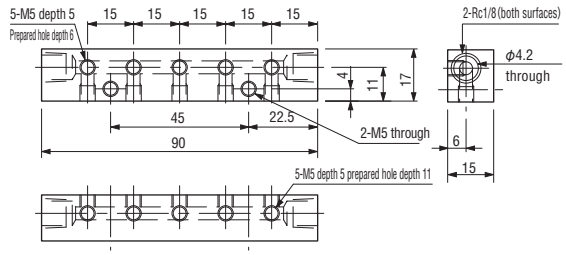




Manifold small

Order code No.	122039
TYPE	MS-12P

● Weight : 50g
● Mounting : M5/P45



Light Weight Plastic Manifold

Air circuit is branched off in two or more directions.

● Close up unneeded ports with cap.



Light weight plastic manifold BF5

Order code No.	123195
TYPE	MP-10P-BF5

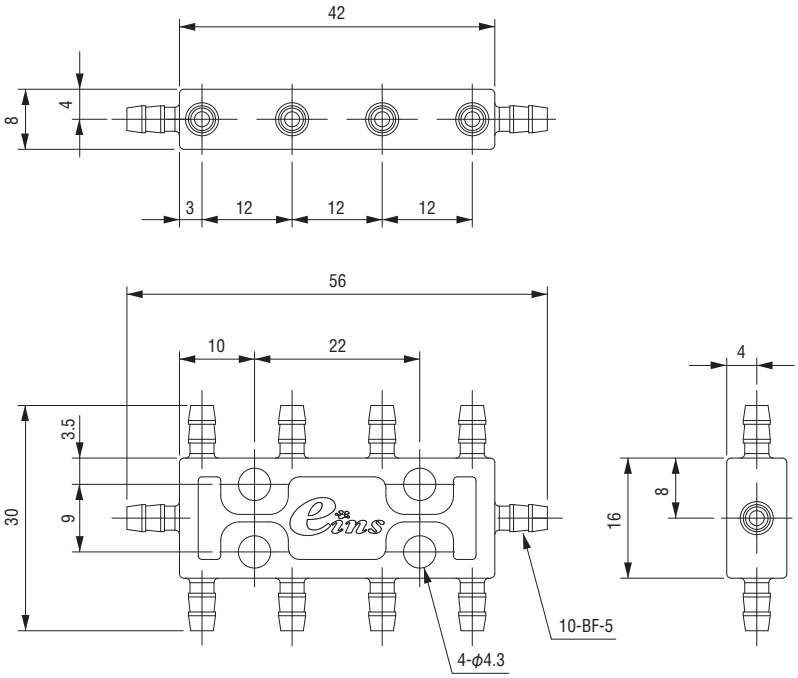
● Weight : 5g



Cap for resin manifold • BF5

Order code No.	010585
TYPE	BF5-CAP

● Weight : 1g





Light weight plastic manifold BF6

Order code No.	123196
TYPE	MP-10P-BF6

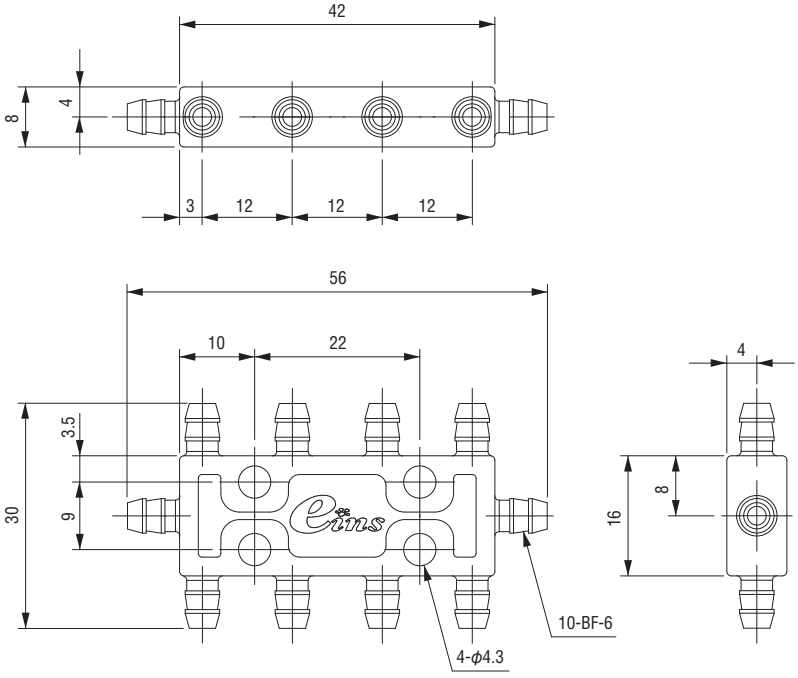
● Weight : 5g



Cap for resin manifold • BF6

Order code No.	010586
TYPE	BF6-CAP

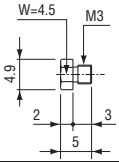
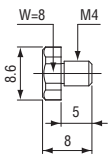
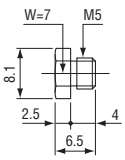
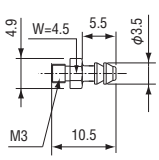
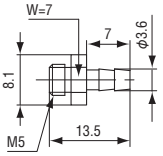
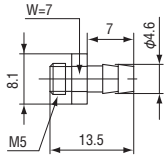
● Weight : 1g

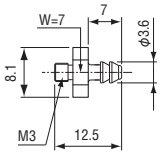
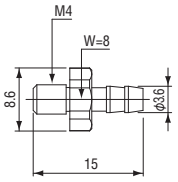
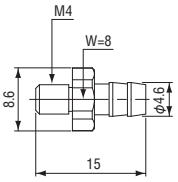
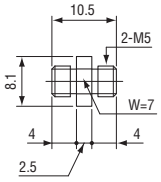
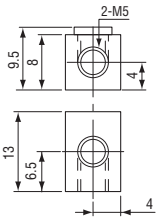
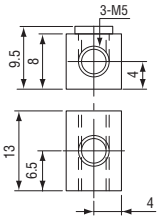


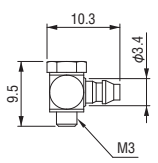
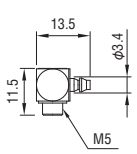
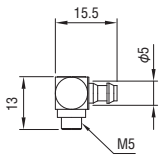
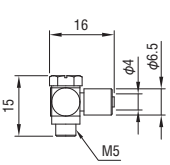
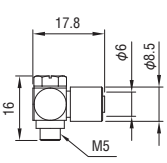
Fitting

Used for connection of chuck device and air tube.

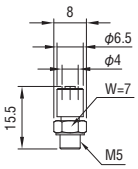
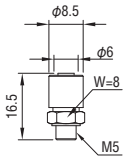
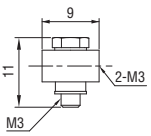
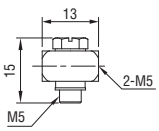
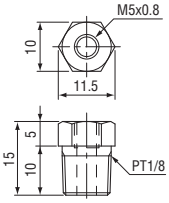
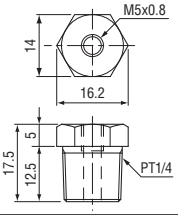
● Please select from 6-9 for the air tube to be connected.

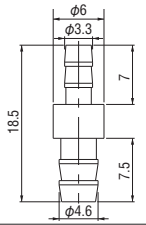
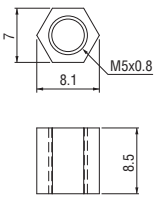
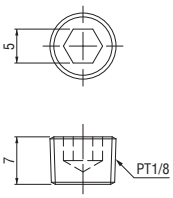
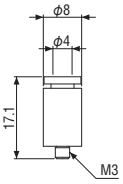
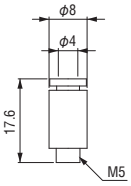
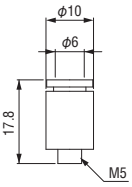
Fitting	For micro-mini cylinder			For micro-mini cylinder		
						
Drawing						
Order code No.	010474	151349	190106	010473	190109	190108
TYPE	PF-3	PF-M4	PF	BF-3	BF-5	BF-6
Weight	0.5g	0.2g	1.2g	0.7g	1.4g	1.5g
Connection	M3	M4	M5	M3	M5	M5
Tube Size	–	–	–	ϕ4	ϕ4、ϕ4.5	ϕ6

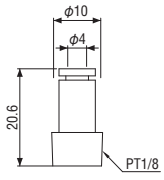
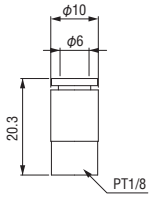
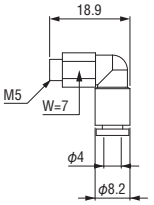
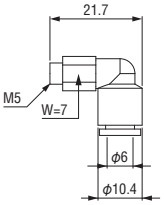
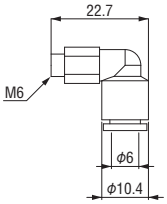
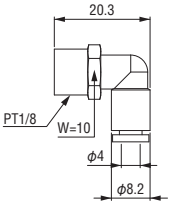
Fitting	For micro-mini cylinder					
						
Drawing						
Order code No.	010416	010482	010481	190107	190110	190111
TYPE	BF-5-M3	BF-5-M4	BF-6-M4	NF	EF	TF
Weight	1.2g	0.2g	0.2g	1.4g	7.0g	6.6g
Connection	M3	M4	M4	M5	M5	M5
Tube Size	ϕ4、ϕ4.5	ϕ4、ϕ4.5	ϕ6	–	–	–

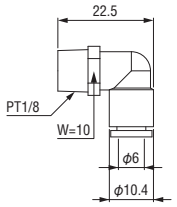
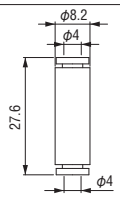
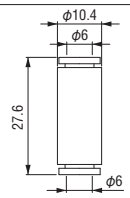
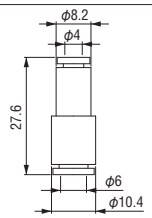
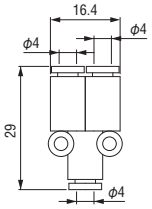
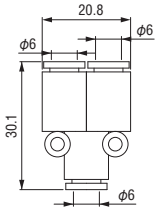
Fitting	Barb elbow for soft tubing			Hose Elbow	
	For micro-mini cylinder				
					
Drawing					
Order code No.	120543	120692	122892	120500	122832
TYPE	M-3ALU-4	M-5ALU-4	M-5ALU-6	MS-5HLH-4	MS-5HLH-6
Weight	0.7g	4.1g	4.5g	4.2g	6.2g
Connection	M3	M5	M5	M5	M5
Tube Size	ϕ4	ϕ4	ϕ6	ϕ4	ϕ6

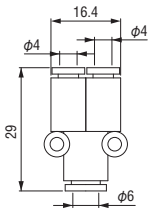
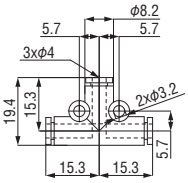
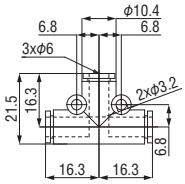
● Please select from 6-9 for the air tube to be connected.

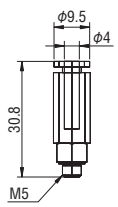
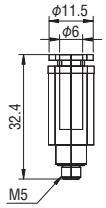
	Hose nipple		Universal tee		Bushing	
Fitting						
Drawing						
Order code No.	122831	122049	123471	120607	190112	190113
TYPE	MS-5H-4	MS-5H-6	M-3UT	M-5UT	RBF	RBF-1
Weight	2.5g	3.7g	1.4g	4.8g	7.1g	17.6g
Connection	M5	M5	M3	M5	PT1/8,M5	PT1/4,M5
Tube Size	ϕ4	ϕ6	–	–	–	–

	Reducer nipple	Joint	Socket plug (trivalent chromate white)	Half Union		
Fitting						
Drawing						
Order code No.	300385	022667	271714	101749	101467	101466
TYPE	4-S-6	CF	1/8	KQ2S04-M3G	KQ2S04-M5N	KQ2S06-M5N
Weight	1.2g	1.75g	2.5g	2.0g	3.0g	4.1g
Connection	–	M5	1/8	M3	M5	M5
Tube Size	ϕ4、ϕ4.5、ϕ6	–	–	ϕ4	ϕ4	ϕ6

	Half Union		Elbow Union			
Fitting						
Drawing						
Order code No.	101746	101468	101462	101464	102051	101710
TYPE	KQ2S04-01NS	KQ2S06-01NS	KQ2L04-M5N	KQ2L06-M5N	KQ2L06-M6A	KQ2L04-01NS
Weight	8.0g	6.5g	3.1g	3.2g	4.3g	4.8g
Connection	1/8	PT1/8	M5	M5	M6	PT1/8
Tube Size	ϕ4	ϕ6	ϕ4	ϕ6	ϕ6	ϕ4

	Elbow Union	Straight Union		Straight Reducer Union	Union Y	
Fitting						
Drawing						
Order code No.	101463	101469	101470	101471	101472	101465
TYPE	KQ2L06-01NS	KQ2H04-00A	KQ2H06-00A	KQ2H04-06A	KQ2U04-00A	KQ2U06-00A
Weight	5.2g	1.6g	2.1g	2.0g	2.9g	4.1g
Connection	PT1/8	–	–	–	–	–
Tube Size	ϕ6	ϕ4	ϕ6	ϕ4、ϕ6	ϕ4	ϕ6

	Reducer Union Y	Cheese:KQ2T	
Fitting			
Drawing			
Order code No.	101473	101596	101597
TYPE	KQ2U04-06A	KQ2T04-00A	KQ2T06-00A
Weight	3.3g	2.8g	3.8g
Connection	–	–	–
Tube Size	ϕ4、ϕ6	ϕ4	ϕ6

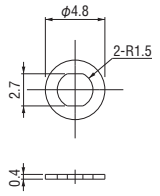
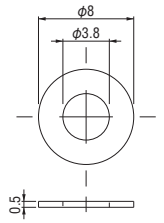
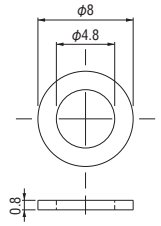
	Half Union KCH	
Fitting		
Drawing		
Order code No.	100817	100818
TYPE	KCH04-M5	KCH06-M5
Weight	8.0g	10.0g
Connection	M5	M5
Tube Size	ϕ4	ϕ6

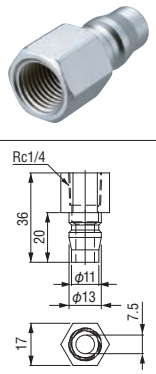
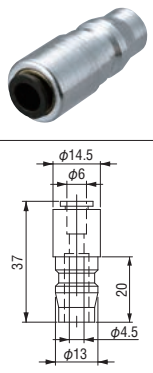
∗When removing the tube, turn off the air. (No air leaks even when the tube is removed.)

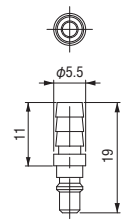
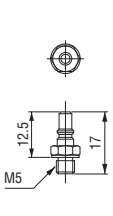
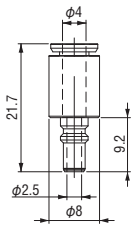
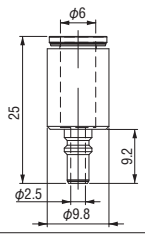
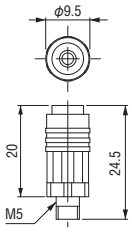
Gasket／Air Coupler／Micro Coupler

Use with pipe connections.

● Please select from 6-9 for the air tube to be connected.

Gasket			
Drawing			
Order code No.	122889	122890	122891
TYPE	M3-G	M4-G	M5-G
Weight	–	–	–
Connection	–	–	–
Tube Size	–	–	–

Air coupler		
Drawing		
Order code No.	280018	322948
TYPE	20PF	60PC
Weight	29.0g	24.0g
Connection	Rc1/4	–
Tube Size	–	ϕ6

Micro coupler					
Drawing					
Order code No.	120170	120120	122893	122894	120121
TYPE	MC-04PH	MC-05PM	MC-04PC	MC-06PC	MC-05SM
Weight	1.5g	2.0g	5.0g	3.0g	7.0g
Connection	–	M5	–	–	M5
Tube Size	ϕ6	–	ϕ4	ϕ6	–

Tube／Sleeve

Use for connecting air powered devices, flexible to work with your robots movements.

Polyurethane tube (flexible)



Order code No.	196516	196277	193564	196513
TYPE	TU0425W-20	TU0425B-20	TU0425BU-20	TU0425R-20
Tube Color	White	Black	Blue	Red
Length	20m			
Outside × Inside diameter	ϕ4×ϕ2.5			

Order code No.	196514	196515	196520	196278
TYPE	TU0425Y-20	TU0425G-20	TU0604W-20	TU0604B-20
Tube Color	Yellow	Green	White	Black
Length	20m			
Outside × Inside diameter	ϕ4×ϕ2.5		ϕ6×ϕ4	

Order code No.	193566	196517	196518	196519
TYPE	TU0604BU-20	TU0604R-20	TU0604Y-20	TU0604G-20
Tube Color	Blue	Red	Yellow	Green
Length	20m			
Outside × Inside diameter	ϕ6×ϕ4			

Soft polyurethane tube (more flexible)



Order code No.	196530	196531
TYPE	TUS0425W-20	TUS0604W-20
Tube Color	White	
Length	20m	
Outside × Inside diameter	ϕ4×ϕ2.5	ϕ6×ϕ4

Urethane tube (flexible)



Order code No.	200039	200113	200040	200112
TYPE	UF4.5＊2.7 (5M)	UF4.5＊2.7 (20M)	UF6＊4 (5M)	UF6＊4 (20M)
Tube Color	Light blue			
Length	5m	20m	5m	20m
Outside × Inside diameter	ϕ4.5×ϕ2.7		ϕ6×ϕ4	

＊Please note that 200039 and 200113 can't be used for ϕ 4mm one touch fitting.

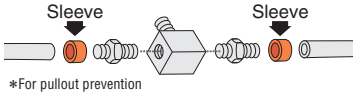
Silicone tube (super flexible)



Order code No.	300514	322194
TYPE	4＊2 (5M)	6＊3 (5M)
Tube Color	Translucent	
Length	5m	
Outside × Inside diameter	ϕ4×ϕ2	ϕ6×ϕ3

＊Can't be used for one touch fitting.

Sleeve



＊For pullout prevention

Order code No.	300001
TYPE	BS-06
Weight	0.2g

Cable Ties／Cable Tie Mount／Tube Cutter

Keep your tooling tubes neat and tied up.

Cable Ties



Order code No.	001920	001921	001922	001923	001924
TYPE	AB100-W	AB150-W	AB200-W	AB300-W	AB350-W
Length	100mm	152mm	202mm	301mm	382mm
Per bag	1,000pcs/bag	100pcs/bag			50pcs/bag

Cable Ties ／ tag

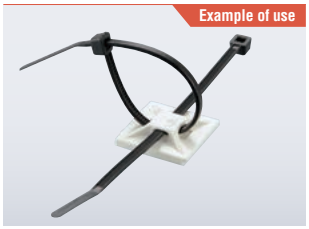


Order code No.	152324
TYPE	PLF1M-C
Length	109mm
Per bag	100pcs/bag

Cable tie mount



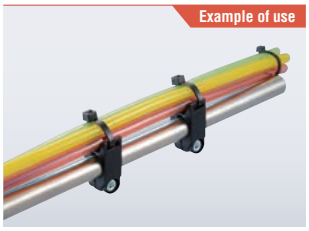
Order code No.	183222	183223
TYPE	SKM-20	SKM-30
Length	20×20×5.3	30×30×6
Per bag	100pcs/bag	



Resin Fixture (Cable Ties)



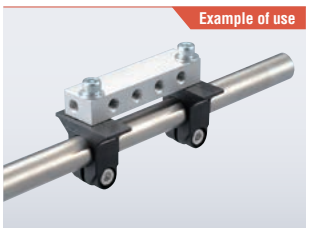
Order code No.	171210	171211
TYPE	RCA12	RCA20
Weight	0.2g	
Per bag	ϕ12	ϕ20



Resin Fixture (M4)

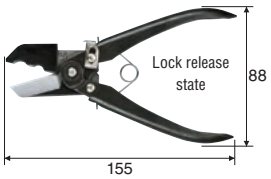


Order code No.	171212	171213
TYPE	RCB12	RCB20
Weight	0.2g	
Per bag	ϕ12	ϕ20



Tube cutter

＊Do not use for cutting metal such as electric wire.



Order code No.	190508
TYPE	TK-1
Weight	154g
Applied tube material	Nylon, soft nylon, polyurethane, other non-rigid plastic tubes
Applied tube outside diameter	13mm or less

Regulator/Manual Air Valve Push Button/Manual Air Valve Push Slide Button

Used for air pressure regulations and switches.

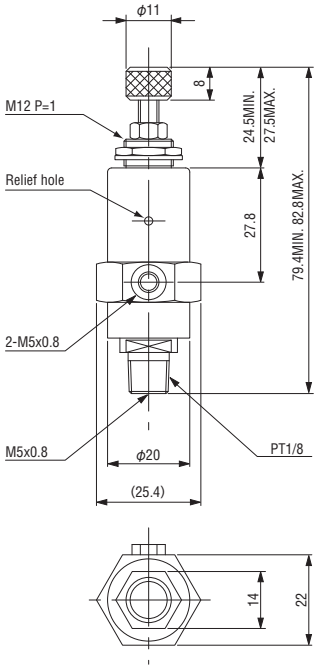
▶ Grip strength of components such as mini cylinder is adjusted by regulating pressure.



Regulator

Order code No.	190009
TYPE	RSR

- Weight : 108g



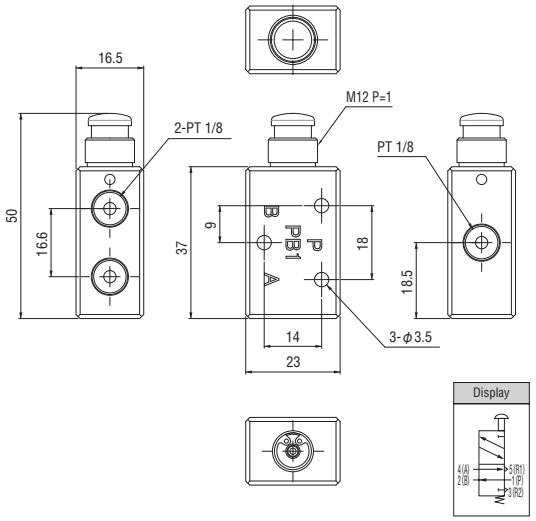
▶ Used to switch port of air (A/B).



Manual air valve push button

Order code No.	152308
TYPE	PB1-E

- Weight : 65g
- Fixing bolt and nut are separately sold.
- Return type



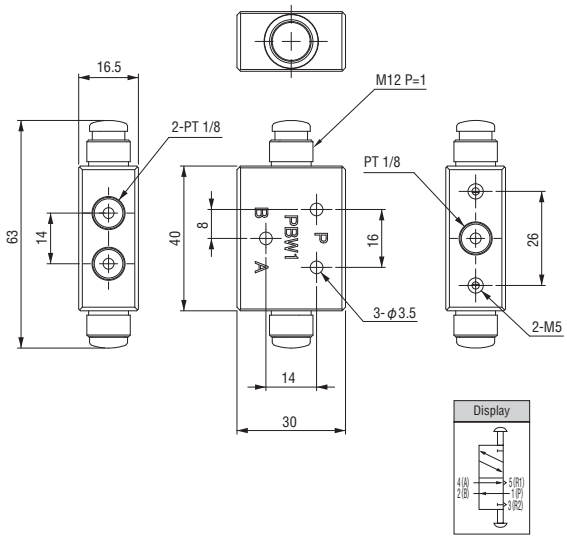
▶ Used to switch port of air (A/B).



Manual air valve push slide button

Order code No.	152306
TYPE	PBW1-E

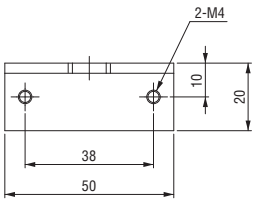
- Weight : 75g
- Fixing bolt and nut are separately sold.
- Retention type



Mountable on RSR, PB1-E, and PBE1-E.
「120483➡(3-37)」is separately required for installation to PB1-E, PBW1-E.

▶ Mounting bracket for push button and regulator.

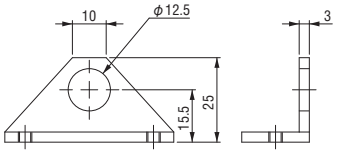




RSR 4P mount BKT

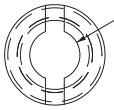
Order code No.	020830
TYPE	CP-055

- Weight : 2g



▶ Installation to PB1-E and PBW1-E is possible.

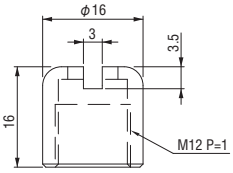




Push button cap

Order code No.	152307
TYPE	PB1-C

- Weight : 5g
- With spring washer



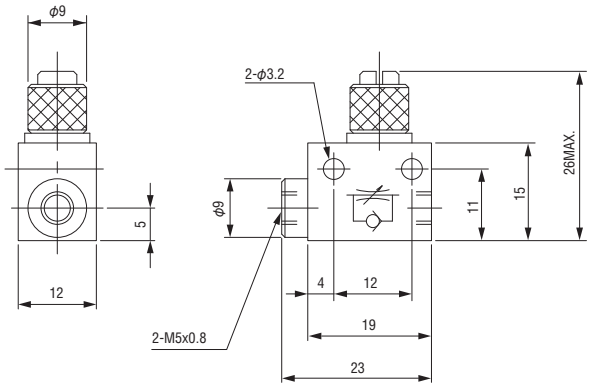
Flow Controller

Speed of air cylinder can be adjusted.



Order code No.	190002
TYPE	SC0

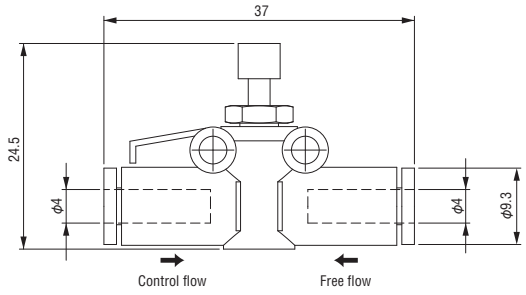
- Weight : 29g
- Directional



Order code No.	002199
TYPE	AS1002F-04

- Weight : 5.5g
- Directional

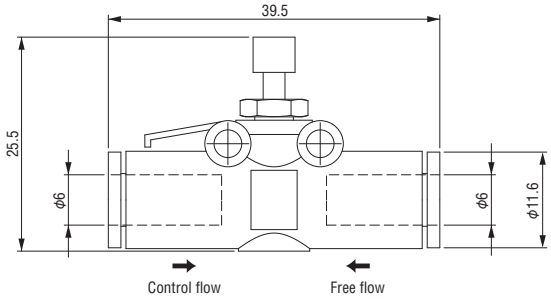




Order code No.	002200
TYPE	AS1002F-06

- Weight : 6.5g
- Directional

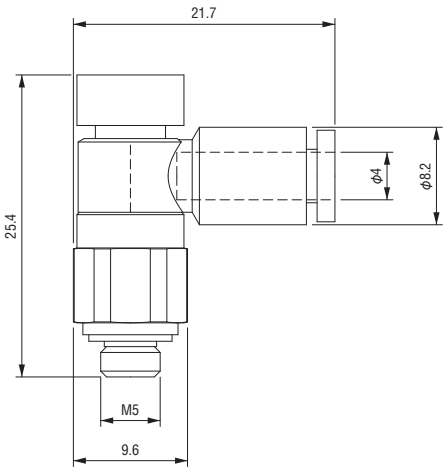




Order code No.	002239
TYPE	AS1201F-M5-04A

- Weight : 5g
- Meter out type

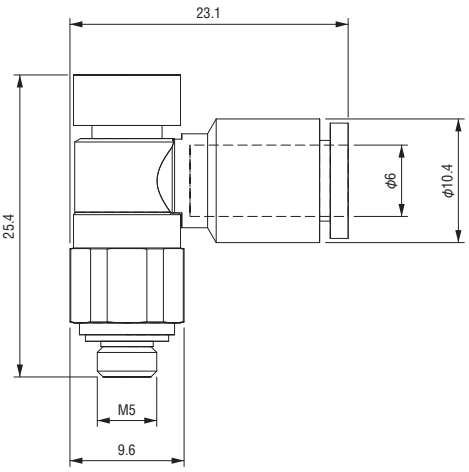




Order code No.	002288
TYPE	AS1201F-M5-06A

- Weight : 6g
- Meter out type





Valve Joint (Quick Exhaust Valve／Finger Valve)

Used to control air flow.

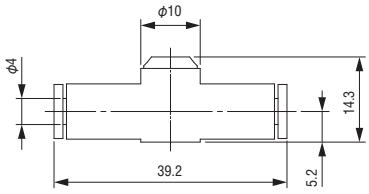
- Quick exhaust valve with one-touch pipe joint.
- The reaction time is shortened for the discharge of the air inside the cylinder.



Quick Exhaust Valve

Order code No.	002216
TYPE	AQ240F-04-00

- Weight : 5g
- Silencer is included.
- Directional

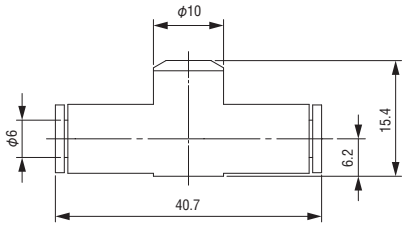




Quick Exhaust Valve

Order code No.	002217
TYPE	AQ240F-06-00

- Weight : 6g
- Silencer is included.
- Directional



- One-touch pipe joint which allows visual inspection of valve open/close with the orientation of the knob.
- A switching valve for manually controlling residual air pressure.



2-port valve

Finger Valve

Order code No.	211152
TYPE	VHK2A-04F-04FL

- Weight : 15g
- Applicable tube size : ϕ4
- Directional

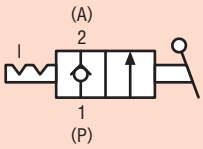
Finger Valve

Order code No.	211153
TYPE	VHK2A-06F-06FL

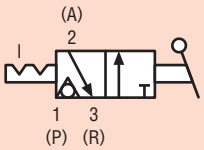
- Weight : 16g
- Applicable tube size : ϕ6
- Directional

Structural drawing

2-port valve



3-port valve





3-port valve

Finger Valve

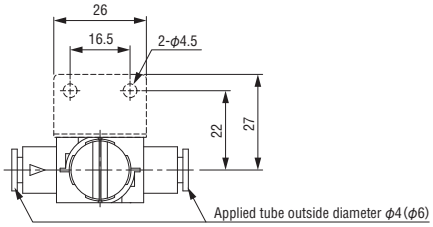
Order code No.	211154
TYPE	VHK3A-04F-04FL

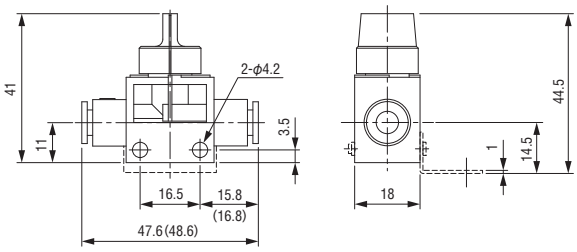
- Weight : 15g
- Applicable tube size : ϕ4
- Directional

Finger Valve

Order code No.	211155
TYPE	VHK3A-06F-06FL

- Weight : 16g
- Applicable tube size : ϕ6
- Directional





∗ Size in ( ) shows the size of the component for 06F.

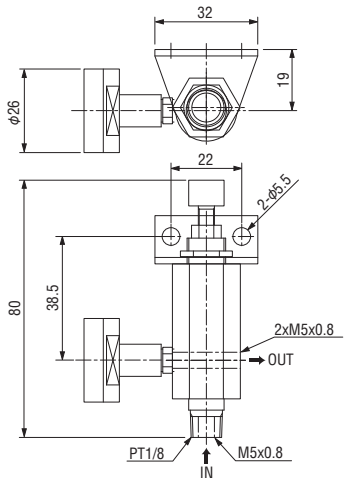
Mini Pressure Regulator

Grips work piece gently by decreasing gripping force.

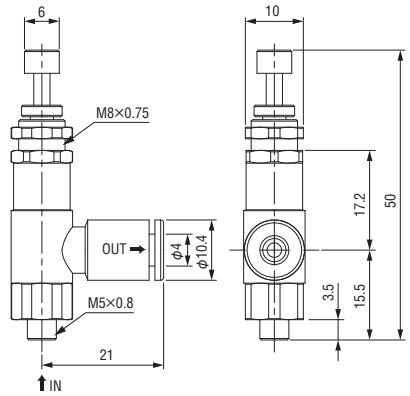


Order code No.	001312
TYPE	ARJ210-M5BG

- Weight : 60g
- With mounting bracket
- Pipe connection : OUT (M5)
  : IN(Pt1/8 or M5)

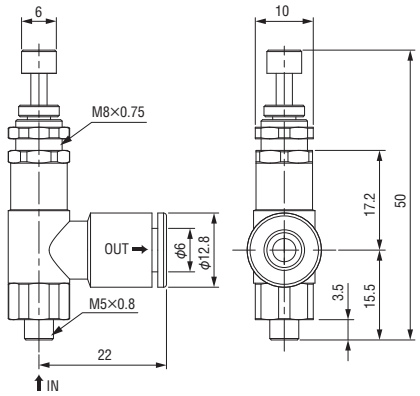






Order code No.	001382
TYPE	ARJ1020F-M5-04

- Weight : 15g
- Pipe connection : OUT (one-touch fitting φ6)
  : IN(M5)



Order code No.	001447
TYPE	ARJ1020F-M5-06

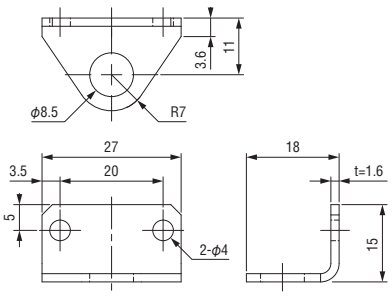
- Weight : 16g
- Pipe connection : OUT (one-touch fitting φ6)
  : IN(M5)



ARJ1 Regulator Bracket

Order code No.	110655
TYPE	LX0109-102

- Weight : 8g

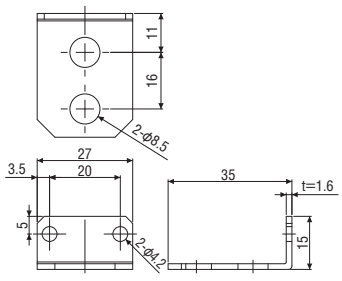




ARJ1 Regulator Bracket (2 pcs specification)

Order code No.	002356
TYPE	ARJ1B2

- Weight : 14g

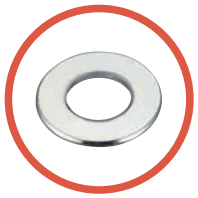


Bolt／Nut／Washer

Assembly Hardware



Nut class 1



Flat washer



Spring washer



Flat head screw with hexagon socket



Cross-recessed pan head screw



Bolt with hexagon socket
(SW+flat W) trivalent chromate white

	Product name	Order code No.	TYPE
1	Cross-recessed pan head screw (trivalent chromate white)	123446	BKJ3-6 (M3＊6)
2	Cross-recessed pan head screw (trivalent chromate white)	123447	BKJ3-10 (M3＊10)
3	Cross-recessed pan head screw (Stainless Steel)	123448	NKJ2.6-5 (M2.6＊5)
4	Cross-recessed pan head screw (trivalent chromate white)	123449	M3＊16
5	Bolt with hexagon socket (SW + flat W) trivalent chromate white	122812	M4＊12 (E)
6	Bolt with hexagon socket (SW + flat W) trivalent chromate white	122821	M6＊15 (E)
7	Bolt with hexagon socket (SW + flat W) trivalent chromate white	122822	M6＊20 (E)
8	Bolt with hexagon socket (trivalent chromate white)	123231	M3＊6
9	Bolt with hexagon socket (trivalent chromate white)	123232	M3＊8
10	Bolt with hexagon socket (trivalent chromate white)	122790	M3＊10
11	Bolt with hexagon socket (trivalent chromate white)	122795	M4＊10
12	Bolt with hexagon socket (trivalent chromate white)	122798	M4＊25
13	Bolt with hexagon socket (trivalent chromate white)	122805	M6＊15
14	Bolt with hexagon socket (trivalent chromate white)	122969	M6＊25
15	Bolt with hexagon socket (trivalent chromate white)	122989	M6＊35
16	Flat head screw with cross recesse (trivalent chromate white)	122787	M2.5＊16
17	Flat head screw with cross recesse (Stainless Steel)	123515	M4＊10
18	Flat head screw with hexagon socket	122785	M4＊8
19	Flat head screw with cross recesse	371193	M4＊12
20	Flat head screw with hexagon socket	122786	M6＊10
21	Spring washer (trivalent chromate white)	122772	M3
22	Spring washer (trivalent chromate white)	122773	M4
23	Spring washer (trivalent chromate white)	122775	M6
24	Spring washer (trivalent chromate white)	122776	M8
25	Flat Washer (Trivalent Chromate) JIS	122777	M3
26	Flat Washer (Trivalent Chromate) JIS	122778	M4
27	Flat Washer (Trivalent Chromate) JIS	122780	M6
28	Flat Washer (Trivalent Chromate) JIS	122781	M8
29	Hex Nut (Trivalent Chromate)	123301	M3
30	Hex Nut (Trivalent Chromate) JIS	123302	M4
31	Nut class 1 (trivalent chrmate white)	122782	M6
32	Nut class 1 (trivalent chrmate white)	122783	M8

Sensors / Multi AND Board

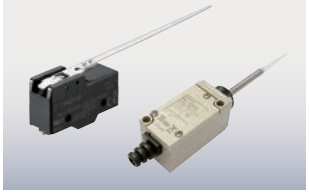
Star Sensor



Use the lead switch inside to improve the durability. Use the two-line design for easy connection.

6-17

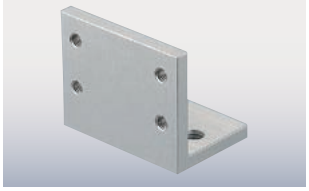
Micro Switch ／ Limit Switch



Optimum for the product confirmation in the EOAT of small and large size parts. Convenient small limit switches.

6-18

Limit Switch Mounting Bracket



Use to mount a limit switch, allowing a proper position for product confirmation to be secured.

6-19

Auto Switch (Reed･Contactless)



It can be used for container cylinders and mini cylinders.

6-20

High-Precision Cylinder Sensor



Detect even a tiny stroke with stability and certainty.

6-21

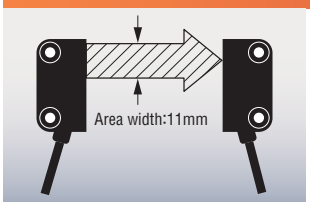
Photo Sensor



No amplifier is required ! Special-purpose mounting brackets are also provided for jungle gym and let's joint.

6-22

Photo Area Sensor



Can be used for passing fine workpieces.Space-saving reflection type can be provided as a special-order product.

6-24

Fiber Units



Best suited for installation in a narrow area. Secure with a set screw.

6-25

Fiber Amplifier Unit



Amplifier for optical fiber.

6-26

Proximity Sensor



Micro proximity sensor.

6-30

Multi AND Board



Many sensor inputs are integrated in the board. And it is output from a point to the robot.

6-32

PCIO Communication Unit



Two power lines allows simple wiring between units for power supply and input/output communication

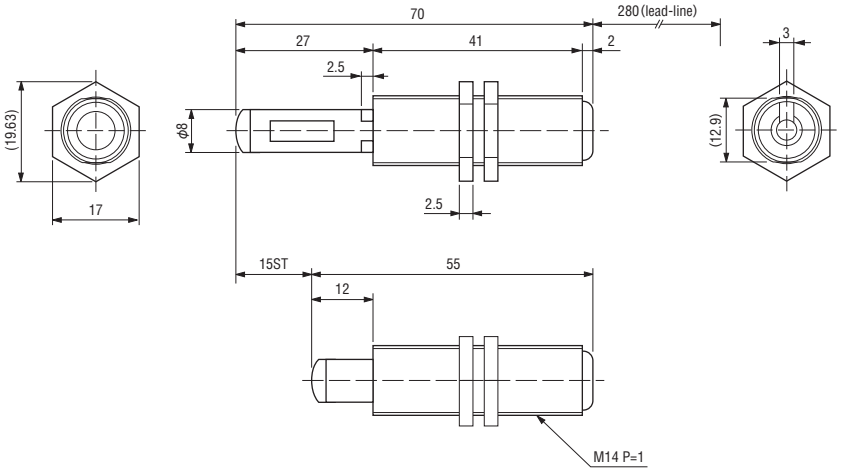
6-34

Star Sensor

Internal reed switch to improve durability.

- Silicone rubber is adopted at the tip to prevent damage to the product.
- Lightweight (14g) and compact design.





Star sensor

Order code No.	181139
TYPE	SSW-15

- Weight : 14g
- With 280mm lead line.
- Sensing-stroke range : 2.5mm-15mm

Replacement rubber head for SSW-15

Order code No.	270449
TYPE	14103301 (SSW-15)

- (One set/5 pcs)

Electrical specifications

TYPE		SSW-15
Contact point	Contact point type	1A
	Contact position	Off center gap
	Maximum contact capacity	20W
	Maximum open/close voltage	200VDC
	Maximum open/close electric current	0.5A
Electric Characteristic	Turn-on value*1	15-50A*1
	Detecting stroke	2.5mm ~ 15mm
	Open value*1	5A (min)
	Withstand voltage*2	250VDC
Others	Surrounding temperature	− 25℃ to 80℃
	Useful life	1×10^8 times / DC10mV-10μA
		1×10^7 times / DC10V-4mA
		250×10^4 times / DC20V-0.5A
	Connection method	Code drawing type (280mm)
	Spring force	0.5N

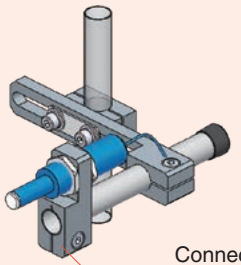
*1 Crossing in shipment : ±2A
*2 Voltage withstanding standard: turn-on value 25A or more

Body specifications

TYPE		SSW-15
Weight		20g
Material	Main body	PA
	Shaft	PA
	Rubber head	Silicone
Accessories		Hexagon nut M14 × P1 (2 pcs)

* Do not put a strong shock from the outside.

Example of usage



Connector for SSW
N01861-108
181139

Micro Switch / Limit Switch

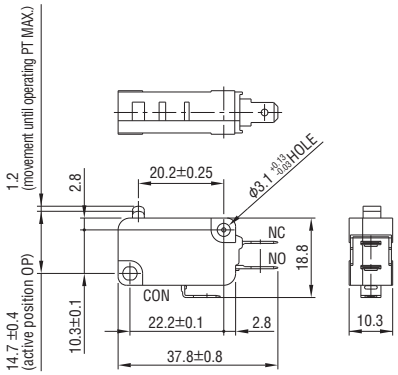
Easy-to-use small limit switches.

Micro Switch

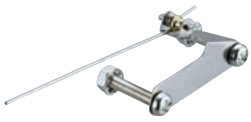


Order code No.	210843
TYPE	VX-5-1A2

- Weight : 6g

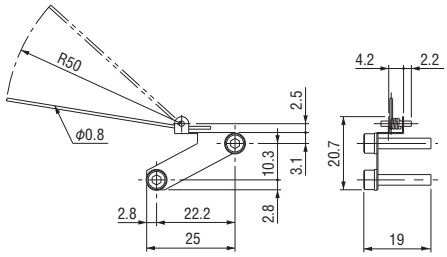


Limit switch hinge lever



Order code No.	210414
TYPE	VAV-5

- Weight : 5g
- Use it in combination with micro switch (no.210843).



Connection terminal



Order code No.	196749
TYPE	TMEDN480509-FA

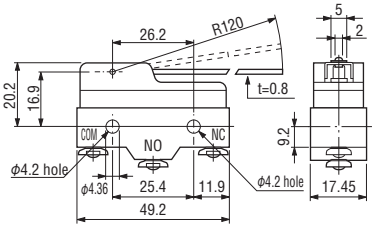
- Weight : 0.8g

Limit Switch



Order code No.	250012
TYPE	Z-15HW24-B

- Weight : 5g
- Stainless steel lever
- Can be attached to sensor bracket (N01915-201) .



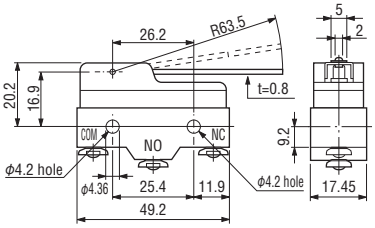
NEW

Limit Switch (w/o Spring)



Order code No.	250006
TYPE	Z-15GW55-B

- Weight : 33.2g
- Can be attached to sensor bracket (N01915-201) .

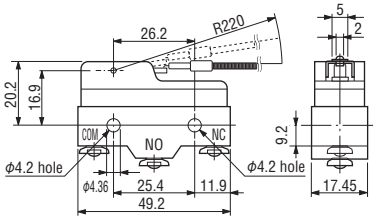


Limit switch • hinge lever type



Order code No.	250017
TYPE	Z-15GW55-B (NC W/SPRING)

- Weight : 42g
- Can be attached to sensor bracket (N01915-201) .



Limit switch spring



Order code No.	250018
TYPE	For Z-15GW55-B

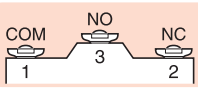
- Weight : 8g
- Exchange parts for Z-15GW55.

Limit switch micro case



Order code No.	140039
TYPE	OM-1

- Weight : 19g
- Mounting screws are not included.
- Protective parts for Z-15GW55



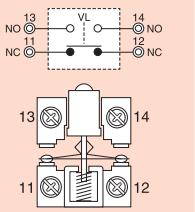
COM+NO	Signal "ON" after lever is pressed.
COM+NC	Signal "OFF" after lever is pressed.

Limit Switch

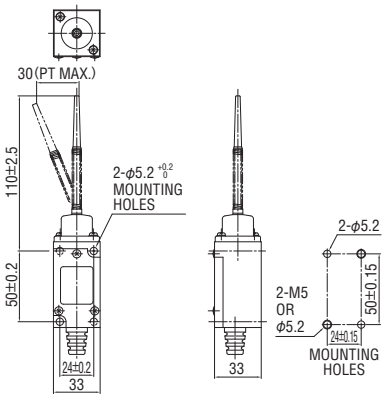


Order code No.	073334
TYPE	HL-5300

- Weight : 134g



NO connection (13,14)
Signal "ON" after lever is pressed.
NC connection (11,12)
Signal "OFF" after lever is pressed.



Limit Switch Mounting Bracket

Use to mount a limit switch, allowing a proper position for product confirmation to be secured.



Order code No.	020837
TYPE	CP-059-A

- Weight : 9g
- For Micro Switch (VX-5-1A5)



Order code No.	020838
TYPE	CP-059-B

- Weight : 10g
- For Micro Switch (VX-5-1A5)



Order code No.	020839
TYPE	CP-059-C

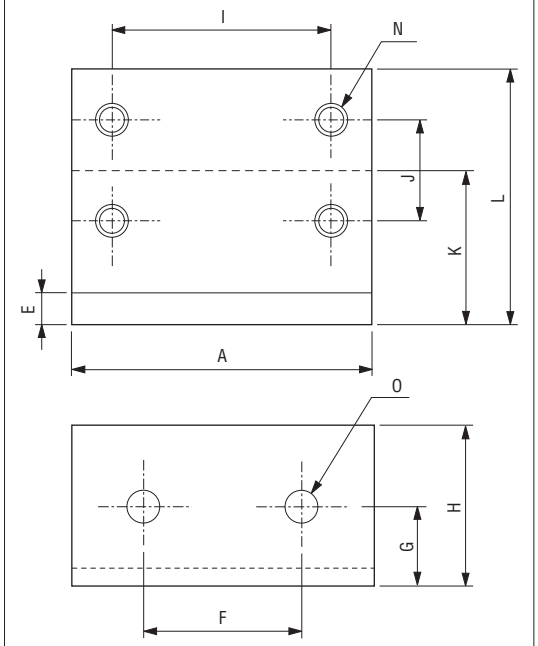
- Weight : 11g
- For Micro Switch (VX-5-1A5)



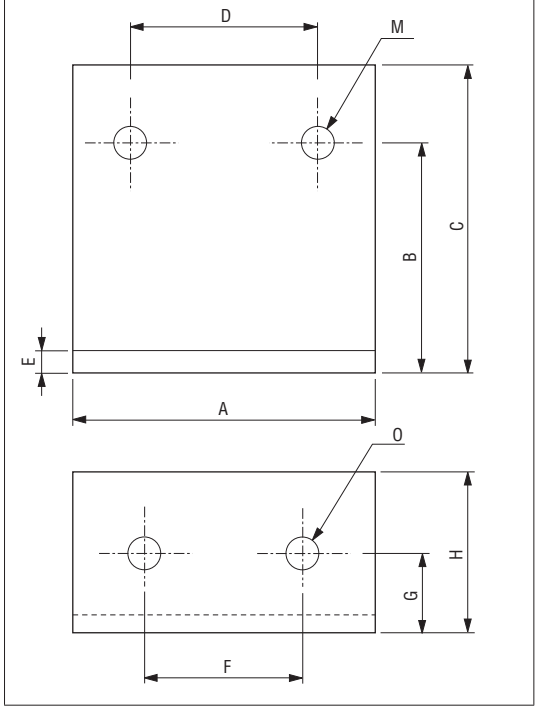
Order code No.	021009
TYPE	CP-070

- Weight : 17g
- For Limit Switch (Z-15HW)

CP-059



CP-070



Dimensions

(mm)

TYPE	CP-059-A	CP-059-B	CP-059-C	CP-070
A	30			40
B	–			30
C	–			40
D	–			25.5
E	3			3
F	20			20
G	10			10
H	20			20
I	22			–
J	10			–
K	15	20	25	–
L	25	30	35	–
M	–			M4
N	M3			–
O	M4			M4
Remarks	For VX-5-1A2			For Z-15HW24-B For Z-15GW55-B

Auto Switch (Reed·Contactless)

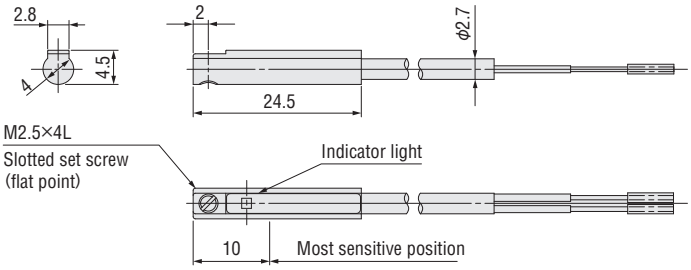
Can be attached to container cylinder and resin mini cylinder.



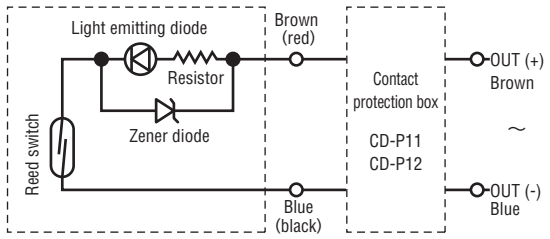
Auto switch (Reed SW)

Order code No.	030282
TYPE	D-A93

- Weight : 6g
- Length : 0.5m
- Terminal process is not made.



Internal circuit



■Specification

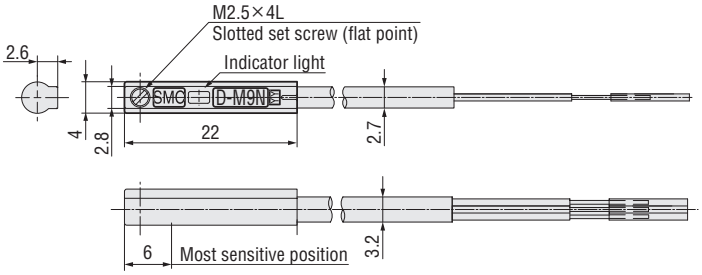
TYPE	D-A93 (With indicator light)
Applicable load	relay, PLC
Load voltage	24VDC
Load current range	5 ~ 40mA
Contact protection circuit	none
Internal voltage drop	2.4V or Less (~20mA) / 3V or Less (~40mA)
Indicator light	Red LED illuminates when turned ON
Standard	CE / UKCA marking
Lead wire	0.5M Load (brown), − (blue)



Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

- Weight : 8g
- Length : 0.5m
- Terminal process is not made.

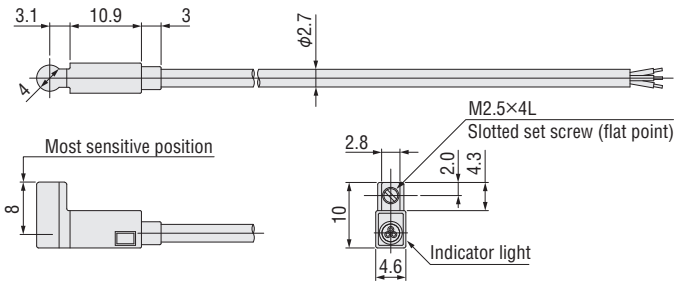




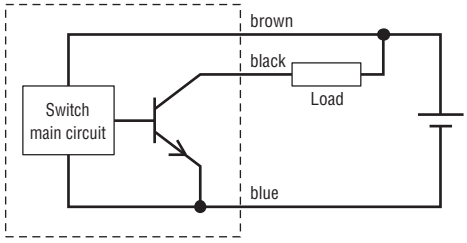
Auto switch (contactless)

Order code No.	030500
TYPE	D-F8N

- Weight : 7g
- Length : 0.5m
- Terminal process is not made.



Internal circuit



■Specification

TYPE	D-F8N • D-M9N
Output Type	NPN type
Applicable load	IC circuit, DC24V relay, PLC
Power supply voltage	DC5 • 12 • 24V (DC4.5 ~ 28V)
Current consumption	10mA or less
Load voltage	28VDC or less
Load current	40mA or less
Internal voltage drop	0.8V or less at 10mA (2V or less at 40mA)
Leakage current	100 μA or less at DC24V
Indicator light	Red LED illuminates when turned ON
Standard	CE marking, RoHS
Lead wire	0.5M + V (brown), Load (black), 0V (blue)

High-Precision Cylinder Sensor

Suitable for mini cylinders (MEC) and container cylinders. Detect even a tiny stroke with stability and certainty.

NEW



High-Precision Cylinder Sensor (N-pole)

Order code No.	002433
TYPE	ACH02LN

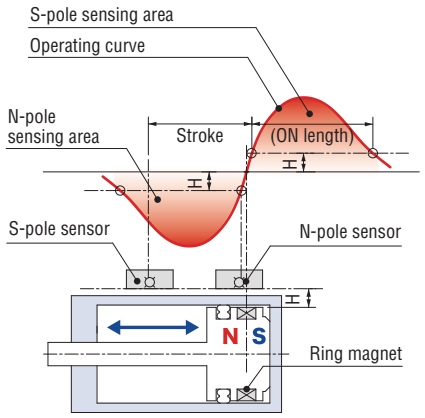
● Weight : 10.8g

High-Precision Cylinder Sensor (S-pole)

Order code No.	002434
TYPE	ACH02LS

● Weight : 10.7g

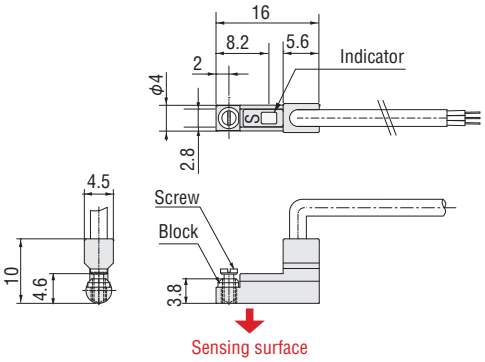
Operation curve of our products



Features

- Stable functioning even with a 1mm stroke
- Stable operational points' dependability
- Superior performance in the harsh environments of vibration,heat etc.
- Fast response less than 5 μs
- Usually combined with N pole and S pole.

Outside dimension



Specification

TYPE	ACH02LN	ACH02LS
Specification	3-wire L-shaped for trench φ4	
Power supply voltage	DC5 ~ 24V	
Detecting magnetic poles	N-pole	S-pole
Magnetic sensitivity	3 ~ 4mT	
Direction to detect	Downward	
Output specification	NPN open-collector (ON when in proximity)	
Output Current	20mA MAX	
Consumption current	8mA MAX	
Response time	16 μ sec max.	
Voltage Resistance	AC1000V (1 minute / packaged changing / between the case)	
Insulation Resistance	DC 250V (Over 20MΩ in megohms / between the case)	
Operation Temperature Range	−20℃~+85℃ (without condensation)	
Operation Humidity Range	20 ~ 95% RH	
Cable length	1m	
Cable specification	Black (N pole)	Grey (S pole)
Case material	GF reinforced PBT (black)	
Mounting	Attachment screws 0.06N・m	
Indicator light	Red	
Protective structure	IP67	

Circuit diagram

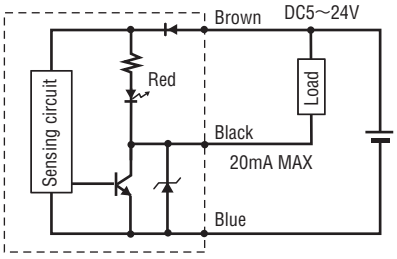
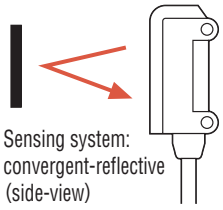


Photo Sensor

No amplifier is required ! Special-purpose mounting brackets are also provided for jungle gym and let's joint.

▶ Can be used with AND board.



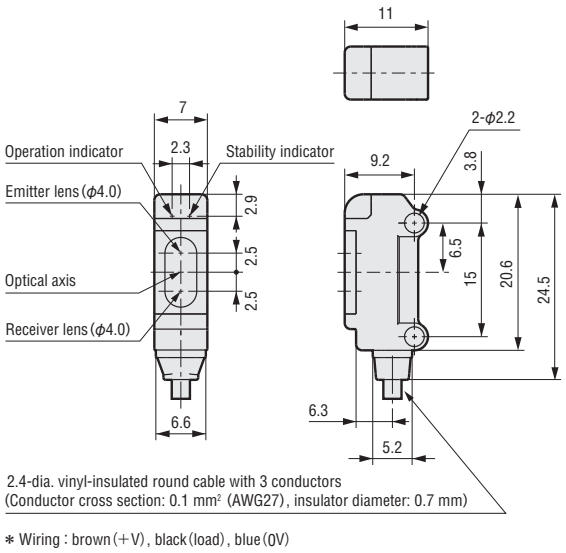


Order code No.	041412
TYPE	E3T-SL21R (NPN)

● Length : 2m

Order code No.	041649
TYPE	E3T-SL23R (PNP)

● Length : 2m



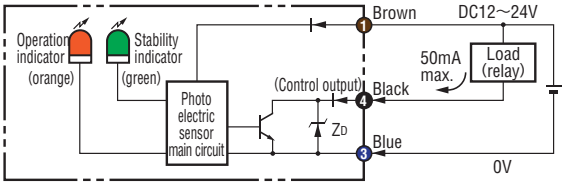
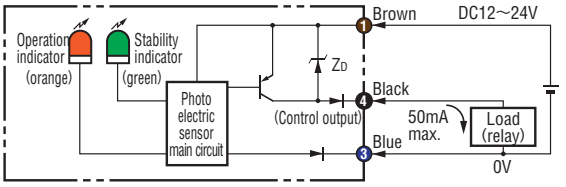
2.4-dia. vinyl-insulated round cable with 3 conductors
(Conductor cross section: 0.1 mm² (AWG27), insulator diameter: 0.7 mm)

∗ Wiring : brown (+V), black (load), blue (0V)

■ Specification

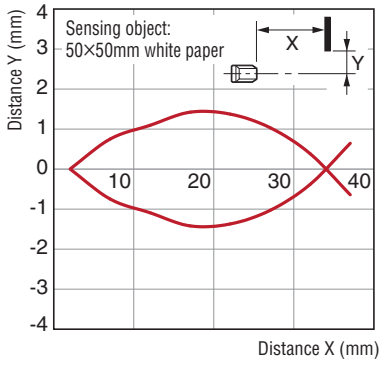
TYPE		E3T-SL21R (NPN)	E3T-SL23R (PNP)
Sensing system		Convergent-reflective (side-view)	
Output system		NPN output	PNP output
Sensing distance		5 to 30mm (50×50mm white paper)	
Minimum detectable object		0.15-mm dia. (sensing distance of 10mm)	
Hysteresis (white paper)		6mm max.	
Light source (wavelength)		Red LED (650nm)	
Power supply voltage		12 to 24VDCI 10%, ripple (p-p) 10% max.	
Current consumption		20mA max.	
Control output (Light-ON)		Load power supply voltage 26.4VDC max.	
		Load current: 50mA max. (residual voltage : 2V max. for load current of 10 to 50mA, 1V max. for load current of less than 10mA)	
		Open-collector output	
Protection circuits		power supply and control output reverse polarity protection, output short-circuit protection, mutual interference prevention	
Response time		Operate or reset 1ms max.	
Ambient illumination		Incandescent lamp 5,000lx max., sunlight 10,000lx max.	
Ambient temperature range		Operating : −25 to 55 ℃ (with no icing or condensation), Storage : −40 to 70 ℃ (with no icing or condensation)	
Ambient humidity range		operating 35% to 85%, storage : 35% to 95% (with no condensation)	
Insulation resistance		20M Ω min. at 500 VDC	
Dielectric strength		1,000VAC、50/60Hz、1min	
Vibration resistance (Destruction)		10 to 2,000Hz, 1.5-mm double amplitude or 300m/s² for 0.5 hrs each in X, Y, and Z directions	
Shock resistance (Destruction)		1,000m/s² 3 times each in X, Y, and Z directions	
Degree of protection		IP67 (IEC60529)	
Connection method		Pre-wired (standard length : 2m)	
Weight		Approx 20g	
Material	case	PBT (polyethyleneterephthalate)	
	Display window	denatured polyarylate	
	Lens	denatured polyarylate	
Accessories		Instruction manual, Set screws for mounting (M2×14), Nuts	

■ Input/output stage circuit diagram

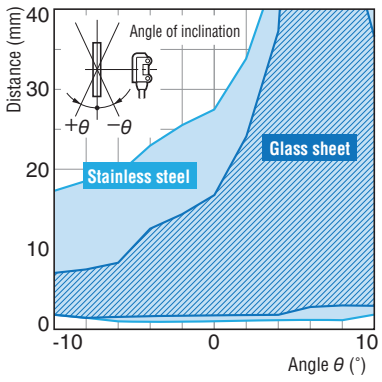
TYPE	Operation mode	Time chart	Output circuit
SE3T-SL21R (NPN output)	Light ON	Light incident / Light interrupted Operation indicator (orange) ON / OFF Output transistor ON / OFF Load (e.g., relay) Operate / Reset (Between brown(1) and black(4) leads)	
SE3T-SL23R (PNP output)	Light ON	Light incident / Light interrupted Output transistor ON / OFF Output transistor ON / OFF Load (e.g., relay) Operate / Reset (Between blue(3) and black(4) leads)	

■ Technical characteristics

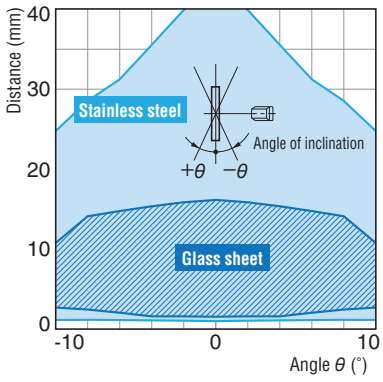
Operation area characteristics



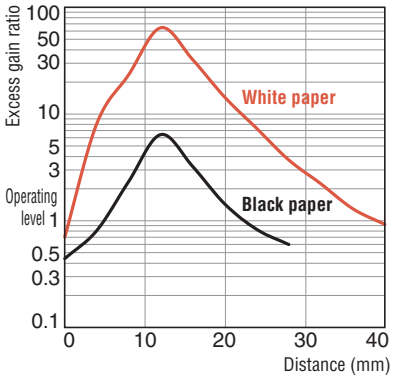
Inclination detection area characteristics (Top to bottom)



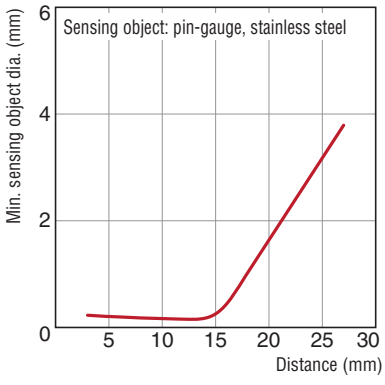
Inclination detection area characteristics (Right to left)



Detected object size −Distance characteristics



Light-receiving output −Distance characteristics



Detection distance −Material characteristics

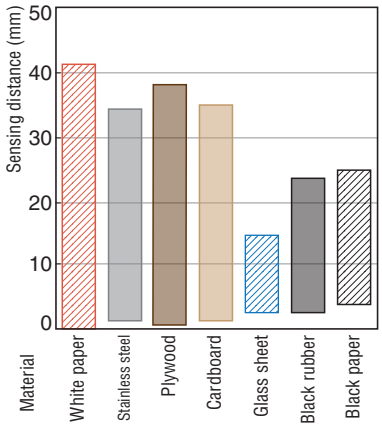


Photo Area Sensor

Can be used for passing fine workpieces.
Space-saving reflection type can be provided as a special-order product.

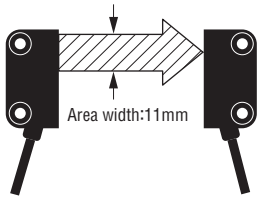
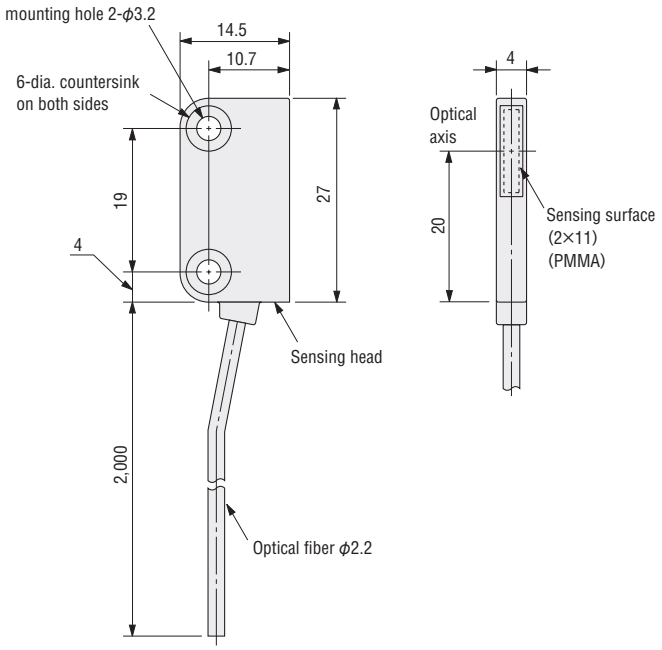


Photo area sensor

Order code No.	041415
TYPE	E32-T16PR

- Use the product with the optical amplifier sold separately.
- Length : 2m
- Material : heat-resistant ABS
- Provided with stickers with slits of width 0.5 and 1 mm(2 of each)



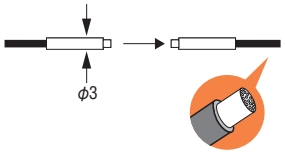
■ Specification

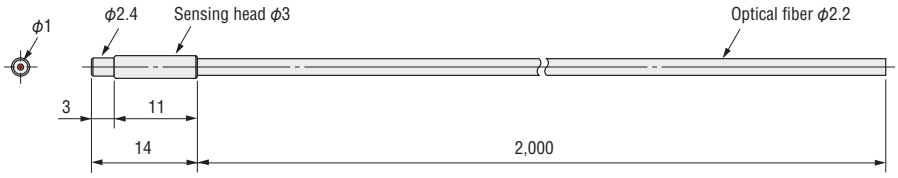
Fiber unit	E32-T16PR
Sensing system	area-sensing
Sensing distance (mm) *1	1,100 840 560 220
Surrounding temperature*2	− 40℃ to 70℃
Surrounding humidity*2	35% to 85% RH
Fiber material	Plastic (vinyl chloride coated)
Degree of protection	IP50 (IEC)

＊1 High-resolution mode Standard mode High-speed mode Super-highspeed mode (When used in combination with the E3X-DA-S Amplifier Unit (general-purpose).)
＊2 No freezing or no dew condensation shall occur under the operating surrounding temperature and humidity.

Fiber Units

Best suited for installation in a narrow area. Secure with a set screw.

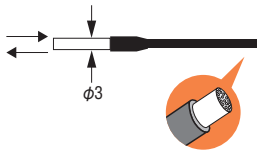


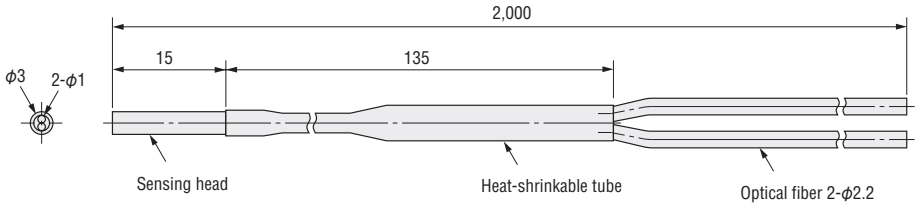


Fiber unit • ϕ3mm through beam

Order code No.	041413
TYPE	E32-T12R

- Use the product with the optical amplifier sold separately.
- Length : 2m (including detection head section)
- Detection head quality : Brass nickel plating





Fiber unit • ϕ3mm reflect

Order code No.	041414
TYPE	E32-D12R

- Use the product with the optical amplifier sold separately.
- Length : 2m (including detection head section)
- Detection head quality : Stainless (SUS304)

■ Specification

Fiber unit	E32-T12R	E32-D12R
Sensing system	Through-beam fiber units	Fiber units with reflective sensors
Sensing distance (mm) *1	700 530 350 140	300 170 120 50
Surrounding temperature *2	− 40℃ to 70℃	
Surrounding humidity *2	35% to 85% RH	
Fiber material	Plastic (vinyl chloride coated)	
Degree of protection	IP67 (IEC)	

＊1 High-resolution mode Standard mode High-speed mode Super-highspeed mode (When used in combination with the E3X-DA-S Amplifier Unit (general-purpose).)
＊2 No freezing or no dew condensation shall occur under the operating surrounding temperature and humidity.

Fiber Amplifier Unit

Amplifier for optical fiber.

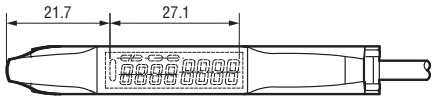


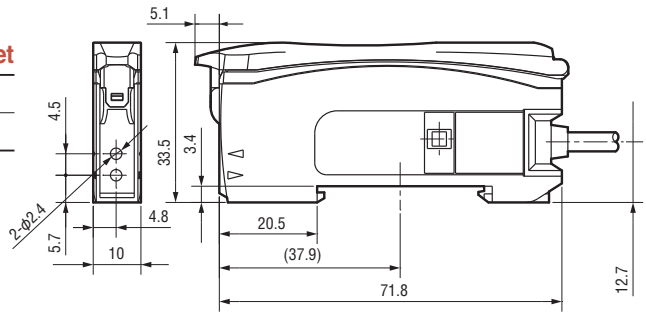
Order code No.	041954
TYPE	E3X-HD11 2M

- Function : AND/OR output
- Length : 2m
- NPN specification

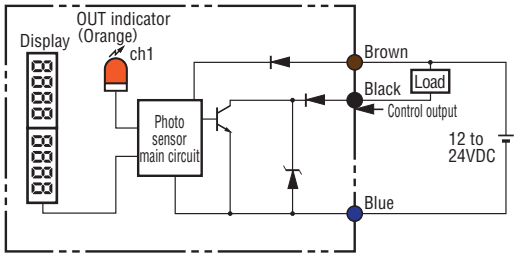
Fiber amplifier mounting bracket

Order code No.	041697
TYPE	E39-L143





■ Input / output stage circuit diagram

TYPE	Operation mode	Time chart	Operation selector	Output circuit
E3X-HD11 (2M)	Light ON	Incident light / No incident light OUT indicator (orange) Lit / No lit Output transistor ON / OFF Load (e.g., relay) Operation / Reset (Between brown and black leads)	L·ON (LIGHT ON)	
	Dark ON	Incident light / No incident light OUT indicator (orange) Lit / No lit Output transistor ON / OFF Load (e.g., relay) Operation / Reset (Between brown and black leads)	D·ON (DARK ON)	

■ Part names



L/D Indicator
Indicates the setting status: Light-ON (L) or Dark-ON (D).

OUT Indicator
Turns ON when the output is ON.

DPC Indicator
Turns ON when Dynamic Power Control is effective.

ST Indicator
Turns ON when Smart Tuning is in progress.

△L/D Button
Use to switch between Light-ON (L) and Dark-ON (D).

STUNE Button
Automatically sets the emitter power and set values.

Threshold Level Green digital display

Incident Level Red digital display

□MODE Button
Use to switch between Detection Mode and Setting Mode.

+−UP/DOWN Button
Used to fine-tune the threshold or change set values.

Specification

TYPE		E3X-HD11 2M
Light source (wavelength)		Red, 4-element LED (625 nm)
Power supply voltage		12 to 24 VDC ±10%, ripple(p-p) 10% max
Power consumption		720 mW max. (Current consumption: 30 mA max. at 24 VDC, 60 mA max. at 12 VDC)
Control output	Load power supply voltage	26.4VDC max　Open-collector output
	Load current	Groups of 1 to 3 Amplifier Units: 100mA max., Groups of 4 to 16 Amplifier Units: 20mA max
	Residual voltage	At load current of less than 10 mA: 1 V max., At load current of 10 to 100 mA: 2 V max.
	OFF current	0.1 mA max
Protection circuits		Power supply reverse polarity protection, output short-circuit protection and output reverse polarity protection
Response time	Super-highspeed mode*	NPN output：Operate or reset：50 μs
	High-speed mode	Operate or reset：return：250 μs (default setting)
	Standard mode	Operate or reset：1ms
	Giga power mode	Operate or reset：16ms
Mutual interference prevention		Possible for up to 10 units (optical communications sync)*
Automatic power control		Always ON
Other functions		Power tuning, differential detection, DPC, timer (OFF-delay, ON-delay, or one-shot), zero reset, resetting settings, and Eco mode
Ambient illumination		Incandescent lamp: 20,000 lx max., Sunlight: 30,000 lx max.
Ambient temperature range		Operating：Groups of 1 to 2 Amplifiers: −25 to 55°C, Groups of 3 to 10 Amplifiers: −25 to 50°C, Groups of 11 to 16 Amplifiers: −25 to 45°C Storage：−30 to 70°C (with no icing or condensation)
Ambient humidity range		Operating and storage：35% to 85% (with no condensation)
Insulation resistance		20MΩ min. (at 500 VDC)
Dielectric strength		1,000 VAC at 50/60 Hz for 1 minute
Vibration resistance (Destruction)		10 to 55 Hz with a 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions
Shock resistance (Destruction)		500m/s^2 for 3 times each in X, Y, and Z directions
Degree of protection		IEC 60529 IP50 (with Protective Cover attached)
Weight (packed state/unit only)		About 105g/about 64g
Materials	Case	Polycarbonate (PC)
	Cover	Polycarbonate (PC)
	Cable	PVC
Accessories		Instruction manual

* The communications function and mutual interference prevention function are disabled when the detection mode is set to Super-high-speed mode (SHS).
When including E3X-DA-S with activated power tuning, mutual interference prevention is possible for up to 6 units. When including E3X-MDA with activated power tuning, mutual interference prevention is possible for up to 5 units.

Safety Precautions

⚠Warning



This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.

Notes on use

Do not use this product under ambient atmosphere and environment exceeding the rating.

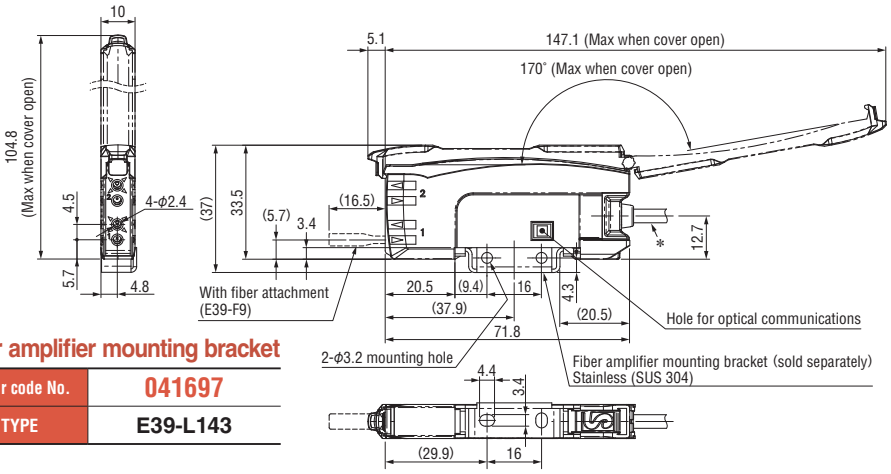
● For design (operation at power on)

The sensor becomes detectable within 200 ms after the power is turned on. If the load and the sensor are connected to separate power supply units, be sure to turn on the sensor power supply first.

Two optical fibers could be connected, the installation space become 1 / 2. Contribute to the miniaturization of equipment and control board in space saving.



With mounting bracket attached



Order code No.	042093
TYPE	E3NX-MA11

● Function: AND/OR output ● Two channel type
● Length : 2m ● NPN specification

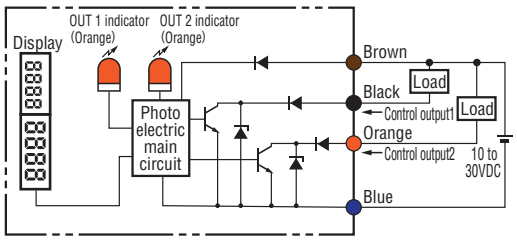
Fiber amplifier mounting bracket

Order code No.	041697
TYPE	E39-L143

*Cord specification

Type	Outer diameter	Number of wire cores	Others
E3NX-MA11	φ4.0	4-core	Conductor cross section:0.2mm² Insulator diameter: φ0.9mm

■ Input / output stage circuit diagram (NPN Output)

TYPE	Operation mode	Time chart	MODE Switching button	Output circuit
E3NX-MA11 (NPN)	Light-ON	Incident light / No incident light OUT indicator (orange) Lit / No lit Output transistor ON / OFF Load (e.g., relay) Operation / Reset (Between brown and black leads)	L·ON (LIGHT ON)	
	Dark-ON	Incident light / No incident light OUT indicator (orange) Lit / No lit Output transistor ON / OFF Load (e.g., relay) Operation / Reset (Between brown and black leads)	D·ON (DARK ON)	

■ Part names



L/D Indicator
Indicates the setting status: Light-ON (L) or Dark-ON (D).

DPC Indicator
Turns ON when Dynamic Power Control is effective.

△L/D Button
Use to switch between Light-ON (L) and Dark-ON (D)

OUT 1 Indicator / OUT 2 Indicator
When OUT1 or OUT2 is ON.

ST Indicator
Turns ON when Smart Tuning is in progress.

STUNE Button
Automatically sets the emitter power and set values.

Threshold Level Green digital display

Incident Level Red digital display

□MODE Button
Use to switch between Detection Mode and Setting Mode.

OUT 1 Indicator
OUT 2 Indicator
The indicator fo the selected output channel is it.

+−UP/DOWN Button
Used to fine-tune the threshold or change set values.

Specification

TYPE		E3NX-MA11 (NPN)
Light source (wavelength)		Red, 4-element LED (625 nm)
Power supply voltage		10 to 30 VDC, Including 10%, ripple (p-p)
Power consumption		960 mW max. (current consumption at 40mA max.)
Control output	Load power supply voltage	30VDC max, open-collector output*1
	Load current	100mA max.; residual voltage : 1V max.
Protection circuits		Power supply reverse polarity protection, output short-circuit protection and output reverse polarity protection
Response time	Super-highspeed mode*2	Operate or reset : 130μs※2※3
	High-speed mode	Operate or reset : 450μs
	Standard mode	Operate or reset : 1ms
	Giga power mode	Operate or reset : 16ms
Sensitivity setting		Teaching or manual method
Functions	Power tuning	Select from ON/OFF
	Timer	Select from OFF-delay, ON-delay, or one-shot timer.
	Automatic power control	Equipped (Always effective)
	Zero-reset	Negative values can be displayed. (Threshold value is shifted.)
	Initial reset	Settings can be returned to defaults as required.
	Mutual interference prevention	Possible for up to 9 units (18 channels) ※4
Indicators		Operation indicator 1ch (orange) ,Operation indicator 2ch (orange)
Digital display		Select from incident level for channel 1 + incident level for channel 2 or other 7 patterns
Display orientation		Switching between normal / reversed display is possible.
Ambient illumination		Incandescent lamp : 20,000 max. Sunlight : 30,000 max.
Ambient temperature range		Operating : Groups of 1 to 2 Amplifier Units : −25℃ to 55℃ , Groups of 3 to 10 Amplifier Units : −25℃ to 50℃ , Groups of 11 to 16 Amplifier Units : −25℃ to 45℃ Storage : −30 to 70℃ (with no icing or condensation)
Ambient humidity range		Ambient humidity range : Operating and storage : 35% to 85% (with no condensation)
Insulation resistance		20MΩ min. (at 500 VDC)
Dielectric strength/Vibration resistance /Shock resistance		1,000 VAC at 50/60 Hz for 1 minute / Destruction: 10 to 55 Hz with a 1.5-mm double amplitude for 2 hrs each in X, Y and Z directions
Degree of protection		IEC 60529 IP50 (w / protective cover attached)
Connection method		Code drawing type (2m)
Weight (packed state)		About 190g
Material		Case : Polybutylene terephthalate (PBT) , Cover : Polycarbonate (PC)
Accessories		Instruction manual

∗1 Depends on the NPN/PNP output system.
∗2 Communications are disabled if the detection mode is selected during super-high-speed mode, and the communications functions for mutual interference prevention and the Mobile Console will not function.
∗3 When differential output is selected for the output setting, the second channel output is 200 μs for operation and reset respectively.
∗4 Mutual interference prevention can be used for up to 5 units (10 channels) if power tuning is enabled.

Safety Precautions

⚠ Warning

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.

Notes on use

Do not use this product under ambient atmosphere and environment exceeding the rating.

● For design (operation at power on)

The sensor becomes detectable within 200 ms after the power is turned on. If the load and the sensor are connected to separate power supply units, be sure to turn on the sensor power supply first.

Proximity Sensor

Micro proximity sensor.



Order code No.	041417
TYPE	E2S-W13 (NPN)

● Length : 1m



Order code No.	041640
TYPE	E2S-W15 (PNP)

● Length : 1m

NEW



Order code No.	041773
TYPE	E2S-W13-R-S (NPN)

● Length : 1m
● Please utilize it as the sensor for the runner chuck (E, E1 Series) due to the improved vibration resistance standard.

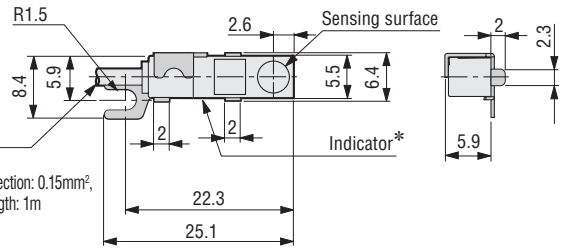
■ Specification

TYPE		E2S-W13 (NPN)	E2S-W15 (PNP)	E2S-W13-R-S (NPN)
Sensing surface		Top		
Sensing distance		1.6mm ± 15%		
Set distance		0 ～ 1.2mm		
Differential travel		10% max. of sensing distance		
Detectable object		Ferrous metal (The sensing distance decreases with non-ferrous metal.)		
Standard sensing object		Iron, 12 × 12 × 1mm		
Response frequency*1		1kHz (Average value)		
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p) : 10% max.		
Current consumption		13mA max. at 24VDC (no-load)		
Control output	Load current	NPN open-collector output, 50mA max. (30VDC max.)	PNP open-collector output, 50mA max. (30VDC max.)	NPN open-collector output, 50mA max. (30VDC max.)
	Residual voltage	1.0V max. (load current of 50mA with cable length of 1m)		
Indicators		Operation indicator (orange)		
Operation mode (with sensing object approaching)		NO		
Protection circuits		Power supply reverse polarity protection, surge suppressor		
Ambient temperature range		Operating : −25 to 70℃ (with no icing or condensation), Storage : −40 to 85℃ (with no icing or condensation)		
Ambient humidity range		operating : 35% to 90% (with no condensation), storage : 35% to 95% (with no condensation)		
Temperature influence		± 15% max. of sensing distance at 23℃ in the temperature range of −25 to 70℃		
Voltage influence		±2.5% max. of sensing distance at rated voltage in rated voltage ±10% range		
Insulation resistance		Between charged parts and the case : 50 MΩ min. (at 500 VDC)		
Dielectric strength		Between charged parts and the case : 1,000VAC 50/60 Hz for 1 min		
Vibration resistance (Destruction)		10 to 55Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions		
Shock resistance (Destruction)		500m/s² 3 times each in X, Y, and Z directions		
Degree of protection		IEC 60529 IP67		
Connection method		Pre-wired models (1m)		
Weight		Approx 20g		Approx 30g
Material (case)		polyarylate		
Accessories		Mounting brackets*2		

∗1 The response frequency is an average value.Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object, and a set distance of half the sensing distance.

∗2 Not for runner chuck. See page ➡ 2-33,35 for runner chuck.

With mounting bracket attached

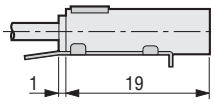


Vinyl insulation round type cord

ϕ2.9. vinyl-insulated round cable
with 2 / 3 conductors (conductor cross section: 0.15mm^2, insulator diameter: 0.9 mm), standard length: 1m

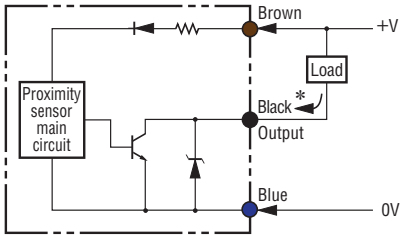
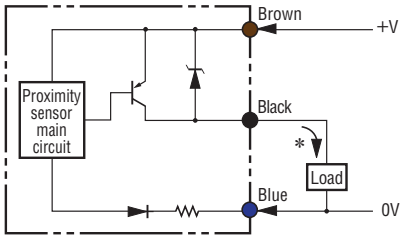


Shape : Unshield



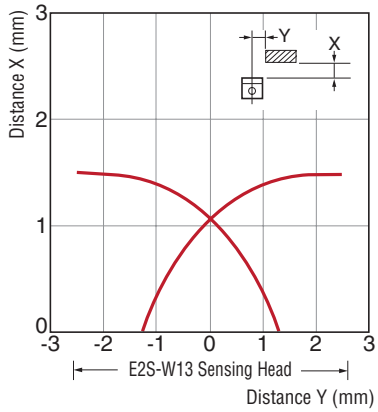
* Operation indicator (orange)
* Wiring : brown (+V), black (load), blue (0V)
* E2S-W13, E2S-W15 and E2S-W13-R-S have the same size.

■ Input/output stage circuit diagram

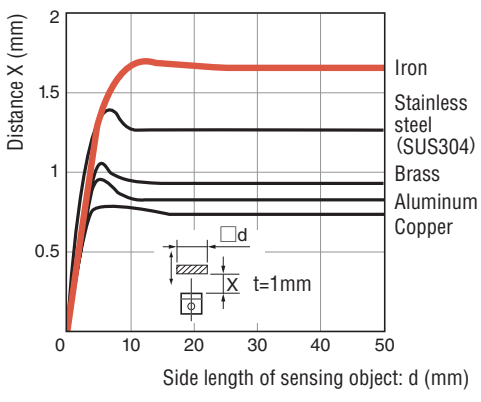
TYPE	Operation mode	Output system	Timing chart	Output circuit
E2S-W13 (NPN) **E2S-W13-R-S (NPN)**	NO	NPN	Sensing object: Present / Not present Output transistor (Load): ON / OFF Operation indicator (orange): ON / OFF	 *Load current: 50mA max.
E2S-W15 (PNP)	NO	PNP	Sensing object: Present / Not present Output transistor (Load): ON / OFF Operation indicator (orange): ON / OFF	 *Load current: 50mA max.

■ Technical characteristics (typical example)

Sensing area

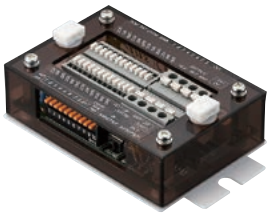


Influence of sensing object size and material



Multi AND Board

Combine multiple sensors to create one output to robot



Eight-point specification

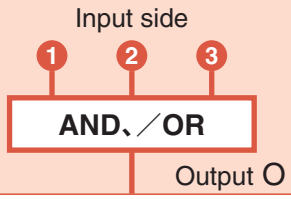
Multi AND board

Order code No.	002161
TYPE	AND/OR-EU

● Weight : 115g

- Just connect a sensor. The easy design allows minimum wiring and space saving.
- Switching AND and /OR outputs is easy and quick. Just slide the select switch at the unit.
- The protective circuit prevents problems with overloads.

About "AND" and "/OR"



AND

Output O is turned on when all the inputs (❶❷❸) are ON.

／OR

Output O is turned on when all the inputs (❶❷❸) are OFF.

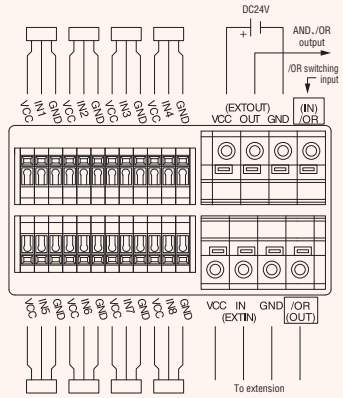
■Specification

Max. number of connection sensors	Power supply voltage (V)	Internal consumption current (mA)	Sensor input terminal (mA)
8	DC24 (±10%)	100 or less (DC24V)	10 or less / one point

Surrounding humidity (%)	Surrounding temperature (℃)	Operation condition
35-80 (non-condensing)	0-40	No particulate and corrosive gas

＊Can be extended to 32 points.

Wiring specification



Connection method

①Push down the button with tools such as minus driver.
②Put the stripped electric wire into the wire insert hole of the terminal block.
③Release the button. And connection completed.

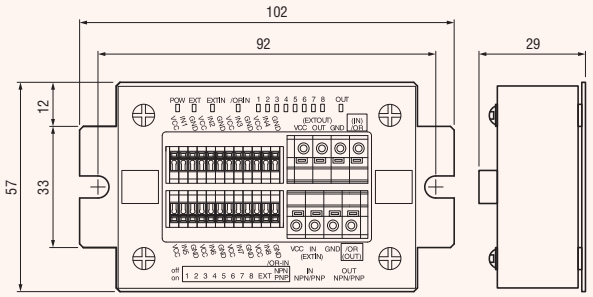
＊Be sure to insert a wire into the hole.

Diameter of electric wire

Sensor input terminal
AWG28-AWG22
Power supply input, signal output terminal / extension
AWG26-AWG22

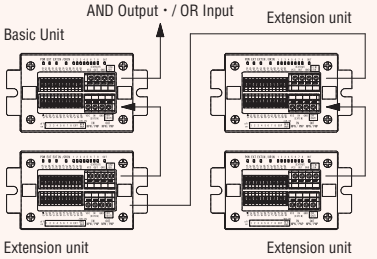
＊Stripped wire length of each terminal is 10mm.

Outside dimension / mounting dimension



＊2-φ6 (mounting hole) : M4-M5　＊Use the mounting washer (φ10mm or less) for M5.

Extension Configuration

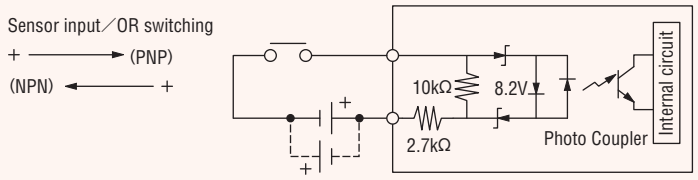


When the power supply voltage becomes less than 21V, the power indicator light will become dark, and please check the power supply to this unit.

- The extension unit could be extended up to 3 units to the basic unit.
- Please wire for AND Output・/ OR Input.
- The / or input of the extension unit will match the polarity of all units at / OR-IN the dip switch.
- The OUT of extension unit should be set to the NPN side.

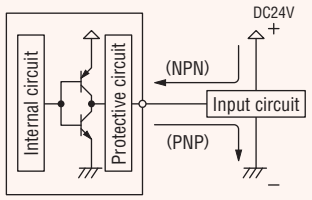
＊Please add the basic unit if extension unit is more than 3.

Sensor input OR switching input circuit configuration (8-point, 4-point common)



＊Select the input setting with the switch as illustrated according to the output circuit specification of the customer's sensor.
＊Select the input with the DIP switch as illustrated according to the output circuit specification of the customer.

Configuration of output circuit (8-point, 4-point common)

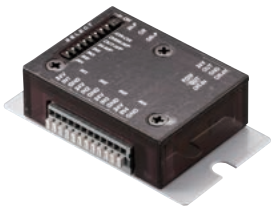


＊Select NPN/PNP as illustrated above according to the input circuit specification of the customer.

Multi AND board



You can see moving images of products by using QR code reader of your smartphone.



Four-point specification

Multi AND board 4P

Order code No.	002237
TYPE	AND/OR-EU-4P

● Weight : 58g

- Just connect a sensor. The easy design allows minimum wiring and space saving.
- Product hold condition check and product release condition check can be switched by switching AND output, /OR output, and OR output. Product hold condition and product release condition can be checked by one unit.
- The protective circuit prevents problems with overloads.

About "AND", "/OR", and "OR"

Input side

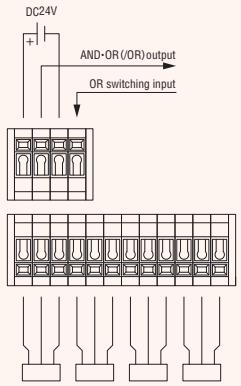
1 2 3

AND, ／OR, OR

Output S

AND	／OR	OR
Output S is turned on when all the inputs (123) are ON.	Output S is turned on when all the inputs (123) are OFF.	Output S is turned on when either of input (123) is ON.

Wiring specification



Connection method

① Push down the button with tools such as minus driver.
② Put the stripped electric wire into the wire insert hole of the terminal block.
③ Release the button. And connection completed.

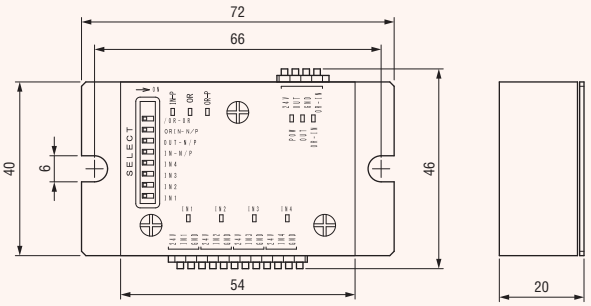
＊Be sure to insert a wire into the hole.

Diameter of electric wire

Sensor input terminal
AWG28-AWG22
Power supply input, signal output terminal / extension
AWG26-AWG22

＊Stripped wire length of each terminal is 10mm.

Outside dimension / mounting dimension



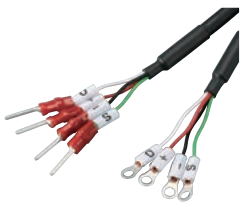
24V 24V(+) GND 24G(−) IN signal

＊2-φ6 (mounting hole) : M4-M5
＊Use the mounting washer (φ10mm or less) for M5.

■Specification

Max. number of connection sensors	Power supply voltage (V)	Internal consumption current (mA)	Sensor input terminal (mA)	Surrounding humidity (%)	Surrounding temperature (℃)	Operation condition
4	DC24 (±10%)	50 or less (DC24V)	10 or less / one point	35-80 (non-condensing)	0-40	No particulate and corrosive gas

- Connecting cable for Eins Multi AND Board



Eight-point specification

Connection harness • for multi AND boards

Order code No.	123106
TYPE	MAND-EH05 • 500MM

● Overall length : 500mm

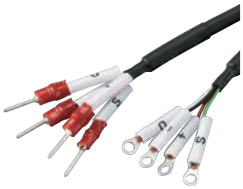


Eight-point specification

Connection harness • for multi AND boards

Order code No.	123105
TYPE	MAND-EH02 • 200MM

● Overall length : 200mm



Eight-point specification

Connection harness • for multi AND boards

Order code No.	123107
TYPE	MAND-EH10 • 1000MM

● Overall length : 1,000mm



Triplex cable (5m)

Order code No.	171292
TYPE	RMCV-0 0.3SQ＊3C 5M

● Overall length : 5,000mm

PCIO Communication Unit

Two power lines allows simple wiring between units for power supply and input/output communication

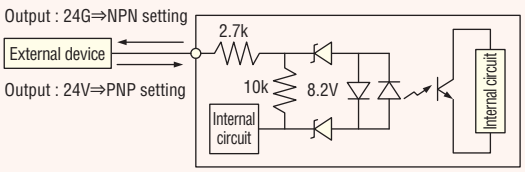
- Two power lines allows simple wiring between units for power supply and input communication.
- Input signal reception with sink/source specifications.
- Two types according to the number of input/output points : 16 points (eight/eight) and 32 points (16/16).

Specification

	E-PCIO-UNIT16	E-PCIO-UNIT32
Power supply voltage	DC24V (±10%)	
System consumption current	2A or less	
Internal consumption current	100mA or less (DC24V)	180mA or less (DC24V)
Output current	100mA (Max) / one point	50mA (Max) / one point
Input current	5mA or less / one point	
Surrounding humidity	35%~80% (non-condensing)	
Surrounding temperature	0-40℃	
Operation condition	No particulate and corrosive gas	

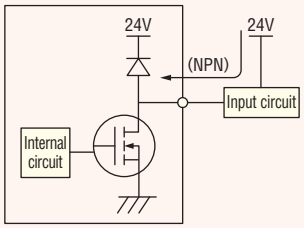
Configuration of Input circuit

Input switch



* Please switch the switch according to the output specifications of the customer, referring to the above figure.

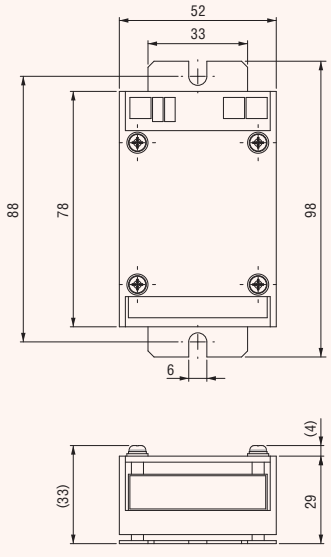
Configuration of output circuit



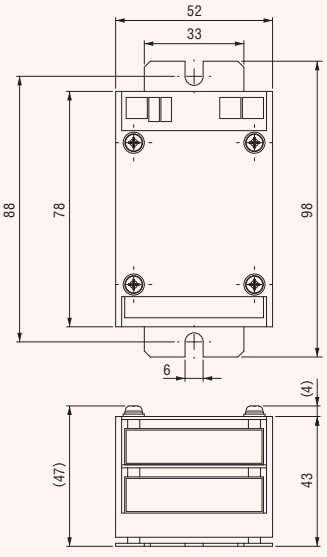
* Only NPN is used for the output specification of the unit.

Outside dimension / mounting dimension

E-PCIO-UNIT 16



E-PCIO-UNIT 32





Power Communication I/O unit (16)

Order code No.	152312
TYPE	E-PCIO-UNIT 16

● Weight : 97g

Power Communication I/O unit (32)

Order code No.	152313
TYPE	E-PCIO-UNIT 32

● Weight : 131g



PCIO communication harness (03)

Order code No.	152314
TYPE	E-PCIO-HNS 03

● Harness length : 300mm

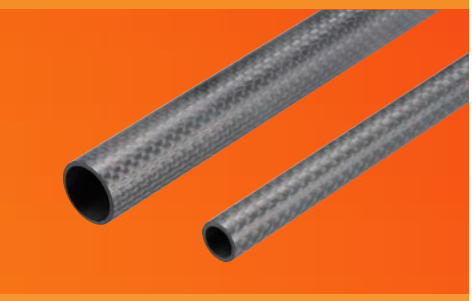


PCIO marktube

Order code No.	041770
TYPE	E-PCIO-MKT SET

● 2 set

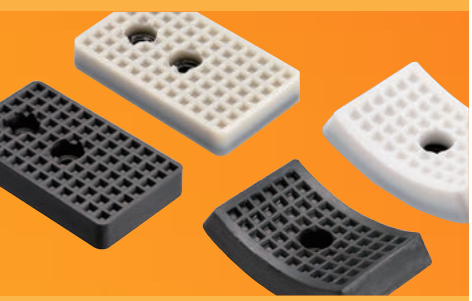
Lightweight Parts Series











Frame 7-2

- CFRP Pipe (ϕ 12 / ϕ 20) 7-2
- Pipe End Cap 7-2
- Tie Wrap Base 7-2

Suction 7-3

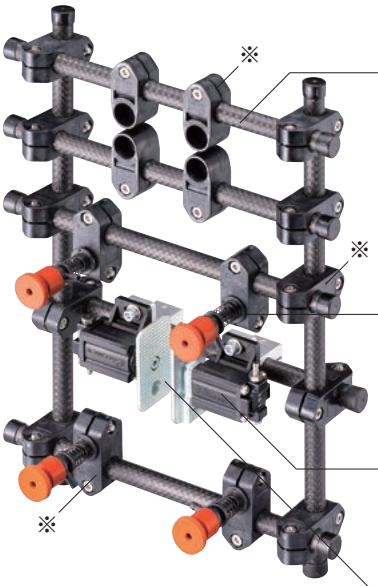
- Resin Suction Stem (Mini) 7-3
- Resin Suction Stem (Small) 7-4

Resin Cylinders / Pads / Resin Manifolds 7-5

- Resin Cylinders 7-5
- Pads (Rectangle / Curved) 7-5
- Resin Manifolds 7-5

Frame

More lightweight parts line up. The combination of the lightweight parts series makes the EOAT lighter and reduces the load on the Robot.

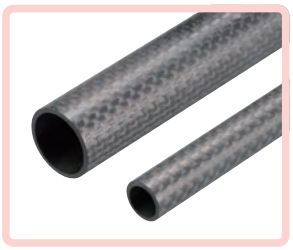


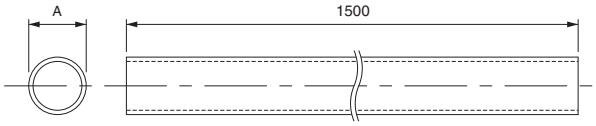
Pipe	250g	→ 121g	51.6% DOWN
Bracket	16.3g	→ 7g	57.1% DOWN
Bracket	21g	→ 16g	23.8% DOWN
Cylinder	65g	→ 40g	38.5% DOWN
Pads	43g	→ 22g	48.8% DOWN

Total weight of hand 738g

It is 32% lighter when compared with the SUS pipe or aluminum products.

※Resin attach bracket and resin cross connector are coming soon.







Jungle gym CFRP pipe ϕ12・ϕ20

Order code No.	023361	023362
TYPE	CFRP 12*1.5*1500	CFRP 20*1.5*1500

● Weight : ϕ12/121g、ϕ20/200g

■Specification

Product name	A	Thickness	Material	Outside diameter tolerance
Jungle gym CFRP pipeϕ12	ϕ 12	1.5mm	CFRP	−0.05 ～ −0.15
Jungle gym CFRP pipeϕ20	ϕ 20			

*The tolerance of outside diameter is a rough standard.
*When cutting pipes, burrs may occur on the cut surface.

Pipe end cap ϕ12・ϕ20

Order code No.	171339	171340
TYPE	R-CAP-12	R-CAP-20

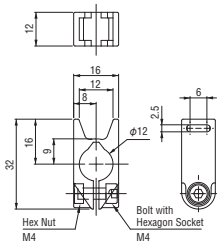
● Weight : ϕ12/0.4g、ϕ20/3.0g



Resin Fixture ϕ12 (Cable ties)

Order code No.	171210
TYPE	RCA12

● Weight : 5g

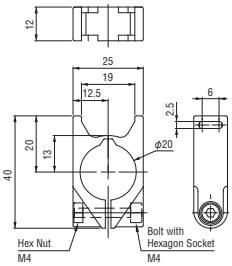




Resin Fixture ϕ20 (Cable ties)

Order code No.	171211
TYPE	RCA20

● Weight : 7g

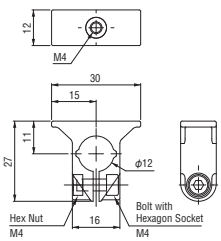




Resin Fixture ϕ12 (M4)

Order code No.	171212
TYPE	RCB12

● Weight : 6g

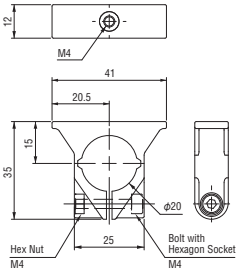




Resin Fixture ϕ20 (M4)

Order code No.	171213
TYPE	RCB20

● Weight : 9g

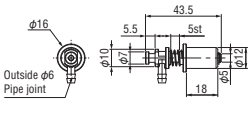
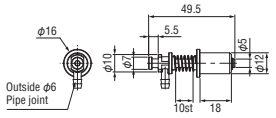
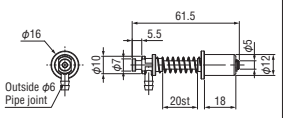
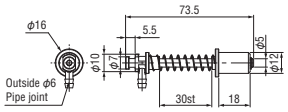


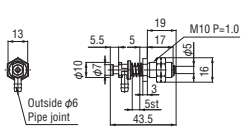
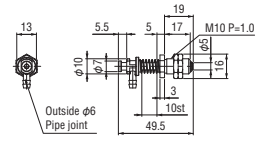
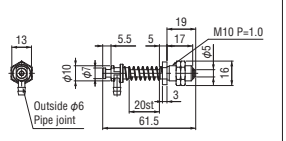
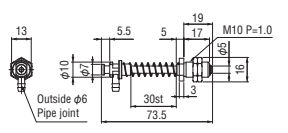
Resin Suction Stem(Mini)

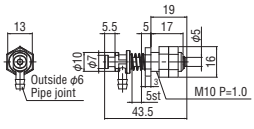
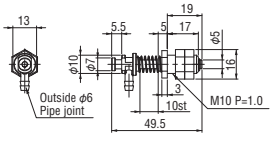
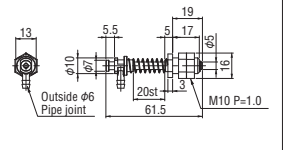
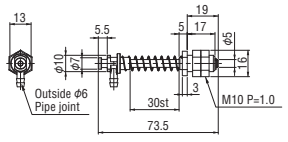
To achieve the lightweight products, the body is made of resin.

Direct connection on jungle gym series parts is possible.

- The suction cup is sold separately.
- Cup fixing system : embedded

Resin Suction Stems (Mini) / Resin Pipe Holder	＊1 	＊1 	＊1 	＊1 
Drawing				
Order code No.	211105	211106	211107	211108
TYPE	VFILP-SS-5-P12	VFILP-SS-10-P12	VFILP-SS-20-P12	VFILP-SS-30-P12
Weight	4g	4g	6g	7g
Piping/Mounting	ϕ6／ϕ12			
Applicable cup size	ϕ4～14			

Resin Suction Stems (Mini) / Aluminum Nut				
Drawing				
Order code No.	211109	211110	211111	211112
TYPE	VFILP-SS-5	VFILP-SS-10	VFILP-SS-20	VFILP-SS-30
Weight	9g	9g	10g	11g
Piping/Mounting	ϕ6 ／ M10 P=1.0			
Applicable cup size	ϕ4～14			

Resin Suction Stems (Mini) / Resin Nut	NEW ＊2 	NEW ＊2 	NEW ＊2 	NEW ＊2 
Drawing				
Order code No.	211144	211145	211146	211147
TYPE	VFILPL-SS-5	VFILPL-SS-10	VFILPL-SS-20	VFILPL-SS-30
Weight	4.8g	5.1g	5.85g	6.4g
Piping/Mounting	ϕ6 ／ M10 P=1.0			
Applicable cup size	ϕ4～14			

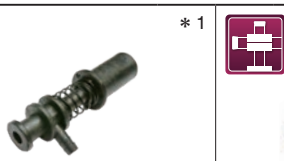
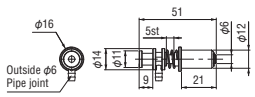
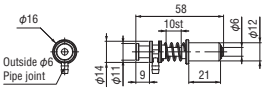
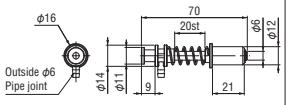
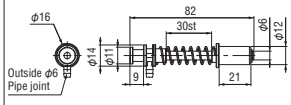
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＊2 Please do not overtighten. (Recommended torque: 0.8-1.0 N・m)

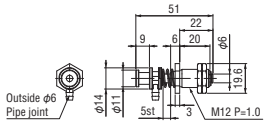
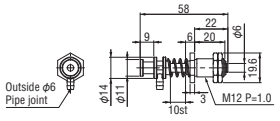
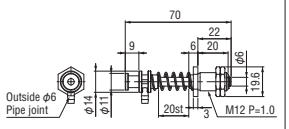
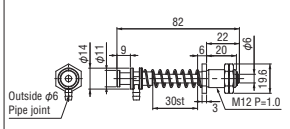
Resin Suction Stem(Small)

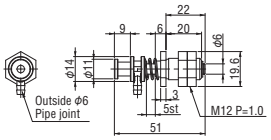
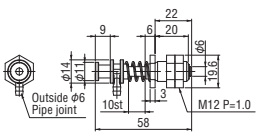
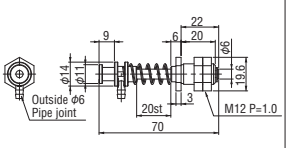
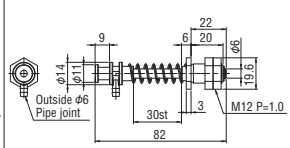
To achieve the lightweight products, the body is made of resin.

Direct connection on jungle gym series parts is possible.

● The Suction Cups Are Sold. ● Cup Fixing System

Resin Suction Stems (Mini) / Resin Pipe Holder	＊1 	＊1 	＊1 	＊1 
Drawing				
Order code No.	211092	211093	211094	211095
TYPE	VFILP-S-5-P12	VFILP-S-10-P12	VFILP-S-20-P12	VFILP-S-30-P12
Weight	7g	7g	8g	9g
Piping/Mounting	ϕ6 ／ϕ12			
Applicable cup size	ϕ15 ～ 45			

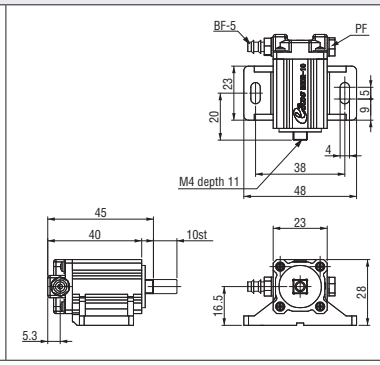
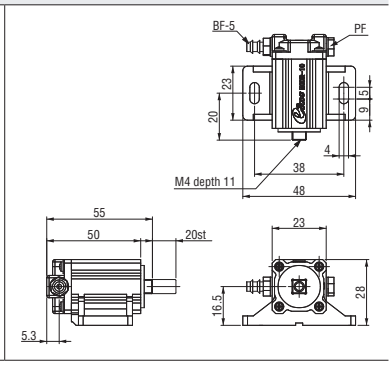
Resin Suction Stems (Mini) / Aluminum Nut				
Drawing				
Order code No.	211097	211098	211099	211100
TYPE	VFILP-S-5	VFILP-S-10	VFILP-S-20	VFILP-S-30
Weight	16g	16g	17g	18g
Piping/Mounting	ϕ6 ／ M12 P=1.0			
Applicable cup size	ϕ15 ～ 45			

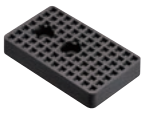
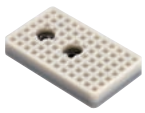
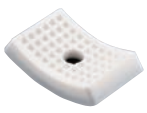
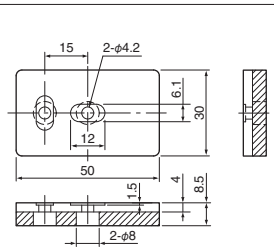
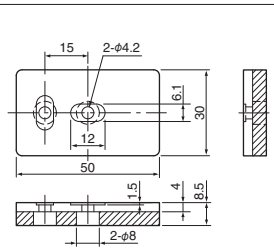
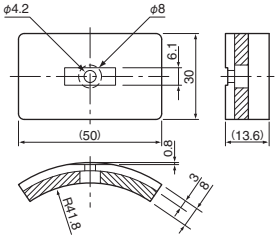
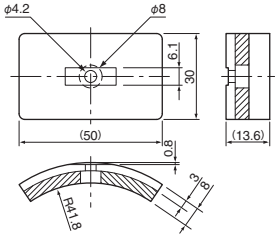
Resin Suction Stems (Mini) / Resin Nut	NEW ＊2 	NEW ＊2 	NEW ＊2 	NEW ＊2 
Drawing				
Order code No.	211148	211149	211150	211151
TYPE	VFILPL-S-5	VFILPL-S-10	VFILPL-S-20	VFILPL-S-30
Weight	8.35g	8.85g	9.7g	10.5g
Piping/Mounting	ϕ6 ／ M12 P=1.0			
Applicable cup size	ϕ15 ～ 45			

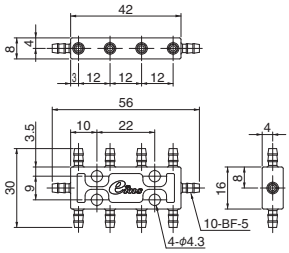
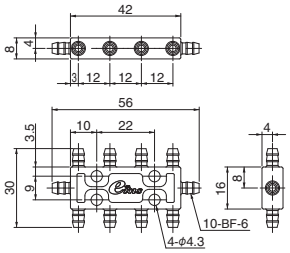
＊1 Please press through the bottom when fixing. OR When attaching, please be sure to push it all the way to the bottom.
＊2 Please do not overtighten. (Recommended torque: 0.8-1.0 N・m)

Resin Cylinders ／ Pads ／ Resin Manifolds

Achieved the further lightweight parts. Optimal item for make lightweight hand.

Product name	Resin Cylinder・MCDR	
Drawing	 	 
Order code No.	123691	123692
TYPE	MCDR-10	MCDR-20
Weight	40g	48g
	● Stroke: 10mm ● Joint pipe fitting BF-5 included ● Include mounting washers.	● Stroke: 20mm ● Joint pipe fitting BF-5 included ● Include mounting washers.

Product name	Pad・rectangle・black 2 holes・for mini cylinder	Pad・rectangle・white 2 holes・for mini cylinder	Pad・curved・black・for mini cylinder	Pad・curved・white・for mini cylinder
				
Drawing				
Order code No.	023336	023337	023359	023360
TYPE	CPL-060	CPL-061	CPL-018	CPL-072
Weight	22g	22g	19g	19g
Material	Chloroprene rubber	Silicone	Chloroprene rubber	Silicone
Cylinder	MCD1、MCDR、MCDP、MCE、MCP1-20 series			

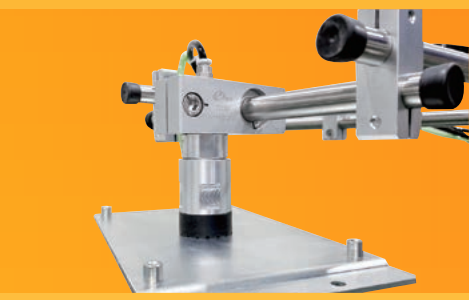
Product name	Light weight plastic manifold BF5	Cap for resin manifold・BF5	Light weight plastic manifold BF6	Cap for resin manifold・BF6
				
Drawing				
Order code No.	123195	010585	123196	010586
TYPE	MP-10P-BF5	BF5-CAP	MP-10P-BF6	BF6-CAP
Weight	5g	1g	5g	1g

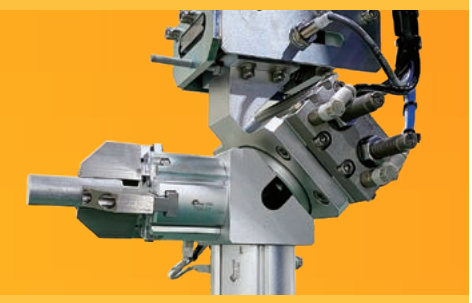
MEMO

By Industry











Logistics • Palletizing 8-2

- Air Ejectors ／ Pad 8-2
- Vacuum Gripper 8-3

Sheet Metal • Stamping • Metal Fabrication 8-4

- Magnet Chucks 8-4
- Three Claws Chuck 8-5
- Suction Cups 8-6

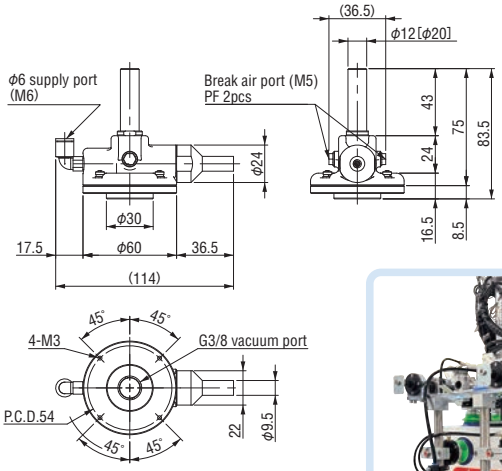
Logistics • Palletizing 【Air Ejectors / Pad】

Perfect for transportation of heavy weight and cardboard.

NEW ▶ Air Ejectors







Air Ejectors(shaft ϕ 12)

Order code No.	042116
TYPE	ESVP10-A

● Weight : 146g

Air Ejectors(shaft ϕ 20)

Order code No.	042129
TYPE	ESVP10-A-20

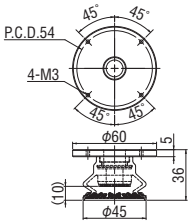
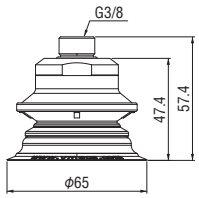
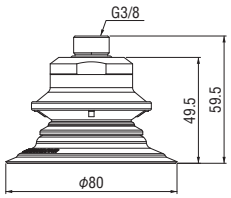
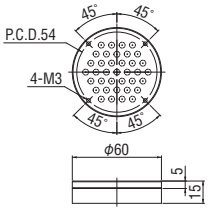
● Weight : 169g



■ Specification

TYPE	Max vacuum (−kPa)	Max suction discharge (NL/min)	Air supply pressure (MPa)	Air consumption (L/min)	Noise level (dBA)
ESVP10-A	−79.5	85	0.5	57	65 ～ 70

NEW ▶ Carrier Cup (for Ejector only)

Applicable cup size	ϕ45mm	ϕ65mm	ϕ80mm	ϕ60mm
Carrier cup	 for Holder plate			 for Holder plate
Drawing				
Order code No.	042117	010749	010750	042118
TYPE	ESVP-A-PA	B1.5/60-MU65-N6-G-F2-38M	B1.5/60-MU80-N6-G-F2-38M	ESVP-A-SA
Weight	56.4g	82g	88g	40.6g

NEW ▶ Maintenance Parts



Filter

Order code No.	042119
TYPE	ESVP-FILT

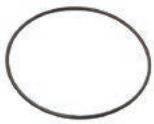
● Weight : 1.5g



Nozzle unit

Order code No.	042133
TYPE	ESVP10-NOZL-UT

● Weight : 20g



Seal ring

Order code No.	042132
TYPE	ESVP10-SEAL

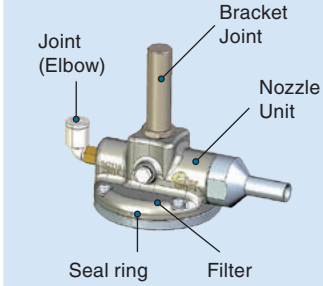
● Weight : 0.1g



Joint (Elbow)

Order code No.	102051
TYPE	K02L06-M6A

● Weight : 4.3g





Bracket joint ϕ 12

Order code No.	042130
TYPE	ESVP10-BKTJT12

● Weight : 16g

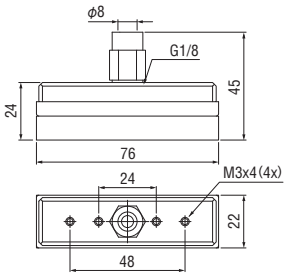


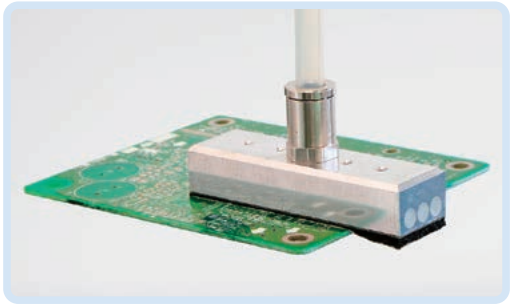
Bracket joint ϕ 20

Order code No.	042131
TYPE	ESVP10-BKTJT20

● Weight : 38g

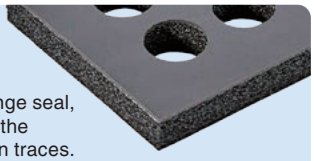
▶ A small vacuum gripper. Suitable for suction and transport of small workpieces.

Vacuum Gripper	 ejector not attached
Drawing	＊Connect plastic ejector SSBP series (3-49) to φ8 (ejector not attached). 



Product name	Vacuum gripper 76×22・10mm	Sponge seal 76×22 w/o valve (for exchange)
Order code No.	183977	183978
TYPE	SFM-76/22-SW-10-B	SFMSEAL76/22SW10BW/OV
Weight	50.0g	1.5g

About suction surface



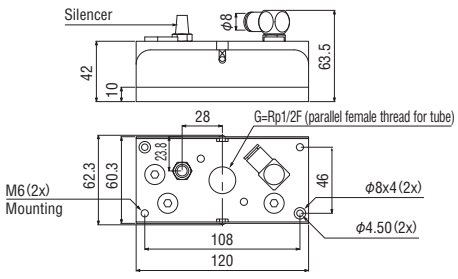
It's coated with sponge seal, which could reduce the abrasion and suction traces.
＊Sponge seal is replaceable.

■ Specification

TYPE	Vacuum Gripper	Valve	Holding power*1 (N)	Required suction quantity*2 (L/min)	Number of cells	Weight (g)
SFM-76/22-SW-10-B	External type	Throttle valve	40	40	26	60

＊1 -60 kPa. If the entire gripper is covered by hard work piece.
＊2 The amount of suction when the vacuum gripper is connected to -60 kPa.

▶ It can transfer the work piece of different shapes with one gripper (wood, resin, cardboard, etc.).

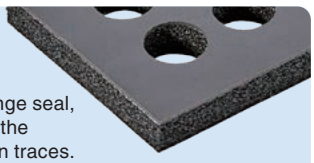
Vacuum Gripper	 with ejector
Drawing	



Product name	Vacuum gripper 120×60・10mm	Sponge seal 120×60 w/o valve (for exchange)
Order code No.	183979	183980
TYPE	SFX-120/60-SW-1.5-10-B	SFXFMSEAL120/60SW10BW/OV
Weight	500.0g	6.5g

＊Sales ends when it's out of stock.

About suction surface



It's coated with sponge seal, which could reduce the abrasion and suction traces.
＊Sponge seal is replaceable.

■ Specification

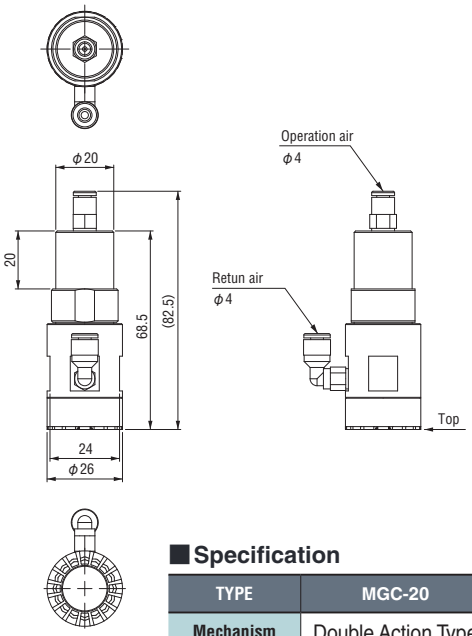
TYPE	Load tolerance*3 (N)	Holding power*4 (N)	Max suction discharge*5 (L/min)	Max vacuum (%)	Air consumption (L/min)	Number of cells	Noise level (dB (A))	Supply pressure (MPa)	Allowable temperature (℃)	Weight (g)
SFX-120/60-SW-1.5-10-B	92	98	69	80	117	10	65	0.3～0.5	+5～+50	500

＊3 When transporting horizontally.
＊4 The max holding power happen while the system air pressure is - 30 kPa When sucking on workpieces without ventilation. The safety rate is not included.
＊5 Supply air pressure 0.5 MPa.
＊The max vacuum level, air consumption and noise level vary according to the external vacuum gripper.

Neodymium magnet is embedded in the chuck parts.

- Powerful holding force with the magnet.
- Lightweight with compact design
- Jungle gym with ϕ 20 series
- Using with magnet to transfer steel parts.







Example of use for a steel plate transport chuck

Magnet chuck

Order code No.	123218
TYPE	MGC-20

- Double-act-type cylinder
- Weight: 95g
- Joint pipe fitting KQ2L04-M5N included



Magnet chuck end rubber

Order code No.	123571
TYPE	MGC-C

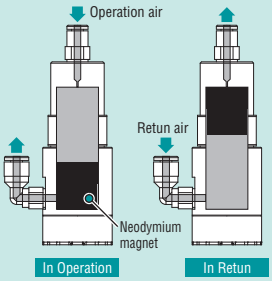
- Weight: 3g
- Material: urethane rubber

Specification

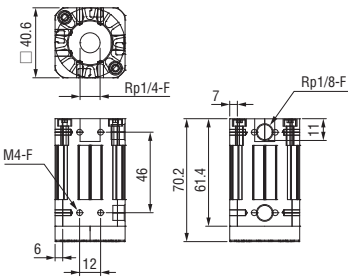
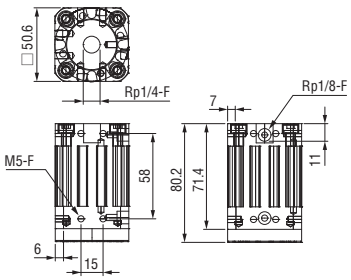
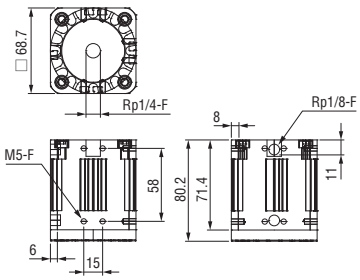
TYPE	MGC-20
Mechanism	Double Action Type
Air pressure	0.39 ~ 0.49Mpa
Holding force	25N
Residual magnet*	0.01N Max.

* Indicates the residual magnet at the top in return operation.

Operation image



- Strong holding of uneven / perforated steel plate with permanent magnet!
  Product with sensor to detect magnet position is also available.

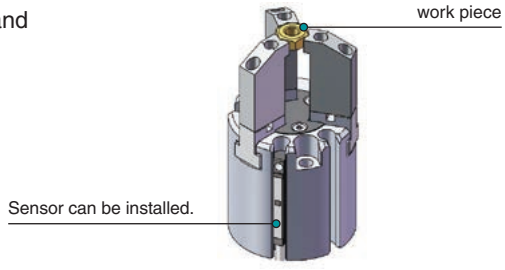
Holding force		100N	180N	290N
Magnet chuck				
Drawing				
W/O sensor	Order code No.	185352	185353	185354
	TYPE	SSGM 40G 1/4-IG	SSGM 50G 1/4-IG	SSGM 70G 1/4-IG
	Weight	240g	440g	715g
W/ NPN output sensor	Order code No.	185358	185359	185360
	TYPE	SSGM-S-40-G1/4-IG-NPN	SSGM-S-50-G1/4-IG-NPN	SSGM-S-70-G1/4-IG-NPN
	Weight	260g	460g	735g
W/ PNP output sensor	Order code No.	185355	185356	185357
	TYPE	SSGM-S-40-G1/4-IG-PNP	SSGM-S-50-G1/4-IG-PNP	SSGM-S-70-G1/4-IG-PNP
	Weight	260g	460g	735g

- Material of non-slip ring : Polyurethane PU
- Pipe joint is sold separately. ➡ See (6-5,6,7)

Perfect for gripping the work piece of cylindrical shape.

- It balances well at cylinder center, and grips the work piece accurately.

Accuracy of movement
±0.01mm



TCC-16 ／ TCC-25 ／ TCC-32


Use in gantry chuck

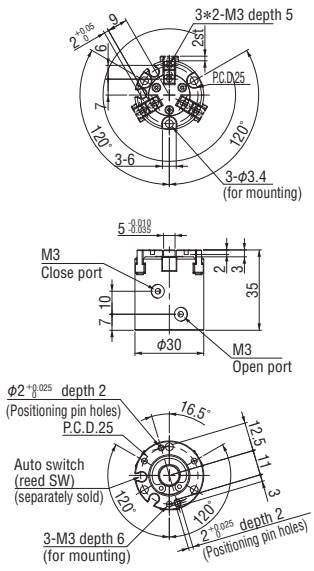
NEW



Three Claws Chuck

Order code No.	197258
TYPE	TCC-16

- Stroke: 4mm
- Weight: 60g
- Structure: Double Action Type
- Pipe joint is sold separately. ➡ See (6-5,6,7)
- Auto switch can be attached



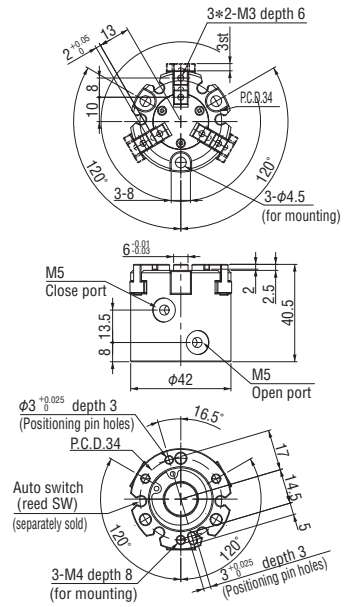
NEW



Three Claws Chuck

Order code No.	197259
TYPE	TCC-25

- Stroke: 6mm
- Weight: 140g
- Structure: Double Action Type
- Pipe joint is sold separately. ➡ See (6-5,6,7)
- Auto switch can be attached



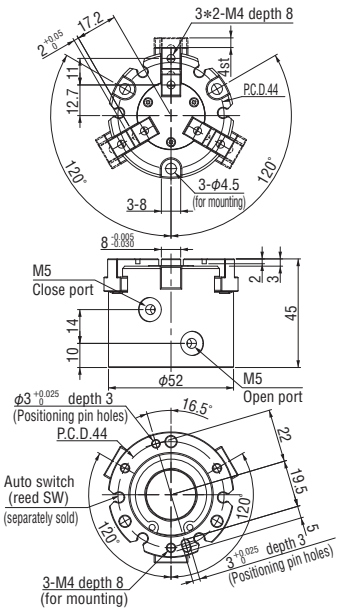
NEW



Three Claws Chuck

Order code No.	197260
TYPE	TCC-32

- Stroke: 8mm
- Weight: 250g
- Structure: Double Action Type
- Pipe joint is sold separately. ➡ See (6-5,6,7)
- Auto switch can be attached



■ Specification

Product name	TYPE	Used air pressure (MPa)	Motion stroke (mm)	Cylinder diameter (mm)	Gripping force of outside diameter 〈0.5MPa〉 (N)	Gripping force of Inner diameter 〈0.5MPa〉 (N)
Three claws chuck	TCC-16	0.2 ～ 0.7	4	16	14	16
	TCC-25		6	25	42	47
	TCC-32		8	32	74	82



Auto switch (reed SW)

Order code No.	030282
TYPE	D-A93

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range: 5mA-40mA
- Lead wire: 0.5M OUT brown OUT (+) blue (–)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m



Auto switch (contactless)

Order code No.	030425
TYPE	D-M9N

- Weight: 6g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range:-40mA or lower
- Lead wire: 0.5M＋V (brown), Load (black), OV(blue)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m



Auto switch (contactless)

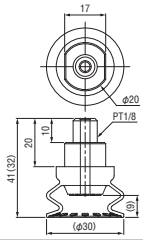
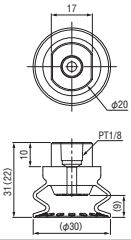
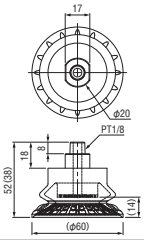
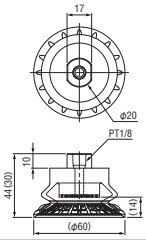
Order code No.	030500
TYPE	D-F8N

- Weight: 7g
- Applicable load: relay, PLC
- Load voltage: 24VDC
- Load current range:-40mA or lower
- Lead wire: 0.5M＋V (brown), Load (black), OV(blue)
- Indicator light
- Terminal process is not made.
- Wiring ➡ See (6-20)
- Length: 0.5m

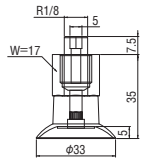
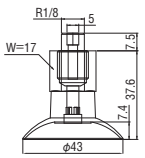
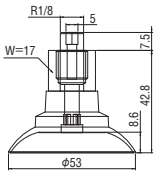
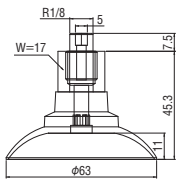
Sheet Metal • Stamping • Metal Fabrication [Suction Cups]

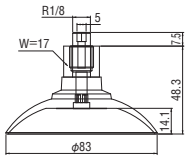
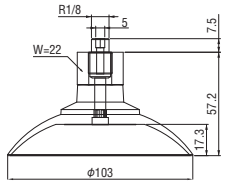
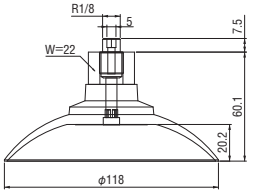
Use as your situation.

▶ Use it for sheet metal conveyance. The grooves on the suction surface of the pad inhibit the lateral movement of the iron plate, which is coated with an oil film, while also accommodating the curved workpiece through a buffering effect.

Applicable cup size		ϕ30mm		ϕ60mm	
Suction Cups (Sheet Metal)					
Drawing * The value in ( ) indicates the dimension with suction.					
Fluorine (black)	Order code No.	210918	210919	210920	210921
	TYPE	VAPNP-30C-1-M	VAPNP-30C-1-F	VAPNP-60C-1-M	VAPNP-60C-1-F
	Weight	15.0g	12.0g	47.0g	45.0g
	Characteristics of rubber	Heat resistance : 85℃ / Shore hardness : 60		Heat resistance : 85℃ / Shore hardness : 60	
Applicable stems		Large : VFI-L, or VFIL-H ➡ (3-29,31)	—	Large : VFI-L, or VFIL-H ➡ (3-29,31)	—

▶ Strong holding power in the horizontal direction. Utilize the superior suction capability provided by the groove on the suction surface.

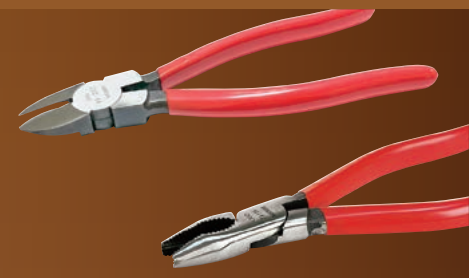
Applicable cup size	ϕ33mm	ϕ43mm	ϕ53mm	ϕ63mm
Suction Cups for sheet metal w/ screw				
Drawing				
Order code No.	187562	187563	187564	187565
TYPE	SSAXM-30-ED85-PT1/8AGJNT	SSAXM-40-ED85-PT1/8AGJNT	SSAXM-50-ED85-PT1/8AGJNT	SSAXM-60-ED85-PT1/8AGJNT
Holding force*1	39N	69N	109N	154N
Horizontal power (with oil)*2	41N	71N	110N	155N
Weight	23.2g	23.7g	36.3g	41.0g
Applicable stems	Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ (3-29,31)			

Applicable cup size	ϕ83mm	ϕ103mm	ϕ118mm
Suction Cups for sheet metal w/ screw			
Drawing			
Order code No.	187566	187567	187568
TYPE	SSAXM-80-ED85-PT1/8AGJNT	SSAXM-100-ED85-PT1/8AGJNT	SSAXM-115-ED85-PT1/8AGJNT
Holding force*1	270N	412N	549N
Horizontal power (with oil)*2	269N	414N	584N
Weight	50.5g	89.8g	109.9g
Applicable stems	Non-rotate for small or VFILB-1/8, large VFI-L, VFIL-H ➡ (3-29,31)		

Assembling Tools











Tool / Jig 9-2

- Tools to Fastening Bolts and Joints 9-2
- Tools to Fastening Bolts and Joints / Pipe Cutting Tool 9-3
- Cutting Tool 9-4
- Cutting Tool / Cutter / Deburring 9-5
- Wiring Tool / Pliers Tool 9-6
- Tube / Duct Cutting Tool / Measuring Tool 9-7
- Adhesives / Adjustment Tool / Jig / Static Solutions Parts ... 9-8

Tools to Fastening Bolts and Joints

Recommend assembly tools.

Tools to Fastening Bolts and Joints



Megadora Standard Screwdriver (+)

Order code No.	350352
TYPE	900-1-75

- Weight: 85g
- Blade size: No.1 (M2.0 ~ M2.6)



Megadora Standard Screwdriver (+)

Order code No.	350353
TYPE	900-2-100

- Weight: 100g
- Blade size: No.2 (M3.0 ~ M5.0)



Megadora Standard Screwdriver (-)

Order code No.	350354
TYPE	900-6-100

- Weight: 95g
- Blade size: 6.0
- Blade is almost straight.



Precision Screwdriver Set

Order code No.	197170
TYPE	TD-56

- Weight: 175g
- Blade size: (+)0.00/(-)2.3, 1.8, 1.2, 0.9
- Often used in precision equipment, etc. A screwdriver for turning small diameter screws.



Ceramic adjuster driver

Order code No.	350355
TYPE	9000-1.8-30

- Weight: 18g
- Blade size: (-)1.8
- Uses a zirconia ceramic chip that is non-inductive and non-magnetic. Ideal for adjusting coils and trimmers.



Electric screwdriver (adapter bits 5set)

Order code No.	284778
TYPE	220USB-5

- Weight: 160g
- Bit : ⊕1、⊕2×2、⊕3、⊖6
- Cable, AC adapter for USB charging
- Quick tightening is done using an electric motor, and final tightening is done using a manual screwdriver. Comes with high brightness LED light.



Electric screwdriver (cable bit 1set)

Order code No.	284779
TYPE	220USB-1

- Weight: 160g
- Bit : ⊕2
- USB charging cable
- Quick tightening is done using an electric motor, and final tightening is done using a manual screwdriver. Comes with high brightness LED light.



Electric screwdriver Rigid Hex Bit (5 set)

Order code No.	061139
TYPE	GS5P-31

- Weight: 70.6g
- Opposite side (mm): 2.5/4.0/5.0/6.0
- Electric screwdriver (220 USB) for hex bit set.



Flat-shaped Ratchet Screwdriver

Order code No.	197169
TYPE	TD-76

- Weight: 98g
- High precision ratchet gear with magnet bit
- Magnetized bits make it easy to work in tight spaces.
- Accessories: Bits +1, +2, +2, +3, -4, -6, Hex width across flats 2.5, 3, 4, 5, 6×18mm



Ball Point Wrench (Long Type)9-piece set

Order code No.	341075
TYPE	8309BP-L

- Weight: 375g
- 9 set(mm) : 1.5/2.0/2.5/3.0/4.0/5.0/6.0/8.0/10.0
- Wrench for hexagon socket head bolts. Diagonal rotation work is feasible for hexagon socket head bolts sized M1.6 to M12.



Ball Point Wrench (Long Type)H2

Order code No.	341077
TYPE	8300BP-L H2

- Weight: 3g
- One specification of 8309BP-L (Opposite side 2.0mm)
- Hexagon socket head bolts sized M2.5



Ball Point Wrench (Long Type)H2.5

Order code No.	341078
TYPE	8300BP-L H2.5

- Weight: 5g
- One specification of 8309BP-L (Opposite side 2.5mm)
- Hexagon socket head bolts sized M3



Ball Point Wrench (Long Type)H3

Order code No.	341079
TYPE	8300BP-L H3

- Weight: 9g
- One specification of 8309BP-L (Opposite side 3.0mm)
- Hexagon socket head bolts sized M4



Ball Point Wrench (Long Type)H4

Order code No.	341080
TYPE	8300BP-L H4

- Weight: 18g
- One specification of 8309BP-L (Opposite side 4.0mm)
- Hexagon socket head bolts sized M5



Ball Point Wrench (Long Type)H5

Order code No.	341081
TYPE	8300BP-L H5

- Weight: 31g
- One specification of 8309BP-L (Opposite side 5.0mm)
- Hexagon socket head bolts sized M6



Ball Point Wrench (Long Type)H6

Order code No.	341082
TYPE	8300BP-L H6

- Weight: 51g
- One specification of 8309BP-L (Opposite side 6.0mm)
- Hexagon socket head bolts sized M8

Tools to Fastening Bolts and Joints / Pipe Cutting Tool

Preferred item for EOAT assembling

Tools to Fastening Bolts and Joints



Ball Point Wrench Stubby (Long Type)9-piece set

Order code No.	341076
TYPE	8209BP-L

- Weight: 361g
- 9 set(mm) : 1.5/2.0/2.5/3.0/4.0/5.0/6.0/8.0/10.0
- Wrench for hexagon socket head bolts. Diagonal rotation work is feasible for hexagon socket head bolts sized M1.6 to M12.



Ball Point Wrench Stubby (Short Type) H2.5

Order code No.	341083
TYPE	8200BP-L H2.5

- Weight: 7g
- One specification of 8209BP-L (Opposite side 2.5mm)
- Hexagon socket head bolts sized M3



Ball Point Wrench Stubby (Short Type) H3.0

Order code No.	341084
TYPE	8200BP-L H3

- Weight: 8g
- One specification of 8209BP-L (Opposite side 3.0mm)
- Hexagon socket head bolts sized M4



Ball Point Wrench Stubby (Short Type) H4.0

Order code No.	341085
TYPE	8200BP-L H4

- Weight: 16g
- One specification of 8209BP-L (Opposite side 4.0mm)
- Hexagon socket head bolts sized M5



Ball Point Wrench Stubby (Short Type) H5.0

Order code No.	341086
TYPE	8200BP-L H5

- Weight: 28g
- One specification of 8209BP-L (Opposite side 5.0mm)
- Hexagon socket head bolts sized M6



SMS Double open end spanner

Order code No.	187038
TYPE	SMS621H

- Weight: 640g
- Set content (mm) : 8*10/11*13/12*14/14*17/17*19/22*24



SNT thin spanner set

Order code No.	187039
TYPE	SNT-0550

- Weight: 290g
- Set content (mm) : 8*9/10*12/11*13/14*17/19*21



Open spanner set

Order code No.	197171
TYPE	TS-05

- Weight: 66g
- Set content (mm) : 3.2*5.5/4*5/6*7/8*9/10*11



Adjustable wrench 150mm

Order code No.	221303
TYPE	WMA-150

- Weight: 140g
- Convenient scale: 150mm. With graduations for convenient use



Nut socket driver

Order code No.	030520
TYPE	D-86-4.5

- Weight: 54g
- Opposite side: 4.5mm
- The nut can be easily tightened by simply fitting the nut into the socket at the tip and rotating the handle.



Nut socket driver

Order code No.	030521
TYPE	D-86-7

- Weight: 63g
- Opposite side: 7mm
- The nut can be easily tightened by simply fitting the nut into the socket at the tip and rotating the handle.

Pipe Cutting Tool



SUS Pipe cutter

Order code No.	101206
TYPE	K-203

- Weight: 215g
- It is easy to operate when cutting cylindrical materials such as metal pipes and PVC pipes, and the material can be cut straight.



Spare blade for pipe cutter

Order code No.	101207
TYPE	K-203-1

- Weight: 3g
- Pipe cutter(K-203) spare blade



Pipe reamer (For copper tubes and stainless tubes)

Order code No.	197173
TYPE	TSR-2

- Weight: 200g
- Applied pipe outer diameter: ϕ8-35mm
- You can easily remove burrs from the outer and inner surfaces of copper and stainless steel pipes by simply rotating them after cutting.

Cutting Tool

Preferred item for EOAT assembling

Cutting Tool



Electronic nippers

Order code No.	310706
TYPE	55S-120

- Weight: 85g ● Total length: 122mm
- Cutting capacity: Iron wire ϕ0.8mm,Copper wire : ϕ1.2mm
- Blade type: Thin blade (suitable for cutting thin lines)



Electronic nippers

Order code No.	310695
TYPE	55S-150

- Weight: 150g ● Total length: 155mm
- Cutting capacity: Iron wire ϕ1.5mm,Copper wire : ϕ2.6mm
- Blade type: Thin blade (suitable for cutting thin lines)



Diagonal cutting nippers

Order code No.	286129
TYPE	205H-150

- Weight: 225g ● Total length: 168mm
- Cutting capacity: Iron wire ϕ2.0 mm,Copper wire : ϕ2.6 mm
- Blade type: Thick blade (suitable for cutting thick lines)



Diagonal cutting nippers

Order code No.	286130
TYPE	205H-175

- Weight: 285g ● Total length: 193mm
- Cutting capacity: Iron wire ϕ2.0 mm,Copper wire : ϕ3.0 mm
- Blade type: Thick blade (suitable for cutting thick lines)



High plastic nippers

Order code No.	271846
TYPE	160S-125

- Weight: 90g ● Total length: 131mm
- Cutting capacity: Soft resin ϕ3.0mm
- Blade type: circular blade (standard blade)



High plastic nippers

Order code No.	271847
TYPE	160S-150

- Weight: 130g ● Total length: 159mm
- Cutting capacity: Soft resin ϕ5.0mm
- Blade type: circular blade (standard blade)



High plastic nippers

Order code No.	271848
TYPE	160SF-125

- Weight: 90g ● Total length: 131mm
- Cutting capacity: Soft resin ϕ3.0mm
- Blade type: Flat blade (the entire blade surface fits perfectly on the product)



High plastic nippers

Order code No.	271849
TYPE	160SF-150

- Weight: 130g ● Total length: 159mm
- Cutting capacity: Soft resin ϕ5.0mm
- Blade type: Flat blade (the entire blade surface fits perfectly on the product)



Miniature plastic cutting nippers

Order code No.	123885
TYPE	M12-125

- Weight: 85g ● Total length: 129mm
- Cutting capacity: Soft resin ϕ3.0mm
- Blade type: circular blade (standard blade)



Plastic nippers (carbide tipped)

Order code No.	023445
TYPE	CT160F-150

- Weight: 130g ● Total length: 159mm
- Cutting capacity: Soft resin ϕ5.0mm
- Blade type: Flat blade (the entire blade surface fits perfectly on the product)



Heavy-duty plastic nippers

Order code No.	350363
TYPE	99-175

- Weight: 260g ● Total length: 188mm
- Cutting capacity: Soft resin ϕ9.0mm
- Blade type: circular blade (standard blade)



Heavy-duty plastic nippers

Order code No.	350364
TYPE	99-200

- Weight: 340g ● Total length: 216mm
- Cutting capacity: Soft resin ϕ10.0mm
- Blade type: circular blade (standard blade)



Plastic nippers (Limited edition)

Order code No.	187586
TYPE	SPN130F

- Weight: 110g ● Total length: 130mm
- Cutting capacity: Soft resin ϕ5.0mm
- Blade type: Flat blade (the entire blade surface fits perfectly on the product)



Compound cutting nippers

Order code No.	221473
TYPE	WA1000F-160

- Weight: 185g ● Total length: 156mm
- Cutting capacity: Soft resin ϕ5.0mm
- Blade shape: circular blade (standard blade)



End cutting plastic nippers

Order code No.	286133
TYPE	25EF-145

- Weight: 125g ● Total length: 144mm
- Cutting capacity: Soft resin ϕ3.0mm
- Blade type: Kuikiri type



Tip edge nippers

Order code No.	261888
TYPE	02SP-125

- Weight: 70g ● Total length: 122mm
- Cutting capacity: Soft resin ϕ2.0mm
- Blade type: circular blade (standard blade)



End cutting plastic nippers

Order code No.	286131
TYPE	24EF-115

- Weight: 75g ● Total length: 119mm
- Cutting capacity: Soft resin ϕ3.0mm
- Blade type: Kuikiri type



Peeling nippers

Order code No.	387221
TYPE	33S-125

- Weight: 90g ● Total length: 131mm
- Cutting capacity: Iron wire ϕ0.8mm,Copper wire : ϕ1.2mm
- Blade shape: Flat blade (the entire blade surface fits perfectly on the product) : Thin blade (suitable for cutting thin lines)



Peeling nippers

Order code No.	387222
TYPE	33S-150

- Weight: 125g ● Total length: 158mm
- Cutting capacity: Iron wire ϕ1.5mm,Copper wire : ϕ2.6mm
- Blade shape: Flat blade (the entire blade surface fits perfectly on the product) : Thin blade (suitable for cutting thin lines)

Cutting Tool / Cutter / Deburring

Preferred item for EOAT assembling

Cutting Tool (Heat nippers)



Heat nippers

Order code No.	073320
TYPE	HT180DX

- Weight: 310g
- Total length: 190mm
- Cutting capacity: Soft resin ϕ4.0mm
- Blade shape: circular blade (standard blade)
- For small diameter resin/with spring
- Maximum temperature of the blade: 160℃



Heater

Order code No.	221472
TYPE	W19

- Weight: 19g
- Replacement heater for HT180DX.



Transformer

Order code No.	197348
TYPE	TRF100D

- Weight: 2,000g
- Input voltage: AC100V (power cord 1.9m)
- Output voltage: AC26V
- Capacity: 32VA
- Temperature measurement method: Thermistor method
- Digital display
- Used for HT180DX heat nipper (with sensor).

Cutter / Deburring



Top sheet cutter

Order code No.	286172
TYPE	209B

- Weight: 17.5g
- Ideal for peeling off EP sponge sheet coatings.



Work finisher (deburring cutter / large)

Order code No.	221474
TYPE	WF-1540

- Weight: 56g
- Total length: 175mm
- Blade length: 40mm
- Blade material: Ceramic



Work finisher (deburring cutter / small)

Order code No.	221475
TYPE	WF-620

- Weight: 20g
- Total length: 133mm
- Blade length: 40mm
- Blade material: Ceramic



Work finisher (micro finish T set)

Order code No.	123923
TYPE	MFC2140

- Weight: 36g
- Blade material: Ceramic
- Blade tip: T type



Work finisher blade (micro finish T/2 pcs)

Order code No.	123925
TYPE	MFC2001

- Weight: 13g
- Blade material: Ceramic
- Blade tip: T type



Work finisher blade (micro finish T/5 pcs)

Order code No.	123927
TYPE	MFC3001

- Weight: 30g
- Blade material: Ceramic
- Blade tip: T type



Work finisher (micro finish R set)

Order code No.	123924
TYPE	MFC2150

- Weight: 36g
- Blade material: Ceramic
- Blade tip: R type



Work finisher blade (micro finish R/2 pcs)

Order code No.	123926
TYPE	MFC2002

- Weight: 13g
- Blade material: Ceramic
- Blade tip: R type



Work finisher blade (micro finish R/5 pcs)

Order code No.	123928
TYPE	MFC3002

- Weight: 30g
- Blade material: Ceramic
- Blade tip: R type

Wiring Tool / Pliers Tool

Preferred item for EOAT assembling

Wiring Tool



Wire strippers

Order code No.	384142
TYPE	3000A

- Weight: 350g
- Completely strip the wire quickly with one hand operation.



Mini wire stripper

Order code No.	211157
TYPE	VST25

- Weight: 295g
- Capable of stripping wires with a core diameter of ϕ0.25 to ϕ2.6mm without any adjustment.
- Cutting range: copper wire ϕ2.6mm



Manual one-hand type crimping tool

Order code No.	002364
TYPE	AK15A

- Weight: 400g
- For copper wire bare crimp terminals/bare crimp sleeves (P.B)



Switch checker

Order code No.	042058
TYPE	E39-VA

- Weight: 20g
- Power supply voltage: DC18V (2 9V dry batteries)
- Handy power supply with built-in battery. (Sensor dedicated power supply)
- Operation of various sensors can be confirmed by buzzer sound and LED
- With battery low detection function



Ceramic heater soldering iron

Order code No.	054350
TYPE	FX600-02

- Weight: 61g
- Perfect for soldering electronic parts.
- Adjustable from 200 to 500℃
- Built-in temperature controller in the grip.
  You can easily set the temperature by simply turning the dial.



Soldering Station (with sponge)

Order code No.	054351
TYPE	FH300-81

- Weight: 502g
- Base size(mm): ϕ85 * D140



Lead free solder

Order code No.	073361
TYPE	HS-304

- Weight: 100g
- Solder: linear 1mm



Hot glue gun

Order code No.	072955
TYPE	HB-80

- Weight: 220g
- Optimum for assembly work such as electronic parts holding.



Hot glue

Order code No.	072956
TYPE	HB-100S

- Weight: 100g
- Hot glue (HB-80) exclusive



Aluminum alloy vise

Order code No.	197174
TYPE	TAB-70

- Weight: 1,098g
- size(mm) : 188×158×155.
  Mouth width: 70mm,
  Mouth opening: 60mm

Pliers Tool



Long nose side cutting pliers

Order code No.	271844
TYPE	105-150

- Weight: 140g
- Cutting capacity: Iron wire ϕ1.5 mm,Copper wire : 2.6 mm
- Total length: 163mm



Long nose side cutting pliers

Order code No.	271845
TYPE	105-175

- Weight: 185g
- Cutting capacity: Iron wire ϕ2.0 mm,Copper wire : 3.0 mm
- Total length: 191mm



Duck bill pliers

Order code No.	286132
TYPE	2500-200

- Weight: 205g
- Tip shape: Height 7.0mm* Width 5.0mm
  : Jagged cross eyes
- Total length: 200mm



Screw pliers

Order code No.	250266
TYPE	ZA185

- Weight: 280g
- Total length: 195mm
- Application: Suitable for removing crushed and rusted screws.

Tube / Duct Cutting Tool / Measuring Tool

Preferred item for EOAT assembling

Tube ／ Duct Cutting Tool



Tube cutters

Order code No.	190508
TYPE	TK-1

- Weight: 154g
- Applicable tube material: soft plastic tube, nylon, polyurethane, etc.)
- Applicable tube outer diameter: 13mm or less



Merry cutters

Order code No.	187587
TYPE	SX10-210

- Weight: 380g
- Total length: 210mm
- Tip blade opening: 39mm
- Blade length: 65mm
- Straight cut.
- Suitable for cutting all kinds of soft materials.



Merry cutters

Order code No.	187589
TYPE	SX5-195

- Weight: 170g
- Total length: 195mm
- Tip blade opening:24mm
- Blade length: 53mm
- Straight cut.
- Suitable for cutting all kinds of soft materials.



Tube cutters

Order code No.	023446
TYPE	CX5

- Weight: 170g
- Total length: 195mm
- Tip blade opening:22mm
- Blade length: 53mm
- A cutter specialized for cutting hoses.



Duct cutters

Order code No.	187588
TYPE	SX15-210

- Weight: 395g
- Total length: 210mm
- Tip blade opening:37mm
- Blade length: 65mm
- For cutting communication moldings and cutting ducts.



Moulding cutters

Order code No.	030530
TYPE	DX80-255

- Weight: 470g
- Total length: 255mm
- Tip blade opening:85mm
- Blade length: 92mm
- Can cut wiring ducts up to 80mm wide.



Duct plastic nippers

Order code No.	030528
TYPE	DK65-250

- Weight: 505g
- Total length: 260mm
- Blade shape: Circular blade (standard blade)/ Resin-specific blade :Length 65.0mm, thickness 21.5mm
- Can cut wiring ducts up to 80mm wide.
- Easy to open the duct.
- Can also be used to cut gates in deep areas of resin molded products.



Duct cutters (Fixed appliance)

Order code No.	197347
TYPE	TDC100

- Weight: 8,400g
- Tip blade opening:25mm
- Blade length: 110mm
- Can cut wiring ducts up to 100mm wide.



DIN rail round nippers

Order code No.	030529
TYPE	DRN4

- Weight: 350g
- Total length: 200mm
- For finishing corners of DIN rails.
- Aluminum DIN rails can have their corner radius processed smoothly.



Ratchet style tube cutter

Order code No.	197172
TYPE	TTCR-322T

- Weight: 270g
- Coping with copper, aluminum, brass, PVC pipe. Because of the automatic transport function, itwill make clean cut surface.
- Stainless steel pipes cannot be cut.
Replacement blade for Ratchet style tube cutter



Replacement blade for Ratchet style tube cutter

Order code No.	061138
TYPE	GFC-15NT

- Weight: 3g
- The replacement blade for tube cutter (TTCR-322T) only.
- Stainless steel pipes cannot be cut.

Measuring Tool

Straight Scale (150mm)

Order code No.	271792
TYPE	13005

- Weight: 10g
- Fist class JIS specification (Non Calibration update)
- Shinwa make

Straight Scale (300mm)

Order code No.	271793
TYPE	13013

- Weight: 65g
- Fist class JIS specification (Non Calibration update)
- Shinwa make



Tough gear HG (Major 5.5m)

Order code No.	341087
TYPE	80821

- Weight: 329g
- Fist class JIS specification (Non Calibration update)
- Origin 0 point correction slide hook equipped (Shinwa)
- Protect the body with shock absorption protector.

Adhesives / Adjustment Tool / Jig / Static Solutions Parts

Preferred item for EOAT assembling

Adhesives



Adhesive (Sponge Pads)

Order code No.	371759
TYPE	Adhesive Q 50G Clear #4888

- NET: 50ml
- Silicon bond
- Please use it to bond silicone pads and sponges.



Adhesive Cemedine 20ML

Order code No.	371765
TYPE	AX-038 (Super X・20TM)

- NET: 20ml
- Please use it for adhering rubber plates.



Adhesive Cemedine 135ML

Order code No.	002481
TYPE	AX-250 (Super X 8008・135ML)

- NET: 135ml
- If you need a Material Safety Data Sheet (SDS),please purchase it.
- Please use it for adhering rubber plates.

Adjusting Tool



Combination hammer

Order code No.	200263
TYPE	UD7-10

- Weight: 730g
- Combination hammer is made of two kinds of materials, steel and resin.

Jig



Mounting pitch fixing plate

Order code No.	042060
TYPE	EINS JIG TYPE J-01

- Weight: 140g
- Mounting pitch(20×50mm) easy to adjust position
- Hand mounting pitch can be adjusted easily.



EOAT assembly stand

Order code No.	042059
TYPE	EINS JIG TYPE C-01

- Weight: 1100g
- Adjustable within 40mm up and down
- The stand is convenient for wiring and piping adjustment work in assembly process.

Static Solutions Parts



Ionizing Fan

Order code No.	054363
TYPE	F-120R

- Weight: 900g
- Ion generation method: Piezoelectric high frequency AC corona discharge type
- Static neutralization time: 1.5 seconds or less
- Ion balance: within ±10V
- Individual packaging size: 295 x 225 x 115



Cross-Flow Ionizing Fan

Order code No.	023455
TYPE	CF-600

- Weight: 4600g
- Thin and wide static electricity removal fan.
- Ion generation method: AC (20kHz) corona discharge type
- Static neutralization time: 1.5 seconds or less
- Ion balance: within ±10V
- Individual packaging size: 645×290×230



Pneu-Power Ion Gun

Order code No.	061261
TYPE	G-9

- Weight: 470g
- A handy static electricity removal power tool.
- Static electricity can be removed using only compressed air.
- Ion generation method: AC high frequency corona discharge type
- Static neutralization time: 1 second or less
- Ion balance: ±30V
- Individual packaging size: 294×250×63



Electrostatic Field Meter

Order code No.	042120
TYPE	Eye-02

- Weight: 200g
- Unseen static electricity can be measured using this useful tool.
- Ion balance: 0 ~ ±200V
- Individual packaging size: 195 x 115 x 80
- Power supply: 9V battery (006P type)
- Measurement range: Charged potential ±0 to ±1.50kV (LO range), ±1.0 to ±22.0kV (HI range)
- Measurement distance: 25mm ± 0.5mm (between main body and charged object)

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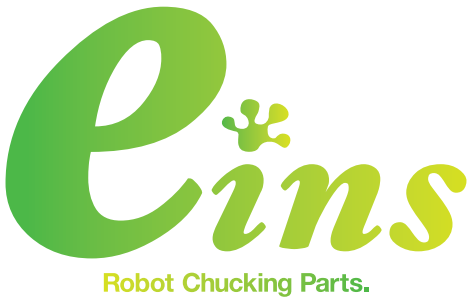
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Robot Chucking Parts.

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