

Serial No.	H-V011E-3
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Gate Valves (C type)

P type (Standard : Plug)

S type (Soft seal)

User's Manual



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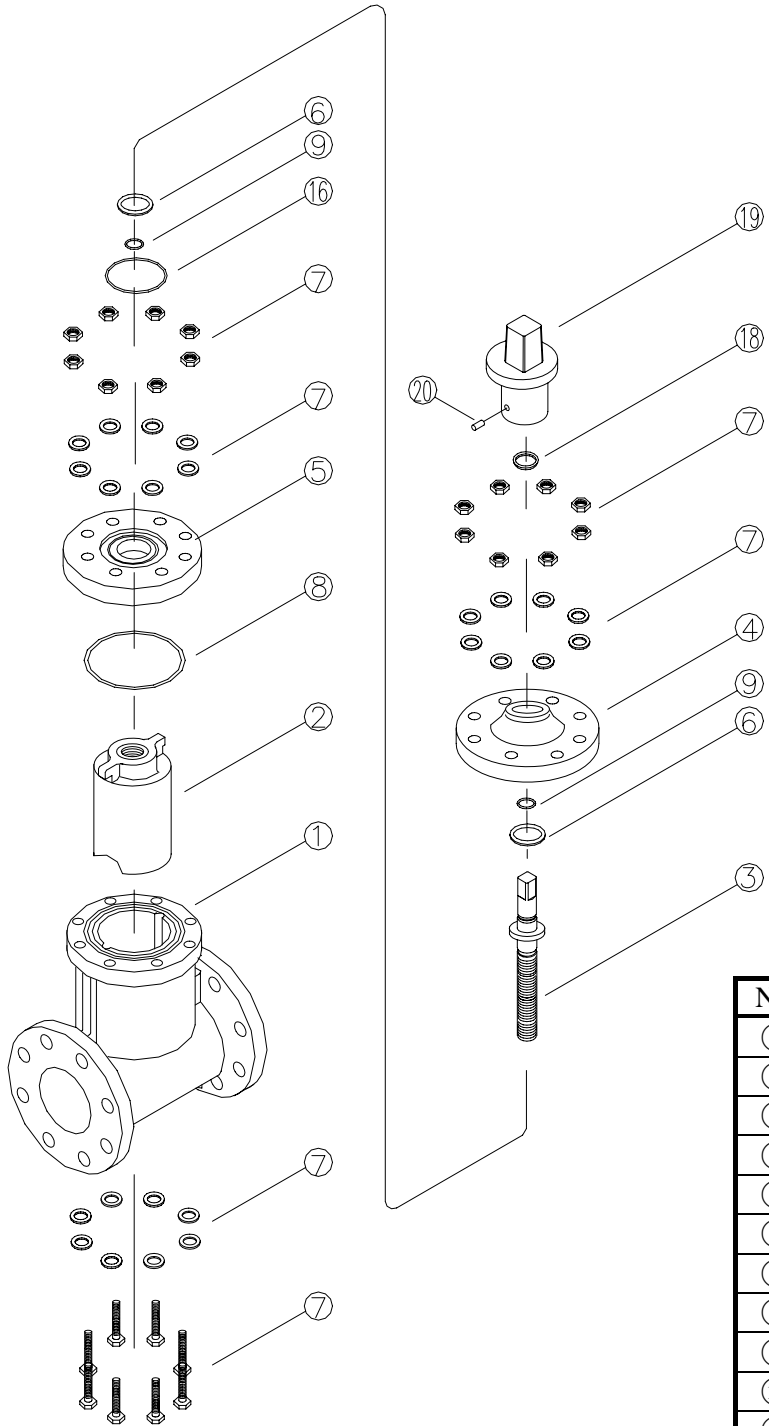
(1) General operating instructions

- Operate the valve within the pressure v.s. 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.)
- Do not exert excessive force in closing the valve.
- 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)
- Set valve support on the valve.
- Keep the valve away from places of direct sunlight, water and dust. Use cover to shield the valve.
(The valve will not operate properly.)
- Do not use AV valves in a place where they may become submerged in water.
(Submergence will make AV valve fail.)

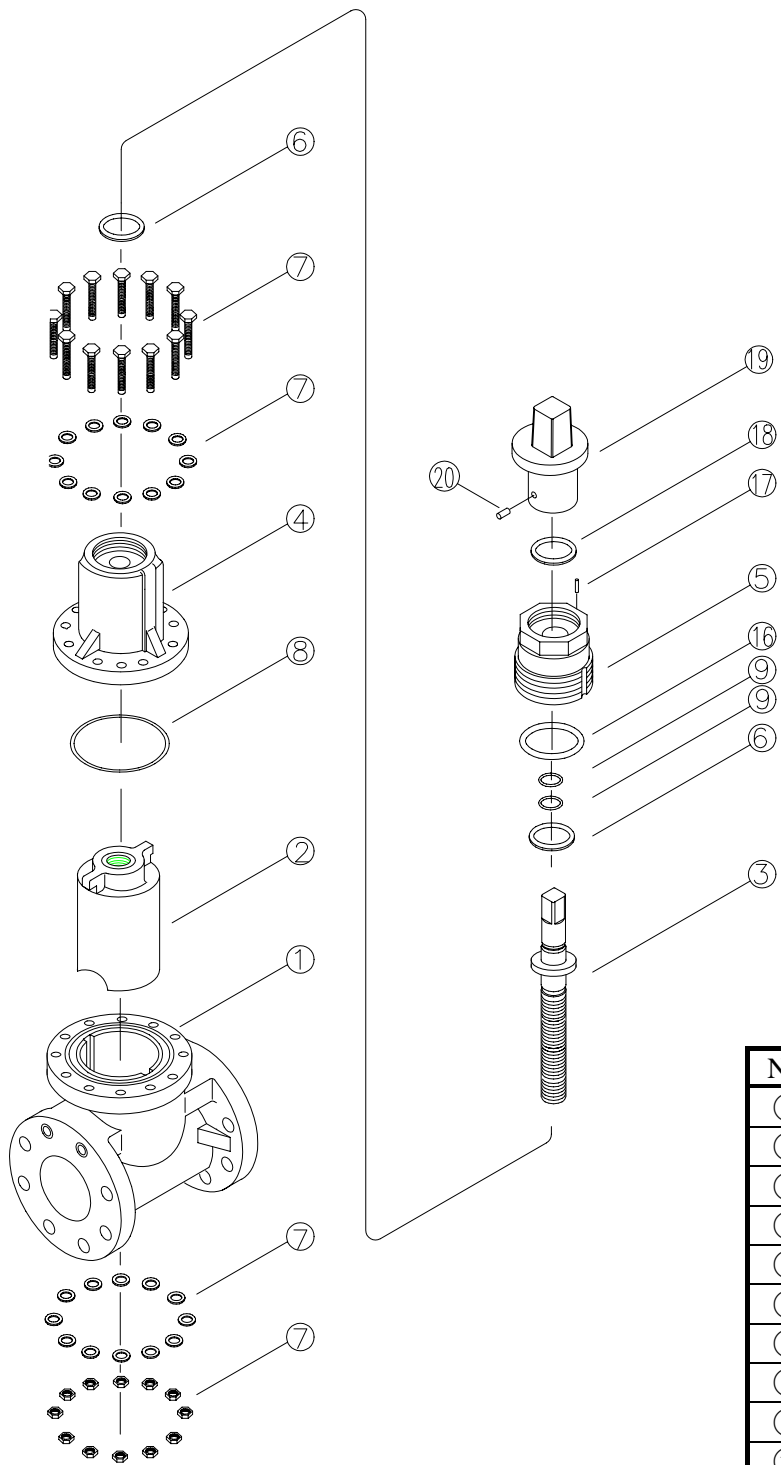
(2) General instructions for transportation, unpacking and storage

- 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 and damage the valve.)
- Do not impact or drop the valve. (It can be damaged.)
- Avoid scratching the valve with any sharp object.

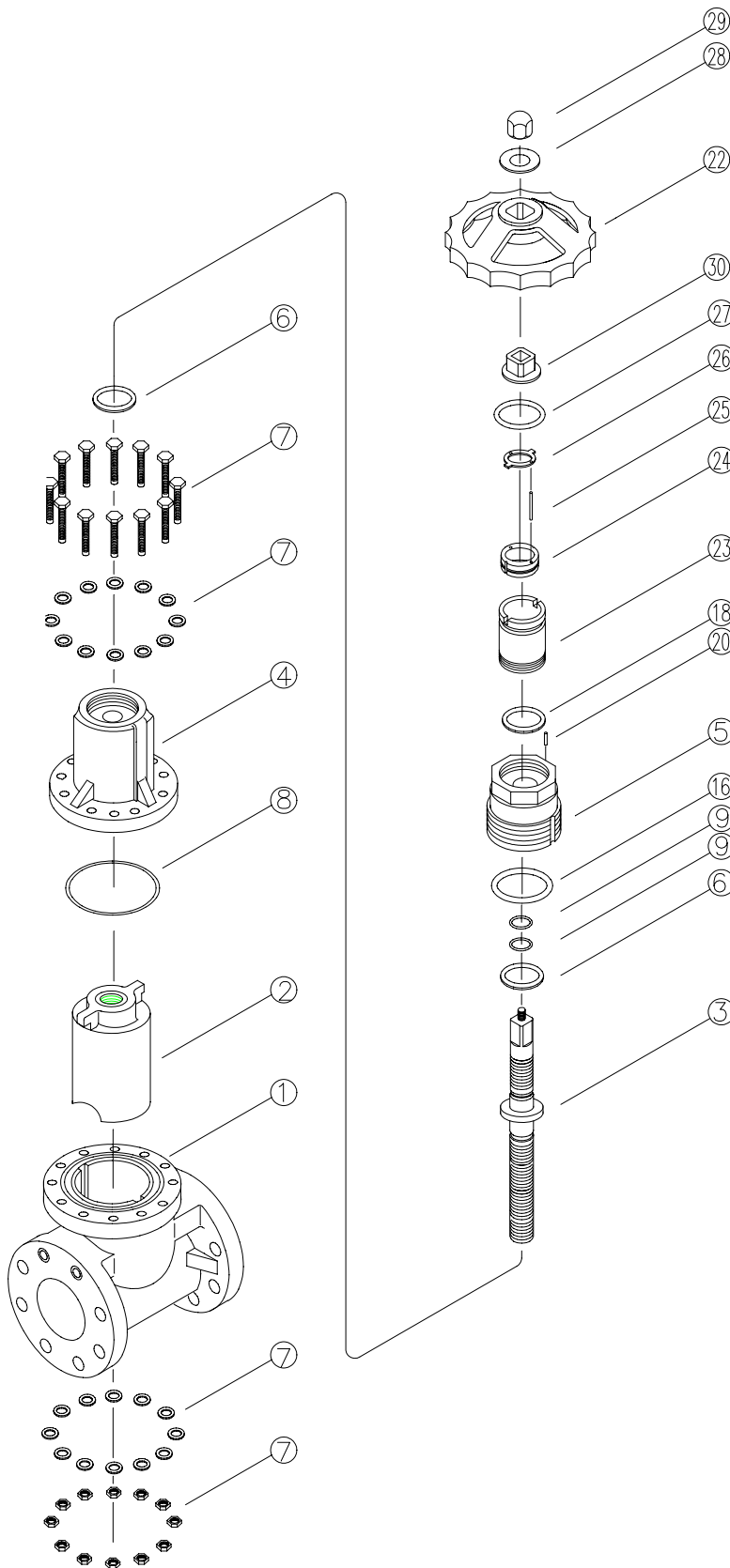
(3) Name of parts



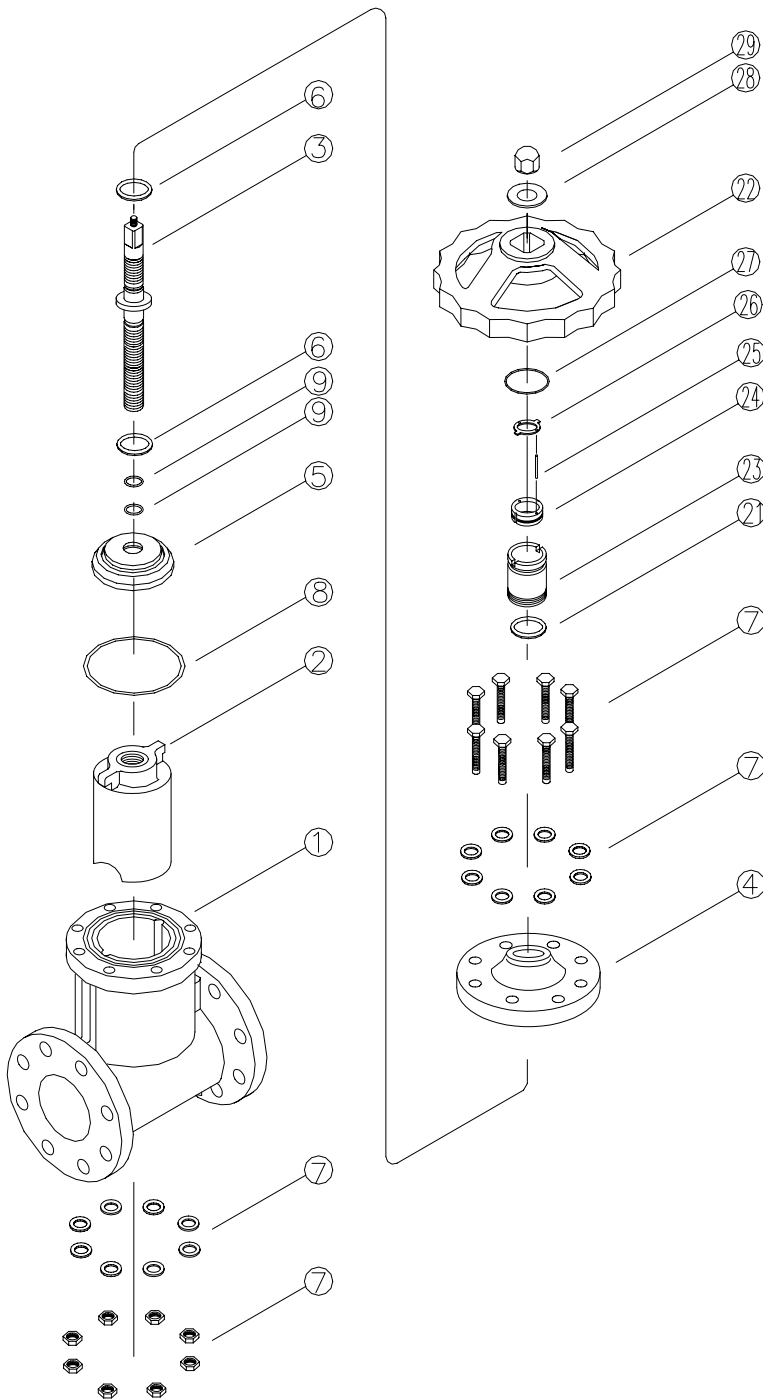
No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑭	Set screw (A)
⑮	Dust seal
⑯	Cap (A)
AV Gate valve P-type 40mm (1½")-150mm (6") Cap Metal stem	



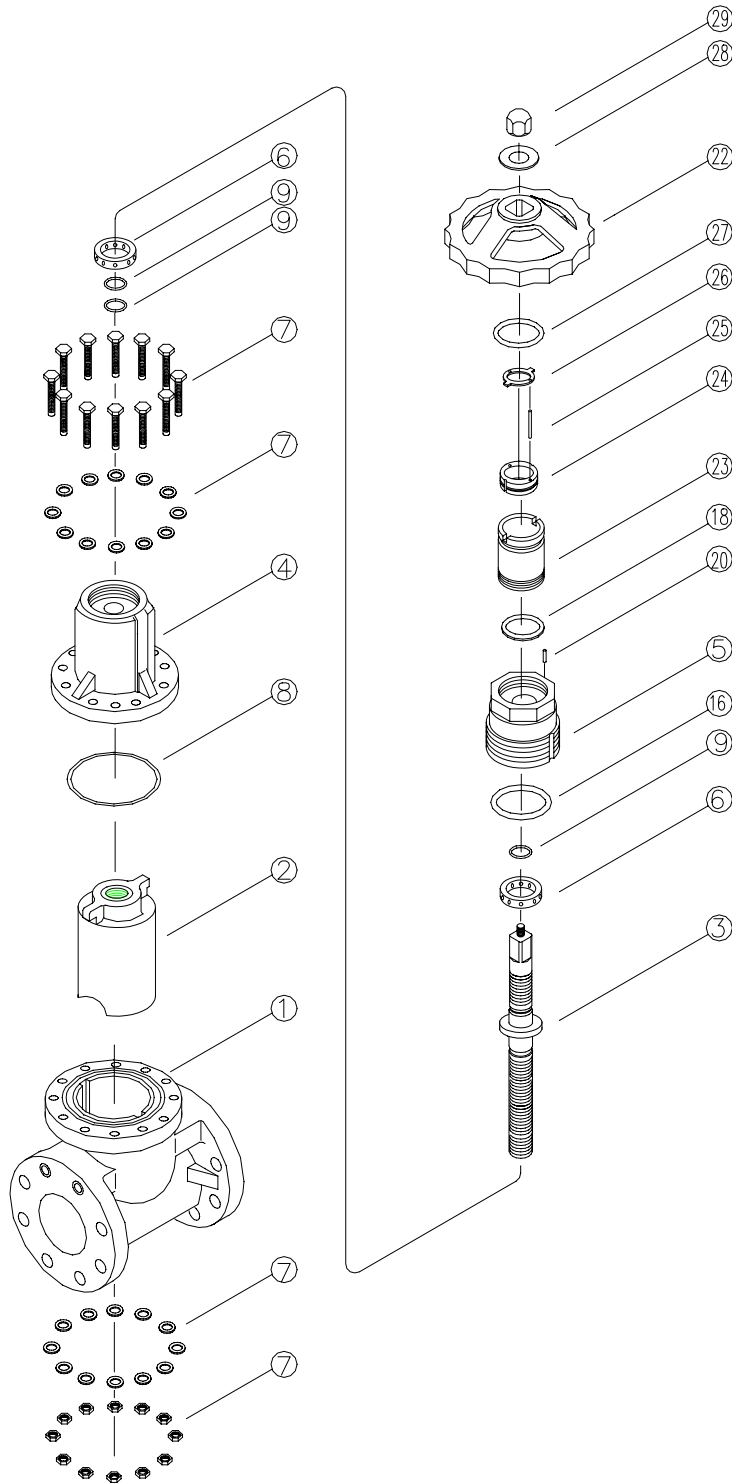
No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑭	Set screw (A)
⑮	Dust seal
⑯	Cap (A)
⑰	Set screw (B)
AV Gate valve P-type 200mm (8'')-350mm (14'') Cap Metal stem	



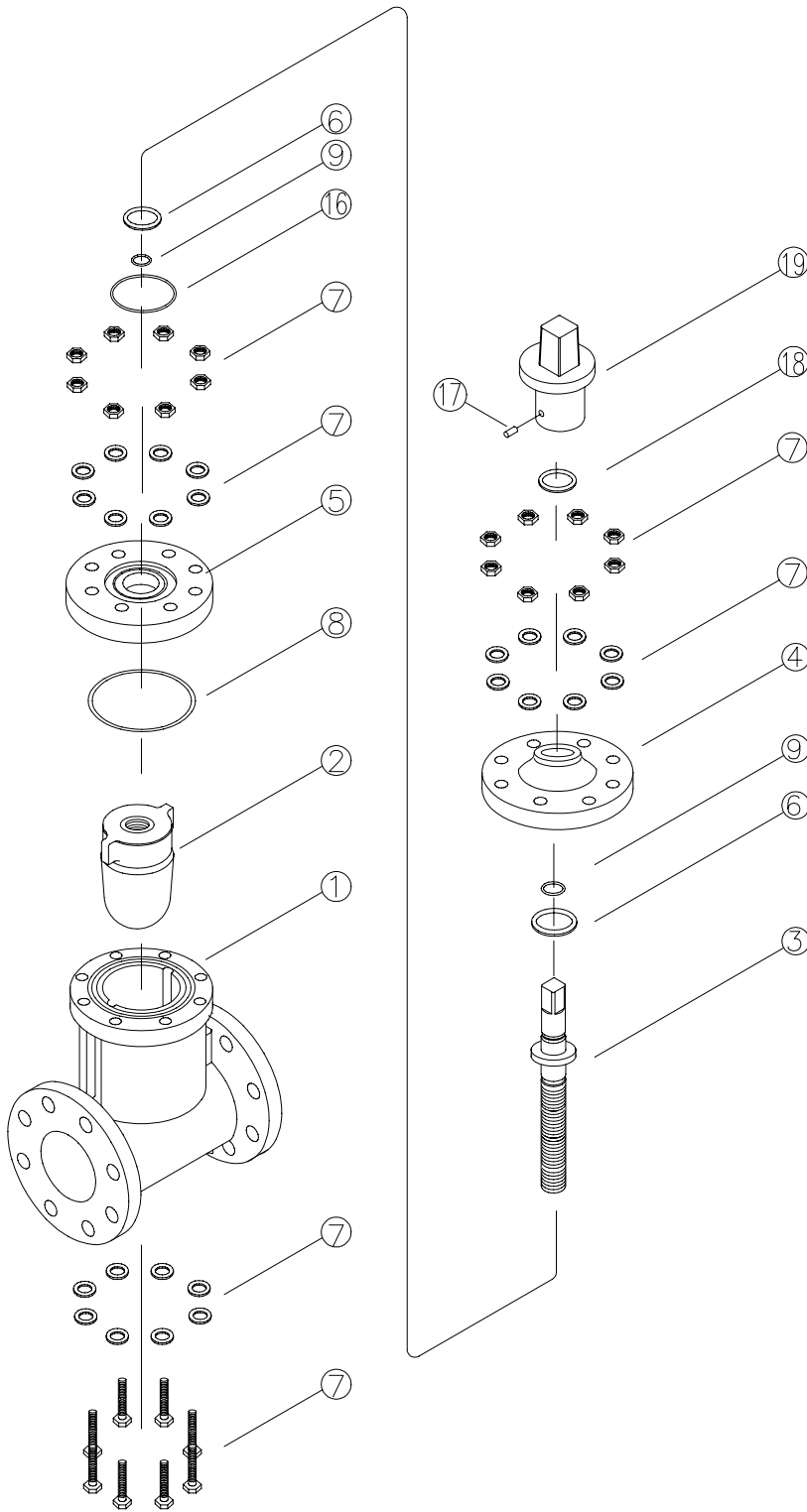
No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑱	Dust seal
⑳	Set screw
㉒	Handle
㉓	Indicating cover
㉔	Indicating ring
㉕	Guide pin
㉖	Guide pin holder
㉗	O-ring (G)
㉘	Washer
㉙	Box nut
㉚	Handle bush
AV Gate valve P-type 200mm (8'')-350mm (14'') Round handle Metal stem	



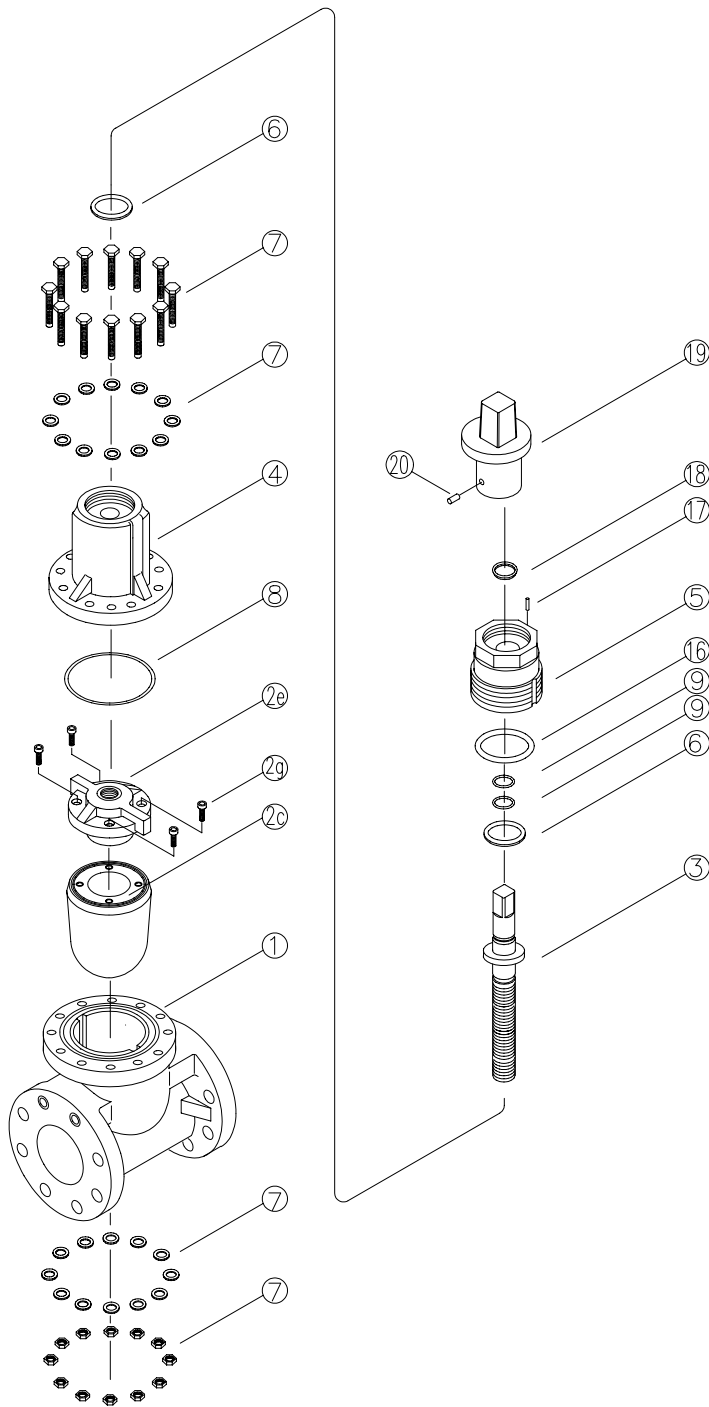
No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑩	O-ring (D)
⑪	Dust seal
⑫	Set screw (B)
⑬	Handle
⑭	Indicating cover
⑮	Indicating ring
⑯	Guide pin
⑰	Guide pin holder
⑱	O-ring (G)
⑲	Washer
⑳	Nut
AV Gate valve P-type 40mm (1½")-150mm (6") Round handle PVC stem Non - rising	



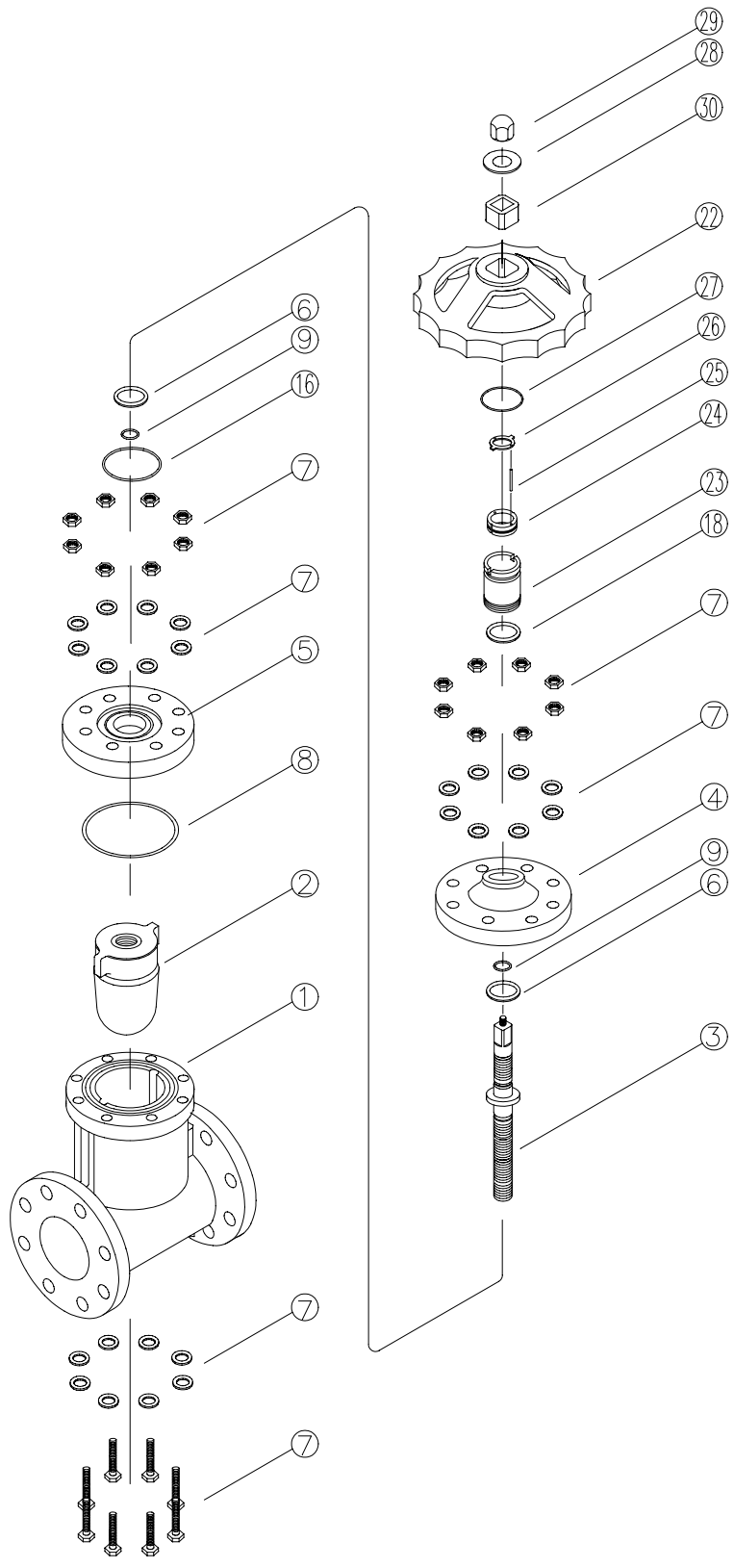
No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust bearing
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑯	O-ring (D)
⑱	Dust seal
⑳	Set screw (B)
㉑	Handle
㉒	Indicating cover
㉓	Indicating ring
㉔	Guide pin
㉕	Guide pin holder
㉖	O-ring (G)
㉗	Washer
㉘	Box nut
AV Gate valve P-type 200mm (8'') -350mm (14'') Round handle PVC stem Non - rising	



No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut-washer
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑭	Set screw (A)
⑮	Dust seal
⑯	Cap (A)
AV Gate valve S-type 40mm (1½")-150mm (6") Cap Metal stem	

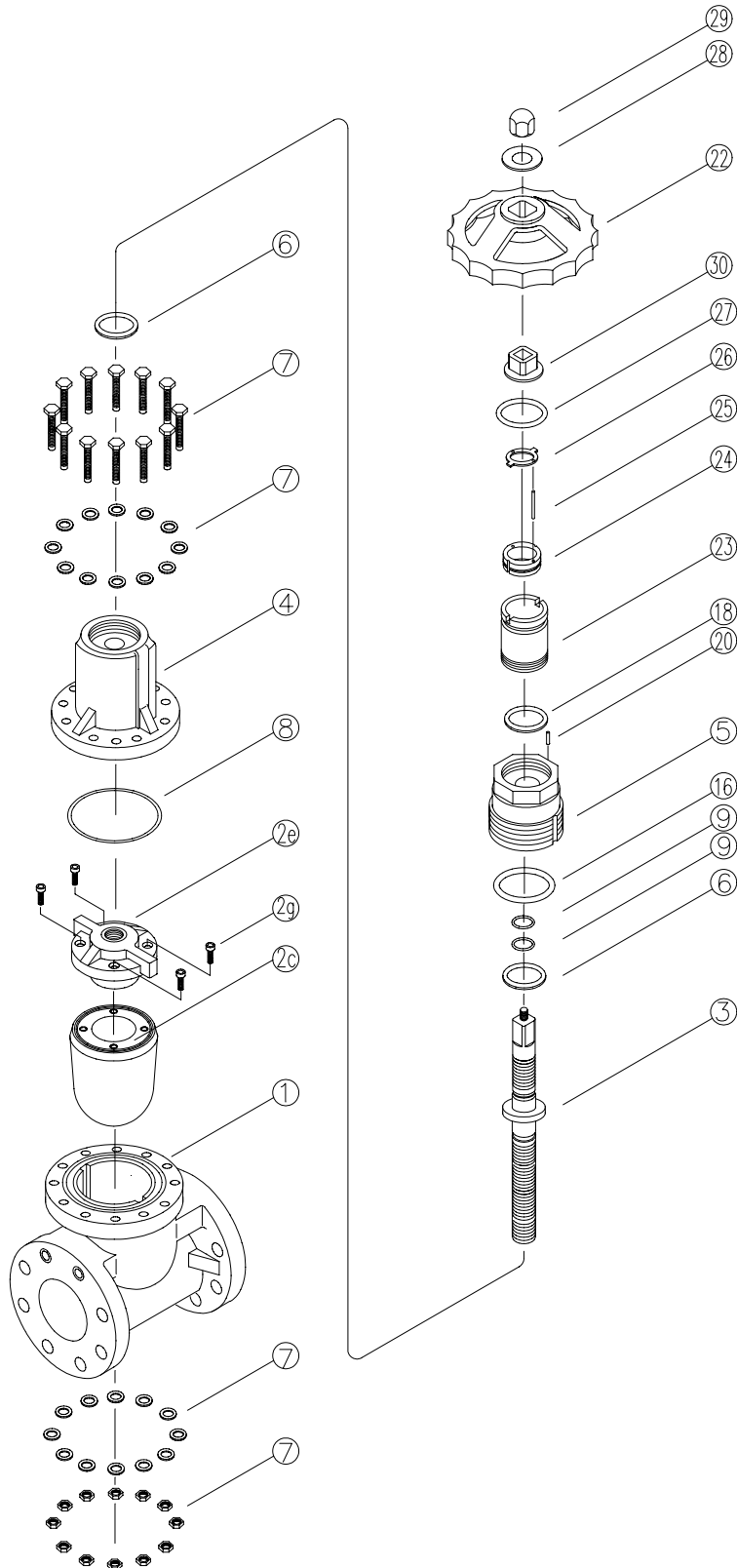


No.	DESCRIPTION
①	Body
②c	Gate (A)
②e	Gate (B)
②g	Bolt (A)
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑰	Set screw (A)
⑱	Dust seal
⑲	Cap (A)
⑳	Stem screw (B)
AV Gate valve S-type 200mm (8'') Cap Metal stem	

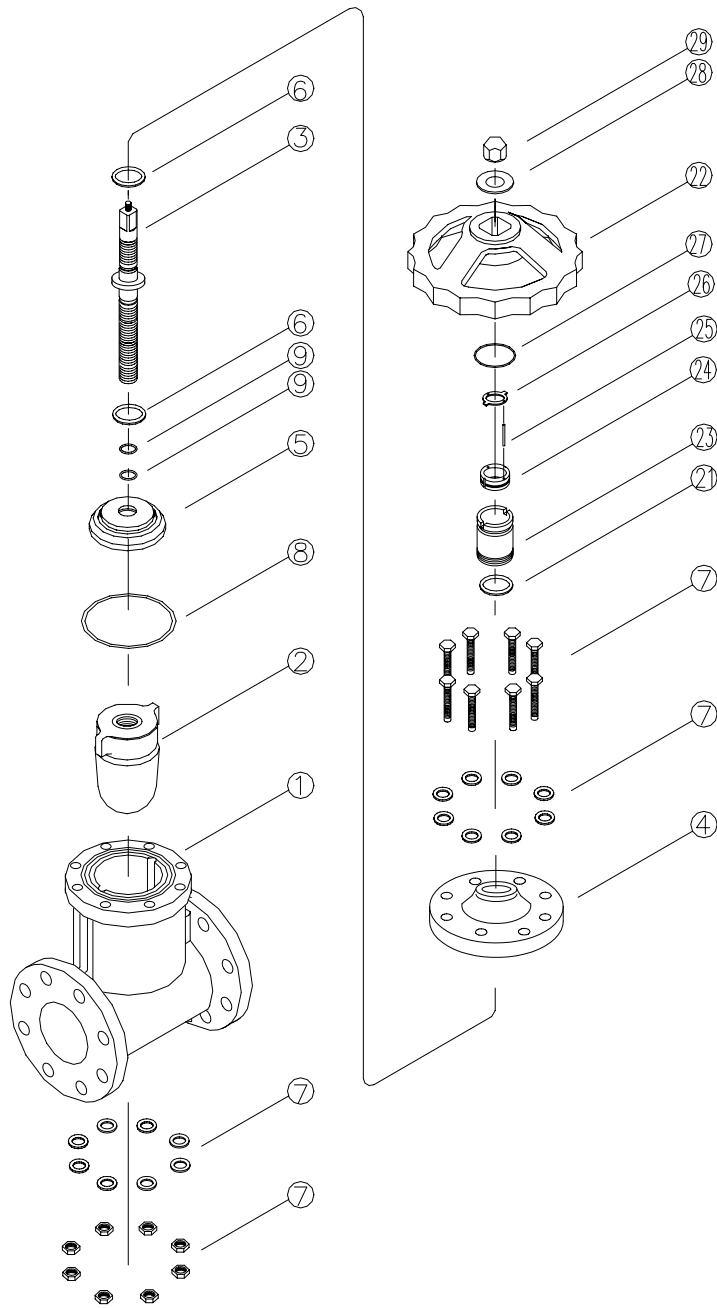


No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑱	Dust seal
⑳	Handle
㉓	Indicating cover
㉔	Indicating ring
㉕	Guide pin
㉖	Guide pin holder
㉗	O-ring (G)
㉘	Washer
㉙	Nut
㉚	Handle bush

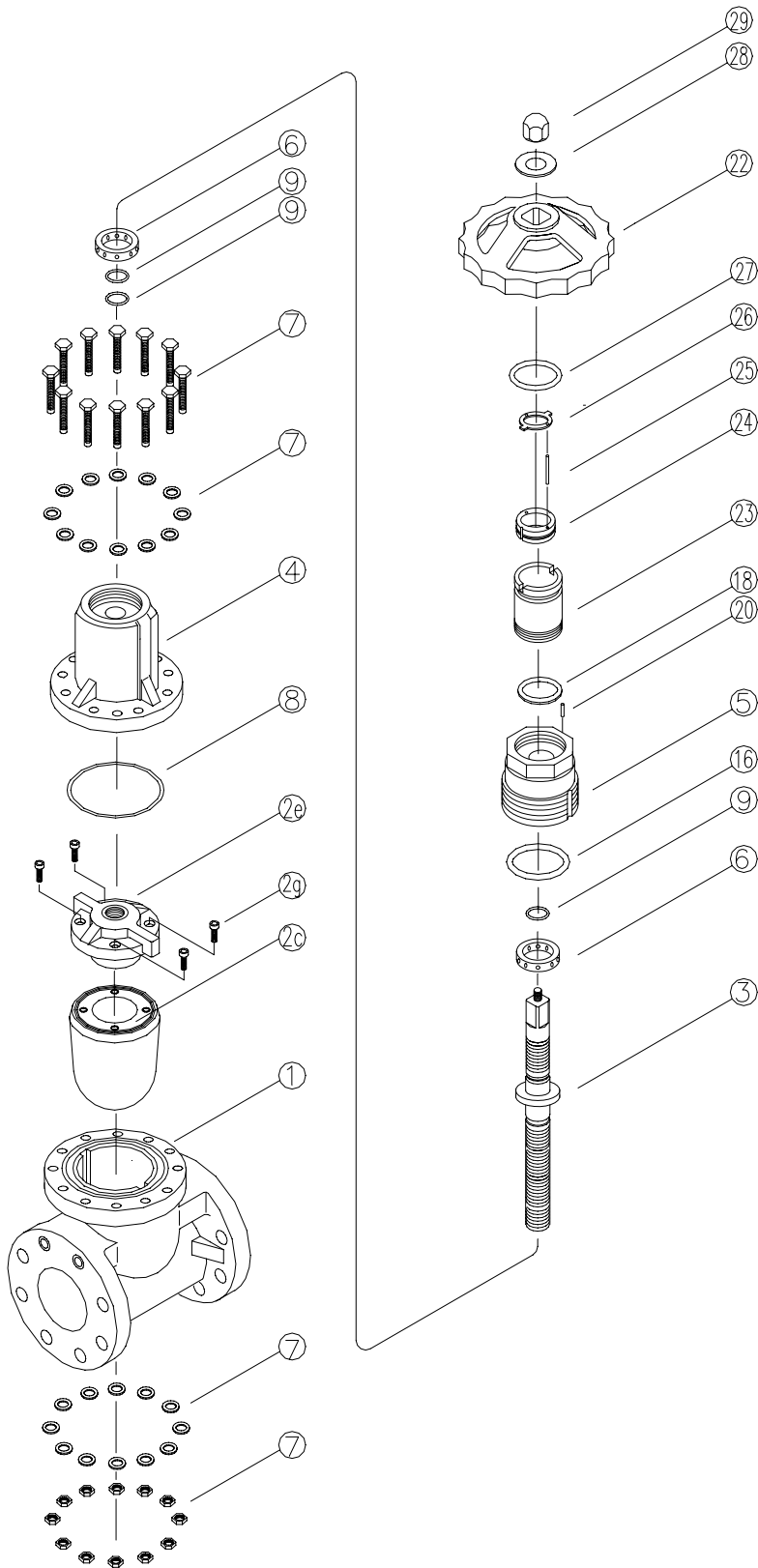
AV Gate valve S-type
 40mm (1½")-150mm (6")
 Round handle
 Metal stem



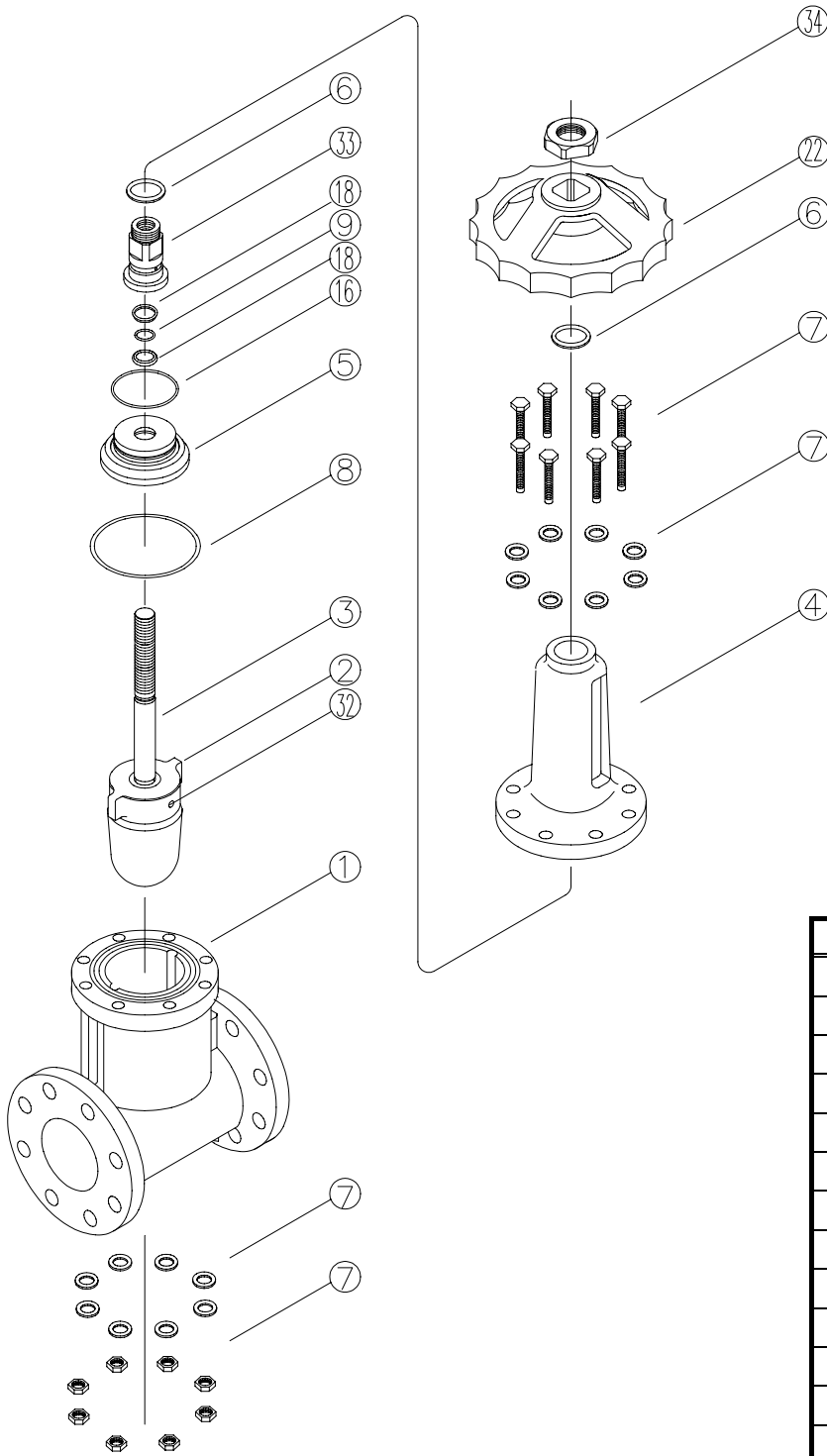
No.	DESCRIPTION
①	Body
②c	Gate (A)
②e	Gate (B)
②g	Bolt (A)
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑱	Dust seal
⑳	Set screw (B)
㉒	Handle
㉓	Indicating cover
㉔	Indicating ring
㉕	Guide pin
㉖	Guide pin holder
㉗	O-ring (G)
㉘	Washer
㉙	Box nut
㉚	Handle bush
AV Gate valve S-type 200mm (8") Round handle Metal stem	



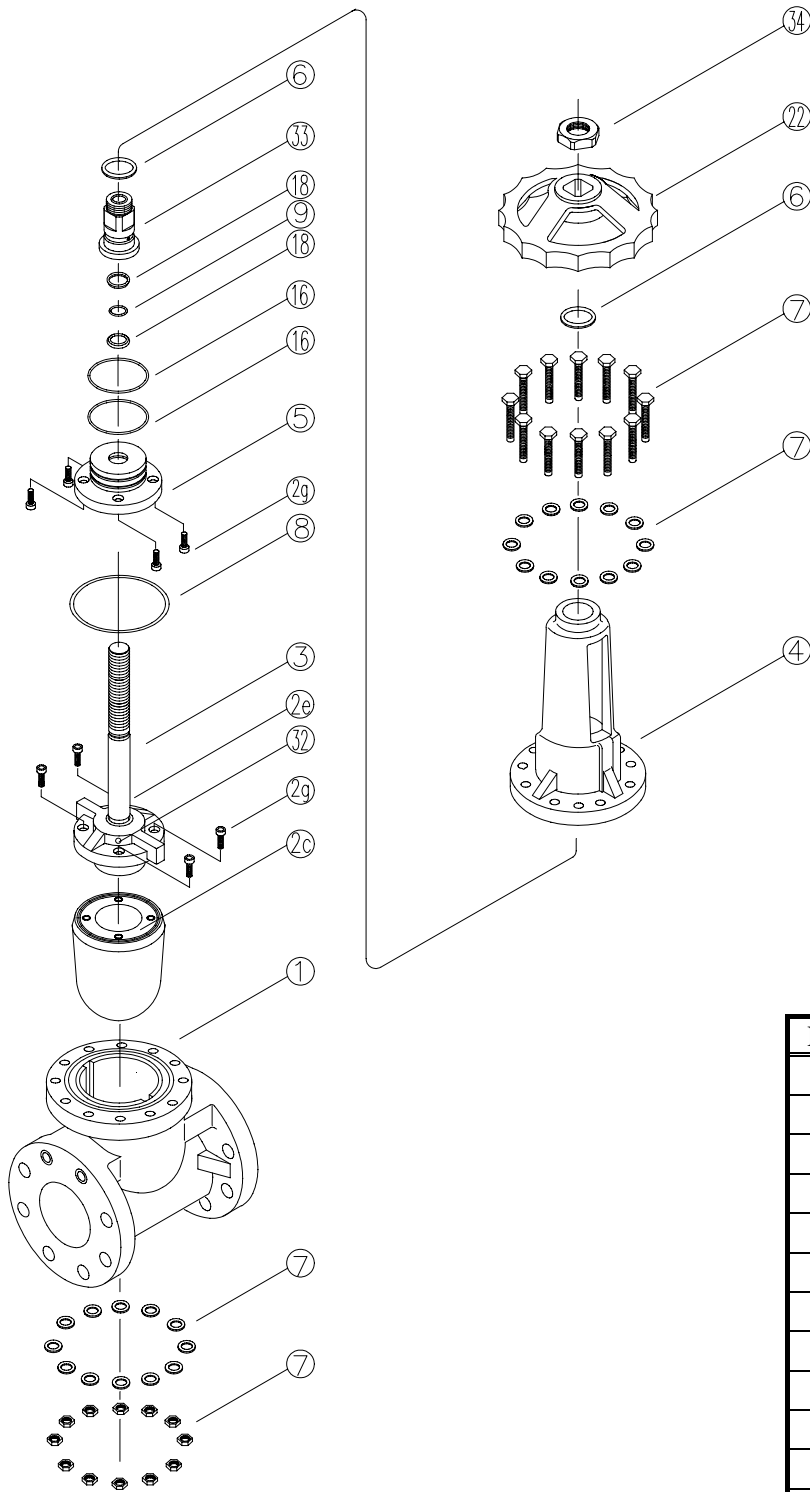
No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑱	Dust seal
⑲	Set screw (B)
⑳	Handle
㉑	Indicating cover
㉒	Indicating ring
㉓	Guide pin
㉔	Guide pin holder
㉕	O-ring(G)
㉖	Washer
㉗	Nut
AV Gate valve S-type 50mm (2")-150mm (6") Round handle PVC stem Non - rising	



No.	DESCRIPTION
①	Body
②a	Bolt
②c	Gate(A)
②e	Gate(B)
③	Stem
④	Bonnet(A)
⑤	Bonnet(B)
⑥	Thrust ring
⑦	Bolt-nut(A)
⑧	O-ring(B)
⑨	O-ring(C)
⑬	O-ring(D)
⑱	Dust seal
⑳	Set screw(B)
㉒	Handle
㉓	Indicating cover
㉔	Indicating ring
㉕	Guide pin
㉖	Guide pin holder
㉗	O-ring(G)
㉘	Washer
㉙	Box nut
AV Gate valve S-type 200mm (8'') Round handle PVC stem Non - rising	

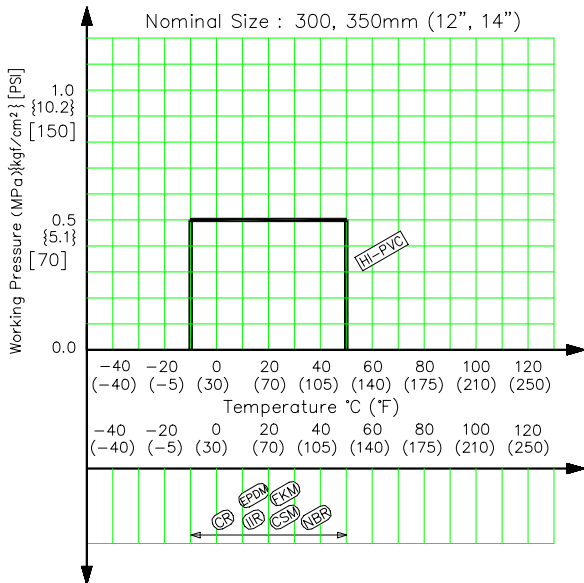
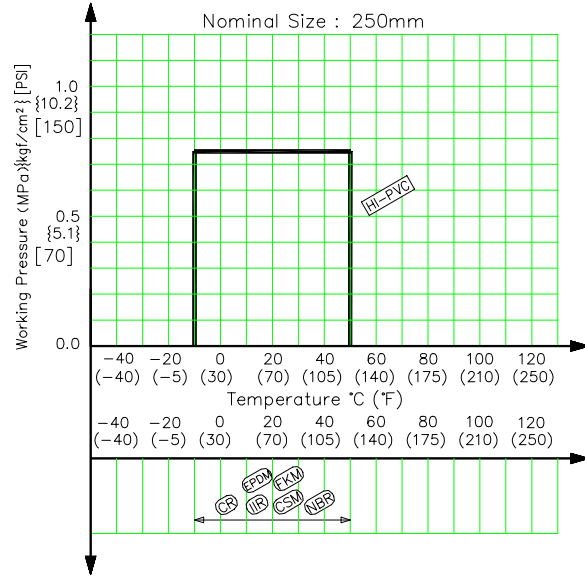
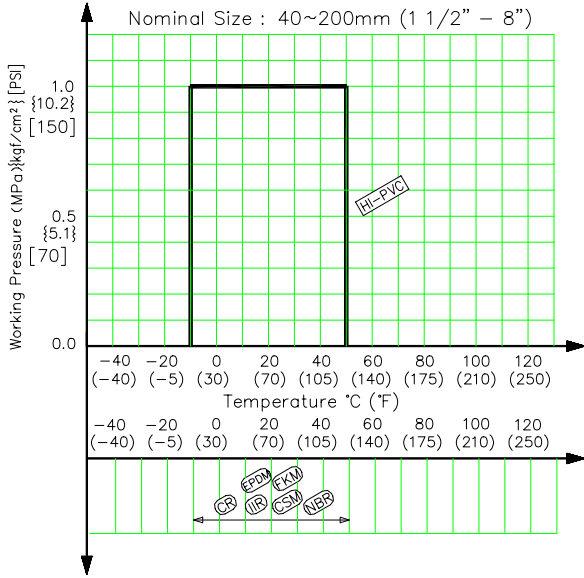


No.	DESCRIPTION
①	Body
②	Gate
③	Stem
④	Bonnet (A)
⑤	Bonnet (B)
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑯	O-ring (D)
⑱	Dust seal
⑳	Handle
㉑	Pin (A)
㉒	Sleeve
㉓	Nut
AV Gate valve S-type 40mm (1½")-150mm (6") External threaded type	



No.	DESCRIPTION
①	Body
②c	Gate(A)
②e	Gate(B)
②g	Bolt(A)
③	Stem
④	Bonnet
⑤	Bush
⑥	Thrust ring
⑦	Bolt-nut (A)
⑧	O-ring (B)
⑨	O-ring (C)
⑬	O-ring (D)
⑱	Dust seal
⑳	Handle
㉓	Pin (A)
㉔	Sleeve
㉕	Nut
AV Gate valve S-type 200mm (8'') External threaded screw type	

(4) Comparison between operating temperature and pressure



Caution

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

(5) Installation procedure

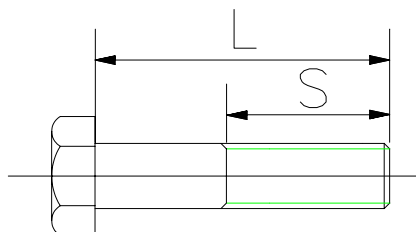
Necessary items

- Torque wrench
- Spanner wrench
- Bolt-nut-washer (For many flanges specification)
- AV gasket

(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, then temporarily tighten them by hand.



Dimension of insert bolt

Nom. Size mm (inch)	Water supply standard AV TS Flange				Water supply standard Steel Flange JIS G5524 •G5521				JIS 10K standard AV TS Flange				Water supply standard Steel Flange JIS G2212			
	Bolt-nut Nom size	Washer Nom size	L	S	Bolt-nut Nom size	Washer Nom size	L	S	Bolt-nut Nom size	Washer Nom size	L	S	Bolt-nut Nom size	Washer Nom size	L	S
40 (1½")	-	-	-	-	-	-	-	-	M16	16	65	38	M16	16	70	38
50 (2")	M16	16	70	38	M16	16	70	38	M16	16	70	38	M16	16	70	38
65 (2½")	-	-	-	-	-	-	-	-	M16	16	75	38	M16	16	75	38
75(80) (3")	M16	16	80	38	M16	16	80	38	M16	16	75	38	M16	16	75	38
100 (4")	M16	16	80	38	M16	16	80	38	M16	16	80	38	M16	16	80	38
125 (5")	M16	16	85	38	M16	16	80	38	M20	20	85	46	M20	20	85	46
150 (6")	M16	16	85	38	M16	16	85	38	M20	20	85	46	M20	20	85	46
200 (8")	M16	16	90	38	M16	16	85	38	M20	20	90	46	M20	20	90	46
250 (10")	M20	20	95	46	M20	20	90	46	M22	22	95	50	M22	22	95	50
300 (12")	M20	20	95	46	M20	20	95	46	M22	22	95	50	M22	22	100	50
350 (14")	-	-	-	-	M22	22	95	50	M22	22	100	50	M22	22	100	50

Dimension of insert bolt

Nom. Size mm (inch)	Water supply standard AV TS Flange				Water supply standard Steel Flange JIS G5524 •G5521				JIS 10K standard AV TS Flange				Water supply standard Steel Flange JIS G2212			
	Bolt-nut Nom size	Washer Nom size	L	S	Bolt-nut Nom size	Washer Nom size	L	S	Bolt-nut Nom size	Washer Nom size	L	S	Bolt-nut Nom size	Washer Nom size	L	S
200 (8")	-	-	-	-	-	-	-	-	M20	20	55	46	M20	20	50	46
300 (12")	-	-	-	-	-	-	-	-	M22	22	60	50	M22	22	60	50
350 (14")	-	-	-	-	M22	22	55	All thread	M22	22	60	50	M22	22	60	50

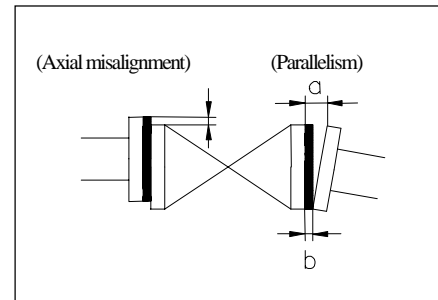


Caution

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)

Nom. Size	Unit: mm (inch)	
	Axial Misalignment	Parallelism (a-b)
40-150mm (1 1/2"-6")	1.5 (0.06)	1.5 (0.06)
200-350mm (8"-14")	2.0 (0.08)	2.0mm (0.08)

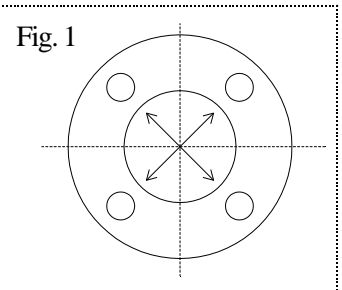


- 3) Tighten the bolts and nuts gradually with a torque wrench to the specified torque level in a diagonal manner. (Refer to fig.1.)

Recommended torque value

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

Nom. Size	Torque value	Nom. Size	Torque value
40 (1 1/2")	20.0{204}[177]	150 (6")	40.0{408}[355]
50 (2")	22.5{230}[200]	200 (8")	55.0{561}[488]
65 (2 1/2")	22.5{230}[200]	250 (10")	55.0{561}[488]
80 (3")	30.0{306}[266]	300 (12")	60.0{612}[532]
100 (4")	30.0{306}[266]	350 (14")	60.0{612}[532]
125 (5")	40.0{408}[355]	-	-



Caution

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

Threaded type

Necessary items

- Sealing tape (A non-sealing tape can cause leakage.)
- Strap wrench (Do not use Pipe wrench.)



Caution

Make sure that threaded connections are plastic x plastic. (Metallic thread might destroy the body cap)

Procedure

- 1) Wind a sealing tape around the external thread of joint, leaving the end (about 3mm) free.
- 2) Tighten the external thread of joint and the body lightly by hand.
- 3) Using a spanner wrench, screw them in by turning 90-180 degrees carefully without damaging them.



Caution

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

(6) Operating Procedure

- Turn the handle gently to open or close.
(For the left open valve, turn the handle clockwise to close and counter clockwise to open. For the right open valve, turn the handle to the reverse side of left open valve.)
- The cap type should not be forced to operate as it dose not have any travel indicators.

(7) Disassembling Method for replacing parts

- Necessary items
- Allen wrench
 - Spanner wrench

<Disassembly>

Procedure

- 1) Remove the cap with a hexagon wrench.
(Ask the nearest blanch about the round handle type. Other types, except from the round handle and any parts related to the valve travel indicate, are the same procedure as the cap type.)
- 2) Bonnet (A) and bonnet (B) can be removed with the stem by loosening the bolt not.

<Assembly>

Procedure

Carry out the assembly work in the reverse procedure of its disassembly.

(8) Inspection items

○Inspect the follow items;

(1)	Check for flaws, cracks, or deformation on the valve.
(2)	Check for leaks to the outside.
(3)	Check for the deformation of seat or disc due to improper installation of valve.
(4)	Check for the smoothness of handle operation.

(9) Troubleshooting

Problem	Cause	Treatment
Fluid leaks from by in the full closed position.	The seat is scratched or worn.	Replace the body or the gate.
	Foreign matter is in the valve.	Clean the valve.
	The gate is scratched or worn.	Replace the body or the gate.
Fluid leaks to the valve.	The O-ring is scratched or worn.	Replace the o-ring.
	The bolt-nut is loose.	Retighten the bolt-nut.
The handle does not operate smoothly.	Foreign materials have adhered.	Clean the valve.
	Deformation. (Due to heat etc.)	Replace parts.
The valve does not operate.	The stem is broken.	Replace the stem.
	The engagement between the stem and the gate is broken.	Replace the stem and the gate.

(10) Handling of residual and waste materials



Caution

In discarding remaining or waste materials, be sure to ask waste service company.
(Poisonous gas is generated.)

(11) Inquiries

ASAHI ORGANIC CHEMICALS INDUSTRY CO., LTD.

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<u>Distributor</u>

Gate Valves (C type)



ASAHI AV VALVES
