



Parallel Gripper

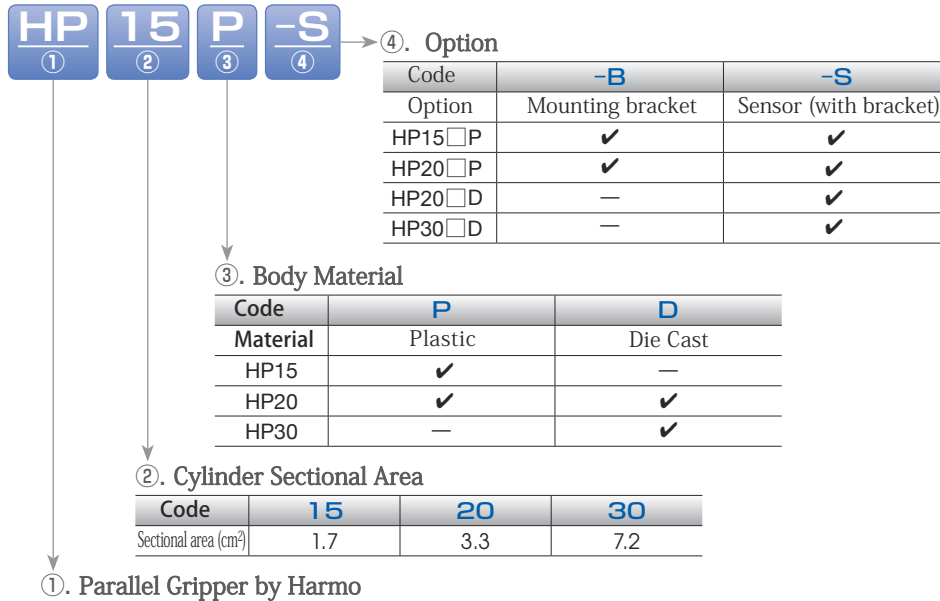
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- ☐ **Compact Design**
realizes Light-weight and high operating cycles
- ☐ **Two types of body material are provided.**
Plastic type realized light-weighted and Die cast type did durability.
- ☐ **Either the center port or the side port can be used as the air supply port.**
Just replacing the plug screw from the center to the side

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Model Designation (example)



Gripper Specification

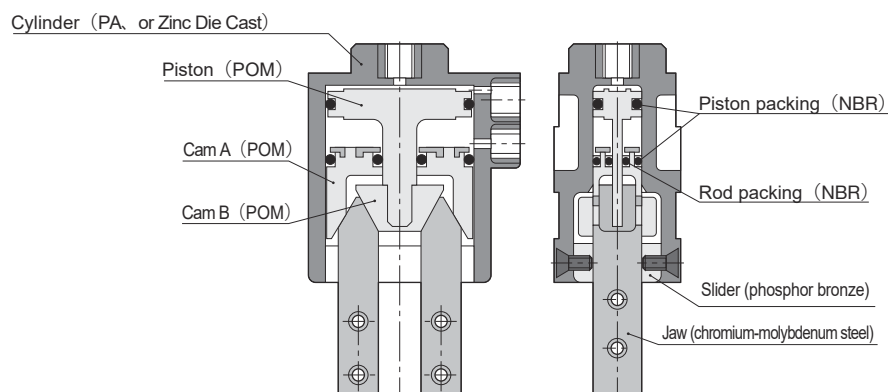
Type	HP15□P	HP20□P	HP20□D	HP30□D
Action	Double acting			
Fluid	Air (No lubricated)			
Service Pressure Range	43~101.5psi (0.3~0.7MPa)		36~130psi (0.25~0.9MPa)	
Service Temperature Range	14~140 °F (-10~60 °C) (No freezing)			
Port size	M5×0.8mm			
Cylinder Sectional Area	1.7cm² (0.26in²)	3.3cm² (0.51in²)		7.2cm² (1.12in²)
Stroke	2.8mm (0.11in)	5mm (0.2in)		8.8mm (0.35in)
Repeatability	±0.1mm (Ceter of fingers)			
Maximum cycles	100cpm			
Option	Mounting Bracket	✓	✓	—
	Sensor	✓	✓	✓

Sensor Specification

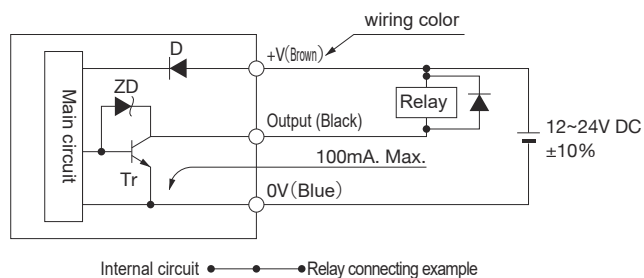
Power Voltage	12~24V DC +10%/-15% Ripple Max. P-P10%
Current consumption	Max. 15mA
Output	NPN transistor open collector Max. inflowing current : 100mA, Applied voltage : Max. 30V DC
Indication light	Orange LED (light on output)
Service Temperature Range	-13~158°F (-25~70°C)
Cable	0.08SQ 3 wires Length 1meter

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Construction



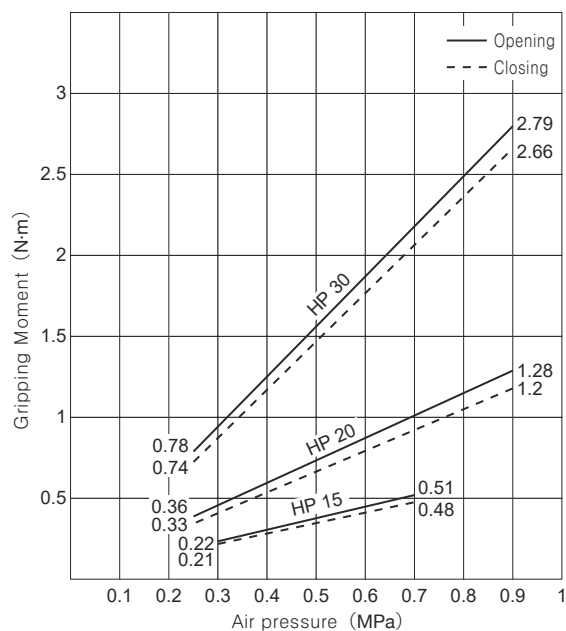
Internal Circuit



Code

- D : Diode (for wrong polarity protection)
- ZD : Zener diode (for surge suppression)
- Tr : Output transistor

Gripping force



Gripping Moment (Theoretical value)

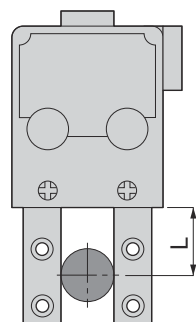
Theoretical gripping force is figured out based on the chart on the left and the following formula.

$$F = \frac{M}{L} \times \frac{1}{100}$$

F : Theoretical gripping force (N)

M : Gripping Moment (N·m)

L : Distance from the finger axis to the point of gripping (cm)



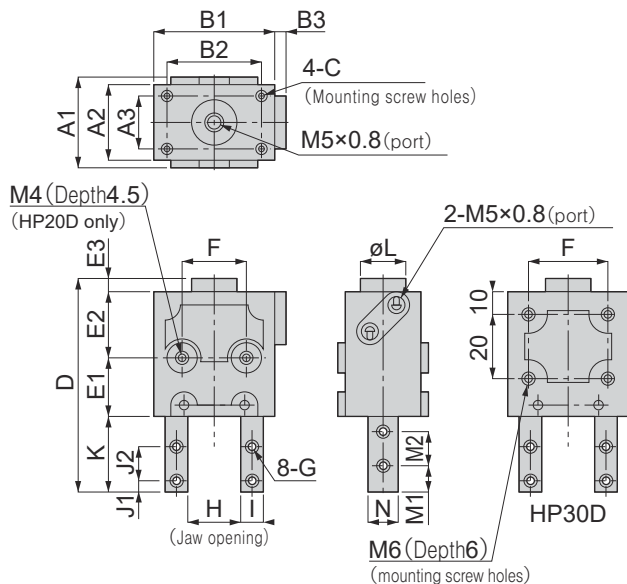
❖ The chart shows the theoretical values. The actual gripping force varies depending on the material and shape of workpiece and jaws. Use the value 40~60% of the theoretical value as a guide.

Dimensions

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HP□□

Parallel Gripper Body



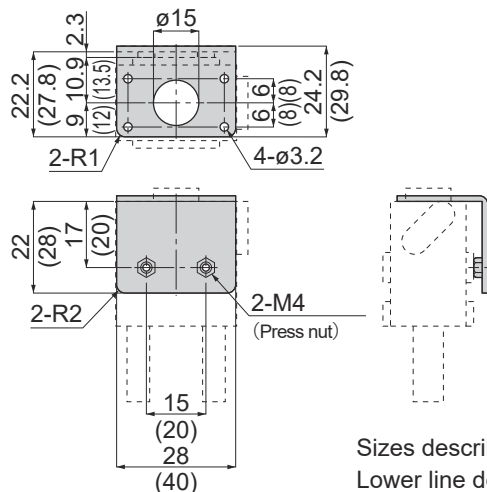
Unit : mm

Model	A1	A2	A3	B1	B2	B3	C	D	E1	E2	E3	F	G
HP15P	22	18	12	28.5	22	5	M3 (Depth4.5)	54.5	17.5	17	4	15	M3 (through)
HP20P	27.2	24.3	16	41	32	3	M3 (Depth4.5)	67.5	20.5	20	4	20	M4 (through)
HP20D	27	-		40.5		3.5	M4 (Depth8)	68	20		5		
HP30D	-	32	22	60.2	50	5.3	M6 (Depth12)	95.8	30	30	4.6	32	M5 (through)

Model	H	I	J1	J2	K	øL	M1	M2	N	Mass (g)	Price (\$)
HP15P	8~10.5	6 ^{-0.05} _{-0.10}	2.5	7	16	15	6	7	8 ^{-0.05} _{-0.10}	55	250.00
HP20P	12.5~18	8 ^{-0.05} _{-0.10}	4	10	23	15	9	10	10 ^{-0.05} _{-0.10}	110	280.00
HP20D										180	310.00
HP30D	20~29	12 ^{-0.05} _{-0.10}	6	12	31.2	20	12	12	14 ^{-0.05} _{-0.10}	525	340.00

HP□P-B

Parallel Gripper with Mounting Bracket



Unit : mm

Model	Mass (g)	Price (\$)
HP15P-B	77	262.50
HP20P-B	140	292.50

Sizes described in upper line : for HP15□P(option)
Lower line described by () : for HP20□P(option)

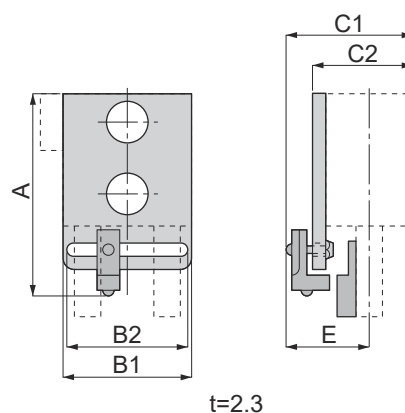
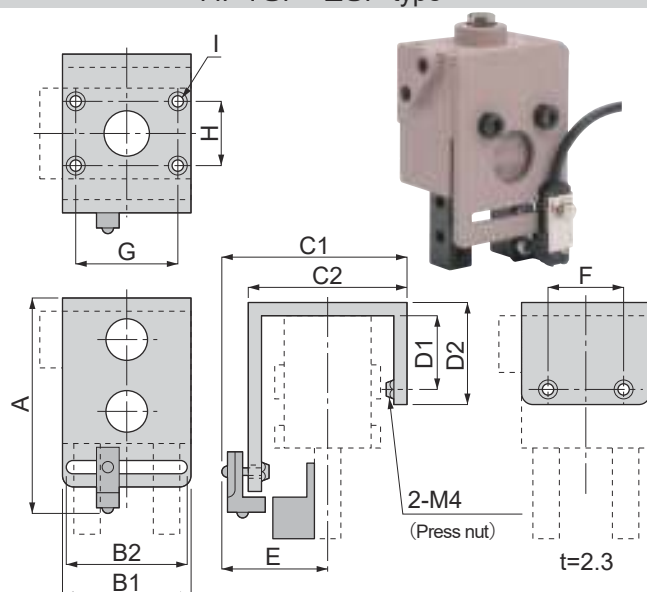


HP□□-S Parallel Gripper with Sensor Bracket

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HP15P · 20P type

HP20D · 30D type



Unit : mm

Model	A	B1	B2	C1	C2	D1	D2	E	F	G	H	I	Mass (g)	Price (\$)
HP15P-S	51	28	20	39	32	19	24	25.5	15	22	12	4-ø3.2 ø6 countersink	110	330.00
HP20P-S	67	40	32	43	36	20	27	25	20	32	16	4-ø3.2 ø6 countersink	201	360.00
HP20D-S	65			36	29	-	-		-	-	-	-	246	390.00
HP30D-S	86	60	50	42	34.3	-	-	26	-	-	-	-	610	420.00

※. HP15P-S, HP20P-S - Sensor bracket works as mounting bracket as well.

Detailed Safety Instruction

1. Supply clean and dry air to the Gripper.
2. Slower and gentler gripping, more accurate performance and repeatability.
3. Avoid lateral load to the jaws.
4. Make the finger attachment on the jaws as short and light as possible.

Option Parts

Model of Sensor Set (*1)

Model	Gripper type	Note
D1002	HP15P	• Set Item
D1102	HP20P	Sensor, Sensor Fixing Screw, Limit
D1112	HP20D	Dog, Dog Fixing Screw, Sensor
D1202	HP30D	Bracket, Sensor Bracket Fixing Screw

Model of Limit Dog for Sensor (Dog only)

Model	Gripper type	Note
D100903	HP15P	Dog only
D110903	HP20P	
D111903	HP20D	
D120903	HP30D	

Model of Sensor Bracket only

Model	Gripper type	Note
D100902	HP15P	Bracket with sensor mount only
D110902	HP20P	
D111902	HP20D	
D120902	HP30D	

Model of Sensor only (*1)

Model	Gripper type	Note
D000907	All types	Sensor 1 pc. + Fixing Screw 1 pc.

Model of Limit Dog Fixing Screw for Sensor

Model	Gripper type	Note
/100613	HP15P	For fixing, 2 pcs. required.
/100813	HP20P	
/101015	HP20D	
/101015	HP30D	

Model of Sensor Bracket Attaching Screw

Model	Gripper type	Note
/100613	HP15P	For fixing, 4 pcs. required.
	HP20P	
/000304	HP20D	For fixing, 2 pcs. required.
/000505	HP30D	For fixing, 4 pcs. required.

Model of Fixing Bracket only (not a sensor mount type) (*2)

Model	Gripper type	Note
D100901	HP15P	Fixing Screw Size: M3x0.5,
D110901	HP20P	Depth 5mm, 4 holes



Cautions

- *1. The sensor is NPN Open collector output.
- *2. No screw is included. Please prepare Attaching Screw by yourself.

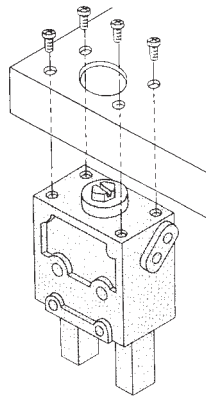


Package specifications

- 1 pc. in a bag: Limit Dog Fixing Screw for Sensor
- Limit Dog for Sensor (Dog only)
- Sensor Bracket only
- Sensor Bracket Fixing Screw
- Bracket only (not a sensor mount type)
- 1 set / bag: Sensor Set
- Sensor only

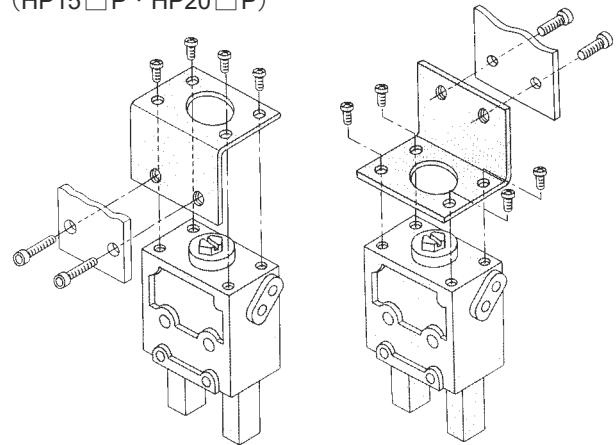
How to install **PDF Compressor Free Version**

① .Use the mounting screw holes on the top cover all models)

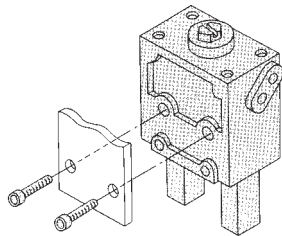


② .Lateral installation for plastic body type
(HC15□P · HC20□P)

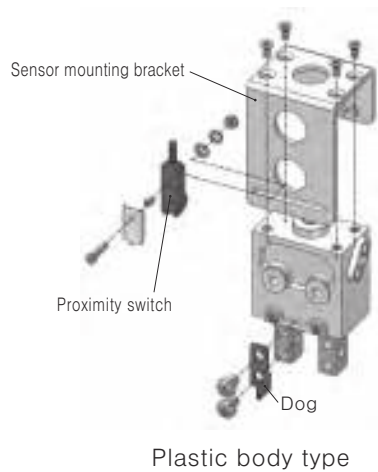
② .Mounting bracket (option)
(HP15□P · HP20□P)



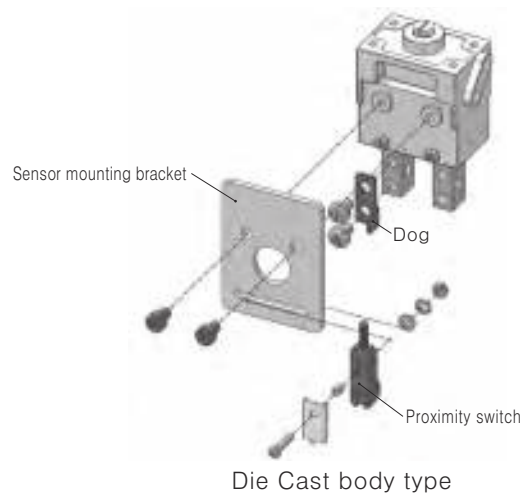
③ .Lateral installation for die cast type
(HP20□D · HP30□D)



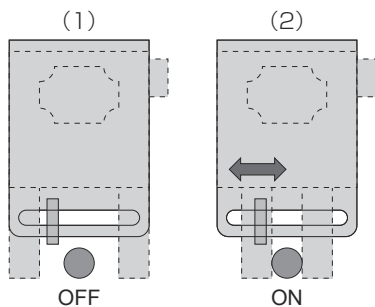
Sensor installation and adjustment



Plastic body type



Die Cast body type



Slide the sensor to the arrow direction and set the switch OFF condition at (1) and ON condition at (2) position

i Accessories

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1 Flow Control Valve

Meter-in flow control valve is best suitable for single-acting grippers.

Type	Model	Type	Model	Price (\$)
	JSCøD-MB		JSSøD-MB	
	JSC3-M3B		JSS3-M3B	12.45
	JSC3-M5B		JSS3-M5B	8.64
	JSC4-M3B (5/32")		JSS4-M3B (5/32")	12.45
	JSC4-M5B (5/32")		JSS4-M5B (5/32")	8.64
	JSC6-M5B		JSS6-M5B	10.45
	JSC1/8-M3B		JSS1/8-M3B	12.45
	JSC1/8-M5B		JSS1/8-M5B	8.64
	JSC1/4-M5B		JSS1/4-M5B	10.45

Meter-out flow control valve is best suitable for double-acting grippers.

Type	Model	Type	Model	Price (\$)
	JSCøD-MA		JSSøD-MA	
	JSC3-M3A		JSS3-M3A	12.45
	JSC3-M5A		JSS3-M5A	8.64
	JSC4-M3A (5/32")		JSS4-M3A (5/32")	12.45
	JSC4-M5A (5/32")		JSS4-M5A (5/32")	8.64
	JSC6-M5A		JSS6-M5A	10.45
	JSC1/8-M3A		JSS1/8-M3A	12.45
	JSC1/8-M5A		JSS1/8-M5A	8.64
	JSC1/4-M5A		JSS1/4-M5A	10.45

2 Barb Fitting

Ideal for small grippers with extremely thin bodies

Type	Model	Price (\$)
	LC-øD-M	
	LC-0320-M3	1.18
	LC-0320-M3M ※	3.64
	LC-0320-M5	.55
	LC-0425-M3	1.18
	LC-0425-M5	.55
	LC-0640-M3	3.00
	LC-0640-M5	.55

3 Push-in Mini Fitting

Push-in connect fitting makes piping easier

Type	Model	Price (\$)	Type	Model	Price (\$)
	PCøD-MM			PLøD-MM	
	PC3-M5M	1.91		PL3-M5M	2.82
	PC4-M5M	2.27		PL4-M5M	3.18
	PC6-M5M	2.36		PL6-M5M	3.23
	PC1/8-M5M	2.27		PL1/8-M5M	3.18
	PC5/32-M5M	2.27		PL5/32-M5M	3.18
	PC1/4-M5M	2.45		PL1/4-M5M	3.32

4 Tubings

Flexible polyurethane tubing, 9 colors

Type	Model	Price (\$) (per meter)
	UBT0320-①-②	.56
	UBT0425-①-②	.36
	UBT0640-①-②	.67
	UBT1/8-①-②	.30
	UBT1/4-①-②	.74

❖ Specify UBT0425 if you need 5/32" O.D. tubing

※Specify the tubing length in ① and the color in ② of the model number from the following option.

■ Polyurethane Tubing

- ① Tubing length ▶ 20 (20 meter roll) or 100 (100 meter reel)
 ② Color ▶ B : Black, R : Red, Y : Yellow, BU : Blue, O : Orange
 G : Green, CB : Clear Blue, C : Clear, W : Milky white

Softer polyurethane tubing, 6 colors

Type	Model	Price (\$) (per meter)
	UC0425-①-②	.73
	UC0640-①-②	1.18

■ Soft Polyurethane Tubing

- ① Tubing length (m) ▶ 20 (20 meter roll), 100 (100 meter roll in a box)
 ② Color ▶ CBL : Clear Black, CO : Clear Orange, CY : Clear Yellow
 CG : Clear Green, CB : Clear Blue, C : Clear