HMV/HSV

4-port valve

Manual selector 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 φ20 to φ160.

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)



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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

(mastr) PV5G

GMF

GMF

PV5S-0 3QR

3QB

MV3QR

3MA/B0

3PA/B

P/M/B NP/NAP/

4F*0EX

4F*0E

2QV 3QV SKH

PCD

Silencer

TotAirSys (Total Air) TotAirSys (Gamma)

Series variation

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

PV5G GMF PV5 GMF

PV5S-0 3QR 3QB

MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/
NVP
4F*0EX

HMV/HSV Series

				Valve pe	rformance	Swite	ching		Port	size		
Series			Position JIS symbol			Poor	acion -	Female thread				
		Number of ports		Flow characteristics C [dm³/(s·bar)] *1	Applicable cylinder bore size	3-position all ports closed	3-position A/B/R connection	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Page
HMV Series			HMVC2, HSVC2 (All ports closed) Switching position 1 N 2 CVL 1 CVL 2 N EXH									
	Miniature	4 ports		1.5 to 1.6	φ20 to φ40	•	•	•				1708
HSV Series			HMVO2, HSVO2 (ABR connection)									
	Standard		Switching position 1 N 2 CYL1 CYL2 IN EXH	7.2 to 10.3	up to φ160	•	•	•	•	•	•	1708
	HMV Series	HMV Series HSV Series	HMV Series HSV Series 4 borts	HSV Series HSV Series HSV Series HSV Series HSV Series HSV Series HSV Series	Series Position JIS symbol HMV Series HMVC2, HSVC2 (All ports closed) Switching position 1 N 2 COLL ONE N EXH HSV Series HMV02, HSV02 (ABR connection) Switching position 1 N 2 COLL ONE N EXH N EXH N EXH N 2 COLL ONE N EXH N 3 N 4 N 4 N 5 N 6 N 6 N 7 N 7 N 7 N 8 N 8 N 8 N 8 N 8	HMV Series HMV Series Position JIS symbol Position JIS symbol 1.5 to 1.6 pd0 HMVC2, HSVC2 (All ports closed) Switching position 1 N 2 COLLEGE STATE OF THE PORT OF THE P	Series Position JIS symbol HMV Series HMVC2, HSVC2 (All ports closed) Switching position 1 N 2 CHUNGE PORT OF THE PORT OF	Series Position JIS symbol P	HMV Series HMV Series HMV Series HMV Series HMV Series HMV Series HMV02, HSV02 (All ports closed) Switching position 1 N 2 (ABR connection)	Series Position JIS symbol P	Series Mulipart of Position All Series Position All Series	Series Series Position Pos

^{*1 :} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 x C.

2QV 3QV

SKH

Silencer

TotAirSys (Total Air)

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

3QB MV3QR

3MA/B0

3PA/B

P/M/B

NP/NAP/ NVP

NVP 4F*0EX

4F*0E

HMV HSV

2QV 3QV

SKH

PCD Silencer

TotAirSys (Total Air) TotAirSys (Gamma)

4GA/B M4GA/B MN4GA/B 4GA/B

Manual selector valve

HMV/HSV Series





JIS symbol

(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

(mastr) PV5G GMF

PV5 GMF PV5S-0

3QR 3QB

MV3QR

3MA/B0

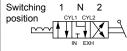
3PA/B P/M/B

NP/NAP/ NVP

● HMVC2, HSVC2 (All ports closed)

Switching 1 N position

● HMVO2, HSVO2 (ABR connection)



Common specifications

Descriptions		HMV _o 2		HS	V ₀ ^C 2			
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 Dust-proof						
Operating angle	0	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		

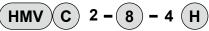
Flow characteristics

Model No.	Port size	IN→CYL	1/CYL2	CYL1/CYL2→EXH		
woder No.	POIL SIZE	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b	
HMV ₀ ^C 2	1/4	1.5	0.31	1.6	0.28	
	1/4	7.2	0.74	7.2	0.73	
HSV ₀ 2	3/8	10.2	0.32	10.1	0.34	
поv ₀ 2	1/2	10.0	0.32	10.2	0.33	
	3/4	10.3	0.36	10.2	0.36	

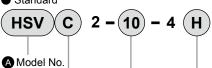
^{*1 :} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 x C.

How to order

Miniature



Standard



B Solenoid position

Port size

Piping

4F*0EX 4F*0E

2QV 3QV

SKH

PCD Silencer

TotAirSys (Total Air) TotAirSys (Gamma)

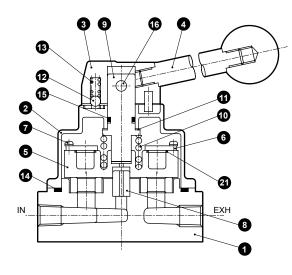
		A Mod	del No.
		HMV	нѕѵ
Code	Content		
B So	lenoid position		
С	3-position all ports closed	•	•
0	3-position ABR connection	•	•
C Po	rt size		
8	Rc1/4	•	•
10	Rc3/8		•
15	Rc1/2		•
20	Rc3/4 (vertical piping not available.)		•
O Pip	ping		
Н	Side piping	•	•
٧	Vertical piping (not compatible with a port size of Rc 3/4.)	•	•



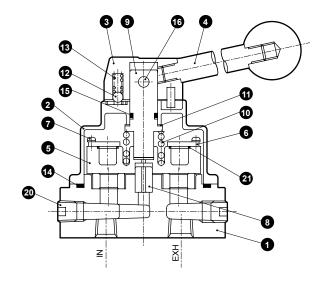
Internal structure and parts list

Internal structure and parts list

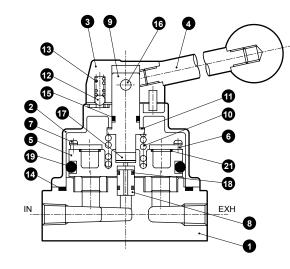
HMVC2-8-4H HSVC2-8 to 20-4H



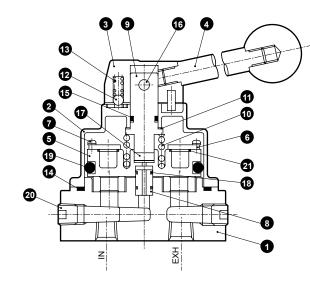
HMVC2-8-4V HSVC2-8 to 15-4V



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



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



Main parts list

ivia	ii parto not						
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/ 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

TotAirSys (Total Air)

TotAirSys (Gamma)

HMV/HSV Series

Dimensions 4GA/B 4-M5 Thread depth 9 4-φ5.5 M4GA/B **HMVC2-8-4H,4V** CYL2 HMVO2-8-4H,4V Drill a panel hole of φ51 MN4GA/B 4GA/B Z 30 52 (mastr) /φ25 4GD/E CYL1 M4GD/E 50 52 MN4GD/E 4GA4/B4 MN3E MN4E W4GA/B2 102 8 W4GB4 4TB 4L2-4/ LMF0 MN3S0 MN4S0 4SA/B0 Plug assembly when Screw for vertical piping using vertical piping 4KA/B 4-R1/4 plug φ32 4KA/B (mastr) 4F 4-M6 Thread depth 11 HSVC2-8 to 20-4H, 4V 4-φ6.5 4F HSVO2-8 to 20-4H, 4V CYL2 (mastr) Drill a panel hole of φ78 PV5G GMF PV5 ш 80 Z GMF PV5S-0 /φ35 3QR CYL1 3QB 55 80 MV3QR 3MA/B0 130 3PA/B P/M/B NP/NAP/ മ 4F*0EX 4F*0E 2QV 3QV SKH Plug assembly when using vertical piping Screw for vertical PCD piping 4-R1/4 plug φ46 Silencer Model No. TotAirSys HMV*2-8-4H 68 (Total Air) HMV*2-8-4V 74 TotAirSys HSV*2-8 to 15-4H 132 105 42 15 6 98 (Gamma) HSV*2-8 to 15-4V 105 42 6 132 15 104

137

110

47

18

10

98

HSV*2-20-4H



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

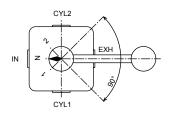
A CAUTION

- 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 \rightarrow CYL1, CYL2 \rightarrow EXH When 2: IN \rightarrow CYL2, CYL1 \rightarrow 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

IVIIV4GD/E

4GA4/B4

MN3E MN4E

W4GA/B2

W4GB4

4TB 4L2-4/

LMF0 MN3S0 MN4S0

4SA/B0

4KA/B

(mastr)

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

Silencer TotAirSys

(Total Air) TotAirSys (Gamma)