Read all instructions thoroughly

INSTRUCTIONS

Electronic Expansion Valve

Type VKV-＊＊DS　　SAGINOMIYA

Introduction

To ensure a correct use of this valve, please check this instruction manual.
After checking this manual, make sure to keep it always within your reach.

Cautions on safety

⚠Warning

- This valve is designed and manufactured for the purpose of controlling the refrigerant of freezers, refrigerators, air-conditioners, etc. Do not use it for any application other than specified above.
- Do not use this valve in a system where an impact pressure like liquid hammer applies to this valve unless a solenoid valve for liquid feeding is installed, otherwise an operation failure or a liquid leakage failure might occur.
- Set the output voltage of controller to conform to the voltage indicated on coil. Do not apply any voltage other than specified, otherwise a coil might be broken (fumed or burnt) or malfunction.
- Do not touch a coil when power is being applied to the coil, otherwise it might cause a burn due to its possible high temperature it becomes.
- Do not touch a valve under a low temperature, otherwise operator's hands might stick to the touched portion and might suffer a burn.
- Do not apply any excessive impact due to a drop or the like, nor any heavy load to a valve. Do not step on a valve either. It might cause a coil to be burnt (fumed or ignited) an operation failure, or a liquid leakage failure.
- Do not keep a coil temperature warm, it might cause a coil to be burnt (fumed or ignited).
- Do not put any combustible materials around a coil, otherwise the heat generated by coil might cause a fire.

⚠Notes

- A controller is necessary to operate this valve. Our pulse converter is recommended. to use as a set (recommended sampling time : 10 sec).
  Please be sure to read the instruction manual for a pulse converter.
- If our pulse converter is not used, ask us for the excitation method and so forth before manufacturing your controller. If a non-conforming controller is used, it might cause malfunction.

Features

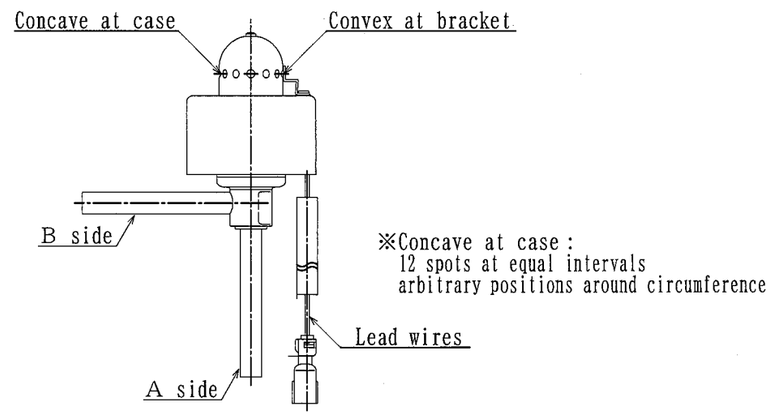
- This electric control valve (electronic expansion valve) adopting a stepping motor serves to regulate refrigerant.
- Since valve open position is adjusted according to pulse signals from a controller, various control can be achieved without being affected by pressure and flow.

Product specification

- Confirm the specification based on the drawings or product specifications before using a valve.
- Do not use a valve under any unspecified conditions other than product specifications, oterwise it might cause failure or a breakdown.
- Do not use a valve with refrigerant R22, nor with mineral oil. Otherwise it might cause malfunction.

Name of each part

<VKV type Electronic Expanion Valve>



Installing method

<Cautions to be observed before starting an installation>

- Do not use our valve nor coil with other manufacturer's counterpart.
- Do not use a valve into water, nor under severe vibration, corrosive atmosphere, nor at the place where water drops consistently, otherwise it might cause a breakdown.
- Remove dust and foreign substances from piping, otherwise it might cause a breakdown.
- Set a strainer more than 100 meshes at the inlet of a valve along the flowing pass.
- Do not flaw joints (at brazed part), otherwise it might cause leakage to the outside.
- Do not hang this valve with coil's lead wire held by hand, otherwise it might cause a breakdown (wire disconnection).
- Allowable installing angle is vertically ±15℃ with motor(coil) on top.
- Do not bring any strong magnetic subject near a valve case, otherwise the magnetic properties of a magnet inside case might become disordered, and cause malfunction.
- Secure a space around a valve for maintenance, checking, wiring operation purposes.
- Neither clog in flowing passage, erosion, nor malfunction caused by foreign particle is within our specification.
- Ensure that the voltage written on a coil and the one outputted from a controller are matched.

<Installing method:Valve>
- For normal flow regulating, set the flow direction B side to A side. If the flow direction is set A to B side, the flow control needle would be lifted up by pressure differential, which might cause valve leakage or a flow volume deviation.
- Ensure that no impact pressure like liquid hammer is applied from fluid passing a valve.
- Do not install any check valve or the like at the inlet side, otherwise the inside of piping might be filled with liquid, generating an abnormal pressure to cause damage and a breakdown of a valve.
- Fix a valve body and piping securely. Stay aware that if the piping vibrates, it might cause a crack on the connecting part between a valve and joints.
- At brazing, ensure that a coil is removed from a valve, and the valve is either wrapped with wet cloth or into water to limit the temperature below 120℃.
  However, stay aware that water does not enter into the inside of a valve.
  Also, do not point flame to a valve directly.
  Stay alert for a burn and a fire.
- Please fill the inside with inert gas (nitrogen, carbon dioxide) at brazing not to generate oxide scale.
- The valve open position is set to 480 pulse at shipment, however, this position is subject to the vibration during transport. When filling the inside with inert gas at brazing, ensure that a valve is open to the fullest.
- Do not apply unproper force to a valve body, like compression, tension, twist. Otherwise, a valve body might be deformed, and it might cause malfunction.
- Ensure that water doesn't enter into piping. Due to freezing and generating of rust, it might cause malfunction.
- Carry out airtight test after laying piping.
- Ensure that the inside of a body is lubricated with proper refrigerant oil.

<Installing method:Coil>
- When installing a coil, insert it onto a case of valve straight, and fix convex spots of coil bracket to concave spots of the valve case securely. As there are 12 concaves on the valve case, fix the coil at a position suitable for easy wiring.
- For lead wire extension, use our relay lead wire exclusively.
- Do not wind any lead wire around a coil.
- Ensure that the whole lead wires are fixed between a valve and a controller in order to avoid a conduction of vibration. When curving the lead wires, do not curve them at an acute angle, but make a gentle curve.
  Do not put an article on the lead wires nor tread on them, otherwise it might cause damage or cutting off.
- Refrain from touching lead wires at the low temperature surroundings. As its cover is hardened, it might cause damage or cutting off.

<Wiring method>
- Turn off a controller without fail before starting wiring.
- Connect lead wires to a controller based on the colors of lead wires as shown in the right table.
- Loose wiring at terminals, and wrong wiring cause not only improper control, but also troubles.

Lead wire color	Phase
Orange	A
Red	B
Yellow	$\overline{A}$
Black	$\overline{B}$
Gray	C(COM.:+)

<Cautions on use>
- If a valve does hunting, change the set value of a controller or check if valve selection is appropriate or not.

Maintenance and inspection
- Turn off a power source without fail at the time of maintenance and inspection.
- Foreign substances in piping may be accumulated on a strainer in the initial stage of operation. Checking and cleaning a strainer is recommended.
- Never disassemble a valve on no account.
- If there is necessity of either disassembling or checking, please contact us.

Limit on application
- This product is neither designed nor manufactured for such equipment or system that is intended to be used under such circumstances as to affect people's lives. For the application requiring high reliability, in particular, please contact us in advance.

Scope of warranty
- Unless otherwise agreed by the parties, a warranty period of this product shall be for one year after delivery.
  In case of failure attributing to Saginomiya within a warranty period, the product shall be repaired or replaced, provided that any incident of the followings are out of warranty.
  ①. Improper handling or use.
  ②. Modification or repair by any one other than Saginomiya.
  ③. Any failure to be caused by an act of God, disaster, war, riot or any other causes beyond the control of the parties concerned.
  Warranty described herein means the warranty for the product itself, and excludes the one for the obstacles induced by a defect or failure of the product.

Inquiries
- Please contact Sales office / distributor nearby for any question or request.
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