

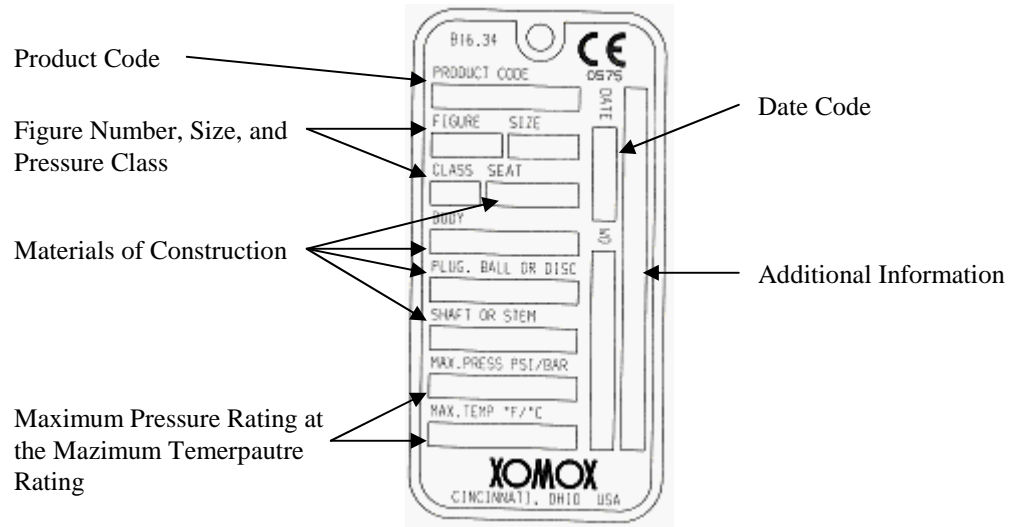
# Operating Instructions TUFLINE Lined Plug Valves


## 0 Introduction

This information is provided to support the user with assembly, operation and maintenance of the above listed valves. Please read the following instructions carefully before a valve is installed or operated.

- ⇒ A tag will be permanently attached to the valve. This tag details the pertinent valve information as shown below in Figure 1.

Figure 1. Tag Information



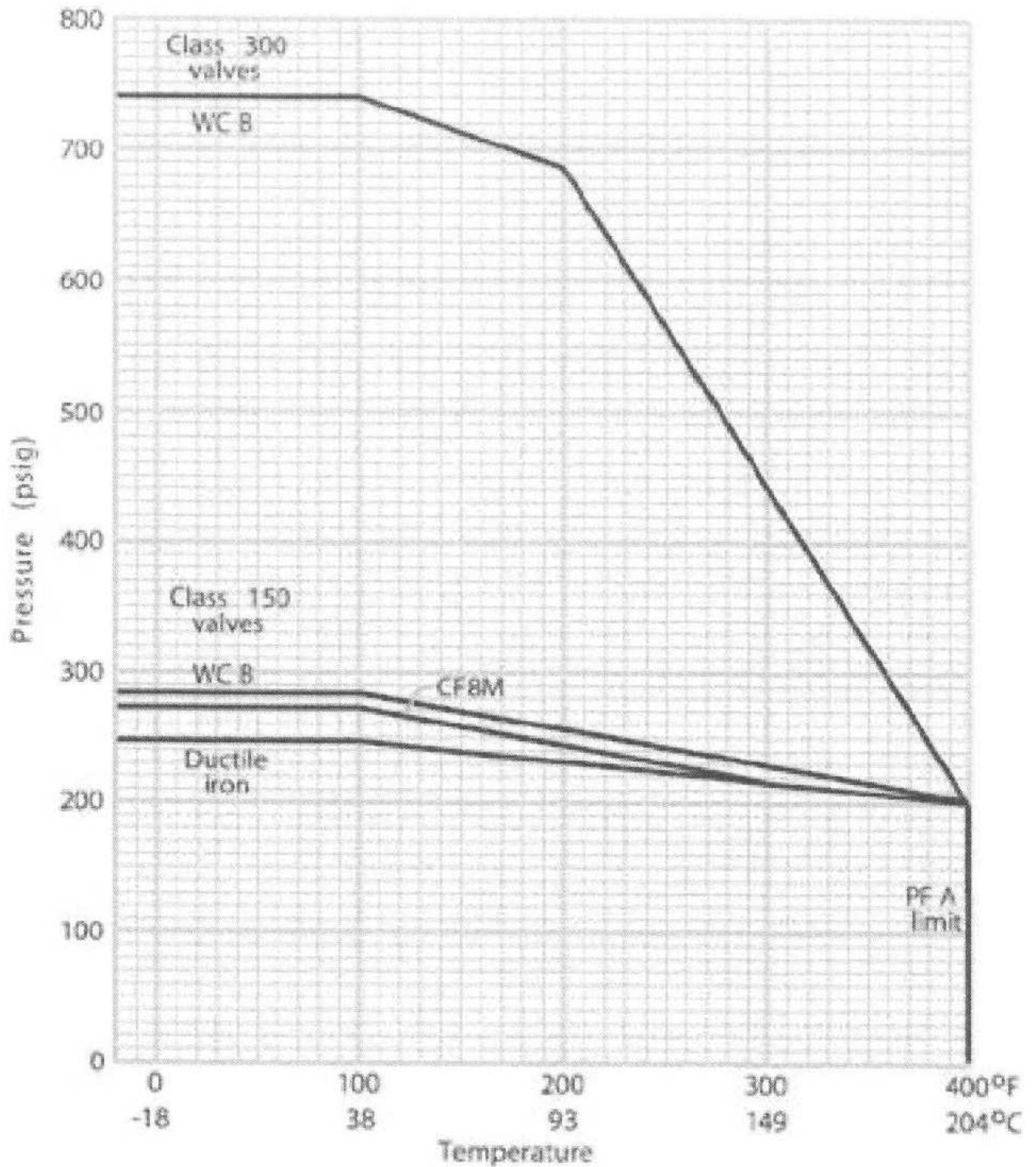
 <b>WARNING</b>	<b>READ AND UNDERSTAND INSTRUCTIONS BEFORE SERVICING VALVE.</b> Failure to follow instructions could result in death or serious injury. If there is a question, contact the factory, see Section 8 for Information.
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## 1 Valve application


Tufline Lined Plug Valves shall be installed between flanges, threaded, or welded in a piping system and are intended exclusively to let pass, shut off, or control the flow of fluids within the certified limits of pressure and temperature rating as shown in Figure 2 below. Tufline Lined Plug Valves are not recommended for fluids with high contents of solid particulates. Please refer to the Xomox Application and Corrosion Data Guide (329751) for application compatibility recommendations.

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Figure 2, Lined Plug Valve Pressure-Temperature Chart



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 CAUTION	If a valve shall control the flow at a differential pressure >2 psi (> 0,15 bar) (of liquid fluids) permanently, respect the limits for the hydraulic parameters in the XOMOX data sheet.
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## 2 Safety Information

### 2.1 General Safety Information

The same safety requirements apply for valves as for the piping system into which they are installed, and as for the plant control system, to which they are connected. This instruction gives such advice only, **which shall be observed additionally**.


Separate safety information is included in the manual of the actuator attached to the valve.

 WARNING	This valve should not be used in service conditions where materials of its parts in contact with the fluid are not suitable. Failure to heed this warning could result in death, serious injury, or property damage.
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### 2.2 Important information for the user

It is not the valve manufacturer's liability, but check and be sure, that

- ⇒ the valve is only used following personal protective procedures and safety practices for protection as usual in the plant, into which the valve is installed.

 WARNING	PERSONAL PROTECTION. Be sure to follow personal protective procedures and safety practices for protection against hazardous media. Failure to do so could result in death or serious injury.
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- ⇒ the valve is only used as specified in Section 1 – Valve application.

 WARNING	This valve should not be used in service conditions where materials of its construction are not suitable. Failure to heed this warning could result in death, serious injury, or property damage.
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- ⇒ an actuator for a valve supplied bare shaft has been sized and assembled to the valve according to the manufacturer's recommendations,
- ⇒ such an actuator has been adjusted correctly in the valve's end positions, – specifically in the OPEN end position,
- ⇒ the design of the housing of the valve allows usual additional forces and bending torques, which are normal in such piping systems.
- ⇒ the pipe system and the plant control system have been installed by experts and that these systems are regularly inspected.
- ⇒ the fluid flow velocity in this pipe system is limited to the usual values, i.e. 13 ft/sec. (4 m/s) for liquids, and no abnormal service conditions occur, such as vibrations, water hammer, or cavitation.
- ⇒ the contents of solid – especially hard and sharp – particulates in the fluid is known to and accepted by the manufacturer XOMOX,
- ⇒ valves used at fluid temperature >122°F (50°C) or < -4°F (-20°C) are protected – together with the pipe connection ends – from contact with the user,
- ⇒ only trained and duly authorized personnel, who are trained in all aspects of plant safety – specifically for those fluids under pressure, – shall operate, inspect, and repair these valves,
- ⇒ personnel shall read and understand the requirements of this manual.

### 2.3 Special kinds of hazard

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 CAUTION	Do not use thick elastomeric gaskets, external leakage may occur. The gasket used shall support and overlap the mating flange surface of the valve at both sides completely. Use gaskets conforming to ANSI B16.21 or EN1514-1 only.
 WARNING	Before a valve is removed from the pipe or before the plug (or cover) from the valve body is disassembled, be sure, that the media in the pipe system is <b>completely depressurised</b> .
 WARNING	<i>Valves in end-of-line-position:</i> For normal service, specifically at gaseous, hot or dangerous fluids, a valve shall be used only, if a <b>blind flange is assembled downstream, unless otherwise noted on the valve</b>
 WARNING	If a valve used in end-of-line-position shall be opened under pressure, open the valve very carefully: The fluid splashes out with high velocity!
 WARNING	<i>If a valve shall be removed from the pipeline :</i> Be careful that the pipe system is <b>completely drained</b> , before the valve is removed from the pipeline. Be extra careful of residual amounts of the fluid that <b>remain trapped in the valve and/or in the pipeline</b> .

### 3 Shipment and storage




The valve shall be handled, shipped and stored with care.

- ⇒ Handle the valve with the protective packaging and/or face covers. Valves >25 lbs (10kg) shall be handled and stored supported by a suitable skid or pallet (even at transport to the place of installation).
- ⇒ If the valve shall be stored before installation, store it at room temperature and protect the valve from harsh environmental conditions, such as dirt, debris and humidity.
- ⇒ Take special care to protect the flange faces from mechanical or any other damage.
- ⇒ The valve shall be stored with the position of the operator as supplied, do not operate the actuator.

### 4 Installation

#### 4.1 General


For valves, the same basic requirements apply for the installation as for the pipe system into which they shall be installed. The following instructions give such requirements only, which shall be observed additionally.

 CAUTION	<i>The valve actuator is adjusted to the service conditions given in the order at supply:</i> <b>Do not displace</b> the end stop adjustment in the actuator or any other actuator adjustment without agreement of the valve manufacturer.
 CAUTION	Flange gaskets used shall support and overlap the mating flange surface of the valve at both ends completely. Use gaskets conforming to ANSI B16.21 or EN1514-1 only. The pipework flanges shall have flat mating surfaces, i.e. conform to ANSI B16.5 or EN 1092, Form A or B. Other kinds of gasket types shall be agreed upon between the customer and XOMOX.
 CAUTION	Do not use thick elastomeric gaskets, external leakage may occur.

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## 4.2 Steps to install the valve

- ⇒ Remove the protective packaging or face covers from the valve.
- ⇒ Check and be sure, that the valve and the actuator are free from damage. Valves or actuator units with visible damage shall not be installed.


 WARNING	Make sure the open and closed positions of the actuator correspond to the appropriate rotation of the valve. Death, serious injury, and severe property damage could result.
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- ⇒ Check and be sure, that the valve pressure class (see valve tag) and the flange connecting dimensions correspond to the pipework data and that all parameters of the actuator (see actuator tag) correspond to the plant control system parameters.

- ⇒ All valve and actuator tags shall remain legible after installation.

 WARNING	<b>DO NOT INSTALL VALVE WHERE SERVICE CONDITIONS EXCEED THE VALVE RATINGS.</b> Death or serious injury could result and/or the warranty could become invalid. If there are any questions, contact the factory. <b>NOTE.....XOMOX brochure 329705 “TUFLINE Lined Plug Valves” specifies the allowable p/t-rating range. (see page 12 for further information.)</b>
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- ⇒ The pipe flanges shall be in line and parallel.
- ⇒ Inspect and be sure, that the valve waterway is free from dirt and foreign matter. Be certain the adjacent pipeline is free from any foreign material, such as rust and pipe scale or welding slag that could damage the valve sleeve and plug sealing surface.
- ⇒ When installing a pipeline section with the valve and the flange gaskets already mounted, the distance between the pipeline ends must be so limited that all sealing surfaces and gaskets remain intact.
- ⇒ At installation into an existing pipe system, be sure that the gap between the 2 pipe flanges has sufficient clearance for the valve along with the 2 gaskets.
- ⇒ When fastening the flange bolting, be sure that the bolts center the valve body correctly.
- ⇒ The torque required for tighten the flange bolting shall be determined based on the gasket type, bolting and flange materials, and the service conditions.
- ⇒ To connect the actuator to the plant control system, refer to the actuator manual supplied with the valve.
- ⇒ Last step of the installation – Perform a functional test with the signals of the plant control system: Open and close the valve to the tight position and check the correct signalization of the limit switches (if any). See also Section 7 “Trouble shooting guide.”

 CAUTION	Incorrectly executed pilot signals could <b>mean danger for life and health and cause damage in the piping system.</b>
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## 5 Pressure test, start-up

For the pressure test and start-up of valves, the same instructions apply as to the pipeline. The following are suggested instructions which should be observed in addition to pipeline start-up instructions:

- ⇒ Flush the pipe system carefully before the pressure test to wash out all hard particulates (specifically in new installed pipe systems), then fill the pipe section and bleed it of trapped air.
- ⇒ Be sure, that all valves are in the required position OPEN or CLOSED.

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- ⇒ The test pressure **shall be limited to 1.5 x ANSI CWP** (1,5 x PN) of the valve when open. The pipe component with the lowest PN or ANSI pressure limits the test pressure in the pipe section.
- ⇒ If a closed valve is used in an end-of-line position, the pressure test **shall be limited to 1.1 x PS** (*PS = maximum allowable service pressure*). For PN, ANSI pressure rating, and PS, see the valve marking).
- ⇒ Check during pressure testing that the flange connections and the valve stem and cover seals remain leak-free. If not, see Section 7 “Trouble shooting guide.” Any leakage should be stopped as quickly as possible.
- ⇒ If the line system after pressure test shall be dried, take care that this is within the limits permissible for the valve pressure/temperature rating, see Section 1 “Valve application.”


## 6 Normal service and inspection

The valves are actuated by the signals of the controller. Valves, which were supplied ex factory with the actuator unit, are accurately adjusted and shall not be disadjusted, as long as a valve functions perfectly.

To operate an emergency manual actuation at the drive unit – if any – normal manual force is sufficient. It is not permitted to use extension levers to increase the torque.

Regular maintenance work is not required at fittings, but with examination of the pipework section no outward leakage shall occur at a valve: In such cases Section 2 “Safety information” and Section 7 “Trouble shooting guide” are to be observed.


It is recommended that valves remaining in a same position for long periods should be actuated 1x to 2x per year.

 WARNING	The in line seal, the body liner and plug liner, is preloaded. This prestress, which is adjusted originally by means of the 3 adjusting screws, does not need be changed as long as the plug valve has a tight in line seal
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## 7 Troubleshooting Guide

Before performing any troubleshooting, follow the requirements of Section 2 “Safety information.”

Possible Defect	Remedy	Remark
Leakage at flange connection or at the plug	<p>Tighten the gasket by the flange bolting or the plug by the adjustment screws.</p> <p><i>If this is in vain:</i> Repair is necessary: Replace the gasket(s). Ask XOMOX for the necessary spare parts and instructions.</p>	<p>ok (D+E)</p> <p><b>Note 1:</b> <i>To order spare parts, transmit all markings on the valve tag. Only original XOMOX-parts shall be used.</i></p>
In-line Leakage	<p><i>Check, if the actuator has closed the valve completely. If OK:</i> Check and ensure, that the actuator torque is sufficient.</p> <p><i>If the actuator torque is OK:</i> Open and close the valve several times under full fluid pressure to flush away clamped particulates.</p> <p>Adjusting of the pre-stress of the seal: The pre-stress of the seat seal can be increased by the 3 hexagon cap screws: Tighten down all 3 screws alternating clockwise for a ¼ turn until the leakage is stopped.</p> <p>If the leakage is not stopped by this or the plug valve torque is to high:  Repair is necessary: Replace sleeve. Ask XOMOX for the necessary spare parts and instructions.</p> <p>If these 3 hexagon socket screws in the cover are made loose or the cover has to be removed:  Respect Section 2.3 “Special hazards”</p> <p style="text-align: center;"> <b>WARNING</b></p> <p>Check and ensure, that the pipe section is completely depressurised.</p>	<p><b>Note 2:</b> <i>If a disassembled valve shows corrosion at body or trim surfaces, choose wear and spare parts of a more resistant material quality.</i></p>
Defect of the valve functional parts	<p>Check actuator and the plant control signals.</p> <p><i>If both OK:</i> Disassemble the valve completely, respecting Section 2.3 “Special hazards” and inspect the valve unit.</p> <p>If repair is necessary: Ask XOMOX for the necessary spare parts and instructions.</p>	

For trouble shooting of the actuator, see the appropriate actuator instruction manual.



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## 8 More information

For further information or for any “XOMOX brochure” – even in other languages – please contact [www.xomox.com](http://www.xomox.com) or the next local office of **XOMOX Corporation**.

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