

Clean Needle Valve

Model: HNV type(H□S Type)

INSTRUCTION MANUAL

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<Description>

●Application

Semiconductor, medicals, and chemical industry related devices

●Features

- This product is developed for accurate control of minute amount of flow, using our own design and ultra-precision machining technique.
- All parts in contact with liquid are made of excellent anti-corrosive fluorine resin.

<Before You Use>

⚠ WARNING

- Confirm the compatibility of the type of fluid to be used and the wetted material of this product before using it.
- Before using this product, carefully read this instruction manual to learn the correct usage.
- Keep this manual at hand to see it any time you need.
- Follow the correct usage of this product specified in this manual.
- Comply with the statements of warning described in this manual.

<About Instruction Manual>

- The information described in this manual is subject to change without prior notice, due to improvements of product in performance and/or functionality.
- No parts of this manual may be reproduced or utilized in any form or by any means.
- Please contact Surpass Industry any time you lose this manual.
- Every effort was made to ensure that all information included in this manual was complete and accurate at the time of printing. However, if you have any point of doubt, errors, or omissions, please contact Surpass Industry.

●Important Safety Instructions

⚠ WARNING

This symbol indicates warnings which, if not observed, may cause death or severe injury to the user.

<About Marks Used>

The meanings of the marks are as follows:

⚠

Provides important notices and indications to operate the product correctly.

1. Specifications

- Operating Fluid Pressure : 0 ~ 400 kPa (0 ~ 58 psig)
(Please see a drawing for more details.)
- Withstanding Pressure : 500 kPa(72.5 psig)
- Operating Environment Temperature : 5 ~ 60 °C (41 ~ 140 °F)
- Operating Fluids Temperature : 5 ~ 80 °C (41 ~ 176 °F)
- Applicable Fluid : Gas or Liquids
- Wetted Parts : Depends on the model type
(Please see a drawing for more details.)

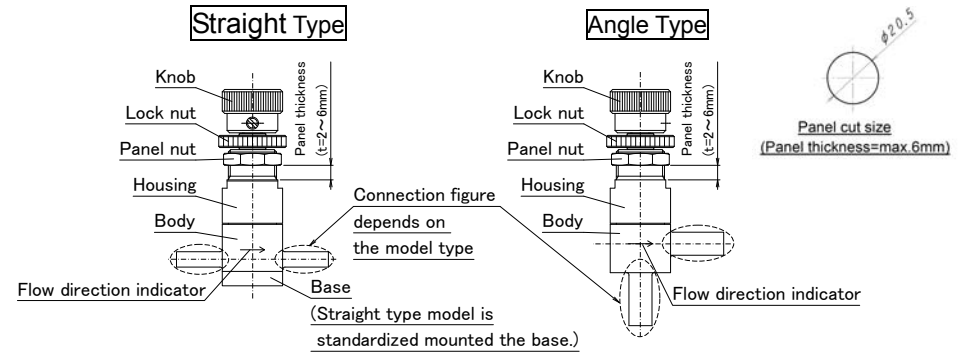
⚠ Do not use this product with slurry liquids or contaminated liquids.

⚠ Because the product is damaged on the condition that a fluid temperature change occurs rapidly, please don't use it in that condition.

2. Designation of Each Component

Viewing from the top, turning the knob counterclockwise increases the flow rate, and turning it clockwise decreases the rate.

- ⚠ Be careful not to turn the knob in the clock-wise direction too much when lowering the flow rate. By doing so may lead to failures. (Do not turn the knob after the flow rate is zero.)
- ⚠ Decreasing the flow rate essentially increases the IN-side pressure. Be sure not to allow the pressure to exceed the specified fluid pressure range. Excessive operating pressure may cause malfunction of the product.



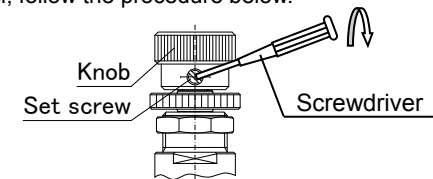
⚠ WARNING

- Be sure to fix the product securely. Otherwise, the product may be a cause of accident, for example, by falling off.
- Do not tighten the nut excessively. Excessive tightening may break the product.
- Never use this product in a place with strong vibration. Such usage may cause an operation failure.
- Check the flow direction indicator (→) imprinted on the main unit for correct setting of IN and OUT. Reverse tubing may cause a failure in operation.
- This is a precision-made product. Never decompose or alter this product. Doing so may cause an operation failure, resulting in a personal injury or damage to your property.
- Be careful not to turn the knob in the clock-wise direction too much when lowering the flow rate. By doing so may lead to failures. (Do not turn the knob after the flow rate is zero.)

3. Mounting Procedure

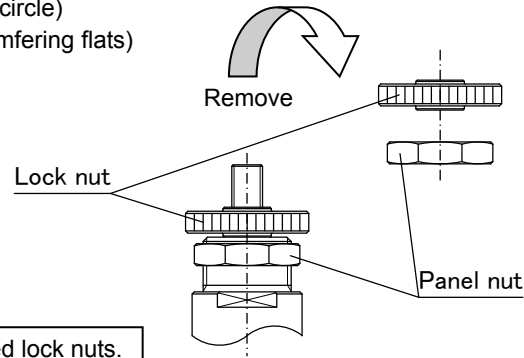
- When fixing the product at its base, fix it firmly to the position using two mounting (4.5 mm dia.) holes on the base.
- For the type without base, fix with mounting screws (M3, Depth 6) on the rear of the main unit. (Do not tighten the screw excessively. Excessive tightening may break the product.)
- When mounting the product on a panel, follow the procedure below.

- ① Loosen the set screw using a small flat-blade screwdriver, and then remove the knob.



⚠ When loosening the locking screw, use a flat-blade screwdriver of appropriate size not to apply excessive force. Be careful not to lose the removed locking screw.

- ② Remove the lock nut (with the round circle) and the panel nut (with the eight chamfering flats) by turning them counterclockwise.

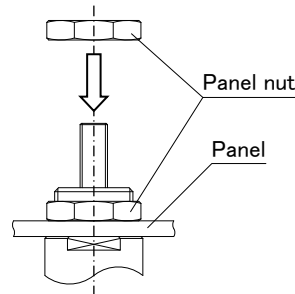


⚠ Be sure not to lose the removed lock nuts.

- ③ Confirm that the panel has the opening of the designated size, and then set the product to the panel.



When the product is set, fix the product by turning the panel nut (with the eight chamfering flats) clockwise.

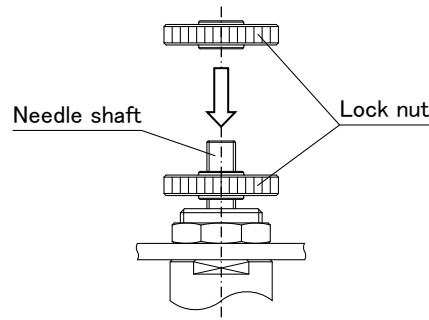


- ⚠
- Be sure that the resulting thickness of the panel plate is 6mm or less. Otherwise, the product cannot be mounted properly.
 - Please use a torque wrench when tightening the panel nut with 3 [N·m]. Excessive or inadequate tightening may cause breakage or liquid leakage.

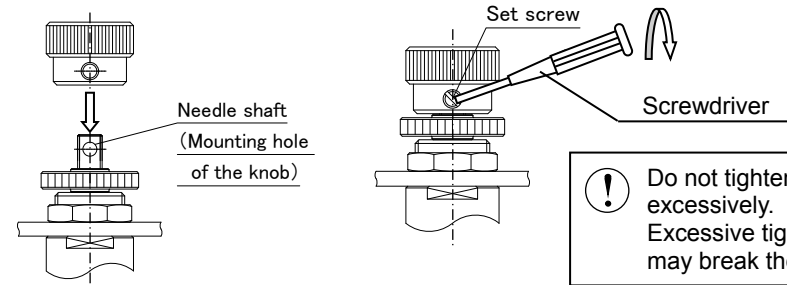
⚠ WARNING

- To mount the product, hold the housing and turn the panel nut. If the body is held, malfunction such as abnormal operation may occur.

- ④ When the product is mounted on the panel, attach the lock nut to the needle shaft by turning it clockwise.



- ⑤ Aligning the set screw to the mounting hole of the needle shaft, tighten it with the flat-blade screwdriver to attach the knob.



⚠ Do not tighten the screw excessively. Excessive tightening may break the product.

4. Removing the Product

Remove the piping to the product then perform the above work in the reverse order to remove the product.

⚠ WARNING

- To remove the product in the panel mounted state, hold the housing and turn the panel nut. If the body is held, liquid leakage resulting in a personal injury or damage to your property.

5. Connecting Procedure

For applications of the connecting part, refer to a brochure or an instruction manual provided with your connecting part.

⚠ WARNING

- Connect the tube not to apply any bending or tensile stress to the tubing. Tubing with such stress applied may result in liquid leakage.
- Check the flow direction indicator (→) imprinted on the main unit for correct setting of IN and OUT. Reverse tubing may cause a failure in operation.
- Apply the pressure to the inside of tube on trial to make sure that the connecting part has no leakage before starting its usage.

6. Warranty

The warranty runs for one year after the day when Surpass Industry products are delivered from Surpass factory in Japan. In case Surpass Industry should agree in writing that the defects in performance or material were caused by faulty design or workmanship of Surpass Industry, replacement products will be supplied free of charge. This warranty shall not be applied to any defects caused by misuse, alteration, neglectful treatment, and neglect of our recommendations or instructions.

In addition, we are not be liable to any direct or consequential loss, damage, and personal injury due to an unauthorized usage in combination with other products and an improper usage outside of the specifications. Our product warranty shall be limited to replacement of product.

Replacement with expense to the purchaser shall be applied to the followings:

- Any defective products caused by usage that is not described in the Instruction Manual.
- Any defective products caused by neglectful treatment.
- Any defective products caused by decomposition, alteration, and improper adjustment or repair.
- Any defects of products caused by acts of God including natural disaster or fires.
- Consumables and accessories.