Serial No.	H – V013 E – 2

Swing Check Valve

User's Manual

Contents

ASAHI AV VALVES

(1) General operating instruction

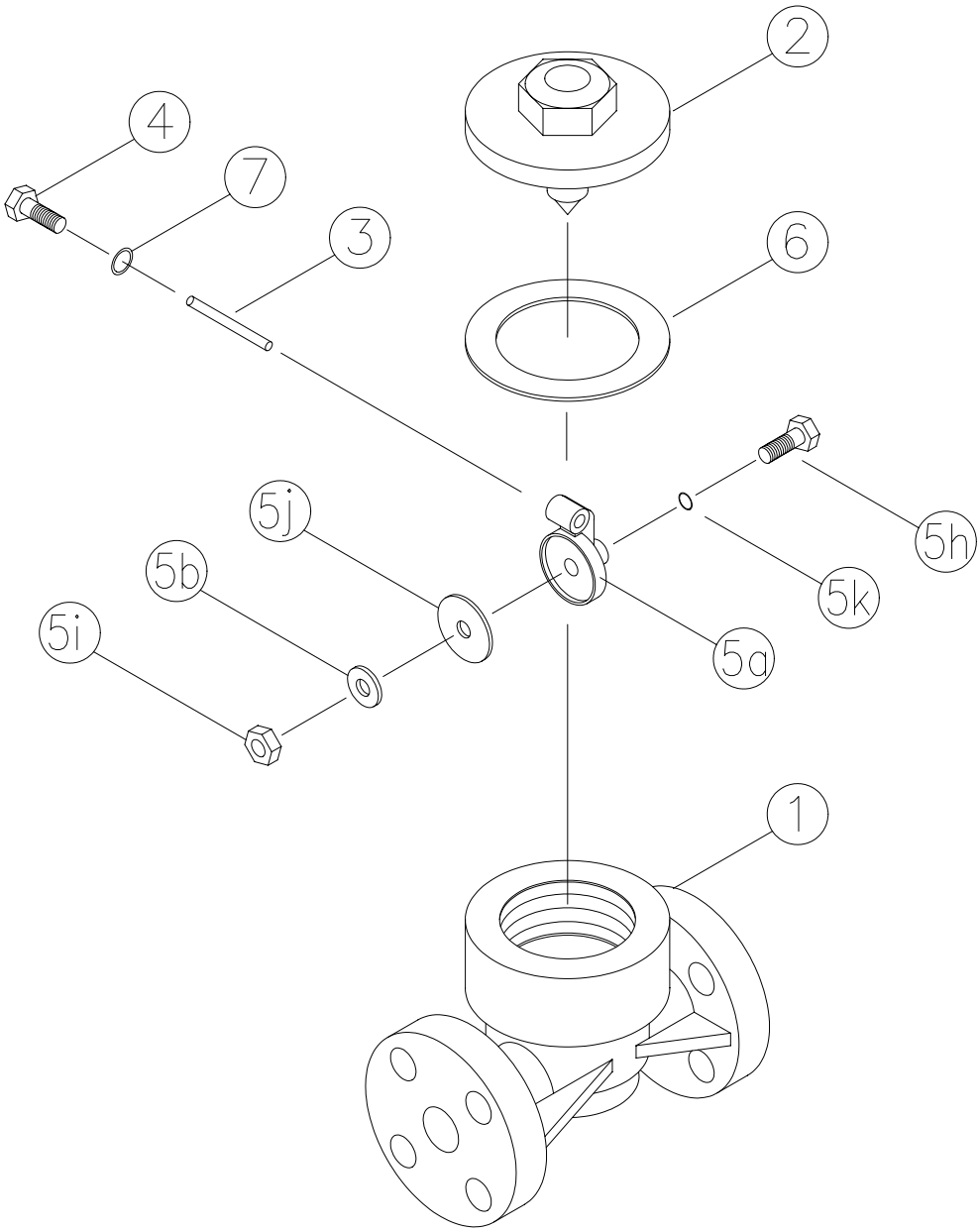
- Operate the valve within the pressure Vs temperature range.
  (The valve can be damaged by operating beyond the allowable range.)
- Select a valve material that is compatible with the media, refer to “CHEMICAL RESISTANCE ON ASAHI AV VALVE”.(Some chemicals may damage incompatible valve materials.)
- Do not use the valve to fluid containing slurry. (The valve will not operate properly.)
- Do not use the valve on condition that fluid has crystallized.
  (The valve will not operate properly.)
- Do not step on the valve or apply excessive weight on valve. (It can be damaged.)
- Make sure to consult a waste treatment dealer to dispose of the valves.
  (Poisonous gas is generated when the valve is burned improperly.)
- Allow sufficient space for maintenance and inspection.
- Keep the valve away from excessive heat or fire. (It can be deformed, or destroyed.)
- The valve is not designed to bear any kind of external load. Never stand on or place anything heavy on the valve at anytime.
- Certain liquid such as H_2O_2, NaClO, etc may be prone to vaporization which may cause irregular pressure increases, which may destroy the valve.

(2) General instructions for transportation, unpacking and storage

- Keep the valve packed in the carton or box as delivered until installation.
- Keep the valve away from any coal tar, creosote (antiseptic for wood), termite insecticide, vermicides, and paint.
  (This could cause swelling damage the valve.)
- Do not impact or drop the valve. (It can be damaged.)
- Avoid scratching the valve with any sharp object.

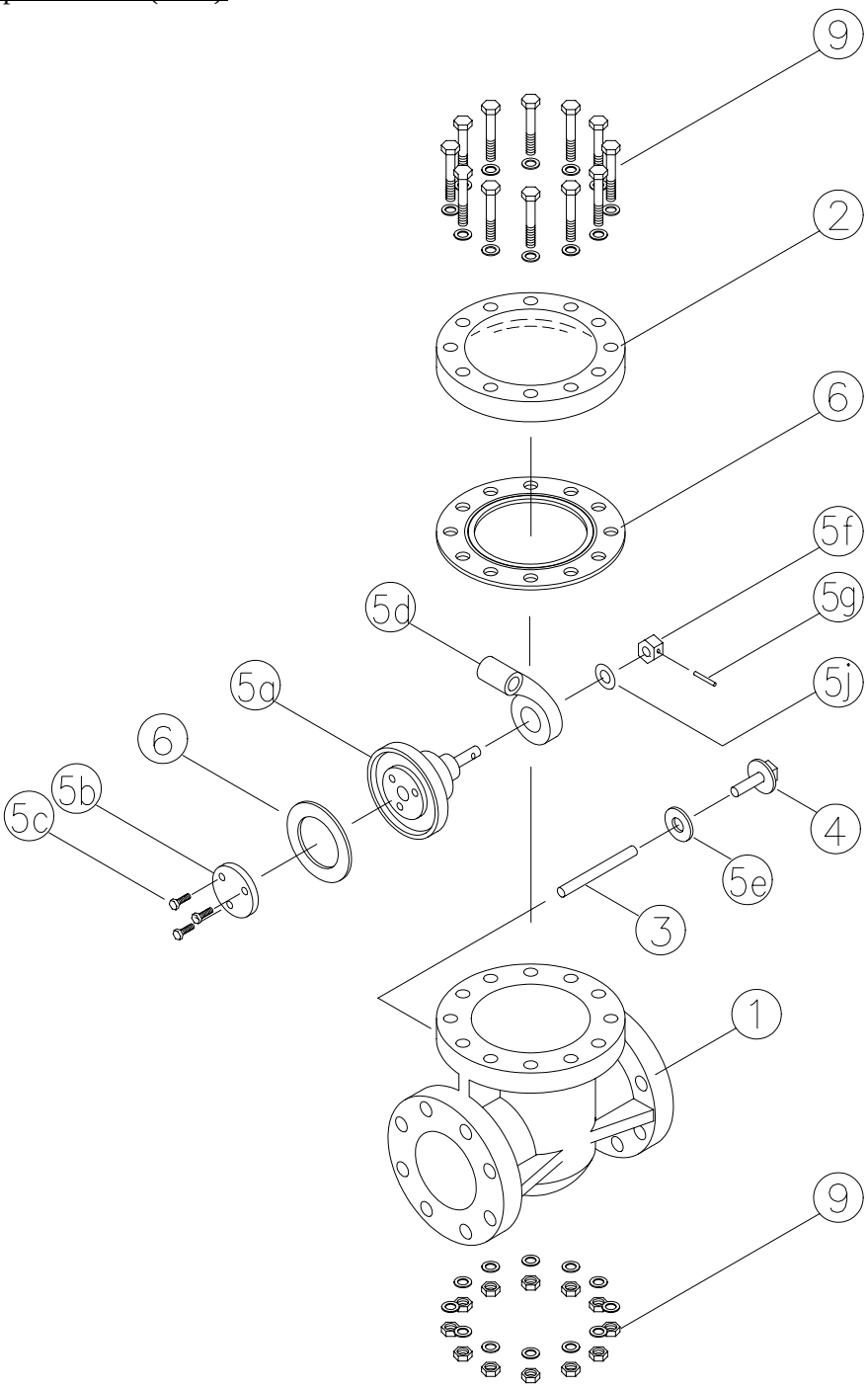
(3) Name of parts

Gasket type 15, 20mm(1/2", 3/4")



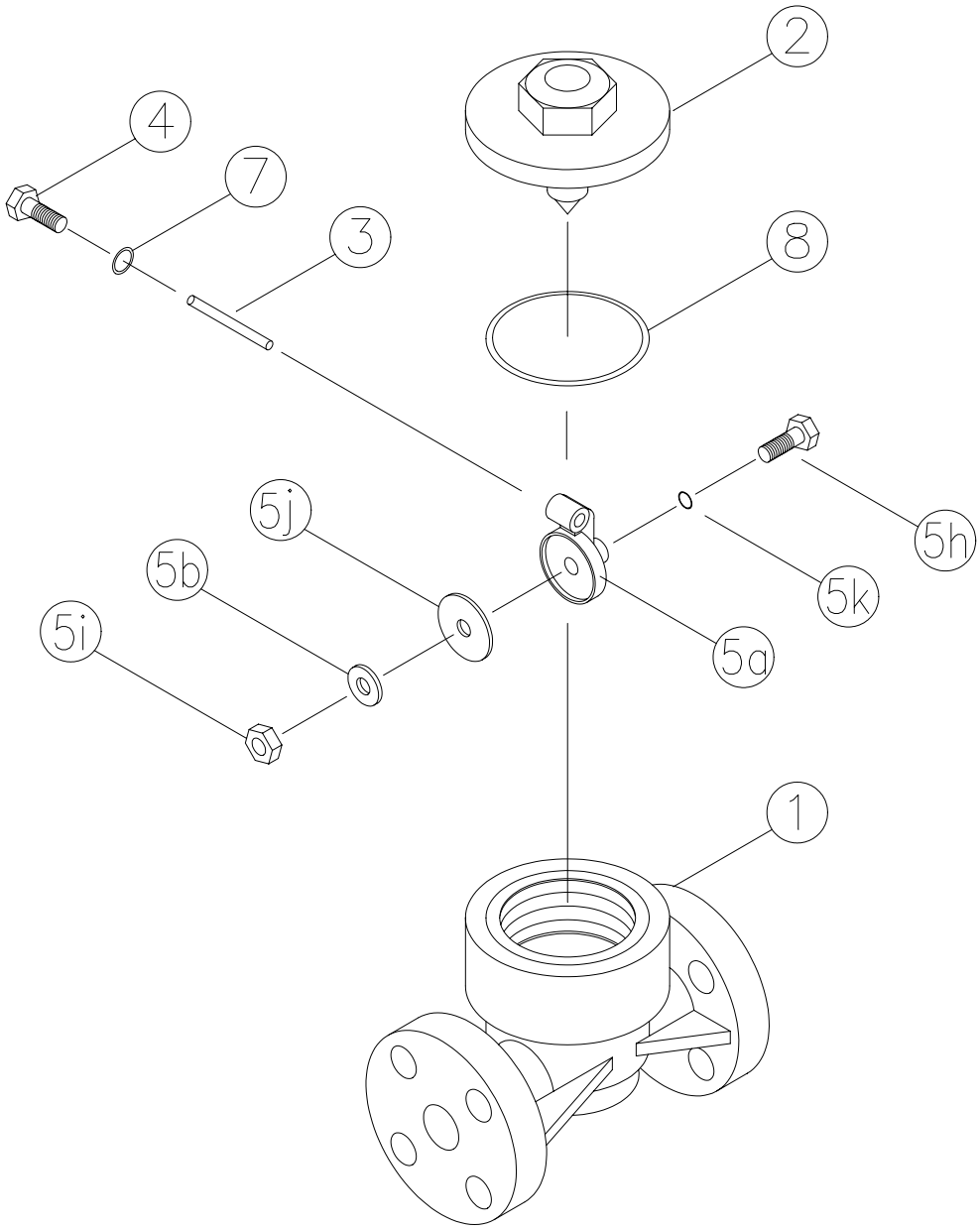
No.	DESCRIPTION	No.		DESCRIPTION	No.		DESCRIPTION
①	Body	⑤	⑤a	Disc	⑤	⑤j	Seat
②	Bonnet		⑤b	Seat holder		⑤k	O-ring (A)
③	Shaft		⑤h	Bolt (B)	⑥		Gasket (A)
④	Plug		⑤i	Nut (B)	⑦		Gasket (B)

Gasket type 25-200mm(1”-8”)



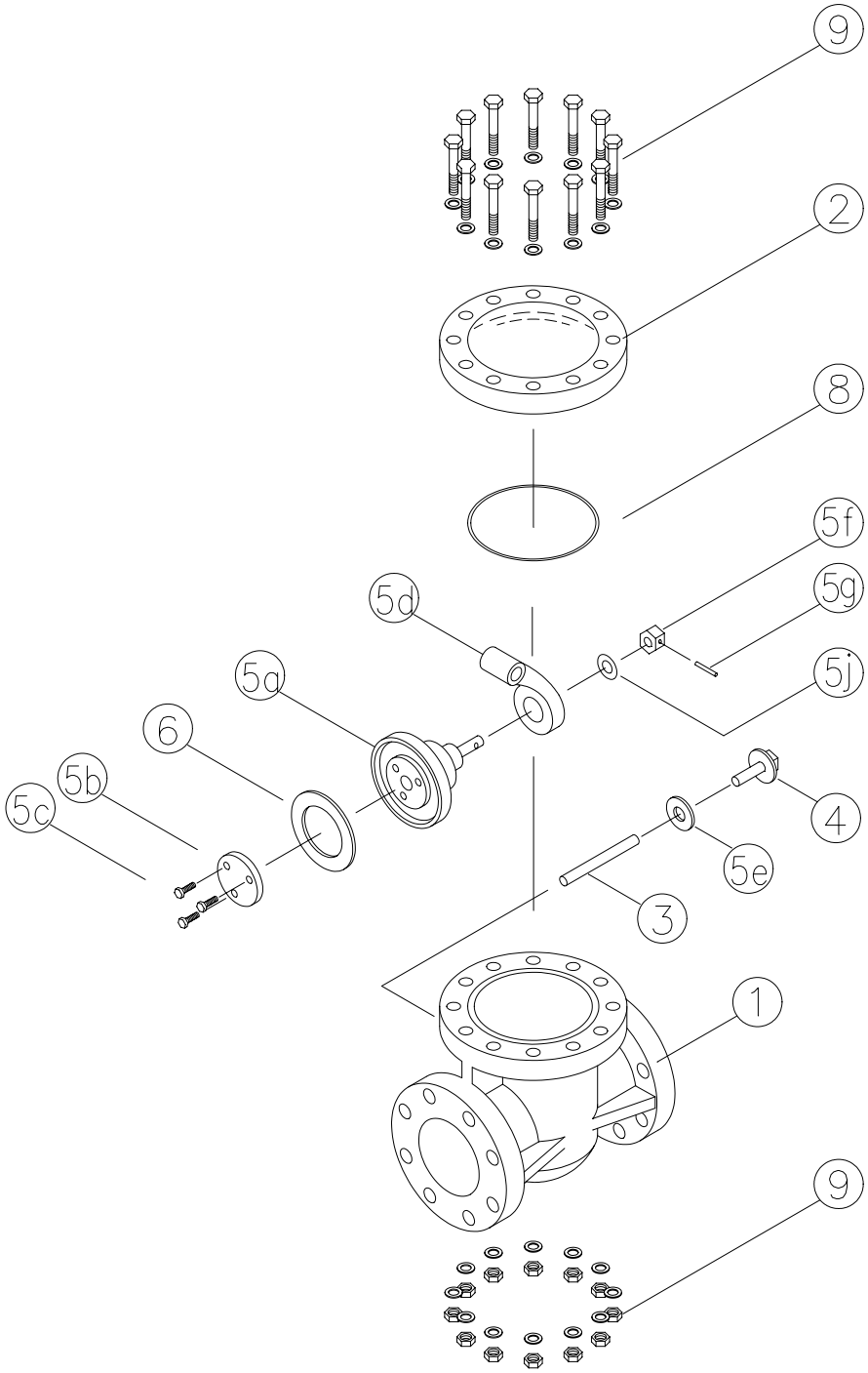
No.	DESCRIPTION	No.	DESCRIPTION	No.	DESCRIPTION
①	Body	⑤	⑤b Seat holder	⑤	⑤j Seat
②	Bonnet		⑤c Bolt (A)		⑤k O-ring (A)
③	Shaft		⑤d Arm	⑥	Gasket (A)
④	Plug		⑤e Washer	⑦	Gasket (B)
⑤ ⑤a	Disc		⑤f Nut (A)	⑨	Bolt ・ Nut

O-ring type 15, 20mm(1/2", 3/4")



No.	DESCRIPTION	No.		DESCRIPTION	No.		DESCRIPTION
①	Body	⑤	⑤a	Disc	⑤	⑤j	Seat
②	Bonnet		⑤b	Seat holder		⑤k	O-ring (A)
③	Shaft		⑤h	Bolt (B)	⑦		Gasket (B)
④	Plug		⑤i	Nut (B)	⑧		O-ring (B)

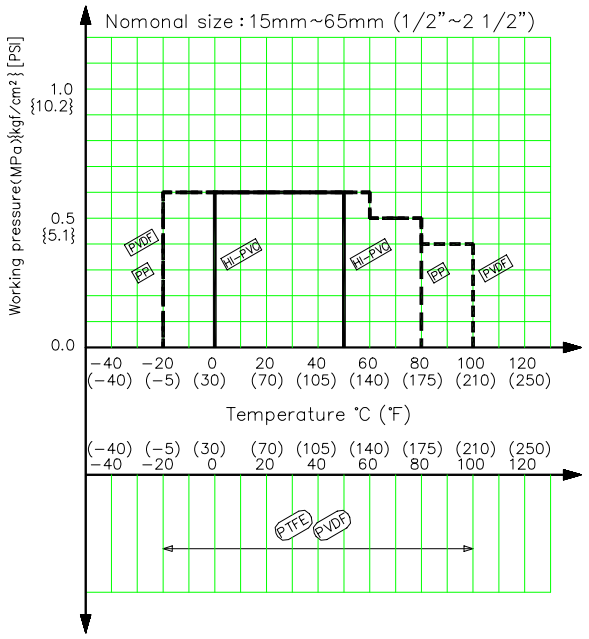
Gasket type 25-200mm(1”-8”)

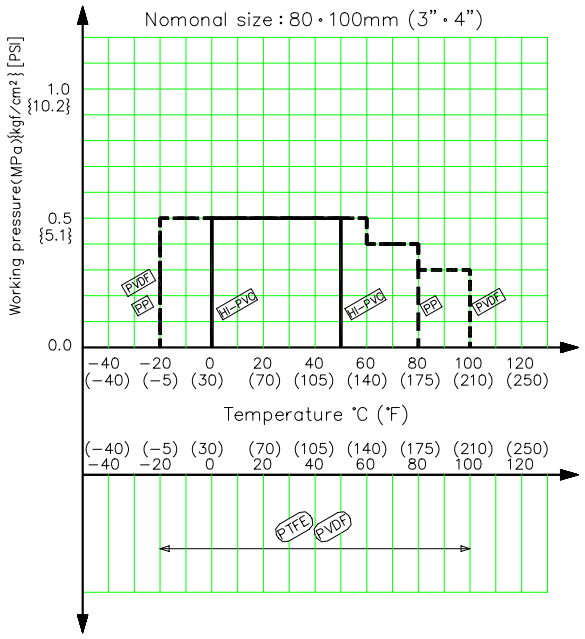


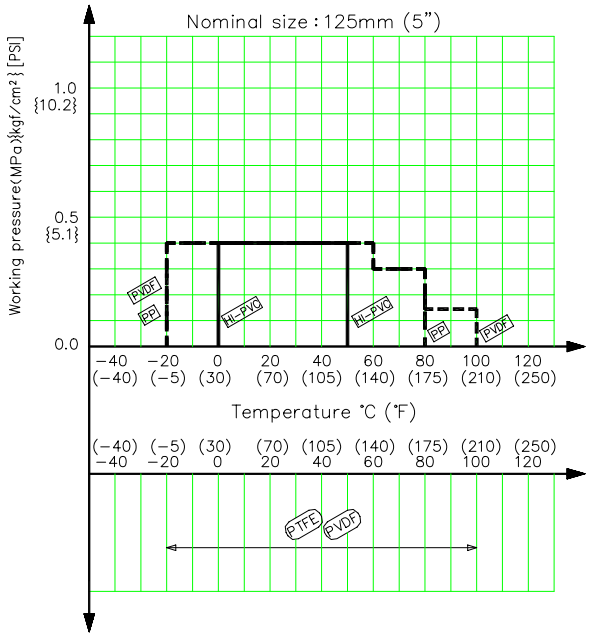
No.	DESCRIPTION	No.	DESCRIPTION	No.	DESCRIPTION
①	Body	⑤	⑤b Seat holder	⑤	⑤g Pin
②	Bonnet		⑤c Bolt (A)		⑤j Seat
③	Shaft		⑤d Arm	⑦	Gasket (B)
④	Plug		⑤e Washer	⑧	O-ring (B)
⑤ ⑤a	Disc		⑤f Nut (A)	⑨	Bolt ・ Nut

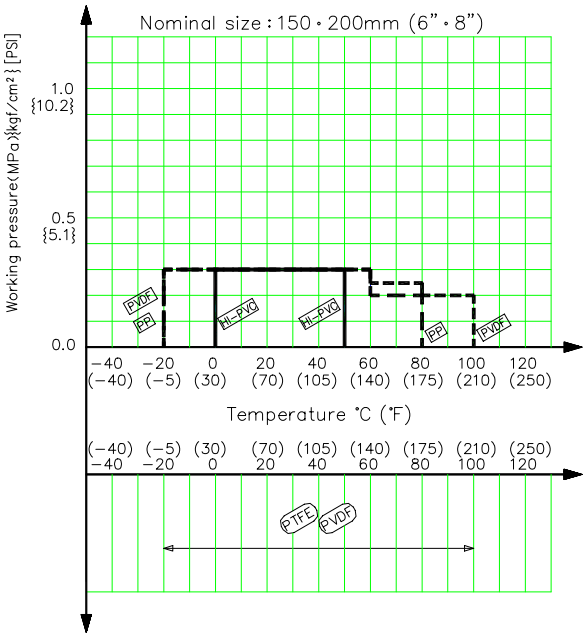
(4) Comparison between operating temperature and pressure

Gasket type





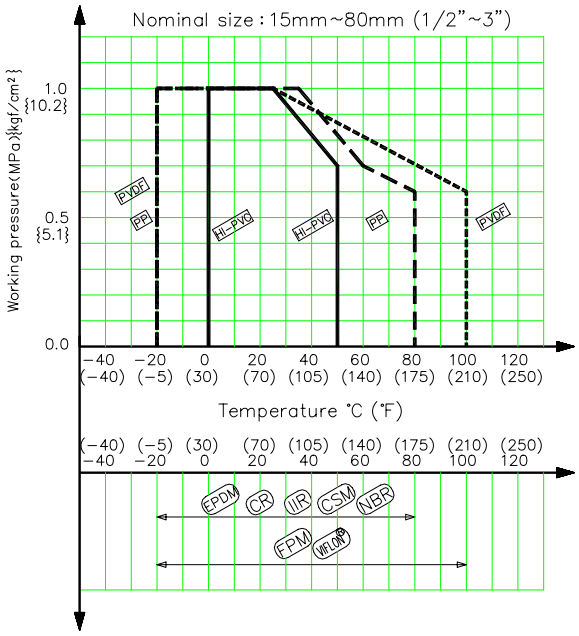


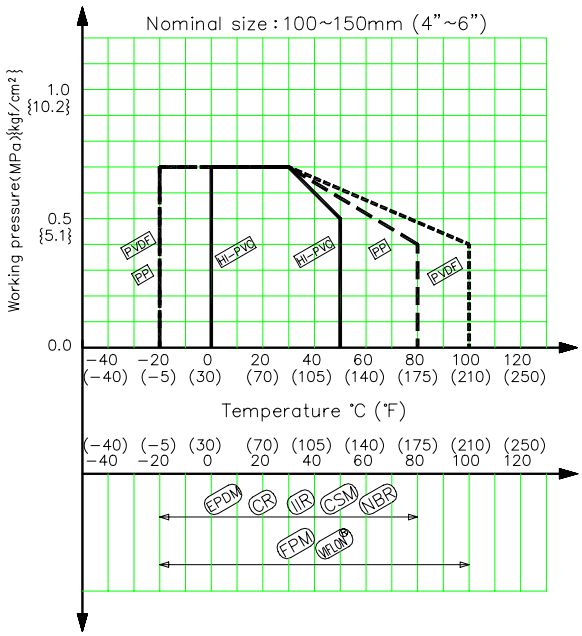


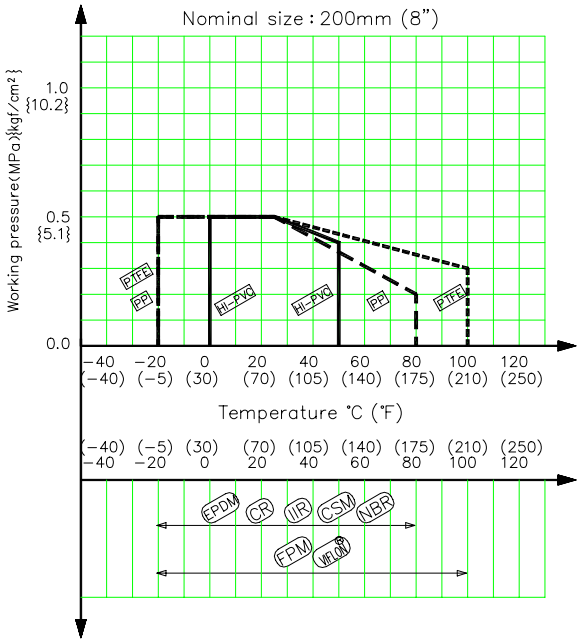
Caution

Do not operate valve beyond the range of working temperature and pressure.
(The valve can be damaged.)

O-ring type







Caution

Do not operate valve beyond the range of working temperature and pressure.
(The valve can be damaged.)

(5) Installation procedure

Necessary items

- Torque wrench
- Spanner wrench
- AV gasket
- Bolt, Nut, Washer (For many flanges specification)

(When a non-AV gasket is used ,a different tightening torque specification should be followed.)

Procedure

1) Set the AV gasket between the flanges.

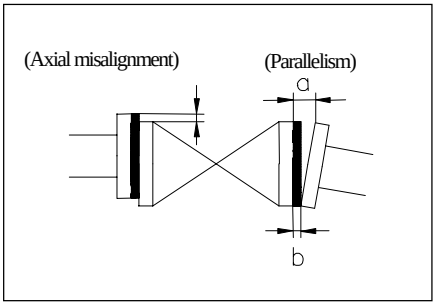
2) Insert washers and bolts from the pipe side, insert washers and nuts from the valve side, and temporarily tighten them by hand.

Caution

The parallelism and axial misalignment of the flange surface should be under the values shown in the following table to prevent damage the valve.
(A failure to observe them can cause destruction due to stress application to the pipe)

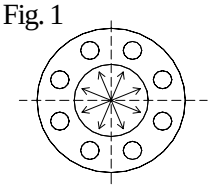
Unit : mm (inch)

Nom. Size	Axial misalignment	Parallelism (a-b)
20-25mm (3/4"-1")	1.0 (0.04)	0.5 (0.02)
40-50mm (1 1/2"-2")	1.0 (0.04)	0.8 (0.03)
65-150mm (2 1/2"-6")	1.0 (0.04)	0.8 (0.03)
200mm (8")	1.5 (0.06)	1.0 (0.04)



3) Using a torque wrench, tighten the bolts and nuts gradually to the specified torque in a diagonal manner. (Refer to fig.1.)

Fig. 1



Caution

Avoid excessive tightening. (The valve can be damaged.)

Recommended torque value

Unit: N-m{kgf-cm}[lb-inch]

Nom. Size	20mm (3/4")	25, 40mm (1", 1 1/2")	50mm (2")	80, 100mm (3", 4")	125, 150mm (5", 6")	200mm (8")
Torque value	17.5 {179} [155]	20.0 {204} [177]	22.5 {204} [199]	30.0 {306} [265]	40.0 {408} [355]	55.0 {561} [488]

Caution

Avoid excessive tightening. (The valve can be damaged.)

(6) Disassembling method for replacing parts

Necessary items

- Torque wrench
- Spanner wrench
- Protective gloves
- Safety goggles
- Bolt, Nut, Washer (For many flanges specification)
- AV gasket （When a non-AV gasket is used, a different tightening torque specification should be followed.)

⚠ Caution

Wear protective gloves and safety goggles as some fluid remains in the valve.
(You may be injured.)

<Disassembly>

1) Drain fluid completely from the pipe line.
2) Loosen the connecting bolts and nuts, and remove the valve from pipeline.
3) <In case of 20mm(3/4")>
   Loosen the bonnet ② and remove it from the body ①.
   <In case of 25-200mm(1"-8")>
   Loosen the bolts and nuts ⑨ and remove the bonnet ②.
4) Loosen the plug ④ and remove it. Thrust the bolt (A) to the threaded hole of shaft ③ and pull out the shaft from the body.

Bolt size

Nom. Size	20-40mm (3/4"-1 1/2")	50mm (2")	65, 80mm (2 1/2", 3")	100-200mm (4"-8")
Torque valve	M4	M5	M6	M8

5) Check the worn of all parts. If the part is worn, replace it.

<Assembly>

<Nominal size 15mm, 20mm (1/2", 3/4")>

1) The produce of assembly is the almost reverse of its disassembly.

2) Only seat can't be replaced. When the seat has necessity to be replaced, replace the assembly part of seat.

3) After completed the assembly, make sure that there is no leakage under the water pressure test.

<Nominal size 25mm (1")>

1) The produce of assembly is the almost reverse of its disassembly.

2) Only seat can't be replaced. When the seat has necessity to be replaced, replace the assembly part of seat.

3) When the bonnet ② is replaced, make sure that the arm stopper direction of the bonnet.
4) Tighten the bolt･nut ⑨ diagonally and equally torque to fix the body ① and bonnet ②.

Unit : N-m {kgf-cm} [lb-inch]

Nom. Size	Torque		Nom. Size	Torque	
	PTFE	Rubber		PTFE	Rubber
25mm (1")	10.0 {102} [89]	6.0 {61} [53]	80mm (3")	20.0 {204} [177]	15.0 {153} [133]
30mm (1 1/4")	13.0 {132} [115]	8.0 {82} [71]	100mm (4")	25.0 {225} [221]	20.0 {204} [177]
40mm (1 1/2")	13.0 {132} [115]	8.0 {82} [71]	125mm (5")	25.0 {225} [221]	20.0 {204} [177]
50mm (2")	15.0 {153} [133]	10.0 {102} [89]	150mm (6")	30.0 {306} [266]	25.0 {225} [221]
65mm (2 1/2")	15.0 {153} [133]	10.0 {102} [89]	200mm (8")	30.0 {306} [266]	25.0 {225} [221]

5) After completed the assembly, make sure that there is no leakage under the water pressure test.

(7) Inspection items

○ Inspect the follow items ;

(1)	Check for any flaw, crack, or deformation on the outside.
(2)	Check whether fluid leaks to the outside.
(3)	Check whether tightness of bolt nut.

(8) Troubleshooting

Problem	Cause	Treatment
The Fluid is leaking past the fully closed position.	The back pressure is low.	Check for the back pressure.
	Seat is worn.	Replacement.
	Solid particles have lodged in the valve.	Clear the solid particles from the valve.
Fluid leaks from the valve	O-ring is worn.	Replacement.
	Packing is worn.	Replacement.
	Looseness of bolts･nut.	Retighten.

(9) Handling of residual and waste materials

Caution

In discarding remaining or waste materials, be sure to ask a waste service company.

(10) Inquires

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Distributor

Swing check valve

ASAHI *AV* VALVES

Information in this manual is subject to change without notice. 2003. 5