QUICK MOLD CHANGE SYSTEMS

QMCS H Series

HC/HB/HE
AIR CLAMP

MV
VALVE UNIT

OPERATION PANEL
CONTROL UNIT

AIR CLAMP SYSTEM

KOSMEK
Harmony in Innovation

KOSMEK
QUICK MOLD CHANGE SYSTEMS

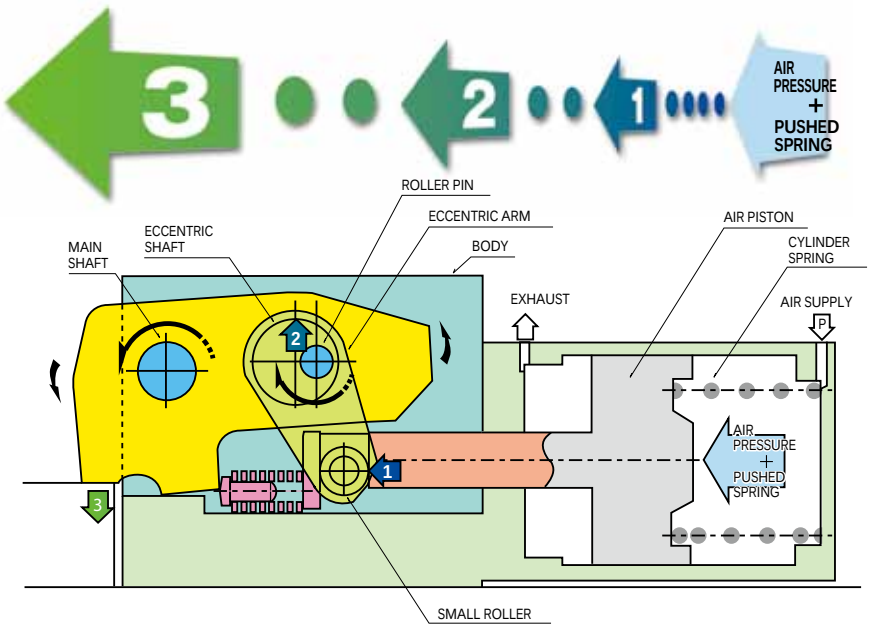
HC/HB/HE ADVANTAGES OF AIR CLAMP SYSTEM

○Power source is general compressed air.
○The air type 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 unit is required.
○Maintenance is easy as there is no oil mess.
○This system is interchangeable with our hydraulic type clamp(GWA type)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 type.
○Overall system costs are less than hydraulic systems.

Basic Structure of H Series

PAT.NO.
JP PAT.NO.3410212
US PAT.NO.5476252
EP PAT.NO.0663268 B1
KR PAT.NO.308826
TW PAT.NO.96666

Air pressure of H Series Clamp is amplified by boosting mechanism (eccentric).



■Description of behavior:
Process towards high output by a compact system

❶When air pressure is supplied, an air piston pushes a small roller by thrust of 1.
(When air pressure is not supplied, the smaller roller is pushed only by a spring.)

❷The small roller is incorporated into an eccentric arm, which pivots about roller pin.

❸The eccentric arm rotates an eccentric shaft.

❹The eccentric shaft pushes up a lever by thrust 2.

❺The lever is rotated around a center of a main shaft.

❻Clamping force amplified by the "lever principle" by using the main shaft as a fulcrum 3 securely fastens a mold.

Components for H Series


HC CLAMP


HB CLAMP


HE CLAMP

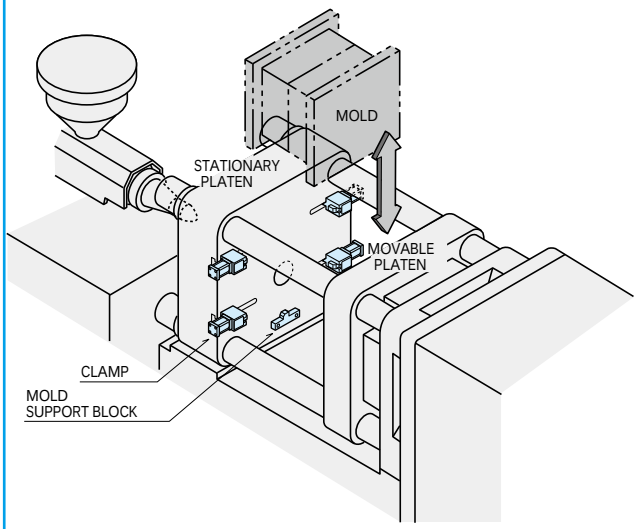

MV7000 VALVE UNIT


YMB080 OPERATION PANEL CONTROL UNIT


JL AUTO JOINT

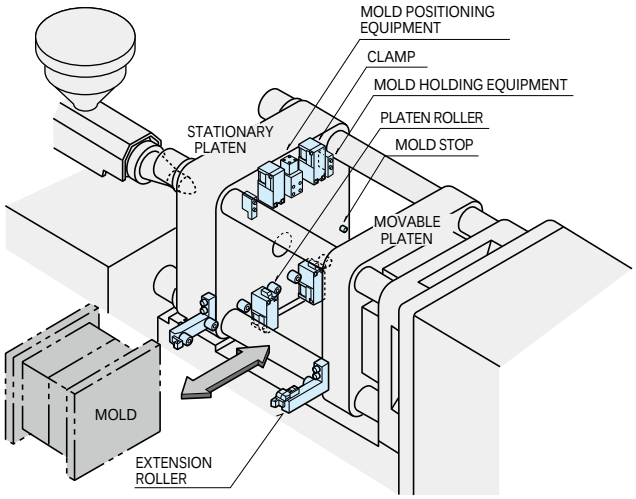
※1. See the separate catalog of QMCS for JL Auto Joint.

VERTICAL MOLD CHANGE SYSTEM



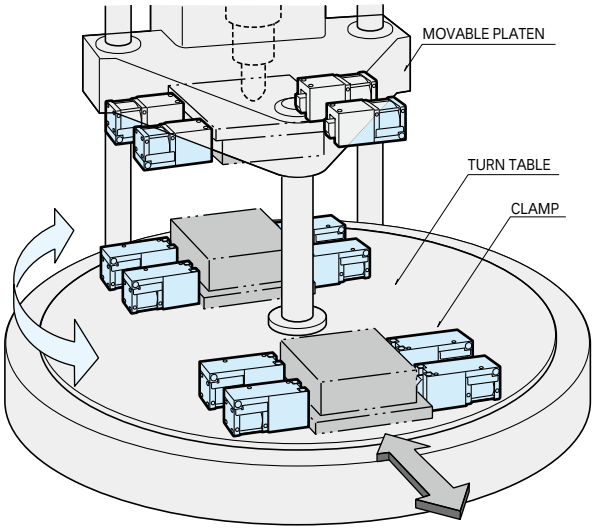
Vertical mold change system is a method for changing a mold using a crane over a molding machine and for securely fastening the mold by a powered clamp. T groove type (HC and HE), □xing type(HC) or a clamp can be selected depending on the conditions of the mold and the molding machine.

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 changing carriage or a changing stand. Most suitable construction can be selected based on the frequency of the mold change or the plant layout.

VERTICAL INJECTION MOLDING MACHINE



Air type clean clamp (H Series) is most suitable for vertical injection molding machines. Especially in case of a turn table type machine, the lower molding face always passes under the upper clamp in each shot due to the mechanism of the injection molding machine. At this time, even a slight amount of hydraulic oil dripping from clamps or hydraulic piping results in not only contamination of molds but mass production of defective molded parts. The air type clamp contains no hydraulic oil, thus eliminating the chance of contamination.

CAUTIONS ON SYSTEM OPERATION

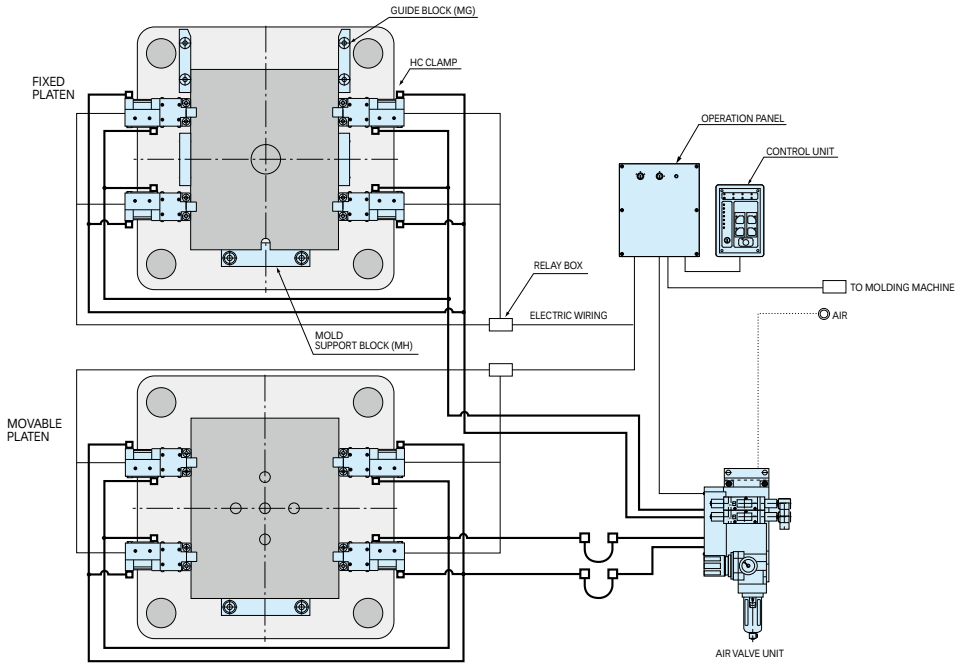
- □Check the condition of the molding machine and the molds prior to changing them and suspend them by a crane till completing the changing work.
  If not suspended by a crane, the mold may drop to cause personal injury.
- □When working on a mold while still in the machine, suspend the mold by crane or fasten it with bolts and turn the machine power supply OFF.
  Failure to do so may result in mold dropping and then 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 the mold dropping and then 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 then personal injury.
  Note) When the □xed side is equipped with a location ring, install the dropping preventive block only on the movable side.
- □When changing a mold, do not enter under the mold nor put a hand or foot under it. The mold may drop to cause personal injury.
- □Only use the speci□ed molds.
  Failure to do so may result in insu□cient locking of a mold, mold dropping and then personal injury.
- □Only operate the system at the speci□ed pressure.
  Failure to do so may result in mold falling or dropping and then personal injury. Malfunction of the clamp may also result.

VERTICAL MOLD CHANGE SYSTEM

QMCS

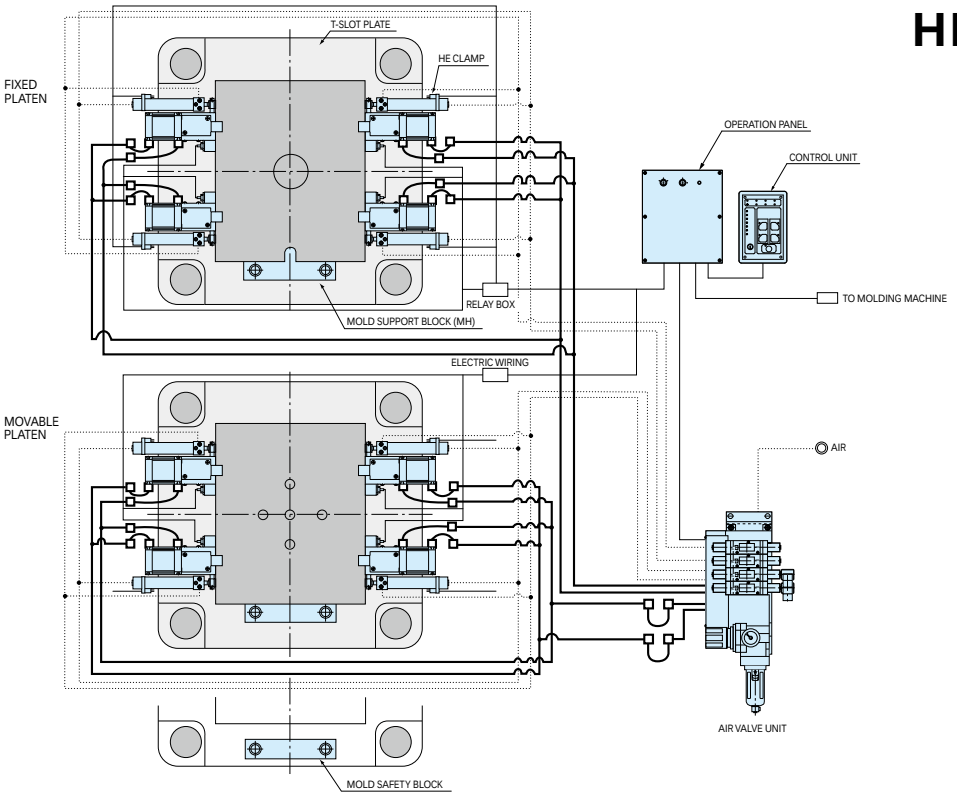
FOR UNIFORM WIDTH MOLDS

HC



FOR VARIABLE WIDTH MOLDS

HB/HE

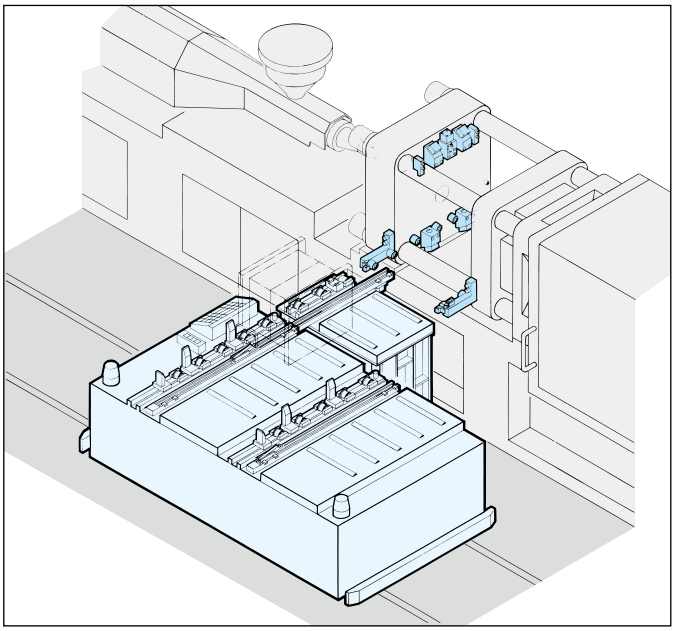


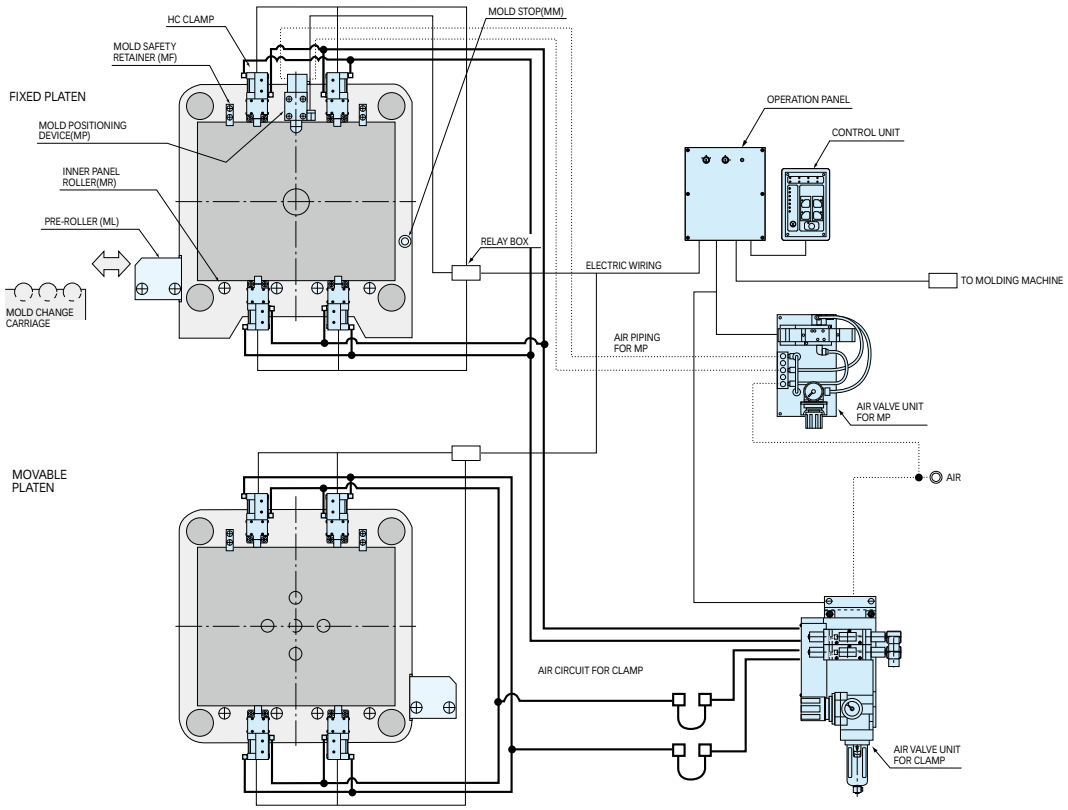
Standard System (HC/HB/HE)

Molding Machine Capacity (kN)	Clamp					Valve unit ( ) is for HE.	Mold support block	Mold safety block
	HC Clamp	HB Clamp	HE Clamp	Quantity	Fixed/Movable clamp force (kN)			
～ 500	HC0102	HB0101	HE0101	8	39	MV7010-UU-5-5 (MV7010-UUTT-5-5)	MH03	MJ0010
～ 750	HC0162	HB0161	HE0161	8	63			
～1500	HC0253	HB0252	HE0252	8	98		MH04	MJ0020
～2500	HC0403	HB0402	HE0402	8	157			
～3500	HC0633	HB0632	HE0632	8	247	MV7020-UU-5-5 (MV7020-UUTT-5-5)		
～5500	HC1003	HB1002	HE1002	8	392		MH06	MJ0030
～8500	HC1603	HB1602	HE1602	8	627	MV7030-UU-5-5 (MV7030-UUTT-5-5)		MJ0040
～13000	HC2503	–	–	8	980	MV7040-UU-5-5	MH08	MJ0050

HORIZONTAL MOLD CHANGE SYSTEMS

MOLD SIZE MUST BE UNIFORM



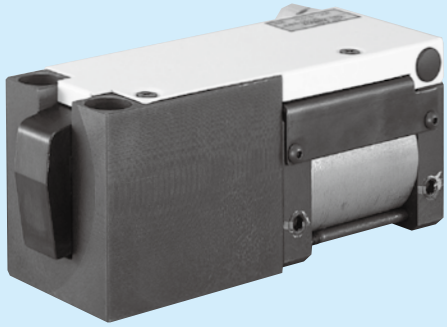


Standard System (HC)

*1.Note that some platen components cannot be selected as shown in the above table because of di□culty of layout depending on the molding machine and molding conditions to be applied.

Molding Machine Capacity (kN)	Clamp			Valve unit	Inner panel components *1							Standard mold mass (t)
	HC Clamp	Quantity	Fixed/Movable clamp force (kN)		Mold positioning device	Mold safety retainer	inner panel roller	Pre-roller	Detection of excessively large mold thickness	Detection of excessively small mold thickness	Mold stop(MM)	
～ 500	HC0102	8	39	MV7010-UU-5-5	MP03	MF0010	MR0270	ML02	MS4011-5	MS2030-5 Limit switch type MS2041-5 Proximity switch type	MM	0.6
～ 750	HC0162	8	63									
～1500	HC0253	8	98		MP04		MR0400	ML04				1.0
～2500	HC0403	8	157									1.5
～3500	HC0633	8	247	MV7020-UU-5-5	MP06							2.5
～5500	HC1003	8	392			MF0020	MR0600	ML06	MS4021-5			4.5
～8500	HC1603	8	627	MV7030-UU-5-5	MP08		MR0800	ML08				8.0
～13000	HC2503	8	980	MV7040-UU-5-5		MF0030	MR1000	ML10	MS4031-5			15

HC AIR CLAMP



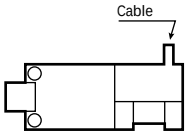
Model code

HC 010 2 — 20 R — V

① Design No.
2 : HC0102・HC0162
3 : HC0253～HC2503

② Mold thickness (h dimension)
20:h dimension 20 mm
50:h dimension 50 mm

③ Cable and air port mounting position
R :Right side viewing from the back (cylinder side)
L :Left side viewing from the back (cylinder side)



Note1) In case of using HC0102, HC0162, HC0253 and HC0403, prox.switch cable and air port direction are in the same direction. Opposite body surface ports are plugged.
Note2) In case of using HC0633、HC1003、HC1603 and HC2503, it shows air port mounting direction.
The cable position is common for both L and R.

④ Special symbols
J : Low lever model
K : Extremely small load switch type
V : High temperature specification (0～120℃)

Example HC0102-30L
・Clamping capacity 9.8kN
・Mold thickness 30 mm
・Cable mounting direction left

Specifications

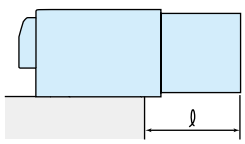
Model			HC0102	HC0162	HC0253	HC0403	HC0633	HC1003	HC1603	HC2503
Clamp capacity		(kN)	9.8	15.7	24.5	39.2	61.7	98	157	245
Retaining force (kN)	Air pressure	0.39MPa	9.8	15.7	24.5	39.2	61.7	98	157	245
	Air pressure	0MPa	2.9	5.9	7.8	11.8	17.6	26.5	40.9	65
Clamp force (kN)	Air pressure	0.49MPa	7.8	13.7	19.6	31.4	48	75.5	124	190
	Air pressure	0.39MPa	6.9	11.8	16.7	26.5	41.2	63.7	104	160
	Air pressure	0MPa	2	2.9	4.9	6.9	9.8	14.7	23.5	35
Full stroke		(mm)	2	2	2.1	2.3	2.6	2.8	3	3.3
Clamp stroke		(mm)	1	1	1	1.1	1.2	1.2	1.2	1.3
Stroke margin		(mm)	1	1	1.1	1.2	1.4	1.6	1.8	2
Air cylinder volume(cm^3)	Lock side		56	94	144	259	444	773	1334	2468
	Release side		52	88	135	244	416	729	1262	2346
Supply air pressure (MPa)	Normal (recommended)		0.49							
	Minimum		0.39							
Working temperature			Max. 70℃(If exceeding 70℃, contact us.)							
Working frequency			Max. 20 times per day (If exceeding 20 times, contact us.)							

Notes) 1. Do not exceed clamp capacity.
2. Retaining force and clamp force may vary by ±10%.
3. Supply air at a pressure of more than 0.39 MPa to release port to maintain the release condition.
4. Keep accuracy of clamp thickness (dimension h) at ±0.3mm.
5. When using HC0102 and HC0162 for thicker mold plate than standard thickness (h-dimension), spacer will be attached on clamp bottom. However, if the mold plate thickness is thinner than standard dimension, please contact us.
When using clamps which are larger than HC0253 for non-standard mold plate thickness, clamp lever thickness (M-dimension) will be adjusted.
6. When the specifications other than the above are needed, contact us.
7. Specifications and contents of this document are subject to change without notice to improve the products. Request technical specifications prior to actual application.

Cautions on Operation

1. Set the clearance between the mold and clamp at the specified value.
Failure to do so may result in mold falling or dropping followed by personal injury.
2. Adjust clamp face of the mold parallel with the molding machine plate.
If the clamp face has projection or is not parallel with the plate, the clamp will subjected to uneven force, and deformation of a lever and a main shaft or falling or dropping of the mold may result followed by personal injury.
3. Protect clamp, air valve unit and control panel from oil, water, or other liquids.
Exposure to these can cause malfunction and may result in an accident.
4. Never disassemble nor remodel, otherwise the clamp may not function and may result in an accident. Always contact us.
5. After installation, flush piping and fittings prior to use.
Insufficient flushing may leave residual debris which may damage packings to cause air leakage.
6. Supply clean dry air. Failure to do so may result in degradation by dirt and / or rust leading to product malfunction. Install an air dryer and a filter.

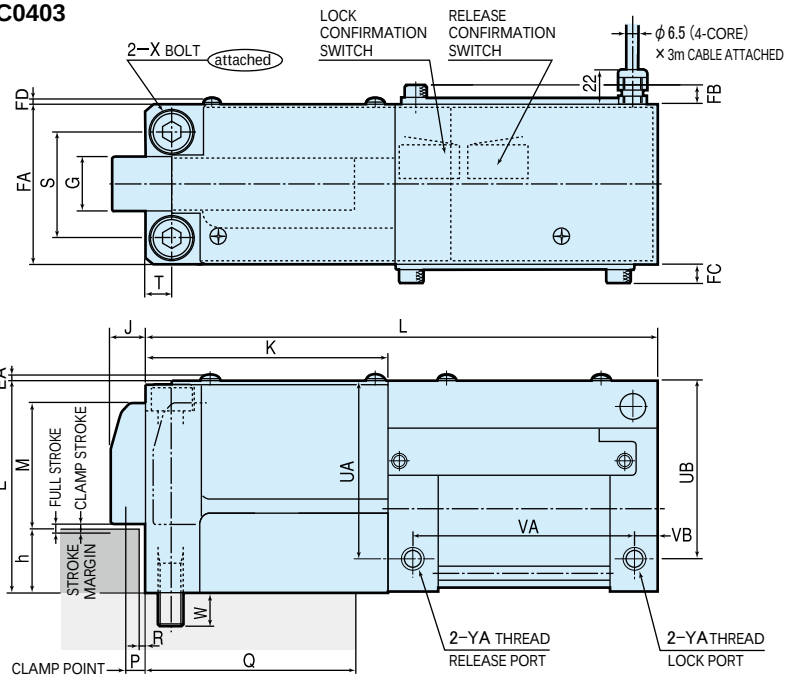
●HC Allowable protrusion



Model	ℓ
HC0102	113
HC0162	119
HC0253	111
HC0403	156
HC0633	179
HC1003	167
HC1603	152
HC2503	190

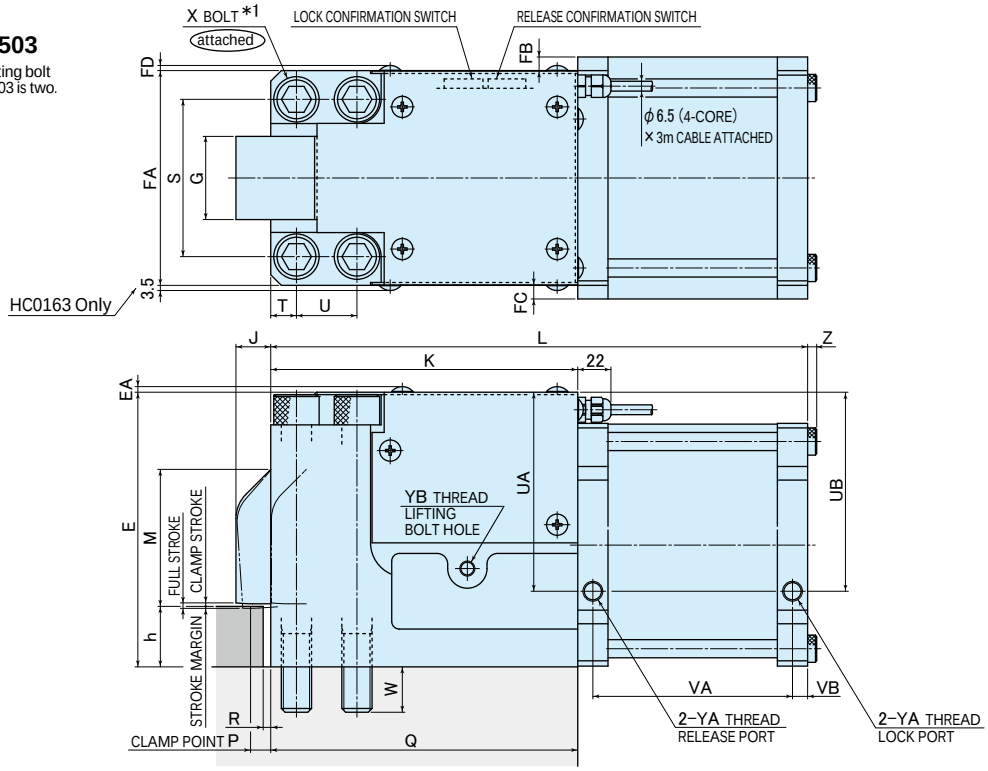
Outline dimensions

□HC0102,HC0162,HC0253,HC0403



□HC0633～HC2503

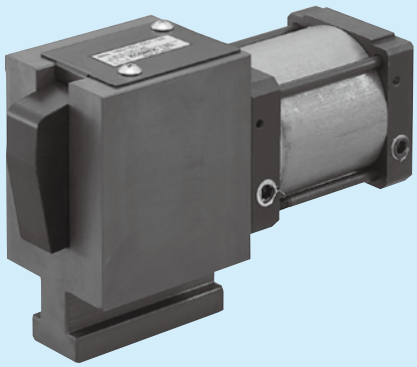
*1. The number of mounting bolt for HC0633 and HC1003 is two.



●External dimensions

Model	E	EA	FA	FB	FC	FD	G	J	K	L	M	P	MIN.Q	R	S	T	U	UA	UB	VA	VB	W	X	YA	YB	Z	Standard h
HC0102	66	2.5	50	6	6	2.5	16	10.5	75.5	159	39.5	5.6	46	1.5	33	8	–	52.5	50.5	68.5	7.5	12	2-M8	Rc1/8	–	–	$20^{\pm 0.3}$
HC0162	76	2.5	60	6	6	2.5	19	12	86	174	48	6.1	55	1.5	39	9.5	–	60	58	73	7.5	15	2-M10	Rc1/8	–	–	$20^{\pm 0.3}$
HC0253	85.5	–	72	–	–	2.5	25	13	100.5	195	48.5	7.4	84	2	50	11	–	67	67	79.5	7.5	22	2-M12	Rc1/8	–	–	$30^{\pm 0.3}$
HC0403	104.5	–	90	–	–	2.5	30	15.5	117.5	217	66.5	8.8	61	2	62	14	–	80	80	84.5	7.5	27	2-M16	Rc1/8	–	–	$30^{\pm 0.3}$
HC0633	128	–	110	–	–	2.5	36	17.5	139.5	254	59	9.9	75	3	76	17	–	94	94	99.5	7.5	33	2-M20	Rc1/8	2-M8	–	$35^{\pm 0.3}$
HC1003	150	2.5	135	–	–	2.5	48	20	163.5	287	73.5	11	120	3	95	20	–	109.5	109.5	108.5	7.5	36	2-M24	Rc1/8	2-M8	–	$40^{\pm 0.3}$
HC1603	182	3.5	142	9	9	3.5	55	23	203	355	91	13	203	5	104	17	40	132	132	132	10	30	4-M20	Rc1/4	2-M10	6	$40^{\pm 0.3}$
HC2503	227	–	170	10	10	9	65	26	253	435	125.5	17	245	5	130	20	50	166	166	158	12	37.5	4-M24	Rc1/4	6-M10	10	$50^{\pm 0.3}$

HB AIR CLAMP



Model code

HB 063 2 — DHP — 5 L — T＊＊＊

① Design No. ② ③ ④

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

1 : HB0101・HB0161
2 : HB0252 ～ HB1602

①Clamping capacity (See speci□cations)

②Special symbols
D:With a handle (for 0402 and higher)
H:High type (When the height is larger than max. h)
J:Low type lever (When the height is lower than min. h.)
P:With a proximity switch to detect mold position *1
V:High temperature speci□cation (0～120℃)
*1Only when "P" is selected from the special symbols, the following symbols are required:

③Switch load voltage (current)
1:AC100V
2:AC200V
5:DC 24V(5～40mA)

④Switch mounting position
R:Right side viewing from the back (cylinder side)
L :Left side viewing from the back (cylinder side)

Example HB0402-DP-5R-T001
・Clamping capacity 39.2kN
・With a handle
・With a proximity switch DC24V in voltage to detect mold position
・Switch located on the right viewing from the back
・T001⇒h=30,A=17,B=28,C=10.5,D=23.6

Specifications

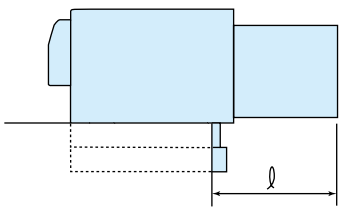
Model			HB0101	HB0161	HB0252	HB0402	HB0632	HB1002	HB1602
Clamp capacity		(kN)	9.8	15.7	24.5	39.2	61.7	98	157
Retaining force (kN)	Air pressure	0.39MPa	9.8	15.7	24.5	39.2	61.7	98	157
	Air pressure	0MPa	2.9	5.9	8.8	13.7	20.6	30.8	50.3
Clamp force (kN)	Air pressure	0.49MPa	7.8	13.7	20.6	32.3	50	77.4	127
	Air pressure	0.39MPa	6.9	11.8	17.6	27.4	43.1	66	108
	Air pressure	0MPa	2	3.9	4.9	7.8	11.8	17.7	28.9
Full stroke		(mm)	3	3	3.2	3.6	4	4.5	5
Clamp stroke		(mm)	1	1	1	1.1	1.2	1.2	1.2
Stroke margin		(mm)	2	2	2.2	2.5	2.8	3.3	3.8
Air cylinder volume(cm^3)	Lock side		56	94	144	259	444	773	1334
	Release side		52	88	135	244	416	729	1262
Supply air pressure (MPa)	Normal (recommended)		0.49						
	Minimum		0.39						
Working temperature			Max. 70℃ (If exceeding 70℃, contact us.)						
Working frequency			Max. 20 times per day (If exceeding 20 times, contact us.)						

Notes) 1. Do not exceed clamp capacity.
2. Retaining force and clamp force may vary by±10%.
3. Supply air at a pressure of more than 0.39 MPa to release port to maintain the release condition.
4. Keep accuracy of clamp thickness (dimension h) at±0.3mm.
5. Dimension E is kept constant and dimension M is changed to deal with the speci□ed thickness (dimension h).
If dimension E cannot be increased because of interference due to minimum mold thickness limitation, contact us.
6. When the speci□cations other than the above are needed, contact us.
7. Speci□cations and contents of this document are subject to change without notice to improve the products. Request technical speci□cations prior to actual application.

Cautions on Operation

1. Adjust the clamp face of the mold parallel with the molding machine plate. If the clamp face has projection or is not parallel with the plate, the clamp will subjected to uneven force, and deformation of a lever and a main shaft or falling or dropping of the mold may result followed by personal injury.
2. Protect clamp, air valve unit and control panel from oil, water or other liquids. Exposure to these can cause malfunction and may result in an accident.
3. Never disassemble nor remodel, otherwise the clamp may not function and may result in an accident. Always contact us.
4. After installation, □ush piping and □ttings prior to use. Insu□cient □ushing may leave residual debris which may damage packings to cause air leakage.
5. Supply clean dry air. Failure to do so may result in degradation by dirt and / or rust leading to product malfunction. Install an air dryer and a □lter.

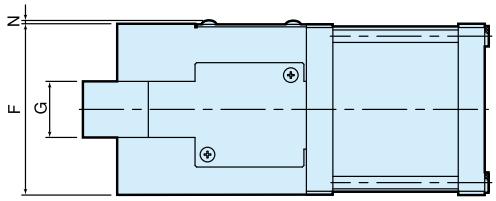
●HB Allowable protrusion

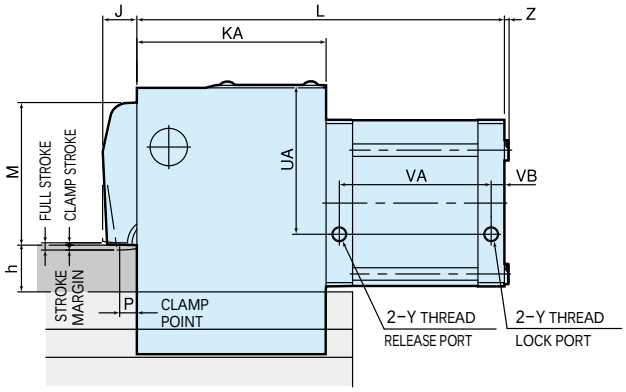


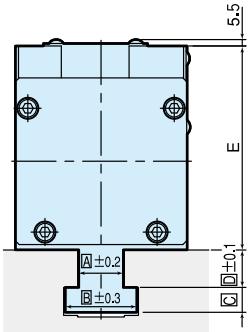
Model	ℓ
HB0101	108
HB0161	113
HB0252	122.5
HB0402	127.5
HB0632	124.5
HB1002	133.5
HB1602	167

Outline dimensions

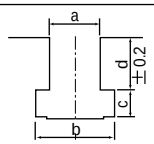
HB0101, 0161





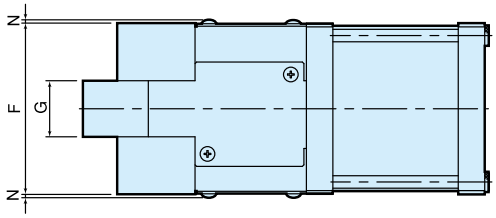


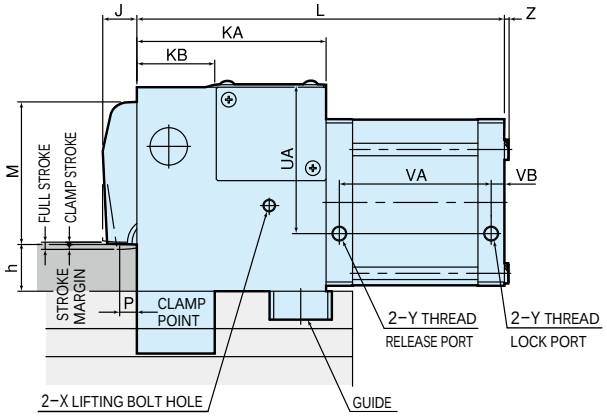
○**T groove dimension**

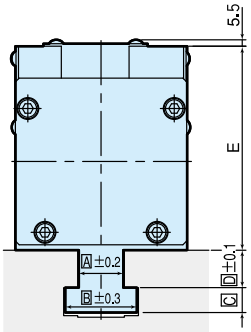


1. A, B, C and D are determined based on T groove dimension.
2. When placing an order, indicate T groove dimensions a, b, c and d and clamp thickness (dimension h) in 0.1 mm unit.
3. Keep tolerance of dimension d of T groove within ±0.2 mm.

HB0252 ～ 1602



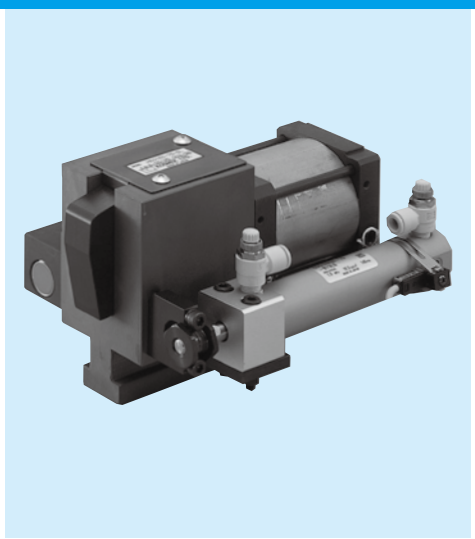




●External dimensions

Model	E	F	G	J	KA	KB	L	M(h)	N	P	UA	VA	VB	X	Y	Z	MIN.a	MIN C	MIN.h	MAX.h
HB0101	69	50	16	14	65	–	148.5	27(35)～47(15)	2.5	7	53	68.5	7.5	–	Rc1/8	–	10	6.5	$15^{\pm0.3}$	$35^{\pm0.3}$
HB0161	77	60	19	16	74	–	162	30.5(40)～55.5(15)	2.5	7.5	58.5	73	7.5	–	Rc1/8	–	12	8	$15^{\pm0.3}$	$40^{\pm0.3}$
HB0252	87.5	72	25	17	87	–	181.5	40.5(40)～60.5(20)	2.5	8.7	68.5	79.5	7.5	–	Rc1/8	–	14	9.5	$20^{\pm0.3}$	$40^{\pm0.3}$
HB0402	106.5	90	30	20	101.5	–	201	53.5(45)～78.5(20)	2.5	10	81.5	84.5	7.5	–	Rc1/8	–	18	12	$20^{\pm0.3}$	$45^{\pm0.3}$
HB0632	131	110	36	22	121.5	–	236	60(50)～80(30)	2.5	11	96	99.5	7.5	M8	Rc1/8	-	22	14	$30^{\pm0.3}$	$50^{\pm0.3}$
HB1002	154	135	48	26	143	60	266.5	74(60)～99(35)	2.5	13	112.1	108.5	7.5	M8	Rc1/8	-	24	16.5	$35^{\pm0.3}$	$60^{\pm0.3}$
HB1602	186	160	55	30	179.5	75	331.5	93.5(70)～123.5(40)	3.5	17	133.6	132	10	M10	Rc1/4	6	28	20	$40^{\pm0.3}$	$70^{\pm0.3}$

HE AIR CLAMP



Model code

HE 040 ① 2 Design No. — 150 ② — 5 ③ — L ④ — H ⑤ — T＊＊＊

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

1 : HE0101・HE0161
2 : HE0252 ～ HE1602

① Clamping capacity (See speci□cations)
② Slide stroke (See outline dimension)
75:Clamp moving distance 75 mm
150:Clamp moving distance 150 mm
※Determine the moving distance considering moving margin.
③ Switch load voltage (current)
1:AC100V
2:AC200V
5:DC 24V(5～40mA)
④ Air Cylinder mounting position
R:Right side viewing from the back
L:Left side viewing from the back
⑤ Special symbols
H:High type
J:Low type lever (When the height is lower than min. h.)
Q:Double cylinders
S:Special spacer
V:High temperature speci□cation(0～120℃)

Example HE0402-125-5L-H-T001
・Clamping capacity 39.2 kN
・Slide distance 125 mm
・DC 24V
・Air Cylinder located on the left viewing from the back
・High type
・T001⇒h=30,A=17,B=28,C=10.5,D=23.6

Specifications

Model		HE0101	HE0161	HE0252	HE0402	HE0632	HE1002	HE1602
HB clamp type		HB0101	HB0161	HB0252	HB0402	HB0632	HB1002	HB1602
Clamp capacity	(kN)	9.8	15.7	24.5	39.2	61.7	98	157
Slide stroke	(mm)	25～150	25～150	25～200	25～200	25～300	50～300	50～300
Clamp supply air pressure (MPa)	Normal (recommended)	0.49						
	Minimum	0.39						
Drive cylinder supply air pressure (MPa)		0.39～0.49						
Working temperature		Max. 70℃ (If exceeding 70℃ , contact us.)						
Working frequency		Max. 20 times per day (If exceeding 20 times, contact us.)						

Switch type and other accessories

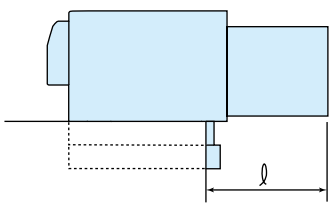
Model		HE0101	HE0161	HE0252	HE0402	HE0632	HE1002	HE1602
Speed controller (manufactured by SMC)		AS2201F-01-06S					AS2201F-02-10S	
Forward end con□rmation switch	AC100V,AC200V	Proximity switch type (Azbil : FL7M-7T7HD)						
	DC 24V(5～40mA)	Proximity switch type (Azbil : FL7M-7J6HD)						
Backward end con□rmation switch	AC100V,AC200V	Auto switch type (SMC: D-B73L)						
	DC 24V(5～40mA)	Auto switch type (SMC: D-B73L)						

Notes) 1. See the HB air clamp document for detailed information on the clamps.
2. Select the slide stroke taking the stroke margin into account.
3. Supply air pressure lower than 0.39 MPa may result in malfunction.
4. When the speci□cations other than the above are needed, contact us.
5. Speci□cations and contents of this document are subject to change without notice to improve the products. Request technical speci□cations prior to actual application.

Cautions on Operation

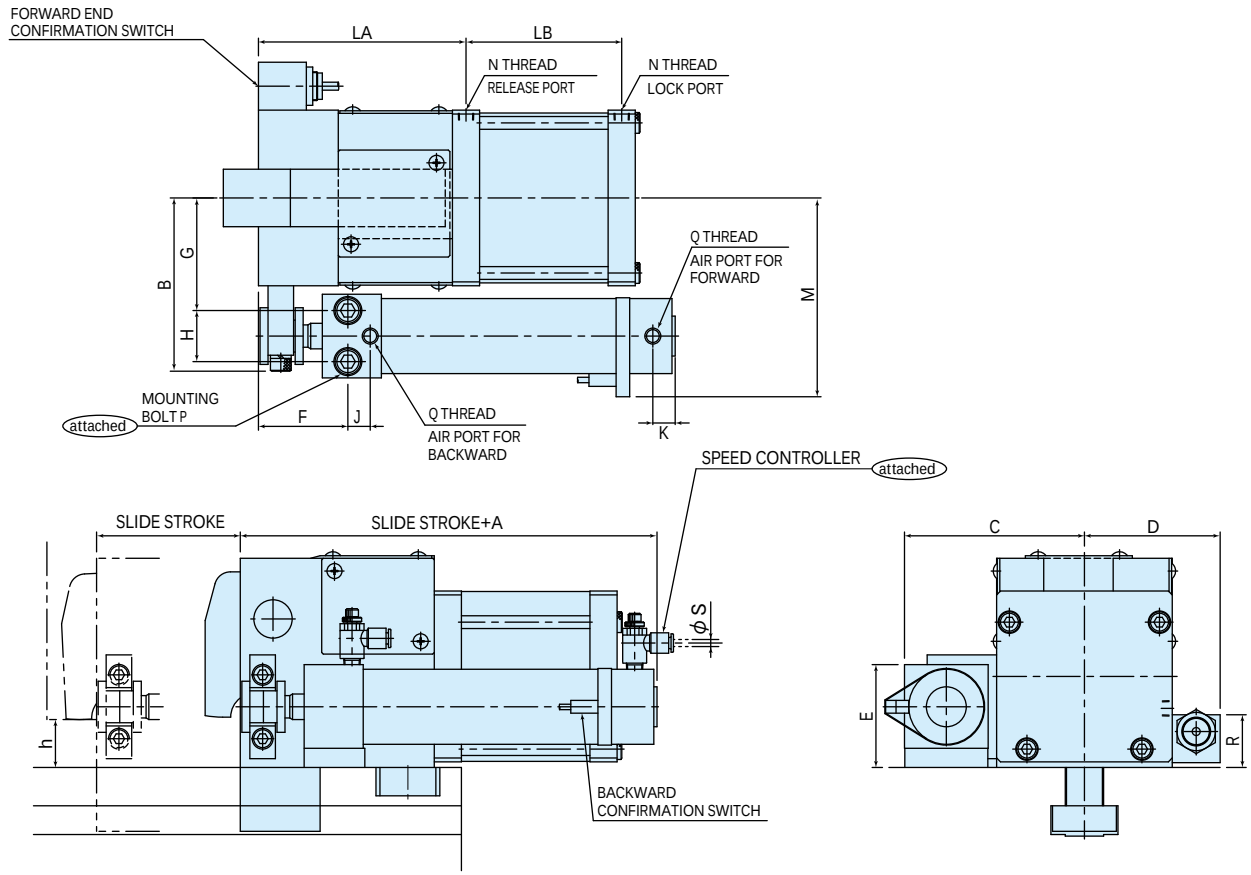
1. Adjust the clamp face of the mold parallel with the molding machine plate. If the clamp face has projection or is not parallel with the plate, the clamp will subjected to uneven force, and deformation of a lever and a main shaft or falling or dropping of the mold may result followed by personal injury.
2. Protect clamp, air valve unit and control panel from oil, water other liquids. Exposure to these can cause malfunction and may result in an accident.
3. Never disassemble nor remodel, otherwise the clamp may not function and may result in an accident. Always contact us.
4. After installation, □ush piping and □ttings prior to use. Insu□cient □ushing may leave residual debris which may damage packings to cause air leakage.
5. Supply clean dry air. Failure to do so may result in degradation by dirt and / or rust leading to product malfunction. Install an air dryer and a □lter.

●HE Allowable protrusion



Model	ℓ
HE0101	108
HE0161	113
HE0252	122.5
HE0402	127.5
HE0632	124.5
HE1002	133.5
HE1602	167

Outline dimensions



●Slide stroke

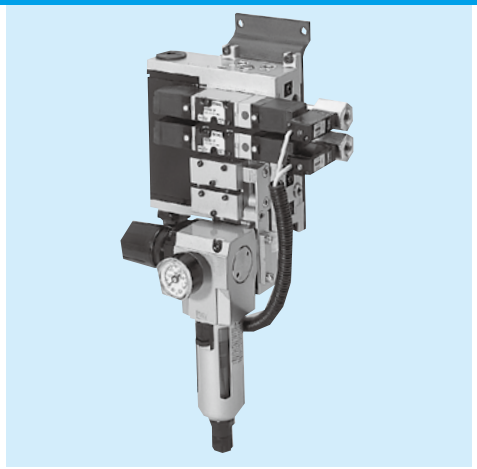
Model	Standard stroke								
	25	50	75	100	125	150	200	250	300
HE0101	●	●	●	●	●	●			
HE0161	●	●	●	●	●	●			
HE0252	●	●	●	●	●	●	●		
HE0402	●	●	●	●	●	●	●		
HE0632	●	●	●	●	●	●	●	●	●
HE1002		●	●	●	●	●	●	●	●
HE1602		●	●	●	●	●	●	●	●

●External dimensions

Model	HB Model	A	B	C	D	E	F	G	H	J	K	LA	LB	M	N	P Mounting Bolt	P Tapping	Q	R	S
HE0101	HB0101	105	56.5	59.5	55	36.5	39	35	18	9	12	72.5	68.5	71.5	Rc1/8	M5X0.8X40	M5×0.8 Depth10	Rc1/8	36	6
HE0161	HB0161	105	61.5	64.5	60	36.5	39	40	18	9	12	81.2	73	76.5	Rc1/8	M5X0.8X40	M5×0.8 Depth10	Rc1/8	36	6
HE0252	HB0252	112	73.5	76.5	66	45.5	45	47	22	10	12	94.5	79.5	88	Rc1/8	M6X50	M6 Depth12	Rc1/8	36	6
HE0402	HB0402	118	89	91	75	54.5	46	57.5	24	13	12	109	84.5	103	Rc1/8	M8X55	M8 Depth16	Rc1/8	36	6
HE0632	HB0632	136	108.5	113	85	64.5	56	70.5	32	14	12	129	99.5	124.5	Rc1/8	M10X70	M10 Depth20	Rc1/8	36	6
HE1002	HB1002	157	132.5	137.5	97.5	80.5	64	84.5	41	16	14	150.5	108.5	148.5	Rc1/8	M12X85	M12 Depth24	Rc1/4	33	10
HE1602	HB1602	169	151.5	162.5	110	95.5	72	101	46	20	14	189.5	132	174	Rc1/4	M16X100	M16 Depth32	Rc1/4	36	10

*See the HB clamp document for detailed information on the clamps.
*Speci□cations and contents of this document are subject to change without notice to improve the products. Request an approval drawing prior to actual application.

MV7000
VALVE UNIT



Model Code

MV70 ② ① 0 — UUTT — ③ — ④ — ⑤

① Design No.

❶ Size
1: Clamp to be applied 010～040
2: Clamp to be applied 063～100
3: Clamp to be applied 160
4: Clamp to be applied 250

❷ Circuit type *1
U: Circuit for clamp (with pressure switch)
T: Circuit for slider (without pressure switch)

③ Control air voltage
1: AC 100 V
5: DC 24 V

❹ Normal air pressure
5: 0.49 MPa
4: 0.39 MPa

❺ Special
N: NPT *2

*1 Some products may be manufactured after an order received depending on the circuit type❷. Please ask delivery time prior to placing an order.
*2 When "N" is selected from the special symbols, each dimension is described in "inch" in the specifications and the other documents.

Example MV7030-UU-5-5
- For H□160
- Clamp circuit in tandem
- Control voltage DC 24 V
- Normal air pressure 0.49 MPa

Specifications

Model	MV7010	MV7020	MV7030	MV7040
Type	Metallic seal/5-port pilot			
Position and number of solenoid	2-position and double			
Piping size	Rc1/4		Rc3/8	
Effective section area	15mm²	32.4mm²	36mm²	
Working fluid	Air			
Clamp operating pressure	0.49MPa			
Design pressure	0.7MPa			
Working fluid temperature	−10～+60℃			
Oil supply	No oil supply			
Protection	Dust-proof			
Manifold with control unit	Depends on the number of circuit※1			
Solenoid type (SMC)	VFS2200	VFS3200		
Pressure switch type (SMC)	IS1000-01S			
Silencer type (SMC)	AN203-02	AN403-04		
Speed Exhaust Controller (SMC)	—	—	ASV510F-02-10S supplied	ASV510F-02-12S supplied
Recommended tube size	φ6	φ10		φ12

※1 Manifold type

MV type	Number of circuit	Manifold type with control unit (SMC)
MV7010	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 type	Number of circuit	Manifold type with control unit (SMC)
MV7020	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 type	Number of circuit	Manifold type with control unit (SMC)
MV7030 MV7040	1	VV5FS3-01T-031-03-F
	2	VV5FS3-01T-041-03-F
	3	VV5FS3-01T-051-03-F
	4	VV5FS3-01T-061-03-F

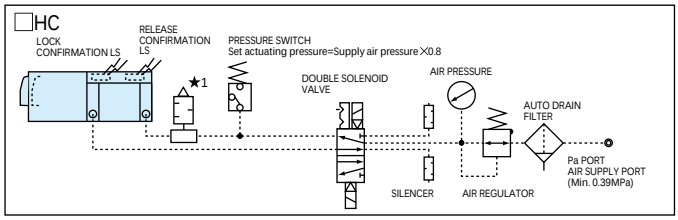
Circuit Symbols

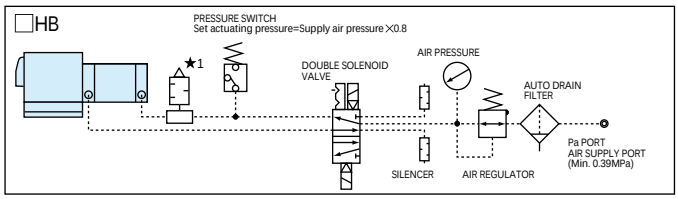
Circuit symbol	Content	Applied clamp: Example
U	Clamp circuit×1	HC/HB: Only for upper mold of vertical molding machine
UU	Clamp circuit×2	HC/HB: Fixed and movable plates for horizontal molding machine
UUU	Clamp circuit×3	HC/HB: One circuit of upper mold and two circuits of lower mold for vertical molding machine
UUTT	Clamp circuit×2 Slider circuit×2	HE: Fixed and movable platens for horizontal molding machine

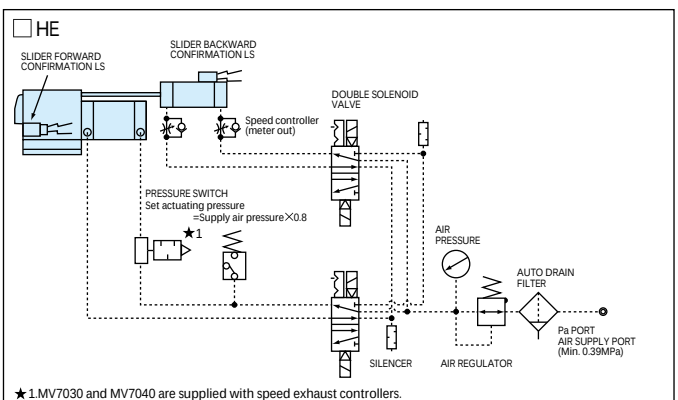
Cautions on Operation

1.Supply dry air.
2.Apply stainless steel pipes, nylon tubes and so on to air piping for rust prevention.
3.Low exhaust efficiency due to long piping results in long release action time. Install the speed exhaust controller or the like in the circuit to reduce the release time. MV7030 and MV7040 are supplied with speed exhaust controllers.

General Example of Operation Circuit

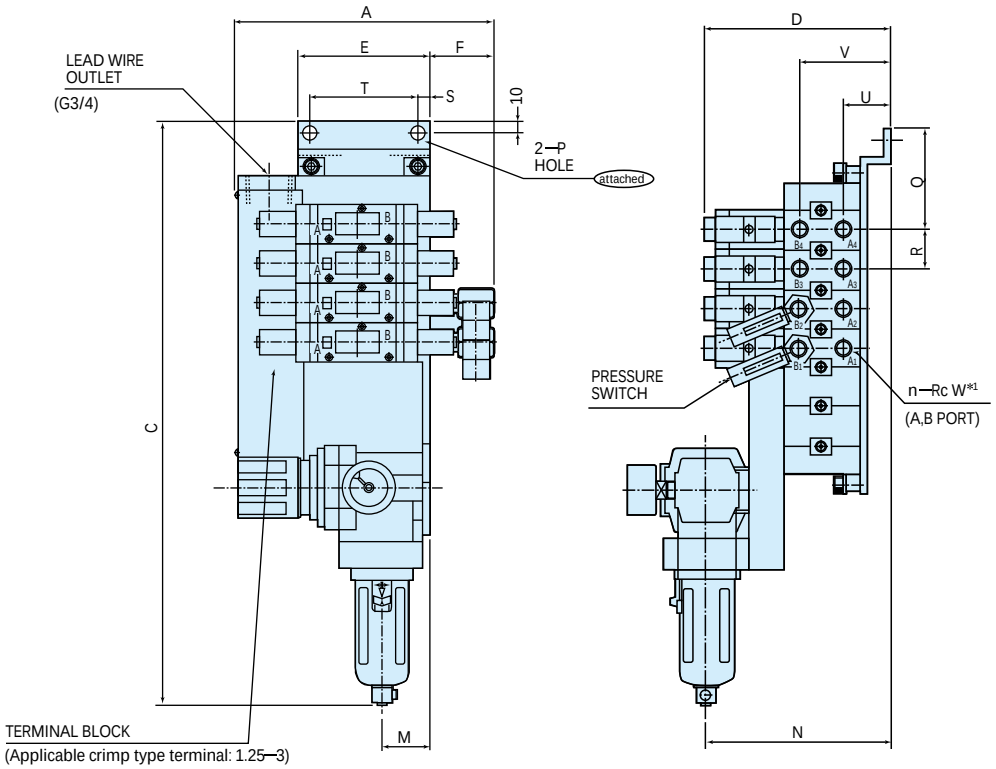


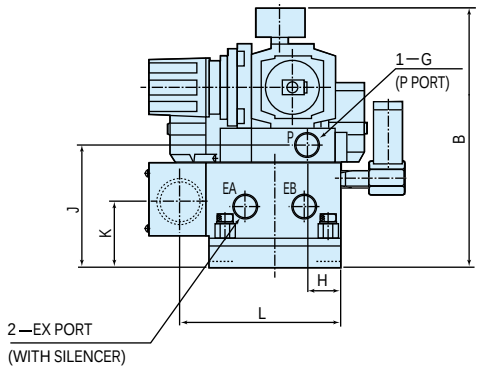




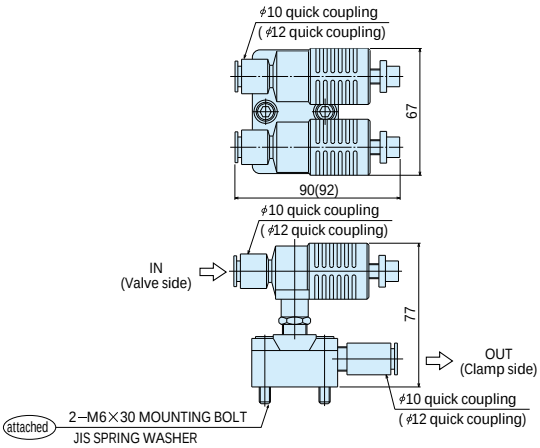
★1.MV7030 and MV7040 are supplied with speed exhaust controllers. Install this controller to the lock circuit side where exhaust is performed efficiently at the release.

Outline dimensions





● Approximate dimensions of speed exhaust controller



※ Dimensions in parentheses are for ASV510F-02-12S.

● External dimensions

Model		MV7010	MV7020	MV7030	MV7040
A		220	218		
B		181	218		
C	1 Circuits	345	412		
	2 Circuits	373	445		
	3 Circuits	401	478		
	4 Circuits	429	511		
D		123	148		
E		83	109		
F		68	55		
G		Rc1/4	Rc1/2		
H		31.5	27.5		
J		79.5	102.5		
K		47	57		
L		128	134		
M		31.5	39.5		
N		118	151.5		
P (Accessory)		2-ϕ7 hole M6×14 Bolt JIS spring washer	2-ϕ9 hole M8×20 Bolt JIS spring washer		
Q		67.5	86		
R		28	33		
S		6.5	9.5		
T		70	90		
U		32.5	39.5		
V		58.5	74.5		
W		Rc1/4	Rc3/8		

*1.The n is twice the number of circuit.

Remarks
1. MV7030 and MV7040 are delivered with the speed exhaust controllers.
Install this controller to the lock circuit side where exhaust is performed e□ciently at the release.

OPERATION PANEL CONTROL UNIT

The many models available ensure compability with a wide variety of applications.
The separate Operation Panel and Control Unit allow for more flexibility and variation in mounting and use.

MODEL CODE

YMB08 [0] – [V] [HC] [10] – [ ]
1 2 3 4 5

1 Design No.

※ Indicates Unit Version

2 Mold Change System

V : Vertical Loading (Horizontal I.M.M)
H : Side Loading (Horizontal I.M.M)
R : Vertical I.M.M *1

3 Applicable Clamp Model

※ Refer to the specification tables below.

4 Pressure Switch

10 : Standard Model with Pressure Switch in the Clamp Circuit
00 : Special Model without Pressure Switch in the Clamp Circuit
※Only for Hydraulic Systems using I.M.M Hydraulic Pressure

5 Option Codes

None : Standard (Operation Panel in Japanese)
E : With Proximity Switches to Ensure Proper Clamp Placement
H : With 6~8 Proximity Switches per Platen
N : Operation Panel in English
C : Operation Panel in Chinese

SPECIFICATIONS

Model		YMB080-□□□10	YMB080-□□□00
Operation Unit Power		DC24V（Supplied by Control Unit）	
Control Unit Power Supply	Voltage	AC100 ～ 240V（50/60Hz）	
	Capacity	30W	100W

Model	②System		③Clamp Model	⑤Options
YMB080-VHB10	V	Vertical Loading	HB	E / H / N / C
YMB080-VHC10			HC	N / C
YMB080-VHE10			HE	H / N / C
YMB080-HHC10	H	Side Loading	HC	N / C

NOTES

＊1. Please contact us for details about vertical press (I.M.M) systems.
1. For special applications not mentioned here, please contact us.
2. Signals should be sent and recieved via dry contacts.
3. The molding machine output should be DC24V / 10mA.
4. The Operation Panel / Control Unit output contact is DC24V / 0.5A.
5. Molding machine terminology may differ depending on the manufacturer.
6. Please contact us for information about the Operation Panel / Control Unit for magnetic clamping systems.

DIAGRAM : OPERATION PANEL

※ The bracket can be mounted in any direction.
The bracket is shipped mounted as in the diagrams below.

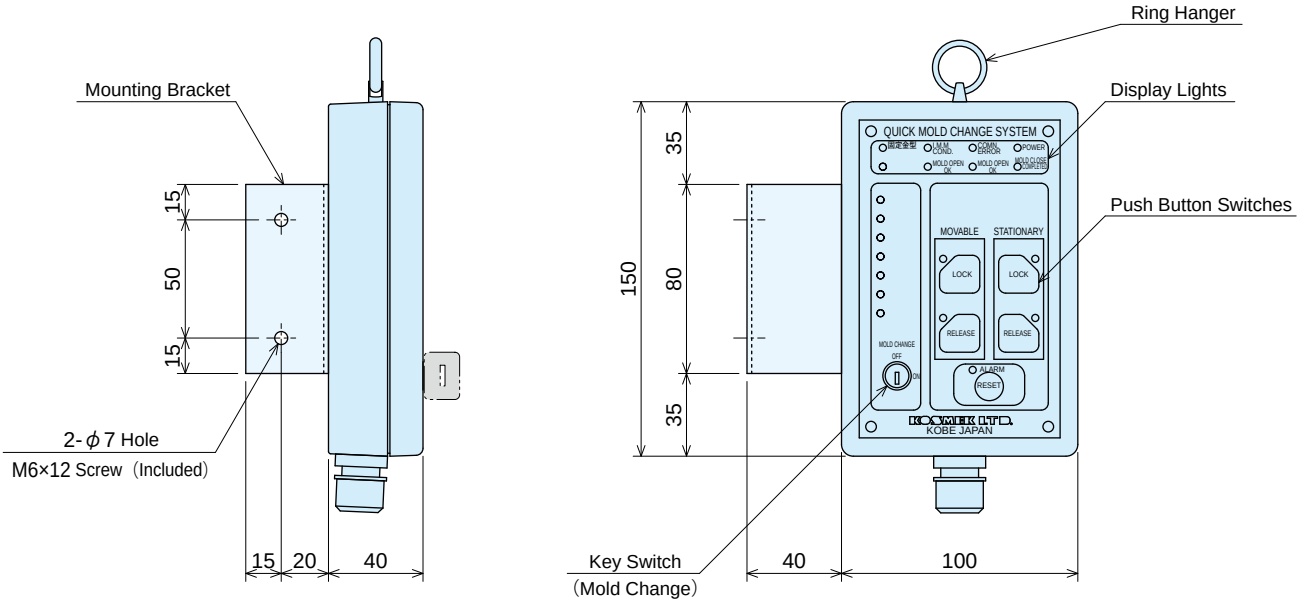
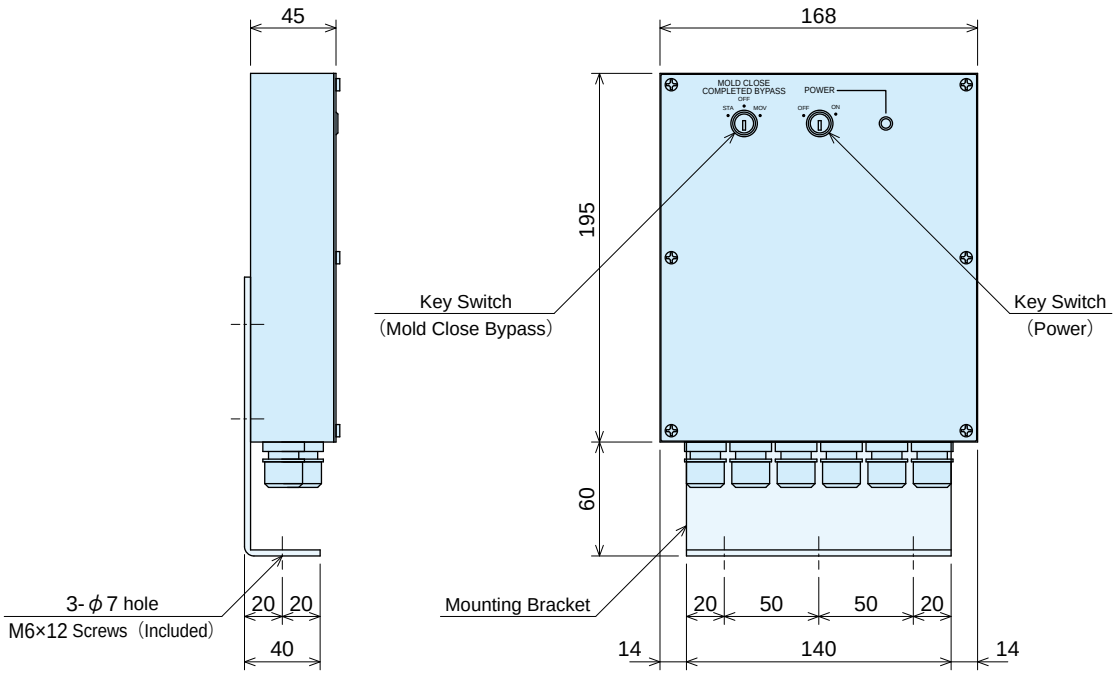


DIAGRAM : CONTROL UNIT

※ The bracket can be mounted in any direction.
The bracket is shipped mounted as in the diagrams below.

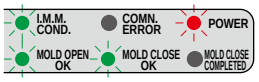
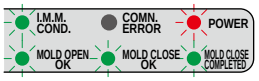
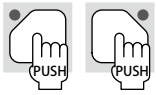
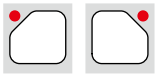
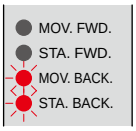
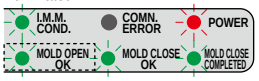
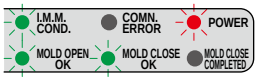


OPERATION PANEL CONTROL UNIT

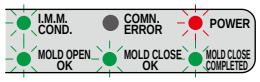
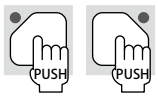
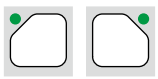
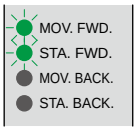
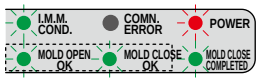
EXAMPLE OF OPERATING PROCEDURES : YMB080-VHE10

※ Please contact us for operating procedures for other models.

Unloading a Mold

I.M.M	OPERATION	OPERATION PANEL
Finish Production	1. Support the mold using the crane.	"I.M.M COND." lamp illuminates.
Mold Change Mode	2. Set the I.M.M to "Mold Change Mode" .	
Nozzle Back	3. Ensure the I.M.M is in "Nozzle Back" mode.	
	4. Turn the "Mold Change Key Switch" on the operation panel to "ON" .	MOLD CHANGE OFF 
Mold Close	5. Close the I.M.M platens.	Ensure the "MOLD CLOSE COMPLETED" lamp is illuminated. 
	6. Confirm that the mold is supported by the crane.	
	7. Press the "STATIONARY (Platen) RELEASE" button. Press the "MOVABLE (Platen) RELEASE" button.	MOVABLE RELEASE STATIONARY RELEASE  "RELEASE" lamps illuminate. MOVABLE RELEASE STATIONARY RELEASE  STA. BACK and MOV. BACK (Stationary / Movable Platen Fully Retracted) illuminate.  Ensure "MOLD OPEN OK" lamp is illuminated. 
Push the platen open button on the I.M.M	8. Open the platens	
	9. Remove the mold.	

Loading a Mold

I.M.M	OPERATION	OPERATION PANEL
Molding Idle	1. Check the mold thickness and insert the mold.	
	2. Position the mold.	
Mold Close	3. Close the Safety Door of the I.M.M and press the "Mold Close" button on the I.M.M.	Ensure the "MOLD CLOSE COMPLETED" lamp is illuminated. 
	4. Press the "Stationary Platen Lock" button. Press the "Movable Platen Lock" button.	MOVABLE LOCK STATIONARY LOCK  "LOCK" lamps illuminate. MOVABLE LOCK STATIONARY LOCK  STA. FWD. and MOV. FWD. (Stationary / Movable Platen Mold Detect) lamps illuminate. 
	5. Turn the Mold Change Key Switch to "OFF" .	MOLD CHANGE OFF  "MOLD OPEN OK" and "MOLD CLOSE OK" lamps illuminate. 
	6. Detach mold from crane to complete set-up.	

INTERLOCK INPUT AND OUTPUT

※ Please contact us for information about Input / Output signals not listed below. (Special Order Unit)

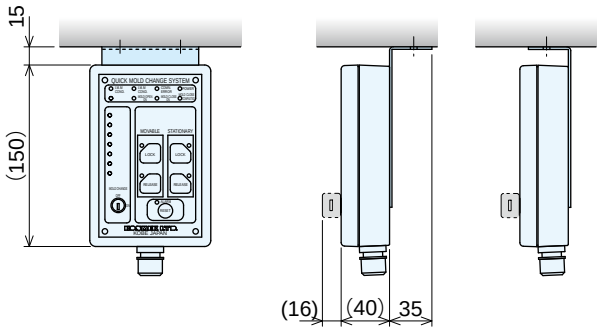
I.M.M OUTPUT	CONTENT
Mold Change Mode	A signal that ensures the IMM is in low-speed Mold Change Mode.
Mold Closed (Pressurized)	A signal that ensures the mold is completely closed. Required for clamp lock / release to prevent the mold from dropping.
Nozzle Back	A signal that ensures the nozzle / injection unit is fully back to prevent damage to the nozzle / injection unit when changing molds.
Ejectors Back	A signal that ensures the ejector plate is in the back position to prevent damage to the ejector rods during mold removal.

I.M.M INPUT	CONTENT
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.

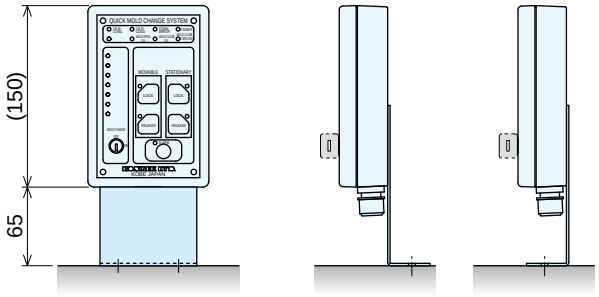
MONTING INSTRUCTIONS : OPERATION PANEL

※For detailed dimensions of the Operation Panel, please refer to page 14.

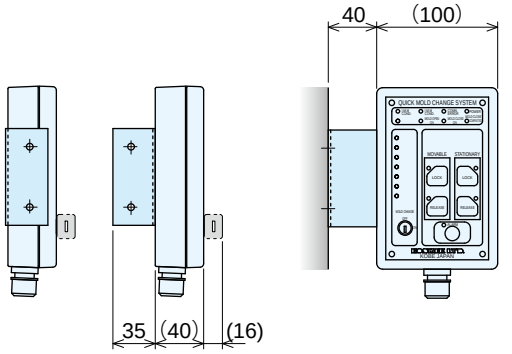
Top Mounted



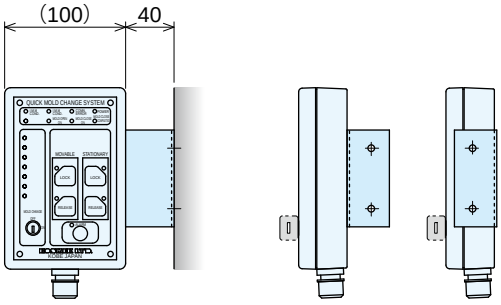
Bottom Mounted



Left Mounted



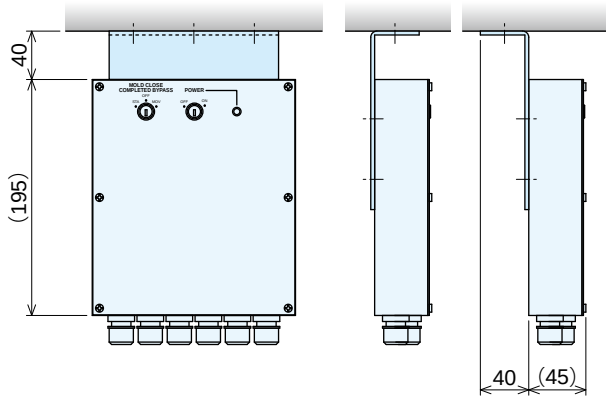
Right Mounted



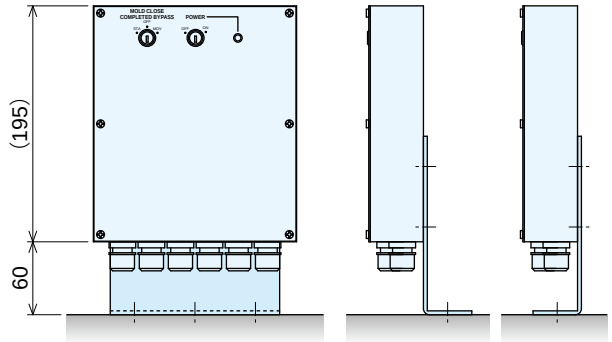
MONTING INSTRUCTIONS : CONTROL UNIT

※For detailed dimensions of the Control Unit, please refer to page 14.

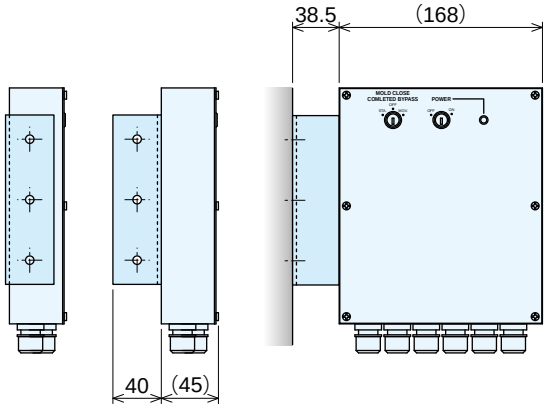
Top Mounted



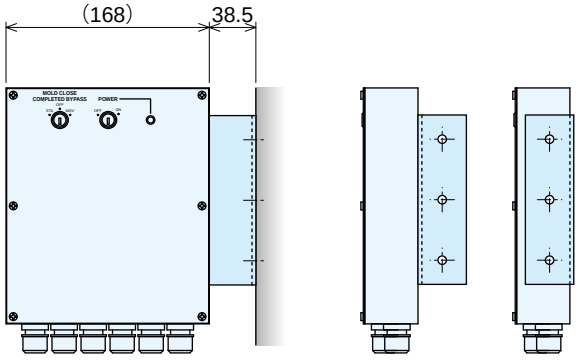
Bottom Mounted



Left Mounted



Right Mounted



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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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