

HMV/HSV

Manual selector valve

4-port valve

Overview

The HMV/HSV series manual selector valves are 4-port valves with a sliding valve method for the main valve. Suitable for operating cylinders of $\phi 20$ to $\phi 160$.

Features

Simple ease of operation with lower sliding

Operation with a sliding lever (detent embedded rotary) method

2 types are available according to applications

HMV: Miniature (Rc1/4)

HSV: Standard (Rc1/4, 3/8, 1/2, 3/4)



CONTENTS


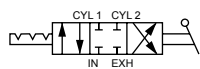

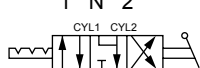
Series variation	1706
Manual selector valve HMV/HSV	
● Miniature (HMV)	1708
● Standard (HSV)	1708
⚠ Safety precautions	1711

4GA/B
M4GA/B
MN4GA/B
4GA/B (mastr)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMF0
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (mastr)
4F
4F (mastr)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

Series variation

HMV/HSV Series

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/LMF0
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G GMF
- PV5 GMF
- PV5S-0
- 3QR
- 3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/NVP
- 4F*0EX
- 4F*0E
- HMV**
- HSV**
- 2QV
- 3QV
- SKH
- PCD
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

Series	Number of ports	Position JIS symbol	Valve performance		Switching position		Port size				Page
			Flow characteristics C [dm ³ /(s·bar)] * 1	Applicable cylinder bore size	3-position all ports closed	3-position A/B/R connection	Female thread				
							Rc1/4	Rc3/8	Rc1/2	Rc3/4	
HMV Series 	Miniature	<ul style="list-style-type: none"> ● HMVC2, HSVC2 (All ports closed) Switching position 1 N 2 	1.5 to 1.6	φ20 to φ40	●	●	●				1708
								HSV Series 	Standard	<ul style="list-style-type: none"> ● HMV02, HSV02 (ABR connection) Switching position 1 N 2 	

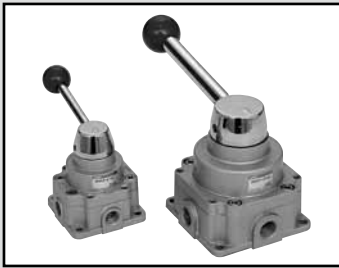
*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

MEMO

4GA/B
M4GA/B
MN4GA/B
4GA/B (mastr)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMF0
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (mastr)
4F
4F (mastr)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

Manual selector valve

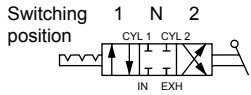
HMV/HSV Series



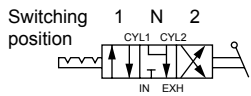
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/LMF0
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3QR
- 3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/NVP
- 4F*0EX
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- PCD
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
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JIS symbol

- HMVC2, HSVC2
(All ports closed)



- HMV02, HSV02
(ABR connection)



Common specifications

Descriptions	HMV ₀₂	HSV ₀₂				
Valve and operation		Rotary sliding valve				
Working fluid		Compressed air				
Max. working pressure	MPa	0.97 (≈140 psi, 9.7 bar)				
Min. working pressure	MPa	0 (≈0 psi, 0 bar)				
Proof pressure	MPa	1.5 (≈220 psi, 15 bar)				
Ambient temperature	°C	5 (41°F) to 50 (122°F)				
Fluid temperature	°C	5 (41°F) to 50 (122°F)				
Lubrication		Not required				
Degree of protection		Dust-proof				
Operating angle	°	90				
Port size	Rc	1/4	1/4	3/8	1/2	3/4
Weight	kg	0.7	2.0	1.9	1.9	1.8

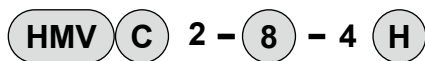
Flow characteristics

Model No.	Port size	IN→CYL1/CYL2		CYL1/CYL2→EXH	
		C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b
HMV ₀₂	1/4	1.5	0.31	1.6	0.28
	1/4	7.2	0.74	7.2	0.73
HSV ₀₂	3/8	10.2	0.32	10.1	0.34
	1/2	10.0	0.32	10.2	0.33
	3/4	10.3	0.36	10.2	0.36

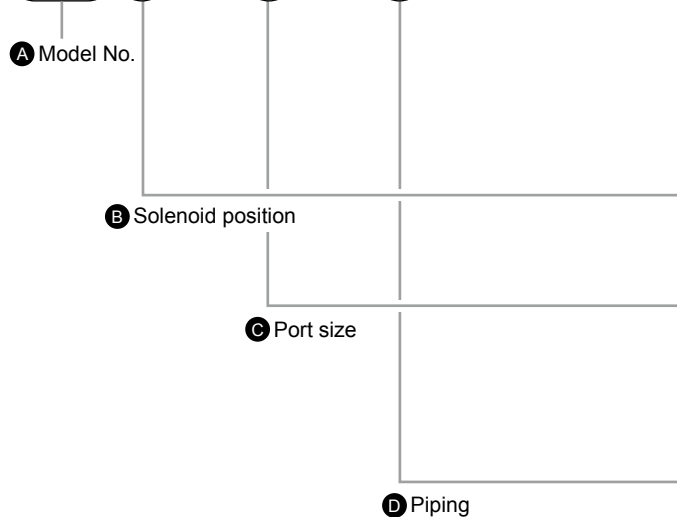
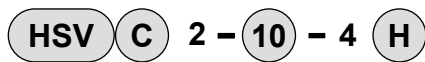
*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

How to order

- Miniature



- Standard

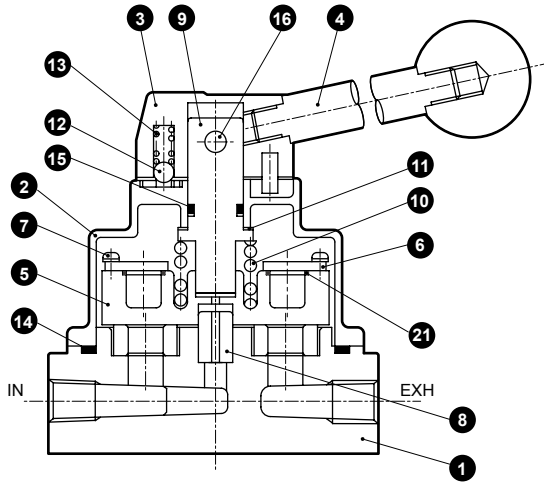


A Model No.	
HMV	HSV

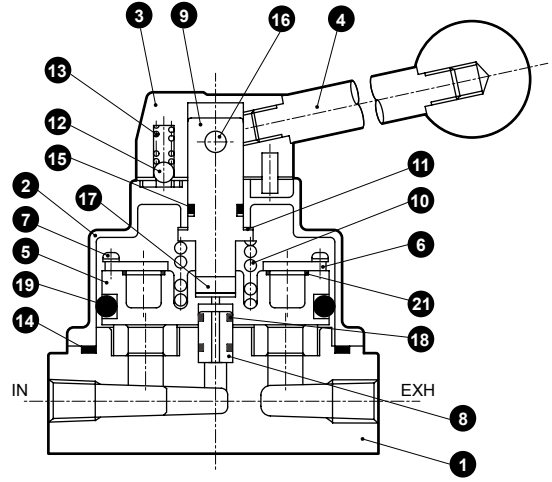
Code	Content	HMV	HSV
B Solenoid position			
C	3-position all ports closed	●	●
O	3-position ABR connection	●	●
C Port size			
8	Rc1/4	●	●
10	Rc3/8		●
15	Rc1/2		●
20	Rc3/4 (vertical piping not available.)		●
D Piping			
H	Side piping	●	●
V	Vertical piping (not compatible with a port size of Rc 3/4.)	●	●

Internal structure and parts list

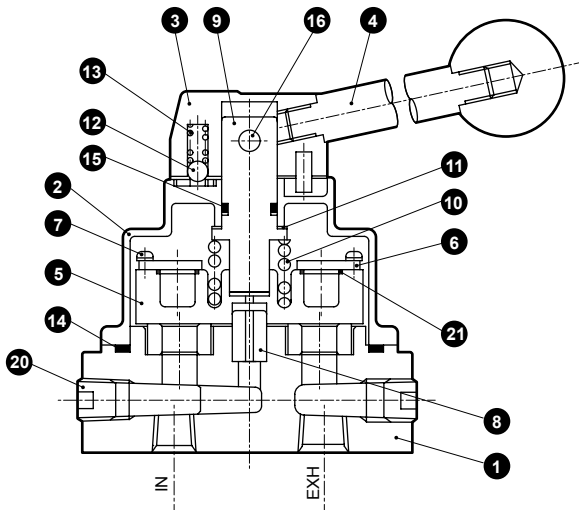
HMVC2-8-4H
HSVC2-8 to 20-4H



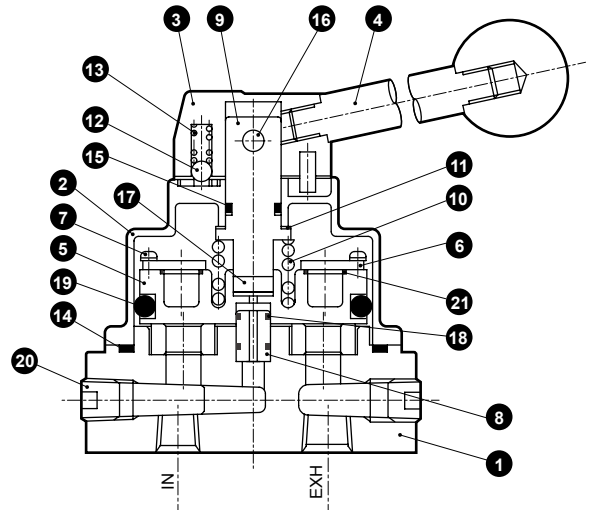
HMVO2-8-4H
HSVO2-8 to 20-4H



HMVC2-8-4V
HSVC2-8 to 15-4V



HMVO2-8-4V
HSVO2-8 to 15-4V



Main parts list

No.	Part name	Material	No.	Part name	Material
1	Body assembly	Zinc alloy die-casting tetrafluoroethylene resin (other than port size 20)	11	Washer	Special polyethylene
			12	Ball	Stainless steel
			13	Spring	Stainless steel
		Aluminum alloy die-casting tetrafluoroethylene resin (port size 20 only)	14	O-ring	Nitrile rubber
			15	O-ring	Nitrile rubber
			16	Pin	Steel
2	Cover assembly	Zinc alloy die-casting	17	Spindle guide	Steel (HSVO2 only)
3	Handle head	Zinc alloy die-casting	18	O-ring	Nitrile rubber
4	Handle assembly	Steel, urea resin	19	O-ring	Nitrile rubber
5	Slide ring	Zinc alloy die-casting	20	Hexagon socket head cap plug	Steel
6	Plate	Steel	21	Gasket	Nitrile rubber
7	Cross-recessed tapping screw	Steel			
8	Rod	Steel			
9	Spindle	Stainless steel			
10	Spring	Piano wire			

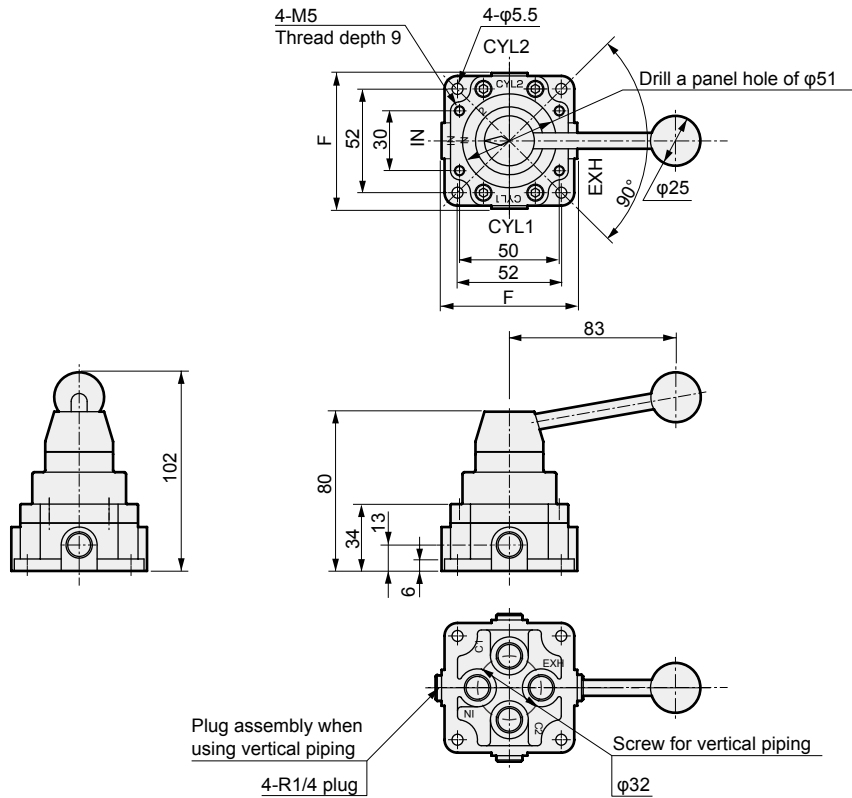
4GA/B
M4GA/B
MN4GA/B
4GA/B (mastr)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMFO
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (mastr)
4F
4F (mastr)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

HMV/HSV Series

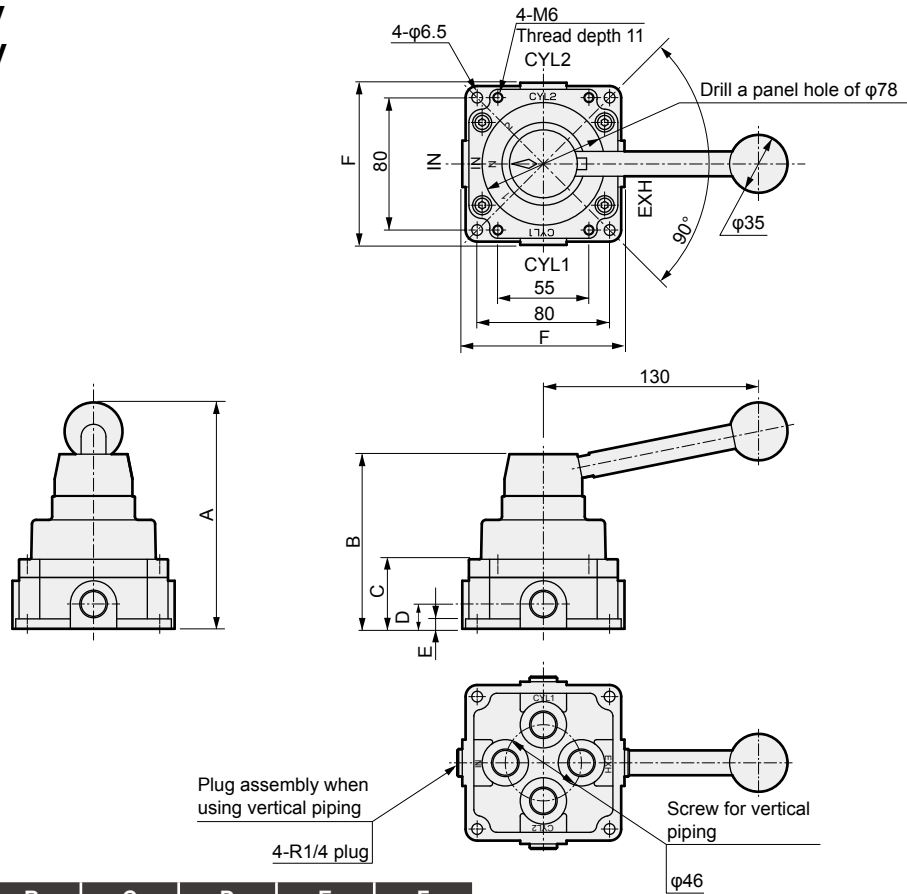
Dimensions

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/
LMF0
- MN3S0
MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G
GMF
- PV5
GMF
- PV5S-0
- 3QR
3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/
NVP
- 4F*0EX
- 4F*0E
- HMV
HSV**
- 2QV
3QV
- SKH
- PCD
- Silencer
- TotAirSys
(Total Air)
- TotAirSys
(Gamma)
- Ending

HMVC2-8-4H,4V
HMVO2-8-4H,4V



HSVC2-8 to 20-4H, 4V
HSVO2-8 to 20-4H, 4V



Model No.	A	B	C	D	E	F
HMV*2-8-4H	—————					68
HMV*2-8-4V	—————					74
HSV*2-8 to 15-4H	132	105	42	15	6	98
HSV*2-8 to 15-4V	132	105	42	15	6	104
HSV*2-20-4H	137	110	47	18	10	98



Pneumatic components

Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 59 for general precautions for using valves.

Product-specific cautions: Manual selector valve HMV/HSV Series

Design/selection

CAUTION

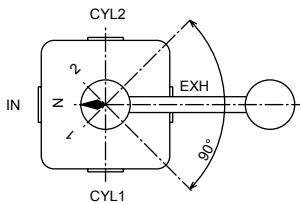
■ In locations with a lot of dust, prevent entry of dust by attaching a silencer to the EXH port or through a similar method.

■ The flow of air when switching is expressed by the letters indicated by the arrows on the tip of the switching handle.

When 1: IN → CYL1, CYL2 → EXH

When 2: IN → CYL2, CYL1 → EXH

When N: all ports closed
or CYL1/2 → EXH (ABR) connection



■ Switching different pressures (switching 2 types of pressures) is enabled by configuring the higher pressure on the IN side and the lower pressure on the EXH side.

(1) If the higher pressure is not constantly applied on the IN side, this may lead to defective switching or air leakage.

(2) Use a regulator with relief on the EXH side.

■ The main valve is a slide valve structure and there is internal leakage. The cylinder stopping position may change or pressure drop may occur due to internal leakage.

■ For use with a 2-position valve, a 3-position all ports closed can be substituted. (N: Consider the neutral position as the transition period of the operation between 1↔2.)

■ When switching the handle position between N↔1 or N↔2, there are positions that instantaneously connect to all ports.

■ The manual operating force for the first operation after not being in operation for a while will be greater.

Mounting, installation and adjustment

CAUTION

■ Be sure to install the piping for the air supply from IN.

■ With the vertical piping specifications, a hex socket plug will protrude in order to mask the thread for lateral piping. Refer to the dimensions for detailed dimensions.

■ For use with a panel mount, use a metric threaded component (HMV*2...4-M5, HSV*2...4-M6). Refer to the dimensions for details.

■ In consideration of panel mount installation, the handle assembly is shipped as an attachment.

4GA/B
M4GA/B
MN4GA/B
4GA/B (mastr)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMF0
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (mastr)
4F
4F (mastr)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
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3MA/B0
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HMV HSV
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TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

