

"GB", "GH" SERIES Needle Valve Instruction Manual



Hy-Lok

◆ *Installation*

Installation Preparation

1. Remove protective cap and packing material.
2. Before installing the valve, assure the specified pressure and temperature range is sufficient and piping line is installed properly.
3. The environment of installing valve should be suitable to the operation.
4. Make sure the piping system line is free of contaminants.
5. Do not carry the valve with getting the handle.

Connection of Taper Thread

1. Before assembly, make sure male and female threads are free of dirt and debris.
2. Teflon tape should be applied to male thread with 5 or 6 turns.
3. After wrapping the threads, make sure that the tape is properly fixed by pressing the tape with hands.
4. During installation, dirt and debris should not contaminate the threads.

Connection of Hy-Lok Tube Fitting

1. Insert prepared tubing into Hy-Lok fitting until tubing end is firmly seated on the body shoulder and make sure the nut is finger-tight.
2. Mark the nut at 9 o'clock position for identification of starting point.
3. Tighten the nut 1 1/4 turns with a wrench keeping the fitting body steady with a back-up wrench. After the nut is tightened 1 1/4 turn, the marking made at 9 o'clock position before, will now be at 12 o'clock position.

Connection of Socket Weld End

1. Before assembly, make sure of removing dirt on the tube/pipe end and the valve end connection.
2. Insert the tube/pipe end to the end connection of valve keeping 1.5mm(0.06 in) gap with the body shoulder.
3. Weld the end connection in accordance with the welding procedure.
4. After welding, remove the slag on the weld bead.

◆ *Operating*

⚠ CAUTION

1. System design should ensure adequate space for proper valve actuation without obstruction.
2. The Valve should be operated manually by an authorized person or trained personnel to ensure proper valve operation.
3. Operate the Valve after complete installation in system.
4. Operate the Valve in accordance with the specified user's procedure.
5. Operate the Valve with the Handle. Actuating the valve with a spanner, pipe wrench, etc. is not recommended.

Open and Close the Valve

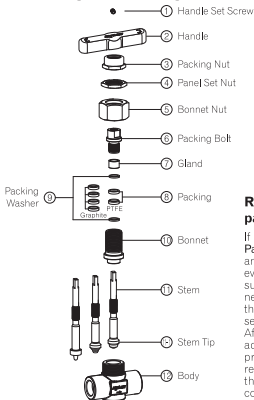
1. Turn the Handle(2) about 3~6 turns clockwise or counterclockwise to close or open.
2. Turn the Handle(2) completely clockwise to fully closed position, counterclockwise to fully open position.

◆ *Maintenance*

⚠ CAUTION

1. Check to ensure operation is within a safe temperature range and is free from any power source. To properly check the valve the line should be fully depressurized and any fluids should be drained before attempting any maintenance.
2. The valve being removed should be operated at least once and left in the open position before removal.
3. The Valve should be operated manually by an authorized person or trained personnel to insure proper valve operation

General Arrangement Drawings



Replacement of part components

If no further adjustment of **Packing Bolt(6)** is possible and stem leakage is still evident or seat leakage is suspected, the valve will need to be removed from the line in order for new seats/seals to be installed. After removal of the valve, adopt the following procedure to remove, replace and reassemble the individual valve components.

This General Arrangement Drawings are applied to the GB3. Parts are changed according to Series

Torque Table

Series	Spanner Size		Body Material	Torque (N · m)		
	Packing Bolt	Bonnet Nut		Packing Bolt		Bonnet Nut
				PTFE	Graphite	
GB1	3/8" (9.5mm)	7/8" (22.2mm)	SS316 Carbon Steel	4	3	78
GB2	7/16" (11.1mm)	1 5/16" (33.3mm)		6	4	98
GB3 G	5/8" (15.8mm)	1 1/2" (38.1mm)		12	8	118

Disassembly

1. Before disassembly, place the **Handle(2)** in the middle of open and close position.
2. Loosen the **Packing Bolt(6)** after loosening the **Packing Nut(3)**.
3. Loosen the **Bonnet Nut(5)** and remove the assembled **Bonnet(10)** from the **Body(12)**.
4. Loosen the **Handle Set Screw(1)** and remove the **Handle(2)** from the **Stem(11)**.
5. Turn the **Stem(11)** counterclockwise to separate from the assembled **Bonnet(10)**.
6. Remove the **Packing Nut(3)**, **Panel Set Nut(4)** and **Bonnet Nut(5)** from the **Bonnet(10)** in order.
7. Remove the **Packing Bolt(6)** from the **Bonnet(10)**.
8. Remove the **Gland(7)**, **Packing Washer(9)** and **Packing(8)** from the **Bonnet(10)** by using the **Probe or Positioner**. (To prevent the damage inside the **Bonnet(10)**, full attention is needed when remove the components.)

Leakage

1. Stem leakage

In case of stem leakage, tighten the **Packing Bolt(6)** after loosening the **Packing Nut(3)**. If the leakage remains after tightening, remove the **Handle(2)**, **Panel Set Nut(4)**, **Bonnet Nut(5)**, **Packing Bolt(6)**, **Gland(7)**, **Packing(8)**, **Packing Washer(9)** and check for damage to the **Stem(11)** and **Packing(8)**, replace damaged parts or component(s) as needed.

2. In-Line leakage

If the leakage happens inside of valve, ensure whether the valve is in fully closed condition. If the reason of leakage is seat(**Body(12)**)/**Stem Tip(11-1)** damage, replace the component.

Reassembly

1. Before valve reassembly, check if any damage and corrosion in all part components of the valve.
2. If the damage is minor, polish the part by sandpaper.
If the damage is considerable, replace the part component.
3. Insert the **Packing Washer(9)**, **Packing(8)**, **Packing Washer(9)** and **Gland(7)** into the **Bonnet(10)** and tighten the **Packing Bolt(6)** with hand.
4. Insert the **Bonnet Nut(5)** on the **Bonnet(10)** and hand-tighten the **Panel Set Nut(4)**, **Packing Nut(3)** on the outer **Bonnet(10)** thread in order.
5. Insert the **Stem(11)** into the **Bonnet(10)** and fully turn the **Stem(11)** clockwise.
6. Tighten the **Handle Set Screw(1)** after inserting the **Handle(2)** into key of **Stem(11)**.
7. Insert the **Bonnet(10)** into the **Body(12)** and tighten the **Bonnet Nut(5)** according to Torque Table.
8. Tighten the **Packing Bolt(6)** according to Torque Table by turning clockwise and tighten the **Packing Nut(3)** to prevent looseness of **Packing Bolt(6)**.

◆ Removal

CAUTION

The valve must be depressurized in the open position before removal.
Close the valve after fluids are fully drained.

1. Get permission to remove the valve.
2. To prevent damage to the seat, careful attention is needed when removing the valve.
3. After removal, clean the valve and cap the ends with plastic covers.