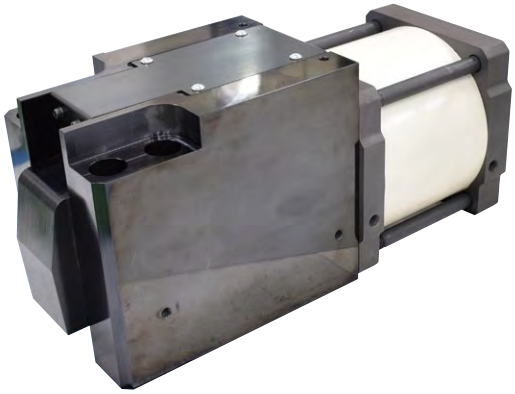
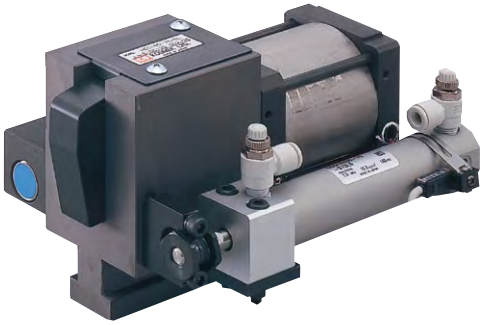
QMCS
QUICK MOLD CHANGE SYSTEMS

Air Clamp System H Series

A Variety of Air Clamps for Small to Extra-Large IMMs.
Suitable for Clean Environment.



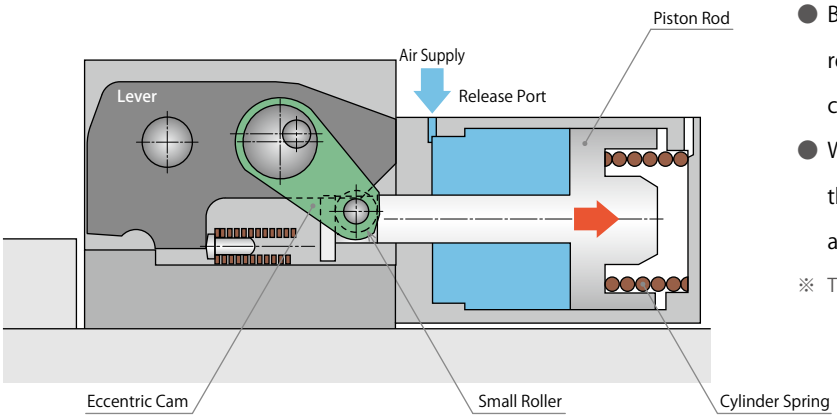


KOSMEK
Harmony in Innovation

Features and Action Description

- Power source is general compressed air only.
- Air clamp system eliminates the possibility of contamination around the clamp due to oil leakage or dripping.
- Piping work is easy because the circuit consists of air lines.
- Fire hazard by use/or storage of hydraulic oil is eliminated.
- Excellent for electric machines, no hydraulic source is required.
- Maintenance is easy as there is no oil mess.
- This system is interchangeable with our hydraulic clamp (model GWA) as the mounting bolt pitch is identical.
- Endurance at high temperature is improved because the working pressure of this system is lower than that of the hydraulic model.
- Overall system costs are less than hydraulic systems.

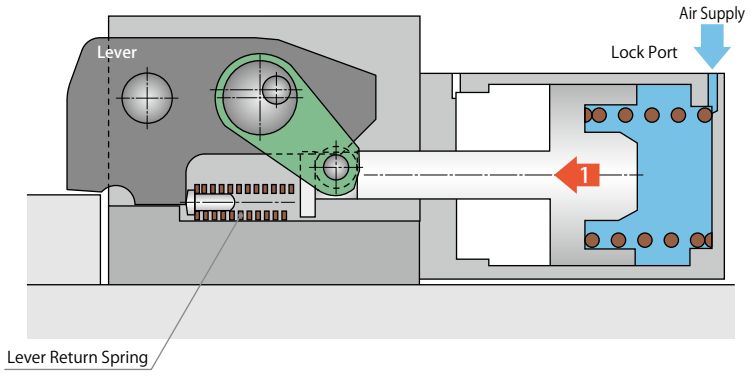
Lever Retracted



- By supplying 0.4 MPa air pressure to the release port, the piston rod moves backward compressing the cylinder spring.
- With the movement of the piston rod, the lever is moved backward by the small roller and eccentric cam. The lever is set inside the body.

※ The lever of HB/HE clamp cannot be set inside the body.

Lever Extended

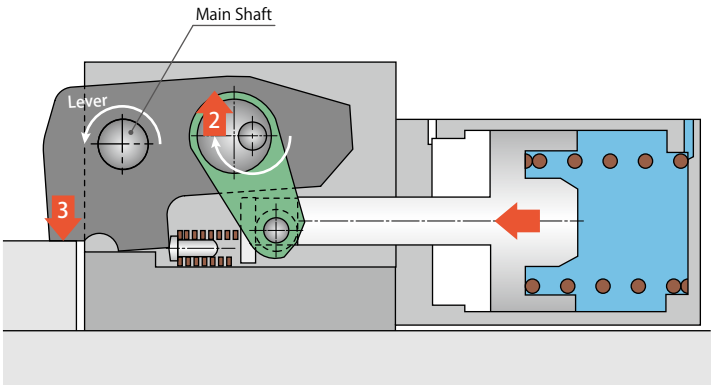


① By releasing the air supply to the release port and supplying air to the lock port, the piston rod is moved forward with air pressure and cylinder spring force. The lever return spring movement 1 keeps the lever moving forward in a horizontal state.

② With the movement of the piston rod, small roller, eccentric cam and lever move forward.

※ The lever is moved forward with the cylinder spring force by releasing the air supply from the release port.

Lever Locked



③ The piston rod moves forward and rotates the eccentric cam, which is connected by the small roller.

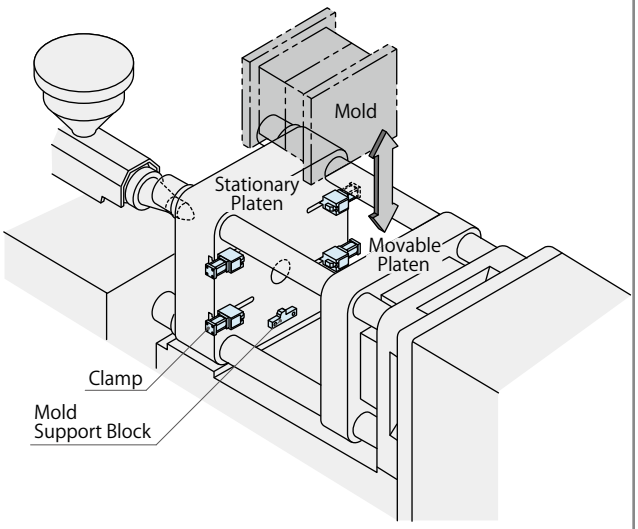
④ With the rotation of the eccentric cam, thrust is applied in the direction of 2.

⑤ Rotational force, with the main shaft as the center, is generated in the lever.

⑥ With the main shaft as the support point, clamping force (which is boosted by the leverage of the lever) securely clamps the mold 3.

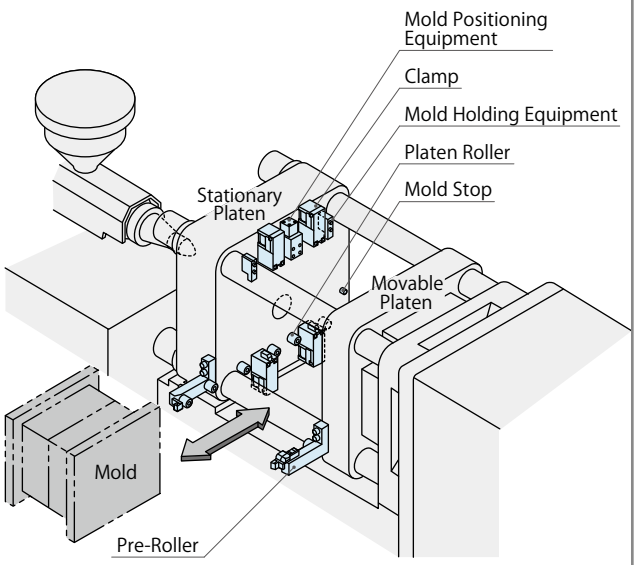
Mold Change System

Vertical Mold Change System



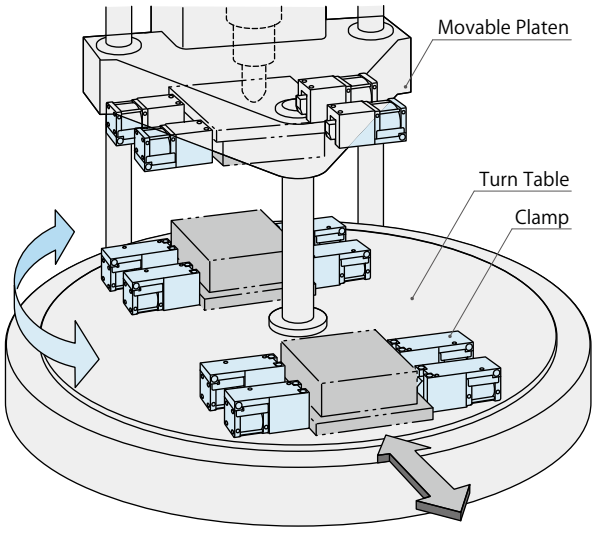
Vertical mold change system is a method for changing a mold using a crane over a molding machine and for securely fastening the mold by a powered clamp. T-slot clamp (model HB/HE) or bolt fixed clamp (model HC) can be selected depending on the conditions of the mold and the molding machine.

Horizontal Mold Change System



Horizontal mold change system is a method for changing molds from the operation side or the non operation side using a mold change cart or a stand.
Most suitable configuration can be selected based on the frequency of the mold change or the plant layout.

Vertical Injection Molding Machine



Air clamp (H series) is most suitable for vertical IMMs. Especially for a turn table machine, the lower molding surface always passes under the upper clamp in each shot due to the IMM mechanism. At this time, even a slight amount of oil dripping from clamps or piping results in not only contaminants of molds but production of defective molded parts. Air clamp uses no oil, thus eliminating a chance of contamination.

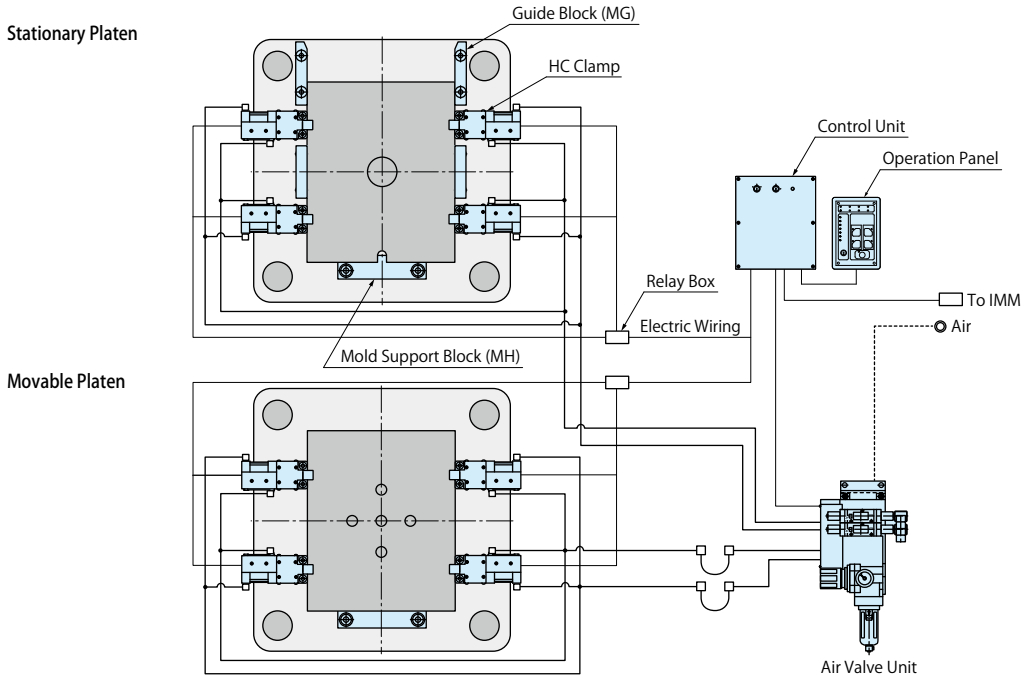
Cautions on System Operation

- Check the condition of IMMs and molds before mold change and make sure to suspend a mold with a crane till completing mold change. Otherwise, a mold may drop and cause an injury.
- When working on a mold while still in the machine, suspend the mold with crane or fasten it with bolts and turn the machine power supply OFF.
  Failure to do so may result in mold dropping and personal injury.
- When production is completed, close the mold in the machine or remove it from the machine. Failure to do so may result in mold dropping and personal injury.
- Do not remove the mold support block or stop block from the stationary or movable platens.
  The removal may result in mold dropping and personal injury.
  Note) When the stationary side is equipped with a location ring, install the dropping preventive block only on the movable side.
- When changing a mold, do not enter or put your hand/foot under the mold. It may drop and cause an injury.
- Use specified molds only.
  Failure to do so may result in insufficient locking of a mold, mold dropping and personal injury.
- Operate within the specified condition.
  Failure to do so may result in breakage of a machine, mold dropping and personal injury. Also this may cause malfunction of a clamp.

Vertical Loading Mold Change System

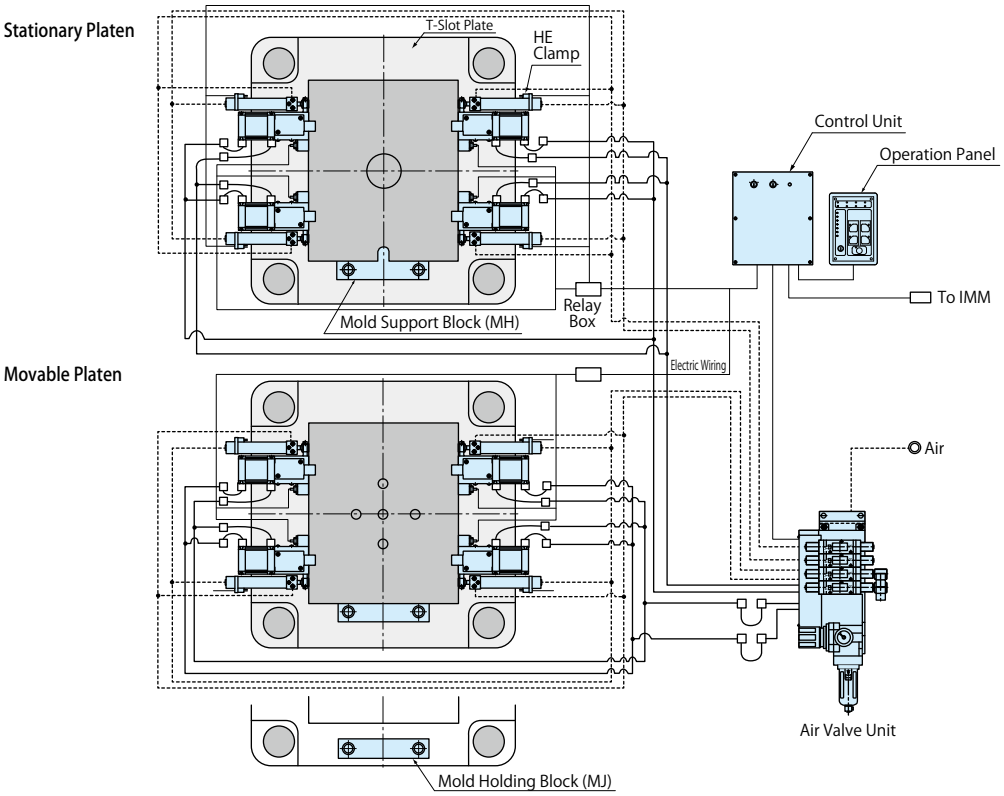
For Molds with Standardized Width

model **HC**



Needs to Standardize Mold Dimension

model **HB / HE**



Standard System (HC / HB / HE)

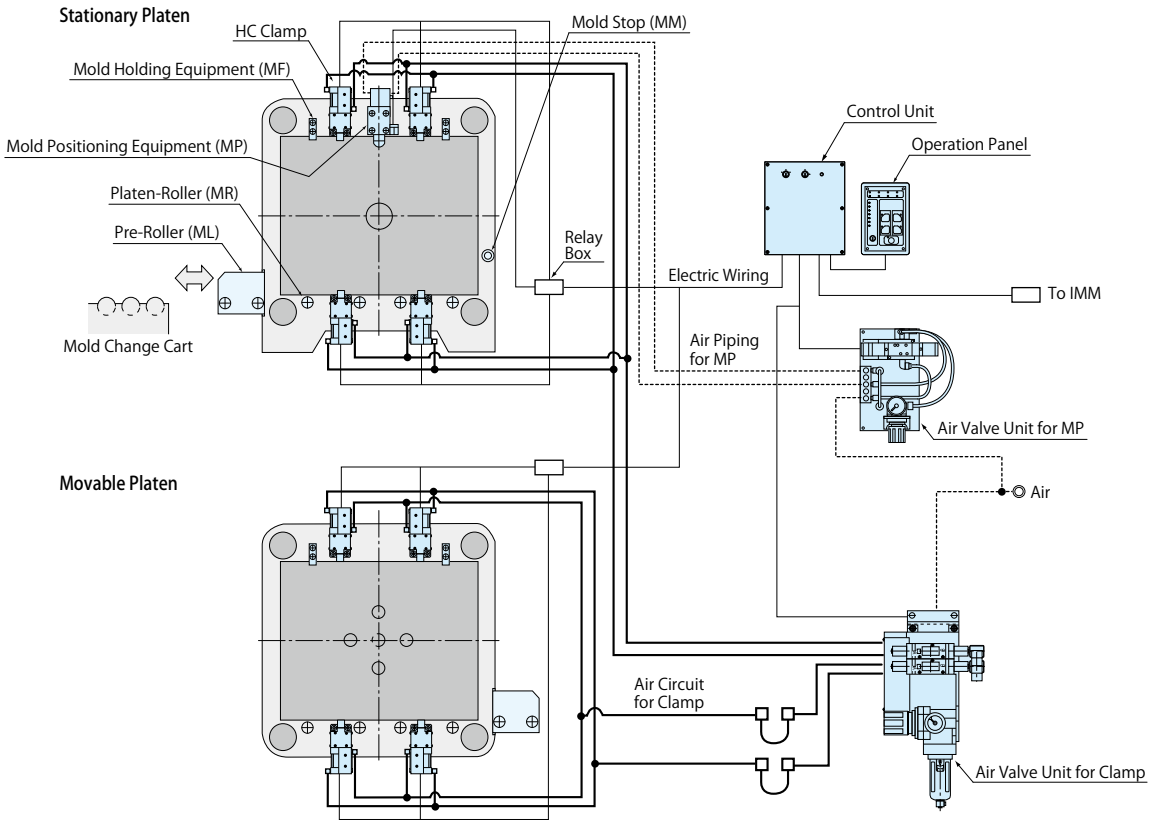
※1. ( ) is for HE.

IMM Capacity (kN)	Clamp					Air Valve Unit ※1	Mold Support Block	Mold Holding Block
	HC Clamp	HB Clamp	HE Clamp	Qty.	Stationary/Movable Clamping Force (kN)			
～ 500	HC0103	HB0101	HE0101	8	40	MV7011-UU-□-□ (MV7011-UUSS-□-□)	MH03	MJ0010
～ 750	HC0163	HB0161	HE0161	8	64		MH03	MJ0010
～ 1500	HC0254	HB0252	HE0252	8	100		MH04	MJ0020
～ 2500	HC0404	HB0402	HE0402	8	160	MV7021-UU-□-□ (MV7021-UUSS-□-□)	MH04	MJ0020
～ 3500	HC0633	HB0632	HE0632	8	252		MH04	MJ0020
～ 5500	HC1003	HB1002	HE1002	8	400	MV7031-UU-□-□ (MV7031-UUSS-□-□)	MH06	MJ0030
～ 8500	HC1603	HB1602	HE1602	8	640	MV7041-UU-□-□	MH06	MJ0040
～ 13000	HC2503	HB2500	HE2500	8	1000		MH08	MJ0050
～ 20000	HC4000	-	-	8	1600	MV7051-U-□-□ (2 Units)	MH08	MJ0050
～ 30000	HC5000	-	-	8	2000		MH10	MJ0050

Note: 1. Please contact us for high speed specifications.

Horizontal Loading Mold Change System

Needs to Standardize Mold Dimension



Standard System (HC)

※2. Note that some platen components cannot be selected as shown in this list depending on the condition of applied IMMs and molds.

IMM Capacity (kN)	Clamp			Air Valve Unit	Platen Components ※2							Standard
	HC Clamp	Qty.	Stationary/Movable Clamping Force (kN)		Mold Positioning Equipment	Mold Holding Equipment	Platen-Roller	Pre-Roller	Detection of Excessively Large Mold Thickness	Detection of Excessively Small Mold Thickness	Mold Stop	Mold Mass (t)
～ 500	HC0103	8	40	MV7011-UU-□-□	MP03	MF0010	MR0270	ML02	MS4011-5	MS2030-5 (Limit Switch Type) MS2041-5 (Proximity Switch Type)	MM	0.6
～ 750	HC0163	8	64	MV7011-UU-□-□	MP03	MF0010	MR0270	ML02	MS4011-5			0.6
～ 1500	HC0254	8	100	MV7011-UU-□-□	MP04	MF0010	MR0400	ML04	MS4011-5			1.0
～ 2500	HC0404	8	160	MV7021-UU-□-□	MP04	MF0010	MR0400	ML04	MS4011-5			1.5
～ 3500	HC0633	8	252	MV7021-UU-□-□	MP06	MF0010	MR0400	ML04	MS4011-5			2.5
～ 5500	HC1003	8	400	MV7031-UU-□-□	MP06	MF0020	MR0600	ML06	MS4021-5			4.5
～ 8500	HC1603	8	640	MV7041-UU-□-□	MP08	MF0020	MR0800	ML08	MS4021-5			8.0
～ 13000	HC2503	8	1000	MV7041-UU-□-□	MP08	MF0030	MR1000	ML10	MS4031-5			15
～ 20000	HC4000	8	1600	MV7051-U-□-□ (2 Units)	MP08	MF0030	MR1600	ML16	MS4041-5			20
～ 30000	HC5000	8	2000	MV7051-U-□-□ (2 Units)	MP10	MF0040	MR1600	ML16	MS4041-5			30

Note: 1. Please contact us for high speed specifications.

Model No. Indication

HC 040 4 - 30 L - V

1 2 3 4 5

1 Clamping Capacity

010 : 10kN	**063** : 63kN	**400** : 400kN
016 : 16kN	**100** : 100kN	**500** : 500kN
025 : 25kN	**160** : 160kN	
040 : 40kN	**250** : 250kN	

2 Design No.

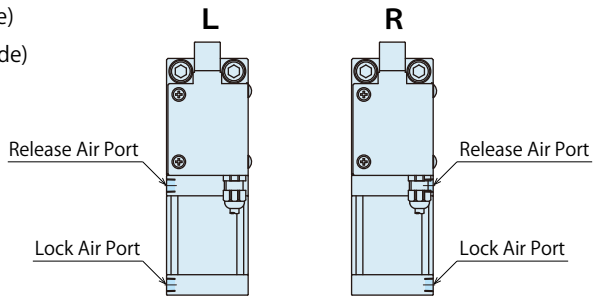
0 : Revision Number (1 Clamping Capacity･･･400 / 500)
3 : Revision Number (1 Clamping Capacity･･･010 / 016 / 063 / 100 / 160 / 250)
4 : Revision Number (1 Clamping Capacity･･･025 / 040)

3 Mold Thickness (h Dimensions)

30 : 30mm
50 : 50mm

4 Air Port Position

L : Left Side as Seen from Back Side (Cylinder Side)
R : Right Side as Seen from Back Side (Cylinder Side)



5 Option ※1

Blank : Standard
J : Low Lever
V : High Temperature (0~120℃)
W1 ※2 : With One Speed Exhaust Controller (For tube in millimeters) (Lock Port Only)
W2 : With Two Speed Exhaust Controllers (For tube in millimeters) (Lock Port/Release Port)
NW1 : With One Speed Exhaust Controller (For tube in inches) (Lock Port Only)
NW2 : With Two Speed Exhaust Controllers (For tube in inches) (Lock Port/Release Port)

Notes :
※1. Please contact us for specifications and external dimensions for these options.
※2. **Blank**：Standard HC4000/HC5000 includes one speed exhaust controller.

Specifications：Clamp Body

Model No.			HC0103	HC0163	HC0254	HC0404	HC0633	HC1003	HC1603	HC2503	HC4000	HC5000
Clamping Capacity ※3		kN	10	16	25	40	63	100	160	250	400	500
Operating Air Pressure (Recommended)		MPa	0.5									
Min. Operating Air Pressure ※4		MPa	0.4									
Holding Force ※5	Air Pressure 0.4	MPa	10	16	25	40	63	100	160	250	400	500
kN	Air Pressure 0	MPa	2.9	5.9	7.6	13	18	27	41	65	107	127
Clamping Force ※5	Air Pressure 0.5	MPa	8	14	20	32.6	49.2	77	127	194	359	380
	Air Pressure 0.4	MPa	7.1	12.1	17.1	27.9	41.9	65	107	164	302	322
kN	Air Pressure 0	MPa	2	2.9	4.4	7.5	10.3	15	24	35	63	78
Full Stroke		mm	2	2	2.1	2.3	2.6	2.8	3	3.3	3.4	3.4
Clamp Stroke		mm	1	1	1	1.1	1.2	1.2	1.2	1.3	1.4	1.4
Extra Stroke		mm	1	1	1.1	1.2	1.4	1.6	1.8	2	2	2
Cylinder Capacity cm^3	Lock		56	94	144	259	444	773	1334	2468	4638	4638
	Release		52	88	135	244	416	729	1262	2346	4398	4398
Usable Fluid			Dry Air									
Operating Temperature ※6		℃	0~70 (**V**：High temperature type is available for 0~120℃. Switch part is 80℃ or less)									
Use Frequency ※7			Max. 20 Cycles / Day									

Notes :

※3. Do not exceed the clamp's capacity.

※4. To maintain the released state, supply 0.4MPa or more in air pressure to the release port.

※5. There is ±10% variation in holding force and clamping force.

※6. Option **V**: High Temperature (0~120℃) is for operating in temperature 70℃ or more.

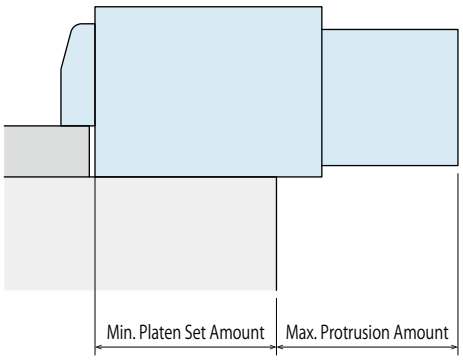
※7. Please contact us for more frequent use.

1. The accuracy of the mold clamping thickness (h dimension) should be within ±0.3mm.

Specifications：Switch

Clamp Model No.	HC010□~040□	HC063□~250□	HC400□~500□
Switch Model No.	D2SW-01L1T	D2SW-01L3T	Z-01HD55-B
Maker	OMRON		
Electrical Rating	0.1A max.AC125V		
	0.1A max.DC30V		

HC Clamp Allowable Protrusion Amount



(mm)

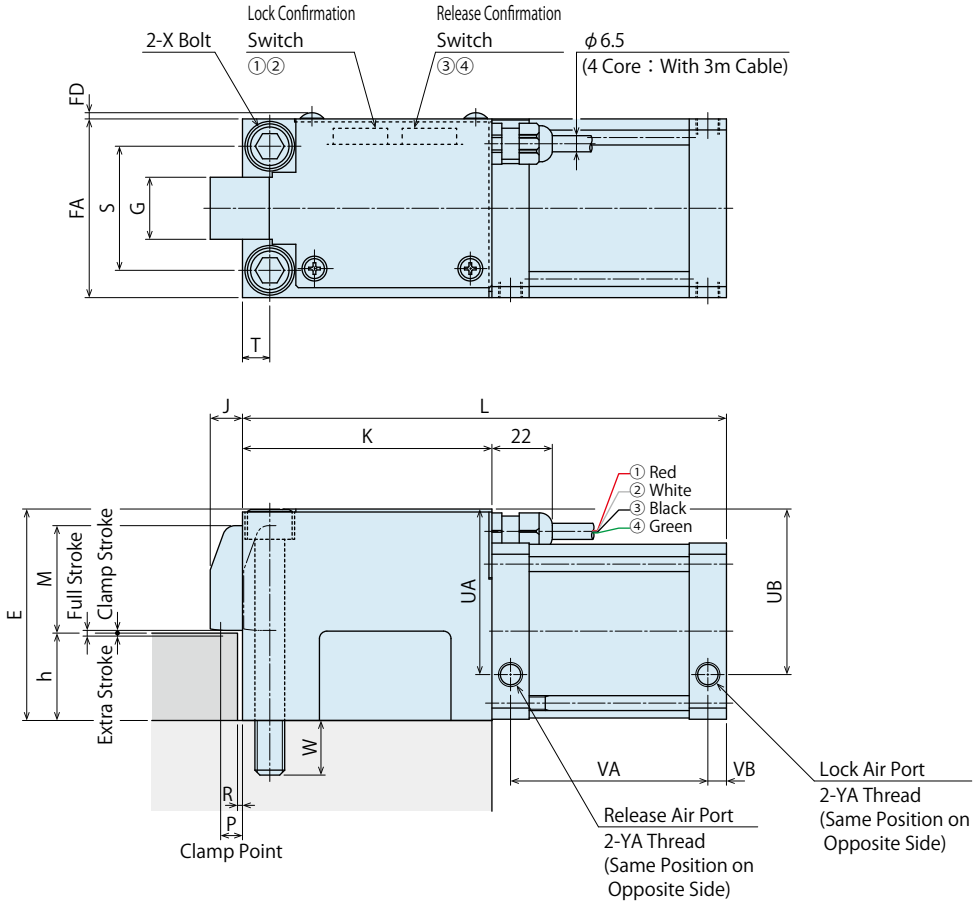
Model No.	Min. Platen Set Amount	Max. Protrusion Amount
HC0103	46	113
HC0163	55	119
HC0254	84	111
HC0404	61	156
HC0633	75	179
HC1003	120	167
HC1603	203	152
HC2503	245	190
HC4000	305	258.5
HC5000	305	258.5

Note :

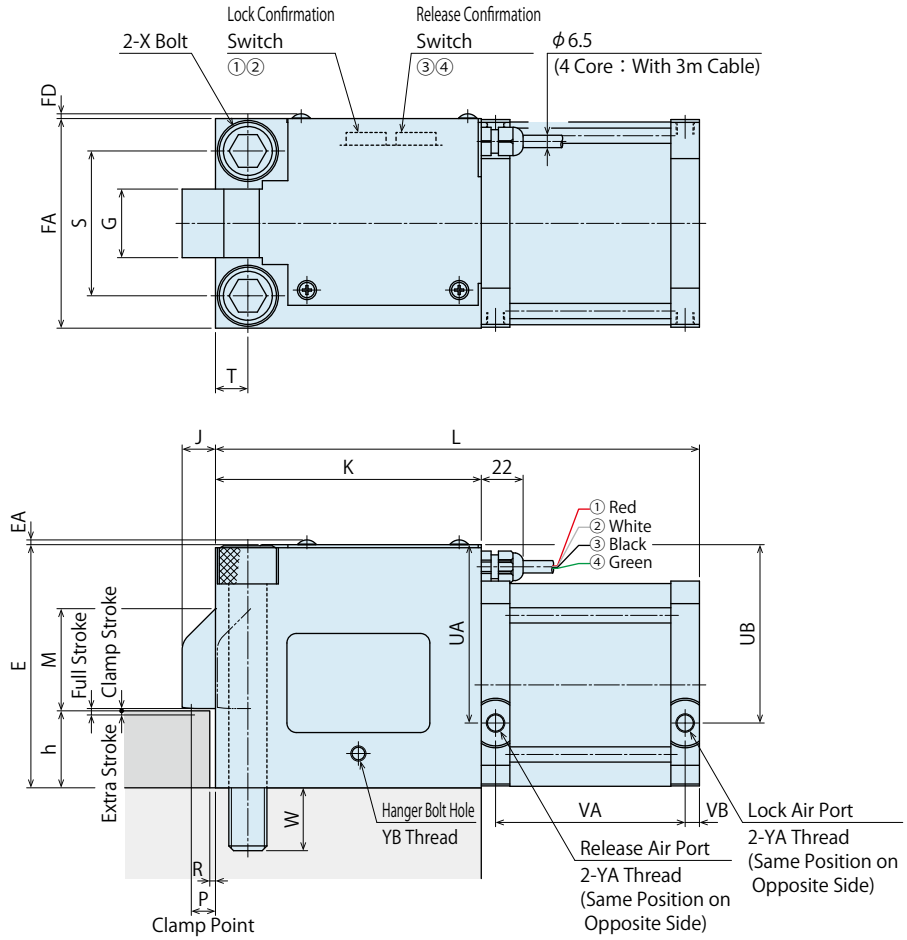
1. The dimensions on the list are for reference.

External Dimensions

※ This drawing shows HC0103 / HC0163 / HC0254 / HC0404. Please contact us for external dimensions of options.

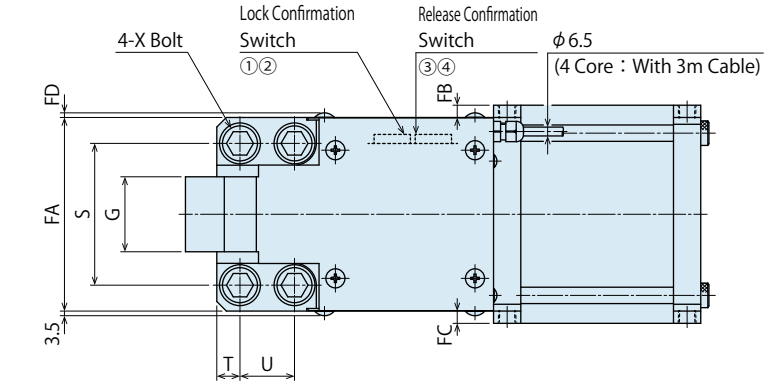


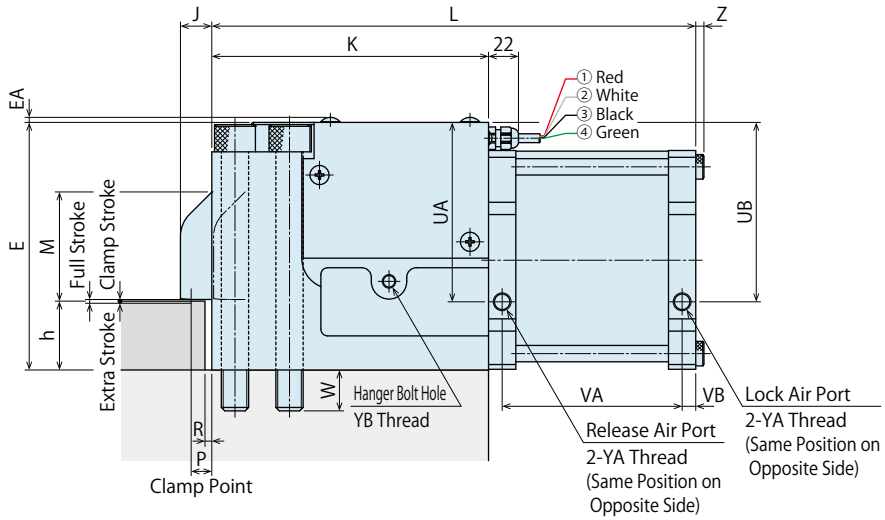
※ This drawing shows HC0633 / HC1003. Please contact us for external dimensions of options.



External Dimensions

※ This drawing shows HC1603 / HC2503. Please contact us for external dimensions of options.





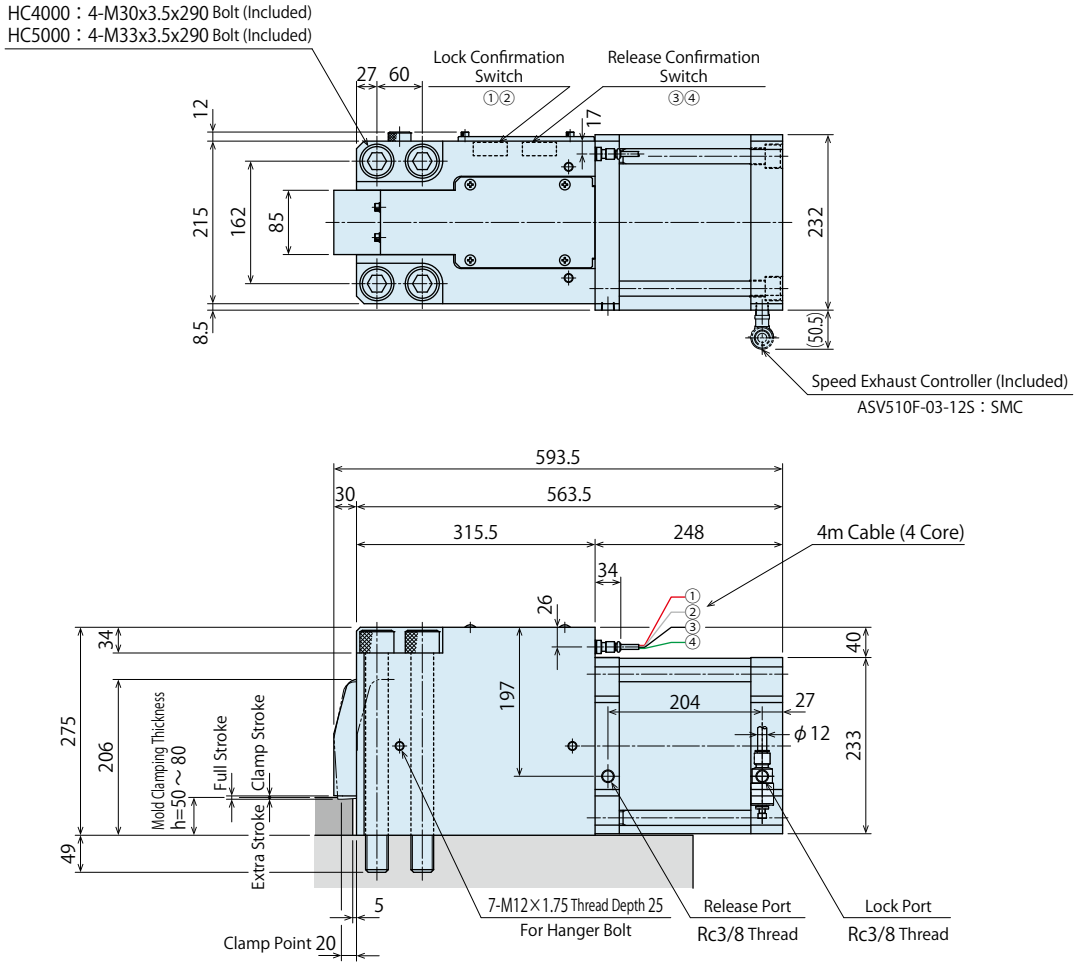
External Dimensions

(mm)

Model No.	HC0103	HC0163	HC0254	HC0404	HC0633	HC1003	HC1603	HC2503
Full Stroke	2	2	2.1	2.3	2.6	2.8	3	3.3
Clamp Stroke	1	1	1	1.1	1.2	1.2	1.2	1.3
Extra Stroke	1	1	1.1	1.2	1.4	1.6	1.8	2
E	66.5	76.5	85.5	104.5	128	150	182	227
EA	-	-	-	-	-	2.5	3.5	-
FA	50	60	72	90	110	135	142	170
FB	-	-	-	-	-	-	9	10
FC	-	-	-	-	-	-	9	10
FD	2.5	2.5	2.5	2.5	2.5	2.5	3.5	9
G	16	19	25	30	36	48	55	65
J	10.5	12	13	15.5	17.5	20	23	26
K	75.5	86	100.5	117.5	139.5	163.5	203	253
L	159	174	195	217	254	287	355	435
M	39.5	48	48.5	66.5	59	73.5	91	125.5
P	5.6	6.1	7.4	8.8	9.9	11	13	17
R	1.5	1.5	2	2	3	3	5	5
S	33	39	50	62	76	95	104	130
T	8	9.5	11	14	17	20	17	20
U	-	-	-	-	-	-	40	50
UA	53	60.5	67	80	94	109.5	132	167
UB	51	58.5	67	80	94	109.5	132	167
VA	68.5	73	79.5	84.5	99.5	108.5	132	158
VB	7.5	7.5	7.5	7.5	7.5	7.5	10	12
W	13	15	22	27	33	36	30	37.5
X	M8×1.25	M10×1.5	M12×1.75	M16×2	M20×2.5	M24×3	M20×2.5	M24×3
YA	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4	Rc1/4
YB	-	-	-	-	2-M8×1.25	2-M8×1.25	2-M10×1.5	6-M10×1.5
Z	-	-	-	-	-	-	6	10
h (Standard)	$20^{\pm 0.3}$	$20^{\pm 0.3}$	$30^{\pm 0.3}$	$30^{\pm 0.3}$	$35^{\pm 0.3}$	$40^{\pm 0.3}$	$40^{\pm 0.3}$	$50^{\pm 0.3}$

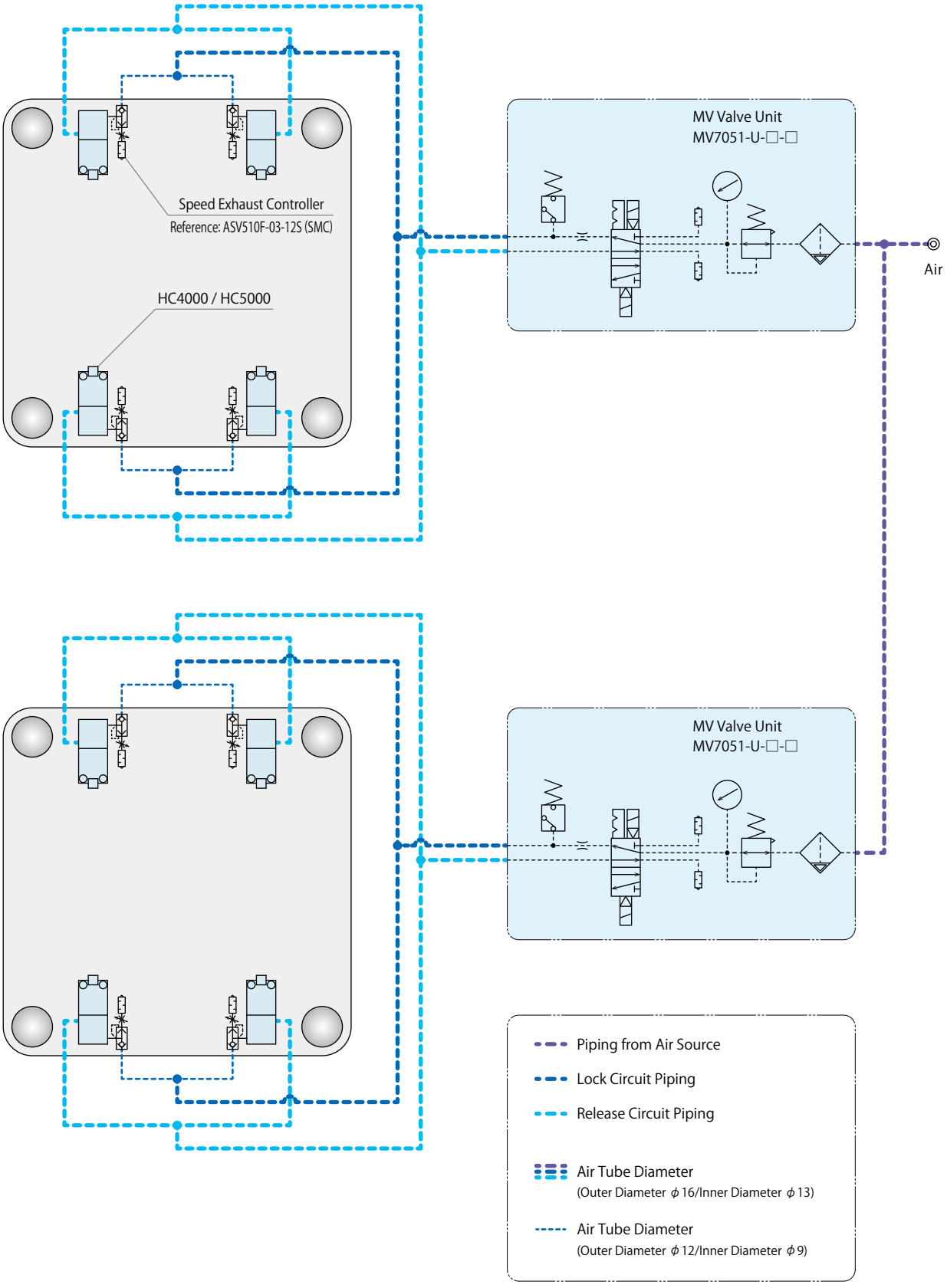
External Dimensions

※ This drawing shows HC4000 / HC5000. Please contact us for external dimensions of options.



Circuit Reference

※ This circuit reference is for HC4000 / HC5000.



Note: 1. Please contact us for unlisted clamp sizes.

Model No. Indication

HB 040 2 - HP - 5 L - T□□□

1 2 3 4 5 6

1 Clamping Capacity

010 :	10kN	**063** :	63kN
016 :	16kN	**100** :	100kN
025 :	25kN	**160** :	160kN
040 :	40kN	**250** :	250kN

2 Design No.

0 : Revision Number (1 Clamping Capacity・・・250)
1 : Revision Number (1 Clamping Capacity・・・010 / 016)
2 : Revision Number (1 Clamping Capacity・・・025 / 040 / 063 / 100 / 160)

3 Option

Blank : Standard
D : With Handle (Clamping Force 040 or more)
H : Extra Height (When h dimension is more than max. h in the external drawing.)
J : Low Lever (When h dimension is less than min. h in the external drawing.)
P : With Mold Confirmation Proximity Switch
V : High Temperature (0~120℃)

4 Proximity Switch Load Voltage (Current)

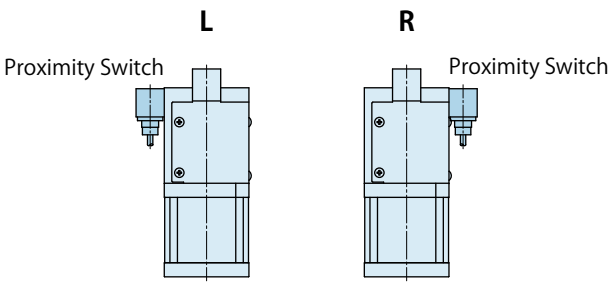
Only when selecting 3 Option **P** : With Mold Confirmation Proximity Switch

1 : AC100V
2 : AC200V
5 : DC24V (5～40mA)

5 Proximity Switch Mounting Position

Only when selecting 3 Option **P** : With Mold Confirmation Proximity Switch

L : Left (Left Side as Seen from Clamp Back Side)
R : Right (Right Side as Seen from Clamp Back Side)



6 Production Number

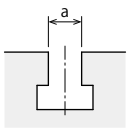
This number represents the main specification of the clamp's T-slot stem and the clamping height.
After the specification is confirmed, we will create a number.

Specifications

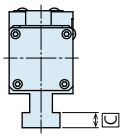
Model No.			HB0101	HB0161	HB0252	HB0402	HB0632	HB1002	HB1602	HB2500
Clamping Capacity ※1		kN	10	16	25	40	63	100	160	250
Operating Air Pressure (Recommended)		MPa	0.5							
Min. Operating Air Pressure ※2		MPa	0.4							
Holding Force ※3	Air Pressure 0.4 MPa	kN	10	16	25	40	63	100	160	250
	Air Pressure 0 MPa	kN	2.9	5.9	7.6	13	18	27	41	65
Clamping Force ※3	Air Pressure 0.5 MPa	kN	8	14	20	32.6	49.2	77	127	194
	Air Pressure 0.4 MPa	kN	7.1	12.1	17.1	27.9	41.9	65	107	164
	Air Pressure 0 MPa	kN	2	2.9	4.4	7.5	10.3	15	24	35
Full Stroke		mm	3	3	3.2	3.6	4	4.5	5	5.5
Clamp Stroke		mm	1	1	1	1.1	1.2	1.2	1.2	2
Extra Stroke		mm	2	2	2.2	2.5	2.8	3.3	3.8	3.5
Cylinder Capacity	Lock	cm³	56	94	144	259	444	773	1334	2468
	Release	cm³	52	88	135	244	416	729	1262	2346
Usable Fluid			Dry Air							
Operating Temperature ※4		℃	0~70 (V：High temperature type is available for 0~120℃)							
Use Frequency ※5			Max. 20 Cycles / Day							
Min. T-slot Width a (JIS) ※6		mm	10	12	14	18	22	24	28	28
Min. T-leg Width C (JIS) ※6		mm	6.5	8	9.5	12	14	16.5	20	18

Notes:

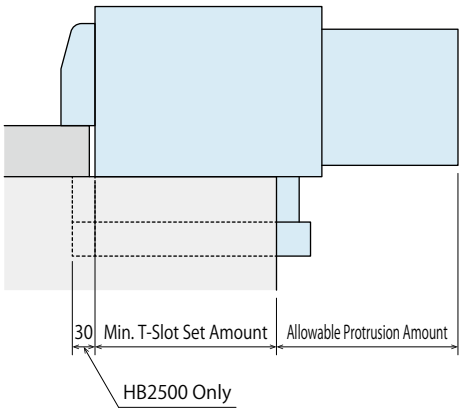
※1. Do not exceed the clamp's capacity.
※2. To maintain the released state, supply 0.4MPa or more in air pressure to the release port.
※3. There is ±10% variation in holding force and clamping force.
※4. Option **V**: High Temperature (0~120℃) is for operating in temperature 70℃ or more.
※5. Please contact us for more frequent use.
※6. It shows reference dimensions. The dimension may differ from specification depending on T-slot (T-leg) dimension and protrusion amount of the body, etc.
1. The accuracy of the mold clamping thickness (h dimension) should be within ±0.3mm.
2. Please contact us for unlisted specifications and dimensions.



T-Slot Dimension ※6


T-Leg Dimension ※6

HB Clamp Allowable Protrusion Amount



(mm)

Model No.	Min. T-Slot Set Amount	Allowable Protrusion Amount
HB0101	40.5	108
HB0161	49	113
HB0252	59	122.5
HB0402	73.5	127.5
HB0632	111.5	124.5
HB1002	133	133.5
HB1602	170.5	167
HB2500	226	192

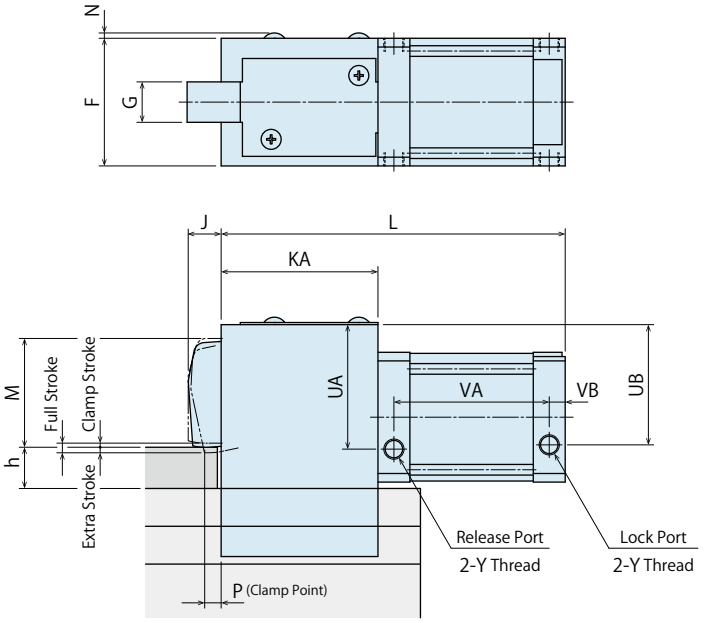
Note:

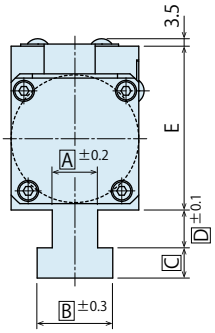
1. The dimensions on the list are for reference.
The dimensions may differ from specification depending on T-slot (T-leg) dimension.

External Dimensions

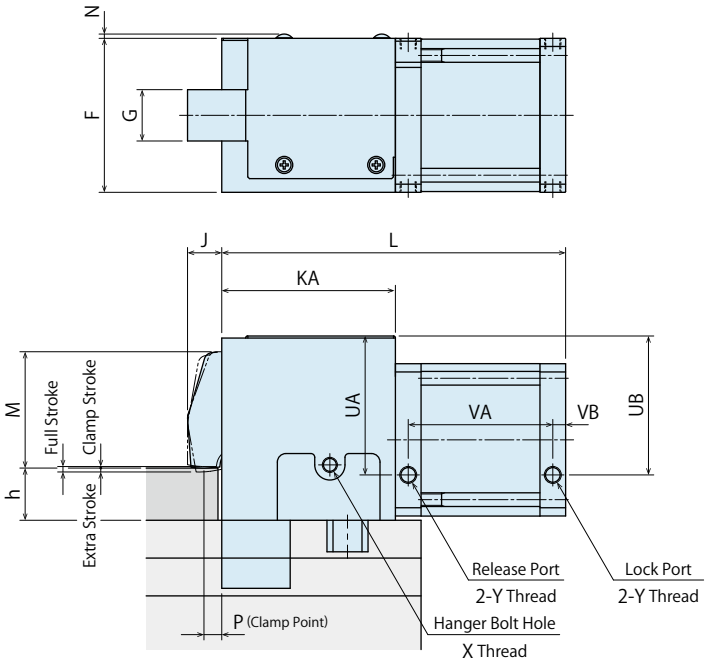
※ This drawing shows HB0101 / HB0161 standard model.
Please contact us for external dimensions of options.

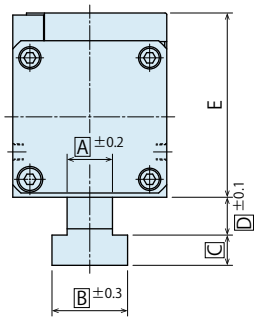
Please refer to P.15 for HB2500.





※ This drawing shows HB0252 / HB0402 / HB0632 standard model.
Please contact us for external dimensions of options.

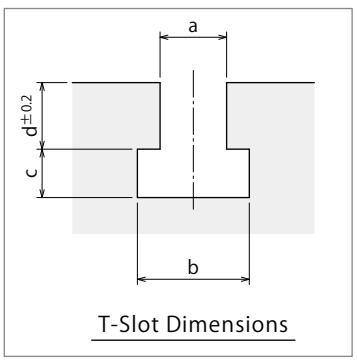




Notes:

1. Do not exceed the clamp's capacity.
2. Specifications/Contents in this catalog are subject to change without prior notice. Ask for the approval drawing before deciding to purchase.

T-Slot Dimensions

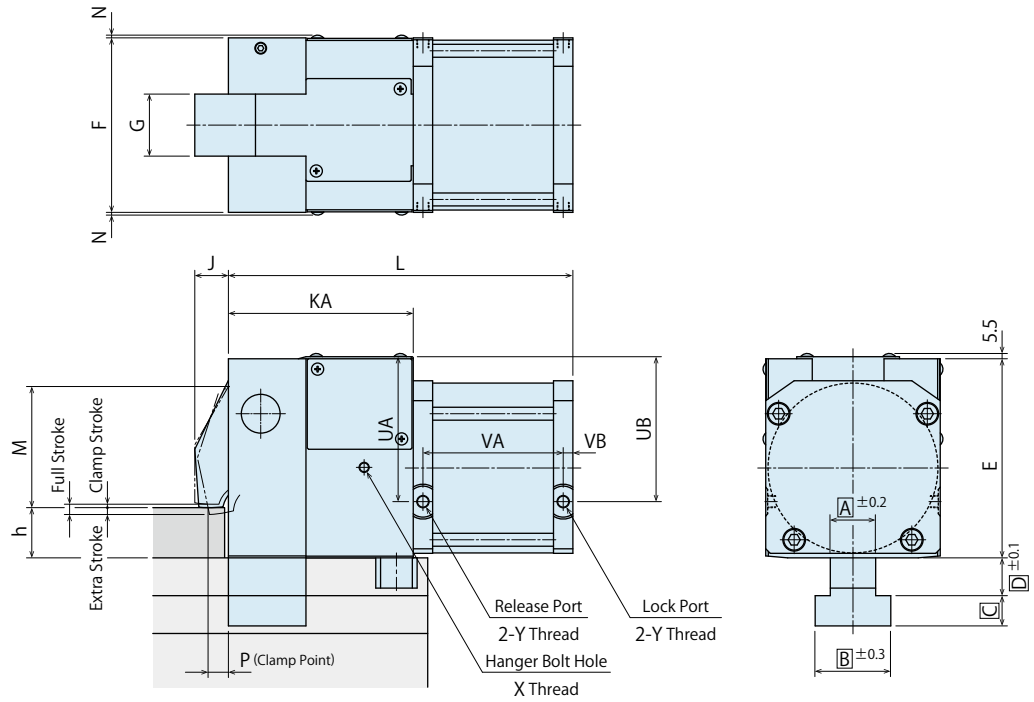


T-Slot Dimensions

External Dimensions

※ This drawing shows HB1002 / HB1602 standard model.
Please contact us for external dimensions of options.

Please refer to P.15 for HB2500.



External Dimensions

(mm)

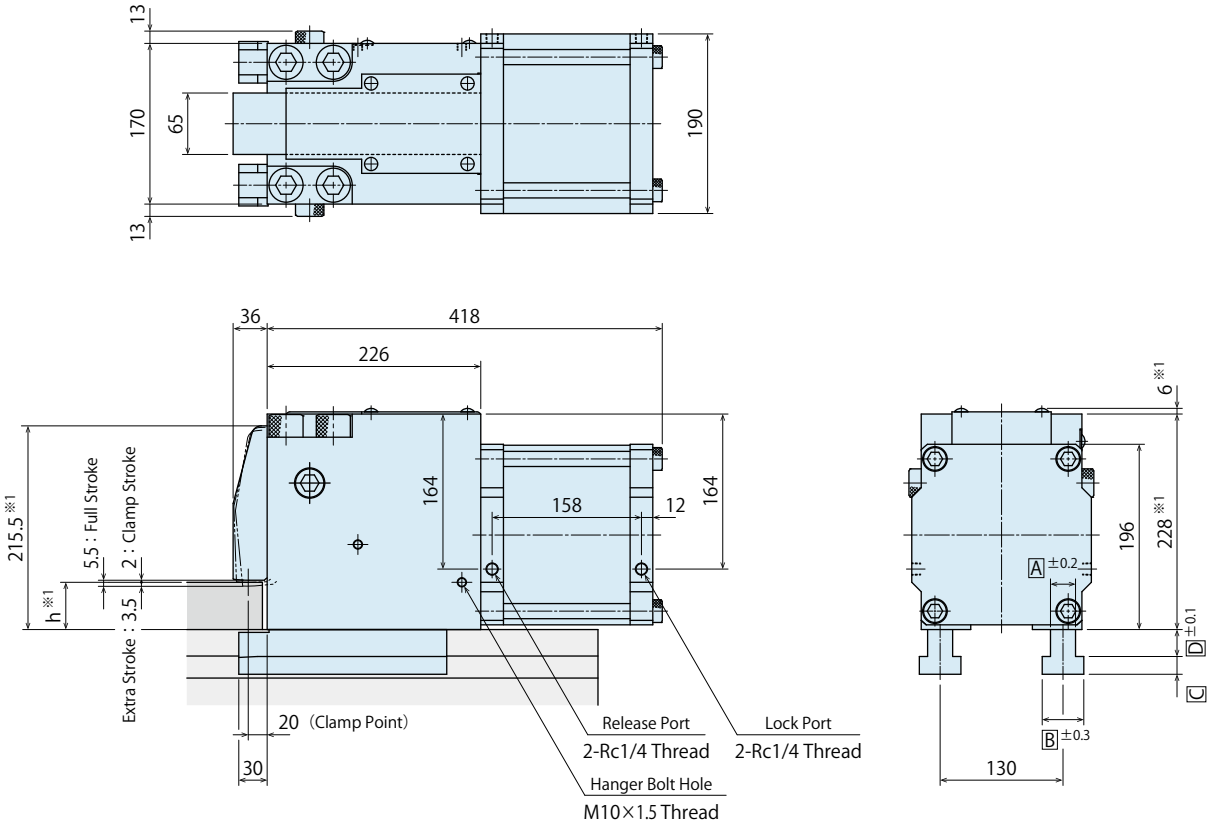
Model No.		HB0101	HB0161	HB0252	HB0402	HB0632	HB1002	HB1602
Full Stroke		3	3	3.2	3.6	4	4.5	5
Clamp Stroke		1	1	1	1.1	1.2	1.2	1.2
Extra Stroke		2	2	2.2	2.5	2.8	3.3	3.8
E		69	77	89	108	133	154	186
F		50	60	72	90	110	135	160
G		16	19	25	30	36	48	55
J		14	16	17	20	22	26	30
KA		65	74	87	101.5	121.5	143	179.5
L		148.5	162	181.5	201	236	266.5	337.5
M + h		62	70.5	80.5	98.5	110	134	163.5
N		2.5	2.5	2.5	2.5	2.5	2.5	3.5
P		7	7.5	8.7	10	11	13	17
UA		53	58.5	68.5	81.5	96	110.5	132
UB		51	56.5	68.5	81.5	96	110.5	132
VA		68.5	73	79.5	84.5	99.5	108.5	132
VB		7.5	7.5	7.5	7.5	7.5	7.5	10
X		-	-	-	-	M8×1.25	M8×1.25	M10×1.5
Y		Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4
Mold	min. h	$15^{\pm0.3}$	$15^{\pm0.3}$	$20^{\pm0.3}$	$20^{\pm0.3}$	$30^{\pm0.3}$	$35^{\pm0.3}$	$40^{\pm0.3}$
	max. h	$35^{\pm0.3}$	$40^{\pm0.3}$	$40^{\pm0.3}$	$45^{\pm0.3}$	$50^{\pm0.3}$	$60^{\pm0.3}$	$70^{\pm0.3}$

Notes:

1. [A][B][C][D] dimensions are determined by Kosmek according to the T-slot dimensions.
2. When making an order, please specify a, b, c, d dimension of T-slot and h dimensions of mold clamping thickness in 0.1mm increments.
3. Tolerance of dimension d of T-slot should be better than ±0.2mm.
4. The accuracy of the mold clamping thickness (h dimension) should be within ±0.3mm.
5. Dimension E is kept constant and dimension M is changed to deal with the specified mold thickness (dimension h).
   If dimension E cannot be increased because of interference due to minimum mold thickness limitation, contact us.
6. Please contact us for unlisted specifications and dimensions.

External Dimensions

※ This drawing shows HB2500 standard model.
Contact us for external dimensions for options.



(mm)

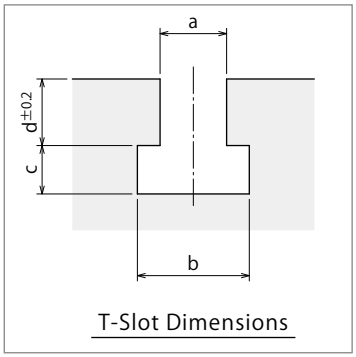
Model No.		HB2500
Mold	min. h	$50^{\pm 0.3}$
	max. h	$90^{\pm 0.3}$

Notes:

※1. Overall height of the clamp（228mm+6mm）is kept constant and the lver thickness is changed to deal with the specified mold thickness (dimension h). Please contact us if the overall height of the clamp cannot be increased due to the interference of the minimum mold thickness limitation.

1. Do not exceed the clamp's capacity.
2. Specifications/Contents in this catalog are subject to change without prior notice. Ask for the approval drawing before deciding to purchase.
3. A B C D dimensions are determined by Kosmek according to the T-slot dimensions.
4. When making an order, please specify a,b,c,d dimension of T-slot and h dimensions of mold clamping thickness in 0.1mm increments.
5. Tolerance of dimension d of T-slot should be better than ±0.2mm.
6. The accuracy of the mold clamping thickness (h dimension) should be within ±0.3mm.
7. Please contact us for unlisted specifications and dimensions.

T-Slot Dimensions



T-Slot Dimensions

MEMO

Model No. Indication

HE 040 2 - 125 - 5 L - H - T□□□

1 2 3 4 5 6 7

1 Clamping Capacity

010: Clamping Capacity = 10kN
016: Clamping Capacity = 16kN
025: Clamping Capacity = 25kN
040: Clamping Capacity = 40kN
063: Clamping Capacity = 63kN
100: Clamping Capacity = 100kN
160: Clamping Capacity = 160kN
250: Clamping Capacity = 250kN

2 Design No.

0 : Revision Number (1 Clamping Capacity・・・250)
1 : Revision Number (1 Clamping Capacity・・・010 / 016)
2 : Revision Number (1 Clamping Capacity・・・025 / 040 / 063 / 100 / 160)

3 Slide Stroke (Air Cylinder Stroke)

25 : Clamp Travel Distance = 25mm
〜
300 : Clamp Travel Distance = 300mm

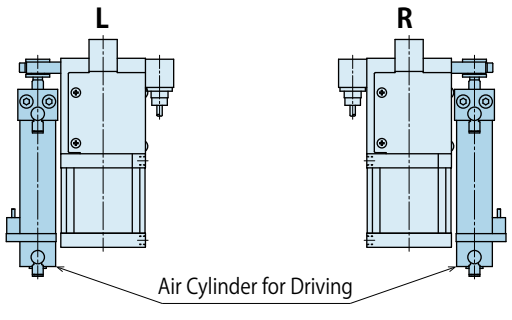
※ Selectable 3 Slide Stroke Length differs according to 1 Clamping Force.
Please refer to the slide stroke on specifications.
※ Extra distance should be considered when determining the travel distance.

4 Switch Load Voltage (Current)

1 : AC100V
2 : AC200V
5 : DC24V (5〜40mA)

5 Air Cylinder Mounting Position

L : Left (Left Side as Seen from Clamp Back Side)
R : Right (Right Side as Seen from Clamp Back Side)



6 Option

Blank : Standard
H : Extra Height (When h dimension is more than max. h in the external drawing.)
J : Low Lever (When h dimension is less than min. h in the external drawing.)
Q : Double Cylinder
S : Special Spacer ※1
V : High Temperature (0~120℃)

Note:
※1. Only available for 1 Clamping Capacity : **010** 〜 **160**.
1. Not all combinations of options are available.

7 Production Number

This number represents the main specification of the clamp's T-slot stem and the clamping height.
After the specification is confirmed, we will create a number.

Specifications

Model No.			HE0101	HE0161	HE0252	HE0402	HE0632	HE1002	HE1602	HE2500
HB Clamp Model No.			HB0101	HB0161	HB0252	HB0402	HB0632	HB1002	HB1602	HB2500
Clamping Capacity ※2			10	16	25	40	63	100	160	250
Operating Air Pressure (Recommended) MPa			0.5							
Min. Operating Air Pressure ※3 MPa			0.4							
Air Pressure for Air Cylinder MPa			0.4～0.5							
Holding Force ※4 kN	Air Pressure 0.4 MPa		10	16	25	40	63	100	160	250
	Air Pressure 0 MPa		2.9	5.9	7.6	13	18	27	41	65
Clamping Force ※4 kN	Air Pressure 0.5 MPa		8	14	20	32.6	49.2	77	127	194
	Air Pressure 0.4 MPa		7.1	12.1	17.1	27.9	41.9	65	107	164
	Air Pressure 0 MPa		2	2.9	4.4	7.5	10.3	15	24	35
Full Stroke mm			3	3	3.2	3.6	4	4.5	5	5.5
Clamp Stroke mm			1	1	1	1.1	1.2	1.2	1.2	2
Extra Stroke mm			2	2	2.2	2.5	2.8	3.3	3.8	3.5
Slide Stroke Range mm			25～150	25～150	25～200	25～200	25～300	50～300	50～300	50～300
Air Cylinder Capacity cm^3	Lock		56	94	144	259	444	773	1334	2468
	Release		52	88	135	244	416	729	1262	2346
Usable Fluid			Dry Air							
Operating Temperature ※5 ℃			0~70 (V：High temperature type is available for 0~120℃)							
Use Frequency ※6			Max. 20 Cycles / Day							

Notes:

※2. Do not exceed the clamp's capacity.

※3. To maintain the released state, supply 0.4MPa or more in air pressure to the release port.

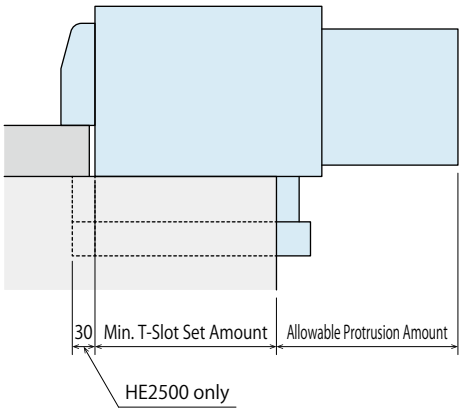
※4. There is ±10% variation in holding force and clamping force.

※5. Option **V**: High Temperature (0~120℃) is for operating in temperature 70℃ or more.

※6. Please contact us for more frequent use.

1. The accuracy of the mold clamping thickness (h dimension) should be within ±0.3mm.
2. Please contact us for unlisted specifications and dimensions.

HE Clamp Allowable Protrusion Amount



(mm)

Model No.	Min. T-Slot Set Amount	Allowable Protrusion Amount
HE0101	40.5	108
HE0161	49	113
HE0252	59	122.5
HE0402	73.5	127.5
HE0632	111.5	124.5
HE1002	133	133.5
HE1602	170.5	167
HE2500	226	192

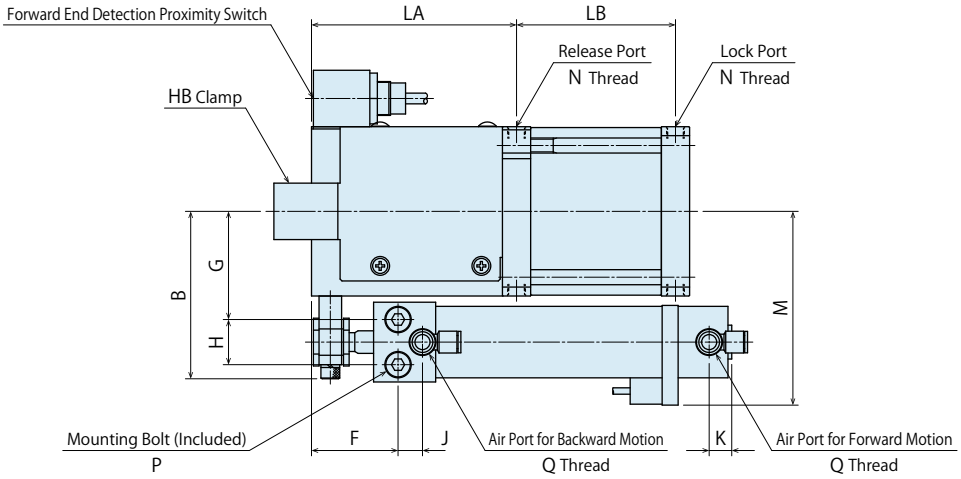
Note:

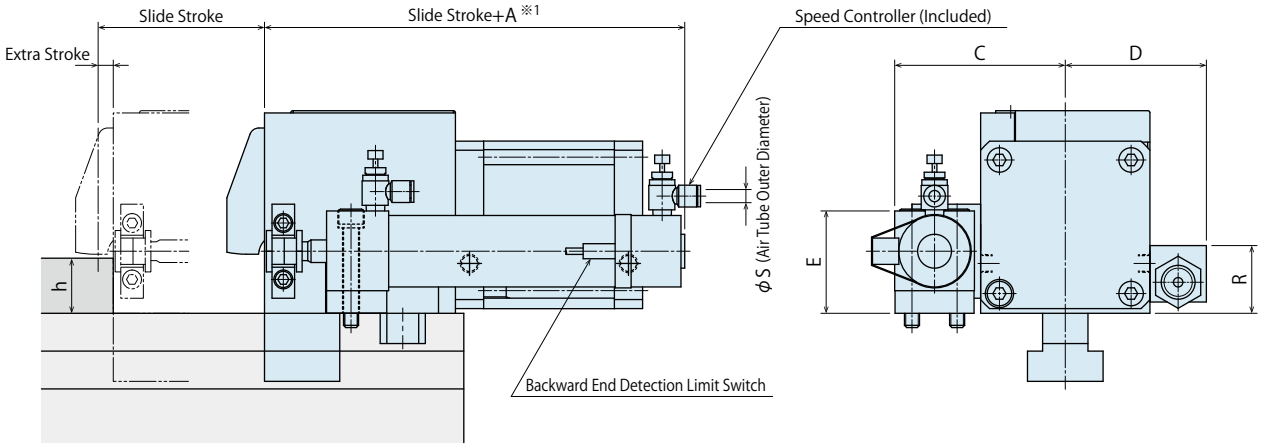
1. The dimensions on the list are for reference.
   The dimensions may differ from specification depending on T-slot (T-leg) dimension.

External Dimensions

※ This drawing shows the standard model of HE Clamp.
Contact us for external dimensions for options.
Please refer to HB Clamp pages (P.11~15) for details of clamp body.

Please refer to P.21 for HE2500.

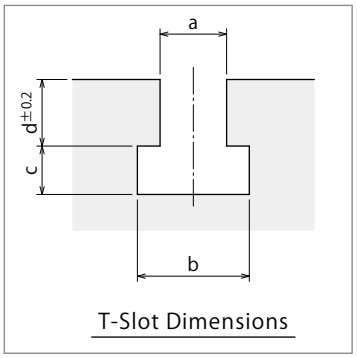




Notes :

1. Do not exceed the clamp's capacity.
2. Specifications/Contents in this catalog are subject to change without prior notice.
   Ask for the approval drawing before deciding to purchase.
3. Make sure to keep 2~5 mm of extra stroke when setting the clamp.

T-Slot Dimensions



T-Slot Dimensions

External Dimensions

(mm)

Model No.		HE0101	HE0161	HE0252	HE0402	HE0632	HE1002	HE1602
HB Clamp Model No.		HB0101	HB0161	HB0252	HB0402	HB0632	HB1002	HB1602
Full Stroke		3	3	3.2	3.6	4	4.5	5
Clamp Stroke		1	1	1	1.1	1.2	1.2	1.2
Extra Stroke		2	2	2.2	2.5	2.8	3.3	3.8
A ※1		105	105	112	118	136	157	169
B		56.5	61.5	73.5	89	108.5	132.5	151.5
C		59.5	64.5	76.5	91	113	137.5	163
D		55	60	66	75	85	97.5	110
E		36.5	36.5	45.5	54.5	64.5	80.5	95.5
F		39	39	45	46	56	64	72
G		35	40	47	57.5	70.5	84.5	101
H		18	18	22	24	32	41	46
J		9	9	10	13	14	16	20
K ※1		12	12	12	12	12	14	14
LA		72.5	81.2	94.5	109	129	150.5	189.5
LB		68.5	73	79.5	84.5	99.5	108.5	132
M		68.5	73.5	85	100	121.5	145.5	171.5
N		Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4
P	Mounting Bolt	M5×0.8×40	M5×0.8×40	M6×1×50	M8×1.25×55	M10×1.5×70	M12×1.75×85	M16×2×100
	Mounting Hole Machining	M5×0.8×10	M5×0.8×10	M6×1×12	M8×1.25×16	M10×1.5×20	M12×1.75×24	M16×2×32
Q		Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4	Rc1/4
R		36	36	36	36	36	33	36
S ※2		6	6	6	6	6	10	10

Notes :

※1. "A" and "K" dimensions are different when exceeding the stroke value written in the list. Please contact us separately.

※2. For -N: NPT Port, "S" dimension is written in inches.

1. ABCD dimensions are determined by Kosmek according to the T-slot dimensions.
2. When making an order, please specify a, b, c, d dimension of T-slot and h dimensions of mold clamping thickness in 0.1mm increments.
3. Tolerance of dimension d of T-slot should be better than ±0.2mm.
4. The accuracy of the mold clamping thickness (h dimension) should be within ±0.3mm.
5. Please contact us for unlisted specifications and dimensions.
6. Please refer to HB Clamp pages (P.11~15) for details of clamp body.

Slide Stroke List

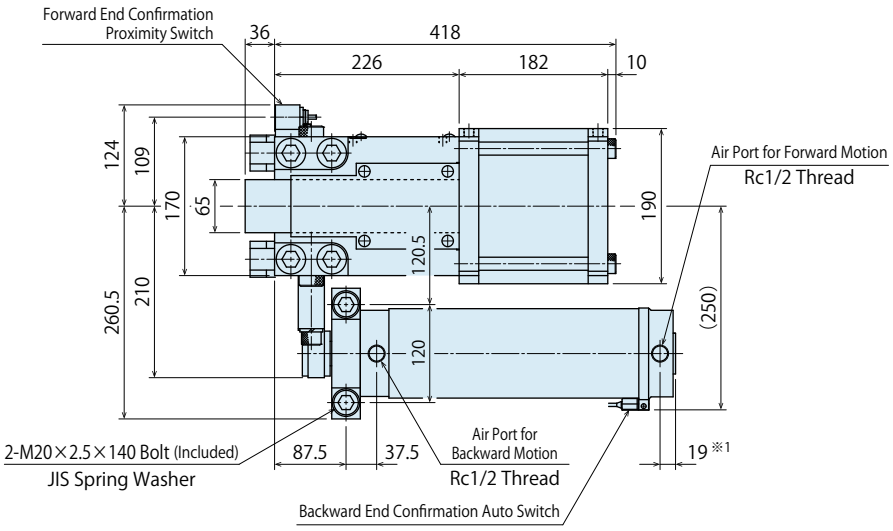
Model No.	Standard Slide Stroke (mm)								
	25	50	75	100	125	150	200	250	300
HE0101	○	○	○	○	○	○			
HE0161	○	○	○	○	○	○			
HE0252	○	○	○	○	○	○	○		
HE0402	○	○	○	○	○	○	○		
HE0632	○	○	○	○	○	○	○	○	○
HE1002		○	○	○	○	○	○	○	○
HE1602		○	○	○	○	○	○	○	○
HE2500		○	○	○	○	○	○	○	○

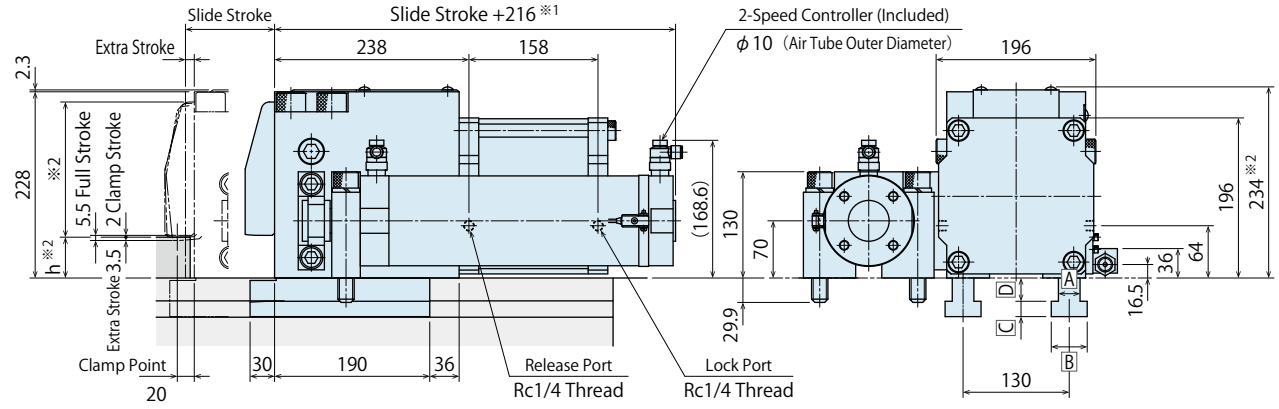
Note:

1. "A" and "K" dimensions are different when exceeding the stroke value written in the list. Please contact us separately.

External Dimensions

※ This drawing shows the standard model of HE2500.
Please contact us for external dimensions of options.
Please refer to HB Clamp pages (P.11~15) for details of clamp body.





(mm)

Model No.		HE2500
Mold	min. h	$50^{\pm 0.3}$
	max. h	$90^{\pm 0.3}$

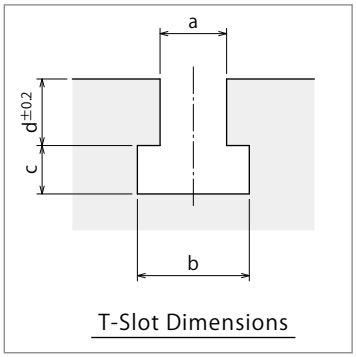
Notes :

※1. When exceeding the stroke value shown in "Slide Stroke List" on P.20, dimensions marked as ※1 ("216" and "19") in above drawing will be different. In that case, please contact us separately.

※2. Overall height of the clamp（234mm）is kept constant and the lver thickness is changed to deal with the specified mold thickness (dimension h).

1. Do not exceed the clamp's capacity.
2. Specifications/Contents in this catalog are subject to change without prior notice. Ask for the approval drawing before deciding to purchase.
3. Make sure to keep 2~5 mm of extra stroke when setting the clamp.
4. Ⓐ Ⓑ Ⓒ Ⓓ dimensions are determined by Kosmek according to the T-slot dimensions.
5. When making an order, please specify a,b,c,d dimension of T-slot and h dimensions of mold clamping thickness in 0.1mm increments.
6. Tolerance of dimension d of T-slot should be better than ±0.2mm.
7. The accuracy of the mold clamping thickness (h dimension) should be within ±0.3mm.
8. Please contact us for unlisted specifications and dimensions.

T-Slot Dimensions



T-Slot Dimensions

MEMO

Model No. Indication

MV70 **2** **1** - **UUSS** - **5** - **5** - **N**

1 2 3 4 5 6

1 Applicable Clamping Capacity

1 : Clamping Capacity= 10kN ～ 25kN
2 : Clamping Capacity= 40kN ～ 63kN
3 : Clamping Capacity= 100kN
4 : Clamping Capacity= 160kN ～ 250kN
5 : Clamping Capacity= 400kN ～ 500kN

2 Design No.

1 : Revision Number

3 Circuit Symbol ※1

U : Clamp Circuit (With Pressure Switch)
(Solenoid Valve：2 Position Double)

S : Slider Circuit (Without Pressure Switch)
(Solenoid Valve：3 Position Exhaust Center)

T : Slider Circuit (Without Pressure Switch)
(Solenoid Valve：2 Position Double)

4 Control Voltage

1 : AC100V
2 : AC200V
3 : AC110V
4 : AC220V
5 : DC24V

5 Operating Air Pressure

Blank : Free ··· When selecting 3 **S** and **T** circuit only (Without Pressure Switch)
4 : 0.4 MPa
5 : 0.5 MPa ··· When including 3 **U** circuit (With Pressure Switch)

6 Option

Blank : Standard
C : — Common
E : Without Quick Exhaust Valve (Only available for 1 **4**)
K : Air Pressure Gauge with Color Range
N : NPT Thread ※2
P : Air Pressure Gauge in both PSI/MPa
S : Solenoid Valve with Light/Surge Voltage Suppressor

Notes:
※1. Air Valve Unit might be made to order depending on 3 Circuit Symbol.
Please contact us for delivery time before making an order.
※2. For 6 Option **N**: NPT Thread, the dimensions in the specification sheet and other documents are in Inches.

Specifications

Model No.			MV7011	MV7021	MV7031	MV7041	MV7051
Valve			Metal Seal / Five-Port Pilot Operated				
Position ·Number of Solenoid	When Selecting 3 **U**, **T**		Two-Position Double Solenoid				
	When Selecting 3 **S**		Three-Position Exhaust Center				
Piping Port Size	P Port		Rc1/4	Rc1/2	Rc1/2	Rc1/2	Rc3/4
	A/B Port		Rc1/4	Rc1/4	Rc3/8	Rc3/8	Rc1/2
Effective Cross Section Area		mm^2	12.5	30	36.5	36.5	60
Usable Fluid			Dry Air				
Clamp Operating Pressure		MPa	0.5				
Withstanding Pressure		MPa	0.7				
Operating Temperature		℃	-10 ～ +60				
Oil Supply			No Oil Supply				
Protection			Dust-Proof				
Manifold with Control Unit (SMC)			Depends on the number of circuits. ※1				VV5FS4-01T-031-04-F
Solenoid Valve Model No. (SMC)	When Selecting 3 **U**, **T**		VFS2200	VFS3200	VFS3200	VFS3200	VFS4200
	When Selecting 3 **S**		VFS2400	VFS3400	VFS3400	VFS3400	-
Pressure Switch Model No. (SMC)			IS10-01S	IS10-01S	IS10-01S	IS10-01S	IS10-01S
Silencer Model No. (SMC)			AN20-02	AN40-04	AN40-04	AN40-04	AN40-04
Speed Exhaust Valve Model No. (SMC)			-	-	ASV510F-02-10S	ASV510F-02-12S	-
Recommended Air Tube Outer Diameter		mm	ϕ6	ϕ10	ϕ10	ϕ12	ϕ16

Note: ※1. Refer to the following list for the model number of Manifold with Control Unit.

MV Model No.	No. of Circuits	Manifold with Control Unit Model No. (SMC)
MV7011	1	VV5FS2-01T1-031-02-F
	2	VV5FS2-01T1-041-02-F
	3	VV5FS2-01T1-051-02-F
	4	VV5FS2-01T1-061-02-F

MV Model No.	No. of Circuits	Manifold with Control Unit Model No. (SMC)
MV7021	1	VV5FS3-01T-031-02-F
	2	VV5FS3-01T-041-02-F
	3	VV5FS3-01T-051-02-F
	4	VV5FS3-01T-061-02-F

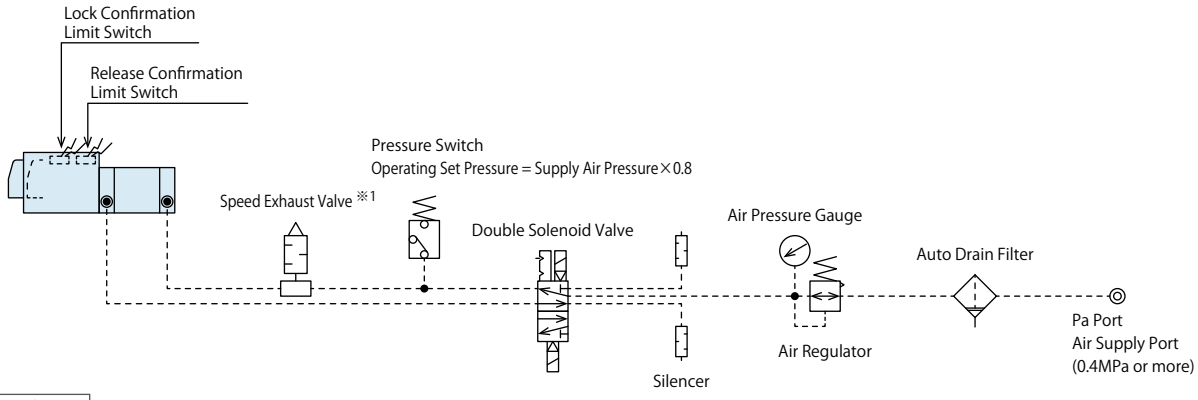
MV Model No.	No. of Circuits	Manifold with Control Unit Model No. (SMC)
	1	VV5FS3-01T-031-03-F
MV7031	2	VV5FS3-01T-041-03-F
MV7041	3	VV5FS3-01T-051-03-F
	4	VV5FS3-01T-061-03-F

Circuit Symbol (Reference)

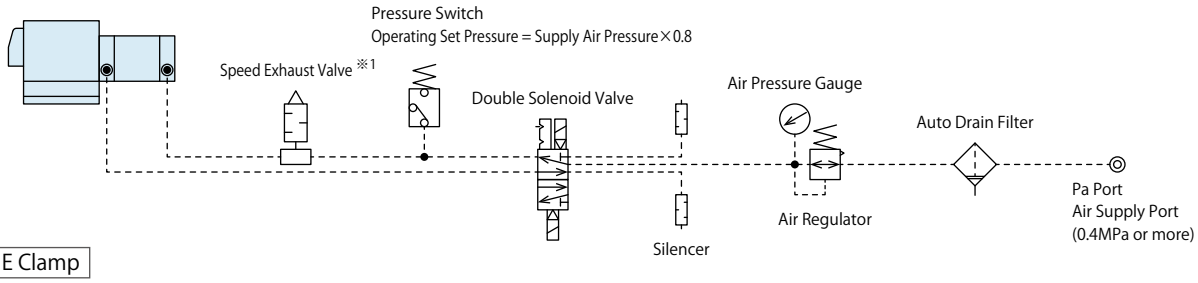
Circuit Symbol	Circuit Type	Applicable Clamp for Reference	
U	Clamp Circuit × 1 Circuit	HB / HC: Vertical Molding Machine	Upper Mold Only
UU	Clamp Circuit × 2 Circuits	HB / HC: Horizontal Molding Machine	Stationary Platen / Movable Platen
UUU	Clamp Circuit × 3 Circuits	HB / HC: Vertical Molding Machine	Upper Mold One Circuit / Lower Mold Two Circuits
UUSS	Clamp Circuit × 2 Circuits Slider Circuit × 2 Circuits	HE: Horizontal Molding Machine	Stationary Platen / Movable Platen

General Operating Circuit Reference

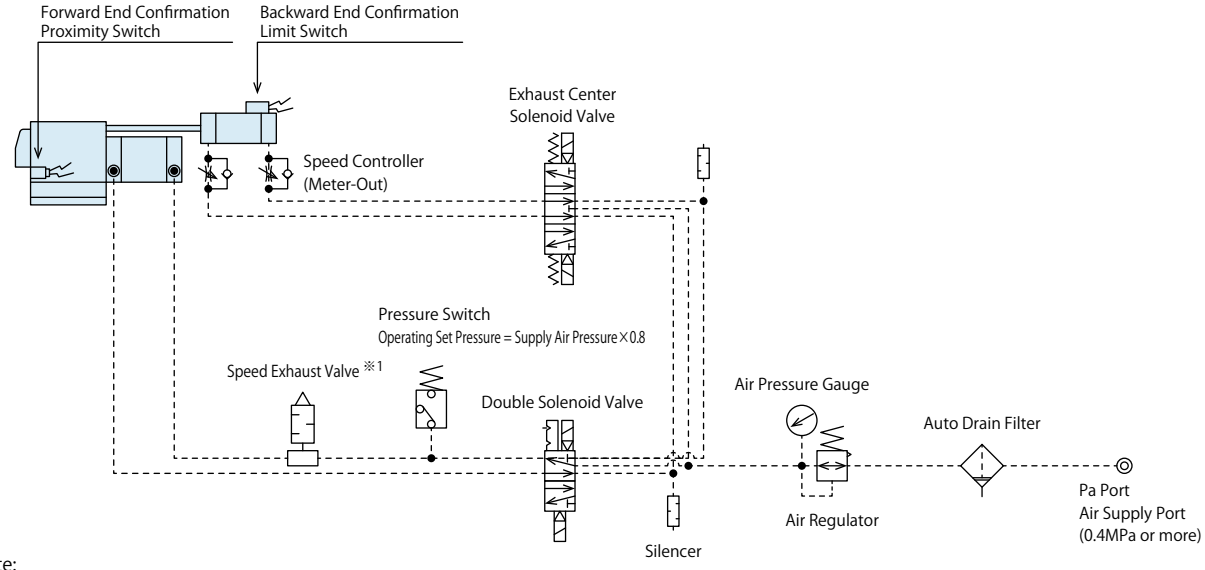
HC Clamp



HB Clamp



HE Clamp

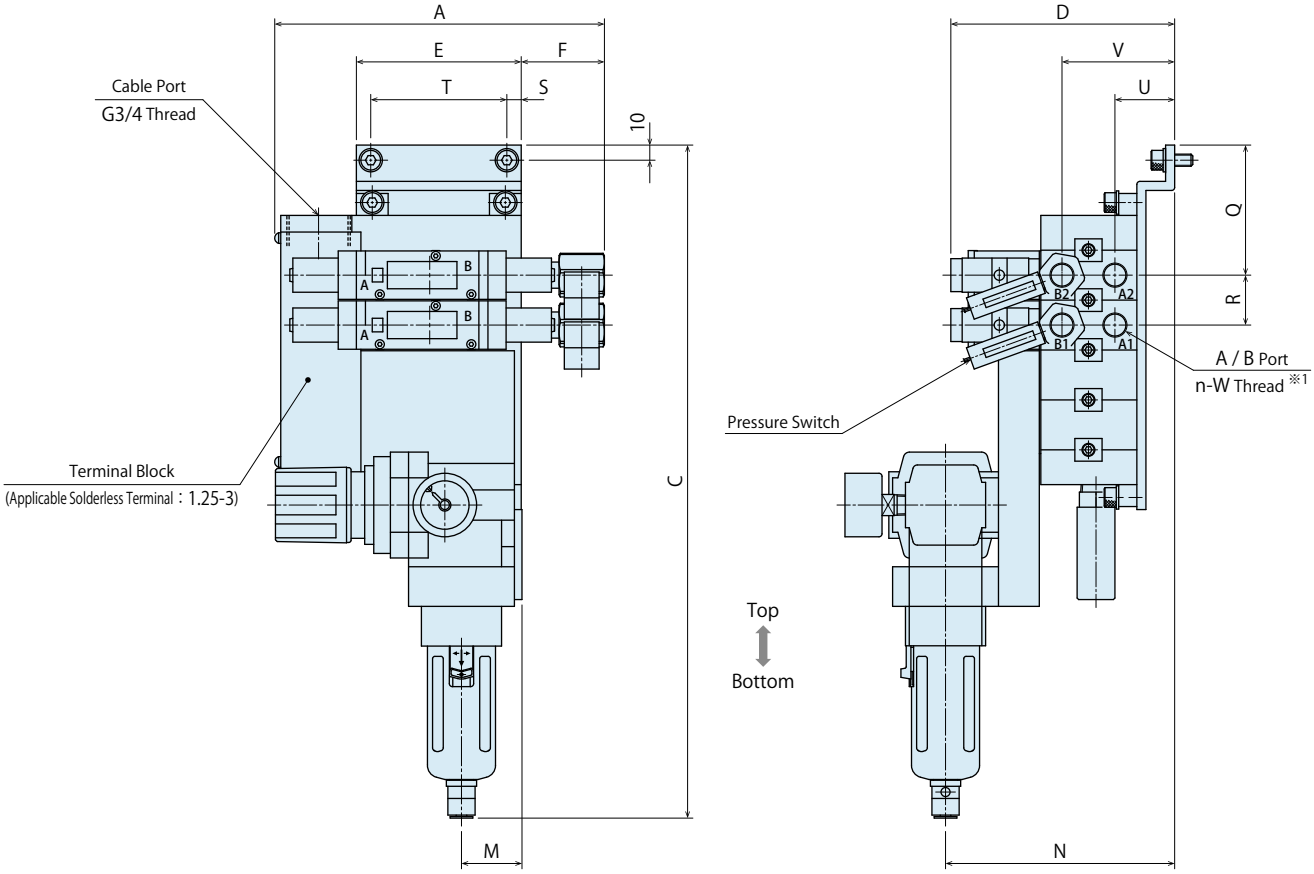


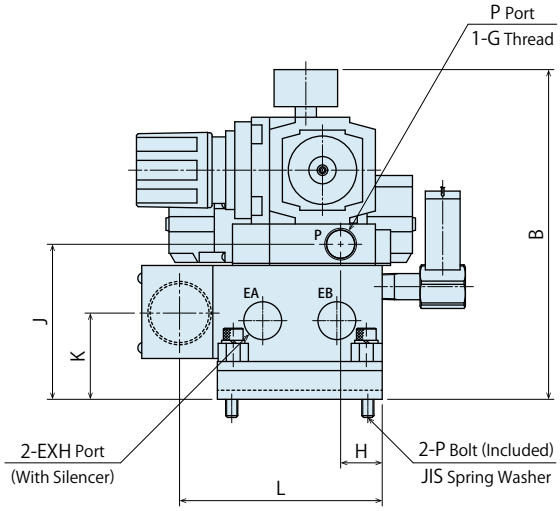
Note:

※1. Speed Exhaust Valve is included in MV7031/ MV7041.
Install it to the place where exhaust is efficient when releasing on lock circuit side.
The circuit symbols are simplified.

External Dimensions

※ This drawing shows MV7011-UU / MV7021-UU / MV7031-UU / MV7041-UU standard model.
Refer to P.27 for external dimensions of MV7051-U.





Notes:

1. Follow the top and bottom directions when mounting.
2. Please supply dry air.
3. Use a stainless steel pipe or nylon tube/hose, etc. for air piping to prevent rust.
4. Releasing time will be longer if piping is long and exhaust efficiency is not well enough.
   Releasing time can be shortened by installing a speed exhaust valve to the circuit.
   Speed exhaust valve is included in MV7031 / MV7041.

External Dimension List

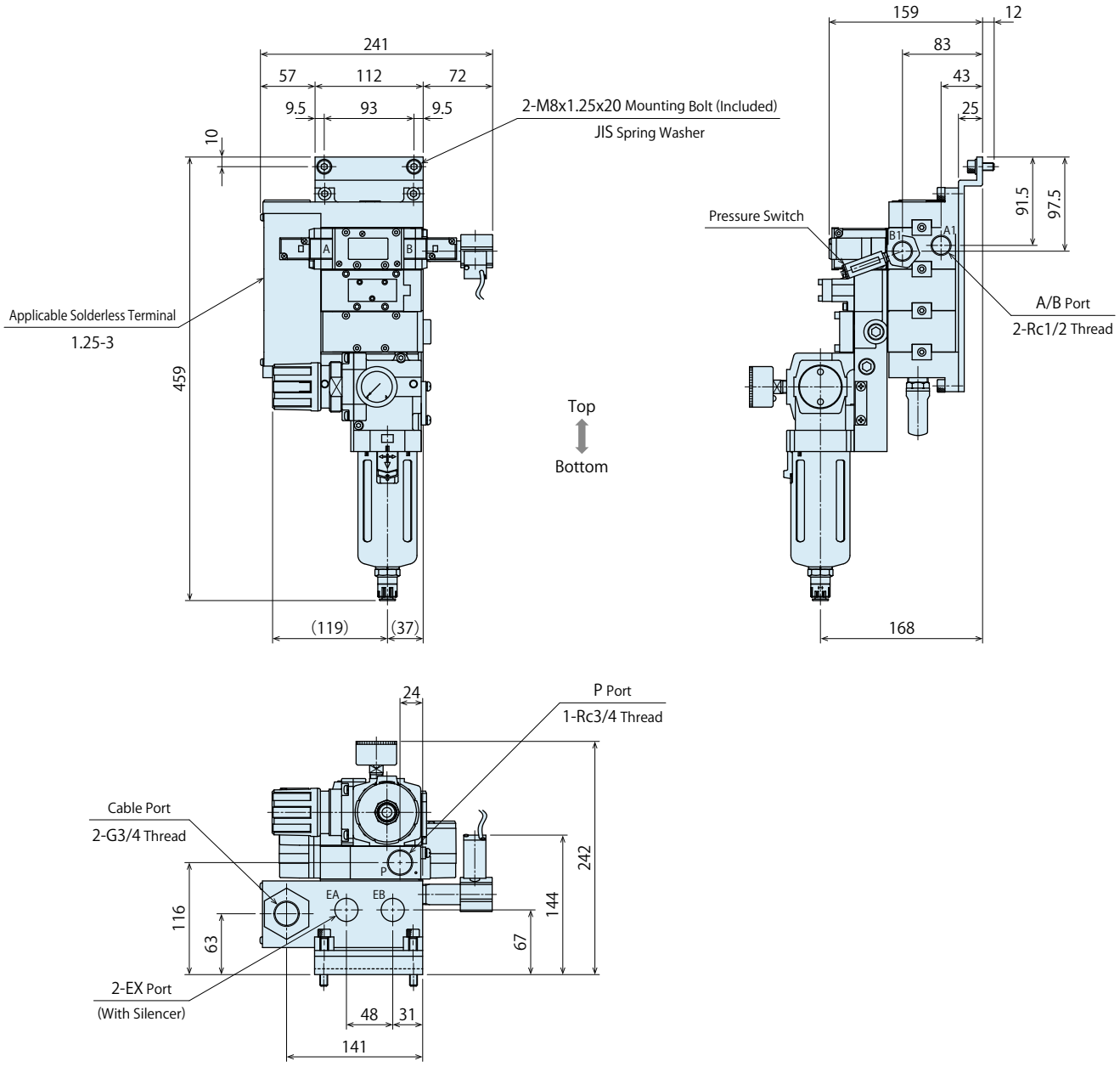
(mm)

Model No.		MV7011	MV7021	MV7031	MV7041
A		222.5	220	220.5	220.5
B		183	218	218	218
C	1 Circuit	345	411.5	411.5	411.5
	2 Circuits	373	444.5	444.5	444.5
	3 Circuits	401	477.5	477.5	477.5
	4 Circuits	429	510.5	510.5	510.5
D		102.5	148	148	148
E		83	109	109	109
F		70	57	57.5	57.5
G		Rc1/4	Rc1/2	Rc1/2	Rc1/2
H		32.5	27.5	27.5	27.5
J		80.5	102.5	102.5	102.5
K		48	57	57	57
L		128	134	134	134
M		34	40	40	40
N		119	151	151	151
P		M6×1×14	M8×1.25×20	M8×1.25×20	M8×1.25×20
Q		67.5	86	86	86
R		28	33	33	33
S		6.5	9.5	9.5	9.5
T		70	90	90	90
U		32.5	39.5	39.5	39.5
V		58.5	74.5	74.5	74.5
W		Rc1/4	Rc1/4	Rc3/8	Rc3/8

Note:
※1. n indicates number of circuits×2.

External Dimensions

※ This drawing shows MV7051-U standard model.
Refer to P.25 for external dimensions of MV7011-UU / MV7021-UU / MV7031-UU / MV7041-UU.



Notes:

1. Follow the top and bottom directions when mounting.
2. Please supply dry air.
3. Use a stainless steel pipe or nylon tube/hose, etc. for air piping to prevent rust.
4. Releasing time will be longer if piping is long and exhaust efficiency is not well enough.

Model No. Indication

MVQ 00 2 0 - 10 - 01 - N

1 2 3 4 5

1 Port Diameter

2 : 1/4
3 : 3/8

2 Design No.

0 : Revision Number

3 Applicable Tube Diameter ※1

06 : φ6 mm
10 : φ10 mm
12 : φ12 mm
07 : φ6 in
11 : φ10 in
13 : φ12 in

4 Number of Circuits

1 : 1 Circuit
2 : 2 Circuits

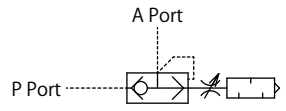
5 Option ※1

Blank : 3 Applicable Tube Diameter・・・mm (in Millimeters)
N : 3 Applicable Tube Diameter・・・in (in Inches)

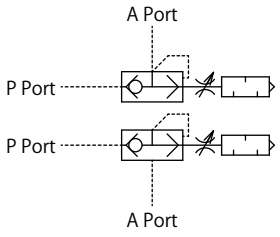
Note:
※1. Please contact us for external dimensions of 3 Applicable Tube Diameter **07/11/13** and 5 Option **N**：Applicable Tube Diameter in inches.

Circuit Symbols

4 Number of Circuits 1：1 Circuit

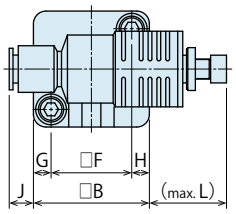


4 Number of Circuits 2：2 Circuits

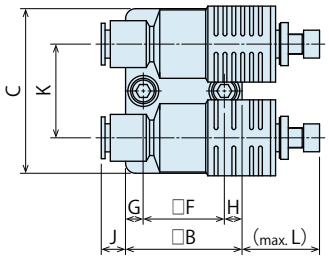


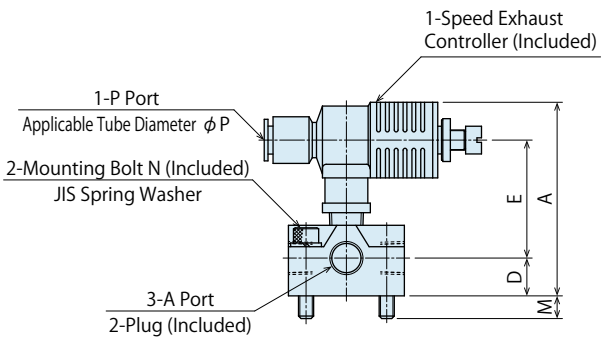
External Dimensions

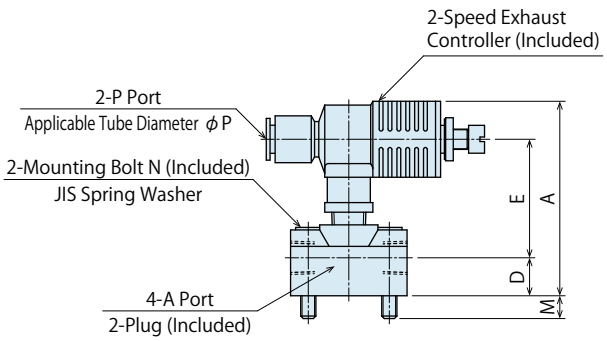
MVQ0020-□-01



MVQ0020-□-02

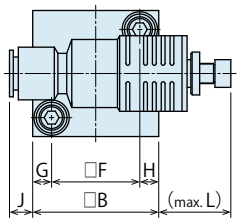




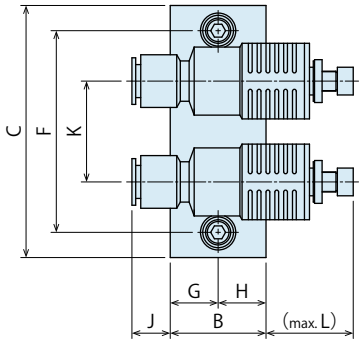


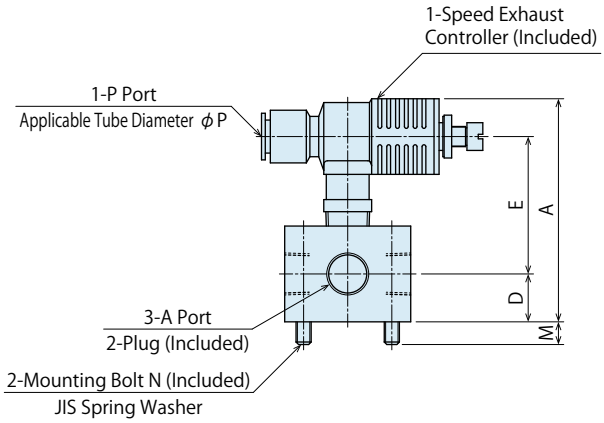
External Dimensions

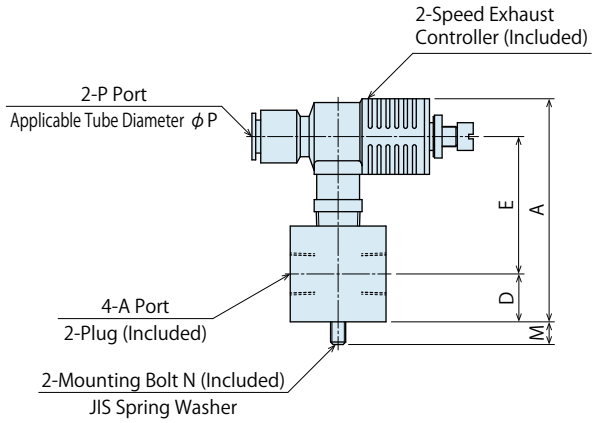
MVQ0030-□-01



MVQ0030-□-02







External Dimensions

Model No.	MVQ0020-06-01	MVQ0020-06-02	MVQ0020-10-01	MVQ0020-10-02	MVQ0020-12-01	MVQ0020-12-02	MVQ0030-12-01	MVQ0030-12-02
Applicable Clamp Model No.	**HC0103 ～ HC0404**		**HC0633 / HC1003**		**HC1603 / HC2503**		**HC4000 / HC5000**	
Applicable Air Valve Unit Model No.	**MV7011 / MV7021**		**MV7031**		**MV7041**		**MV7051**	
A	62.2	62.2	76.8	76.8	76.8	76.8	88.5	88.5
B	46	46	46	46	46	46	50	38
C	-	65	-	65	-	65	-	100
D	15	15	15	15	15	15	19	19
E	38.4	38.4	46.8	46.8	46.8	46.8	54.5	54.5
F	32	32	32	32	32	32	35	80
G	7	7	7	7	7	7	7.5	19
H	7	7	7	7	7	7	7.5	19
J	1.1	1.1	9.6	9.6	11.2	11.2	9.2	15.2
K	-	37	-	37	-	37	-	40
L	22.8	22.8	30.6	30.6	30.6	30.6	28.6	34.6
M	9	9	9	9	9	9	9	9
N	M6×1×30	M6×1×30	M6×1×30	M6×1×30	M6×1×30	M6×1×30	M6×1×30	M6×1×30
P	6	6	10	10	12	12	12	12
A Port	Rc1/4	Rc1/4	Rc1/4	Rc1/4	Rc1/4	Rc1/4	Rc3/8	Rc3/8
Speed Exhaust Controller	ASV310F-02-06S (SMC)		ASV510F-02-10S (SMC)		ASV510F-02-12S (SMC)		ASV510F-03-12S (SMC)	

Note:

1. Please contact us for external dimensions of 3 Applicable Tube Diameter **07**/**11**/**13** and 5 Option **N**：Applicable Tube Diameter in inches.

Operation Panel / Control Unit

Model YMC
Model YMV

Clamping System Controls for All Mold Change Methods

PAT.P

Model No. Indication

YMC | HB | 1 | 0 | - | V | - | P4 | |
1 2 3 4 5 6 7

1 Operation Unit

YMC : Horizontal Molding Machine
YMV : Vertical Molding Machine

2 Applicable Clamp Model No.

HB : HB Clamp
HC : HC Clamp
HE : HE Clamp

3 Pressure Source

1 : With Pressure Switch in the Clamp Circuit
(When using MV Air Valve Unit)

4 Design No.

Revision Number

5 Machine type and Mold Loading/Unloading Direction

1 **YMC**:Horizontal Molding Machine
V : Horizontal Molding Machine・Vertical Loading
H : Horizontal Molding Machine・Horizontal Loading

1 **YMV**:Vertical Molding Machine
A : Vertical Molding Machine・Upper Mold Only
B : Vertical Molding Machine・Upper and Lower Mold
R□ : Vertical Rotary Machine (Lower Side)・Upper Mold ×1 Lower Mold ×2
Lower Side Rotary Table Stop Position
R1:1 Position / **R2**:2 Positions / **R3**:3 Positions / **R4**:4 Positions

6 Option

Blank : None
S2~S8 : With Mold Confirmation Proximity Switch (Series connection)
2-8 pcs. on each side
(2 Applicable Clamp Model No. **HE** only)
P2~P8 : With Mold Confirmation Proximity Switch (Individual connection)
2-8 pcs. on each side
(2 Applicable Clamp Model No. **HB** only)
F : Clamp Incomplete Detection
(2 Applicable Clamp Model No. **HE** only)
W : Remote Monitoring System※1
L : Without Locating Pin + With Release Confirmation Output※2

※1. Please contact us for details of Option **W**.
※2. Option **L** can be selected only for horizontal mold loading.

7 Indication Language

Blank : Japanese
N : English
C : Chinese

Specifications

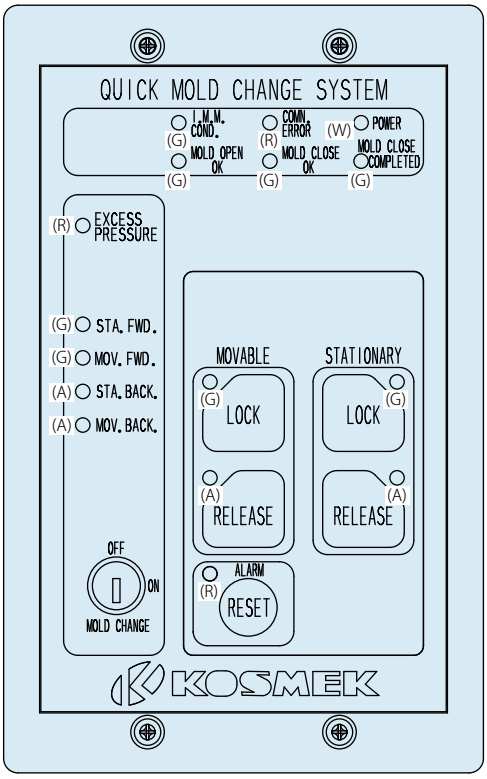
Model No.		YMC□10
Control Panel Operating Voltage		DC24V (Supplied with the attached power supply.)
Attached Power Supply	Input Voltage	AC100V~240V (50/60Hz)
	Output Capacity	30W

Notes :

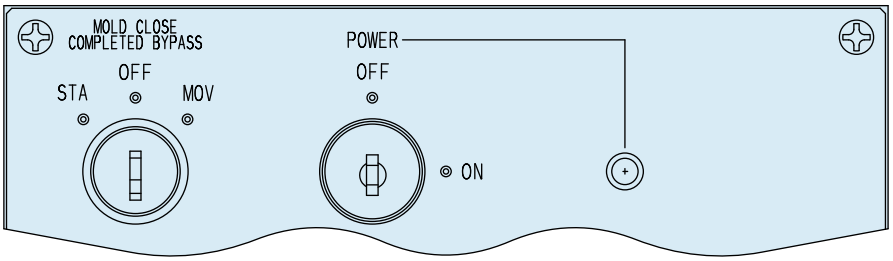
1. Requested specifications other than those written above will be treated as custom made.
2. Signals are sent and received via dry contacts.
3. The molding machine output contact should be for fine current (DC24V / 10mA).
4. The output contact of Operation Panel/Control Unit is DC24V/0.5A.
5. Molding machine terminology may differ depending on the manufacturer.

Detail : Operation Panel

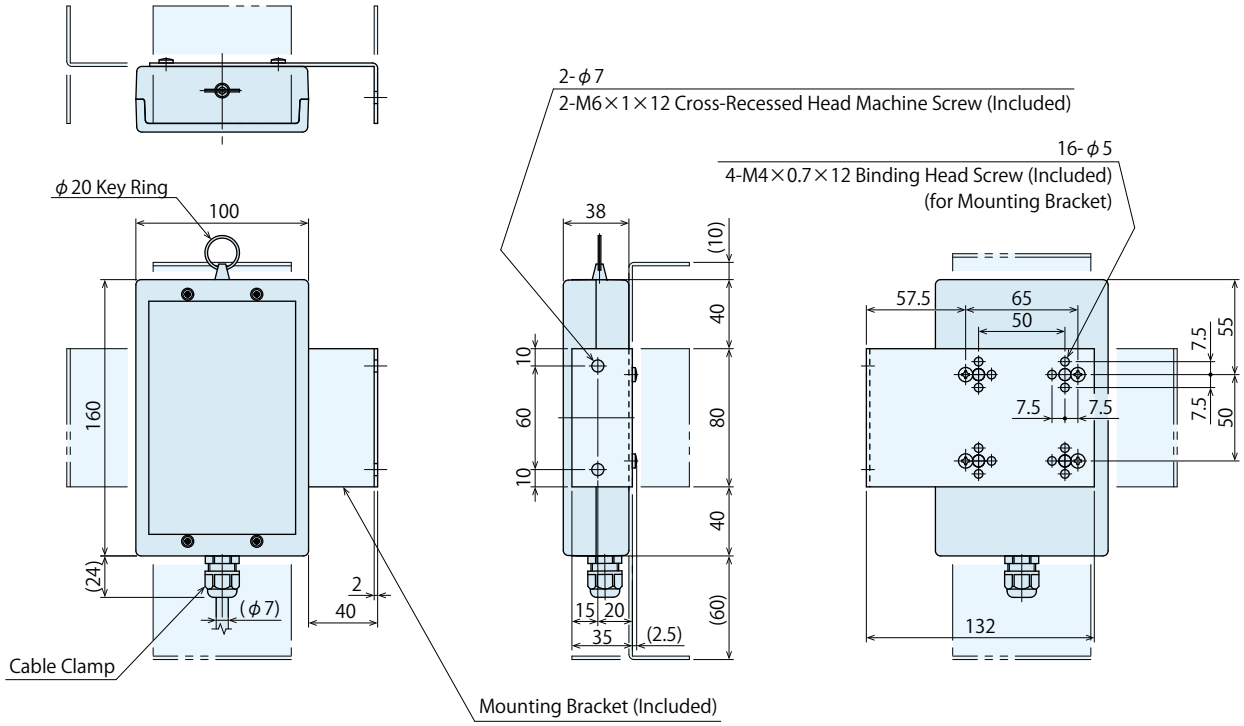
(G) Display Light : Yellow Green
(A) Display Light : Orange
(R) Display Light : Red
(W) Display Light : White



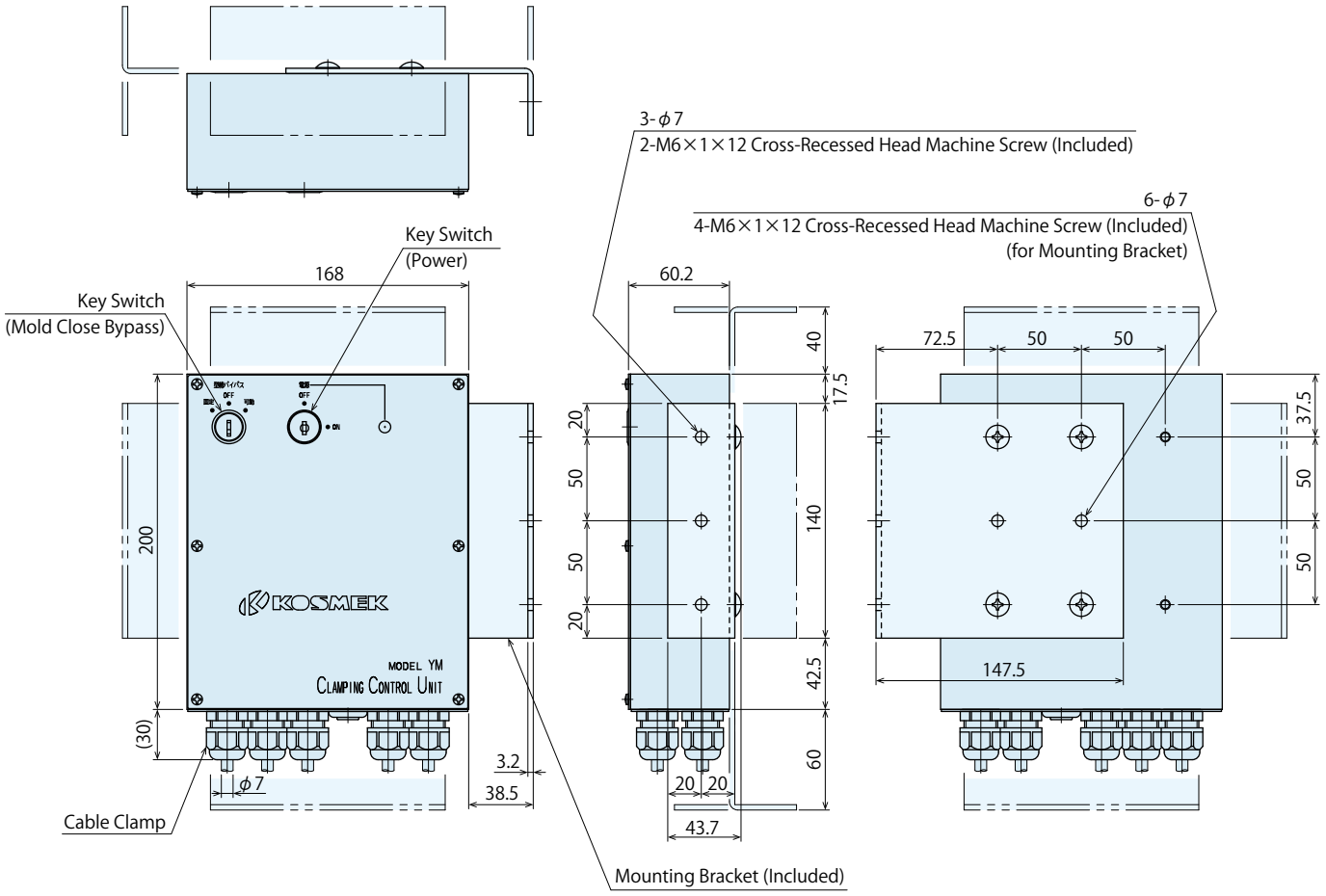
Detail : Control Unit



External Dimensions：Operation Panel



External Dimensions：Control Unit



Note :

1. The bracket can be mounted in any direction.

Operation Procedure : For YMCHE10-V

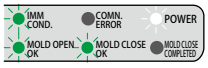
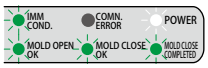
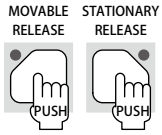
※ Please contact us for the operation procedure for other models.

Clamp Operating Condition

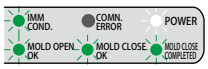
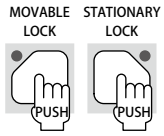
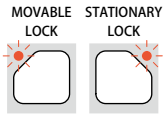
Injection Molding Machine Condition				Clamp Operation Panel
Operation Mode : Mold Change	Mold Close	Nozzle Back (Option)	Ejector Back (Option)	Mold Change "ON"

Note : 1. When the mold change switch is "ON", clamp error does not occur regardless of the condition of clamps during mold change.

Unloading a Mold

Operation Procedure	Confirmation Items	Cautions
Prepare for mold change.		
Switch the IMM condition to "Nozzle Back" / "Ejector Back" etc. (Input Options)		
Support the mold with the crane.		Confirm the mold is securely hung and cables are not loose.
Switch the IMM to Mold Change Mode.	"IMM COND." light ON. 	
Turn ON the "Mold Change" switch of the clamp operation panel. 		The clamping system controller keys should be carefully controlled by the person in charge.
Close the platens.	"MOLD CLOSE COMPLETED" light ON. 	
Press the [Stationary] and [Movable] "Release" buttons of the clamp operation panel. 	"STA. BWD END" "MOV. BWD END" lights ON.  "RELEASE" lights ON. 	
	"MOLD OPEN OK" light ON.	
Open the platens.		Operate with low speed or inching.
Unload the mold.		Make sure there is no abnormality on clamps and other devices in the platen after unloading the mold.

Loading a Mold

Operation Procedure	Confirmation Items	Cautions
Load the mold with the crane.		Confirm specifications of the mold before loading.
Close the platens.	"MOLD CLOSE COMPLETED" light ON. 	
Press the [Stationary] and [Movable] "Lock" buttons of the clamp operation panel. 	"STA. FWD END" "MOV. FWD END" lights ON.  "LOCK" lights ON. 	
Turn OFF the "Mold Change" switch of the clamp operation panel. 	"Mold Open OK" "Mold Close OK" lights ON.	
Release the mold from crane.		Make sure there is no abnormality on clamps and other devices in the platen.

Interlock Input and Output

※Please contact us for any specifications other than those described below (custom-made).

I. M. M. Output	Contents
Mold Change Mode	A signal that ensures the IMM is in low-speed Mold Change Mode.
Mold Closed (Pressurized)	A signal that ensures the mold is completely closed. Prohibit the release operation while the mold is open to prevent the mold from falling.
Nozzle Back	A signal that ensures the nozzle or the injection unit is fully back to prevent damage to the nozzle when unloading the mold.
Ejector Back	A signal that ensures the ejector is in the back position to prevent damage to the ejector when unloading the mold.

I. M. M. Input	Contents
Mold Open OK	A signal that indicates the clamping system is ready for mold opening.
Mold Close OK	A signal that indicates the clamping system is ready for mold closing.
Mold Change "ON"	A signal that indicates the clamp system is in "Mold Change Mode".
Clamp Error	When an error in the clamp circuit occurs, this signal is sent to make an emergency stop of the machine.
Pressure Request	This signal requests additional hydraulic pressure when necessary to lock or release the clamps in Mold Change Mode.

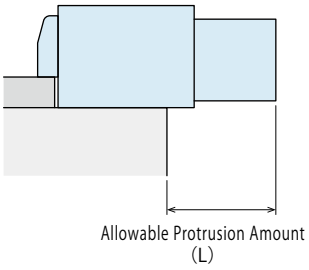
Cautions

Notes for Design

1) Check Specifications
- Please use each product according to the specifications.
- Operate within the specified condition. Failure to do so may result in damage on clamps, falling down of molds and injury.
- The ambient operating temperature of clamp should be 0 ~ 70℃. (High Temperature Model：0 ~ 120℃.)

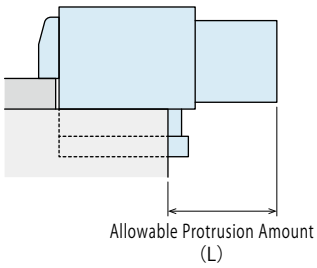
2) Clamping Mold Thickness
- Check the clamping mold thickness.
  Clamping Mold Thickness must be h±0.3mm.
  Use specified molds only. Failure to do so may result in insufficient locking of a mold, mold dropping and injury.

3) Allowable Protrusion Amount of Cylinder
- Do not exceed the allowable protrusion amount. Otherwise, excessive force is applied to the clamp, deforming or dropping the clamp out of T-slot and resulting in falling off of mold and injury.



Allowable Protrusion Amount

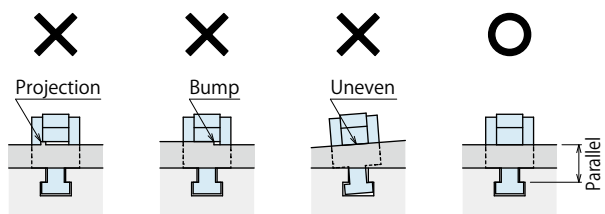
Model No.	L (mm)
HC0103	113
HC0163	119
HC0254	111
HC0404	156
HC0633	179
HC1003	167
HC1603	152
HC2503	190
HC4000	258.5
HC5000	258.5



Allowable Protrusion Amount

Model No.	L (mm)
HB0101/HE0101	108
HB0161/HE0161	113
HB0252/HE0252	122.5
HB0402/HE0402	127.5
HB0632/HE0632	124.5
HB1002/HE1002	133.5
HB1602/HE1602	167
HB2500/HE2500	192

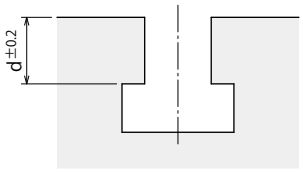
4) Clamping surface must be parallel to the IMM platen.
- If clamping surface is not even or parallel, excessive force is applied to the clamp which deforms or damages the clamp resulting in falling off of the mold and injury.



5) Interlock
- Make sure to control with the interlock so that clamps lock or release only when IMM is at mold close (pressurized) state.

6) Clamp Control【HC Clamp Only】
- HC clamp uses a micro switch of mechanical interface for confirming the lock/release operation. It may happen to disconnect the connection of the switch caused by vibration during the machine running.
  It is recommended to install an off-delay timer in the control circuits of the program.

7) Check Dimension d of T-slot
- Tolerance of dimension d of T-slot should be better than d±0.2mm.



8) Confirm Smooth Forward/Backward Movement of Clamp.
① Supply 0.39MPa or more of air pressure to the air cylinder.
② Adjust the moving speed of the clamp with speed controllers to fully stroke within 1 to 2 seconds.
③ Proximity switch is used for forward-end confirmation. Make sure a mold surface on the switch side has no U-cut.
④ The clamp sliding surface must be smooth (without any bumps).

9) Please supply filtered clean dry air.

Cautions

Installation Notes

1) Please supply filtered clean dry air.
- Install an air filter/air dryer in order to prevent rust and dirt. Otherwise it may lead to malfunction.

2) Procedure before Piping
- The pipeline, piping connector, etc. should be cleaned and flushed thoroughly. The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
  (There is no filter provided with this product for prevention of contaminants in the air circuit.)

3) Applying Sealing Tape
- Wrap with tape 1 to 2 times following the screwing direction. When piping, be careful that contaminants such as sealing tape do not enter in products. Pieces of the sealing tape can lead to air leaks and malfunction.

4) Mounting the Clamp【HC Clamp Only】
- Use attached hex. socket bolts and tighten it with the torque shown below.

Model No.	Bolt Size	Tightening Torque (N·m)
HC0103	M8×1.25	25
HC0163	M10×1.5	50
HC0254	M12×1.75	80
HC0404	M16×2	200
HC0633	M20×2.5	400
HC1003	M24×3	630
HC1603	M20×2.5	400
HC2503	M24×3	630
HC4000	M30×3.5	1250
HC5000	M33×3.5	1600

5) Mounting the Clamp【HE Clamp Only】
- After setting the clamp in the T-slot, use attached hex. socket bolts and tighten it with the torque shown below.

Model No.	Bolt Size	Tightening Torque (N·m)
HE0101	M5×0.8	6.3
HE0161	M5×0.8	6.3
HE0252	M6×1	10
HE0402	M8×1.25	25
HE0632	M10×1.5	50
HE1002	M12×1.75	80
HE1602	M16×2	200
HE2500	M20×2.5	400

6) Wiring of Forward End Confirmation Switch
- Please wire not to snap the code of the Forward End Confirmation Switch when the clamp moves forward or backward.

Cautions

Notes on Handling

1) Close the mold after molding is completed.
- Failure to do so may result in mold dropping and injury.

2) Do not disassemble or modify the air cylinder.
- Built-in spring is very strong and can be dangerous. If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

3) It should be handled by qualified personnel.
- The hydraulic/pneumatic equipment should be handled and maintained by qualified personnel.

4) Do not handle or remove the product unless the safety protocols are ensured.

① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.

② Before the product is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the air circuit.

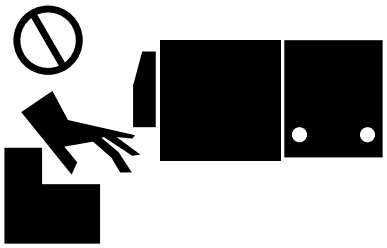
③ After stopping the product, do not remove until the equipment cools down.

④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

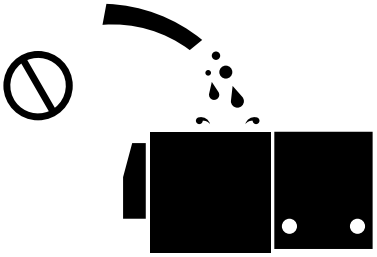
5) Do not apply load on the clamp at 0MPa.
- In case of air source trouble, the clamp has holding force with mechanical lock even when air pressure is at 0MPa. However, do not apply load on the clamp at this state.

6) Do not supply lock and release air pressure simultaneously.
- It leads to damage and decline of the clamp capacity.

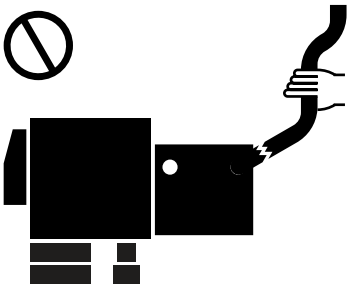
7) Do not touch clamps while they are working.
- Otherwise, your hands may be injured.



8) Do not pour water / oil over the product.
- It may lead to malfunction or deterioration of the product and cause an accident.



9) Please hold the main body of the clamp when removing it.
- If pulling on the air tube, the clamp will fall off leading to injury. Also, the air tube and piping will be damaged leading to air leakage.



Cautions

Maintenance and Inspection

1) Removal of the Product and Shut-off of Pressure Source

- Before the product is removed, make sure that the safety measures mentioned earlier are in place. Shut off the air of hydraulic source and make sure no pressure exists in the air circuit.
  Also make sure there is no abnormality in the bolts and respective parts before restarting.

2) Regularly tighten piping to ensure proper use.

3) Periodically ensure that supply air pressure is a specified value.

4) Make sure to supply filtered clean dry air.

5) Make sure there is smooth action and no abnormal noise. (When the product is restarted after left unused for a long period, make sure it operates properly.)

6) The products should be stored in the cool and dark place without direct sunshine or moisture.

7) Please contact us for overhaul and repair.

Warranty

1) Warranty Period

- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
  Defects or failures caused by the following are not covered.

① If the stipulated maintenance and inspection are not carried out.

② If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.

③ If it is used or handled in inappropriate way by the operator. (Including damage caused by the misconduct of the third party.)

④ If the defect is caused by reasons other than our responsibility.

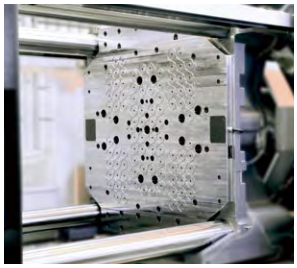
⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.

⑥ Other caused by natural disasters or calamities not attributable to our company.

⑦ Parts or replacement expenses due to parts consumption and deterioration. (Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.

Magnet Clamp/Air Clamp/Hydraulic Clamp Mold Change System for Small to Extra-Large Injection Molding Machines.



● Magnet Clamp System

Ensures safety and securely clamps the mold.

● Pneumatic Clamp System

Eco-friendly air operated clamps exert powerful clamping force and are equipped with a mechanical locking system.
40ton / 50ton models have been introduced for extra-large injection molding machines.

● Hydraulic Clamp System

Hydraulic clamps have powerful clamping force in a compact body.
Kosmek also offers units that generate hydraulic pressure using only factory air.

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- For Further Information on Unlisted Specifications and Sizes, Please call us.
- Specifications in this Leaflet are Subject to Change without Notice.

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