

# Oasis



TH404 with TPRD



TH404 without TPRD

## TH400 Series Cylinder Valves Instruction Manual

### **▲ WARNING**

Failure to follow these instructions or to properly install and maintain this equipment could result in gas leakage, fire or explosion causing property damage and personal injury or death.

Oasis products must be installed, operated and maintained by trained and competent personnel in accordance with all applicable local codes, rules and regulations in addition to the Oasis Instructions.

Oasis Engineering Ltd. will not be held liable in such circumstances where installation, operation and maintenance procedures were performed by incompetent personnel resulting in improper assembly, unsafe operation, equipment damage or personal injury.

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Instruction Manual

## Warning!

High pressure gas and gas equipment can cause serious harm to both infrastructure and personnel if safety precautions are not followed.

Oasis recommends considering the use of the following PPE when working with high pressure along with any other site specific health and safety requirements:



Foot Protection



Hearing Protection



Safety Helmets



Hand Protection



Safety Glasses

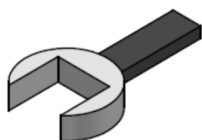


Ensure the system is clean of debris, vented and isolated before any installation or servicing work is carried out.

## Attention!

Oasis TH404 Series Ball Valves are intended for use with gaseous Hydrogen.

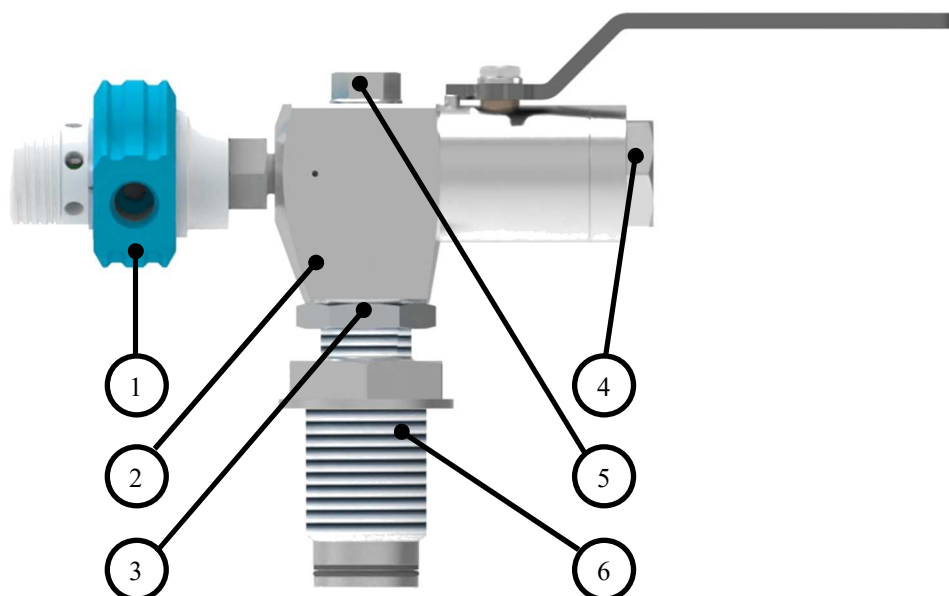
### Tools Required



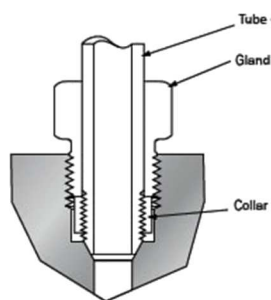
Spanners  
(Wrenches)  
Recommended spanner sizes on page 4



Spray bottle  
(Snoop or suitable equivalent)



- 1 PRD
- 2 Valve Body
- 3 Locking Nut
- 4 End Cap (SAE or Medium Pressure Connection)
- 5 Plug / Commissioning Plug
- 6 Cylinder Adaptor

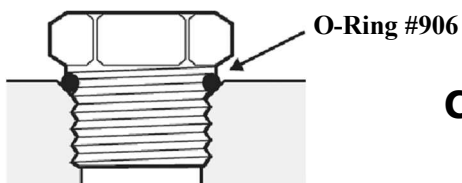


## Medium Pressure Connections

**Ensure a gap of two to three threads between the collar and the start of the sealing surface.**

**FOLLOW MEDIUM PRESSURE FITTING RECOMMENDATIONS**

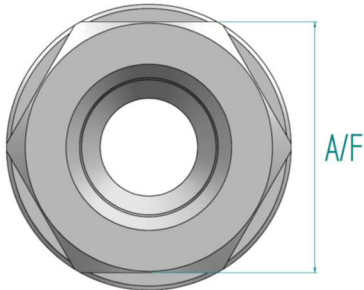
## SAE Connections



**Check and lubricate O-ring before installation.**

**FOLLOW MANUFACTURER TORQUE SPECS**

## Recommended Spanners



**End Caps:**  
**Medium Pressure= 1-5/16"**  
**SAE = 1-5/16"**

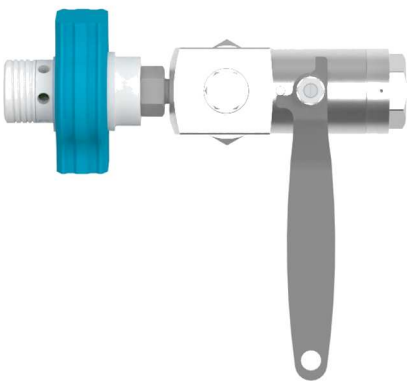
**Plug = 19mm**

**PRD connection = 27mm**

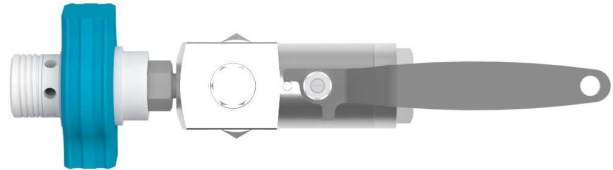
**Cylinder adaptor = 48mm**

**Locking Nut = 1-1/2" - 38mm**

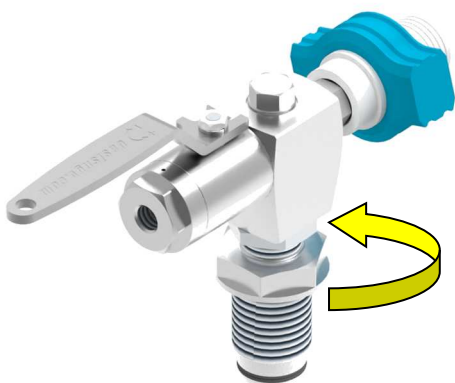
1. Closed



2. Opened



**Important:** Actuate valve 10 times before use to ensure initial sealing.



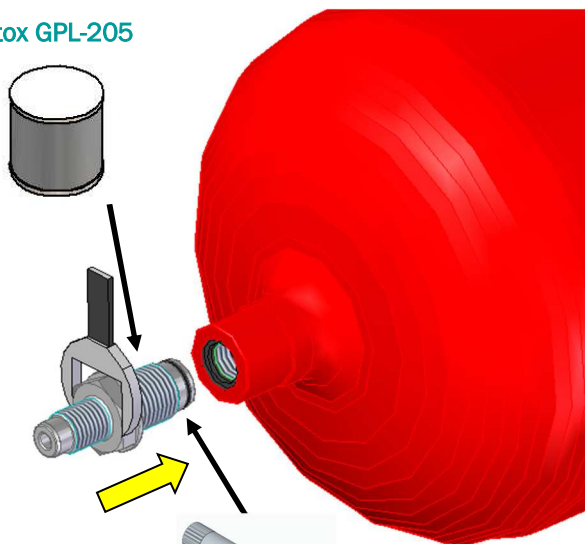
## Attention!

**Cylinder adaptor is adjustable  
for easy installation and alignment.**

**MAX 1 Turn  
from full insertion**

1. Apply Anti-seize to the Adaptor Thread and Lube O-Rings

Krytox GPL-205

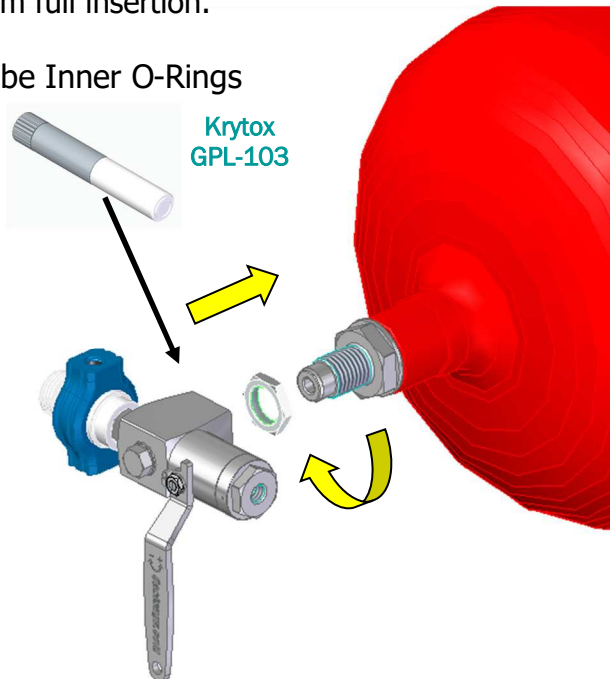


Torque according to Cylinder manufacturer Spec.  
Krytox GPL-103

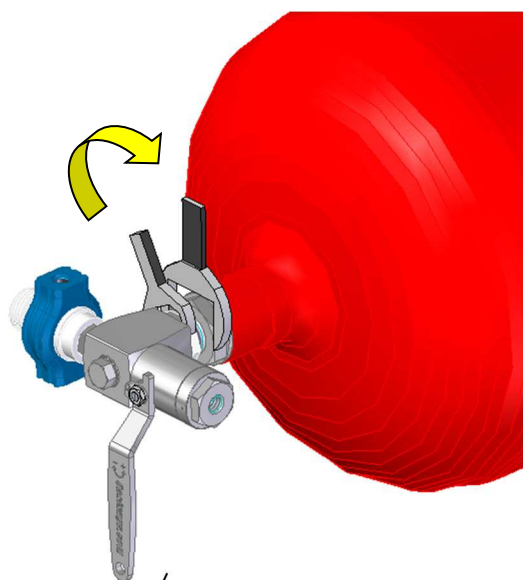
2. Install valve on Cylinder adaptor. Align valve by unwinding no more than one turn from full insertion.

Lube Inner O-Rings

Krytox GPL-103

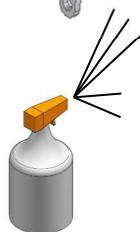
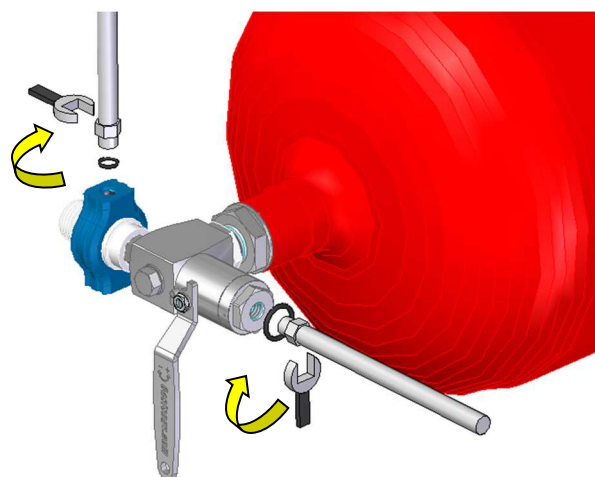


3. Using 2 wrenches, Torque lock nut to 50Nm.



4. Install Main pipe  
**SAE end cap:** Lube O-ring \*  
**Medium Pressure End Cap \***  
**PRD Vent Pipe:** Lube O-Ring \*

\*: Torque fittings to manufacturer's instructions



**LEAK TEST ALL CONNECTIONS ON FIRST USE USING SNOOP**


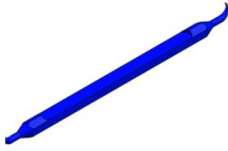

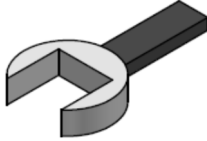
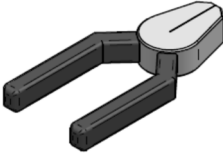
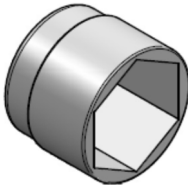
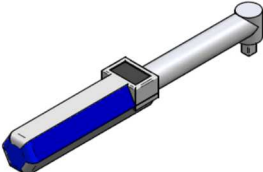
## Service Kit Parts

**The service kit includes 1 extra #025 O-ring and 1 extra #025 backup ring. The rest of the service kit must be used.**

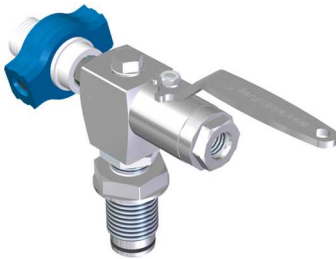
<p>2 x Seats</p> 	<p>1 x Stem</p> 	<p>1 x Ball</p> 	<p>1 x Plug O-Ring</p> 
<p>1 x Gland</p> 	<p>1 x Inner Body O-ring</p> 	<p>1 x Cap O-ring</p> 	<p>2 x Cylinder Adapter O-Ring</p> 
<p>1 x Krytox GPL 103</p> 	<p>1 x Inner Body Back-up Ring</p> 	<p>1 x Cap Back-up Ring</p> 	<p>2 x Cylinder Adapter Backup Ring</p> 

**It is recommended to work in a clean environment to successfully service the valve. Test to maximum pressure before re-installing.**

## Tools Required

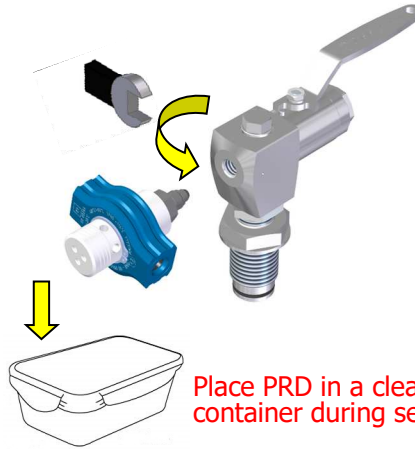
	<p>Cleaner (Suitable for Hydrogen Components and Seals)</p>		<p>Pick Tool Part Number: TOOL-PICK (Sold separately)</p>		<p>Anti Seize Grease (Krytox GPL-205) For All Threads</p>
	<p>Spanner (Wrenches)</p>		<p>Pliers</p>		
	<p>Sockets</p>		<p>Torque Wrench</p>		

1. Trapped Pressure Release



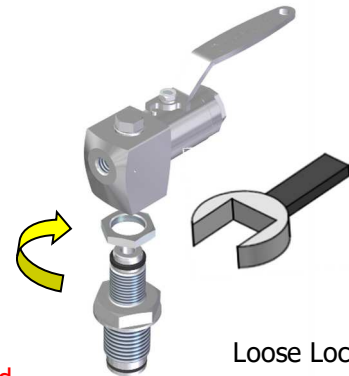
Open and close valve to ensure all trapped gas is released.

2. Remove PRD



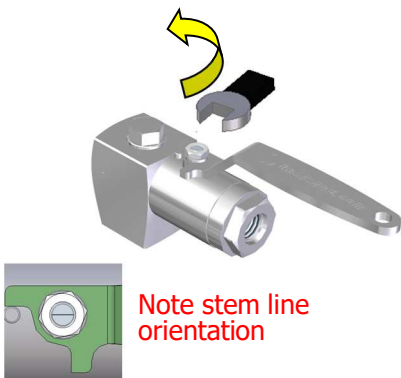
Place PRD in a clean sealed container during servicing.

3. Remove Valve Adaptor



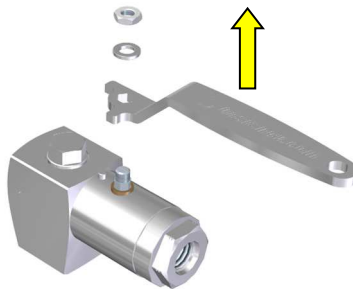
Loose Locking Nut

4. Unscrew Stem Nut.

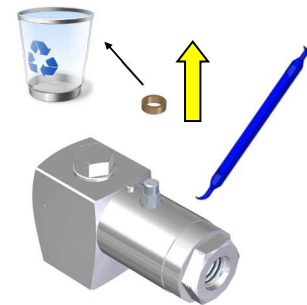


Note stem line orientation

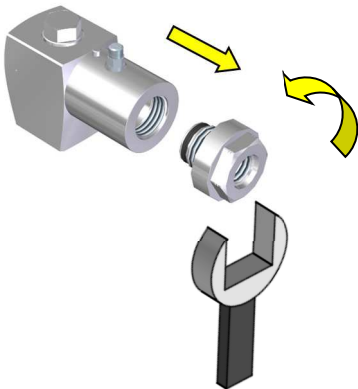
5. Remove Handle.



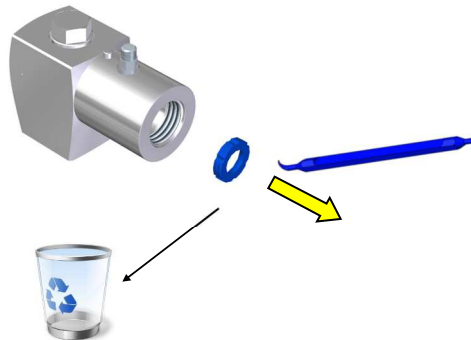
6. Remove and Discard Gland



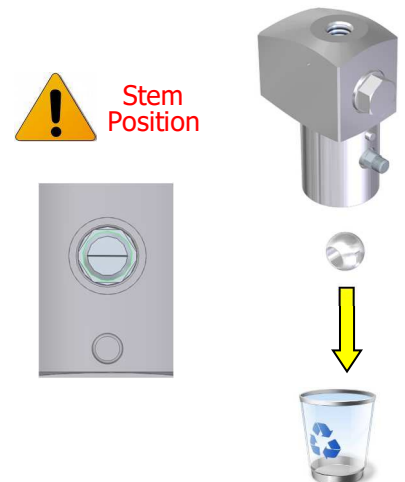
7. Remove End Cap.



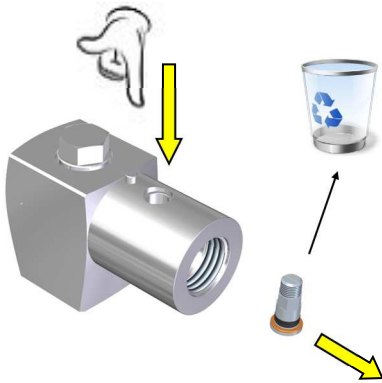
8. Remove and Discard Seat.



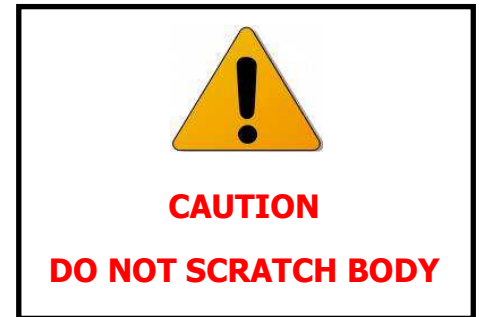
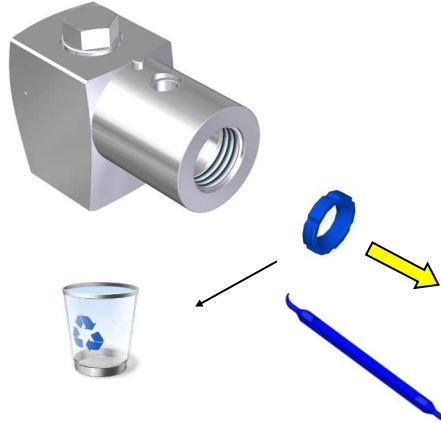
9. Remove and discard ball.



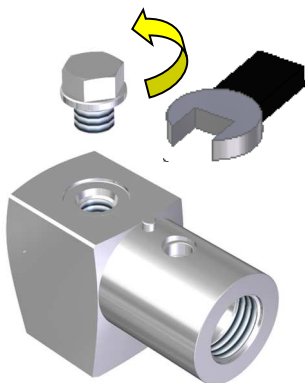
10. Remove and Discard Stem



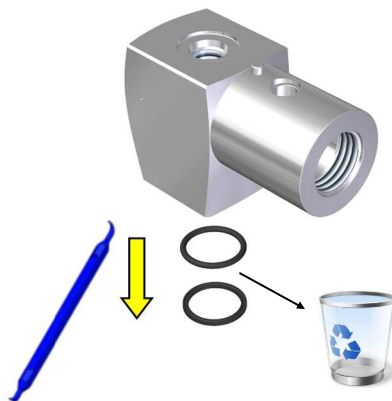
11. Remove and Discard 2nd Seat.



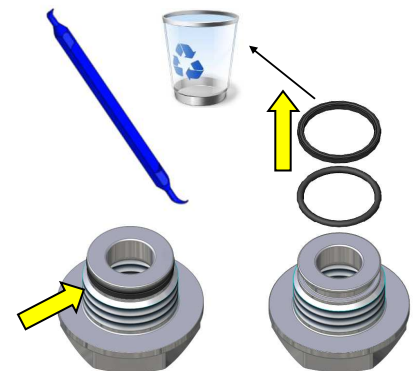
12. Remove Plug



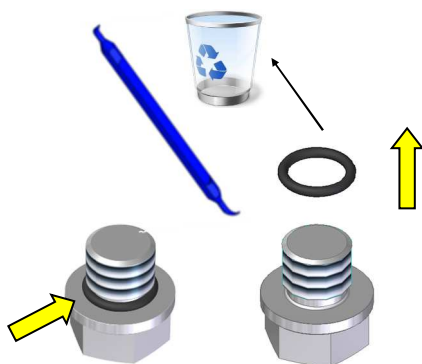
13. Remove and Discard Body Inner O-Rings



14. Remove and Discard End Cap O-rings



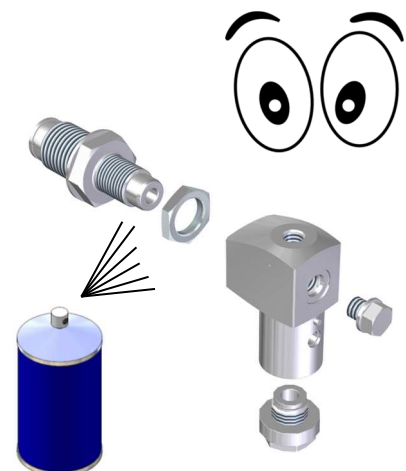
15. Remove and Discard Plug O-Ring



16. Remove and Discard Cylinder Adaptor O-Rings

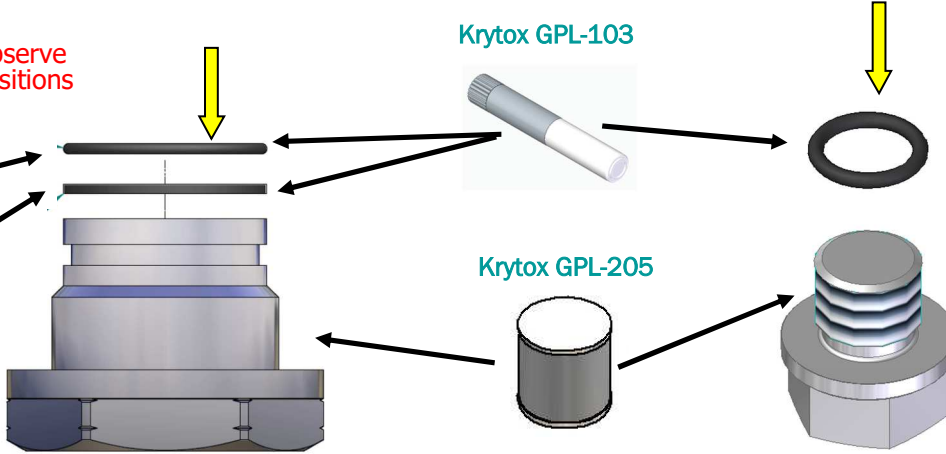
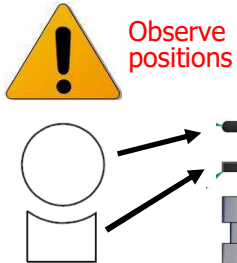


17. Clean and Visually Inspect all Parts for Damage.





1. Apply Krytox GPL 103 to end cap O-rings



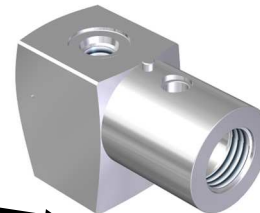
2. Apply Krytox GPL 103 to plug O-rings and fit to plug



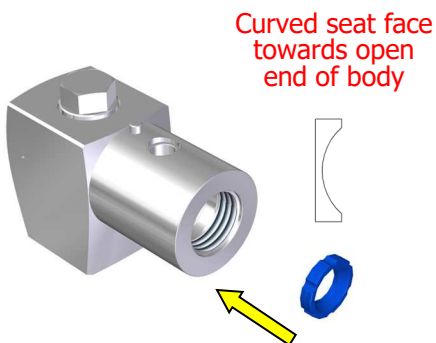
3. Apply Krytox GPL 103 to cylinder adaptor O-Rings



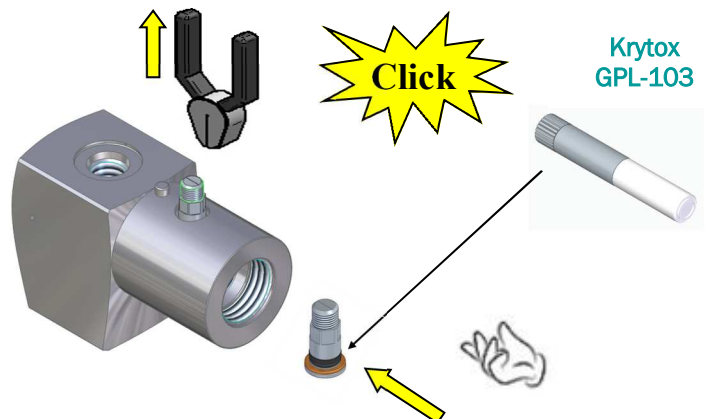
Krytox GPL-103



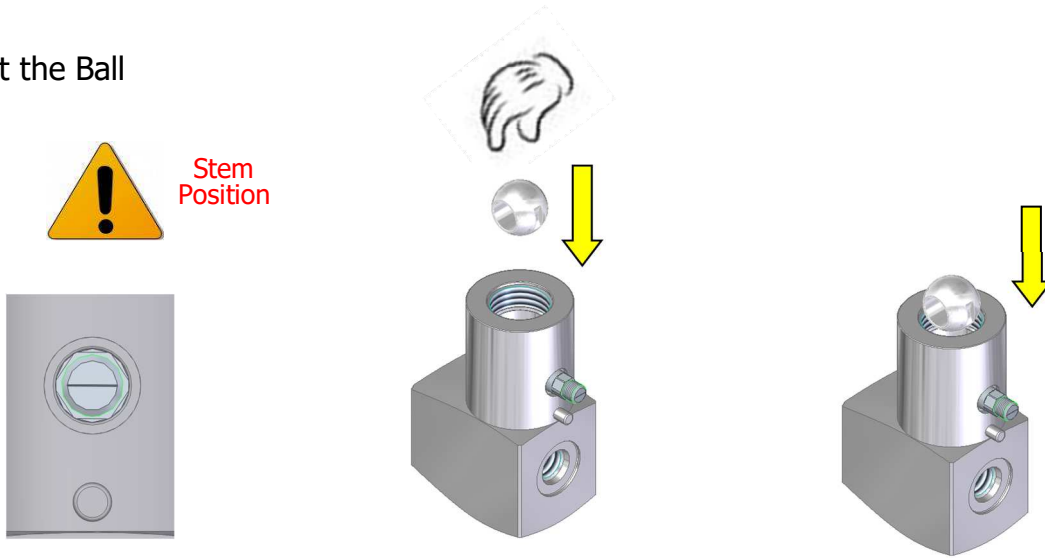
5. Install First New Seat



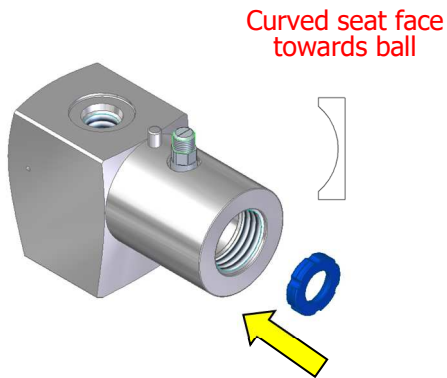
6. Apply grease to stem O-ring and insert stem assembly.



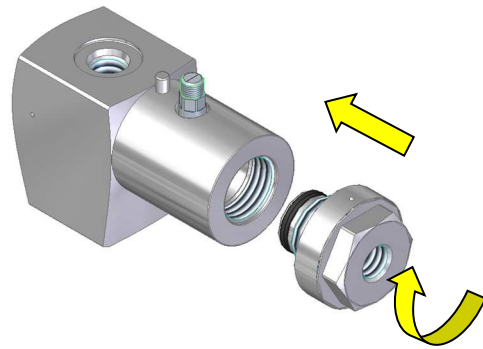
## 7. Insert the Ball



## 8. Install the New Second Seat

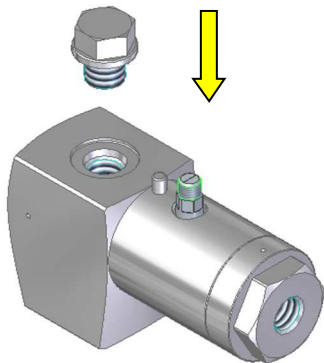


## 9. Screw in End Cap Thread

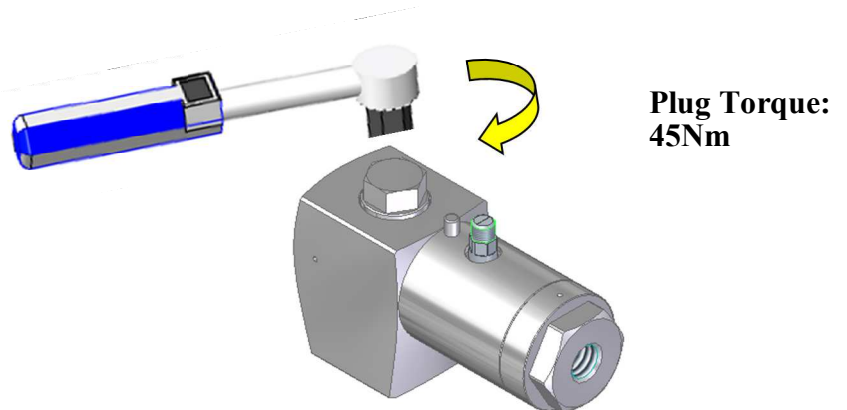


## 10. Install Plug

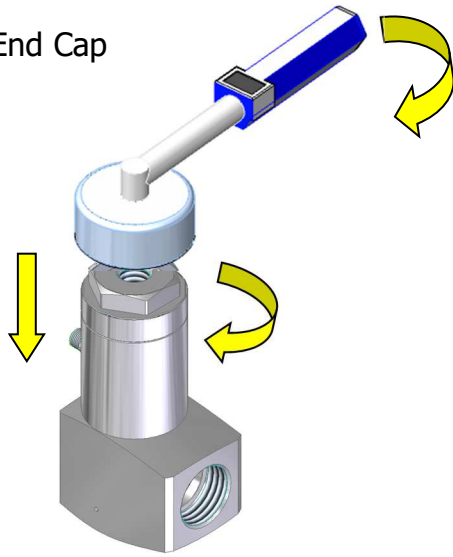
Check:  
Krytox GPL-103 on O-Rings  
Krytox GPL-205 on Thread



## 11. Torque the Plug

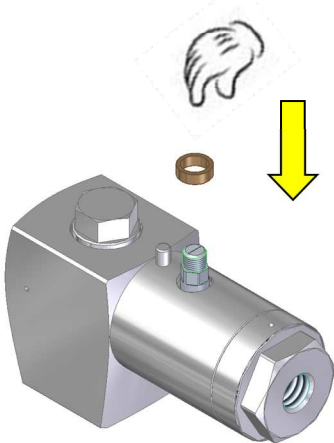


12. Torque End Cap

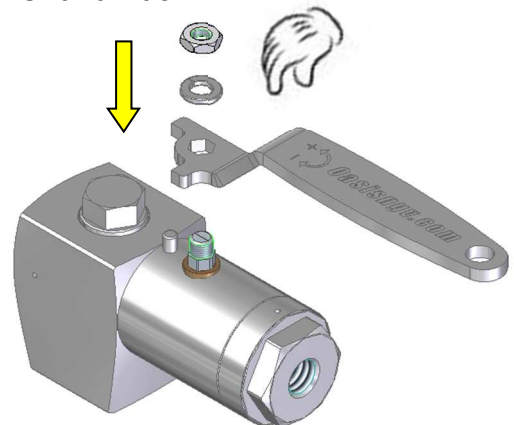


End Cap Torque: 60Nm

13. Install the Gland



14. Place the handle onto the stem and install the washer and nut



**Observe handle alignment**

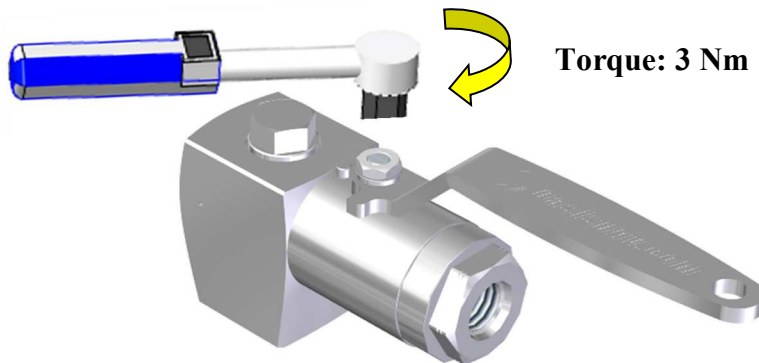


45° Handle



Straight Handle

15. Tighten Stem nut



Torque: 3 Nm

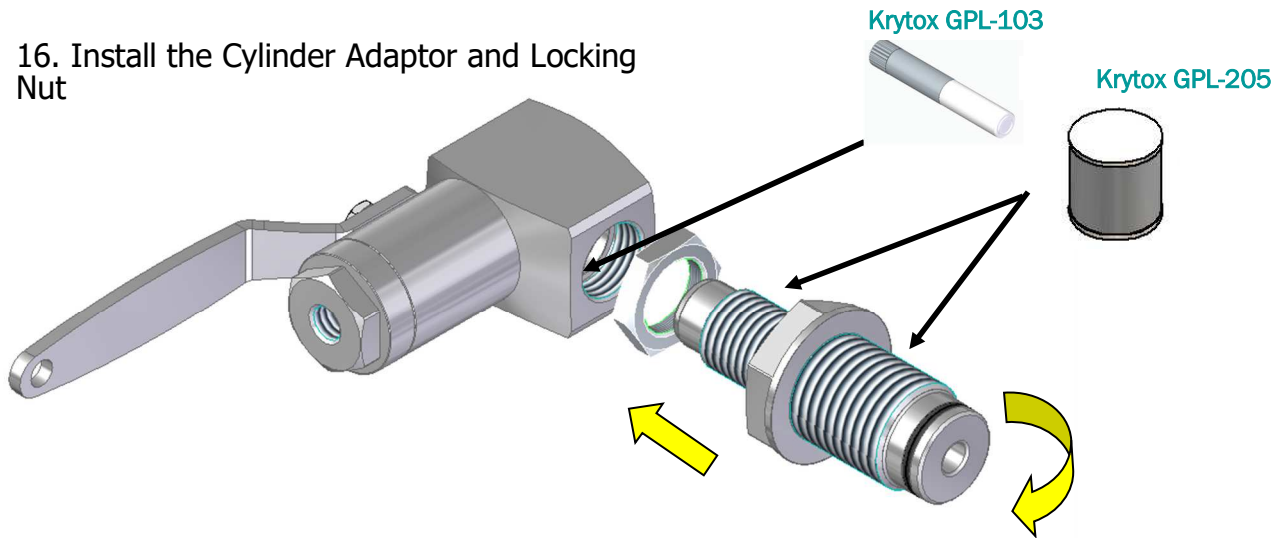


Valve Open

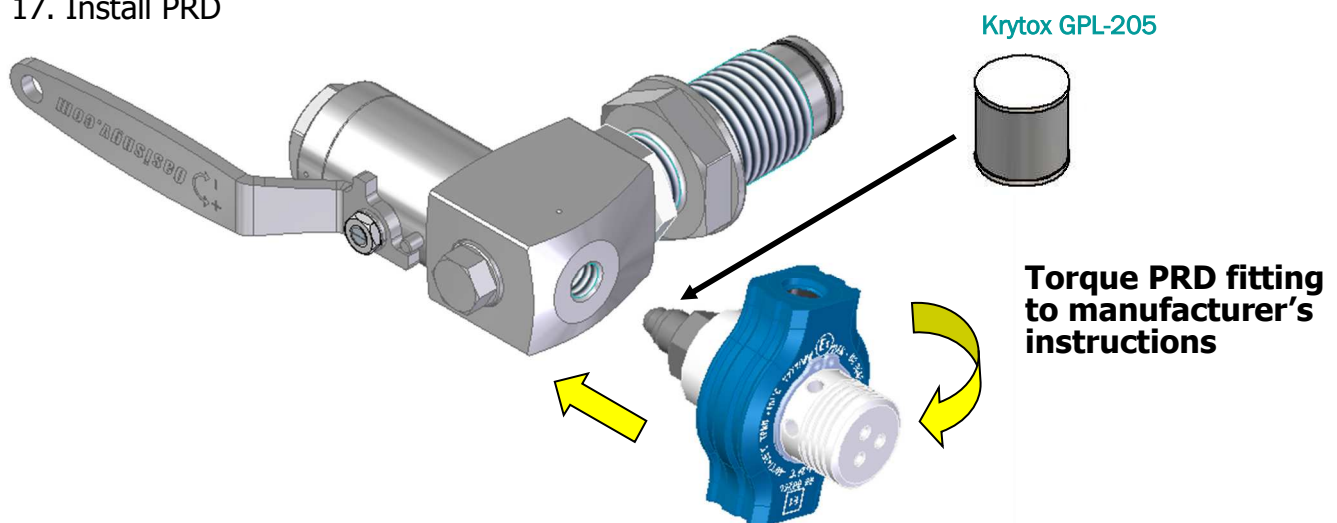


Valve Closed

16. Install the Cylinder Adaptor and Locking Nut



17. Install PRD



18. Servicing Complete. Re-install as per the Instruction on Page 5.

