

Read all instructions thoroughly

# INSTRUCTIONS

## Solenoid Valve for Ammonia

Type HMV (Taper Screw For Tube Type )  
Flange Type



### PREFACE

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.

### 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, 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.

### SPECIFICATIONS (As for the following specification, there is a case different from indication of a product.)

- Water Test Pressure 3.82 MPa {39kgf/cm<sup>2</sup>}
- Airtight Test Pressure and Maximum Working Pressure 2.55 MPa {26kgf/cm<sup>2</sup>}
- Max. Operating Press. Diff. (M. O. P. D.)

Fluid	Standard Type	Non Differential Pressure Type
Ammonia	For AC:1.96 MPa {20kgf/cm <sup>2</sup> }, For DC:1.57 MPa {16kgf/cm <sup>2</sup> }	0.98 MPa {10kgf/cm <sup>2</sup> }
Brine	0.98 MPa {10kgf/cm <sup>2</sup> }	0.49 MPa { 5kgf/cm <sup>2</sup> }

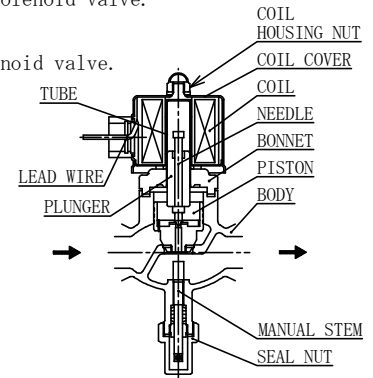
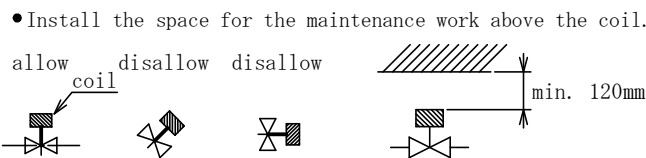
- Min. Operating Press. Diff. (M. O. P. D.) Standard Type : 0.015 MPa {0.15kgf/cm<sup>2</sup>},  
Direct Action Type (port φ3) and No Differential Pressure Type : 0 MPa {0kgf/cm<sup>2</sup>}
- Fluid Ammonia·Brine:Please give instructions of fluid and power supply(AC or DC), because of change internal parts.  
※Since the material of main body is iron, it is limited to fluids that do not corrode.  
Not available for OXYGEN, HYDROGEN and FLUOROCARBON refrigerants and SEA WATER.
- Class of Insulation class B
- Max. Use to Viscosity 50m<sup>2</sup>/s
- Ambient Temperature 0 ~ +40°C
- Ambient Humidity 95%RH or less
- Allowable Fluid Temperature 0 ~ +80°C
- As explained in NOTE FOR SAFETY, coil may burn out at an abnormal condition. Encapsulated fuse coil is available upon request. Use a suitable fuse as shown in below table.

ELECTRICAL CHARACTERISTICS		PORT SIZE : φ3~φ19			PORT SIZE : φ25~φ50			
		RUNNING CURRENT	WATTAGE	PROPER CURRENT FUSE	RUNNING CURRENT	WATTAGE	PROPER CURRENT FUSE	COILS
AC	100V 50/60Hz	280/220 mA	9/7 W	1.2 A	730/600 mA	32/29 W	3.0 A	AC100V
	110V 60Hz	260 mA	9 W		680 mA	32 W		
	200V 50/60Hz	140/110 mA	9/7 W	0.6 A	340/280 mA	32/29 W	1.5 A	
	220V 60Hz	125 mA	9 W		310 mA	32 W		
DC	12V	1260 mA	15 W	3.0 A	2180 mA	25 W	5.0 A	DC 12V
	24V	610 mA		1.5 A	1000 mA		2.0 A	DC 24V
	100V	150 mA		0.3 A	240 mA		0.5 A	DC100V

## INSTALLATION

### <Before Installation>

- Ensure the supply voltage to conform with the electrical ratings specified on coil or coil cover.
- Be careful of viscosity of the fluid exceeds 50 mm<sup>2</sup>/s as it might cause failure of solenoid valve.
- Do not carry the valve with the lead wire. It causes the disconnection.
- Remove any foreign material or dust in the pipe as it may cause failure of the solenoid valve.
- Use a mesh strainer(80 to 100mesh).
- Mount coil facing up and vertically. (Only horizontal piping can be installed)



- Grounding is required at a suitable position on the unit.

### <Installation>

- When installing the solenoid valve, confirm the arrow shown in the valve body in the direction of the 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. (When reverse pressure applied, install check valve on the exit side.)
- 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.
- Be sure to firmly tighten taper screw parts for tube. The proper tightening torque is as follows.

Type	HMV-	302G 702G	303G 1003G	1304G	1606G
TORQUE	N·m	20	30	35	50
	{kgf·cm}	{200}	{300}	{350}	{500}

- Be sure to evenly tighten a flange, not uneven clamping. The proper tightening torque is as follows.

Type	HMV-	1906E	2508E	3212E	3814E	5020E
TORQUE	N·m	23	50	55	58	65
	{kgf·cm}	{230}	{500}	{550}	{580}	{650}

- Conduct airtight inspection after piping work.
- Do not add abnormal power of compression, the pull, and the twist to the main body. It causes the failure.
- After putting the solenoid coil to the valve body and/or changing the coil direction, be sure to tighten the mounting nut. Proper tightening torque: 8 N·m {80kgf·cm}
- When connecting coil, leave some slack so that cord is not subject to pulling force.
- Make sure to fix the valve body and piping firmly.

### <Operation>

- 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.
- Prevent moisture inside coil cover. It may be degrade of insulation of coil.

## 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.

## OPERATION CHECK

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

## 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 the 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 and other causes beyond the control of the parties concerned.

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 failure of the Product.

## INQUIRY

**SAGINOMIYA**  
SEISAKUSHO, INC.

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8-2, Okubo 3-chome, Shinjuku-ku, Tokyo, 169-0072 Japan  
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E-mail : [inter@saginomiya.co.jp](mailto:inter@saginomiya.co.jp)  
URL : <http://www.saginomiya-global.com/en/>

## 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.