IM-CARD-110
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110 SERIES
Ball Valve Instruction Manual

Hy-Lok

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◈ *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.

◈ *Operating*

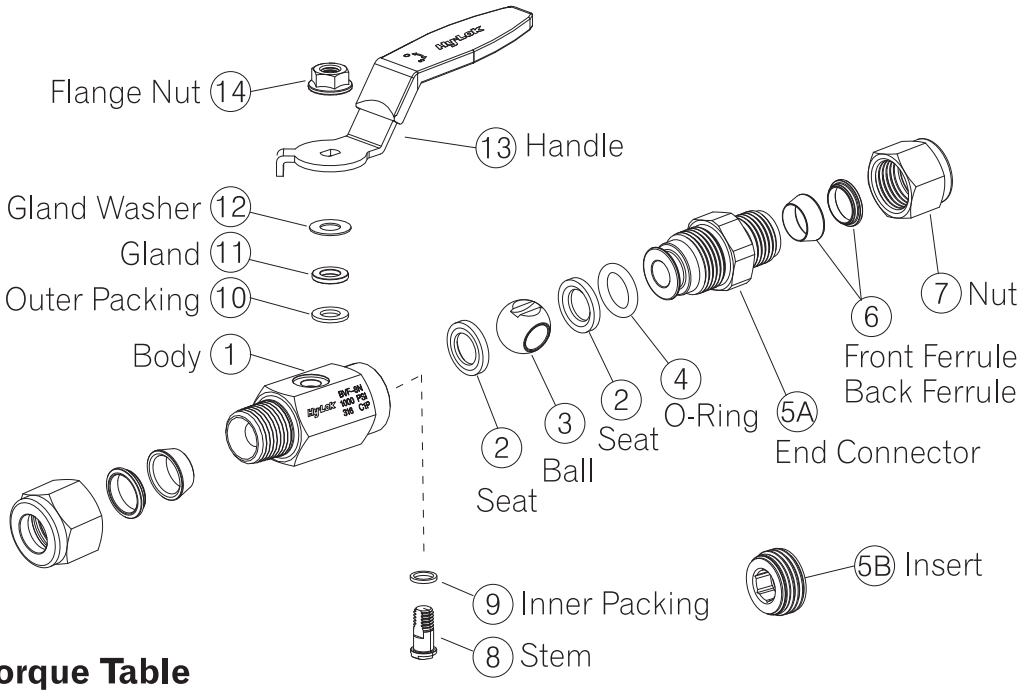
⚠ CAUTION

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(13) 1/4 turns clockwise or counterclockwise to close or open.
2. Turn the Handle(13) completely clockwise to fully closed position, counterclockwise to fully open position.

General Arrangement Drawings



Torque Table

Series	Spanner Size		Body Material	Torque (N · m)	
	End Connector	Insert		End Connector	Insert
1/4	17mm	5.0mm	SS316	39.2	19.6
			BRASS	29.4	14.7
3/8	19.0mm 20.6mm	7.0mm	SS316	39.2	19.6
			BRASS	29.4	6.9
1/2	24.0mm 27.0mm	8.5mm	SS316	58.8	29.4
			BRASS	29.4	9.8
3/4	28.6mm 30.0mm	12.0mm	SS316	88.2	29.4
			BRASS	34.3	
1	35.0mm 38.1mm	15.0mm	SS316	88.2	29.4
			BRASS	36.8	

◈ *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.

Replacement of part components

If no further adjustment of **Flange Nut(14)** 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.

Disassembly

1. Ensure whether the valve is in fully-closed condition.
2. Remove the Insert(5B) by using the wrench. - Female End Connection Type
   Remove the End Connector(5A) by using the spanner. - Hy-Lok Male End Connection Type
3. Remove the Seat(2) and Ball(3).
4. Loose the Flange Nut(14) and remove the Handle(13), Gland Washer(12), Gland(11) and Outer Packing(10).
5. Remove the Stem(8) and Inner Packing(9).

Leakage

1. Stem leakage
   In case of stem leakage, tighten the Flange Nut(14). If the leakage remains after tightening, remove the Flange Nut(14), Handle(13), Gland Washer(12), Gland(11), End Connector(5A)/the Insert(5B) and check for damage to the Stem(8), Outer Packing(10) and Inner Packing(9), 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 damage, replace the Seat(2).

Reassembly

1. Before valve reassembly, check if any damage and corrosion in all part components of the valve. If the damage is considerable, replace the part component.
2. Insert the Seat(2) into the Body(1).
3. Put the Inner Packing(9) on the Stem(8) and then Insert the Stem(8) into the Body(1).
4. Place the Stem(8) with close position.
5. Insert the Ball(3) into the Body(1) by aligning the Stem(8) key and Ball(3) slot.
6. Insert the Insert(5B) into the Body(1). - Female End Connection Type
   Insert the End Connector(5A) into the Body(1) after assembling the O-Ring(4) to End Connector(5A). - Hy-Lok Male End Connection Type
7. Put the Outer Packing(10) on the Body(1).
8. Place the Gland(11), Gland Washer(12) on the Outer Packing(10).
9. Put the Handle(13) on the Gland Washer(12) and then tighten the Flange Nut(14).
10. Tighten the End Connector(5A) / the Insert(5B) according to Torque Table.
11. Tighten the Flange Nut(14) according to Torque Table.

◈ *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.