

# XOMOX<sup>®</sup>

**brands you trust.**

## OPERATION AND MAINTENANCE INSTRUCTIONS

**XOMOX<sup>®</sup> Performance Valves**

**Types 127; 067; 0367**

**XP3 / XP4D**

**SR / HF4D**



**CRANE**<sup>®</sup>

ChemPharma Flow Solutions

[www.cranecpe.com](http://www.cranecpe.com)

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

### GENERAL INFORMATION

#### 1. VALVE APPLICATIONS

XOMOX Performance Valves – XP3 / XP4D / SR / HF4D – shall be installed within the certified limits of pressure and temperature ratings, refer to the valve label/markings.

#### 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 the plant control system to which they are connected. The following instructions provide such advice only, which shall be observed additionally.

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

#### ⚠ WARNING

These valves should not be used in service conditions where materials of its parts in contact with the fluids are not suitable.

#### ⚠ WARNING

Subsequent caution- and warning comments are not adhered to, danger can result and the guarantee of the manufacturer will become void.  
The manufacturer is at your disposal for further information – please see contact information on the last page.

##### 2.2 Important Information for the User

The following will consider information of the installation and operation of XOMOX® Performance Valves (Types 127; 067; 0367 – XP3, XP4D, SR & HF4D). Before proceeding, please pay attention to the items presented in the beginning of this instruction manual and make sure that they are being followed in all following matters.

Please be aware, that it is not the liability of the Valve Manufacturer to ensure the following:

- the valve is only used following personal protective procedures and safety practices for protection as per the policy of the plant in which the valve is installed.
- the valve is only used as specified in Section 1 “Valve Application.”
- an actuator for a valve supplied bare shaft has been sized and assembled to the valve according to the manufacturer’s recommendations.
- such actuator has been adjusted correctly in the valve’s end positions – specifically in the OPEN end position.
- the design of the valve’s housing allows the standard additional forces and bending torques, which are customary 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 standard values, i.e. 4 m/s (13 ft/sec) 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 are known and accepted by the manufacturer XOMOX.
- valves used at fluid temperatures >50°C (122°F) or <-20°C (-4°F) 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.

#### ⚠ WARNING

- Only original XOMOX spare parts may be installed.
- Never reassemble with used gasket, sleeve, membrane or packing.
- Clean components, stuffing box and stem to ensure that they are completely free of wear, solids or corrosion.
- Ensure that the gland, bolts and nuts run freely on threads – it is recommended that bolting are new or in “like new” condition.
- Make sure that the gland follower nose is clean and fits properly into the stuffing box.
- Ensure that the bottom of the stuffing box – located in press-ring and packing cover (if XP4D) – is flat and perpendicular to the valve stem.
- Make sure that the HF4D plug stem has a surface finish of 32RMS Ra0.8 or better and the stuffing box has a surface finish of 64RMS Ra1.6 post cleaning.
- Obtain the correct equipment to setup packing described in this document.
- Refer product literature for application date.
- Review all instructions below before proceeding with installation.
- If the valve is to be placed into short/long term storage, the valve should be cycled at least three times quarterly.

##### 2.3 Special Kinds of Danger

Do not use thick elastomeric gaskets, as this may lead to external leakage of the valve. The gasket used shall support and overlap the mating flange surface of the valve at both sides completely.

#### ⚠ WARNING

- Before a valve is removed from the pipe, or the plug (or cover) from the valve body is disassembled, make sure that the media in the pipe system is completely depressurized.
- Valves in end-of-line-position:  
For normal service, a valve shall be used only if a blind flange is assembled downstream (unless otherwise noted on the valve).
- If a valve used in end-of-line-position shall be opened under pressure, open the valve very carefully; the fluid can splash out with high velocity.
- If a valve shall be removed from the pipeline, make sure that the pipe system is completely drained before the valve is removed from the pipeline. Be extra careful of residual amounts of the fluid that may remain trapped in the valve and/or in the pipeline.

# XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

## INTRODUCTION

### About Crane XOMOX

XOMOX International is a world leader in the manufacture of Sleeved Plug Valves that continues to strive for best-in-class solutions for our customers.

Our comprehensive portfolio of trusted products have been designed to meet the strictest emission requirements and handle complex applications such as phosgene, HCN and HF derivatives.

### Reliable Operation

XOMOX valves have proven themselves with long-term, trouble-free service in a wide variety of applications.

When applied within their pressure and temperature limitations, properly installed, adjusted and operated, these valves should require minimum attention and lower your long-term ownership costs.

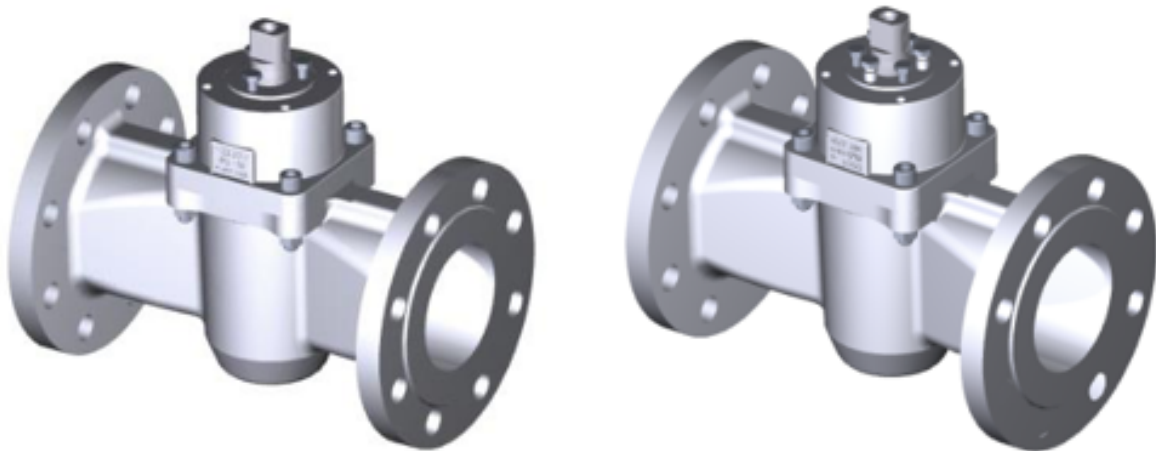
In case there are any questions, please contact your CRANE ChemPharma, XOMOX representative, XOMOX Service Center or the factory. Contact information can be found on the last page of this manual or on our website.

### Important Information

The following information, procedures and illustrations have been prepared to assist the user in assembly, installation and operation of XOMOX Performance Valves – XP3, XP4D, SR & HF4D. Please read and make sure to fully understand these instructions.

### Please Notice

These instructions have been prepared for valves as they are currently manufactured. If you have an older design valve that requires repair, please contact the factory and make sure that you have the correct repair parts and necessary instructions.



XOMOX® Performance Valves – XP3 and XP4D

**Patent Pending no. 299 03 320**  
**Applied for European and international patents**

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

### INSTRUCTIONS – DISASSEMBLY

#### WARNING

##### **MEDIA EXPOSURE.**

Depressurize, clean and neutralize any media that may remain in the valve and/or the pipeline. In case the valve is in the pipeline, you should follow your line entry procedures. Make sure to always use and wear appropriate safety attire.



1. Remove the hub (or e.g. actuator and bracket).
2. Loosen the cover bolts (or nuts) approximately 4 turns each, being careful not to allow the release of the valve cover. Remove nuts and studs of push follower in case of XP4D and HF4D design
3. Rotate the plug stem ¼ turn to release any trapped pressure within the valve.
4. Remove the valve cover.
5. Use a wrench to turn the plug – remove XP3, XP4D, SR and HF4D plug kit
6. Remove body gasket without damaging body's surfaces
7. Remove sleeve without damaging body's surfaces

### INSPECTION

See pictures above.

For best sealing results, inspect the following components:

1. The seal surface on the plug kit and port's radii's.
2. The metallic membrane surface of plug kit.
3. The seal surface of the cover
4. The body seal surface online and that aligns with the cover.
5. The sleeve.

These surfaces should be free from defects, which are typically caused by corrosion, erosion, improper handling or improper storage of a disassembled valve.

If defects are found on any of the parts mentioned above, the valve must not be repaired nor operated.

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

### INSTRUCTIONS – REASSEMBLY

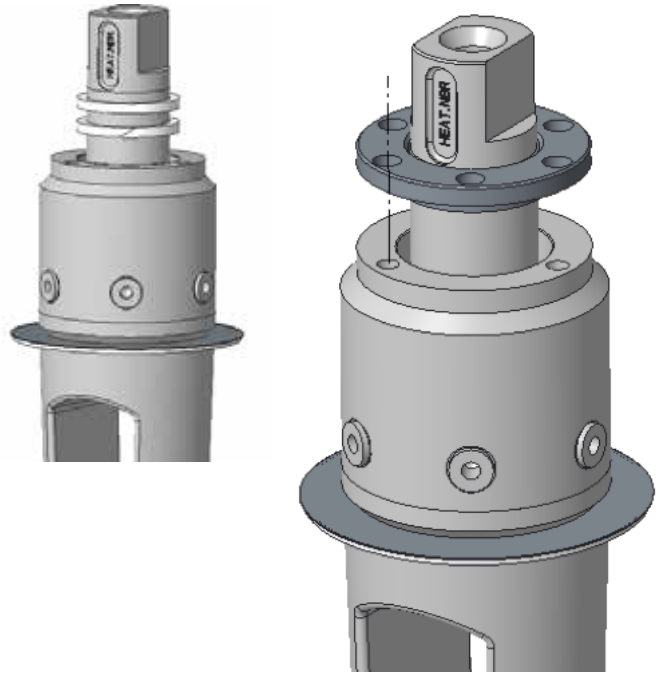
#### 4D Version Preparation Only

**(FRA)** 4D version: Introduire 4D packing, positionner le fouloir et orienter celui-ci (petits perçages au-dessus des taraudages).

**(ENG)** 4D version: Introduce 4D packing, position the gland and make needed orientations (small holes above the tapping).

**(GER)** 4D Version: 4D Verpackung einführen, die Positionierung des Folgers und Führung desselben (kleine Löcher über dem Gewinde).

**(SPA)** Versión 4D: Introducir embalaje 4D, posicionar el seguidor y guiar los mismos (pequeños agujeros encima de los hilos).



#### 5.1.1 Install the 4D packing according to Table 1 below.

Table 1: Packing Configuration

SIZE (DN & INCH.)	1X PIECE PACKING	2 PACKING RING*
1/2" – 1"		
1 1/2" – 12"		

(\*) NPS 14-16-18-20-24 4 rings

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

### INSTRUCTIONS – REASSEMBLY

**(FRA)** Mettre en place le joint de couvercle puis introduire le plug en position ouverte.

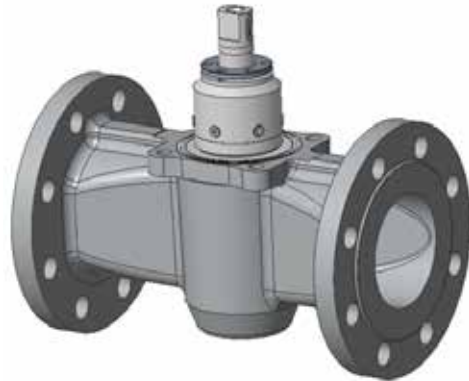
**(ENG)** Insert the cover gasket and the plug in open position.

**(Ger)** Die Deckeldichtung und den Stecker in der Öffnungsstellung.

**(SPA)** Montar la junta de la tapa e insertar la clavija en la posición abierta.

#### CAUTION

With 4D design – orientation of the plug must be correct in order to allow installation of the cover, adjusting screws and gland.

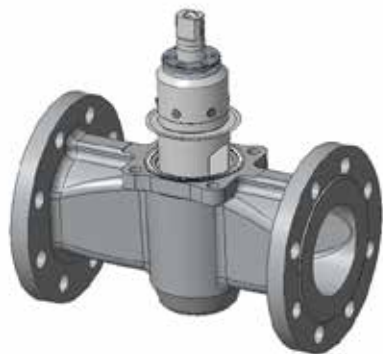
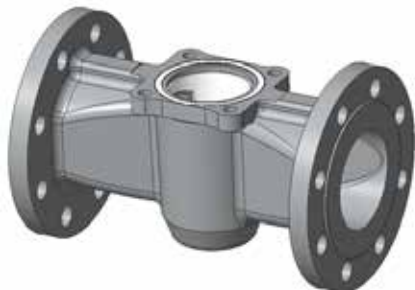


**(FRA)** Pousser le plug sur la presse pour obtenir le contact entre joint de couvercle et membrane métallique.

**(ENG)** With the aid of the press, push the plug to make contact between the cover gasket and the metal membrane.

**(GER)** Schieben des Steckers an der Presse, den Kontakt zwischen Deckeldichtung und Metallmembran zu erhalten.

**(SPA)** Empujar el tapón en la prensa para obtener el contacto entre junta de la cubierta y la membrana de metal.



**(FRA)** Introduire le joint torique de couvercle (optionnel) puis positionner le couvercle sur le corps.

**(ENG)** Insert the cover weather O-ring (optional) and position the cover onto the body.

**(GER)** Setzen Sie den Deckelwetter O-Ring (optional) ein und stellen Sie die Abdeckung auf den Körper.

**(SPA)** Inserte la junta tórica de la tapa (opcional) y luego coloque la tapa sobre el cuerpo

#### CAUTION

With 4D design – orientation of the cover must be correct in order to allow installation of the adjusting screws and gland.

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

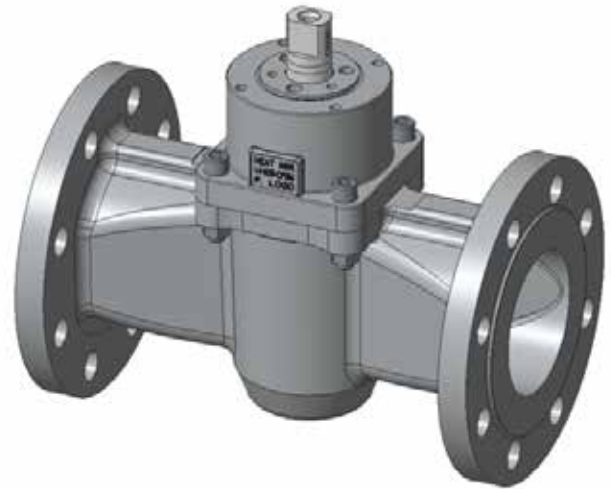
### INSTRUCTIONS – REASSEMBLY

**(FRA)** Installez la visserie lubrifié et serré en pour atteindre le contact métallique avec le corps, ne pas dépasser les valeurs de couples indiqués dans les tables ci-dessous.

**(ENG)** Install the lubricated bolts; tighten the bolts in order to reach a metallic contact with the body – make sure not to exceed the torque values indicated in the tables below.

**(GER)** Installieren der geschmierten Schrauben und engt den Metallkontakt mit dem Körper zu erreichen, nicht der Wert überschreitet angegebene Paare in.

**(SPA)** Instalar los tornillos lubricados y apretado para alcanzar el contacto de metal con el cuerpo, que no exceda el valor indicado parejas en las siguientes tablas.

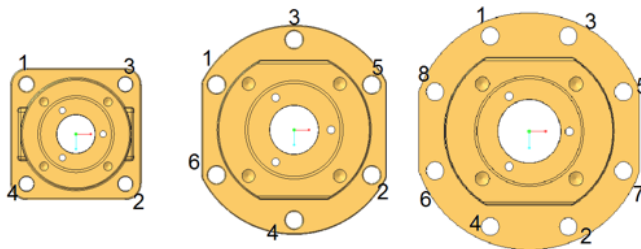


#### METRIC

DN	UNC	Qty	A4-70 Torque lbs-ft
15 - 20	M8	4	20
25		4	
40		4	
50 - 80	M10	4	40
100	M12	4	70
150	M16	4	180
200		6	
250		8	
300	M20	8	360

#### IMPERIAL

NPS	UNC	QTY	A193-B7 TORQUE LBS-FT	A193-B8 TORQUE LBS-FT
½ - ¾	⅝ - 18	4	16	6
1		4		
1½	⅜ - 16	4	29	9
2 - 3	⅞ - 14	4	46	14
4	½ - 13	4	70	21
6	⅝ - 11	4	139	42
8		6		
10		8		
12	¾ - 10	8	247	75
16-18		8		
20-24	1¼ - 8	8	900	375

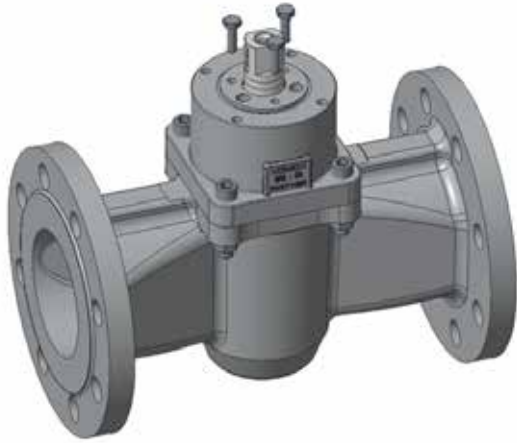


#### CAUTION

##### VALVE DAMAGE.

DO NOT exceed maximum torque values as this may lead to personal injury or damage of the valve.

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance



**(FRA)** Mettre en place les vis d'ajustement.

**(ENG)** Install the adjustment bolts.

**(GER)** Bringen Sie die Einstellschrauben.

**(SPA)** Montar los tornillos de ajuste.

### METRIC

DN	SCREW	QTY
15	M5	3
25		3
40	M6	3
50 – 80		3
100	M8	3
150		3
200	M10	3
250		3
300	M12	3

### IMPERIAL

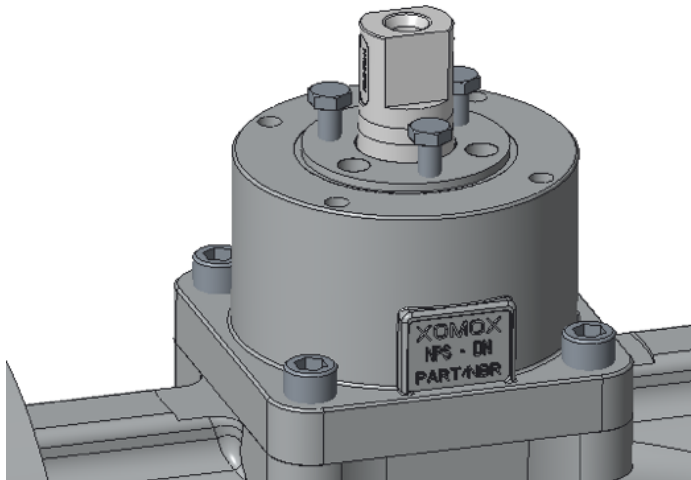
NPS	SCREW	QTY
½ – ¾	UNC 8 – 32	3
1		3
1½	UNC ¼ – 20	3
2 – 3		3
4	UNC ⅝ – 18	3
6		3
8 – 10	UNC ⅜ – 16	3
12	UNC ⅞ – 14	3
16 – 18	UNC ⅝ – 11	6
20 – 24	UNC 1 – 8	6

**(FRA)** Serrer les vis de réglage uniformément par incréments de 1/4 de hauteur jusqu'à ce que le contact soit effectué. Puis serrer un 1/4 de tour supplémentaire.

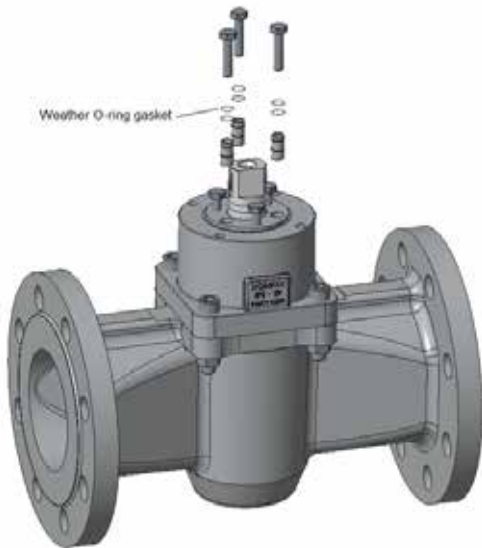
**(ENG)** Tighten the adjustment bolts uniformly with 1/4 turn increments until contact has been made. After this, tighten an additional 1/4 turn.

**(GER)** Ziehen Sie die Einstellschrauben gleichmäßig in 1/4 Umdrehungen an, bis der Kontakt hergestellt ist. Dann eine zusätzliche 1/4 Umdrehung anziehen.

**(SPA)** Apriete los tornillos de ajuste uniformemente en incrementos de 1/4 de vuelta hasta que se haga el contacto. Luego apriete 1/4 de vuelta adicional.



## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance



**(FRA)** Introduire le joint torique sur les poussoirs (optionnel) puis introduire vis et poussoir dans les orifices du couvercle, engager les vis.

**(ENG)** Insert the O-ring onto the push-rods (optional). Place the screws and push-rods into the holes in the cover and tighten the screws.

**(GER)** Setzen Sie den O-Ring auf die Stößel (optional) ein und legen Sie Schrauben und Stößel in die Löcher in der Abdeckung ein, greifen Sie die Schrauben ein.

**(SPA)** Inserte el anillo en O en los tiradores (opcional) e inserte tornillos y barras de presión en los orificios de la cubierta, enganche los tornillos.

### ⚠ CAUTION

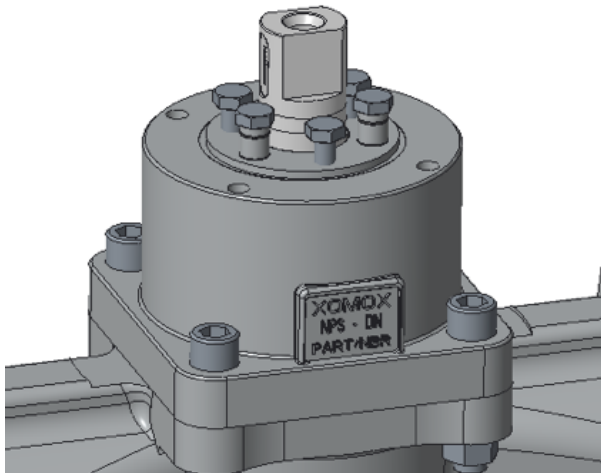
Pay attention to the orientation of the push-rods.

#### METRIC

DN	SCREW	QTY
15	M4	3
25		
40		
50	M6	3
100	M8	3
150		
200		
250		
300		

#### IMPERIAL

SIZE	SCREW	QTY
1/2 - 3/4	UNC 8 - 32	3
1		
1 1/2	UNC 1/4 - 20	3
2 - 3		
4	UNC 5/16 - 18	3
6 - 8		
10		
12		
16 - 18	UNC - 7/16 - 14	3
20 - 24		



**(FRA)** Serrer les vis uniformément par incréments de 1/4 de hauteur jusqu'à ce que le contact soit effectué avec le fouloir.

**(ENG)** Tighten the adjustment bolts uniformly with 1/4 turn increments until contact is made with the gland follower.

**(GER)** Ziehen Sie die Einstellschrauben gleichmäßig in 1/4 Umdrehungen an, bis der Kontakt mit dem Stopfbügel verbunden ist.

**(SPA)** Apriete los tornillos de ajuste uniformemente en incrementos de 1/4 de vuelta hasta que se haga el contacto con el seguidor del prensaestopas.

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

### OPERATING TORQUES

Normal running torques may be less than the values shown in the table below.

Valve torque may be greater if the valve is used to control a highly viscous or abrasive medium.

XP3 / XP4D Break Torque PN 40 - Class 150 and 300 [Nm]

SIZE	PTFE/PTFEX		%R-PTFE SLEEVE		PTFEXC/XENITH SLEEVE		UHMWPE/PFA SLEEVE	
	Std	Built Dry	Std	Built Dry	Std	Built Dry	Std	Built Dry
15	16	24	20	30	21	32	32	47
20	16	24	20	30	21	32	32	47
25	45	68	57	85	61	92	90	136
40	90	136	113	170	122	183	181	271
50	124	186	155	233	168	252	249	373
80	136	203	170	254	183	275	271	407
100	271	407	339	509	366	549	542	814
150	565	847	706	1059	763	1144	1130	1695
200	881	1322	1102	1652	1190	1785	1763	2644
250	1627	2441	2034	3051	2196	3295	3254	4881
300	2373	3559	2966	4449	3203	4805	4745	7118

In case of questions please contact your service center or the XOMOX manufacturing site.

## XOMOX® Performance Valves, Types 127, 067, 0367, XP3, XP4D, SR & HF4D Installation, Operation & Maintenance

### HELP WITH POSSIBLE DEFECTS

In case defects have occurred during the installation and/or operation of the valves, please see sections 1 "Valve Applications" and 2 "Safety Information" that are presented at the beginning of this instruction manual. Additionally, the below table provides information in the case of defects - please follow these instructions if applicable.

**CAUTION**

In case a valve has been disassembled from the service line with dangerous fluids, please follow the decontamination instructions - see XOMOX <Disposal Sheets>

TYPE OF DEFECT	REMEDY	REMARKS
<ul style="list-style-type: none"> <li>• Leakage at the connection of the body screw cover</li> <li>• Leakage at the flange connection to the pipeline</li> </ul>	Please contact a XOMOX manufacturing and repair center.	<p><b>Note 1:</b> Only original XOMOX spare parts may be installed.</p> <p><b>Note 2:</b> After disassembly, if it is detected that the wetted inner parts are not sufficiently resistant towards the medium, parts of suitable material are to be selected.</p>
<ul style="list-style-type: none"> <li>• Leakage at the control shaft sealing</li> </ul>	Please contact a XOMOX manufacturing and repair center.	
<ul style="list-style-type: none"> <li>• Leakage in the locking position</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Dismantle and inspect the valve</b> - observe the information presented in Section 2.3 "Special Kinds of Danger".</li> <li>• If the valve is damaged;</li> </ul> <p><b>Repair is necessary</b> – please request spare parts and needed instructions from XOMOX.</p>	
<ul style="list-style-type: none"> <li>• Malfunction</li> </ul>	<ul style="list-style-type: none"> <li>• Check the actuator unit and control commands.</li> <li>• If the actuator and control are OK;</li> </ul> <p><b>Dismantle and inspect the valve</b> - observe the information presented in Section 2.3 "Special Kinds of Dangers".</p> <ul style="list-style-type: none"> <li>• If the Valve is damaged;</li> </ul> <p><b>Repair is necessary</b> – please request spare parts and needed instructions from XOMOX.</p>	

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