KOGANEI

VALVES GENERAL CATALOG

SOLENOID VALVES
H200 SERIES
INDEX

Features — 159
Basic Models and Configuration — 159
Specifications — 161
Solenoid Valve Order Codes — 163
Manifold Order Codes — 164
Operating Principles and Symbols — 165
Dimensions of Solenoid Valve — 166
Dimensions of Manifold — 167
Dimensions of Options — 170
Sub-base Regulator — 171
Handling Instructions and Precautions — 172

⚠ Caution Before use, be sure to read the “Safety Precautions” on p. 31.

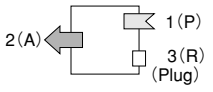
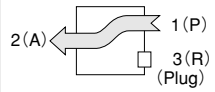
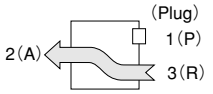
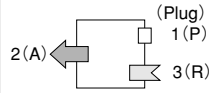
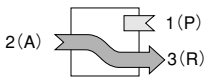
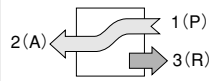
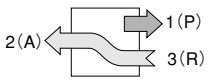
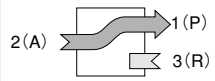
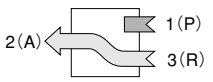
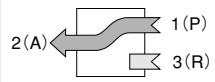
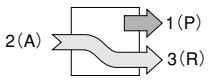
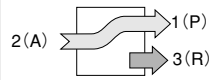
The standard for square and direct acting types

Solenoid Valves H200 Series

Offers reliable control of φ32 [1.260in.]～φ80 [3.150in.] bore size air cylinders. Standard direct acting solenoid valve offers a refined inner construction and versatility with excellent reliability and durability, responding with ease of use and flexibility to its "reliable operation" feature.

- The sealing method uses a pressure-balanced poppet for balancing supply pressure at the valve seat portion. Low power consumption translates to optimum performance for high cycle applications, and the valve is compact but large flow.
- An overspring mechanism prevents excessive force from being applied on the seal. It demonstrates excellent durability.
- The single solenoid 2-, 3-, 5-port valves offer assured operations even under low pressure. They demonstrate multiple performance capabilities as a low pressure specification actuator operation, selector valve, or divider valve.
- A flywheel diode is standard equipment for the AC solenoid (optional for the DC24V). Eliminates solenoid burning and humming.
- Responds to diversified needs. Wide selection of options.

2-, 3-port Valves Valve Functions and Connection Port Configurations

		De-energized	Energized
2-port	Normally closed (NC)		
	Normally open (NO)		
3-port	Normally closed (NC)		
	Normally open (NO)		
Selector valve			
Divider valve			

H200 Series Single Unit Basic Models and Configuration

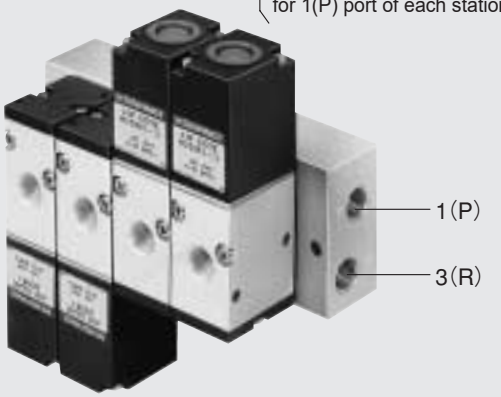
2-, 3-port	5-port				
	2-position		3-position		
	Single solenoid	Double solenoid	Closed center	Exhaust center	Pressure center
					
H200E1	H200-4E1	H200-4E2	H203-4E2	H203-4E2-13	H203-4E2-14

H200 Series Manifold Basic Models and Configuration

Manifold for 2-, 3-port valves

HBM□T — T type (1(P), 3(R)) manifold
HBM□C — C type (1(P), 3(R)) manifold

Made to order.
Built-in check mechanism for 1(P) port of each station.



Manifold for combination mounting of 2-, 3-, 5-port valves

HBM□F — F type (1(P), 3(R2), 5(R1)) manifold

Manifold for combination mounting of 2-, 3-, 5-port valves

HBM□U — U type (1(P)) manifold

HBM□L — L type (1(P)) manifold

Manifold for 5-port valves only

HBM□A — A type (all port) manifold

SOLENOID VALVES
H200 SERIES

Basic Models and Functions

Item \ Basic model	Direct piping, T, C, F, U, L type manifolds	H200E1 (HM200E1[Note])	H200-4E1	H200-4E2	H203-4E2
	A type manifold	——	HA200-4E1	HA200-4E2	HA203-4E2
Number of positions		2 positions			3 positions
Number of ports		2, 3 ports	5 ports		
Valve function		Normally closed (NC) or Normally open (NO)	Single solenoid	Double solenoid	Closed center (standard), exhaust center or pressure center (option)

Remark: For optional specifications and order codes, see p.163～164.
Note: H**M200E1** is a dedicated valve for the manifold. For details, see “About HM200E1” on p.163.

Specifications

Item \ Basic model	Direct piping, T, C, F, U, L type manifolds	H200E1 (HM200E1)	H200-4E1	H200-4E2	H203-4E2
	A type manifold	——	HA200-4E1	HA200-4E2	HA203-4E2
Media		Air			
Operation type		Direct acting type			
Effective area〔Cv〕 mm²		8.5〔0.47〕	7.5〔0.42〕		6.5〔0.36〕
Port size		NPT1/4			
Lubrication		Not required			
Operating pressure range MPa{kgf/cm²} [psi.]		0～0.9 {0～9.2} [0～131]		0.15～0.7 {1.5～7.1} [22～102]	0～0.7 {0～7.1} [0～102]
Proof pressure MPa{kgf/cm²} [psi.]		1.35 {13.8} [196]		1.05 {10.7} [152]	
Response time[Note] ms ON/OFF	DC24V	20/20 or below		20 or below	20/20 or below
	AC100V, AC200V	20/20 or below		20 or below	20/20 or below
Maximum operating frequency Hz		5			
Minimum time to energize for self holding ms		—		50	—
Operating temperature range (atmosphere and media) ℃[℉]		0～50 [32～122]			
Shock resistance m/s² {G}	Lateral direction	980.7 {100.0}			
	Axial direction	588.4 {60.0}	392.3 {40.0}	294.2 {30.0}	588.4 {60.0}
Mounting direction		Any			

Note: Values when air pressure is 0.5MPa {5.1 kgf/cm²} [73psi.]. Values for □200-4E2 are switching time from the opposite-side position, and for □203-4E2 are switching time from the neutral valve position.

Solenoid Specifications

Item \ Rated voltage[Note5]		DC24V	AC100V		AC200V	
Type		DC type	Flywheel diode type			
Operating voltage range V		21.6～26.4 (24±10%)	90～110 (100±10%)		180～220 (200±10%)	
Current[Note 1] (when rated voltage is applied)	Frequency Hz	—	50	60	50	60
	Energizing[Note 2] mA(r.m.s)	420 (10.1W) 〔432 (10.4W)〕	160 〔170〕	150 〔160〕	70 〔72〕	65 〔68〕
Maximum allowable leakage current mA		30	15		7	
Insulation resistance MΩ		10				
Wiring type and lead wire length	Standard	Grommet type: 300mm [11.8in.]				
	Optional	With DIN connector				
Color of lead wire		Red 〔Red (+), Blue (−)〕[Note 1] Red (+), Black (−)[Note 3]	Yellow, Black		White, Black	
Color of LED indicator (optional)		Red	Yellow		Green	
Surge suppression	Standard	——	Flywheel diode[Note 4]			
	Optional	Flywheel diode	——			

Notes: 1. Figures and descriptions in brackets 〔 〕 are for solenoids with LED indicators.
2. Since the AC types have built-in flywheel diodes, the starting current value and energizing current value are virtually the same.
3. For solenoids with surge suppression, and solenoids with surge suppression and LED indicators.
4. Since the AC types have built-in flywheel diodes, they are sometimes not turned on by the solid-state relay (SSR) with zero-cross function. For this reason, use it only after confirming the solid-state relay’s ratings and precautions.
5. DC12V and AC120V coils are also available as standard options.

Manifold Port Size

Manifold model	Port	Location of piping port	Port size
HBM□T HBM□C	1(P)	Manifold	NPT 1/4
	2(A)	Valve	
	3(R)	Manifold	
HBM□F	1(P)	Manifold	NPT 1/4
	4(A), 2(B)	Valve	
	3(R2), 5(R1)	Manifold	
HBM□U	1(P)	Manifold	NPT 1/4
	4(A), 2(B)	Valve	
	3(R2), 5(R1)	Valve	
HBM□L	1(P)	Manifold	NPT 1/4
	4(A), 2(B)	Valve	
	3(R2), 5(R1)	Valve	
HBM□A	1(P)	Manifold	NPT 1/4
	4(A), 2(B)		
	3(R2), 5(R1)		

Solenoid Valve Mass

g [oz.]

Basic model	Mass
H200E1	300 [10.58]
HM200E1	300 [10.58] Note
H200-4E1	330 [11.64]
H200-4E2	520 [18.34]
H203-4E2	500 [17.64]
HA200-4E1	330 [11.64]
HA200-4E2	520 [18.34]
HA203-4E2	525 [18.52]

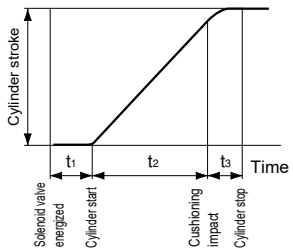
Note: Sub-plate not included. For sub-plate mass, see p.167.

Manifold Mass

g [oz.]

Manifold model	Mass calculation of each unit (n=number of units)	Block-off plate
HBM□T	(138×n)+125 [(4.87×n)+4.41]	30 [1.06]
HBM□C	(138×n)+125 [(4.87×n)+4.41]	30 [1.06]
HBM□F	(163×n)+175 [(5.75×n)+6.17]	42 [1.48]
HBM□U	(50×n)+200 [(1.76×n)+7.05]	15 [0.53]
HBM□L	(50×n)+200 [(1.76×n)+7.05]	15 [0.53]
HBM□A	(145×n)+150 [(5.11×n)+5.29]	42 [1.48]

Cylinder Operating Speed

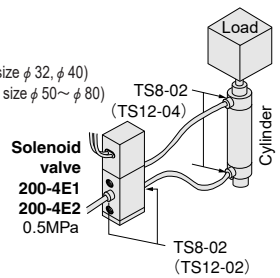


To obtain the time required for the cylinder to complete 1 stroke, add the cylinder's delay time t_1 (time between energizing of the solenoid valve and actual starting of the cylinder), to the cylinder's max. operating speed time t_2.
When a cushion is used, add the cushioning time t_3, to the above calculations. The standard cushioning time t_3 is approximately 0.2 seconds.

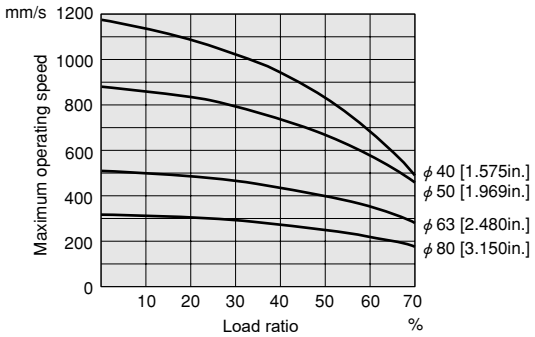
H200-4E1, H200-4E2

Measurement conditions

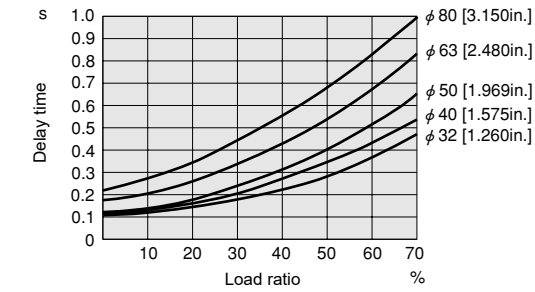
- Air pressure: 0.5MPa {5.1kgf/cm²} [73psi.]
- Piping inner diameter and length: ϕ6×600mm (Bore size ϕ32, ϕ40)
  ϕ8×1000mm (Bore size ϕ50～ϕ80)
- Fitting: Quick fitting TS8-02(TS12-02, TS12-04)
- Load ratio = $\frac{\text{Load}}{\text{Cylinder theoretical thrust}}$ (%)
- Cylinder stroke: 300mm [11.8in.]



Maximum operating speed



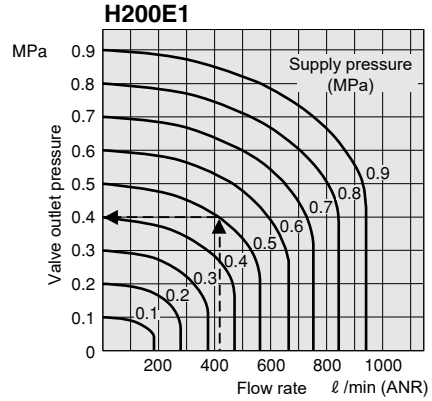
Delay time



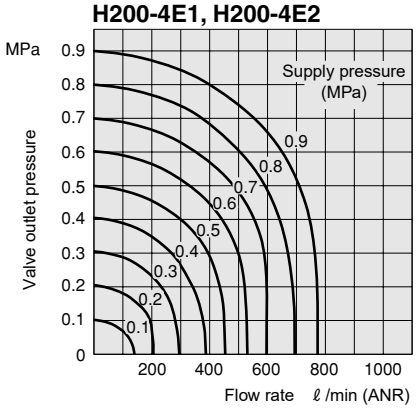
1mm/s = 0.0394in./sec.

Flow Rate

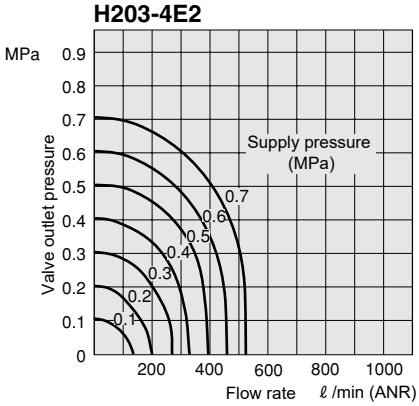
H200E1



H200-4E1, H200-4E2



H203-4E2

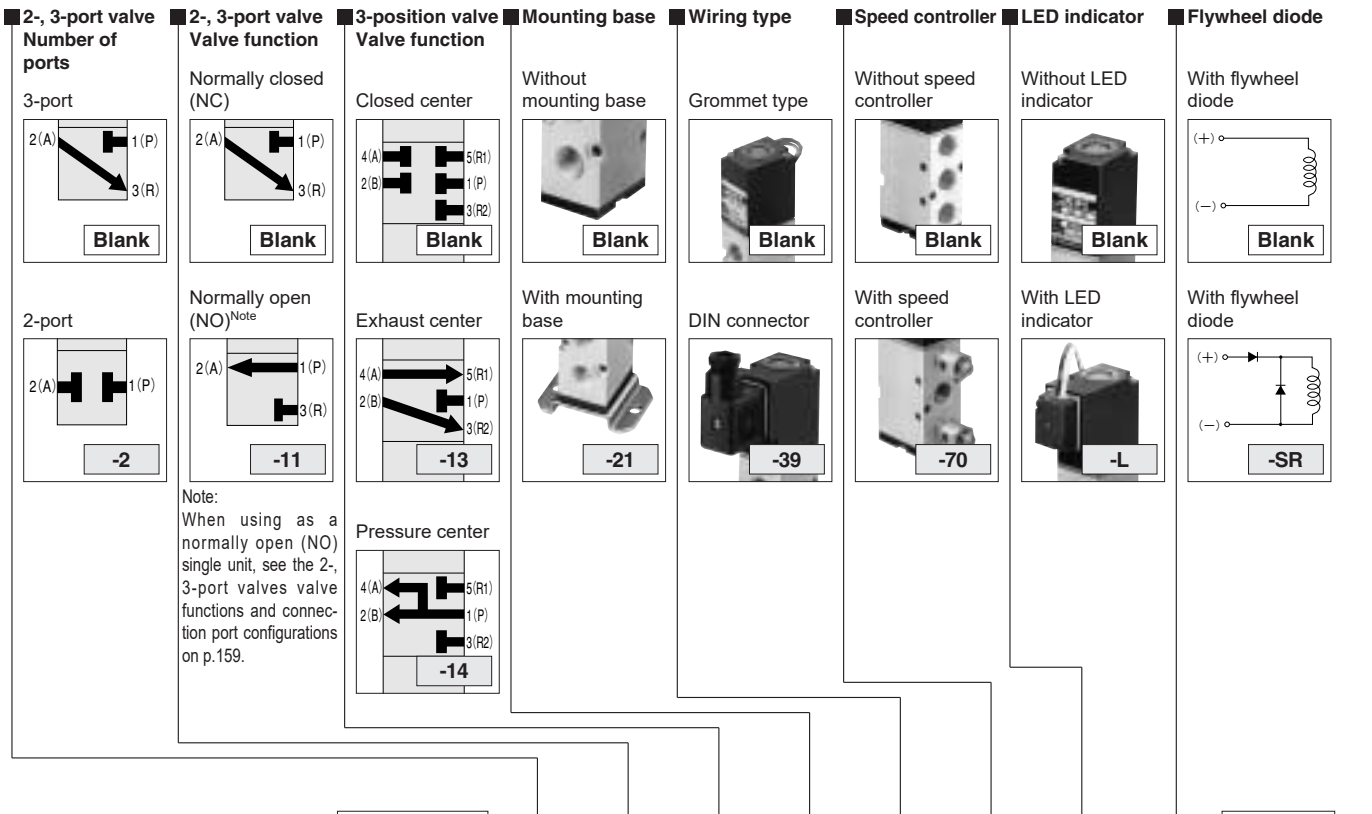


How to read the graph

When the supply pressure is 0.5MPa [73psi.] and flow rate is 415 ℓ/min [14.6ft³/min.] (ANR), the valve outlet pressure becomes 0.4 MPa [58psi.].

1MPa = 145psi., 1 ℓ/min = 0.0353ft³/min.

H200 Series Solenoid Valve Order Codes



		Basic model									Voltage
Direct piping	2-, 3-port single solenoid	H200E1	-2 Note 3	-11 Note 2		-21	-39	-70	-L	-SR	DC12V DC24V AC100V AC120V AC200V
	5-port single solenoid	H200-4E1									
	5-port double solenoid	H200-4E2									
	5-port 3-position	H203-4E2			-13 -14						
For manifold only Note 1	2-, 3-port single solenoid	HM200E1	-2	-11			-39		-L	-SR	DC12V DC24V AC100V AC120V AC200V
	5-port single solenoid	HA200-4E1									
	5-port double solenoid	HA200-4E2									
	5-port 3-position	HA203-4E2			-13 -14						

Notes : 1. Cannot be used as a single unit.
2. For 2-port only. Always enter **H200E1-2-11**. For the 3-port, supplying air through the 3(R) port and exhausting through the 1(P) port makes it possible to use as a normally open (NO) type valve.
3. A plug is included. Always install it in position before use.

● **HM200E1** includes a sub-plate for mounting on the F type manifold, gaskets, and mounting screws.

● Not available with DIN connector

● For DC12V & DC24V only. For AC100V, AC120V & AC200V equipped as standard.

Manifold Models and Applicable Valves Basic Models

Valve specification / Manifold model	2-, 3-port	5-port		
	Single solenoid	Single solenoid	Double solenoid	3-position
HBM□T	H200E1 HM200E1-11	——		
HBM□C Note				
HBM□F	HM200E1 HM200E1-11	H200-4E1	H200-4E2	H203-4E2
HBM□U	H200E1 HM200E1-11	H200-4E1	H200-4E2	H203-4E2
HBM□L				
HBM□A	——	HA200-4E1	HA200-4E2	HA203-4E2

Note: **HBM□C** is made to order.

● About HM200E1

HM200E1 is a dedicated valve for the manifold. Differences with **H200E1** are as shown in the table below.

Model	Point of difference	Remarks
HM200E1	With sub-plate Note	For F type manifold only
HM200E1-11	With sub-plate Note Port location	For T, C, F, U, L type manifolds

Note: The sub-plate is only used for mounting on F type manifolds. For details, see p.167.

H200 Series Manifold Order Codes

Sub-base regulator
- Without sub-base regulator — Blank
- With sub-base regulator — -52, -54

2-, 3-port valve Number of ports
- 3-port — Blank
- 2-port — -2

2-, 3-port valve Valve function
- Normally closed (NC) — Blank
- Normally open (NO) — -11

3-position valve Valve function
- Closed center — Blank
- Exhaust center — -13
- Pressure center — -14

Wiring type
- Grommet type — Blank
- DIN connector — -39

Speed controller
- Without speed controller — Blank
- With speed controller — -70

LED indicator
- Without LED indicator — Blank
- LED indicator — -L

Flywheel diode
- Without flywheel diode — Blank
- With flywheel diode — -SR

Manifold model Number of units		Station		Basic model						Voltage
HBM	2 ⋮ 10	T C	stn.□ ⋮ stn.□	H200E1	-2		-39	-L	-SR	DC12V DC24V AC100V AC120V AC200V
				HM200E1 Note		-11				
		F	stn.□ ⋮ stn.□	HM200E1 Note	-2	-11	-39	-L	-SR	DC12V DC24V AC100V AC120V AC200V
				H200-4E1						
				H200-4E2						
				H203-4E2		-13 -14				
		U L	stn.□ ⋮ stn.□	H200E1	-2		-39	-L	-SR	DC12V DC24V AC100V AC120V AC200V
				HM200E1 Note		-11				
				H200-4E1						
				H200-4E2						
				H203-4E2		-13 -14				
		A	stn.□ ⋮ stn.□	HA200-4E1	-52 -54		-39	-L	-SR	DC12V DC24V AC100V AC120V AC200V
				HA200-4E2						
				HA203-4E2		-13 -14				

- **HBM□C** is made to order.
- Valve mounting location from the left-hand side when facing the 4(A), 2(B) ports.
- Specify the valve type for each station.
- Enter **-BP** when closing a station with a block-off plate without mounting a valve.
- For details, see p.171.
- For DC12V & DC24V only. For AC100V, AC120V & AC200V equipped as standard.
- Not available with DIN connector

Note: **-HM200E1** should be used in the normally open (optional code: **-11**) type only.

Options

Mounting base — -21
- For direct piping
- Not available with double solenoid

DIN connector — -39
- Cannot be used with **-L**

Speed controller — -70

Built-in LED indicator — -L

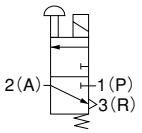
Built-in flywheel diode — -SR
- Only for DC24V

Sub-base regulator — -52, -54
- For **BM□A** manifold only
- **-52**: 1(P) port pressure regulating
  -54: 2(B) port pressure regulating

Block-off plate — -BP

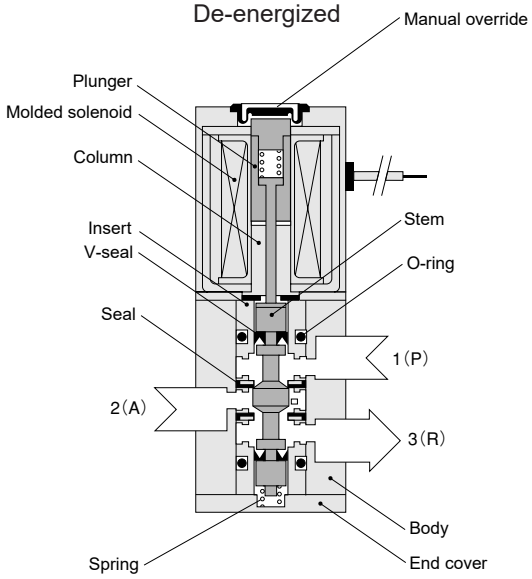
Operating Principles and Symbols

3-port



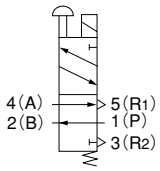
H200E1

De-energized

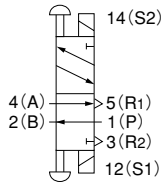


5-port, 2-position

Single solenoid



Double solenoid

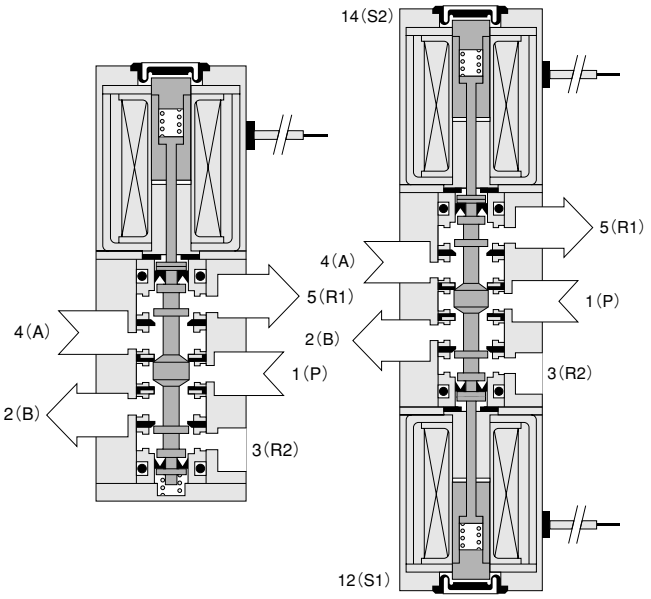


H200-4E1

De-energized

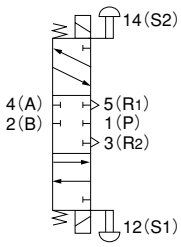
H200-4E2

(De-energized condition after energizing solenoid S1)

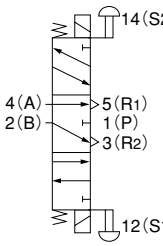


5-port, 3-position

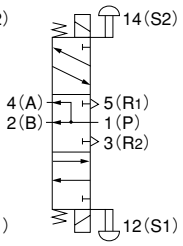
Closed center



Exhaust center

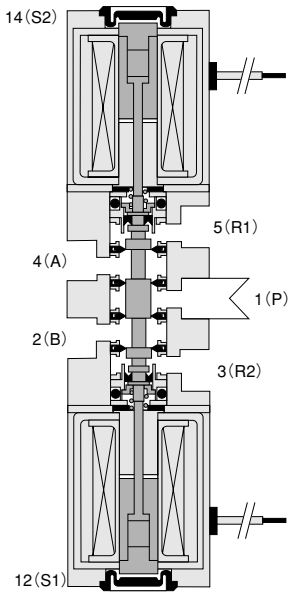


Pressure center



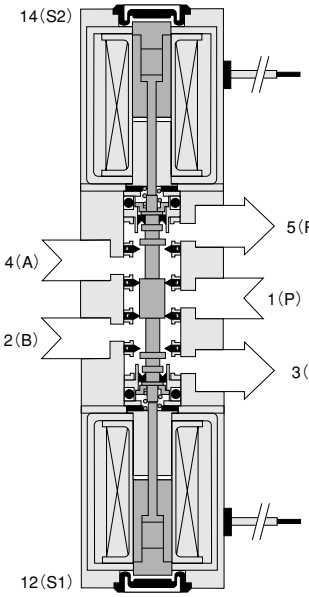
H203-4E2

(Both solenoid 12(S1) and 14(S2) are de-energized)



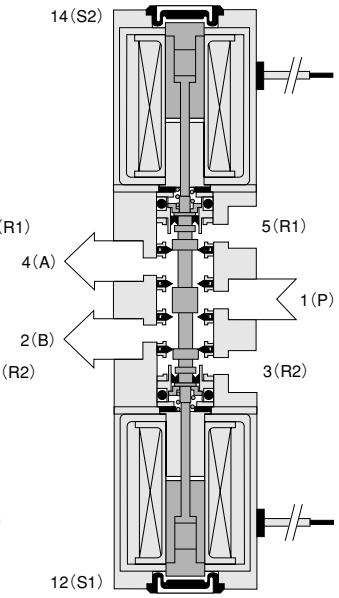
H203-4E2-13

(Both solenoid 12(S1) and 14(S2) are de-energized)



H203-4E2-14

(Both solenoid 12(S1) and 14(S2) are de-energized)



Major Parts and Materials

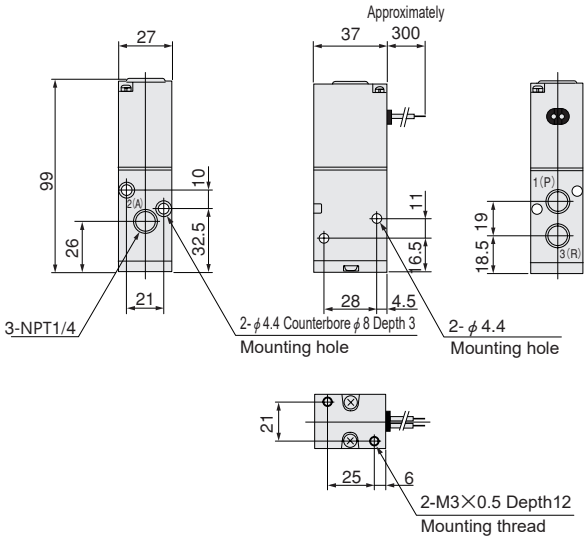
	Parts	Materials
Valve	Body	Aluminum alloy (anodized)
	Stem	
	Seal	Synthetic rubber
	Insert	Aluminum alloy and brass
	Spring	Stainless steel
	Mounting base	Mild steel (zinc plated)
	Plunger	Magnetic stainless steel
	Column	Magnetic steel (zinc plated)
Manifold	Body	Aluminum alloy (anodized)
	Block-off plate	Mild steel (zinc plated)
	Seal	Synthetic rubber
	Mounting bracket	Mild steel (zinc plated)

Remark: Materials that generate copper ions are not used for the non-ion specification.

Dimensions of Solenoid Valve (mm)

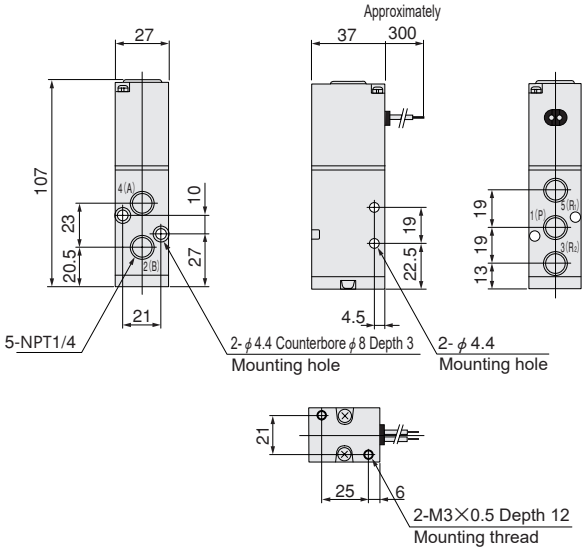
2-, 3-port

H200E1

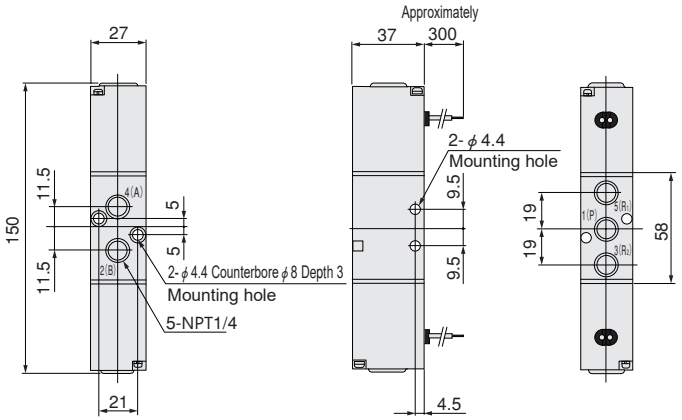


5-port, 2-position

H200-4E1

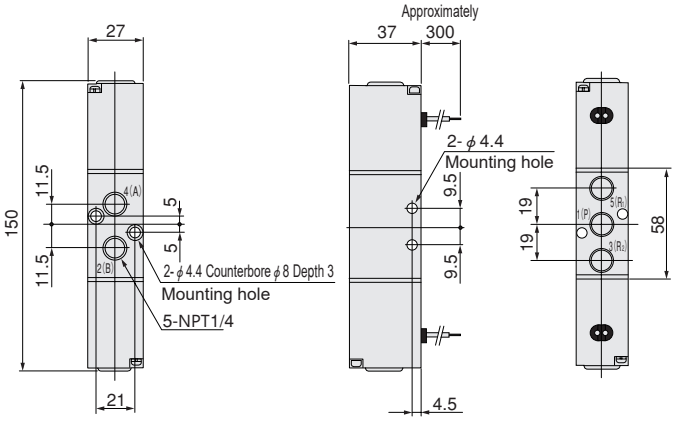


H200-4E2



5-port, 3-position

H203-4E2

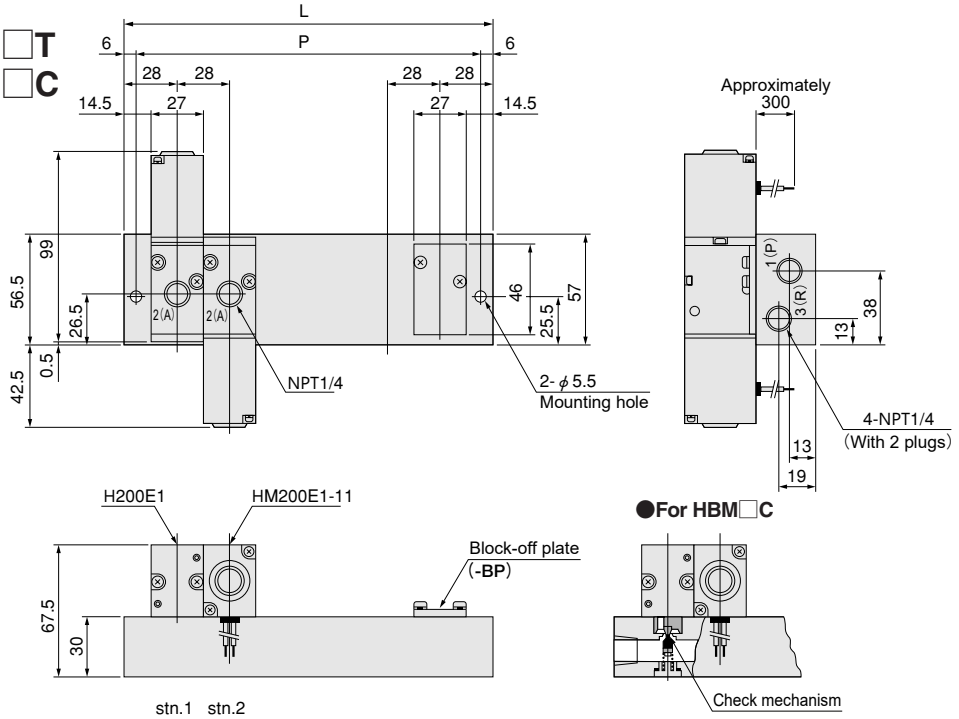


For options, see p.170.

Dimensions of Manifold (mm)

For 2-, 3-port

HBM□T
HBM□C

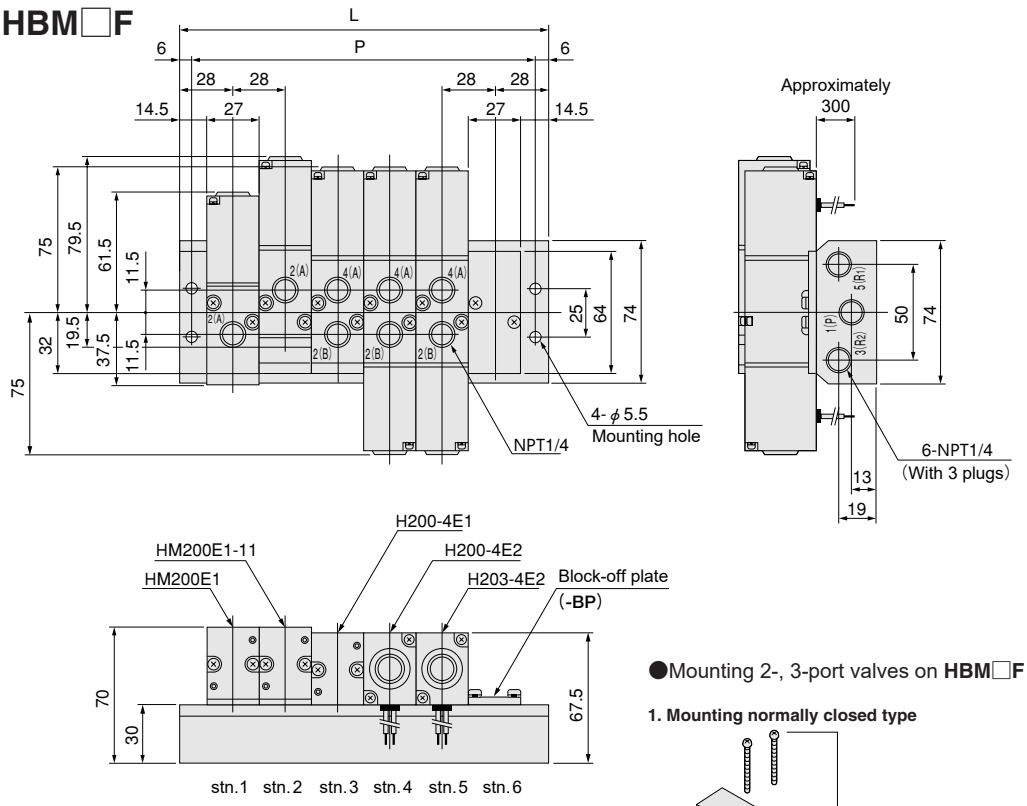


Unit dimensions

Model		L	P
HBM2T	**HBM2C**	84	72
3T	**3C**	112	100
4T	**4C**	140	128
5T	**5C**	168	156
6T	**6C**	196	184
7T	**7C**	224	212
8T	**8C**	252	240
9T	**9C**	280	268
10T	**10C**	308	296

For combination mounting of 2-, 3-, 5-port

HBM□F

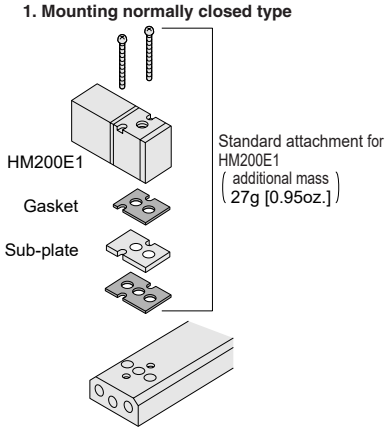


Unit dimensions

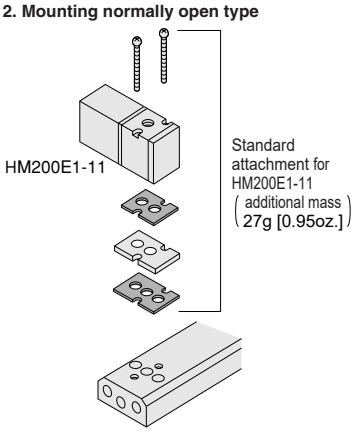
Model	L	P
HBM2F	84	72
3F	112	100
4F	140	128
5F	168	156
6F	196	184
7F	224	212
8F	252	240
9F	280	268
10F	308	296

●Mounting 2-, 3-port valves on **HBM□F**

1. Mounting normally closed type



2. Mounting normally open type

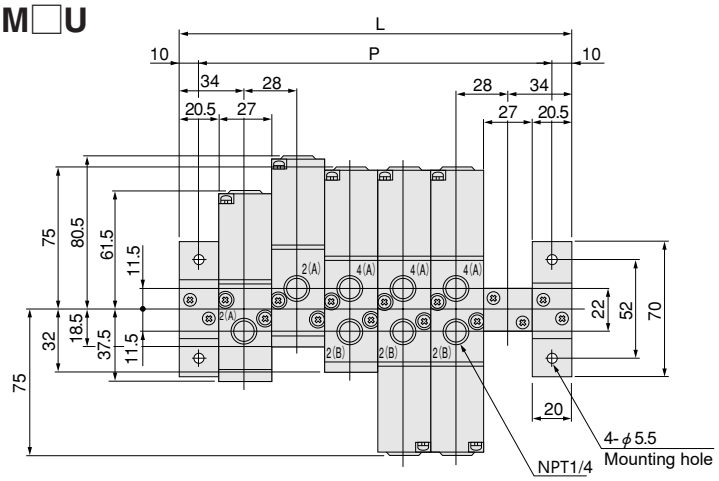


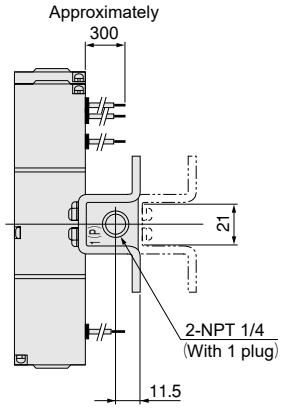
For options, see p.170.

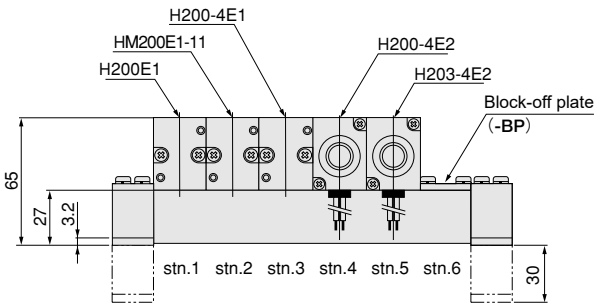
Dimensions of Manifold (mm)

For combination mounting of 2-, 3-, 5-port

HBM□U



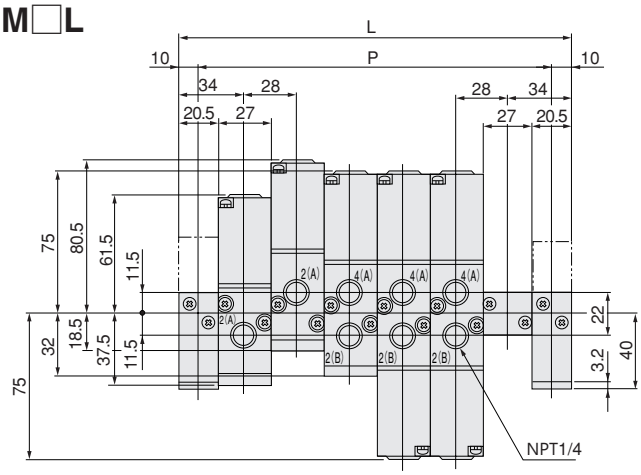


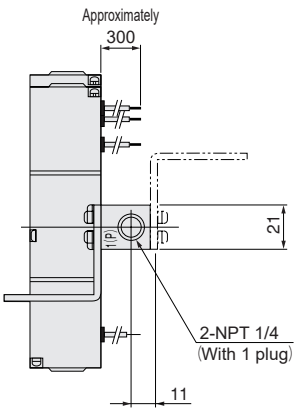


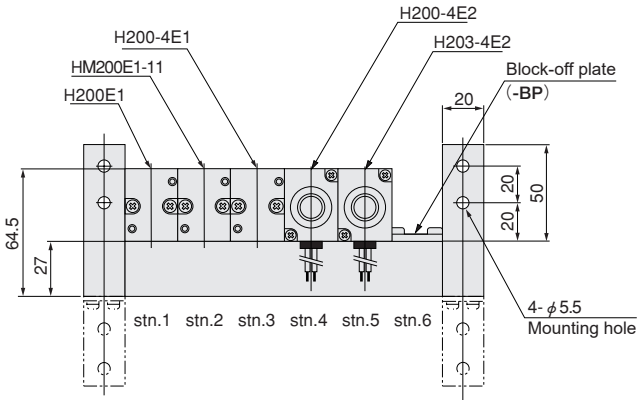
Unit dimensions

Model	L	P
HBM2U	96	76
3U	124	104
4U	152	132
5U	180	160
6U	208	188
7U	236	216
8U	264	244
9U	292	272
10U	320	300

HBM□L







Unit dimensions

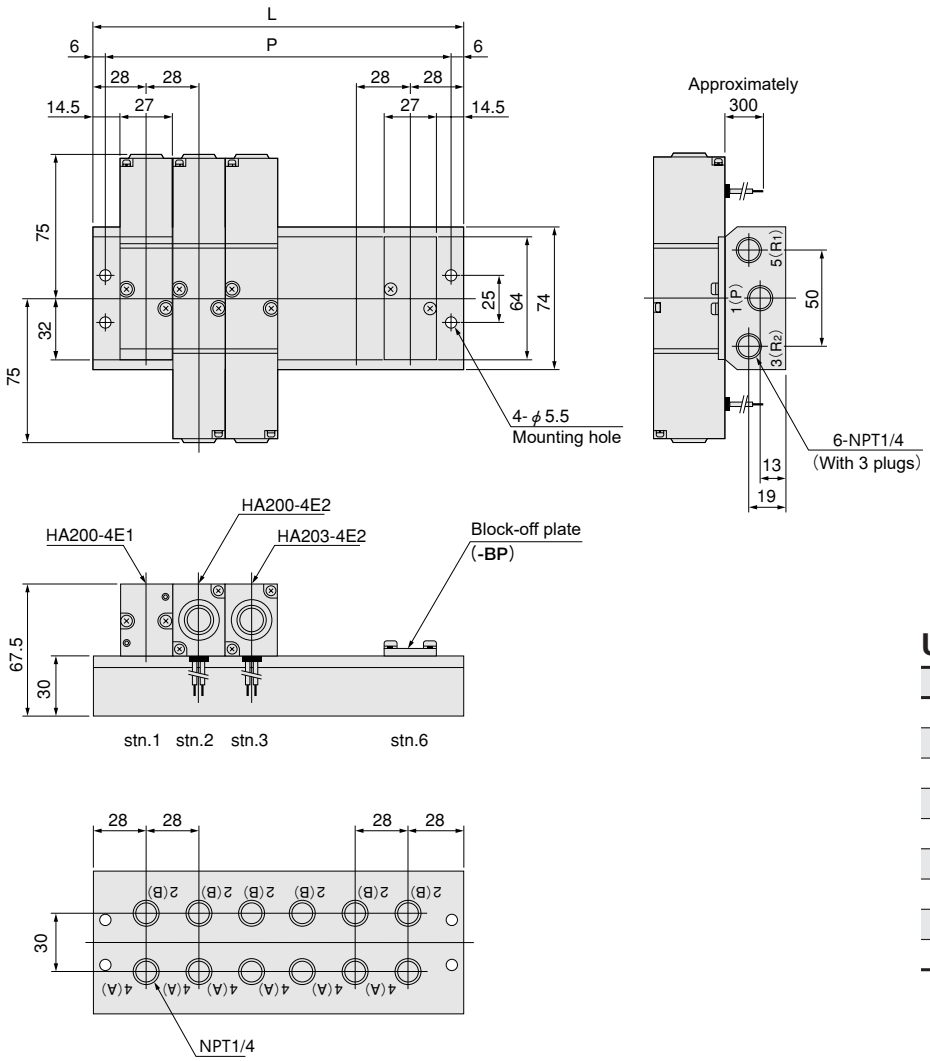
Model	L	P
HBM2L	96	76
3L	124	104
4L	152	132
5L	180	160
6L	208	188
7L	236	216
8L	264	244
9L	292	272
10L	320	300

For options, see p.170.

Dimensions of Manifold (mm)

For 5-port

HBM□A



Unit dimensions

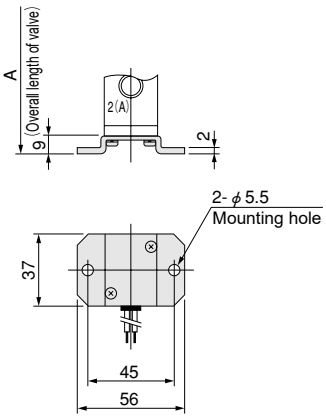
Model	L	P
HBM2A	84	72
3A	112	100
4A	140	128
5A	168	156
6A	196	184
7A	224	212
8A	252	240
9A	280	268
10A	308	296

For options, see p.170.

Dimensions of Options (mm)

For single unit

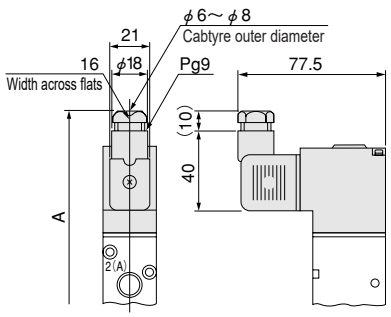
●Mounting base: **-21**



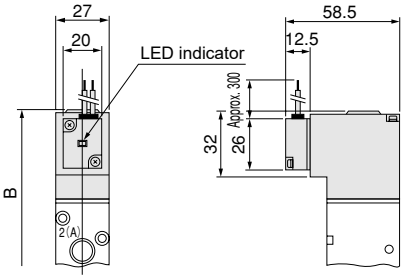
Model \ Code	A
H200E1	108
H200-4E1	116

For single unit and manifold

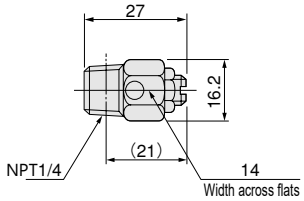
●Solenoid with DIN connector: **-39**



●Solenoid with LED indicator: **-L**



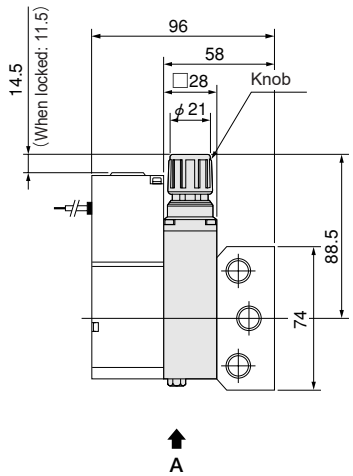
●Speed controller: **-70**
Note: Not available in 2-, 3-port

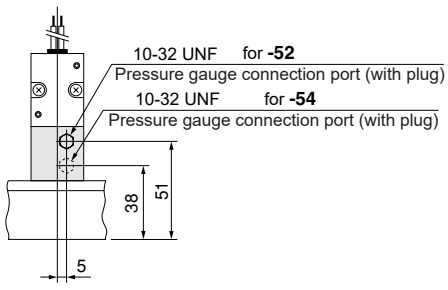


Model \ Code	A	B	Remark
H200E1	117	99	Overall length of valve
H200-4E1	125	107	
H200-4E2	186	150	
H203-4E2			

For manifold

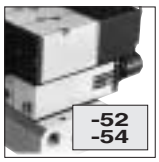
●Sub-base regulator: **-52**
-54





〈Viewed from **A**〉

Note: When mounting the sub-base regulator, the solenoid valve lead wire direction is reversed (solenoid rotated).
For details, see p.171.

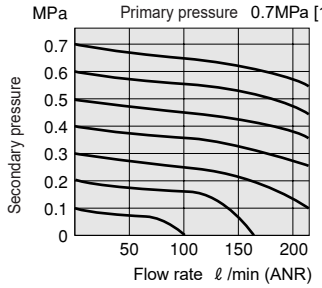


Specifications

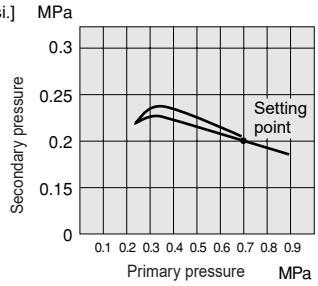
Item \ Order code	-52 (HBMA-52)Note	-54 (HBMA-54)Note
Functions	1(P) port pressure regulating type	2(B) port pressure regulating type
Media	Air	
Operating pressure range MPa {kgf/cm²} [psi.]	0.05～0.7 {0.5～7.1} [7～102]	
Maximum operating pressure MPa {kgf/cm²} [psi.]	0.9 {9.2} [131]	
Proof pressure MPa {kgf/cm²} [psi.]	1.35 {13.8} [196]	
Operating temperature range °C [°F]	5～60 [41～140]	
Mass g [oz.]	200 [7.05]	

Note: Order codes in parentheses ( ) are those for the sub-base regulator which must be ordered separately.

Flow Rate Characteristics



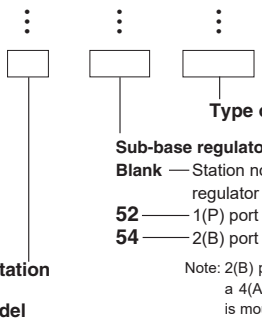
Pressure Characteristics



1MPa = 145psi., 1 ℓ /min = 0.0353ft³/min.

Order Code

HBM□A stn. □ — □ — □



Type of mounting valve

Sub-base regulator
Blank — Station not mounting a sub-base regulator
52 — 1(P) port pressure regulating type
54 — 2(B) port pressure regulating typeNote

Station

Manifold model

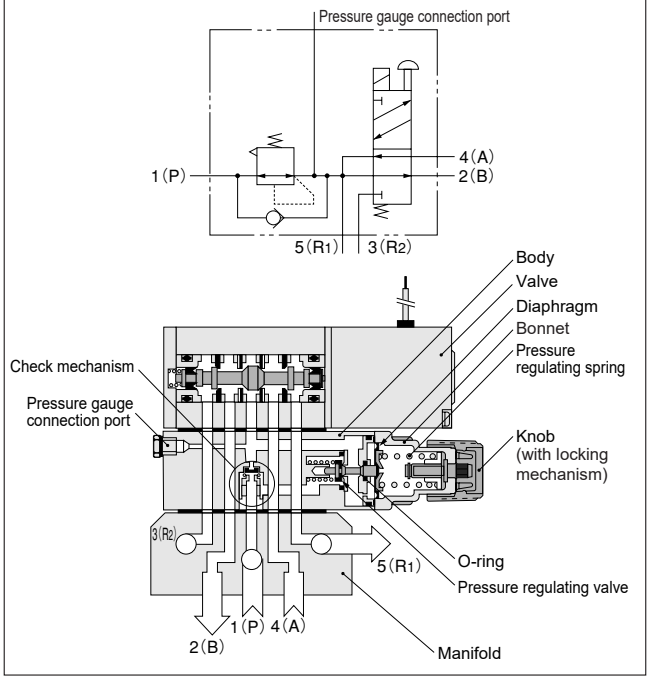
Note: 2(B) port pressure regulating type also has a 4(A) port pressure regulating type which is mounted so that the knob is on the 3(R2) port side of the manifold (Order code: **-54A**).

●For sub-base regulator only

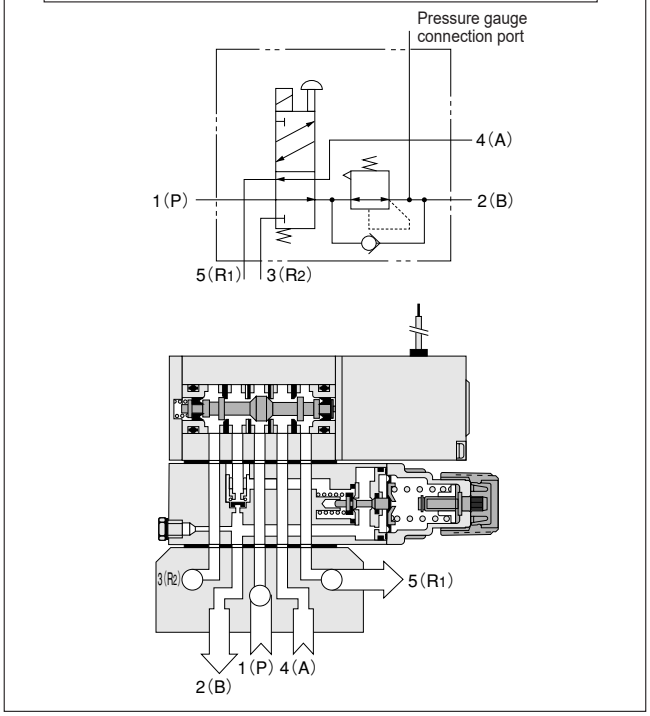
HBMA-52 — 1(P) port pressure regulating type
HBMA-54 — 2(B) port pressure regulating type

Operating Principles and Symbols

1(P) port pressure regulating type



2(B) port pressure regulating type



Major Parts and Materials

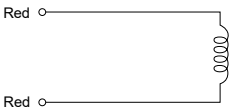
Parts	Materials
Body	Aluminum alloy (anodized)
Knob	Plastic (POM)
Diaphragm	Synthetic rubber (NBR)
Pressure regulating spring	Piano wire (chromating)
Seal	Synthetic rubber (NBR)

Solenoid

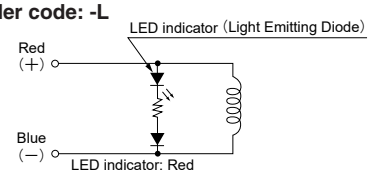
Internal circuit

●DC24V

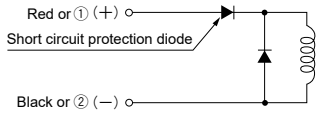
Standard solenoid



Solenoid with LED indicator
Order code: -L

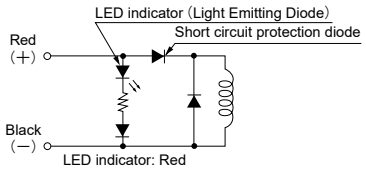


Solenoid (Surge suppression)
Order code: -SR

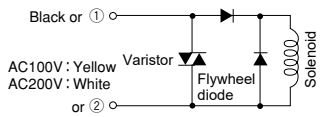


① and ② are for with DIN connector (order code: -39).

Solenoid with LED indicator (Surge suppression)
Order code: -L-SR

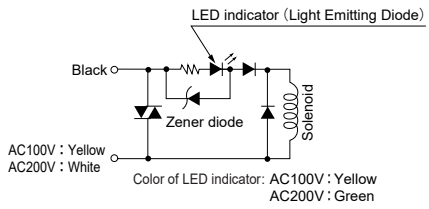


●**AC100V, AC200V (Surge suppression)**
Standard solenoid



① and ② are for with DIN connector (order code: -39).

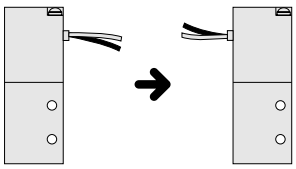
Solenoid with LED indicator
Order code: -L



Cautions:
1. Do not apply megger between the lead wires.
2. The DC solenoid will not short circuit even if the wrong polarity is applied, but the valve will not operate.
3. Leakage current inside the circuit could result in failure of the solenoid valve to return, or in other erratic operation. Always use it within the range of the allowable leakage current. If circuit conditions, etc. cause the leakage current to exceed the maximum allowable leakage current, consult us.
4. For a double solenoid valve, avoid energizing both solenoids simultaneously. The valve could fall into the neutral position.
5. Since the AC solenoid uses diodes for the solenoid, always use lead wires of the same color when connecting a number of solenoid units in parallel. The DC24V standard solenoid, however, has no polarity, so either lead wire connection is acceptable.

Changing lead wire direction

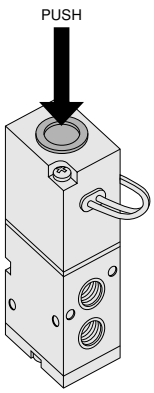
The lead wire direction can be changed in the case of the add-on mounting of a sub-base regulator, etc.
Remove the two solenoid mounting screws, and rotate the solenoid 180 degrees to change the lead wire direction.



Manual override

Non-locking type

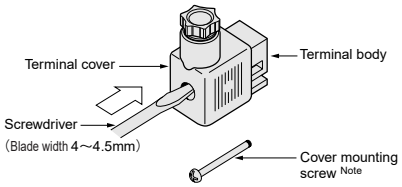
To operate the manual override, press it all the way down. The single solenoid valve works the same as when in the energized state as long as the manual override is pushed down, and returns to the rest position upon release.
For the double solenoid valve, pressing the manual override on the 12(S1) side switches the 12(S1) to the energized state, and the unit remains in that state even after the manual override is released. To return it to the rest position, operate the manual override on the 14(S2) side. This is the same for the solenoid 14(S2).



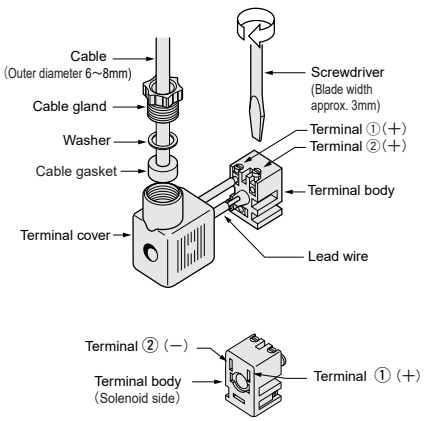
DIN connector

Wiring instructions

Remove the cover mounting screws, and lift the terminal cover off from the solenoid. Use a screwdriver (blade width 4～4.5mm [0.16～0.18in.]), etc. to push strongly against the terminal body through the hole of the terminal cover's mounting screw, and remove the terminal body.
Slip a cable gland, washer, and cable gasket over a cable (outer diameter 6～8mm [0.24～0.31in.]), insert the cable into the terminal cover's wiring port, and connect the lead wire to the terminal body (screwdriver blade width of about 3mm [0.12in.]).



Note: The appropriate tightening torque for the cover mounting screw is 29.4N·cm {3kgf·cm} [2.6in·lbf].



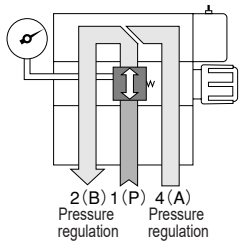
※For the DC24V solenoid with surge suppression, connect (+) to Terminal ①, and (−) to Terminal ②.

Sub-base regulator

Application example

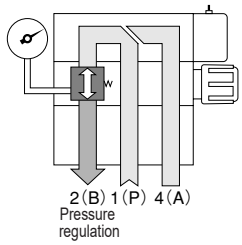
●1(P) port pressure regulating type
Order code: -52

The 4(A) and 2(B) ports are regulated to the same pressure.



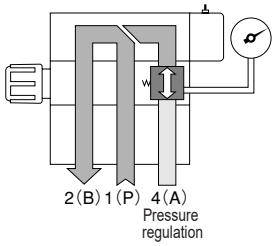
●2(B) port pressure regulating type
Order code: -54

Regulates 2(B) port pressure



●2(B) port pressure regulating type
Order code: -54

While using the 2(B) port pressure regulating type to regulate 4(A) port pressure



When the 2(B) port pressure regulating type (order code: **-54**) is used to regulate 4(A) port pressure, mount the sub-base regulator so that the knob is on the 3(R2) port side of the manifold.

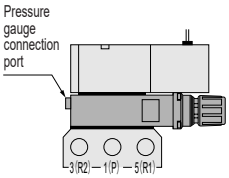
Pressure regulation

1. Connect a pressure gauge to check the pressure setting. A compact pressure gauge (Model G1-20) is recommended.
2. To regulate the pressure, pull the knob out firmly, and turn it to the right (clockwise rotation) to increase the pressure, and to the left (counterclockwise rotation) to reduce the pressure. After pressure regulation, push the knob back into the body and lock in place.

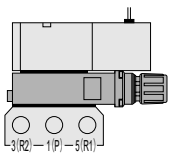
Mounting

The sub-base regulator is mounted between the manifold and the valve. While the sub-base regulator's knob is on the 5(R1) port side of the manifold for the standard type, the knob for the 2(B) port pressure regulating type is mounted so that the handle comes to the 3(R2) port side of the manifold, and can also regulate the pressure of the 4(A) port. For mounting directions and functions, see the Application example.

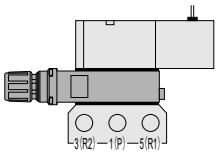
Cautions: 1. Pay attention to the sub-base regulator facing and the front/back sides when newly mounting a sub-base regulator, or when changing the pressure regulating port. In the 1(P) port pressure regulating type: **-52**, the knob is on the 5(R1) side, and the pressure gauge connection port is on the valve side. In the 2(B) port pressure regulating type: **-54**, the knob is on the 5(R1) side for 2(B) port pressure regulation, and on the 3(R2) side for 4(A) port pressure regulation. In both cases, the pressure gauge connection port is on the manifold side.



1(P) port pressure regulating type



2(B) port pressure regulating type
(regulates 2(B) port pressure)



When the 2(B) port pressure regulating type is used to regulate 4(A) port pressure

2. When the solenoid is a grommet type, change the solenoid orientation after confirming the "Changing lead wire direction" on the previous page, to prevent interference between the lead wires and the sub-base regulator.