



Instruction manual

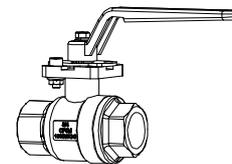
Please read this document before using these valves.

GENERAL

This series is suitable for main or bypass valve in piping system.
The position of manual handle can be changed.

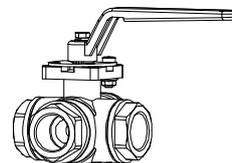
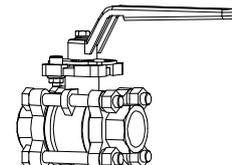
Manual operation

- Valve only
- Lever



Valve

- SR type For food / Corrosive fluid.
- SH type For high temp. (up to 2 MPa)
- MS type 3 piece / For heavy load.
- MV type 3 piece / For control.
- MH type 3 piece / For high pressure.
- ST type 4 seats, 3 way. (with flow paths)
- SL type 4 seats, 3 way.



PRODUCT CODE

SR type	MAX SR	<input type="checkbox"/>	-	5	U	U	T	-	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
SH type	MAX SH	<input type="checkbox"/>	-	5	U	U	F	-	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
MS type	MAX MS	<input type="checkbox"/>	-	5	U	U	P	-	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
MV type	MAX MV	<input type="checkbox"/>	-	5	U	U	P	-	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
(Standard port)	MAX MV	<input type="checkbox"/>	-	5	U	U	P	R	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
MH type	MAX MH	<input type="checkbox"/>	-	5	U	U	<input type="checkbox"/>	-	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
ST type	MAX ST	<input type="checkbox"/>	-	5	U	U	F	-	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
SL type	MAX SL	<input type="checkbox"/>	-	5	U	U	F	-	<input type="checkbox"/>	:	:	-	<input type="checkbox"/>
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
(1) Actuator MAX	(6) Body material U : SCS14A	(10) Option											
(2) Valve SR SH MS MV MH ST SL	(7) Ball material U : SCS14A / SUS316	(11) Flow paths (ST) a to d : 3 way valve flow											
(3) Operation 0 : (Zero) Valve only L : With manual lever	(8) Seat material T : PTFE F : F-PTFE P : R-PTFE D : POM R : R-F-PTFE												
(4) Hyphen	(9) Size [mm] ex. 25A → 025												
(5) Connection 5 : Threaded End Rc													

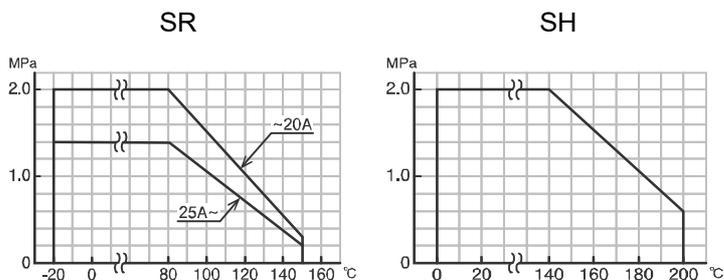
VALVES SPECIFICATIONS

 Water
  Oil
  Air, Gas
  Steam
  Chemicals
  Sea water
  Slurry
  Negative pressure

SR SH type

Valve type		SR	SH
Design		2-way, Full port	2-way, Full port
Connection		Threaded End Rc	Threaded End Rc
Fluid			
Max pressure		2 MPa	2 MPa
Size [mm]		015 to 020	015 to 032
Material	Body	SCS14A	SCS14A
	Ball	SCS14A	SCS14A
	Seat	PTFE	F-PTFE
Stem seal	Packing	F-PTFE	R-PTFE
	O-ring	-	Steam resistant FKM

PRESSURE & TEMPERATURE RATING



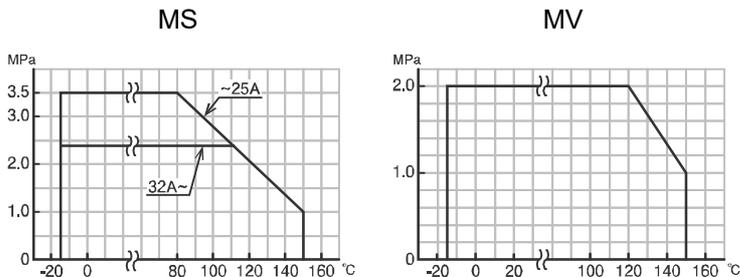
VALVES SPECIFICATIONS

Water
 Oil
 Air, Gas
 Steam
 Chemicals
 Sea water
 Slurry
 Negative pressure

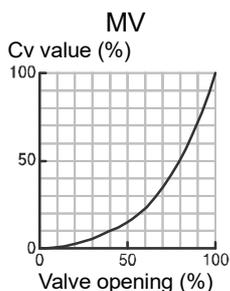
MS MV type

Valve type	MS		MV		
Design	2-way, Full port		2-way, V-port		
Connection	Threaded End Rc		Threaded End Rc		
Fluid					
Max pressure	3.5 MPa	2.4 MPa	2 MPa		
Size [mm]	010 to 025	032 to 050	R010 to R015	015	020 to 050
Material	Body	SCS14A		SCS14A	
	Ball	SCS14A	SUS316		SCS14A
	Seat	R-PTFE		R-PTFE	
Stem seal	Packing	R-PTFE		R-PTFE	
	O-ring	FKM		FKM	

PRESSURE & TEMPERATURE RATING



INHERENT FLOW CHARACTERISTIC



Range ability

MV-5UUP R 010 to 015 100:1
 MV-5UUP - 015 to 050 50:1

VALVES SPECIFICATIONS

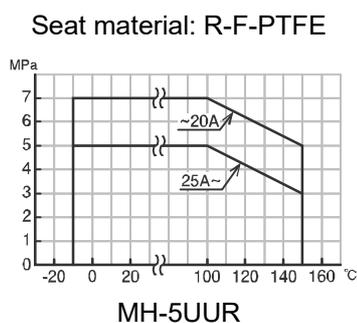
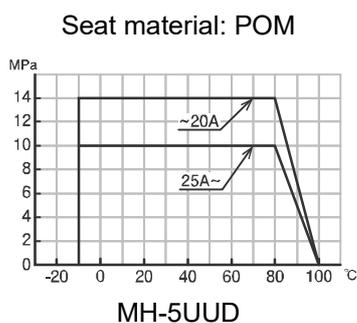
 Water
  Oil
  Air, Gas
  Steam
  Chemicals
  Sea water
  Slurry
  Negative pressure

MH type

Valve type		MH			
Design		2-way, Full port			
Connection		Threaded End Rc			
Fluid		  			
Max pressure		14 MPa	10 MPa	7 MPa	5 MPa
Size [mm]		010 to 020	025 to 040	010 to 020	025 to 040
Material	Body	SCS14A			
	Ball	SCS14A (HCr plated)			
	Seat	POM		R-F-PTFE	
Stem seal	O-ring	FKM			

Note) It cannot be used POM seat for a water solution of more than 85 °C.

PRESSURE & TEMPERATURE RATING



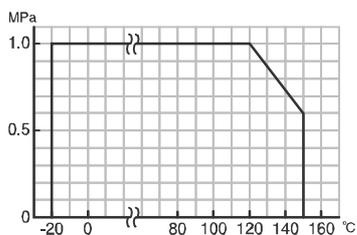
VALVES SPECIFICATIONS

Water
 Oil
 Air, Gas
 Steam
 Chemicals
 Sea water
 Slurry
 Negative pressure

ST SL type

Valve type	ST SL	
Design	3 way, Standard port	
Connection	Threaded End Rc	
Fluid		
Max pressure	1 MPa	
Size [mm]	015 to 032	
Material	Body	SCS14A
	Ball	SCS14A
	Seat	F-PTFE
Stem seal	Packing	F-PTFE

PRESSURE & TEMPERATURE RATING



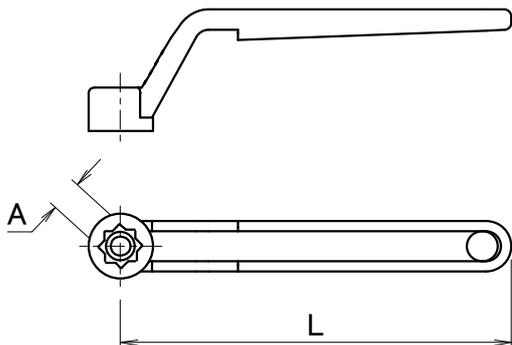
FLOW PATHS (Position ① / P1) (Position ② / P2)

ST				SL
Code: a	Code: b	Code: c	Code: d	
 P1 P2 B A B A C C A-B ⇔ B-C	 P1 P2 B A B A C C A-C ⇔ A-B	 P1 P2 B A B A C C B-C ⇔ A-B-C	 P1 P2 B A B A C C A-B-C ⇔ A-C	 P1 P2 B A B A C C B-C ⇔ A-C

Note) When a closed path is exposed to high pressure, it may leak slightly to an open path.

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

LEVER DIMENSIONS



SR	Valve size [mm]			Lever [mm]			Hex bolt
	SH ST SL	MS MV	MH	L	H	A	
015 020	015 020	010 015 020	010 015 020	115	36	9	M5×15
025 032	025 032	025 032	025 032	145	46	11	
040	-	040 050	040	220	52	14	M6×15

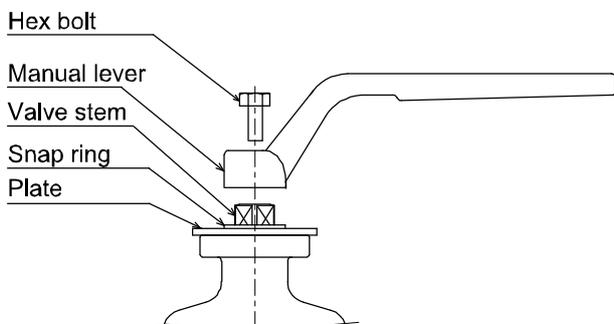
HANDLING OF MANUAL LEVER

①Attention

- The lever handle is removed and shipped.
- The lever mounting direction can be changed in units of 45 degrees.
- Do not apply excessive torque to the lever.
- Do not strike or extend the lever with a tool.
- The arrow on the plate indicates the direction of flow.

②LEVER HANDLE INSTALLATION

- Plate of position indicator is attached on the valve by C-type snap ring. Install the manual lever on it tightening the bolt.
- The position of manual lever can be changed according to piping circumstances.



INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

HANDLING & STORAGE

①HANDLING

Do not drop or throw the product as it may break.

②STORAGE

- Store away from dust, moisture and direct sunlight. If possible, store in the original package.
- Do not remove a dust proof cap until the piping.

③CHECKING

Check the product code before installation.

INSTALLATION

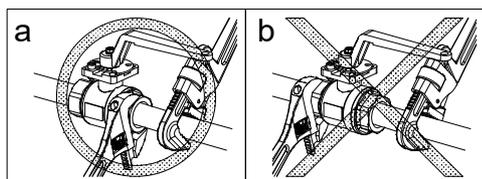
①PRECAUTIONS

- Flush the pipeline carefully before installing the valve. Foreign particles, such as sand or pieces of welding electrode, will damage the ball and seats.
- For valves with specified flow direction (SH, MV) or with ST / SC option, check the arrows on the product before piping.
- When the flow path is subjected to a high pressure from arrow, it may leak slightly to the low pressure port. (ST, SL)



②PIPING

- Using a pipe with too long a thread will damage the valve.
 - If sealing tape or sealant gets inside the valve, the valve seat leaks or malfunctions.
 - To prevent the valve from being damaged by stress, always hang a wrench on the end of the valve on the side where the pipe is to be connected when screwing in the pipe or when unscrewing it after correcting the angle. (Fig a and b)
- Do not apply excessive force to the valve with a pipe wrench or the like.



- Refer to the recommended tightening torque table and do not apply excessive torque.

Valve size [mm]	Torque [N·m]
010	15 to 20
015	25 to 35
020	40 to 50
025	50 to 60
032	60 to 80
040	75 to 85
050	90 to 110

③ENVIRONMENT

If there is a possibility that the fluid and drive part freeze, please take measures to prevent freezing.

④POSITIONING

Should be positioned through 90° upward from horizontal. Provide space around the product to allow manual operation, inspection and replacement work.

MAINTENANCE

Do the routine maintenance at least once in half a year.

Inspection items

- Confirm operation of opening and closing.
- Confirm whether screws are loose or not.
- Confirm the fluid temperature or pressure.
- Confirm the leak from valve stem.

TROUBLESHOOTING

Problem	Cause	Solution
Stop in the mid position.	<ul style="list-style-type: none"> • Biting of valve seat. • The scale has adhered to the valve ball. 	Remove a foreign object.
		Clean or replace valve parts. MS MV MH
Leakage from valve body	<ul style="list-style-type: none"> • Valve cap get loose. • Valve body is damaged. 	Replace the valve.
Leakage from valve seat	Seat is worn or damaged.	Replace the valve.
		Replace the seat. MS MV MH
Leakage from valve stem	Stem packing is worn or distorted.	Replace the valve.
		Replace the packing. MS MV
		Replace the O-ring. MH

For more information contact NIPPON VALVE CONTROLS, INC. for consultation.