

## Fig.924 Installation & Maintenance



### General Information:

The Trueline Valve's Fig. 924 (screwed ends) is a 3-way ball valve. It comes with L/T-port options with ISO 5211 mounting pads and 1000 psi working pressure. These are 1/4 turn operated three way ball valve. (The top of the stem shows the open ports).

1. To provide an optimum service life, the valve should be operated only in its fully open or fully close position. If the valve is used in partly open (throttled) position, seat life may be reduced.
2. Extending the handle lever is considered misuse and can damage the valve or cause injuries.
3. The valve body rating can be higher than the seat rating. .
4. High viscous or abrasive media, frequent operation and temperature fluctuations could cause an increase in valve torque.
5. Valve pressure varies under different models, sizes, working temperatures and materials. Please verify the application within the limits specified herein and as described on metal plate spot welded on valve body.  
References contained in this documents to the 'PED' are in regards to European Pressure Equipment Directive 97/23 EC.
6. Always use Trueline recommended spare parts for maintenance and replacement.

### Shipping and Storage:

All valves are packed in strong cardboards and plastic bags to avoid any possible damage during transportation. All the valves must be examined on reception, to ensure that they have not suffered any damages during transport, and the supplier must be informed of any damages observed. If the items are not for immediate use, please follow the following instructions:

1. Leave the valves in fully open position. Never leave the valve in a partially open position.
2. Always keep the protective covers in place until the valve is ready for installation.
3. The valves should not be unpacked until they are to be definitively installed, except for purpose of inspection. After inspection they will be packed again.
4. The valves should be stored under cover and protected from severe weather conditions and foreign bodies.
5. Stainless steel ball valves do not need any additional protection coatings once they are installed.
6. Valves to be stored for a long period of time should be inspected by QC personnel every six months; and every three months for automated valves.

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### General Installation Step:

The handling and transporting of the valves must be carried out with extreme precaution and using the necessary & adequate means on the basis of their size and weight, avoiding any risks to the person that handle them.

1. Valve pressure varies under different valve series, sizes, application temperature and the material of the main parts. Please verify the application within the limits and as described on the valve body.
2. Prior to installation, please make sure the valve is free from dirt and other foreign materials that could damage the valve seats, as these parts are fundamental to the correct operation of the valve.
3. It might be necessary to flush the ball valve, valve cavity and the pipes to remove the accumulated dirt and burrs.
4. Valves should be operated for at least two complete cycles before the installation to the pipe. All the multi port ball valves have a visual indicator engraved on the valve stem. Make sure the valve port configuration comply with the flow arrangement of the pipe.
5. Use any pipe sealant suitable for the material and the process that the valve is installed in. Don't use the sealant too excessively to avoid the obstruction in valve operation.
6. Always leak test the system before using.

### Installation Step for Screwed End:

1. Keep the valve in open position. The handle can be oriented 90° increments. Make sure the valve open ports are oriented as needed.
2. Check the valve threads and the threads of the connecting pipe and make sure these are free from dirt, grit or burrs.
3. Use an anti-seize thread sealant to seal and prevent galling. Taper threaded fittings should not be over tightened.
4. When tightening valve, use a wrench on the end nearest to the pipe.

### Installation Step for SW/BW End:

1. Tack weld the valve (in open position) end caps to the pipes at three points.
2. Loosen & separate the end caps from the body. Remove the seat and seal and set aside in the clean and secured area for reassembly later.
3. Weld completely the end caps to the pipes. Allow enough time for cooling the welded joints. Remove the remnant from the end caps and pipes.
4. Put back the seats and reassemble the end caps to the body according to the Bolt Torque Specifications.

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### Preventive Maintenance:

Preventive maintenance operations essentially consist of periodic inspections to ensure that the valve is working properly.

1. The valve must be opened and closed at least once every six months. The user will be responsible for establishing opening and closing plans that are adequate for the working conditions and fluids used.
2. Before making the maintenance, always make sure the pressure is released and the line has been closed.
3. Wear protective clothing adequate for the circulating fluid. (Comply with the safety guidelines laid down by the company).
4. If leakage happens at the stem, tighten the stem nut a quarter turn as a routine maintenance procedure. This will compensate for any wearing or settling of the gland packing.
5. Don't over tighten the stem nut. It will cause in excessive operating torque and shorten the life of the packing service. If leakage persists, depressurize the valve and replace the stem packing.
6. If leakage is detected in the body seal, tighten the body connector bolts. If the leakage still occurs, this will be due to the damaged seal. The valve needs to be dismantled for repairs.

### Disassembly:

1. Make sure the installation is not under pressure.
2. Loosen all body bolts or screws and remove the body from the line. If the circulating fluid is noxious or inflammable precautions must be taken to avoid accidents.
3. Remove and discard the seats and body seals. Remove the ball and check the exterior surface of the ball, particularly the area in contact with the seat and the radius or transition between the exterior surface and the bore. If the ball's surface is damaged replace it with a new one.
4. Remove the handle subassembly (handle nut, handle, stem nut, tab washer, Belleville washer and gland bushing). Place all components in clean and secured area.
5. Push down the stem into stuffing box and discard the stem packing, O-Ring, thrust washer. Be careful not to scratch or nick the stem packing area of the stuffing box area.

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### Assembly:

1. Clean each component with a clean cloth.
2. Lubricate the thrust washer and stem packing. Insert the stem into the stem port of the valve body. Place the threaded end perpendicular to centerline of the body.
3. Hold the stem up and insert the thrust washer, O-Ring, Stem packing, gland packing, Belleville washer, tab washer and gland (stem) nut.
4. Tighten the stem nut according to the torque specification stated in this manual.
5. Insert tab washer, handle and handle nut. Tighten the handle nut.
6. Bring the handle to close position and insert the ball and make sure it engages with the stem.
7. Move the handle in open position to prevent ball from falling out.
8. Place the ball seat and body seal into the body and install the body bolts and nuts. Tighten the body bolts according to the torque specifications.
9. Cycle the valve several times to verify the free operation of the valve.

### Gland (Stem) Nut Tightness Torque Specifications:

Valve Size	Recommended Tightening Torque	
	Nm	In-lb
½"	9	80
¾"	9	80
1"	9	80
1-½"	17	150
2"	17	150

### Bolt Tightness Torque Specifications:

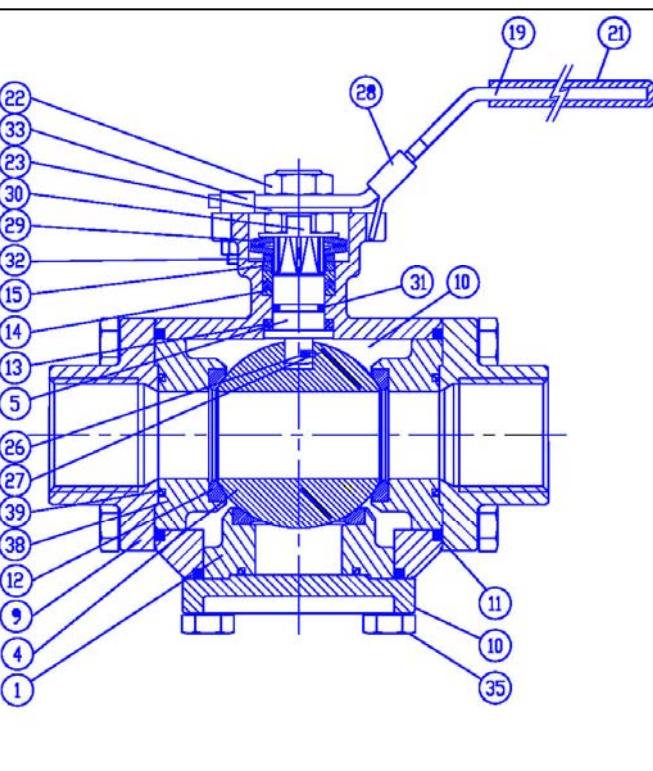
Valve Size	Bolt Size	Recommended Tightening Torque	
		Nm	In-lb
½"	M6	10.8	95.5
¾"	M6	10.8	95.5
1"	M8	17.6	156.2
1-½"	M10	24.5	217.0
2"	M10	24.5	217.0

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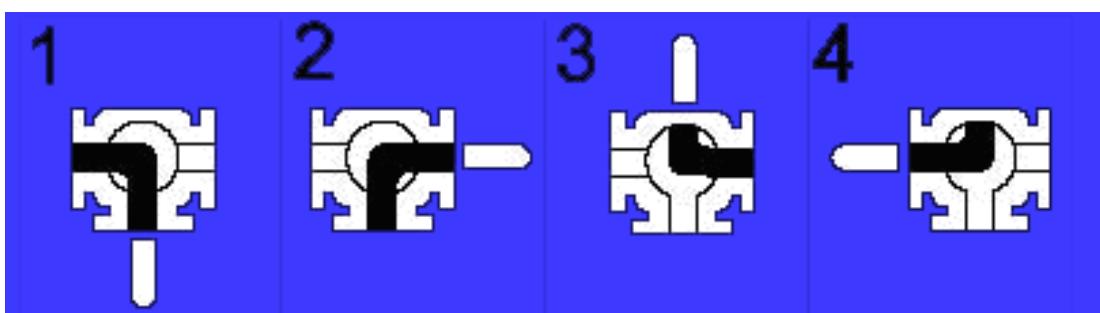
### Material Specifications:



MATERIALS LIST			
NO	PART NAME	MATERIAL: STAINLESS	MATERIAL: CARBON
1	BODY	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
4	BALL	ASTM A351 Gr. CF8M	ASTM A351 Gr. CF8M
5	STEM	SS316	SS316
9	END CAP	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
10	BLIND CAP	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
10	BOTTOM BLIND CAP	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
11	BODY SEAL	PTFE.	PTFE.
12	SEAT	PTFE/RTFE.	PTFE/RTFE.
13	THRUST WASHER	PTFE.	PTFE.
14	STEM PACKING	PTFE.	PTFE.
15	GLAND	PTFE.	PTFE.
19	LEVER	SS304	SS304
21	LEVER COVER	PLASTIC	PLASTIC
22	NUT	SS304	SS304
23	SPRING WASHER	SS304	SS304
26	PLUNGER SPRING	SS316	SS316
27	ANTI-STATIC BALL	SS316	SS316
28	LOCKING PAD	SS304	SS304
29	BELLEVILLE WASHER	SS301	SS301
30	TAB WASHER	SS304	SS304
31	STEM O-RING	VITON	VITON
32	PACKING FOLLOWER	SS304	SS304
33	LEVER STOP	SS304	SS304
35	BODY BOLT	A193 Gr.B8 CL2	A193 Gr.B8 CL2
38	SEAT RETAINER	SS304	SS304
39	RETAINER SEAL	PTFE.	PTFE.

### Port Configurations:

L-Port  
Configurations



T-Port  
Configurations

