

Read all instructions thoroughly

INSTRUCTIONS

Solenoid Valve for Refrigerant

Type REV

SAGInoMIYA

A Failure to read and follow all instructions carefully before installing or operating this solenoid valve could cause personal injury and/or property damage. Save these instructions for future use.

B NOTE FOR SAFETY

Warning

- When removing the solenoid coil from the valve body, be sure to cut out the power supply as the coil may burn.
- Do not apply the different voltage from the voltage marked on the coil label.
It may cause burning or failure.
- While power is on, do not touch the housing cover as personal injury may be caused.
(Coil heats up to 90°C)
- Do not apply excessive force and/or any impact to the coil as it may cause valve failure, burn-out and leakage trouble due to deformation.
- Do not heat up the solenoid coil as the coil might be burn-out.
- Do not put any inflammable thing around the coil as it could catch fire due to the coil heat.

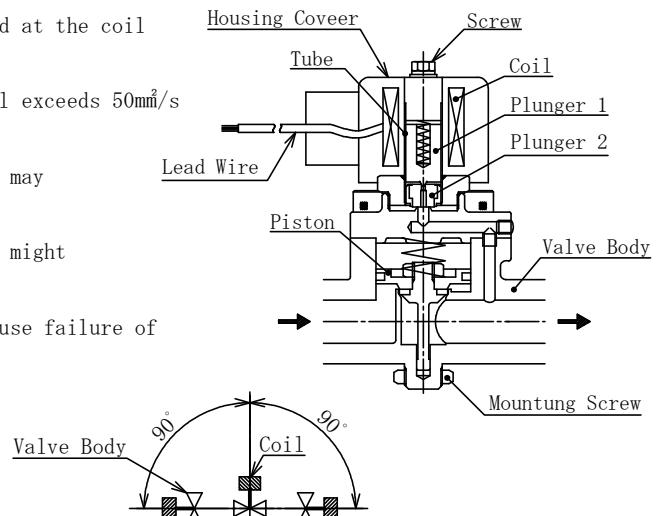
C SPECIFICATIONS As for the following specification, there is a case different from indication of a product. Note : SI unit (Metric unit)

- | | | | |
|-----------------------------|--|-----------------------------|-----------------------------------|
| ● Min Bursting Press. | 4.41 MPa {45kgf/cm ² } | ● Airtight Pressure | 2.94 MPa {30kgf/cm ² } |
| ● Max Working Press. | 2.94 MPa {30kgf/cm ² } | ● Max Operating Press Diff. | 2.45 MPa {25kgf/cm ² } |
| ● Min Operating Press Diff. | 0.007 MPa {0.07kgf/cm ² } | ● Fluid Viscosity | 50mm ² /s |
| ● Ambient Humidity | 95%RH or less | ● Coil insulation | Class B molded |
| ● Fluid | Fluorinated Refrigerant (R-134a, R-22), Air (It is not available in oxygen or hydrogen line.
When using in water or oil, it is recommended to contact us) | | |
| ● Fluid Temp. | -40 to +125°C | ● Ambient Temp. | -30 to +40°C |
- As explained in NOTE For SAFETY, coil may burn out at an abnormal condition. Use a suitable fuse.
 - CE marking models are built as a class 0 device, and must be installed inside of a unit / enclosure in order to avoid contact from outside.

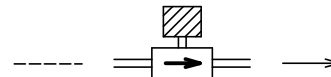
D INSTALLATION

<Before Installation>

- Confirm the supply voltage to conform with the voltage marked at the coil label on the housing cover.
- Be careful to select a refrigerant oil if viscosity of the oil exceeds 50mm²/s as it might cause failure of solenoid valve.
- Do not carry the valve with holding the lead wire only as it may cause coil burn-out.
- Be careful to scratch flared part and/or brazing point as it might cause leakage trouble.
- Remove any foreign material or dust in the pipe as it may cause failure of the solenoid valve.
- Use a mesh strainer (80 to 100 mesh) at the valve inlet.
- Mounting position should be in the following range.
(The coil should always direct upward or horizontal.)
- Grounding is required at a suitable position on the unit.
- Mounting position below shows operatable range.
It does not intend to indicate dust and drip proof performances.



<Installation>



- When installing the solenoid valve, be sure the arrow embossed on the valve body points the direction of refrigerant flow. (Be sure to correctly locate outlet and inlet side.)
- Special attention is required not to apply back pressure. Inner parts of valve may be deformed and may cause leakage trouble.
- Do not install a check valve at the inlet side as it may cause liquid sealing condition on the pipe inside and may cause damage due to excessive pressure.
- When brazing the joints, the valve body should be kept cool by wet rags in order not to heat up the valve body in excess of 120°C (Do not direct the flame to the valve body.)
- When brazing, valve inside should be filled with inactive gas (N₂ or CO₂) to prevent generation of scale.
- Be sure to firmly tighten a flare nut or a threaded pipe. The proper tightening torque is as follows.

Style		Flare				Threaded Pipe		
REV-		703B**	1004B**	1205B**	1506B**	1003G**	1204G**	1506G**
Torque	N·m	38	55	75	110	30	35	50
	{kgf·cm}	{380}	{550}	{750}	{1100}	{300}	{350}	{500}

- Special attention is required not to apply excessive force of compression, tension or torsion against the valve body as it may cause malfunction.
- In case of flange connection, be careful to tighten bolts equally to prevent uneven tightening. The proper tightening torque is as follows.

REV-		2006E**	2510E**	3212E**	4014E**	5020E**	6524E**	6530E**
Torque	N·m	23	50	55	58	65	70	75
	{kgf·cm}	{230}	{500}	{550}	{580}	{650}	{700}	{750}

- After putting the solenoid coil to the valve body and/or changing the coil direction, be sure to tighten the screw firmly.

Proper tightening torque : 3N·m {30kgf·cm}

<Operation>

- For DC type of the solenoid coil, a spacer is provided at coil axis. When removing the solenoid coil, be careful not to lose the spacer.
- Before removing the solenoid coil from the valve body, be sure to cut the power supply. If energizing the coil itself while it is not assembled into the valve body, the coil may cause burn-out.

E ELECTRICAL CHARACTERISTICS

Rated Voltage/Frequency		Running Current	Wattage	Coils	Proper Current Fuse
AC	100V 50/60Hz	170/140 mA	8/7 W	AC100V coil	0.5A
	110V 60Hz	150 mA	8 W		
	200V 50/60Hz	85/ 70 mA	8/7 W	AC200V coil	0.3A
	220V 60Hz	75 mA	8 W		
DC	12V	900 mA	10 W	DC 12V coil	2.0A
	24V	450 mA		DC 24V coil	1.0A
	100V	105 mA		DC100V coil	0.3A

F MAINTENANCE/INSPECTION

- In case of disassembling or inspection, please contact Saginomiya.
- Before making a maintenance or inspection for the valve, be sure to cut the power supply.

G OPERATION CHECK

Install the Product correctly and then check its operation to confirm correct function of the whole system.

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CONSENT RELATED TO DISCLAIMERS

We, SAGINOMIYA SEISAKUSHO, INC., (hereinafter referred to as "Saginomiya"), truly appreciate your choosing Saginomiya's product (hereinafter referred to as this "Product").

When this Product is used, this document as provided below shall be applicable except to the extent that there is anything to the contrary in any applicable estimate, agreement, catalogue, specification, etc.

● CONFIRMATION OF OPERATION

All customers using this Product (hereinafter referred to as "Customers") are requested to, after properly installing this Product, test the operation of this Product to confirm that all the systems in connection with this Product fully function.

In order to prevent the occurrence of bodily injury, fire accidents, serious damage, etc., in connection with the Customers' machinery or equipment due to improper installation of this Product, Saginomiya kindly requests the Customers to take the necessary safety measures by preparing safe designs such as a fail-safe design (*1) and a fire spread prevention design, as well as to make the proper adjustments for product reliability necessary for fault-tolerance (*2).

(*1) Fail-safe design: Design to ensure safety in the event of any mechanical failure

(*2) Fault-tolerance: Utilization of redundancy technology

Periodic Inspection of this Product

Be sure to confirm the proper operation of this Product and keep records of such operation at least once a year.

Saginomiya shall be held harmless and be indemnified by the Customers from any damages incurred due to the Customers failing to conduct the above operational procedures, provided, however, that, this shall not apply if the damages which the Customers incurred due to the defect of this Product caused by Saginomiya.

● RESTRICTIONS OF USE

This Product is designed and manufactured for the purpose of using them for cooling and heating and refrigerating appliances and air conditioning equipment or various industrial equipment, but is not designed and manufactured for the purpose of using this Product for any instrument or system related to human life or health purposes.

Therefore, the use of this Product in fields related to items (1) through (3) below is not intended whatsoever.

Saginomiya shall be held harmless and be indemnified from any and all damages incurred by use of this Product under item (3).

- (1) In any field related to nuclear power and radiation;
- (2) In any field related to space or seafloor equipment;
- (3) In any equipment or device requiring a high degree of reliance on such equipment or device with respect to which it is reasonably foreseeable that failure or malfunction of the equipment or device would either directly or indirectly cause serious damage to human life, health or property;

Also, when using this Product under the fields related to items (1) through (10), (except for item (3), in relation to which this Product must never be used), please be sure to notify Saginomiya's contact desk in charge of sales and obtain Saginomiya's prior written approval for such use.

Saginomiya shall be held harmless and be indemnified from any and all damages incurred by use of this Product in relation to these fields if the Customers do not notify Saginomiya's contact desk and obtain Saginomiya's prior written approval.

- (4) Heating, cooling and air conditioning equipment that uses flammable and/or toxic refrigerants, or various industrial equipment that uses flammable and/or toxic fluids;
- (5) Transportation device (railroad, aviation, ship or vessel, vehicle equipment, etc.);
- (6) Disaster-prevention or crime-prevention device;
- (7) Facility or application directly related to medical equipment, burning appliances, electro thermal equipment, amusement rides and devices, facilities/applications associated directly with billing;
- (8) Equipment requiring high reliance on supply systems such as electricity, gas, water, etc., in large-scale communication system, or in transportation or air traffic control system;
- (9) Facilities that are to comply with regulations of governmental / public agencies or specific industries or
- (10) Other machineries or equipment equivalent to those set forth in the above items (4) to (9) which require for high reliability and safety.

It is recommended to replace this Product within 5 to 10 years of delivery if no other duration of use is provided in the applicable specifications or instruction manual because the conditions and environment of use also have an impact on this Product.

● SCOPE OF WARRANTY

SAGINOMIYA WILL PROVIDE THE CUSTOMERS WITH REPLACEMENT OR REPAIRED THIS PRODUCT DELIVERED, FREE OF COST, ONLY WITHIN ONE YEAR OF DELIVERY TO THE CUSTOMER, IF FAILURE OCCURS IN THE CUSTOMERS' EQUIPMENT USING THIS PRODUCT DUE TO A DEFECT OF THIS PRODUCT; PROVIDED, HOWEVER, THAT IN ANY EVENT THE RATIO OF THE AMOUNT THAT SAGINOMIYA BEARS FOR THE DAMAGES INCURRED BY THE FAILURE OF THIS PRODUCT OR CUSTOMERS' EQUIPMENT SHALL NOT EXCEED THE PRICE OF THIS PRODUCT WE DELIVERED. IN ADDITION, SAGINOMIYA SHALL BE HELD HARMLESS AND BE INDEMNIFIED FROM ANY AND ALL DAMAGES INCURRED WHEN THE FAILURE OF THE CUSTOMERS' EQUIPMENT OCCURRED DUE TO ANY CAUSE SET FORTH BELOW.

- (1) WHEN CAUSED BY INAPPROPRIATE HANDLING OR USE OF THIS PRODUCT BY THE CUSTOMERS (SUCH AS NOT COMPLYING WITH THE CONDITIONS, ENVIRONMENTAL SPECIFICATIONS OR CAUTIONS INDICATED IN ANY APPLICABLE CATALOGUE, SPECIFICATIONS, INSTRUCTION MANUAL, ETC.);
- (2) WHEN FAILURE OCCURRED DUE TO ANY REASON OTHER THAN THIS PRODUCT;
- (3) WHEN CAUSED BY MODIFICATION OR REPAIR OF THIS PRODUCT MADE BY ANYONE OTHER THAN SAGINOMIYA OR DESIGNEE OF SAGINOMIYA;
- (4) WHEN CAUSED BY THE USE OF THIS PRODUCT IN VIOLATION OF THE ABOVE "RESTRICTIONS OF USE" OR "CONFIRMATION OF OPERATION";
- (5) WHEN SUCH FAILURE WAS NOT REASONABLY FORESEEABLE AT THE TIME OF SAGINOMIYA'S SHIPMENT; OR
- (6) BY ANY OTHER CAUSE NOT ATTRIBUTABLE TO SAGINOMIYA, SUCH AS AN ACT OF GOD, DISASTER, OR ACT OF ANY THIRD PARTY.

PLEASE NOTE THAT THE CUSTOMERS WILL NOT BE ENTITLED TO ANY OF THE ABOVE WARRANTY IF THE CUSTOMERS PURCHASED THIS PRODUCT FROM INTERNET AUCTION, ETC.