

HMV/HSV

Manual switching valve

4 port valve

Overview

The HMV and HSV Series manual switching valve is 4 port valves incorporating a sliding valve for the main valve. This valve is suitable for driving cylinders $\varnothing 20$ to $\varnothing 160$.

Features

Low sliding movement facilitates operation

A swing lever (detent integrated rotary) is used for operation.

Two types available based on application

Miniature type (Rc1/4)
Standard type
(Rc1/4, 3/8, 1/2, 3/4)



C O N T E N T S

Series variation	1182
⚠ Safety precautions	1183
Manual switching valve HMV/HSV	
● Miniature type (HMV)	1184
● Standard type (HSV)	1184

MN3E0
MN4E0

4GA/B

M4GA/B

MN4GA/B

4GA/B
(Master)

W4GA/B2

W4GB4

MN3S0
MN4S0

4TB

4L2-4/
LMF0

4SA/B0

4SA/B1

4KA/B

4F

PV5G/
CMF

PV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F*0E

**HMV
HSV**

2QV
3QV


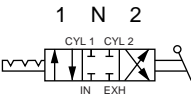

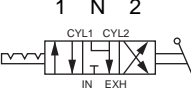
SKH

PCD/
FS/FD

Ending

Manual switching valve

MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMFO
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
3PA/B
P/MB
NP/NAP/NVP
4F*0E
HMV HSV
2QV/3QV
SKH
PCD/FS/FD
Ending

Series	No. of port	Position JIS symbol	Valve performance		Solenoid position		Port size				Page
			Flow characteristics C (dm ³ /s-bar) Note 1	Applicable 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	● HMVC2, HSVC2 (All ports closed) Solenoid position 1 N 2 	1.5 to 1.6	ø20 to ø40	●	●	●				1184
HSV Series 	Standard	● HMVO2, HSVO2 (A/B/R connection) Solenoid position 1 N 2 	7.2 to 10.3	Up to ø160	●	●	●	●	●	●	1184

Note 1: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.



Pneumatic components

Safety precautions

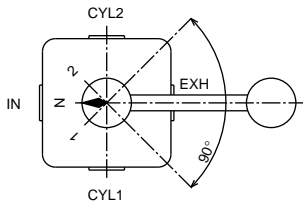
Always read this section before starting use.
Refer to Intro 63 for valve general precautions.

Manual switching valve HMV/HSV Series

Design & Selection

CAUTION

- For the place subject to dust, please take countermeasures such as installing silencers at EXH port to prevent dust intrusion.
- When switching the valve, the arrow on the top of handle shows the direction of air flow.
For 1: IN → CYL1, CYL2 → EXH
For 2: IN → CYL2, CYL1 → EXH
For N: All ports closed
or CYL1/2 → EXH (A/B/R) connection



- For switchover of multi-pressure (switching 2 types of pressure), connect higher-pressure to IN side, while connect lower-pressure to EXH side.
(1) If higher-pressure is not always supplied to IN side, switchover defective and air leakage may be caused.
(2) Please use a regulator with relief at EXH side.

- When using 2-position type, the valve can be substituted by 3-position all ports closed type. (N: Neutral position during transition period of operation 1 ⇔ 2.)
- Main valve with sliding structure may cause internal leakage. This internal leakage may cause a change of cylinder stop position or pressure drop.
- When the handle position is switched between N⇔1 or N⇔2, all ports may be connected for an instant.

Installation & Adjustment

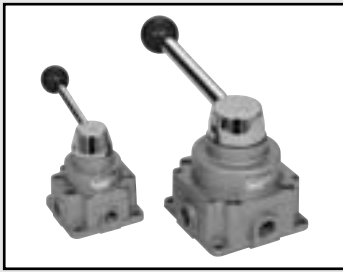
CAUTION

- The air should be supplied from IN port.
- Since vertical piping specifications provide masking of side porting thread, a hexagon socket head plug projects from the side wall. Please refer to dimensions for details.

- For panel mount, select meter thread (HMV*2...4-M5, HSV*2...4-M6). Please refer to dimensions for details.
- The handle assembly is enclosed with the product at delivery to enable panel mounting.

MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

Manual switching valve



Manual switching valve

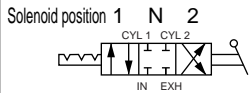
HMV/HSV Series



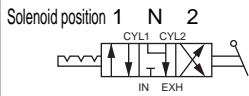
MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMFO
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

JIS symbol

- HMVC2, HSVC2 (All ports closed)



- HMVO2, HSVO2 (A/B/R connection)



Common specifications

Descriptions	HMV ^C 2	HSV ^C 2				
Valve type and operations	Rotary type slide valve					
Working fluid	Compressed air					
Max. working pressure	MPa	0.97				
Min. working pressure	MPa	0				
Withstanding pressure	MPa	1.5				
Ambient temperature	°C	5 to 50				
Fluid temperature	°C	5 to 50				
Lubrication	Not required					
Protective structure	Dust proof					
Operation angle	degree	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 ^C 2	1/4	1.5	0.31	1.6	0.28
	1/4	7.2	0.74	7.2	0.73
HSV ^C 2	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

Note 1: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

How to order

- Miniature type

HMV C 2 - 8 - 4 H

- Standard type

HSV C 2 - 10 - 4 H

A Model no.

B Solenoid position

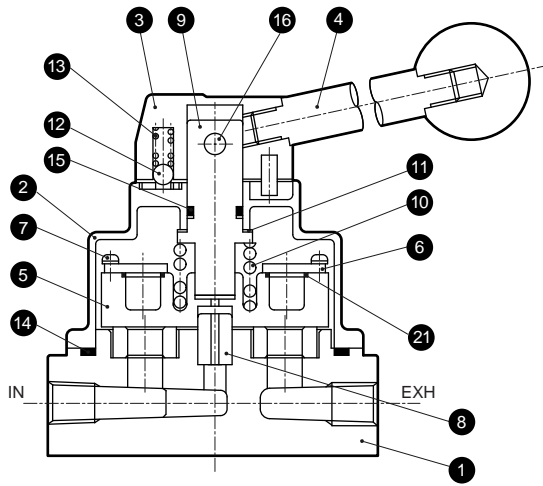
C Port size

D Piping

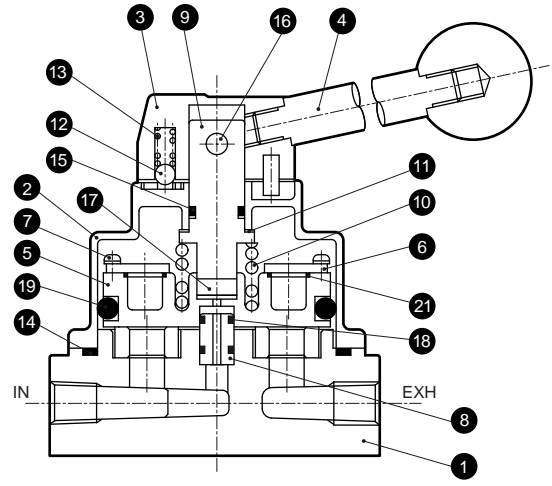
		A Model no.	
		HMV	HSV
Symbol	Descriptions		
B Solenoid position			
C	3-position all ports closed	●	●
O	3-position A/B/R connection	●	●
C Port size			
8	Rc1/4	●	●
10	Rc3/8		●
15	Rc1/2		●
20	Rc3/4 (vertical porting is not available.)		●
D Piping			
H	Side porting	●	●
V	Vertical porting (not compatible with port size Rc3/4)	●	●

Internal structure and parts list

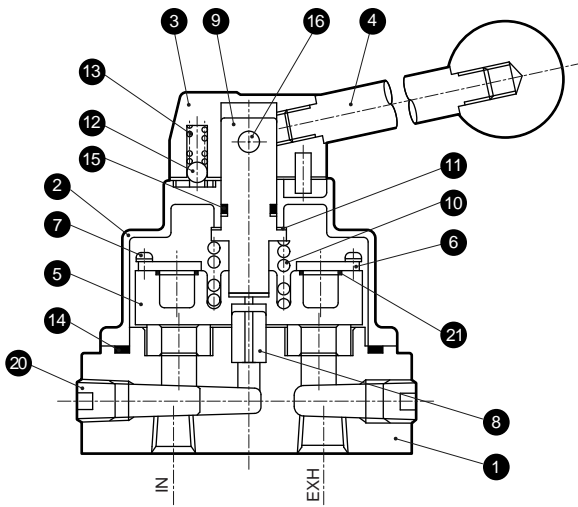
HMVC2-8-4H HSVC2-8 to 20-4H



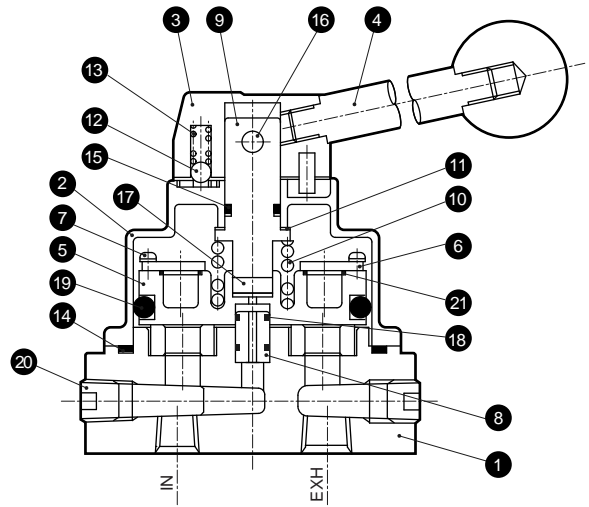
HMVO2-8-4H HSVO2-8 to 20-4H



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



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



Main parts list

No.	Parts name	Material	No.	Parts name	Material
1	Body assembly	Zinc alloy die-casting	11	Washer	Special polyethylene
		Tetrafluoroethylene resin (Other than port size 20)	12	Ball	Stainless steel
		Aluminum alloy die-casting	13	Spring	Stainless steel
		Tetrafluoroethylene resin (Only port size 20)	14	O ring	Nitrile rubber
			15	O ring	Nitrile rubber
			16	Pin	Steel
2	Cover assembly	Zinc alloy die-casting	17	Spindle guide	Steel (only HSVO2)
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	Plug with hexagon head hole	Steel
6	Plate	Steel	21	Gasket	Nitrile rubber
7	Cross headed tapping screw	Steel			
8	Rod	Steel			
9	Spindle	Stainless steel			
10	Spring	Piano wire			

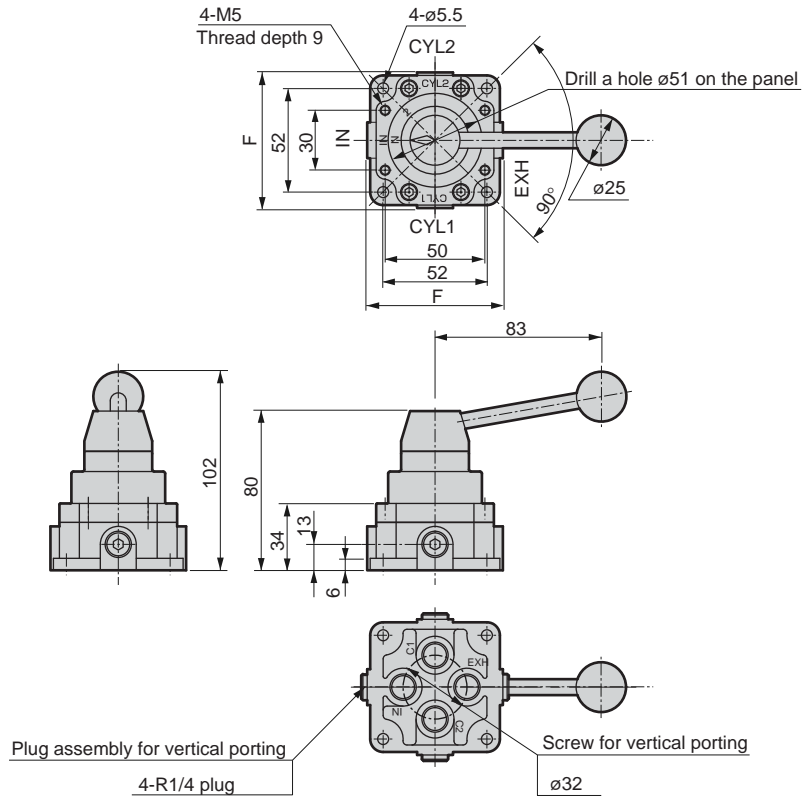
MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/ LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/ CMF
PV5/ CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
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Ending

Manual switching valve

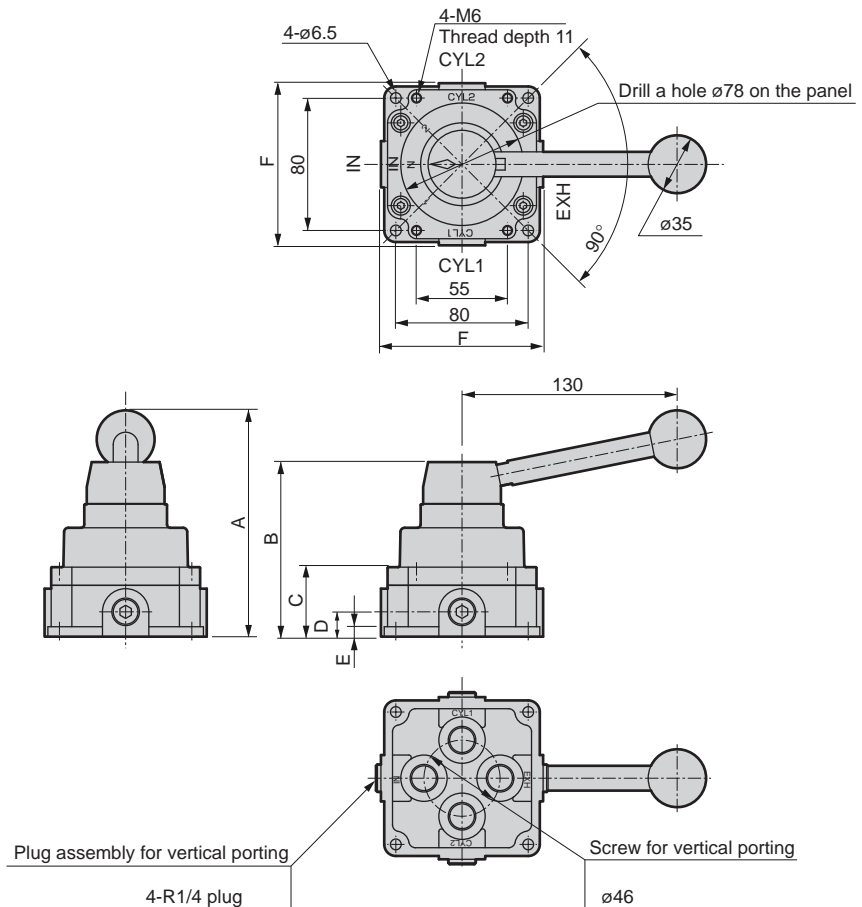
HMV/HSV Series

Dimensions

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