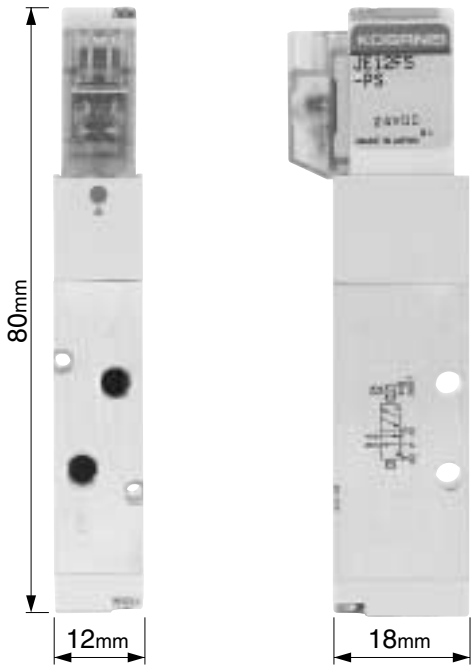
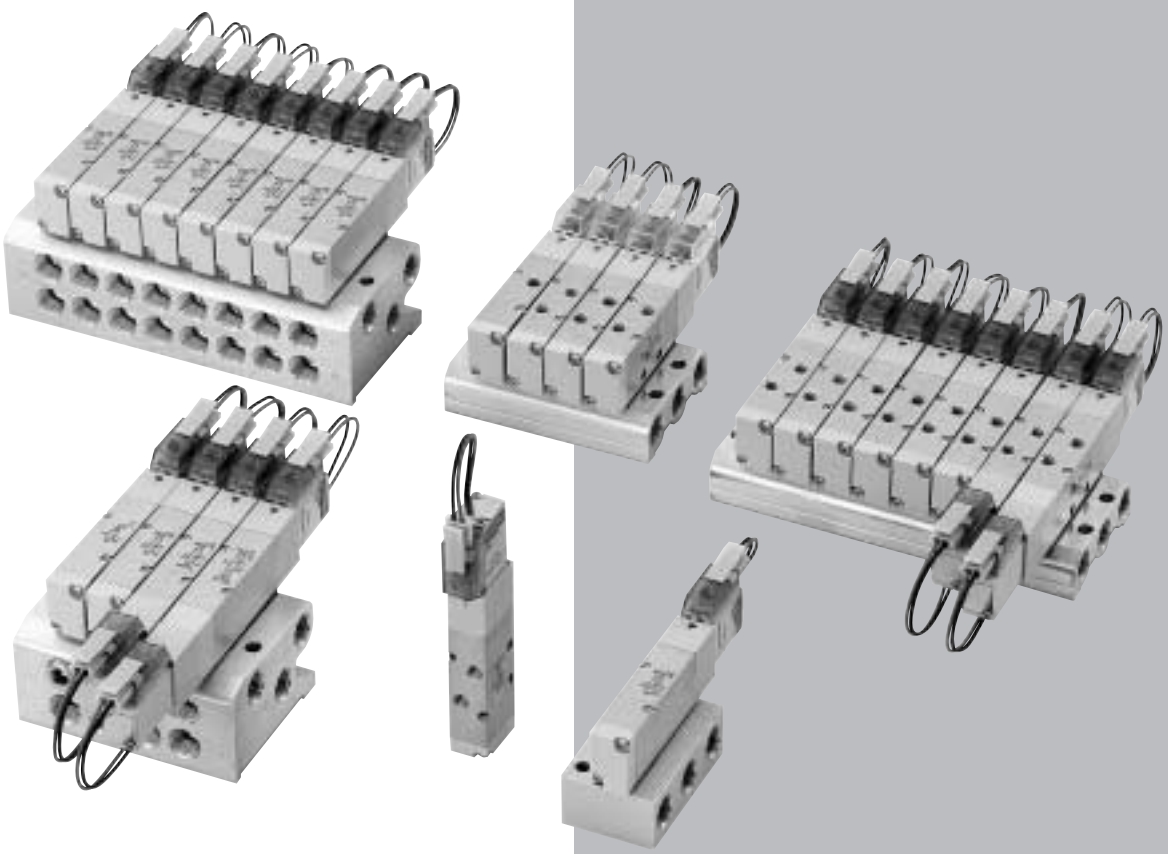
Solenoid Valves HJE Series

(2, 3, 5-port pilot type solenoid valves)



- ***Space Saving—Thin and compact size***
  Valve width: 12mm [0.472in.]
  Valve length: 80mm [3.150in.]
- ***Flow—Large flow rate with a compact body***
  Sonic conductance C: 1.9dm³/(s·bar)
  (Effective area: 9.5mm² 〔Cv: 0.53〕)
  Optimum for operating up to φ80 bore size cylinders.
- ***Response—Quick response***
  Response time: When ON, 6ms or below
  When OFF, 10ms or below
  (for quick response type single solenoid)
- ***Power—Lower power consumption***
  Standard type: 0.55W, Low current type: 0.15W
- ***Safety—Configured to prevent erroneous operations***
  Lever type manual override with erroneous operation prevention mechanism improves safety.



HJE SERIES SPECIFICATIONS

Specifications

Basic Models and Functions

Basic model / Item					
For direct piping, F type manifolds	**HJE12□F1**[Note] **HJE12□F2**[Note] **HJE12□F3**[Note] **HJE12□F4**[Note]	**HJE12□F5**	**HJE12□F6**	**HJE12□F7 HJE12□F8 HJE12□F9**
For base piping, A type manifolds	**HJE12□A1**[Note] **HJE12□A2**[Note] **HJE12□A3**[Note] **HJE12□A4**[Note]	**HJE12□A5**	**HJE12□A6**	**HJE12□A7 HJE12□A8 HJE12□A9**
Number of positions	2 positions			3 positions
Number of ports	2, 3 ports	5 ports		
Valve function	Single solenoid NC, NO	Single solenoid	Double solenoid	Closed center, Exhaust center, Pressure center

Remark: For the optional specifications and order codes, see p.253.
Note: Valves with valve specifications **F1**, **F2**, **F3**, **F4**, **A1**, **A2**, **A3**, and **A4** are for mounting on manifolds only, and cannot be used as single valve units.

Specifications

Basic model / Item					
For direct piping, F type manifolds		**HJE12□F1 HJE12□F2 HJE12□F3 HJE12□F4**	**HJE12□F5**	**HJE12□F6**	**HJE12□F7 HJE12□F8 HJE12□F9**
For base piping, A type manifolds		**HJE12□A1 HJE12□A2 HJE12□A3 HJE12□A4**	**HJE12□A5**	**HJE12□A6**	**HJE12□A7 HJE12□A8 HJE12□A9**
Media		Air			
Operation type		Internal pilot type			
Flow rate characteristics[Note 1] Sonic conductance C dm³/(s・bar)		Base piping (A type): 1.9			
Port size[Note 2]		Direct piping (F type): 10-32 UNF, Base piping (A type): NPT1/8			
Lubrication		Not required			
Operating pressure range	MPa {kgf/cm²}[psi.]	0.2～0.7 {2～7.1} [29～102]			
Proof pressure	MPa {kgf/cm²}[psi.]	1.05 {10.7} [152]			
Response time[Note 3] ON/OFF	ms Standard type	12/28 or below		20 or below	12/30 or below
	ms Low current type (L)	12/60 or below		20 or below	12/60 or below
	ms Quick response type (S)	6/10 or below		8 or below	6/10 or below
Maximum operating frequency	Hz Standard type	5			
	Hz Low current type (L)	2			
	Hz Quick response type (S)	10			
Minimum time to energize for self holding[Note 4]	ms	—		50	—
Operating temperature range (atmosphere and media)	°C [°F]	5～50 [41～122]			
Shock resistance	m/s² {G}	1373.0 {140} (Axial direction 294.2 {30})		1373.0 {140} (Axial direction 245.0 {25})	
Mounting direction		Any			

Notes: 1. For details, see the flow rate characteristics on p.250.
2. For details, see the port size on p.251.
3. Values when air pressure is 0.5MPa [73psi.]. The values for the 3-position valves are the switching time from the neutral position.
4. For double solenoid valve.

Solenoid Specifications

Item / Rated voltage			DC12V (Standard type)	DC24V (Standard type)	DC24V (Low current type)	DC24V (Quick response type)
Operating voltage range		V	10.8～13.2 (12±10%)	21.6～26.4 (24±10%)	21.6～26.4 (24±10%)	21.6～26.4 (24±10%)
Standard type	Current (when rated voltage is applied)	mA (r.m.s)	46	23	—	—
	Power consumption	W	0.55	0.55	—	—
Low current type Quick response type	Current (when rated voltage is applied)	Starting mA	—	—	23	125
		Holding mA	—	—	6.3	46
	Power consumption	Starting W	—	—	0.55	3
		Holding W	—	—	0.15	1.1
	Start-up time (standard time)	ms	—	—	200 or below	30 or below
Allowable leakage current		mA	2	1	0.5	4
Insulation resistance		MΩ	Over 100 (value at DC500V megger)			
Color of LED indicator			Red			
Surge suppression (as standard)			Flywheel diode			

Flow Rate Characteristics

The test method for flow rate characteristics conforms to JIS B 8390:2000 (test method for pneumatic equipment — equipment for compressible fluids — flow rate characteristics).

●When used as a single unit (with fittings)

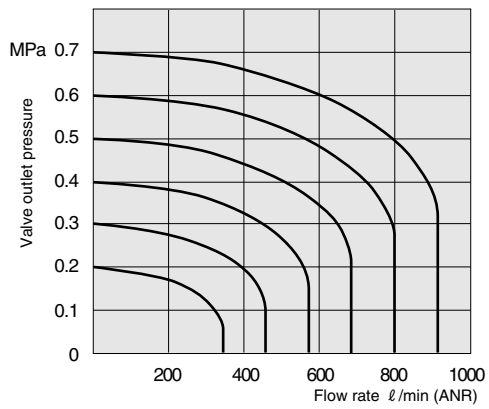
Basic model		Flow path	Sonic conductance C dm³/(s·bar)	Critical pressure ratio b	Effective area S Note 5 mm² 〔Cv〕
Direct piping Note 1	HJE12□F5 HJE12□F6	1 (P) →4 (A)	0.81	0.55	4.05〔0.225〕
		1 (P) →2 (B)	0.81	0.54	4.05〔0.225〕
		4 (A) →5 (R1)	0.75	0.44	3.75〔0.208〕
		2 (B) →3 (R2)	0.76	0.43	3.80〔0.211〕
	HJE12□F7 HJE12□F8 HJE12□F9	1 (P) →4 (A)	0.80	0.51	4.00〔0.222〕
		1 (P) →2 (B)	0.80	0.52	4.00〔0.222〕
		4 (A) →5 (R1)	0.71	0.41	3.55〔0.197〕
		2 (B) →3 (R2)	0.72	0.43	3.60〔0.200〕
Base piping Note 2 (with sub-base)	HJE12□A5 HJE12□A6	1 (P) →4 (A)	1.91	0.19	9.55〔0.531〕
		1 (P) →2 (B)	1.93	0.18	9.65〔0.536〕
		4 (A) →5 (R1)	1.90	0.15	9.50〔0.528〕
		2 (B) →3 (R2)	1.90	0.12	9.50〔0.528〕
	HJE12□A7 HJE12□A8 HJE12□A9	1 (P) →4 (A)	1.42	0.20	7.10〔0.394〕
		1 (P) →2 (B)	1.49	0.21	7.45〔0.414〕
		4 (A) →5 (R1)	1.37	0.18	6.85〔0.381〕
		2 (B) →3 (R2)	1.28	0.14	6.40〔0.356〕

●When mounted on a manifold (with fittings)

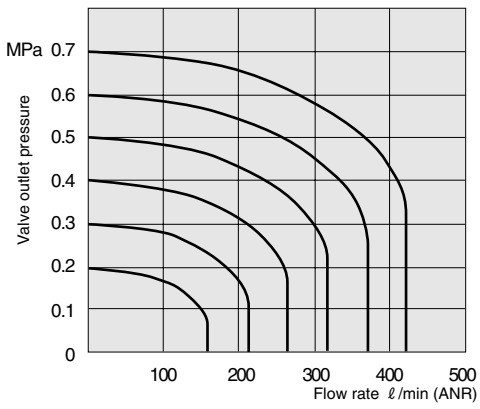
Basic model		Flow path	Sonic conductance C dm³/(s·bar)	Critical pressure ratio b	Effective area S Note 5 mm² 〔Cv〕
F type manifold Note 3 (direct piping type)	HJE12□F1 HJE12□F2 HJE12□F3 HJE12□F4 HJE12□F5 HJE12□F6	1 (P) →4 (A)	0.88	0.64	4.40〔0.244〕
		1 (P) →2 (B)	0.88	0.63	4.40〔0.244〕
		4 (A) →5 (R1)	0.90	0.20	4.50〔0.250〕
		2 (B) →3 (R2)	0.91	0.20	4.55〔0.253〕
	HJE12□F7 HJE12□F8 HJE12□F9	1 (P) →4 (A)	0.84	0.59	4.20〔0.233〕
		1 (P) →2 (B)	0.85	0.59	4.25〔0.236〕
		4 (A) →5 (R1)	0.85	0.20	4.25〔0.236〕
		2 (B) →3 (R2)	0.85	0.21	4.25〔0.236〕
A type manifold Note 4 (base piping type)	HJE12□A1 HJE12□A2 HJE12□A3 HJE12□A4 HJE12□A5 HJE12□A6	1 (P) →4 (A)	1.62	0.38	8.10〔0.450〕
		1 (P) →2 (B)	1.63	0.38	8.15〔0.453〕
		4 (A) →5 (R1)	1.82	0.10	9.10〔0.506〕
		2 (B) →3 (R2)	1.77	0.18	8.85〔0.492〕
	HJE12□A7 HJE12□A8 HJE12□A9	1 (P) →4 (A)	1.34	0.40	6.70〔0.372〕
		1 (P) →2 (B)	1.37	0.24	6.85〔0.381〕
		4 (A) →5 (R1)	1.34	0.08	6.70〔0.372〕
		2 (B) →3 (R2)	1.26	0.17	6.30〔0.350〕

Notes: 1. Quick fitting TSH6-M5Ms are mounted on connection ports 1(P), 2(B), and 4(A).
2. Quick 8mm fittings are mounted on connection ports 1(P), 2(B), and 4(A).
3. Quick fitting TSH6-M5Ms are mounted on connection ports 2(B) and 4(A).
4. Quick 6mm fittings are mounted on connection ports 2(B) and 4(A).
5. Figures in effective area S are calculated based on sonic conductance C (S=5.0×C).

Base piping type
(Effective area S = 9.5mm² 〔Cv: 0.53〕)



Direct piping type
(Effective area S = 4.4mm² 〔Cv: 0.25〕)



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

•Graphs use flow rate calculations based on the discharge method.
•Use the flow rate as a guide.

Port Size

Port specification \ Port		2(B), 4(A)	1(P)	3, 5(R)
Single unit	Direct piping	10-32 UNF	10-32 UNF	10-32 UNF
	Base piping (with sub-base)	NPT1/8	NPT1/8	NPT1/8
Manifold	F type	10-32 UNF	NPT1/8	NPT1/8
	A type	NPT1/8	NPT1/8	NPT1/8

Mass

Single Valve Unit Mass

g [oz.]

Basic model	Mass	Additional mass		
		-21 (with bottom mounting base)	**-22** (with side mounting base)	**-25** (with sub-base)
HJE12□F1	39 [1.38]	—	—	—
HJE12□F2				
HJE12□F3				
HJE12□F4				
HJE12□F5	36 [1.27]	6 [0.21]	5 [0.18]	
HJE12□F6	52 [1.83]	—		
HJE12□F7	55 [1.94]			
HJE12□F8				
HJE12□F9				
HJE12□A1	39 [1.38]	—	—	—
HJE12□A2				
HJE12□A3				
HJE12□A4				
HJE12□A5	36 [1.27]	—	—	48 [1.69]
HJE12□A6	52 [1.83]			
HJE12□A7	55 [1.94]			
HJE12□A8				
HJE12□A9				

Manifold Mass

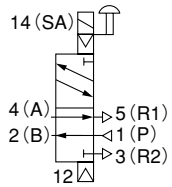
g [oz.]

Basic model	Mass calculation of each unit (n = number of units)	Block-off plate	With DIN rail mounting bracket
HJEM□F	(13×n)+17 [(0.46×n)+0.60]	7 [0.25]	—
HJEM□A	(32×n)+59 [(1.13×n)+2.08]		15 [0.53]

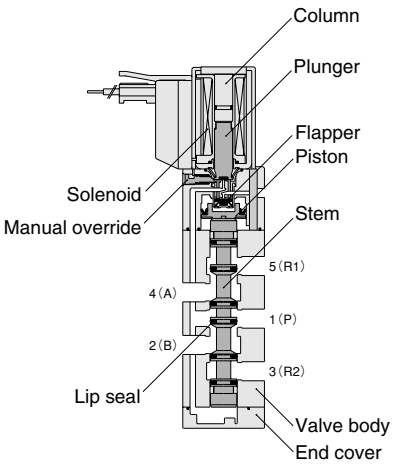
Calculation example: **HJEM8A**
stn.1～8 HJE12A5-PS-D4
(32×8)+59+(36×8) = 603g [21.27oz.]

5-port, 2-position

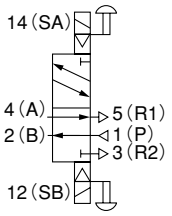
Single solenoid



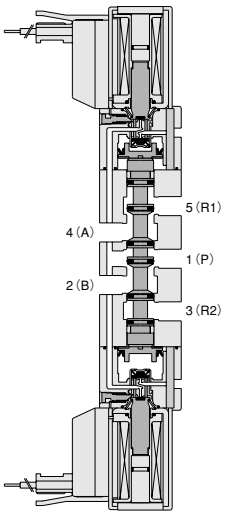
HJE12F5
De-energized



Double solenoid



HJE12F6
〔De-energized condition after energizing solenoid 12 (SB)〕



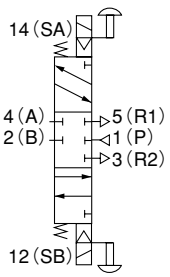
Major Parts and Materials

Parts		Materials
Valve	Body	Aluminum alloy (anodized)
	Stem	
	Lip seal	Synthetic rubber
	Flapper	
	Mounting base	Mild steel (nickel plated)
	Sub-base	Aluminum alloy (anodized)
	Plunger	Magnetic stainless steel
	Column	
	End cover	Plastic
Manifold	Body	Aluminum alloy (anodized)
	Block-off plate	Mild steel (nickel plated)
	Seal	Synthetic rubber

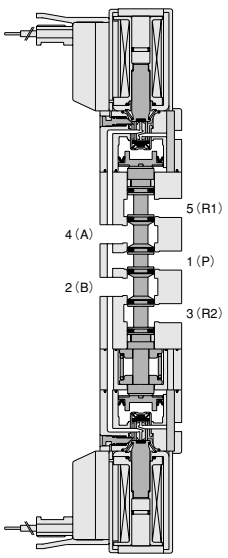
5-port, 3-position

〔Both 14 (SA) and 12 (SB) are de-energized〕

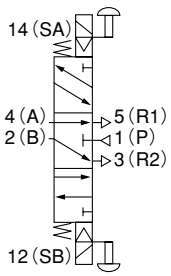
Closed center



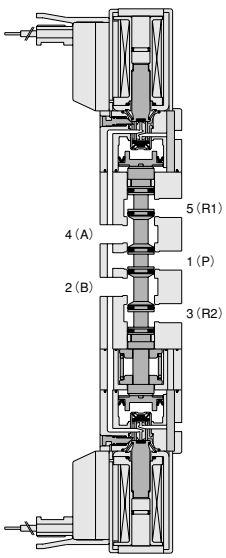
HJE12F7



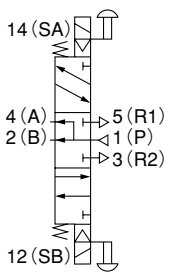
Exhaust center



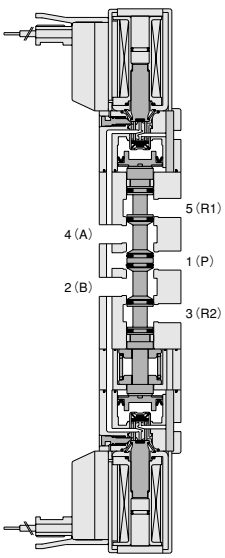
HJE12F8



Pressure center



HJE12F9



HJE Series Single Valve Unit Order Codes

Valve specification

F1, **A1**: 2-port normally closed (NC)Note1

F2, **A2**: 2-port normally open (NO)Note1

F3, **A3**: 3-port normally closed (NC)Note1

F4, **A4**: 3-port normally open (NO)Note1

F5, **A5**: 5-port 2-position, single solenoid

F6, **A6**: 5-port 2-position, double solenoid

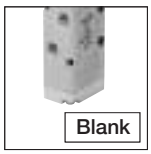
F7, **A7**: 3-position, closed center

F8, **A8**: 3-position, exhaust center

F9, **A9**: 3-position, pressure center

Mounting base

Without mounting base



With mounting base (for bottom mounting)

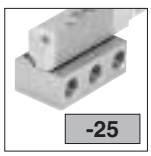
With mounting base (for side mounting)

Mounting base for side mounting is supplied with a valve.

Sub-base

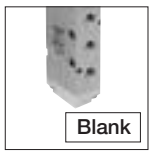
Without sub-base

With sub-base

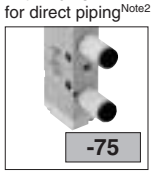


Muffler

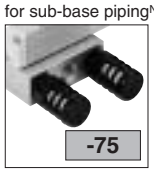
Without muffler



With muffler for direct pipingNote2



With muffler for sub-base pipingNote3

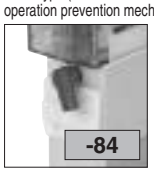


Manual override

Non-locking type

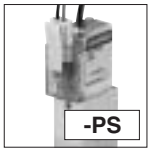
Locking typeNote4

Lever type (with erroneous operation prevention mechanism)



Wiring specification

S type plug connector Lead wire 300mm



L type plug connector Lead wire 300mm

S type plug connector Lead wire 1000mm

L type plug connector Lead wire 1000mm

S type plug connector Lead wire 3000mm

L type plug connector Lead wire 3000mm

S type plug connector Without connector ass'y

L type plug connector Without connector ass'y

Grommet typeNote5 Lead wire 300mm (moisture proof specification)

300mm = [11.8in.]
1000mm = [39in.]
3000mm = [118in.]

Model

HJE12
Standard type

HJE12L
Low current type

HJE12S
Quick response type

Voltage

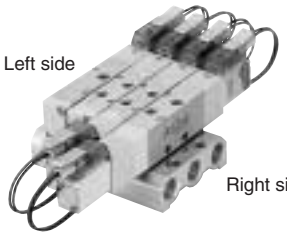
-D4
DC24V

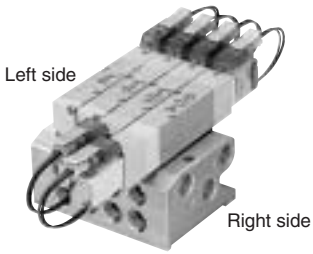
-D5
DC12VNote6

	Model	Valve specification	Mounting base	Sub-base	Muffler	Manual override	Wiring specification	Voltage
Direct piping	HJE12 HJE12L HJE12S	F1Note1 F2Note1 F3Note1 F4Note1				Blank -81Note4 -84	-PS -PS1 -PS3 -PSN -PL -PL1 -PL3 -PLN -GLNote 5	-D4 -D5Note6
		F5	Blank -21 -22		Blank -75Note2			
		F6 F7 F8 F9	Blank -22					
Base piping	HJE12 HJE12L HJE12S	A1Note1 A2Note1 A3Note1 A4Note1				Blank -81Note4 -84	-PS -PS1 -PS3 -PSN -PL -PL1 -PL3 -PLN -GLNote5	-D4 -D5Note6
		A5 A6 A7 A8 A9		Blank -25	Blank -75Note3			

Notes: 1. Valves with valve specifications **F1**, **F2**, **F3**, **F4**, **A1**, **A2**, **A3**, and **A4** are for mounting on manifolds only, and cannot be used as single valve units.
2. The muffler thread for direct piping is 10-32 UNF and the muffler cannot be used for sub-base piping.
3. When ordering the sub-base piping with muffler, always enter both **-25** (sub-base) and **-75** (muffler). The muffler thread for sub-base piping is NPT1/8 and the muffler cannot be used for direct piping.
4. The locking-type manual override is not available in the quick response type **HJE12S**.
5. The grommet type is not available in the low current type **HJE12L** and quick response type **HJE12S**.
6. The DC12V specification is not available in the low current type **HJE12L** and quick response type **HJE12S**.

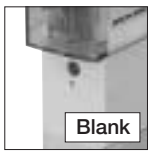
HJE Series Manifold Order Codes



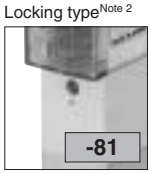


Manual override

Non-locking type



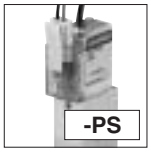
Locking type[Note 2]



Lever type (with erroneous operation prevention mechanism)

Wiring specification

S type plug connector Lead wire 300mm



L type plug connector Lead wire 300mm

S type plug connector Lead wire 1000mm

L type plug connector Lead wire 1000mm

S type plug connector Lead wire 3000mm

L type plug connector Lead wire 3000mm

S type plug connector Without connector ass'y

L type plug connector Without connector ass'y

Grommet type[Note 3]
Lead wire 300mm
(moisture proof specification)

300mm = [11.8in.]
1000mm = [39in.]
3000mm = [118in.]

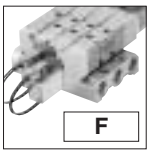
Voltage

-D4
DC24V

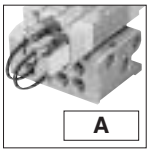
-D5
DC12V[Note4]

Manifold specification

F type (direct piping type)

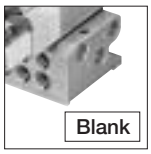


A type (base piping type)



Mounting type

Direct mounting



With DIN rail mounting bracket
(A type manifold only)

Mounting bracket is supplied with a manifold.

Valve specification

F1, **A1**: 2-port normally closed (NC)
F2, **A2**: 2-port normally open (NO)
F3, **A3**: 3-port normally closed (NC)
F4, **A4**: 3-port normally open (NO)
F5, **A5**: 5-port 2-position, single sol.
F6, **A6**: 5-port 2-position, double sol.
F7, **A7**: 3-position, closed center
F8, **A8**: 3-position, exhaust center
F9, **A9**: 3-position, pressure center

Model

HJE12
Standard type

HJE12L
Low current type

HJE12S
Quick response type

Model	Number of units	Manifold specification	Mounting type	Station	Model	Valve specification	Manual override	Wiring specification	Voltage
Manifold model				Mounting valve model					
F type manifold (direct piping type)	HJEM	2 • • • 20	F	stn.1 • • • stn.□ Note1	HJE12 HJE12L HJE12S	F1 F2 F3 F4 F5 F6 F7 F8 F9	Blank -81[Note2] -84	-PS -PS1 -PS3 -PSN -PL -PL1 -PL3 -PLN -GL[Note3]	-D4 -D5[Note4]
					HJEBP (for block-off plate)				
A type manifold (base piping type)			Blank -DN	stn.1 • • • stn.□ Note1	HJE12 HJE12L HJE12S	A1 A2 A3 A4 A5 A6 A7 A8 A9	Blank -81[Note2] -84	-PS -PS1 -PS3 -PSN -PL -PL1 -PL3 -PLN -GL[Note3]	-D4 -D5[Note4]
					HJEBP (for block-off plate)				

Notes: 1. The valve mounting location is from the left side of the manifold.
2. The locking-type manual override is not available in the quick response type **HJE12S**.
3. The grommet type is not available in the low current type **HJE12L** and quick response type **HJE12S**.
4. The DC12V specification is not available in the low current type **HJE12L** and quick response type **HJE12S**.

Block-off plate (block-off plate and 2 mounting screws)

JEBP

Connector-related

EAZ - □

Connector specification

P : Connector, lead wire length 300mm [11.8in.]
P1 : Connector, lead wire length 1000mm [39in.]
P3 : Connector, lead wire length 3000mm [118in.]
PN : Connector, without lead wire (contacts included)

DIN rail mounting bracket (with screws)

JEZ -DN

Common connector assembly

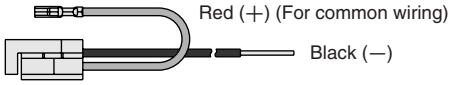
EAZ - □

Connector specification

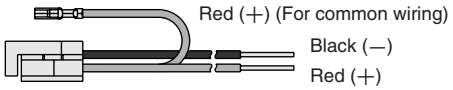
PA : Positive common A type, connector, lead wire length 300mm [11.8in.]
PA1 : Positive common A type, connector, lead wire length 1000mm [39in.]
PA3 : Positive common A type, connector, lead wire length 3000mm [118in.]
PB : Positive common B type, connector, lead wire length 300mm [11.8in.]
PB1 : Positive common B type, connector, lead wire length 1000mm [39in.]
PB3 : Positive common B type, connector, lead wire length 3000mm [118in.]
PC : Positive common C type, connector, lead wire length 300mm [11.8in.]
PC1 : Positive common C type, connector, lead wire length 1000mm [39in.]
PC3 : Positive common C type, connector, lead wire length 3000mm [118in.]
CPN : Positive common, connector, without lead wire (short bar and contacts included)

A type: EAZ-PA□※

B type: EAZ-PB□※

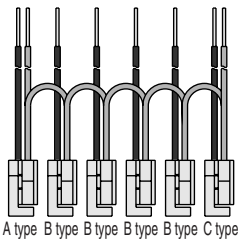


C type: EAZ-PC□※



※Lead wire length **Blank** : 300mm [11.8in.]
1 : 1000mm [39in.]
3 : 3000mm [118in.]

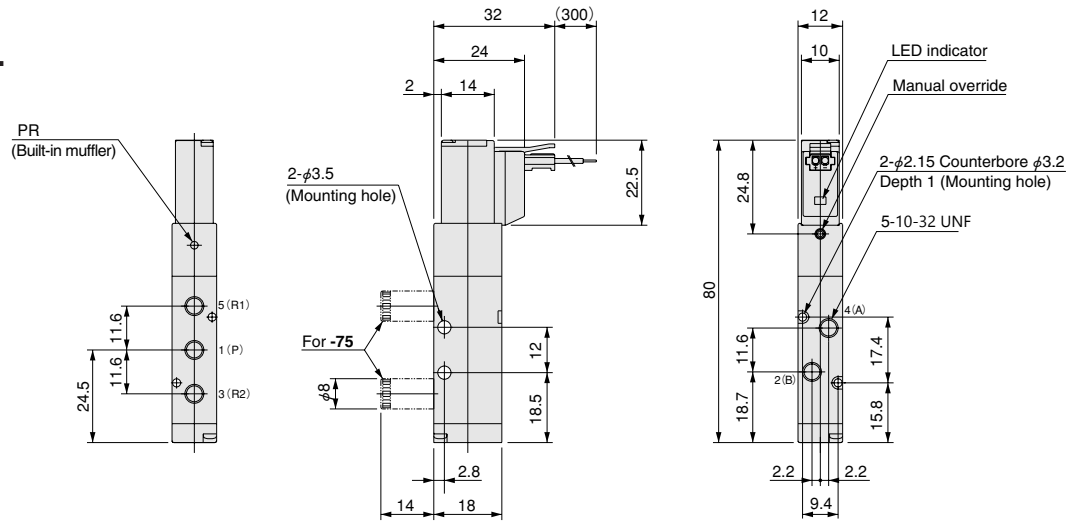
Application example



Dimensions of HJE Series Single Valve Unit (mm)

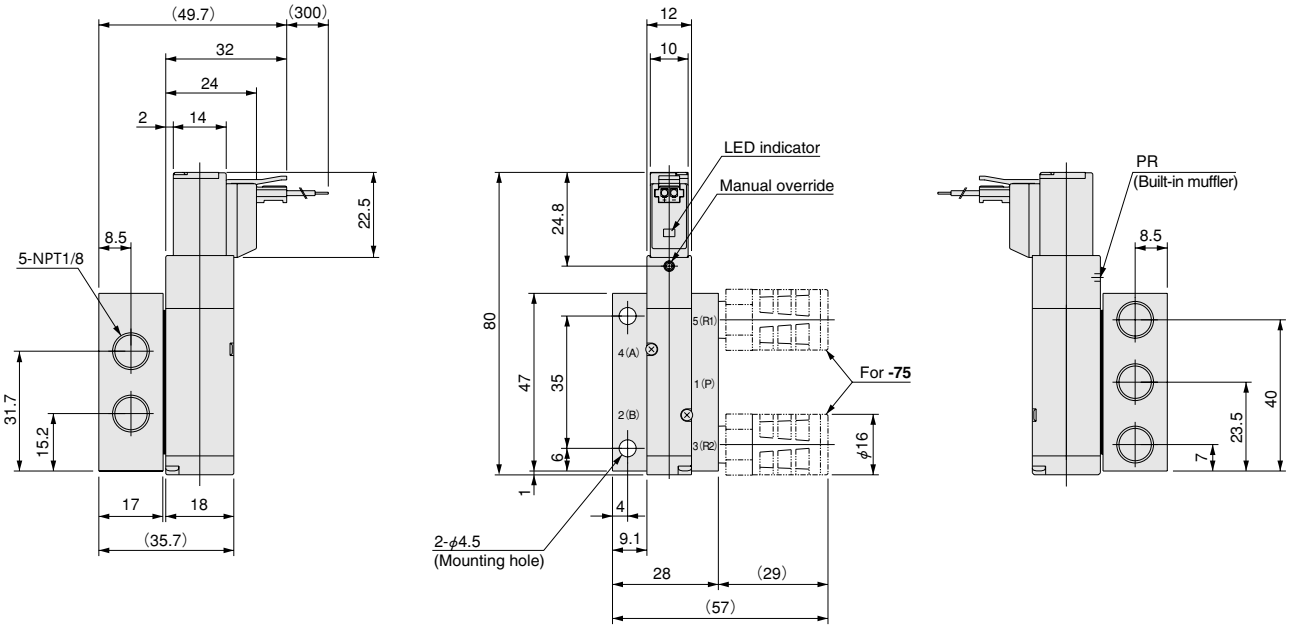
5-port, single solenoid

HJE12□F5-PL



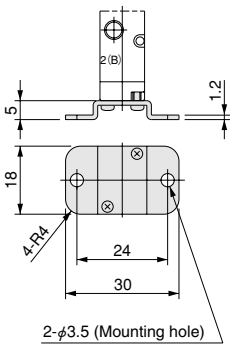
5-port, single solenoid (with sub-base)

HJE12□A5-25-PL

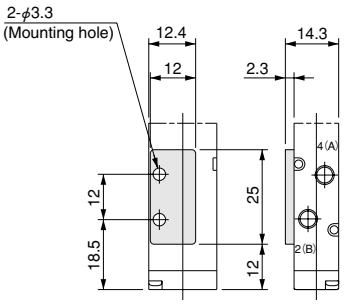


Options

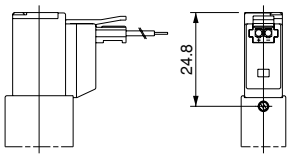
●Mounting base: **-21**



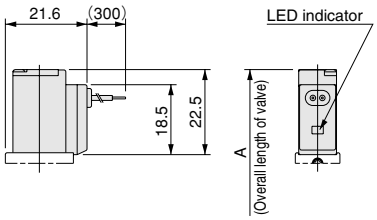
●Mounting base: **-22**
(for side mounting)



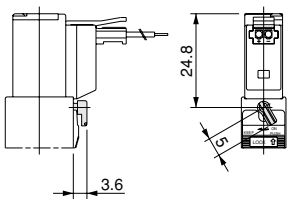
●Locking type manual override: **-81**



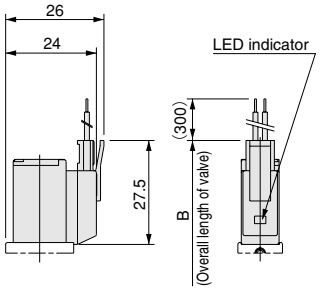
●Grommet: **-GL**



●Lever type manual override: **-84**



●S type plug connector: **-PS**

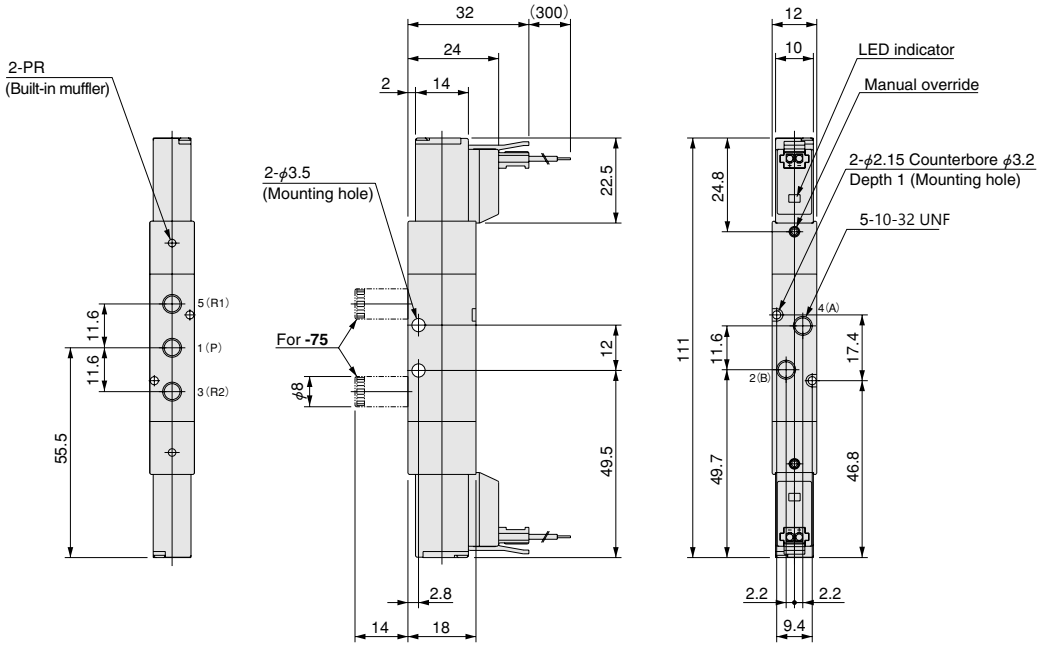


mm

Model / Code	A	B	Remark
HJE12F5, HJE12A5	80	85	Overall length to the end of the valve
HJE12LF5, HJE12LA5, HJE12SF5, HJE12SA5	—	85	

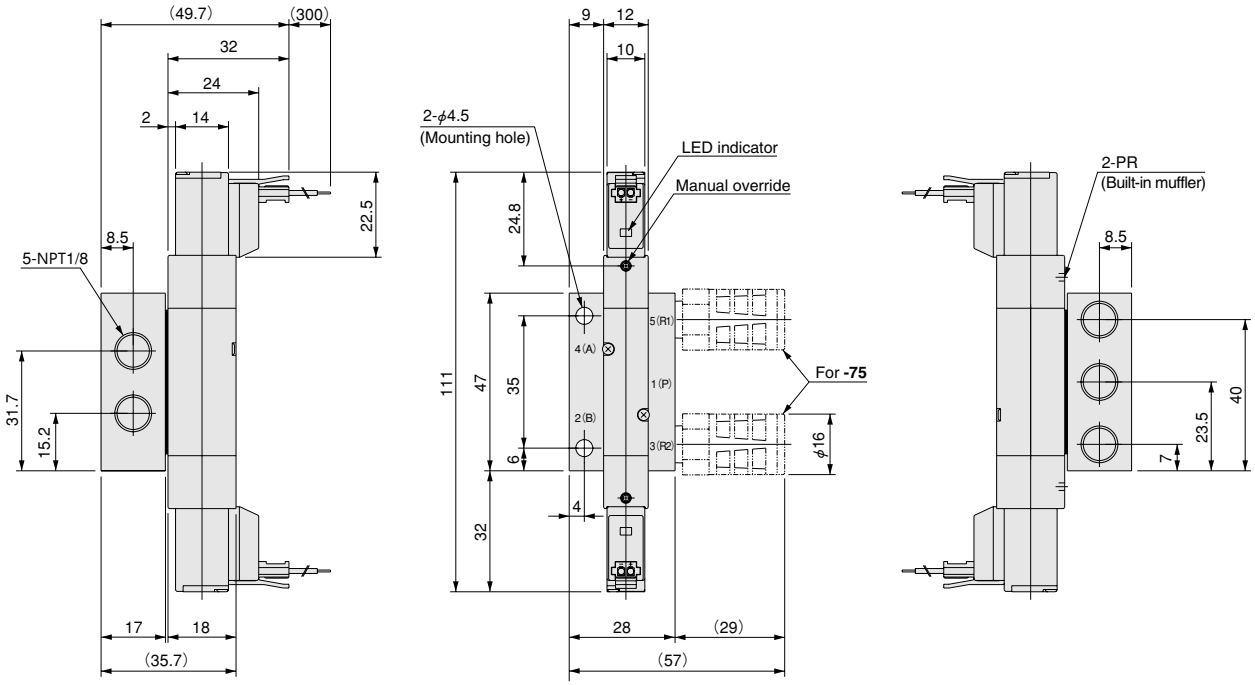
5-port, double solenoid

HJE12□F6-PL



5-port, double solenoid (with sub-base)

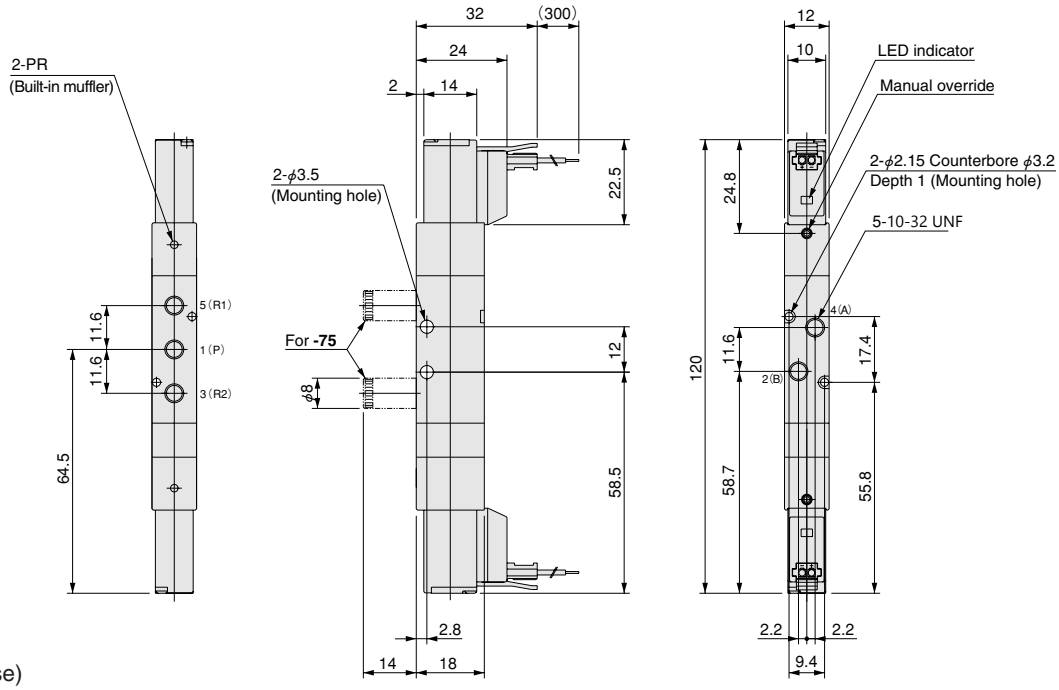
HJE12□A6-25-PL



Dimensions of HJE Series Single Valve Unit (mm)

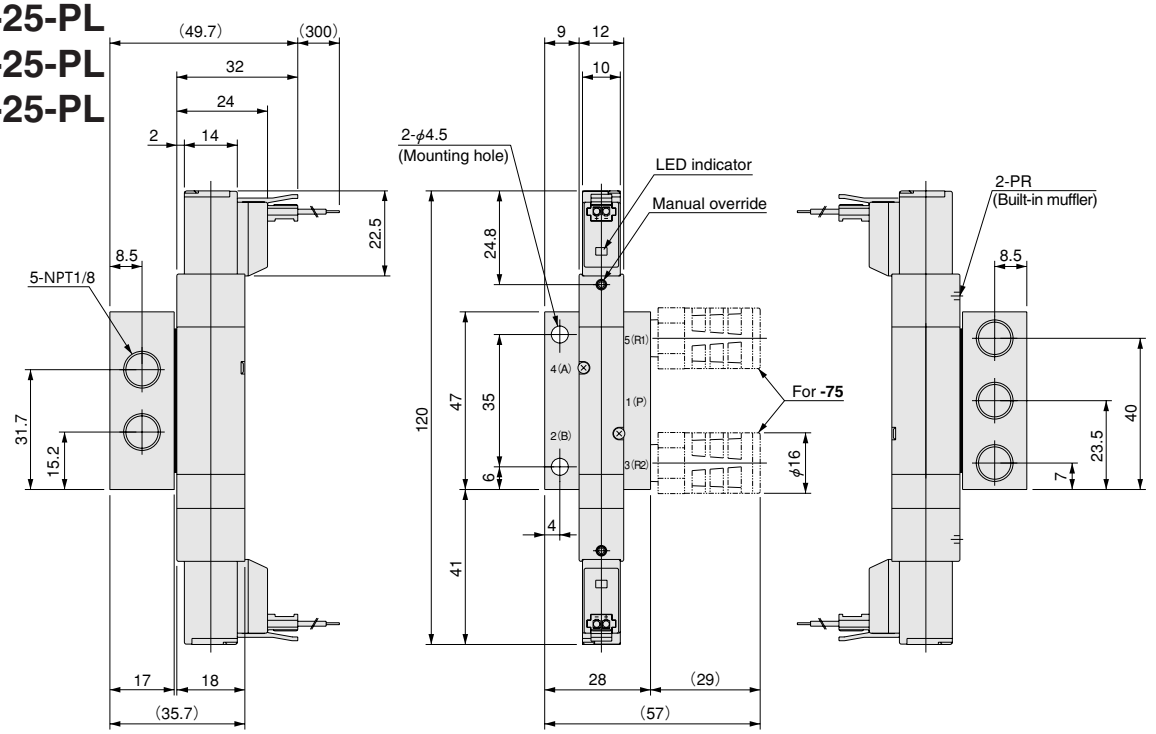
5-port, 3-position

HJE12□F7-PL
HJE12□F8-PL
HJE12□F9-PL



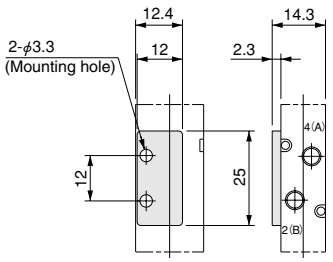
5-port, 3-position (with sub-base)

HJE12□A7-25-PL
HJE12□A8-25-PL
HJE12□A9-25-PL

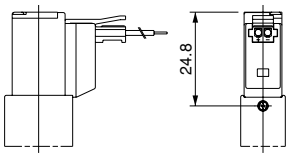


Options

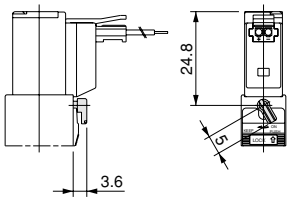
●Mounting base: **-22**
(for side mounting)



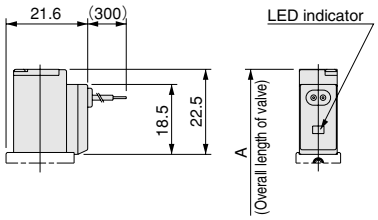
●Locking type manual override: **-81**



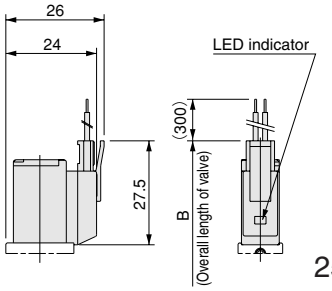
●Lever type manual override: **-84**



●Grommet: **-GL**



●S type plug connector: **-PS**



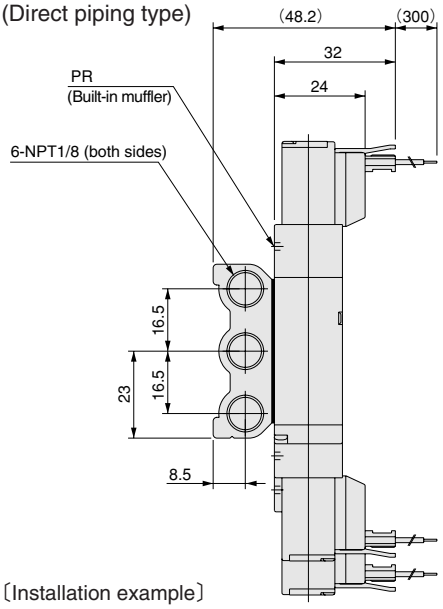
mm

Model / Code	A	B	Remark
HJE12F6, HJE12A6	111	121	Overall length to the opposite end of the solenoid
HJE12F7～HJE12F9, HJE12A7～HJE12A9	120	130	
HJE12LF6, HJE12LA6, HJE12SF6, HJE12SA6	—	121	
HJE12LF7～HJE12LF9, HJE12LA7～HJE12LA9	—	130	
HJE12SF7～HJE12SF9, HJE12SA7～HJE12SA9			

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

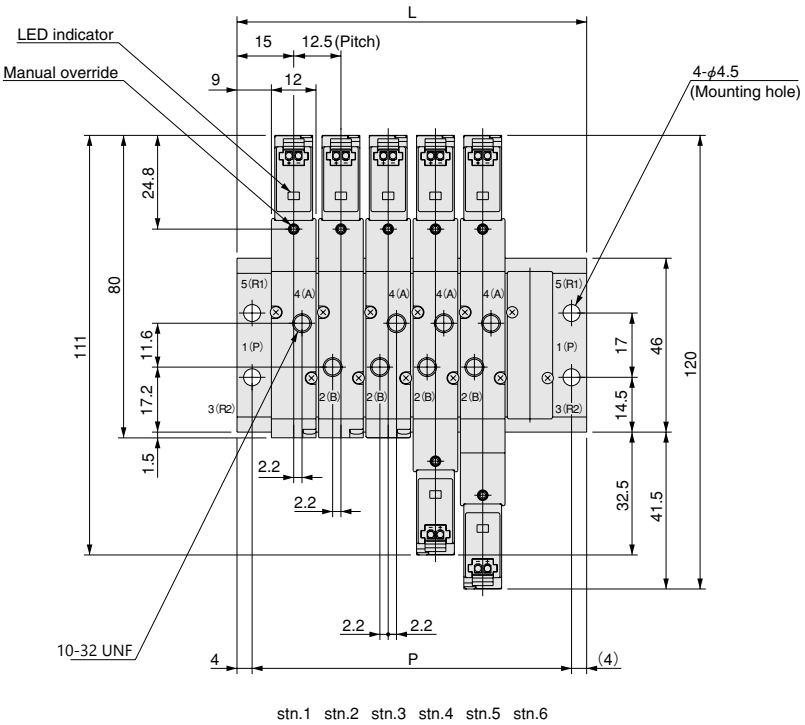
HJEM□F

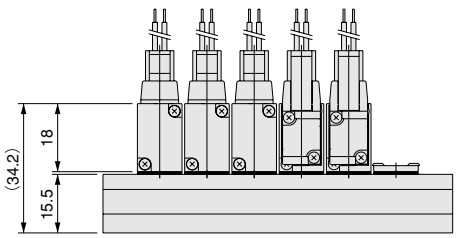
(Direct piping type)



〔Installation example〕

HJEM6F
stn.1 HJE12F3-PL-D4
stn.2 HJE12F4-PL-D4
stn.3 HJE12F5-PL-D4
stn.4 HJE12F6-PL-D4
stn.5 HJE12F7-PL-D4
stn.6 HJEBP





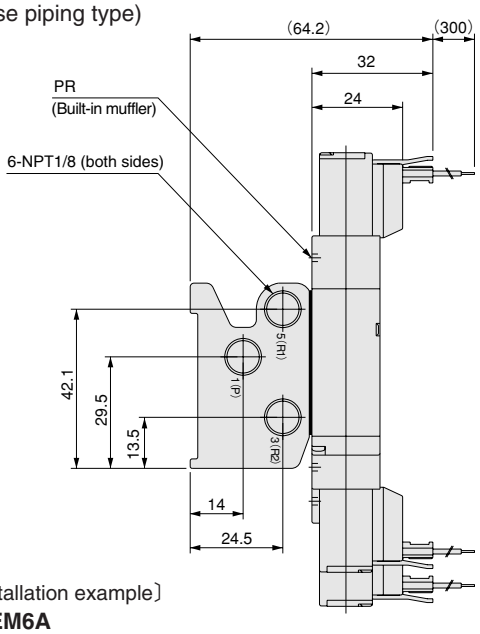
Unit dimensions

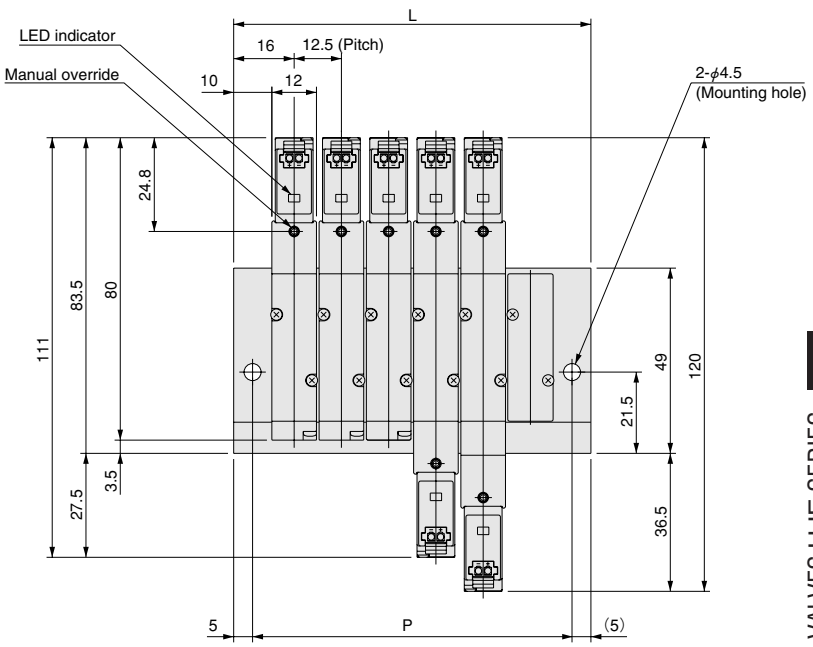
Number of units	L	P
2	42.5	34.5
3	55.0	47.0
4	67.5	59.5
5	80.0	72.0
6	92.5	84.5
7	105.0	97.0
8	117.5	109.5
9	130.0	122.0
10	142.5	134.5
11	155.0	147.0
12	167.5	159.5
13	180.0	172.0
14	192.5	184.5
15	205.0	197.0
16	217.5	209.5
17	230.0	222.0
18	242.5	234.5
19	255.0	247.0
20	267.5	259.5

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

HJEM□A

(Base piping type)

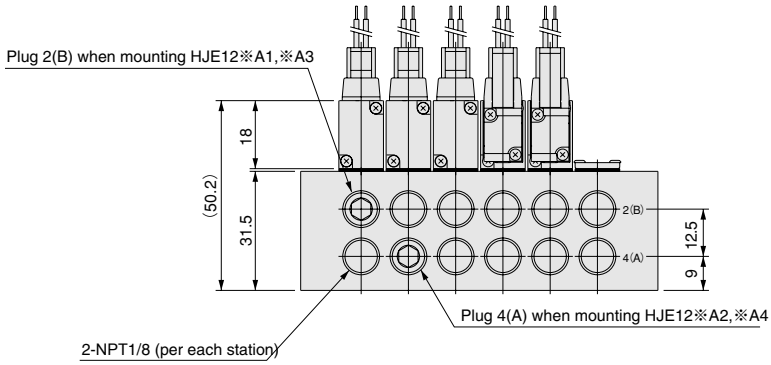




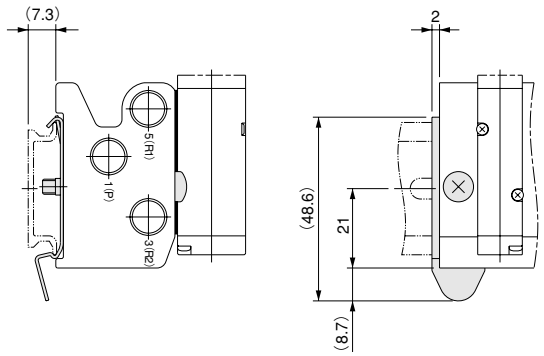
〔Installation example〕

HJEM6A
stn.1 HJE12A3-PL-D4
stn.2 HJE12A4-PL-D4
stn.3 HJE12A5-PL-D4
stn.4 HJE12A6-PL-D4
stn.5 HJE12A7-PL-D4
stn.6 HJEBP

stn.1 stn.2 stn.3 stn.4 stn.5 stn.6



●DIN rail mounting bracket **(-DN)**



Unit dimensions

Number of units	L	P
2	44.5	34.5
3	57.0	47.0
4	69.5	59.5
5	82.0	72.0
6	94.5	84.5
7	107.0	97.0
8	119.5	109.5
9	132.0	122.0
10	144.5	134.5
11	157.0	147.0
12	169.5	159.5
13	182.0	172.0
14	194.5	184.5
15	207.0	197.0
16	219.5	209.5
17	232.0	222.0
18	244.5	234.5
19	257.0	247.0
20	269.5	259.5

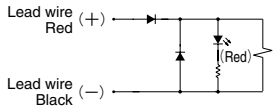
Solenoid

Internal circuit

●DC12V, DC24V

(Standard type)

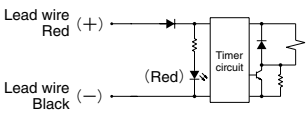
Solenoid with LED indicator and surge suppression



●DC24V

(Low current, quick response types)

Solenoid with LED indicator and surge suppression



Cautions: **1.** Do not apply megger between the pins.

2. Leakage current inside the circuit could result in failure of the solenoid valve to return to the rest position or other erratic operation. Always use it at less than the allowable leakage current shown in the solenoid specifications on p.235, and 249. If circuit conditions, etc. cause the leakage current to exceed the maximum allowable leakage current, consult us.

3. For the double solenoid configuration, avoid energizing both solenoids simultaneously.

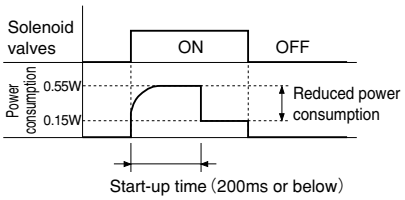
4. The standard housing type is colored blue, while the low current type is light blue, and the quick response type is white.

5. The low current and quick response types will not activate when the power supply voltage is raised too slowly. Always apply the appropriate voltage.

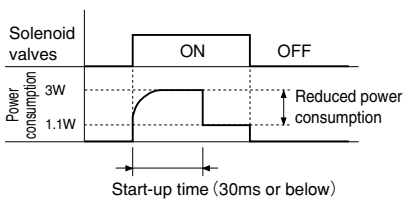
Operating principles of low current and quick response types

The low current and quick response types use a timer circuit, as shown above, that achieves power savings by switching to the holding operations mode after a certain period of time and operates at about 1/3 of the starting power consumption.

●Power waveform for low current type



●Power waveform for quick response type

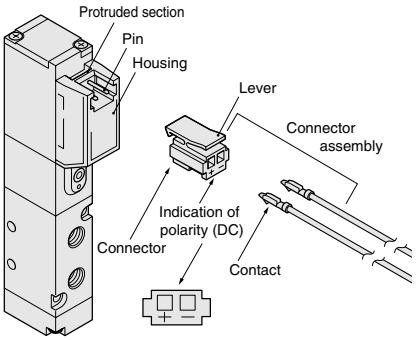


Plug connector

Attaching and removing plug connector

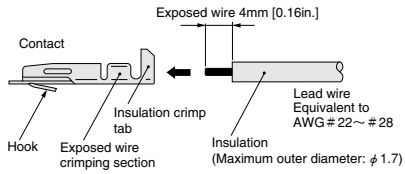
Use fingers to insert the connector into the pin, push it in until the lever claw latches onto the protruded section of the connector housing, and complete the connection.

To remove the connector, squeeze the lever along with the connector, lift the lever claw up from the protruded section of the connector housing, and pull it out.



Crimping of connecting lead wire and contact

To crimp lead wires into contacts, strip off 4mm [0.16in.] of the insulation from the end of the lead wire, insert it into the contact, and crimp it. Be sure to avoid catching the insulation on the exposed wire crimping section.



Cautions: 1. Do not pull hard on the lead wire.

2. Always use a dedicated tool for crimping of connecting lead wire and contact.

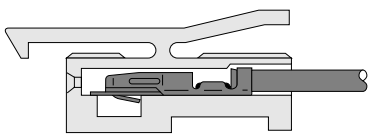
Contact: Model 702062-2M
Manufactured by Sumiko Tech, Inc.

Crimping tool: Model F1-702062
Manufactured by Sumiko Tech, Inc.

Attaching and removing contact and connector

Insert the contact with lead wire into a plug connector □ hole until the contact hook latches on and is secured to the plug connector. Confirm that the lead wire cannot be easily pulled out.

To remove it, insert a tool with a fine tip (such as a small screwdriver) into the rectangular hole on the side of the plug connector to push up on the hook, and then pull out the lead wire.

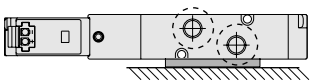


Cautions: **1.** Do not pull hard on the lead wire. It could result in defective contacts, breaking wires, etc.

2. If the pin is bent, use a small screwdriver, etc. to gently straighten out the pin, and then complete the connection to the plug connector.

Side mounting precautions

When using a JE series single solenoid valve unit in a side mounting, as shown in the diagram below, mounting base **-22** for the side mounting is required, because the fitting interferes with the mounting surface. The **TS6-M5** and **TL6-M5** quick fitting standard types for the 6mm tube cannot be mounted. Use the hexagon socket straight fitting or the quick fitting mini type instead.



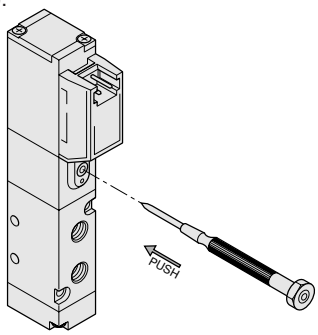
Manual override

Non-locking type

To operate the manual override, press it all the way down.

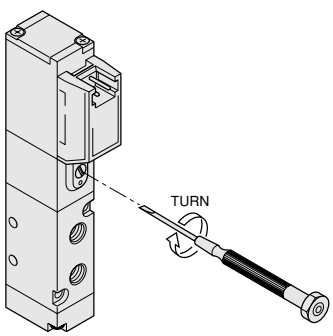
For the single solenoid, the valve works the same as when in the energized state as long as the manual override is pushed down, and returns to the rest position upon release.

For the double solenoid, pressing the manual override on the 14 (SA) side switches the 14 (SA) to the energized state, and the valve remains in that state even after the manual override is released. To return it to the rest position, operate the manual override on the 12 (SB) side. This is the same for the solenoid 12 (SB).



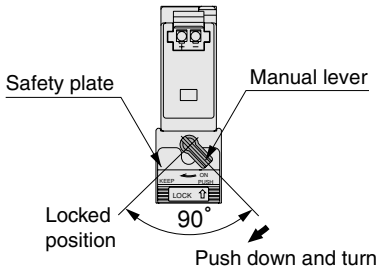
Locking type

To lock the manual override, use a small screwdriver to push down on the manual override all the way down and turn it clockwise 45 degrees. When locked, turning the manual override 45 degrees in the counterclockwise direction returns it to its rest position, and releases the lock. (Excluding the quick response type)



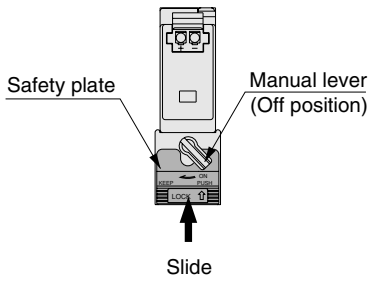
Lever type

To lock the manual override, push the manual lever all the way down and turn it clockwise 90 degrees. When locked, turning the manual lever 90 degrees in the counterclockwise direction returns it to its rest position and releases the lock. When the manual lever is not turned, this type acts just like the non-locking type, and the valve remains in the energized state as long as the manual lever is pushed down, and returns to the rest position upon release.
The manual lever is equipped with a safety plate to avoid erroneous operation. Care should be taken that the safety plate cannot be operated when the manual lever is locked in place.



● Safety plate operation

①Check that the manual lever is in the off position.
②Slide the center of the safety plate in the direction shown by the arrow until it comes to a stop, at a distance of about 3mm [0.12in.]. In this position, the manual lever can no longer be pushed in.
③To release the safety plate, slide it in the direction opposite to that shown by the arrow until it comes to a stop.

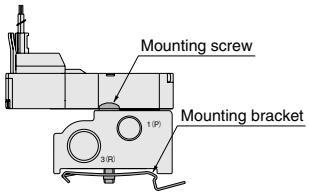


Cautions: **1.** The **HJE** series are pilot type solenoid valves. As a result, the manual override button or manual lever cannot switch the main valve without air supplied from the 1(P) port.
2. Always release the lock of the manual override button or manual lever before commencing normal operation.
3. Do not attempt to operate the manual override button or manual lever with a pin or other object having an extremely fine tip. It could damage the button.
4. For the lever type, do not apply excessive force when sliding the safety plate. It could result in a breakdown. (Recommended force: 3N)

Manifold

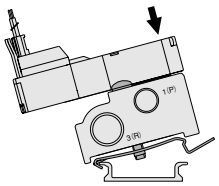
Mounting on a DIN rail (A type manifold)

With the DIN rail mounting bracket option, a mounting bracket and mounting screw are provided. First, use the mounting screw to temporarily secure the mounting bracket on the manifold.

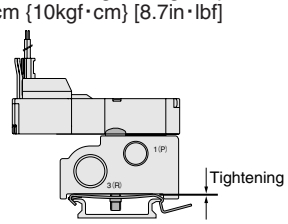


● Mounting

①Approaching from the direction shown in the diagram, let the mounting bracket hook latches onto the DIN rail fringe, then press down the manifold to secure the bracket onto the DIN rail.



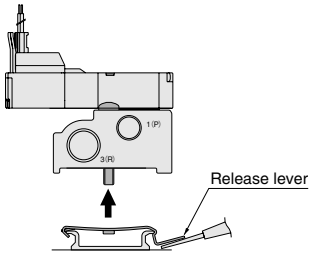
②To ensure that the mounting bracket is firmly set against the bottom of the manifold, tighten the mounting screw to secure the DIN rail in place.
Recommended tightening torque:
98N·cm {10kgf·cm} [8.7in·lbf]



Caution: Since the mounting bracket cannot slide along the DIN rail once it is set onto the rail, make sure to set the manifold in the appropriate position beforehand.

● Removing

①Loosen the mounting screw and lift the manifold off and away from the mounting bracket.
②Insert a flatblade screwdriver, etc. underneath the mounting bracket's release lever, and gently pry it away to remove the mounting bracket.

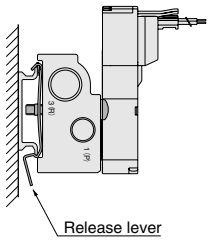


Cautions: Spring force from the mounting bracket's plate could cause the bracket to pop out during the removal operation. To ensure safety, proceed with caution during the operation. In addition, always use a flatbrade screwdriver, etc. when removing the mounting bracket from the DIN rail. Never use your fingers because of the danger of serious injury due to the potential strong forces.

● Vertical mounting

When mounting the manifold in a vertical direction, mount it so that the release lever is pointing downward.

Caution: Caution should be taken not to drop the manifold.



Mounting a valve on the manifold

When mounting a valve on the manifold, the recommended tightening torque for the valve mounting screw is 14.7N·cm {1.5kgf·cm} [1.30in·lbf].

Tube

1. Attaching and removing tubes

For tube connection, insert an appropriate size tube until it comes into contact with the tube stopper, and lightly pull it to check the connection.
For tube removal, push the tube against the tube stopper, then push the release ring and at the same time pull the tube out.

2. Either a nylon or urethane tube can be used.

Use tubes with an outer diameter tolerance within ±0.1mm [±0.004in.] of the nominal diameter, and ensure the ovalness (difference between large diameter and small diameter) is 0.2mm [0.008in.] or less. (Using Koganei tubes is recommended.)

Cautions: **1.** Do not use extra-soft tubes since their pull-out strength is significantly reduced.
2. Only use tubes without scratches on their outer surfaces. If a scratch occurs during repeated use, cut off the scratched section.
3. Do not bend the tube excessively near the fittings.The minimum bending radius is as shown in the table below.
4. When attaching or removing tubes, always stop the air supply. In addition, always confirm that air has been completely exhausted from the manifold.

mm [in.]

Tube size	Minimum bending radius	
	Nylon tube	Urethane tube
ϕ3	———	7 [0.28]
ϕ4	20 [0.79]	10 [0.39]
ϕ6	30 [1.18]	15 [0.59]
ϕ8	50 [1.97]	20 [0.79]