Butterfly Valve Type 57

Lever type : 40～200mm

Side Gear Type: 40～350mm

Top-gear type : 40～350mm

User's Manual

Thank you for choosing our product.
This instruction manual contains important information for safe use of our product, so please be sure to read it before handling the product.
After reading this manual, please be sure to keep it in a place where the user can see it at any time.

ASAHI YUKIZAI CORPORATION

-SAFETY PRECAUTIONS-

This instruction manual is written on the assumption that the person who handles our products has a basic knowledge of our products, electrical equipment, machinery, control, etc., and it contains technical terms depending on the handling contents.
Please read this manual carefully and fully understand the contents and observe the safety precautions for proper use.

In this manual, the warning, caution, prohibition, and enforcement are categorized together with the symbol to inform the situation and scale of human injury or property damage.
Failure to observe this precaution may result in unexpected failure or damage. Be sure to observe this precaution.

<WARNING/CAUTION indications>

Warning	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

<Prohibited/Forced display>

Prohibition	In the handling of the product, it is prohibited to do it in "Do not do it".
Forcing	In the handling of the product, it is forced by "contents to be carried out without fail".

Table of contents

1. Our product warranty coverage

Unless otherwise stated in the Contract or Specifications, etc., the warranty for the piping material products (hereinafter referred to as "applicable products") such as valves manufactured or sold by us is as follows.

Applicable to

This warranty applies only when the product is used in Japan. If you intend to use the product overseas, please contact us.

Warranty Period

The warranty period is one year after delivery.

Guaranteed range

In the event of failure or malfunction due to our responsibility during the above warranty period, we will replace or repair the product with a substitute free of charge.
Provided, however, that even within the warranty period, the warranty shall not apply to any of the following cases (charged service).

- ▶ When the storage, operating conditions, precautions, etc. described in the specifications, instruction manual, etc. are not adhered to in the construction, installation, handling, maintenance, etc.
- ▶ Defects, such as the design of the customer's equipment or software, caused by other than the target product.
- ▶ The fault is due to modification or secondary processing of the product by something other than us.
- ▶ In the case of a failure which can be deemed to have been avoided if the periodic inspection described in the instruction manual, etc. or the maintenance or replacement of consumable parts has been performed normally.
- ▶ The component is used for purposes other than the product's intended use.
- ▶ Failure or malfunction due to causes that could not be foreseen by our level of science and technology at the time of shipment.
- ▶ The fault is due to an external factor that is not our responsibility, such as natural disaster or disaster.

Disclaimer

- ▶ The warranty will not cover secondary damage (damage to equipment, loss of opportunity, loss of profit, etc.) or any other damage caused by the failure of our product.
- ▶ Although we strive to improve the quality and reliability of our products, we do not guarantee their integrity. Especially when using this product for equipment that may infringe human life, body or property, take appropriate safety design measures, etc., with full consideration of problems that may normally occur. We assume no responsibility for such use if we have not obtained our consent in advance in writing of specifications, etc.
- ▶ Please observe the product specifications and precautions when using our products. We shall not assume any responsibility for any damage to the customer caused by the customer's negligence. However, this does not apply to damage caused by a defect in our product.

2. Safety Instructions

Unpacking, Transportation and Storage

⚠ Warning	
Prohibition	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load.

⚠ Caution	
Prohibition	**The valve can be damaged, damaged, or leak.** ▶ Do not subject the product to impact by throwing, dropping or hitting. ▶ Do not scratch or pierce the product with a sharp object such as a knife or hand hook. ▶ Do not pile up cardboard boxes forcefully to prevent the load from collapsing. ▶ Avoid contact with coal tar, creosote (a wood preservative), white pesticides, insecticides, paints, etc. ▶ Do not hang the handle when transporting the valve.
Forcing	**The valve can be damaged, damaged, or leak.** ▶ Keep in cardboard until just before piping, and store indoors (at room temperature) away from direct sunlight. Also, avoid storing the product in places of high temperature. (The strength of cardboard packaging decreases when it gets wet. Be very careful when storing and handling it.) ▶ After unpacking, make sure that the product is correct and that it meets the specifications.

Product Handling

⚠Warning	
Forcing	**The valve can be damaged or seriously injured.** ▶ If positive pressure gas is used for our resin piping material, a dangerous condition may occur due to the repulsive force peculiar to compressible fluids even if the pressure is the same as the water pressure. Therefore, be sure to take safety measures for the surrounding area, such as covering the piping with protective materials. If you have any questions, please contact us separately. ▶ When conducting a pipe leak test after completion of piping construction, be sure to check with water pressure. Contact us in advance if you are unavoidable to test with a gas.

⚠Caution	
Prohibition	**The valve can be damaged, damaged, or leak.** ▶ Do not step on the valve or place heavy objects on it. ▶ Keep away from fire and hot objects. ▶ Do not subject the valve to large vibrations. ▶ Do not use instruments or tools to assist manual operation.
Forcing	**There is a danger of injury.** ▶ Ensure sufficient space for maintenance and inspection. **The valve can be damaged, damaged, or leak.** ▶ Pay attention to the atmosphere where the valve is installed. Avoid locations where the product is exposed to sea breezes, corrosive gases, chemical liquids, sea water, steam, etc. ▶ Keep the pressure and temperature of the fluid within the allowable range. (The maximum allowable pressure includes water hammer pressure.) ▶ Use a valve of suitable material for the operating conditions. (Depending on the type of chemical liquid, the parts may be damaged. Contact us in advance for details.) ▶ Use fluids containing crystalline material under conditions that do not recrystallize. ▶ Avoid any place where the valve is constantly exposed to splashes of water and dust, or direct sunlight, or protect the valve with a cover or the like to cover the entire area. ▶ 「9. Perform maintenance on a regular basis referring to "Inspection items." Pay particular attention to temperature changes and aging during long-term storage or shutdown or use.

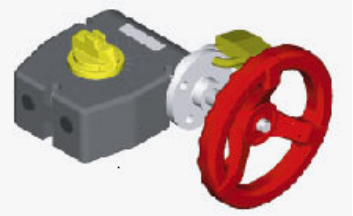
⚠Caution

Forcing

The valve can be damaged, damaged, or leak.

▶ The side gear type has a self-locking worm gear structure. Under general operating conditions, the flow rate can be adjusted by arbitrarily changing the valve travel. When the valve is used at an intermediate position, the disk may move to the closed side depending on the effects of vibration or fluid (high flow velocity, turbulence, etc.). Specify the optional "Handle Lock" as necessary. The handle lock mechanism prevents the valve opening from being changed when the valve is used at an intermediate position.

Handle lock (optional)



▶ When used with a high temperature fluid, the misalignment of the valve and flange shaft may cause sheet damage. Exercise due caution when installing the valve.

▶ When connecting a valve with a nominal diameter 150mm and a flange with a SDR21 or larger diameter, be sure to use a flange with a chamfered bore.

▶ Use a connection flange with a full-face seat. If a flange other than the full face seat (flange adapter/backing flange, etc.) is unavoidably used, the flange corners may bite into the seat depending on the size of the valve, causing damage to the seat. Contact us in advance.

▶ When installing a valve, provide an appropriate valve support so that excessive force is not applied to the valve and piping.

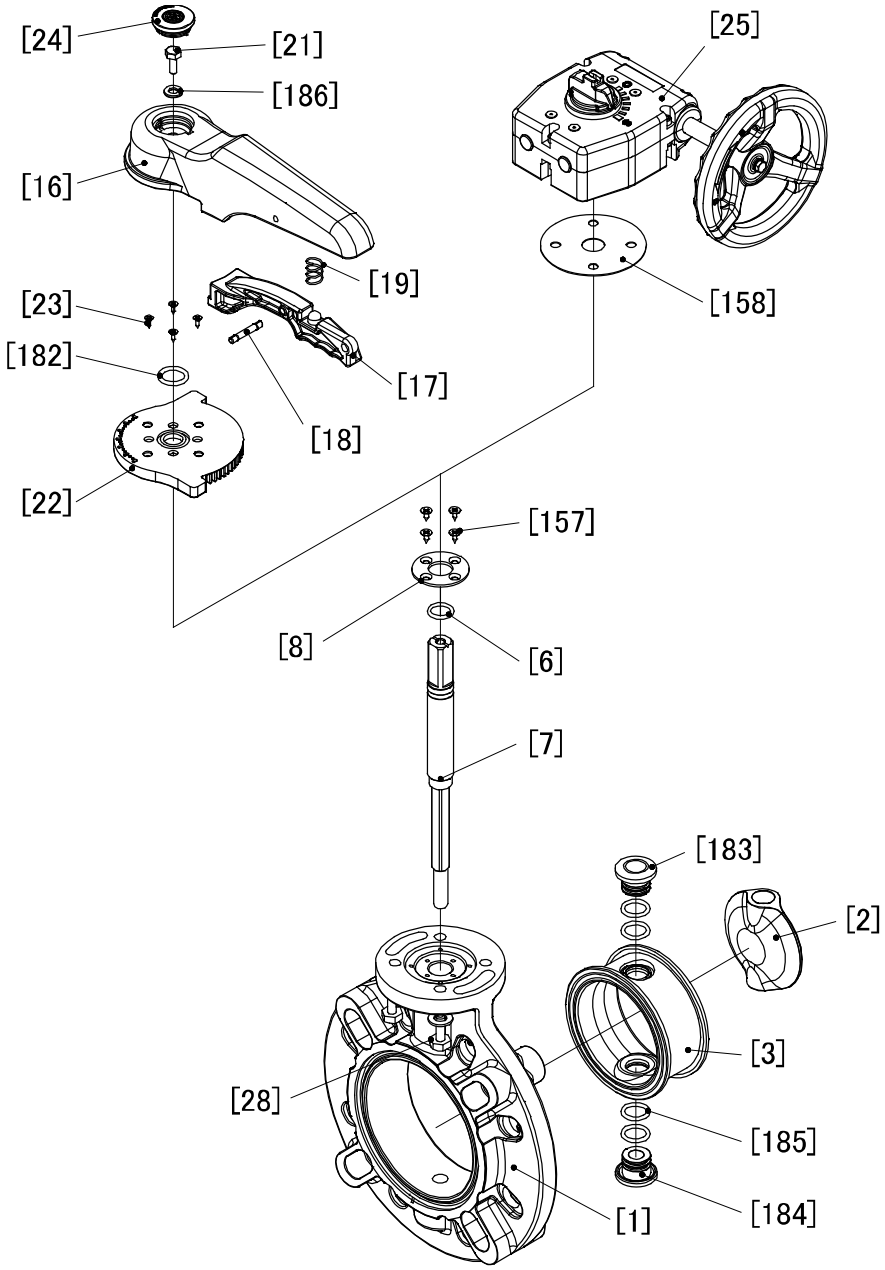
▶ Always use the product within the indicated product specifications.

▶ Keep the ambient temperature of the installation location within-10 to 50° C.

▶ Avoid locations with volatile gases or poor atmospheres. Provide a cover, etc., to cover the entire area.

3. Name of each part

Lever-type (40～200mm)
Side gear (40～350mm)



No.	DESCRIPTION	No.	DESCRIPTION	No.	DESCRIPTION
[1]	Body	[18]	Pin	[157]	Set screw (F)
[2]	Disk	[19]	Spring	[158]	Gasket (L)
[3]	Seat	[21]	Bolt (B)	[182]	O-ring (H)
[6]	O-ring (C)	[22]	Locking plate	[183]	Sheet bush (A)
[7]	Stem	[23]	Set screw (B)	[184]	Sheet bush (B)
[8]	Stem Holder (A)	[24]	Cap (A)	[185]	O-ring (I)
[16]	Handle (A)	[25]	Gear box	[186]	Rubber washer
[17]	Handle lever	[28]	Bolt (C)		

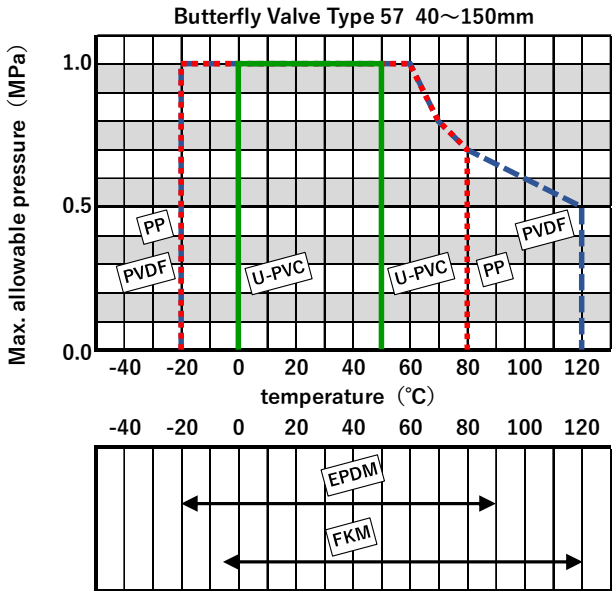
4. Product Specifications

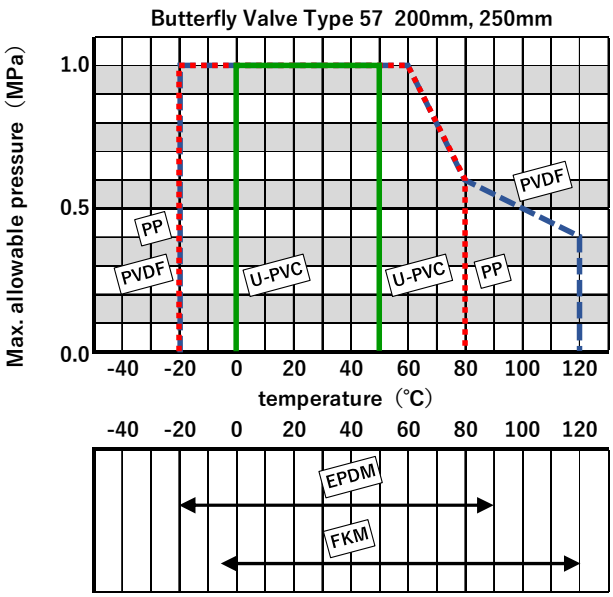
Product Model Code List

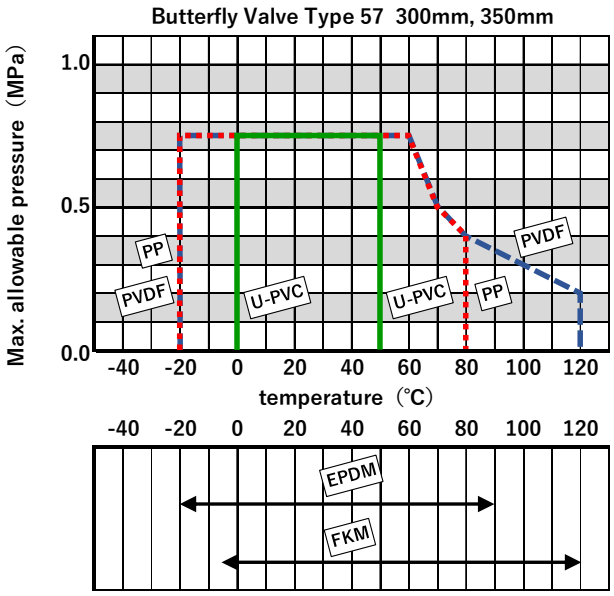
ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	HIGH PURITY SERIES
V	57	* *	*	*	W	*	* * *	*
V MANUAL	57 TYPE 57	LV LEVER TYPE	U U-PVC	E EPDM	W WAFER	1 JIS 10K	040 40mm	BLANK NON
		SG SIDE GEAR TYPE	P PP	V FKM		5 JIS 5K	050 50mm	2 WETTED PART LIBRICANT FREE
		TC TOP GEAR TYPE WITH CAP	F PVDF			D DIN	065 65mm	
		TG TOP GEAR TYPE WITH HAND WHEEL				A ANSI	080 80mm	
							100 100mm	
							125 125mm	
							150 150mm	
							200 200mm	
							250 250mm	
							300 300mm	
							350 350mm	

NOTE ・The standard stem material is SUS403.

Relationship between maximum allowable pressure and temperature







Limit switch specifications

DN (mm)	Operation system	Model	Switch contact	Protection grade
40～200	Lever type	1LS1-J	Silver contact	IP67
		1LS1-JK	Gold contact (Minute current spec.)	
40～300	Side gear type	TA2-SB2	Silver contact	IP65
			Gold contact (Minute current spec.)	
350	Side gear type	TA-200-SB2	Silver contact	IP55
			Gold contact (Minute current spec.)	

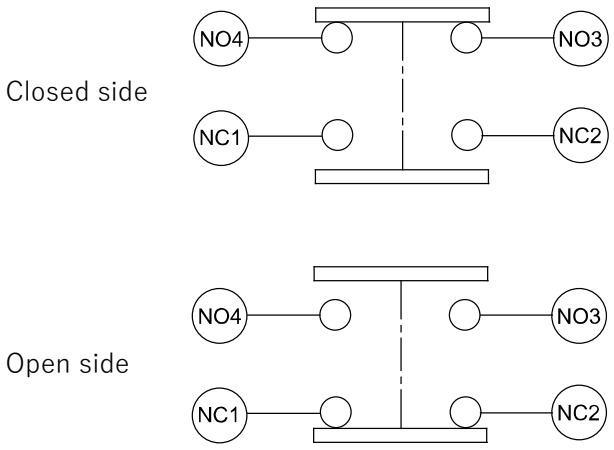
Limit switch rating

Model	Rated voltage (V)	Resistance load (A)	Induction load (A)
1LS1-J	125AC	10	6
	250AC	10	6
	115DC	0.8	0.2
	230DC	0.4	0.1
TA2-SB2	125AC	11	7
	250AC	11	7
	125DC	0.5	-
	250DC	0.25	-
TA-200-SB2	125AC	11	7
	250AC	11	7
	125DC	0.5	0.1
	250DC	0.25	0.04

Internal circuit

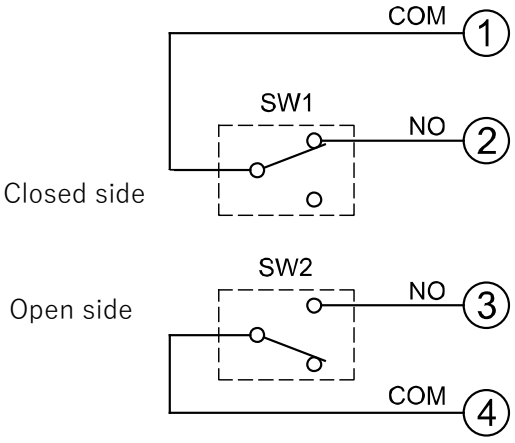
1LS1-J

※The figure shows the end of the closing operation.



TA2-SB2 / TA-200-SB2

※The figure shows the end of the closing operation.

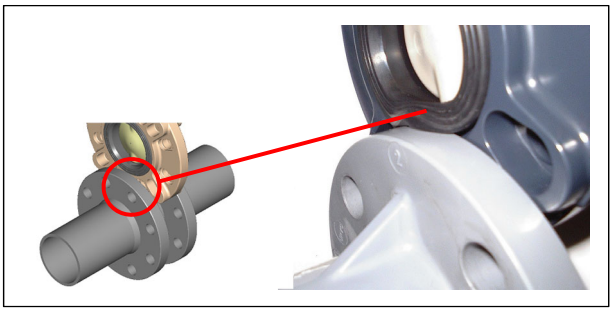


5. Piping

Warning	
Prohibition	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load.

Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not over-tighten when piping support is removed with a U-band, etc. ▶ When installing piping, do not install it in the fully closed state. (The disc may get caught in the seat and the operating torque may become heavy, making it impossible to open and close it.) ▶ Never carry or install the disc in the condition "Not feasible" in **Fig. 5-1**, as it will scratch the sealing surface of the disc. ▶ Do not tighten the bolt nut for piping with the specified torque or more.

Caution	
Forcing	**The valve can be damaged, or leak.** ▶ When inserting the valve between the flanges, fully widen the space between the faces before inserting. (If the valve is forcibly inserted without sufficiently expanding the space between the flanges, the seat may be flipped off and scratches may occur.) ▶ Keep the parallelism of the flange surface and the dimension of the shaft misalignment below the values shown in the **table 5.1**. (The piping may be damaged due to stress applied to it.)



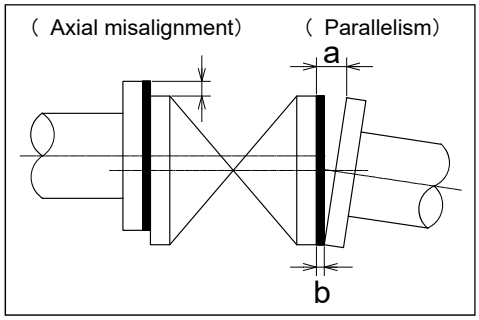


Table 5-1 Axial misalignment and Parallelism

DN (mm)	Shaft misalignment	Parallelism (a-b)
40～80	1.0mm	0.8mm
100～150	1.0mm	1.0mm
200～350	1.5mm	1.0mm

⚠Caution

Forcing

There is a danger of injury.

▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.

▶ Wear appropriate protective equipment according to the type of work being performed.

The valve can be damaged, or leak.

▶ When installing the product, make sure that no excessive stress such as tension, compression, bending or impact is applied to the piping or valve.

▶ Use a connection flange with a full-face seat. If a flange other than the full face seat (flange adapter/backing flange, etc.) is unavoidably used, the flange corners may bite into the seat depending on the size of the valve, causing damage to the seat. Contact us in advance.

▶ Check that the flange standards of each other are correct.

▶ The product is in the "Good" state as shown in **Fig. 5-1**. Before opening or closing the valve for piping installation, be sure to return the disc to the original condition (Refer to "Good" in **Fig. 5-1**) after operation.

▶ If the inner diameter of the connection (flange/pipe) is small, chamfer the inside of the connection to avoid contact between the valve disk and the inner surface of the connection. (See **Fig. 5-2**)

▶ The internal diameter of the connecting part should be equal to or larger than the value shown in Table **5-2**.

Fig 5-1

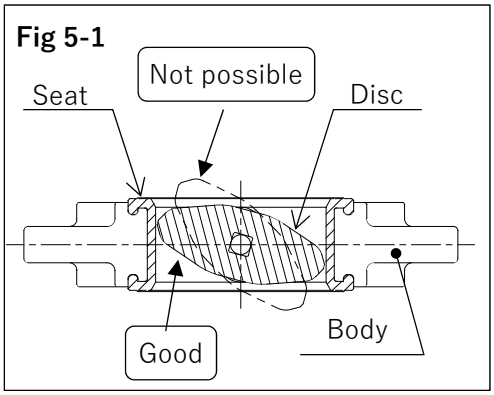


Fig 5-2

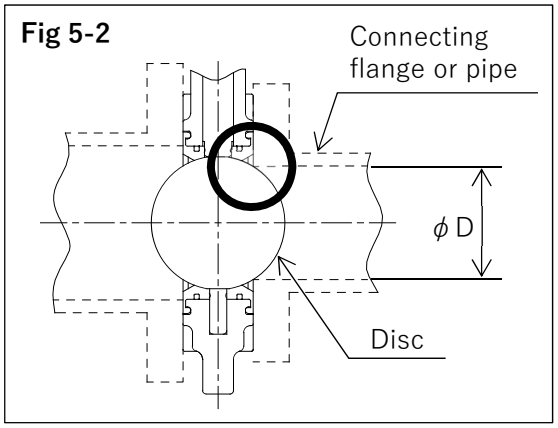
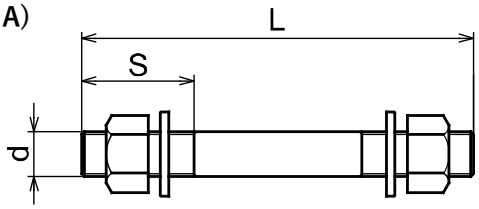


Table 5-2 Minimum bore size

DN (mm)	40	50	65	80	100	125	150	200	250	300	350
Bore diameter D(mm)	31	43	57	67	91	115	137	179	231	280	333

Preparations ▶ Torque wrench ▶ Spanner ▶ Through bolt/nut/washer (Dimensions shown below)

Dimensions of Through Bolt (Bolt A)



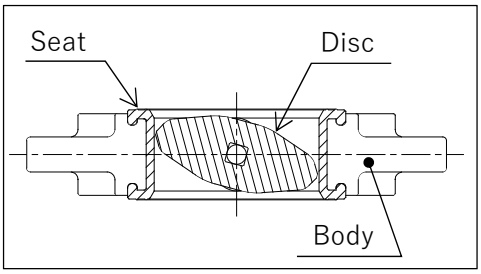
Connection standard	Nominal diameter		Bolt A			Quantity	
	mm	Inch	D	L(mm)	S(mm)	Bolt A	Nut and washer
JIS 10K	40	1 1/2	M16	115	40	4	8
	50	2	M16	125	40	4	8
	65	2 1/2	M16	135	45	4	8
	80	3	M16	135	45	8	16
	100	4	M16	145	45	8	16
	125	5	M20	165	50	8	16
	150	6	M20	175	55	8	16
	200	8	M20	195	55	12	24
	250	10	M22	225	60	12	24
	300	12	M22	245	60	16	32
	350	14	M22	255	65	16	32

Connection standard	Nominal diameter		Bolt A			Quantity	
	mm	Inch	D	L(mm)	S(mm)	Bolt A	Nut and washer
JIS 5K	40	1 1/2	M12	100	30	4	8
	50	2	M12	105	30	4	8
	65	2 1/2	M12	110	30	4	8
	80	3	M16	120	35	4	8
	100	4	M16	130	40	8	16
	125	5	M16	140	40	8	16
	150	6	M16	150	40	8	16
	200	8	M20	195	55	8	16
	250	10	M20	225	55	12	24
	300	12	M20	240	55	12	24
	350	14	M20	245	60	12	24

Note 1. The above figures are the bolted dimensions when using an AVTS flange.

Note 2. The quantity of nuts and washers is the quantity of two sets (one bolt/two nuts and two washers).

[Procedure]



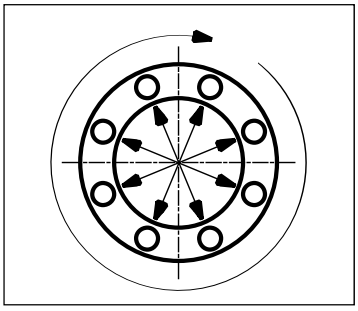
1) Use the handles to open the disc [2].
※ Make sure that the disc [2] does not protrude from between the seat surfaces. (Disc [2] may be damaged.)

2) Set the valve between the connecting flanges.

3) Temporarily tighten by hand with through bolts, washers, and nuts for connection.

4) Gradually tighten to the specified torque value diagonally with a torque wrench.

5) Tighten clockwise at least two turns at the specified torque value.



Flange tightening torque

Unit; N-m

DN (mm)	40	50	65	80	100	125	150	200	250	300	350
Torque value	20.0	22.5	22.5	30	30	40	40	55	55	60	60

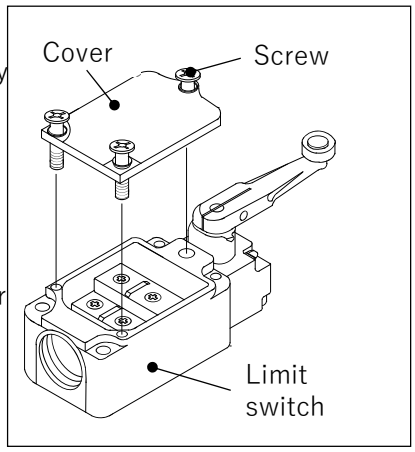
Limit switch wiring method (option)

⚠ Warning	
Prohibition	**Serious injury can result.** ▶ Do not connect or separate lines to the limit switch in the power supply status. (Electric shock or sudden start of opportunity)

⚠ Caution	
Prohibition	**The limit switch can be damaged.** ▶ Do not leave or use with the cover open. (Water or dust may penetrate and cause operation failure.) ▶ Connect the wires using solderless terminals with insulation covering so that they do not come into contact with the cover or housing. (If the crimp terminal comes into contact with the cover, the cover may not tighten or a ground fault may occur.)
Forcing	**The limit switch can be damaged.** ▶ If you are using a limit switch in the range of 1mA to 100mA, and with a voltage of DC5 to 30V, please consult with our company. ▶ Securely attach the cover.

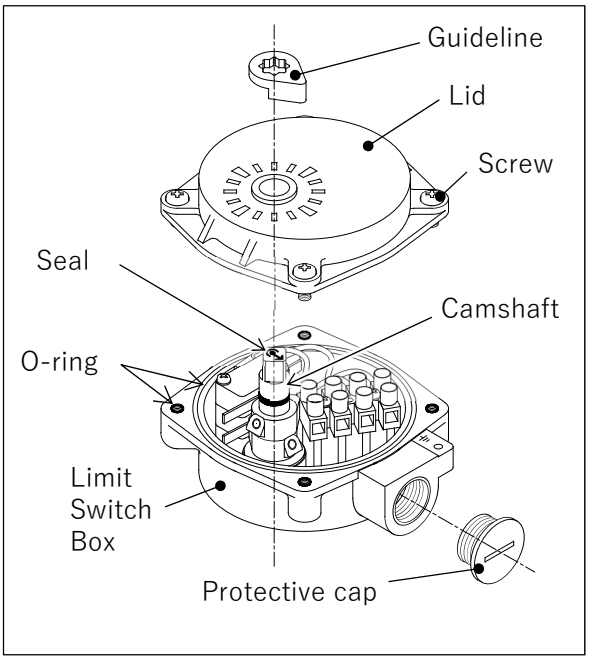
Preparations	▶ Phillips screwdriver ▶ Connector (G1/2) ▶ Flat-blade screwdriver ▶ Wire stripper

[Procedure] (1LS1-J)



1) Loosen the three screws holding the limit switch cover with a Phillips screwdriver and remove the cover. (The screws are structured so that they do not come off the cover.)
2) Pull off the resin protective cap.
3) Pass the cable through the connector.
4) Peel off the outer skin of the cable with a wire stripper.
5) Use a terminal crimping tool to attach the crimping terminal to the lead wir
6) Use a Phillips screwdriver to connect the terminal screws according to the internal circuit diagram.
(Tighten the screws securely.)
7) Using a Phillips screwdriver (3 screws) holding the limit switch cover
Tighten and install the cover.
8) Tighten the cable with the connector.

[Procedure] (TA2-SB2/TA-200-SB2)



1) Remove the pointer by hand.
2) Loosen the four screws securing the lid with a Phillips screwdriver to remove it. (Do not lose the O-ring)
3) Turn the pipe port protection cap counterclockwise to remove it.
4) Pass the cable through the connector.
5) Peel off the outer skin of the cable with a wire stripper.
6) Connect to the terminal screw using a flathead screwdriver according to the internal circuit diagram.
7) Tighten the connector to secure the cable.
8) After attaching the lid, tighten the four screws alternately and evenly with a Phillips screwdriver.
9) Insert the pointer so that the direction of the seal arrow on the camshaft head matches the direction of the pointer.

6. Operation method

▶ Valve opening and closing operations

⚠ Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not turn the handle unnecessarily with excessive force when fully closing or opening the valve. ▶ Do not open or close the valve with dust or other foreign matter in the fluid.
Forcing	**The valve can be damaged, or leak.** ▶ Since foreign matter such as sand may remain in the pipeline even after the valve is installed, open and close the valve after cleaning the inside of the pipe. ▶ Handle operation must be done by hand. ▶ Be sure to pass water before opening/closing the oil-prohibited parts.

Lever type

▶ Turn gently to open/close operation.

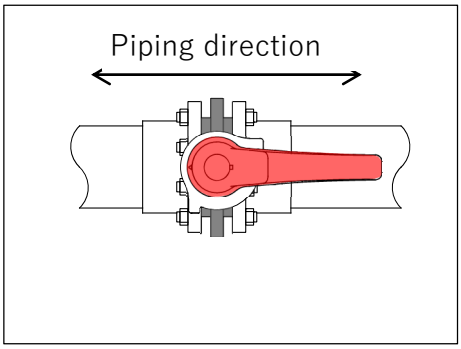
▶ For the lever type, the handle and the disc are oriented in the same direction.

When fully opened, the handle is parallel to the piping direction.

When fully closed, the handle is perpendicular to the piping direction.

The fully closed position has a tightening allowance of approximately 5 degrees, so fluid can be sealed within the closing side scale of the locking plate. (See **Fig. 6-1**.)

Fully open state



Fully closed state

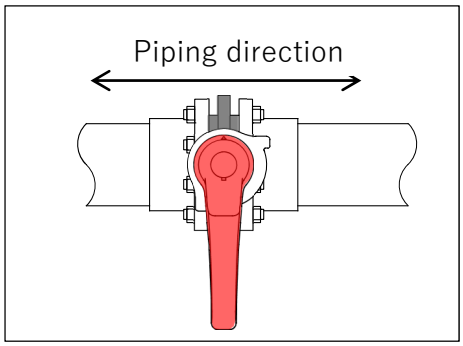
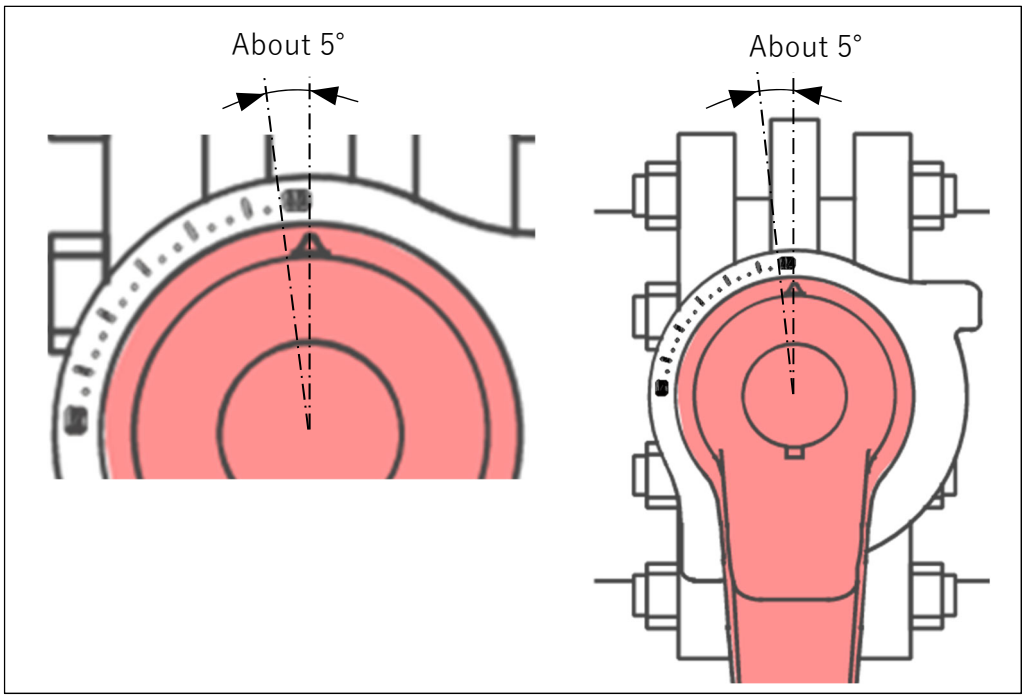


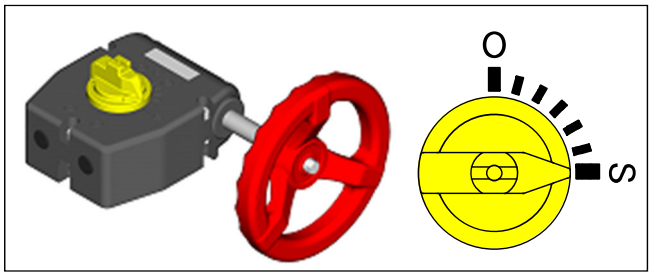
Figure 6-1 Fully Closed State (Enlarged View)



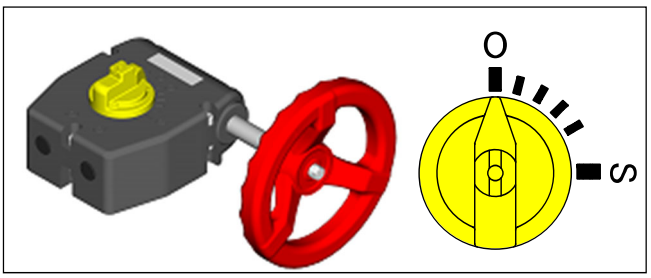
Side gear type / Top gear type

▶ For the gear type, check the movement of the opening instruction at the top of the gear box.
  ▶ When the valve is fully closed, the position of "S" (SHUT) is pointed.
  ▶ When the valve is fully open, the position of "O" (OPEN) will be oriented.
▶ The side gear type and top gear type are both infinitely adjustable. When you want to tighten the disc further, please adjust the stopper bolt on the gearbox.

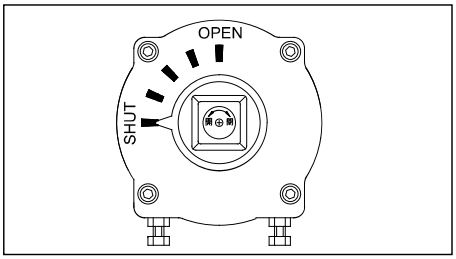
Fully closed state



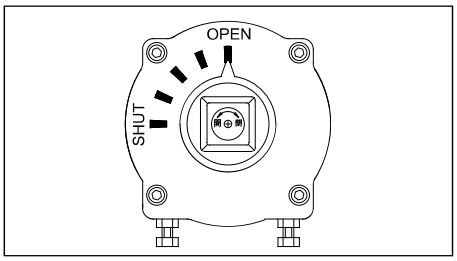
Fully open state



Fully closed state



Fully open state



[**Operating force**]

Nominal size		Stem torque (N-m)	Lever length and handle diameter (mm)			Control force (N)		
mm	(inch)	Seal	Lever type	Side gear type	Top gear type	Lever type	Side gear type	Top gear type
40	($1^1/_2$)	5	220	160	140	23	3	4
50	(2)	10	220	160	140	46	5	8
65	($2^1/_2$)	15	220	160	140	68	8	11
80	(3)	20	250	160	140	80	11	15
100	(4)	30	250	160	140	120	16	22
125	(5)	40	320	160	200	125	21	20
150	(6)	65	320	160	200	205	34	33
200	(8)	165	400	160	200	415	87	83
250	(10)	300	-	160	200	-	158	125
300	(12)	330	-	300	250	-	74	83
350	(14)	400	-	300	250	-	90	100

※ The above values are for reference only. (It is a measured value in the standard condition, and it varies depending on various conditions)

※ The gear-type operating force (N) is the value when the handle is operated with both hands.

7. How to disassemble/assemble parts for replacement

Warning	
Prohibition	**Serious injury can result.** ▶ The handle [16] and the gearbox [25] can be replaced even when the fluid pressure is applied. However, do not remove the stem retainer. This could cause the stem to pop out and is dangerous.
Forcing	**Serious injury can result.** ▶ Be sure to perform safety inspections of the machine tool and power tool before starting operation. ▶ Wear appropriate protective equipment for the work details when installing piping.

Caution	
Forcing	**The valve can be damaged, or leak.** ▶ When installing the product, make sure that no excessive stress such as tension, compression, bending or impact is applied to the piping or valve. ▶ Completely drain the fluid in the piping when replacing the valve or replacing parts.

Preparations	▶ Protective gloves	▶ Protective goggles	▶ Socket wrench	▶ Wrench
	▶ Jack	▶ Plate	▶ pliers	▶ Thrust bearing
	▶ Silicone grease	▶ flathead screwdriver	▶ Phillips screwdriver	

Disassembly

[**Procedure**]

1) Completely drain the fluid in the piping to make the valve slightly open.

2) Loosen the connecting bolt nut with a spanner and remove it.

3) Remove the valve from the piping.

4) For lever type

Remove handle [16] by unscrewing cap [24] with a flathead screwdriver, loosening bolt [21] with a socket wrench, grasp handle lever [17] and pull upwards to remove.

Loosen the four machine screws [23] with a Phillips screwdriver and remove the stem retainer [8] from the locking plate [22].

For gear type

Remove gearbox [25] by loosening and removing screws [28] and pulling it upwards.

5) For nominal diameter 40mm～100mm

Remove stem [7] with pliers or hands.

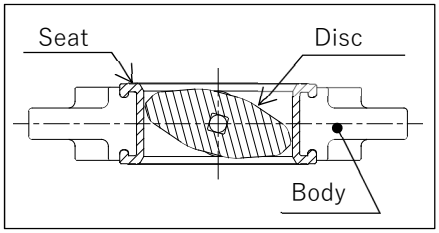
For nominal diameter 125mm～350mm

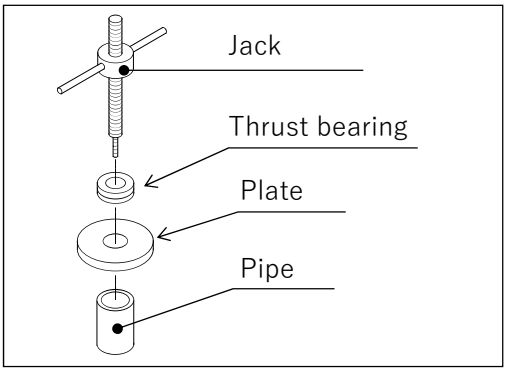
Fit the jack, thrust bearing, plate and pipe to the valve, screw the jack shaft into the stem [7], turn the jack handle and pull out the stem [7].

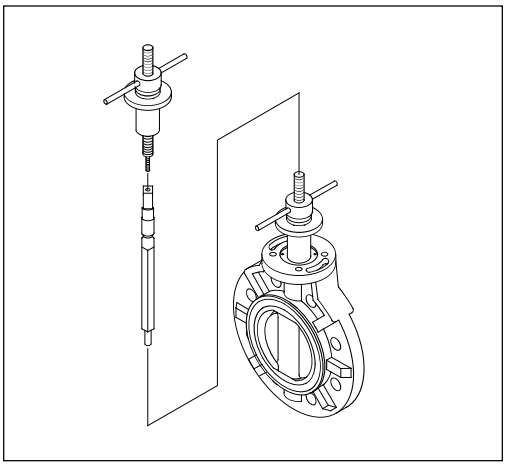
6) Fasten a gap between the body [1] and the seat [3] with a flathead screwdriver. Insert a flathead screwdriver or a Phillips screwdriver into the gap and remove the seat [3] and the disc [2] by pushing them out.

7) Remove disc [2], seat bush (A) [183] and seat bush (B) [184] from seat [3].

8) Remove O-ring (C) [6] and O-ring (I) [185].





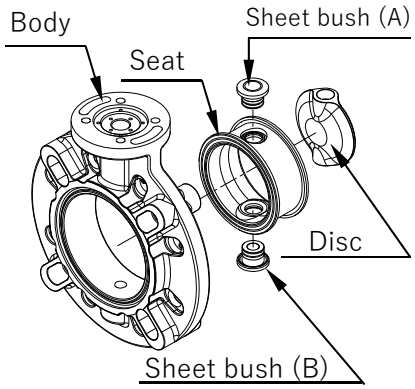


Assembly

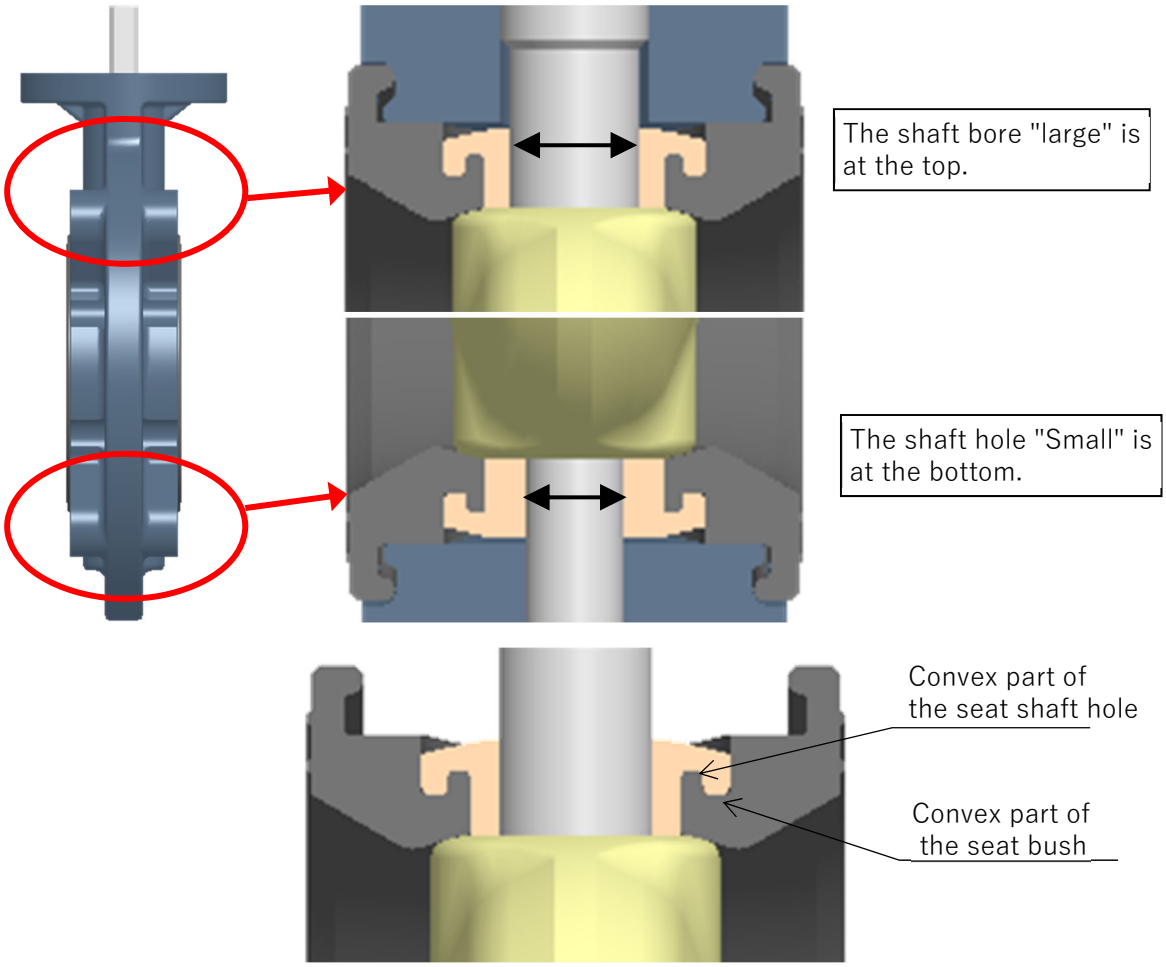
[Procedure]

1) Before assembly, apply silicone grease to O-rings (C) [6] and O-rings (I) [185].
2) Install O-ring (C) [6] on stem [7], seat bush (A) [183] and seat bush (B) [184] with O-ring (I) [185].
3) Apply silicone grease to disc [2] and sheet [3] (sliding section).
4) Fit disc [2] on the inside of the seat [3] and seat bushes (A) [183] and seat bushes (B) [184] on the outside.
(Mounted products are referred to below as sheet disc sets.)
* The seat [3] can be deformed into an ellipse for a smooth fit.
5) Put the disc [2] of the seat disc set in half-open position, align the stem hole of the body [1] with the stem hole of the seat disc set and fit the seat [3] inside the body [1].

<Assembly>4) Reference drawing



▶ Note that the size of the shaft holes for the sheet bush (A) [183] and sheet bush (B) [184] of the sheet disc set are different. The sheet bush (A) [183] (shaft hole "large") is at the top. If the upper and lower sections are reversed, the stem [7] cannot be inserted.
▶ After inserting into the body, make sure that the convex part of the seat shaft hole and the convex part of the seat bush are not detached.



6) Insert stem [7] into body [1].

7) Set the stem retainer [8] with its flat side facing downwards, fit it in the groove in the body [1] and tighten it with the set screw (F).

8) Mount the lever (gear box) after checking that the direction of the disc is aligned with the lever (position indication for gear type).

9) After assembly is complete, perform manual operation and make sure that the disc [2] fits sufficiently into the seat [3].

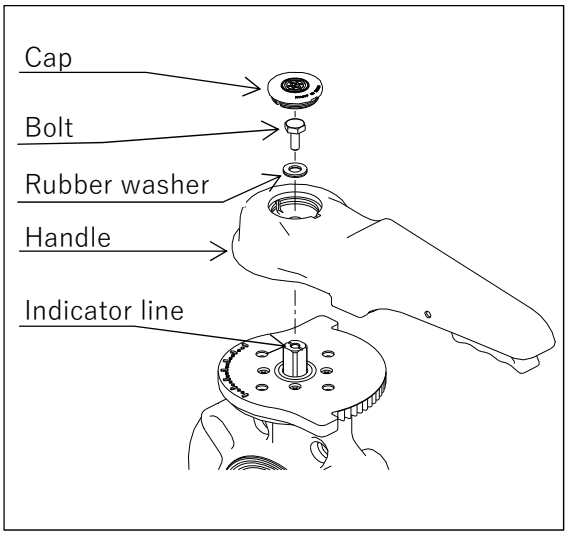
Lever handle installation method

⚠Caution	
Prohibition	**The cap can be damaged.** ▶ Do not apply excessive force to the cap when attaching or removing the cap.

Preparations			
	▶ Plastic hammer	▶ Socket wrench	▶ flathead screwdriver
	▶ Protective goggles	▶ Protective gloves	

[**Installation procedure**]

1) Install the handle on the stem. Align the handle with the indicator line on the top of the stem.
2) Use the socket wrench to secure the handle to the top of the stem with the supplied bolt and washer.
3) Align the convex part on the side of the cap with the concave part on the handle side, and lightly tap with a plastic hammer to snap the cap into place.

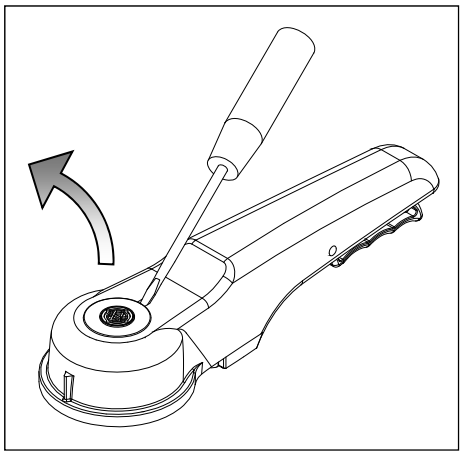


Socket size for socket wrench

Valve size	40-100 mm	125-200 mm
Bolt dimensions	M6×15L	M8×15L
Socket designation	10	13

[**Removal procedure**]

1) Remove the cap by pushing it up from the side with a flathead screwdriver.
2) Use a socket wrench to loosen the bolt and washer to remove the handle.



8. How to adjust the stopper

Preparations	▶ Protective gloves	▶ Hex wrench (used for side gear type)
	▶ Spanner (used for top gear type)	

[Procedure]

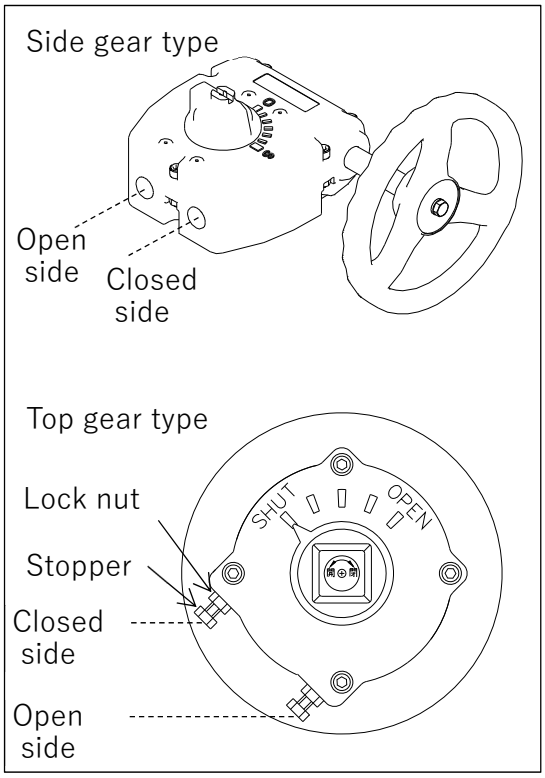
1) For side gear type
Remove by hand the fully closed (or fully open) side cap of the gearbox [25].
For top gear type
Loosen the locknut on the fully closed (or fully open) side of the gearbox [25] with a wrench.

2) Loosen the stopper with an Allen wrench or wrench.

3) Manually operate the valve to move the disc to the desired opening.

4) Tighten the stopper with an Allen wrench or spanner.

5) For side gear type
Fit the fully closed (or fully open) cap of the gearbox [25] by hand.
For top gear type
Fix the locknut on the fully closed (or fully open) side of the gear box [25] with a spanner.



9. Inspection item

⚠Caution	
Forcing	**The valve can be damaged, or leak.** ▶ Maintenance should be performed every 3 to 6 months as a guide in order to keep the watch in normal condition and use it for a long time. Pay particular attention to temperature changes and aging during long-term storage or shutdown or use. ▶ When removing the valve from the piping when replacing the valve or parts, completely remove the fluid from the piping before starting work. ▶ If any trouble is found, take the appropriate action referring to "10. Cause of malfunction and remedy".

Daily inspection

As inspection items Inspection method	Guideline of judgment	Check point	Treatment method
External leakage (visual inspection)	For leakage No	Pipe flange connection	① Retighten the pipe bolts to the specified torque. ② Remove the valve from the pipe and re-tighten the pipe bolts. (Ref: 5. Piping)
		Top flange of the valve	Remove the valve from the piping and replace the valve or defective part. (Ref: 7. How to disassemble/assemble parts for replacement)
		Surface of the entire valve	Remove the valve from the pipe and replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
Internal leakage (Visual and measurement)	For leakage No	Leakage to secondary side when valve is fully closed	Remove the valve from the piping and replace the valve or defective part. (Ref: 7. How to disassemble/assemble parts for replacement)
		Measured values of flowmeters, pressure gauges, etc.	Remove the valve from the piping and replace the valve or defective part. (Ref: 7. How to disassemble/assemble parts for replacement)
Abnormal noise (hearing)	Of abnormal noise No	Valve	Remove the valve from the pipe and replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
		Piping around the valve	Reconfirm the conditions of use (Ref: 2. Safety Instructions [Product Handling])

Periodic inspection

●Guideline for the inspection cycle: 3 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Vibration (palpation)	To differences from other parts No	Valve	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Safety Instructions [Product Handling])
			Remove the valve from the pipe and replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
		Piping around the valve	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Safety Instructions [Product Handling])

●Guideline of the inspection cycle: 6 months

As inspection items Inspection method	Guideline of judgment	Check point	Remedy for malfunctions
On the manual handle Operability (touch)	Smoothly Turning	Manual operation unit	Remove the valve from the pipe and replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
Of bolts Looseness (visual and palpation)	Loose No	For flange piping	Retighten the pipe bolts to the specified torque. (Ref: 5. Piping method)
Corrosion Or rust ※1) (visual inspection)	Corrosion or Of rust No	Product appearance	Remove the valve from the pipe and replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
Product damage	No scratches, cracks, or deformation	Product appearance	Remove the valve from the pipe and replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)

10. Cause of malfunction and remedy

⚠Caution	
Forcing	**There is a danger of injury.** ▶ If any malfunction is found, immediately stop using the product and take appropriate action. ▶ When removing the valve from the piping when replacing the valve or parts, completely remove the fluid from the piping before starting work.

Failure phenomenon	Possible cause	Measures
The handle does not turn (cannot turn) during manual operation.	The valve is already fully open (or fully closed).	Rotate the handle in the opposite direction (Ref.: 6. Operation method)
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 7. How to disassemble/assemble parts for replacement)
	Piping stress is applied to the valve.	Remove the piping stress
	The torque of the valve has increased due to the effects of the fluid (temperature, components, pressure, etc.)	Reconfirm the conditions of use (Ref: 2. Safety Instructions [Product handling])
	Gearbox failure	Remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
	Stem corroded or damaged	Remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)

Failure phenomenon	Possible cause	Measures and measures
Fluid does not stop even when fully closed (Internal leakage)	High fluid pressure	Use below the maximum allowable pressure (Ref: 2. Safety Instructions [Product handling])
	Seat or disc is worn or scratched	Remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 7. How to disassemble/assemble parts for replacement)
	Piping bolts are over-tightened or uni-tightened	Retighten the piping bolts (Ref: 5. Piping)
Fluid leaks from the valve. (external leak)	Valve is cracked or broken	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)
	The seat is unfolded.	Remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 7. How to disassemble/assemble parts for replacement)

11. Disposal method of residual materials and waste materials

⚠ Warning	
Forcing	**When burnt, toxic gas is generated.** ▶ When disposing of the product or parts, please dispose of them according to the guidelines of each local authority by a professional disposal company.

Inquiries

Contact the nearest dealer, our sales office, or our web website for inquiries about this product.

[User's Manual]

Butterfly Valve Type 57

Lever type

Side Gear type

Top gear type

https://www.asahi-yukizai.co.jp/

Please note that the content of this manual is subject to change without notice. **January 2024**