Read all instructions thoroughly

INSTRUCTIONS

PULSE MOTOR EXPANSION VALVE

Type - GKV

SAGInoMIYA

INTRODUCTION

Thank you for purchasing our GKV type pulse motor expansion valve.
Please read the instruction manual carefully before use and use the product correctly.
After reading, be sure to keep it in a place where the user can access it at any time.

NOTE FOR SAFETY

⚠ WARNING

- This valve is designed and manufactured for refrigerant control in refrigeration, and air conditioning. Do not use this valve for any other purpose.
- Do not use this valve in a system where impact pressure such as liquid hammer is applied to this valve. It may cause malfunction or fluid leakage.
- Select a solenoid valve that matches the size of this valve.
  If an oversized solenoid valve is installed, excessive impact pressure will be applied to this valve, causing it to break.
- The voltage indicated on the label and the output voltage of the controller must match. Applying a voltage other than that specified may cause the coil to burn out (smoke or fire) or malfunction. For the output voltage of our controllers, refer to the controller's instruction manual.
- Do not touch the coil when the power is on. It may become hot and may cause burns.
- Do not touch this valve at low temperatures. The touched part may not come off and you may get burned.
- Do not drop or otherwise subject this valve to impact or large loads. Also, do not ride on this valve. Doing so may cause coil burnout (smoking or ignition), malfunction, or fluid leakage.
- Do not keep the coil warm. Doing so may cause coil burnout (smoking or ignition).
- Do not place flammable materials around the coil. The heat generated by the coil may cause a similar fire.

⚠ Caution

- A separate controller is required to operate this valve. Use in conjunction with ourレフコン® electronic expansion valve system. Be sure to read the handling instructions as well.
- If you do not use our controller, please contact us for the excitation method, etc. before manufacturing. Use of an incompatible controller may result in malfunction.
- Loose or miswired terminals not only prevent correct control, but also cause malfunctions.

<When to use>

- If the valve is hunting, change the controller settings, etc., or review whether the valve model selection is appropriate.
- The ON/OFF frequency of the liquid feed solenoid valve due to the thermo cycle should be within 200,000 times for the durability life of this valve. Excessive frequency may cause malfunction due to valve wear and deterioration of valve operation.

Maintenance and Inspection

- Be sure to turn off the power during maintenance and inspection.
- Since foreign matter in the piping may accumulate in the strainer in the early stages of operation, we recommend that the strainer be inspected and cleaned.
- Never attempt to disassemble it.
- If disassembly or inspection is required, please contact us.

Confirmation of operation

After installing the product correctly, be sure to perform a test run to confirm that the entire system is fully functional.

LIMIT ON APPLICATION

The product is not designed and manufactured for such equipment or system that is intended to be used under such circumstances as to relate to human life. For application requiring specially high reliability, please contact Company first.

SCOPE OF WARRANTY

Unless otherwise agreed by the parties, warranty period of the Product shall be one year after delivery. In case of failure attributable to the Company within such period, the Product shall be repaired or replaced, provided that any one of followings are out of the warranty :

1. Improper handling or application by user
2. Modification or repair by other than the Company
3. Any failure to be caused by acts of God, fire, storm or the like, war, riot or the like

Warranty described in this paragraph means the warranty for the Product itself and does not include warranty for any consequential damage arising out of or occasioned by a defect or failure of the Product.

SAGINOMIYA SEISAKUSHO, INC.
Shinjuku Garden Tower 22F
8-2, Okubo 3-chome, Shinjuku-ku, Tokyo, 169-0072 Japan
Tel : +81 3 6205 9123 Fax : +81 3 6205 9125
E-mail : inter@saginomiya.co.jp
URL : http://www.saginomiya-global.com/en/

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Feature

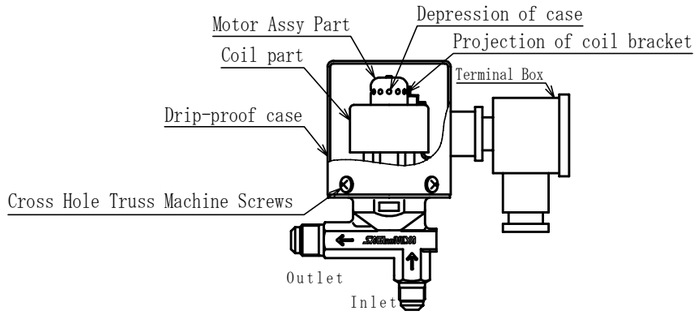
・This motorized control valve (electronic expansion valve) uses a stepping motor to control refrigerant.
・Since the valve opening is adjusted by pulse signals from the controller, various controls are possible without being affected by pressure or flow rate.
・With our レフコン® electronic expansion valve system, in combination with our electronic expansion valve controller, highly efficient refrigeration operation is possible over a wide range of temperatures.

Product Specifications

・Before using the product, check the specifications with the drawings or product specifications.
・Do not use the product under conditions outside the specifications. Failure to do so may result in malfunction or damage.

Part Names

[ＧＫＶ Type] Flare Fype



：Fig-1

MOUNTING METHOD

<Before Installation>

・Do not use the product under water, in corrosive atmospheres, or in areas subject to severe vibration. Doing so may cause malfunction.
・Remove any dust or foreign matter in the piping. Doing so may cause malfunctions.
・A strainer is built into the inlet side to ensure secure installation in the flare section.
・Do not scratch the joint (flare section). It may cause external leakage.
・The mounting position should be within ±15° of vertical with the splash-proof case up.
・Allow space around the valve for maintenance and wiring.
・Check that the voltage indicated on the coil matches the output voltage of the controller. For the output voltage of our controllers, refer to the controller's instruction manual.

<MOUNTING METHOD：Body part>

・Install in accordance with Figure 1. Do not confuse the inlet and outlet. There are arrows on the main unit to indicate the flow direction.
・Do not apply reverse pressure. Doing so may push up the needle valve that controls the flow rate, causing valve leakage, flow deviation, or malfunction.
・Fluid passing through the valve should not be subjected to shock pressure, such as a liquid hammer.
・Select a solenoid valve that is appropriate for the size of this valve. If an oversized solenoid valve is used, the valve will be subjected to excessive impact pressure and may be damaged.
(Our recommended solenoid valve)
GKV-18BS(T) ... SEV-603BYF,SEV-603DYF
GKV-34BS(T)～-60BS(T) ... SEV-1004BYF,SEV-1004DYF
・The distance between the valve and the liquid feed solenoid valve should be as short as possible to reduce shock pressure. (We recommend a distance of 300 mm or less.)
・Do not install a check valve or similar device on the inlet side. The inside of the piping will become liquid-sealed and abnormal pressure will be generated, which may cause damage or failure of the valve.
・Do not install the solenoid valve in such a position that the valve becomes a liquid reservoir.
・Securely fix the main unit and piping. Vibration of the piping may cause cracks in the joints of the main unit.
・Use the nuts supplied with the flare fittings. With some exceptions, special products with low-temperature measures are included.
・Tightening of the flare coupling nut must be done securely. Appropriate tightening torques are shown in the table on the right.

Dimensions		3/8″	1/2″
Torque	N・m	38	55

・Do not apply unreasonable force such as compression, tension, or torsion to the main unit. Doing so may cause deformation of the main unit and malfunction.
・Do not allow water to get inside the piping. Freezing or rusting may cause malfunction.
・After piping, perform an airtightness inspection.
・The terminal box mounting direction can be changed every 45° by rotating the splash-proof case. Remove the cross-holed truss cap screws and rotate the drip-proof case. Rotation should be limited to a maximum of 180 ° from the shipping position, and the lead wires in the drip-proof case should have enough room to prevent pulling force from being applied. If you cannot rotate to 180° , do not force it, but rotate it to the opposite side.
・Do not wrap lead wires around the coil section. Do not pry open, scratch, or deform the splash-proof case.

<Wiring Method>

・When wiring, be sure to turn off the controller power.
・As shown in the table on the right, connect the wires according to the symbols on the terminal symbol plate (or the color of the lead wires of the coil section) so that the wires match those on the controller side.

Lead wire color	Phase
Orange	A
Red	B
Yellow	A
Black	B
Gray	C(COM.:＋)

・Loose or miswired terminals not only prevent correct control, but also cause malfunctions.
・For wiring, use commercially available control cables (5-core - 1.25 mm^2) or other wire materials (outer diameter of coating 14 or less), and be sure to use crimp terminals for connections.