



Rotary damper Electric Actuated Type S 40~600mm

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>

	A Warraina	Indicates a potentially hazardous situation which, if not avoided, could result in death or
	warning	serious injury.
	^ Caution	Indicates a potentially hazardous situation which, if not avoided, may result in minor or
4	Caudion	moderate injury or property damage.

<Prohibited/Forced display>

O 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".



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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.

ACaution



Prohibition

The valve can be 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.



Forcing

The valve can be 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									
Prohibition	Serious injury can result. ➤ Do not disassemble the actuator. ➤ Do not touch moving parts during operation with hands, feet or tools.									
Forcing	 Serious injury can result. 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. 									
	The valve can be damaged, or leak.									
	 Check the voltage on the power supply and nameplate before use. Serious injury can result. Perform manual operation after confirming that the actuator is not operated by the motor. 									



ACaution



The valve can be damaged, or leak.

- ▶ Do not step on the valve or place heavy objects on it.
- ▶ Do not use the product in places where it may be submerged.
- ▶ 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.
- ▶ Do not subject the valve to large vibrations.

Otherwise, the valve may be damaged, or fire may occur.

► Keep away from fire and hot objects.

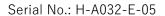


Otherwise, the valve may be damaged, or fire may occur.

▶ If you notice an unusual odor, heat, or smoke, immediately turn off the power supply. If any abnormality is found, be sure to consult your dealer or us for inspection.

The valve can be damaged, or leak.

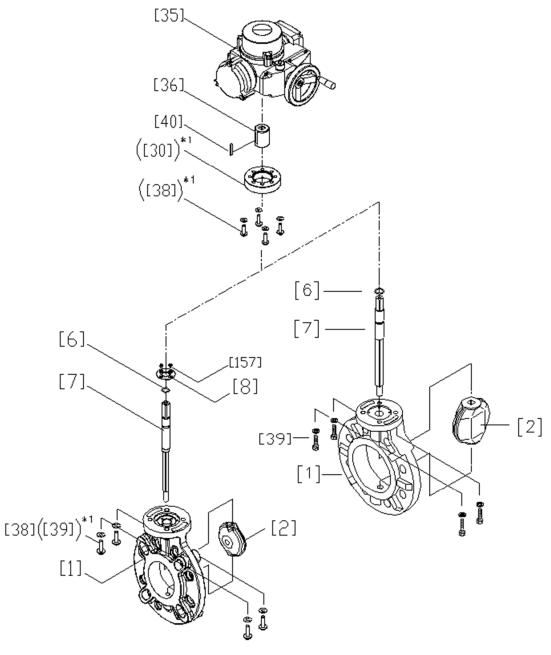
- ► Keep the pressure and temperature of the fluid within the allowable range. (The maximum allowable pressure includes water hammer pressure.)
- ► Secure sufficient space for maintenance and inspection when piping.
- ▶ Use a valve of suitable material for the operating conditions. (Depending on the 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.
- ▶ 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.
- ► Avoid places with corrosive gases or poor atmospheres, and provide a cover or the like to cover the entire area.
- ► Use the supplied handle for manual operation.
- ▶ When using in an explosive atmosphere, make sure that the actuator conforms to the explosion-proof specifications.
- ► Keep the ambient temperature of the installation site within the range of-5°C to 50°C.





3. Name of each part

40mm~350mm (Body material: PVC) 40mm~600mm (Body material: PP)



[1]	Body	[8]	Stem retainer (A)	[38]	Bolt (E)
[2]	Disc	[30]	Stand	[39]	Bolt (K)
[6]	O-ring (C)	[35]	Actuator	[40]	Key (B)
[7]	Stem	[36]	Stem bush	[157]	Set screw (F)

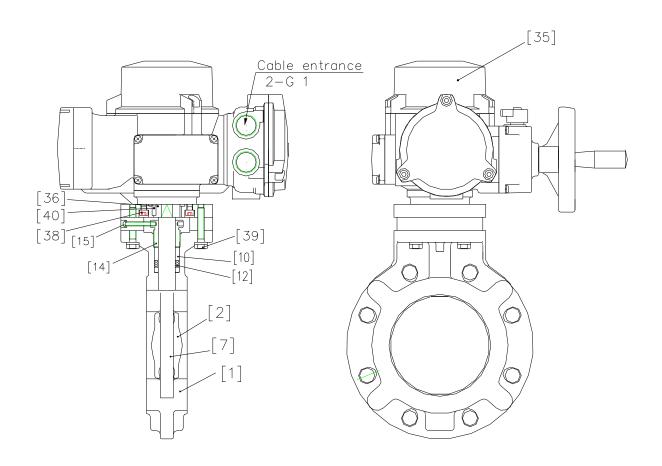
² Components shown in parentheses are used for nominal size 125mm or larger.



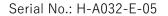


40mm∼600mm (Body material: PVDF)

*The nominal size 450mm~600mm is slightly different.



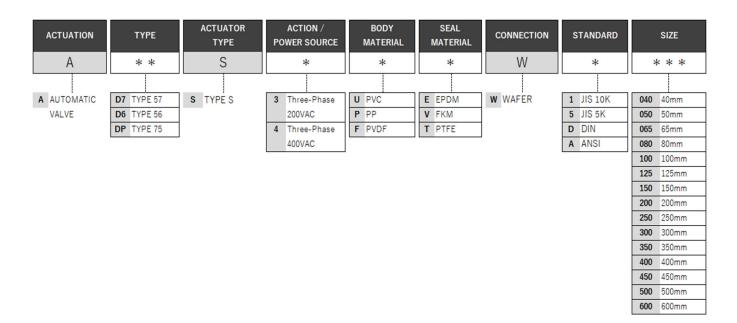
[1]	Body	[13]	Spacer (A)	[36]	Stem bushing
[2]	2] Disc [:		Ground	[38]	Bolt (E)
[7]	Stem	[15]	Screw (A)	[39]	Bolt (A)
[10]	Bush (A)	[30]	Stand	[40]	Key (B)
[12]	V packing	[35]	Actuator		

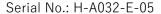




4. Product Specifications

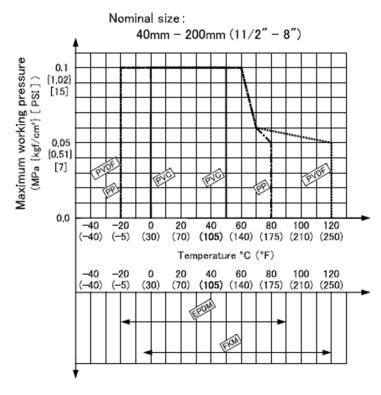
Model number table

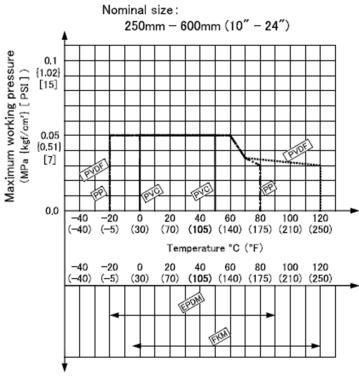






Relationship between maximum allowable pressure and temperature





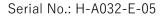


Actuator specifications

Specifications List

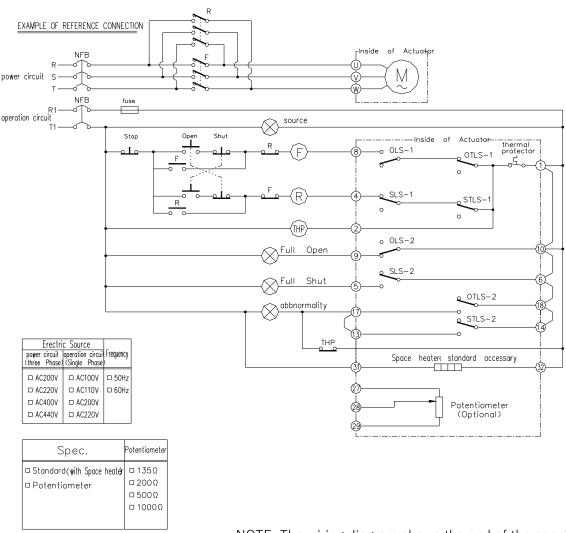
Applicable nominal size (mi	m)	40~150	200~350	400~600		
Actuator model		SRJ-010	SRJ-020	SRJ-060		
Open/close time (sec)	50Hz	18	36	36		
Open/close time (sec)	60Hz	15	30	30		
Degree of protection		IP 68				
Motor starting current (A)	200VAC	1.27	/1.19	1.89/1.77		
50/60Hz	400VAC	0.63	/0.58	0.94/0.90		
Motor Rated Current (A)	200VAC	0.53	/0.45	0.74/0.67		
50/60Hz	400VAC	0.26	0.37/0.34			
Manual operation handle re	volution	2	21	26		
Electricity consumption	200VAC	82.7	162/156			
(Watts) 50/60Hz	400VAC	84.7	163/159			
Cable connector nominal si	ze	G1				
Motor rated output (W)		4	100			
Motor insulation type		Class B				
Motor rated time		15 minutes				
Limit switch capacity		250VAC 2A 4				
Number of motor poles (P)						
Space heater rated output	(W)	8				
Potentiometer	135 (Ω)		7.3			
Between A and C Max. applied voltage	200 (Ω)	12.6				
(V)	500 (Ω)	14				

^{*}The power supply used is single phase (100VAC, 200VAC) for the type with electro-static positioner.



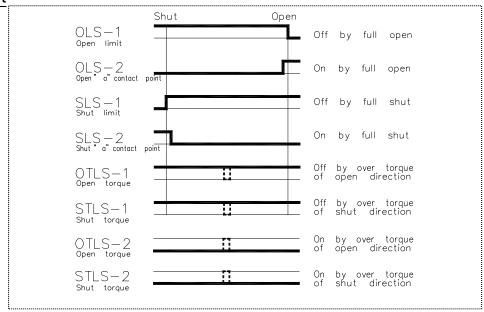


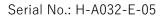
Wiring diagram Actuator model: SRJ



NOTE; The wiring diagram shows the end of the opening operation.

Switching chart







5. Piping method

	⚠Warning
Prohibition	Serious injury can result.▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load.
Forcing	 Serious injury can result. ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand. ▶ When installing piping, be sure to wear the appropriate protective equipment according to the operation details.



A	^	
<u>/!\</u>	Cai	ution



Prohibition

The valve can be damaged, or leak.

- ▶ Do not open or close the valve with dust or other foreign matter in the fluid.
- ▶ Do not tighten the bolts and nuts for piping to the specified torque values in Table 5-2.



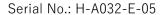
Forcing

Serious injury can result.

- ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.
- ▶ When installing piping, be sure to wear the appropriate protective equipment according to the operation details.

The valve can be damaged, or leak.

- ▶ Install the product so that excessive stress such as tension, compression, bending or impact is not applied to the piping or valve.
- ▶ When connecting to metal piping, do not apply piping stress to the valve.
- ▶ Use a connection flange with a full-face seat.
- ► Check that there is no difference in mutual flange standards.
- ▶ Be sure to use a sealing gasket (AV packing) between the flanges and tighten the pipe bolts/nuts to the specified torque values in Table 5-2 "Flange tightening torque." (When other than AV packing, the tightening torque value will change.)
- ► Keep the axis misalignment and parallelism of the flange surface below the values shown in Table 5-1 "Axis misalignment and parallelism."
- ► Tighten the bolts and nuts for piping diagonally with the specified torque values in Table 5-2.
- ➤ To avoid damaging the sealing surface of the disc or the sealing surface of the seat, do not throw the product or hit it against other objects.
- ► Even after installing the valve, do not open or close the valve when sand or other foreign matter has entered the pipeline.
- ▶ When piping, if the disc is fully opened, confirm that it does not hit the connection flange or the corner of the inner diameter of the connection pipe, and then fit it correctly.
- ► Keep the ambient temperature of the installation site within the range of-5°C to 50°C.
- ▶ Do not damage the sealing surface of the disc when installing the product.





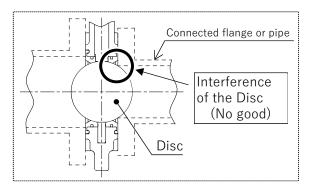
⚠ Caution



Forcing

The valve can be damaged, or leak.

▶ If the inner diameter of the connection (flange/pipe) is small, chamfer the inside of the connection to avoid contact between the valve Disc and the inner surface of the connection.





Preparations

➤ Torque Wrench

▶ Wrench

• Through bolts, nuts, and washers (see dimensions on page 20)

[Procedure]

- 1) Turn valve fully closed.
- 2) Install a AV seal between the valve/flange.
- 3) Temporarily set by hand with through bolts, nuts, and washers for connection. (For 400∼600mm with JIS 10K connecting standards, screw-in bolts are also used. Refer to the bolt dimension tables on page 20.)
- 4) Gradually tighten to the specified torque value diagonally (see Fig. 1) with a torque wrench.





Forcing

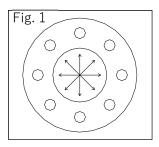
The valve can be damaged, or leak.

▶ Tighten the bolts and nuts of the connection flange diagonally to the specified torque.

Table5-2 Flange Tightening Specified Torque Units: N⋅m {Kgf ⋅ cm}

Nominal size	40mm	50、65 mm	80、100 mm	125、150 mm
Torque value	20.0{204}	22.5{230}	30.0{306}	40.0{408}

Nominal size	200、250 mm	300、350	400、450	500、600
Torque value	55.0{561}	60.0{612}	80.0{816}	100.0{1020}



XUp to 40∼350mm, the specified torque value when AV packing is used. However, the value above 400mm is for reference only.



Dimensions of through bolt (bolt A) and screw-in bolt (bolt B)

▼JIS10K

Nominal size			Bolt A			Bolt B			Quantity		
mm	inch	D	L(mm)	S(mm)	d1(mm)	L1(mm)	S1(mm)	S2(mm)	Bolt A	Bolt B	Nut and washer
40	1 1/2		115	40							
50	2		125	40					4		8
65	2 1/2	M16	135								
80	3		135	45							
100	4		145						8		16
125	5		165	50	-	-	-	-	0	-	10
150	6	M20	175	55							
200	8		195	33					12		24
250	10		225	60					12		24
300	12	M22	245	00					16		
350	14		255	65					10		32
400	16		290			110			14	4	
450	18	M24	305	60	M24	110	60	35	16	_	40
500	20		315			115			10	8	40
600	24	M30	350	70	M30	130	70	40	20		48

Note 1. The above figures are for nominal size 40 to 350 mm using AVTS flanges and for nominal size 400 to 600 mm using JIS B2220 "steel pipe flanges" with nominal pressure 10k of the same size.

Note 2. The number of nuts and washers for bolt A is 2 sets (1 bolt/2 nuts, 2 washers), In the case of bolt B, this is the quantity of one set (one bolt/one nut, one washer).

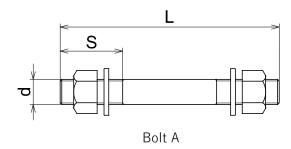
▼JIS5K

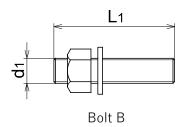
▼ 1133	11										
Nominal size		Bolt A			Bolt B			Quantity			
Mm	InCh	D	L(mm)	S(mm)	d1(mm)	L1(mm)	S1(mm)	S2(mm)	Bolt A	Bolt B	Nut and washer
40	1 1/2		100								
50	2	M12	105	30					1		0
65	2 1/2		110						4		8
80	3		120	35							
100	4	M16	130								
125	5	IVITO	140	40					8		16
150	6		150						0	-	10
200	8		195		-	-	-	-			
250	10	M20	225	55							
300	12	10120	240						12	-	24
350	14		245	60							
400	16		270						16	_	32
450	18	M24	280	55					10	-	JZ
500	20		290						20	_	40
600	24	M22	320	60					20	_	40

Note 1. The above values are for nominal bore size $40\sim350$ mm and AVTS flange. The nominal bore size $400\sim600$ mm is for JISB2220 "steel pipe flange" when the nominal pressure 5K is used.

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











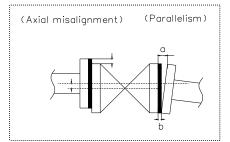
Forcing

Otherwise, stress may be applied to the piping, resulting in damage.

► Flange surface parallelism and shaft misalignment should be less than the values shown in the table below.

Table 5-1 Axis misalignment and parallelism

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









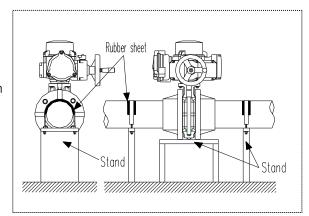
⚠Caution The valve can be damaged, or leak. **Prohibition** ▶ Do not over-tighten when supporting piping with a U-band, etc. ▶ When installing a valve in the piping around the pump, do not cause large vibrations in the valve. There is a danger of injury. **Forcing** ▶ Be sure to perform safety inspections 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. ▶ Do not over-tighten when supporting piping with a U-band, etc. ▶ When installing the product, make sure that no excessive stress such as tension, compression, bending or impact is applied to the piping or valve. ▶ When connecting a resin valve to metal piping, make sure that no piping stress is applied to the resin valve.

Preparations : ▶ Spanner ▶ U-band (with bolt) ▶ Rubber seat

Horizontal piping

Place the frame under the valve.

Lay a rubber sheet on the top of the pipe and secure it with the U-band.

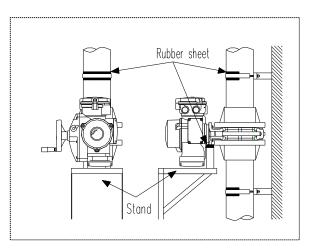


Vertical piping

Rubber sheet is laid on the connecting part of the actuator and the body, and the frame is mounted.

Fix with.

Wrap the rubber sheet around the pipe and secure it with the U-band.







6. Wiring method

Actuator

	<u>^</u> Warning					
 Prohibition Serious injury can result. ▶ Do not perform wiring while the power is on. ▶ Do not touch any other parts on the board or the terminal block wiring parts on the board or the terminal block wiring parts. ▶ Do not perform wiring work in an environment where rain water or moist splash on the wiring work (e.g. outdoor work in rainy weather). ▶ Do not perform wiring work with wet hands or tools. 						
Forcing	 Serious injury can result. ▶ 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. 					



ACaution



Prohibition

The valve can be damaged or leak.

- ▶ Do not apply a load to the non-voltage limit switch exceeding the contact capacity.
- ▶ Do not connect multiple (two or more) motorized valves in parallel.
- ▶ Do not use the product near high-voltage lines, inverters, or other objects that generate noise or magnetism.
- ▶ Do not remove the sealing plug supplied with the cable gland if you are not wiring the signal wire.



Forcing

There is a danger of injury.

► Keep hands free of moisture and oil during operation.

The valve can be damaged or leak.

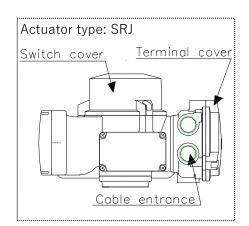
- ▶ Provide an open/close switch (or relay contact) for each electric valve.
- ▶ Be sure to connect the ground wire.
- ► Connect the wires correctly according to the wiring diagram.
- ▶ Perform the wiring work without insulation failure.
- ▶ Tighten the terminal block with the recommended tightening torque $(0.15 \sim 0.18 \text{ N-m})$ so that there is no looseness.
- ➤ Connect the wires so that the conductors of the lead wires do not come into contact with each other.
- ► Tighten the cable gland securely with the recommended tightening torque (3 N-m).
- ► The cover of the actuator is sealed by an O-ring. When removing and reinstalling the cover for wiring work, etc., make sure that the O-ring is set in place.
- ► Tighten the screws to attach the cover of the actuator with the recommended tightening torques (1N-m).
- ➤ Securely tighten the cable gland when it is used outdoors or in a place where it will be exposed to rain water or water drops.
- ► After wiring, make sure that the screws (crimp terminals, etc.) are not tightened or loosened.
- ► Check the voltage on the power supply and nameplate before use.
- ► The non-voltage limit switch does not support minute loads (for example, when connecting to a 1mA~100mA, 5V~30V, PLC) in the standardproduct. Therefore, select and use an optional product.
- ► Keep the devices connected to the limit switch (non-voltage contact) for open/close signals within the contact capacitance (1A).
- ▶ Use a power line of 100 meters or less for connection as a guide.



; -		, ▶ Phillips screwdriver ▶ wire strip	per ▶ hex key	- <u>:</u>
•	Preparations	· > Crimp terminal >		·
:		¹ ► Terminal crimping tool	► Wrench	:

[Procedure]

- 1) Loosen the screws (6mm) securing the terminal cover with an Allen wrench and remove the cover.
- 2) Remove the lead entry plug with a spanner.
- 3) Attach the connector to the lead entry.
- **4)** Pass the cable through the connector.
- 5) Peel off the outer skin of the cable with a wire stripper.
- **6)** Use a terminal crimping tool to attach the crimping terminal to the lead wire.
- **7)** Wire the terminal block with a Phillips screwdriver according to page 14.
 - XTighten the screws securely.
 - (There is a risk of electric leakage or electric shock.)
- 8) Tighten the connector.
 - **Tighten the connector securely.
 - (There is a risk of electric leakage or electric shock.)
- 9) Tighten the screws securing the terminal cover with an Allen wrench to attach the cover.
- 10) Attach the ground.





Limit switch

⚠Warning				
Prohibition	Serious injury can result.			
ombicion	▶ Do not perform wiring while the power is on.			

	<u> </u>
Prohibition	Otherwise failure or malfunction of the machine can result. If the product is installed outdoors or in a location where there is a possibility of rainwater or moisture intrusion, make sure that rainwater, etc. does not enter through the wiring port.
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.
	Otherwise failure or malfunction of the machine can result. ➤ 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 close and may cause a ground fault.) ➤ Contact CKD when using the limit switch in a 1mA~100mA, 5V~30V.

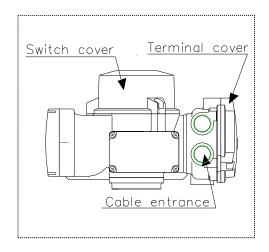


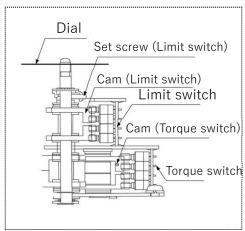


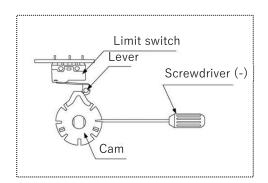
Preparations : ▶ Hex key ▶ wrench ▶ (-) screwdriver

[Procedure]

- 1) Turn off the power.
- 2) Completely drain the fluid in the piping.
- **3)** Loosen and remove the switch cover with an Allen key (6mm).
- **4)** Perform manual operation (refer to page 29) to the position to be adjusted (fully open or fully closed).
- **5)** Loosen the setscrew holding the cam for limit switch with a hex key (1.5mm). (Loosen the hex wrench if it is pressed.)
- **6)** Slowly move the cam in the direction you want to adjust with the (-) screwdriver.
- 7) Confirm that the limit switch has been operated in two stages with a click and a click.
- **8)** The cam is tightened by the Disc spring and fixed by frictional force. A rotation-stop washer is inserted between the two cams. Turning one cam does not cause the other cam to turn.
- **9)** After setting the cam, slowly tighten the set screw for the cam with an Allen wrench.
- **10)** Make sure that the position you want to adjust is set manually (see page 29). If not, repeat steps 4) to 9).
- **11)** Replace the switch cover and tighten it with an Allen wrench.
- **12**) Fully open and closed with electric operation (see page 29).
- **13**) Confirm that the opening is pointing to fully open "O" or fully closed "S."
- XIf the gauge is misaligned, loosen the switch cover with an Allen wrench to remove it, loosen the gauge with a Phillips screwdriver to point at "O" or "S" fully open, and then perform 10), 11, 12).









7. Commissioning method

	⚠Warning					
O Prohibition	 Serious injury can result. Do not connect or separate lines when the power is on. Also, do not touch any other parts on the board or the terminal block wiring part. (risk of electric shock or damage to equipment) Insulation-resistance DC500V, 10MΩ. Do not apply high voltage considering the actuator specifications below the withstanding voltage AC1500V, 1min. Never touch any moving parts (valves and actuators) during operation. 					
Forcing	 There is a risk of electric shock or injury. Keep hands free of moisture and oil when adjusting or checking. (risk of electric shock or damage to equipment) Perform manual operation after confirming that the actuator is not operated by the motor. 					





	<u> </u>
O Prohibition	 The valve can be damaged or leak. ▶ Do not connect multiple (two or more) motorized valves in series. In addition, open/close switches (or relay contacts) should be provided for each electric valve. ▶ Do not use the product near high-voltage lines, inverters, or other objects that generate noise or magnetism. (Doing so may cause malfunction or failure.)
Forcing	 The valve can be damaged or leak. Check that there is no insulation defect when performing wiring work. (Danger of damage to wiring) Securely tighten the covers of each part. (Rainwater, dust, etc. may penetrate and cause malfunction.) Be sure to connect the wires correctly as shown in the wiring diagram. After wiring, be sure to check that the connection is secure, and then turn on the power. (Failure to do so may cause malfunction or failure.) Each lid part is sealed by an O-ring. When removing and reinstalling the cover, such as when wiring, be sure to confirm that the O-ring is set in place and securely sealed. (If the seal is insufficient, rainwater or other liquid may enter the actuator and cause electric shock or malfunction.) If the actuator is used outdoors or in a location where it will be exposed to rainwater or water drops, make sure that rainwater does not enter the actuator through the wiring port. Confirm that Auto/Manual selector switch (A/M selector switch) is completely switched to the manual operation before operating the manual operation. If you notice an unusual odor, heat, or smoke, immediately turn off the power supply. If any abnormality is found, be sure to consult your dealer or us for

▶ This product uses a switching power supply circuit. If there is a concern about the effects of noise, be sure to check the peripheral devices for malfunctions

inspection.

beforehand.



Manual operation

Preparations · ► Wrench

[Procedure]

1) Turning the changeover lever in the direction of the arrow (until the A state shown in the right figure) disconnects the motor and enters the manual state.

Switching lever is auto return.

(If the changeover lever stops in the state shown in Fig. B on the right, the crests of the internal clutch are aligned. Do not turn it forcibly, and operate the changeover lever while turning the handle to either the left or right.

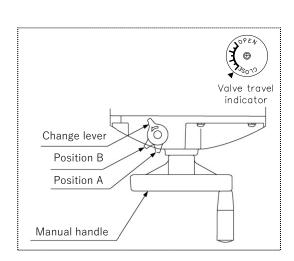
2) Turn the manual handle while watching the valve travel meter.

Rotate clockwise → Close direction

Counterclockwise rotation → Open direction

*Opening and closing operations with the manual handle must be performed by hand.

Do not forcibly turn the manual handle further from the fully open "O" and fully closed "S" positions. (It will malfunction.)



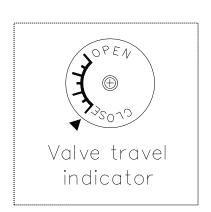
Electric operation method

[Procedure]

- 1) Turn on the power.
- 2) Open or close the external selector switch to check that the displayed direction of the valve matches the operating direction

If they do not match, check the wiring diagram (see page 14), Perform the operation from 1) again.

3) Fully open "O" or fully closed "S" to turn off the power.





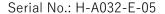
8. How to disassemble/assemble parts for replacement

If internal leakage (seat leakage) or external leakage occurs when the valve is fully closed, the leakage may be improved by replacing the parts.

If the leak does not improve after replacing the parts, remove and replace the valve according to this item.

⚠Warning					
Prohibition	Serious injury can result. ▶ Do not disassemble the actuator.				
	 Failure to do so may result in electric shock or damage to the equipment. ▶ Do not connect or separate lines when the power is on. Also, do not touch any other parts on the board or the terminal block wiring part. 				
	 Doing so may cause malfunction or failure. ▶ Securely tighten the covers of each part. Rainwater, dust, etc. will infiltrate. ▶ The actuator is adjusted at the factory before shipment. However, if the setting needs to be changed or adjusted, perform the adjustment properly as described in the instruction manual. ▶ Each lid part is sealed by an O-ring. When removing and reinstalling the cover, such as when wiring, be sure to confirm that the O-ring is set in place and securely sealed. 				
Forcing	 Serious injury can result. ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand. ▶ When installing piping, be sure to wear the appropriate protective equipment according to the operation details. 				

	<u> </u>					
Prohibition	 Damage may occur. ▶ When replacing the valve or replacing parts, completely drain the fluid from the piping to reduce the fluid pressure to zero. 					
Forcing	Damage may occur.▶ When connecting a resin valve to metal piping, be careful not to apply piping stress to the resin valve.					





Preparations | Discrete | Place | Place | Place | Place | Place | Place | Protective gloves | Protective glasses | Protective glasses

<Disassembly>

[Procedure]

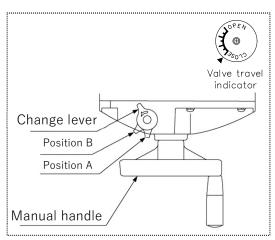
- 1) Completely drain the fluid in the piping.
- **2)** Fully close the valve by motor or manual operation. (Refer to page 29.)
- 3) Turn off the power.
- 4) Slightly open the valve using the manual handle.
- **5**) Loosen the connecting bolts and nuts with a spanner and remove the valve.
- **6)** Remove bolts (E) [38] (bolts larger than nominal size 125mm (K) [39]) and remove actuator [35] and Stand [30] from body [1].

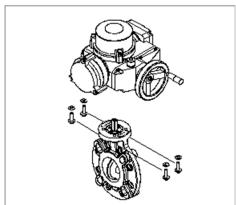
(For $40\sim350$ mm, use a Phillips screwdriver to take the stem retainer [8].)

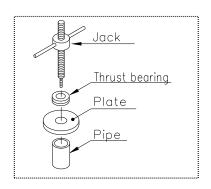
**At this point the mounting [30] is secured to the actuator [35]

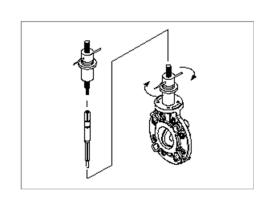
It is.

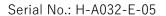
- **7)** Remove stem [7] with pliers or hand for nominal size 40mm∼100mm.
- 8) For the nominal size 125mm~600mm, attach the jack, thrust bearing, plate and pipe to the valve. Screw the jack shaft into the stem [7], and turn the handle of the jack to remove the stem [7].
- 9) Remove the O-ring (C) [6].
- **10**) Put the disc [2] in the fully open state.
- 11) Remove disc [2] from body [1].









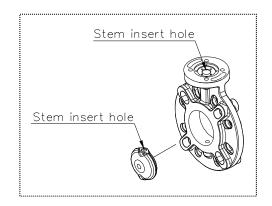


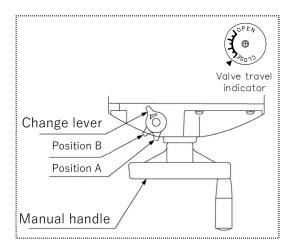


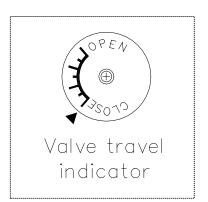
<Assembly>

[Procedure]

- 1) Apply silicone grease to the O-rings (C) [6] before assembly.
- **2)** To assemble the parts, reverse the procedure from 11) on page 31.
- **3)** Make sure that the position of the disc [2] is the same as that of the gauge by manual override (see page 29).
- **4)** Check the operation with an electric operation (see page 29).











9. Inspection item

ACaution



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

		T	
Inspection items and inspection methods	Guideline of judgment	Check point	Treatment method
External leakage (visual inspection)	No leakage	Pipe flange connection	 Retighten the pipe bolts to the specified torque. Remove the valve from the pipe and retighten the pipe bolts. (Ref: 5. Piping method)
		Top flange of the valve	Remove the valve from the pipe and replace the valve or defective part. (Ref: 8. How to disassemble for parts replacement)
		Surface of the entire valve	Remove the valve from the piping and replace the valve. (Ref: 8. How to disassemble for parts replacement)
Internal leakage (visual and measurem ent)	No leakage	Measured values of flowmeters, pressure gauges, etc.	Remove the valve from the pipe and replace the valve or defective part. (Ref: 8. How to disassemble for parts replacement)
Abnormal noise (hearing)	No abnormal noise	Valves and actuators	Remove the valve from the piping to replace the valve or actuator. (Ref: 8. How to disassemble for parts replacement)
		Piping around the valve	Recheck the operating conditions. (Ref: 2. Handling Precautions)
Odor ^{**1)} (sniffing)	No odor	Valves and actuators	Remove the valve from the piping to replace the valve or actuator. (Ref: 8. How to disassemble for parts replacement)

 $\frak{1}\sl 1)$ Failure to do so may result in burnout or fire.



Periodic inspection

●Guideline for the inspection cycle: 3 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Operating time	Error within ±1 second	Actuator opening display	Check the power supply voltage (±10%). (Ref: Actuator nameplate)
(Measurem ent)			Remove the valve from the piping to replace the valve or actuator. (Ref: 8. How to disassemble for parts replacement)
Vibration (palpation)	No different from other parts	Valves and actuators	Recheck the operating conditions and remove the vibration source. (Ref: 2. Handling Precautions)
			Remove the valve from the piping to replace the valve or actuator. (Ref: 8. How to disassemble for parts replacement)
		Piping around the valve	Recheck the operating conditions and remove the vibration source. (Ref: 2. Handling Precautions)



Periodic inspection

●Guideline of the inspection cycle: 6 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Operability of manual handle (touch)	Rotates smoothly	Manual operation unit	Remove the valve from the piping to replace the valve or actuator. (Ref: 8. How to disassemble for parts replacement)
Looseness of bolts	No Loose	For Stand + valve	Retighten the mounting bolts.
(visual and palpation)		For flange piping	Retighten the pipe bolts to the specified torque. (Ref: 5. Piping method)
Water-intrusion **1) (visual inspection)	No intrusion	Inside the actuator	Replace the actuator. (Ref: 8. How to disassemble for parts replacement)
Intrusion **1) of foreign objects (visual inspection)	No intrusion	Inside the actuator	Replace the actuator. (Ref: 8. How to disassemble for parts replacement)
Insulation resistance test *1) (Measurement)	Must be 50MΩ or more	Inside the actuator	Replace the actuator. (Ref: 8. How to disassemble for parts replacement)
Corrosion Or rust *1) (visual inspection)	No corrosion or rust	Appearance of the product and in the actuator	Remove the valve from the piping to replace the valve or actuator. (Ref: 8. How to disassemble for parts replacement)
Product damage	No scratches, cracks, or deformation	Appearance of the product	Remove the valve from the piping to replace the valve or actuator. (Ref: 8. How to disassemble for parts replacement)

 \gg 1) Failure to do so may result in burnout or fire.



10. Cause of malfunction and remedy

∆ Caution



Forcing

You may be electrocuted or injured.

- ▶ If any malfunction is found, immediately stop using the product and take appropriate action.
- ▶ When replacing the valve or parts, remove the fluid in the piping completely before removing the valve from the piping.
- ► Turn off the power before removing the actuator cover.

Failure phenomenon	Possible cause	Measures and measures
The Allen key does not turn (does not turn) during manual operation.	The valve is already fully open (or fully closed).	Turn the hand wheel in the reverse direction. (Ref.: 7. Test run method)
	The power remains supplied in the opposite direction of the handle operation direction.	Turn off the power before operating the machine manually.
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: How to disassemble for replacing 8 parts)
	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.)	Recheck the operating conditions. (Ref: 2. Handling Precautions)



CAUSE OF FAILURE AND HOW TO REMEDY (continued)

Failure phenomenon	Possible cause	Measures and measures
Do not open or close with electric operation	The power is off.	Check the voltage and turn on the power.
	Wiring to the terminal block is disconnected.	Immediately stop using and recheck the connection condition. (Ref: 4. Wiring diagram for actuator specifications)
	The cable or the connection inside the actuator is broken.	Replace the cable or replace the actuator (Ref: 8. How to disassemble for parts replacement)
	Simultaneous switching energizing or incorrect wiring to the terminal block	Immediately stop using and recheck the connection condition. (Ref: 4. Wiring diagram for actuator specifications)
	The power supply voltage is different.	Check the voltage with a tester to obtain the correct voltage.
	Power supply voltage is low.	Check the voltage with a tester to obtain the correct voltage.
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 8. How to disassemble for parts replacement)



CAUSE OF FAILURE AND HOW TO REMEDY (continued)

Failure phenomenon	Possible cause	Measures and measures
Fluid leaks even when fully closed (internal leak)	High fluid pressure	Use the product with the maximum allowable pressure or less. (Ref: 8. How to disassemble for parts replacement)
	Missing parts	Remove the valve from the piping and attach the relevant part or replace the valve. (Ref: 8. How to disassemble for parts replacement)
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 8. How to disassemble for parts replacement)
	Piping stress is applied to the valve.	Remove the piping stress



CAUSE OF FAILURE AND HOW TO REMEDY (continued)

Failure phenomenon	Possible cause	Measures and measures
Fluid leaks from valve (external leak)	Valve is cracked or broken	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 8. How to disassemble for parts replacement)
Actuator is operating but valve is not open or closed	The stem or fitting is damaged.	Immediately stop using the product, remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 8. How to disassemble for parts replacement)
The actuator emits a bad smell, heat, or smoke.	Actuator is defective	Stop using the product immediately, remove the valve from the piping, and replace the actuator. (Ref: 8. How to disassemble for parts replacement)
	Wrong connection to the terminal block	Stop using the product immediately, remove the valve from the piping, and replace the actuator. (Ref: 8. How to disassemble for parts replacement)
	An overcurrent is flowing to the actuator	Stop using the product immediately, remove the valve from the piping, and replace the actuator. (Ref: 8. How to disassemble for parts replacement)
	The actuator is affected by lightning.	Stop using the product immediately, remove the valve from the piping, and replace the actuator. (Ref: 8. How to disassemble for parts replacement)
Actuator is corroded	The watch is exposed to water, chemical liquids, or other liquids.	Stop using the product immediately, remove the valve from the piping, and replace the actuator. (Ref: 8. How to disassemble for parts replacement)



Failure phenomenon	Possible cause	Measures and measures
Valve is corroded or deformed	The watch is exposed to water, chemical liquids, or other liquids.	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 8. How to disassemble for parts replacement)

11. Disposal method of residual materials and waste materials

⚠Warning		
Forcing	When burnt, toxic gas is generated.	
Tolcing	▶ 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]

Rotary damper
Electric Actuated TYPE S
40~600mm





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

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

April 2024