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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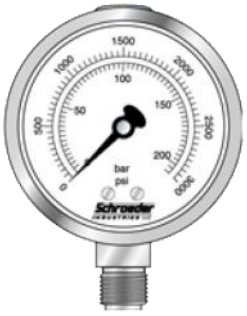
Warning!

High pressure gas and gas equipment can cause serious harm to both infra-structure 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:

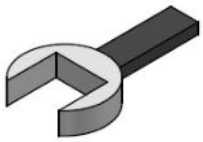


Ensure the system is clean of debris, vented and isolated before any installation or servicing work is carried out.

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)

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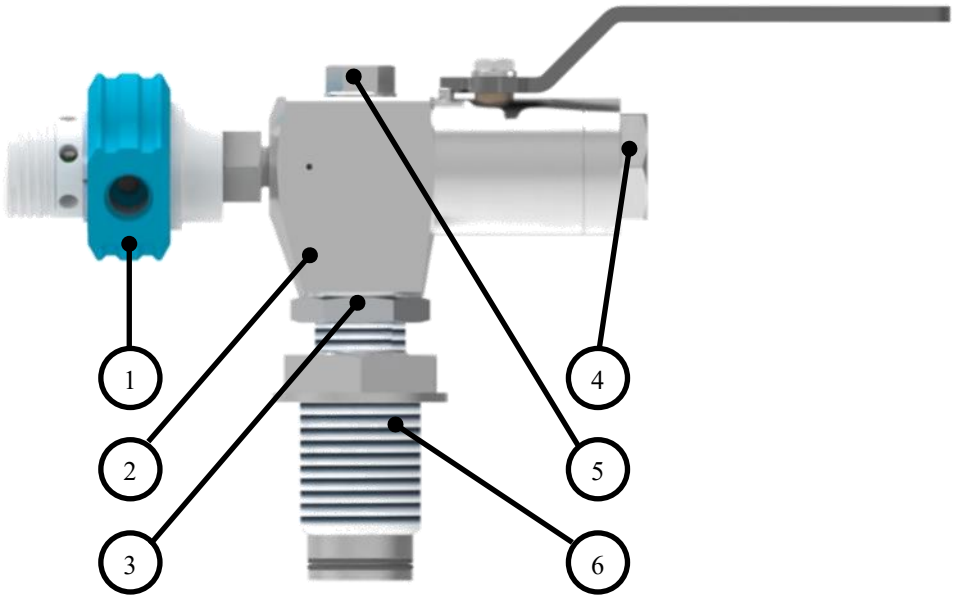
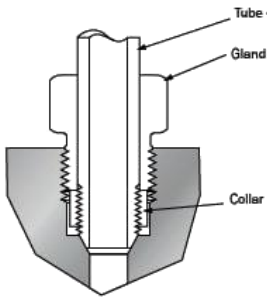


1 PRD
2 Valve Body
3 Locking Nut
4 End Cap (SAE or Medium Pressure Connection)
5 Plug / Commissioning Plug
6 Cylinder Adaptor

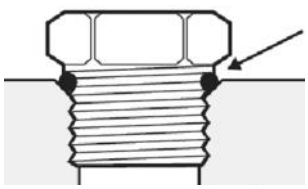


Medium Pressure Connections

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

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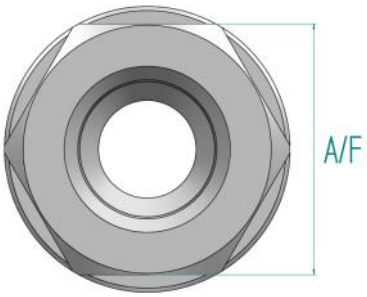
Recommended Spanners



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

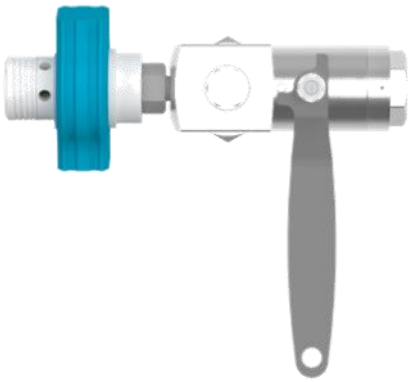
Plug = 19mm

PRD connection = 27mm

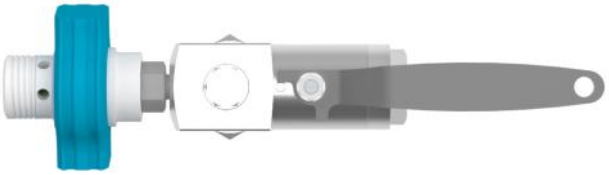
Cylinder adaptor = 48mm

Locking Nut = 1-1/2” - 38mm

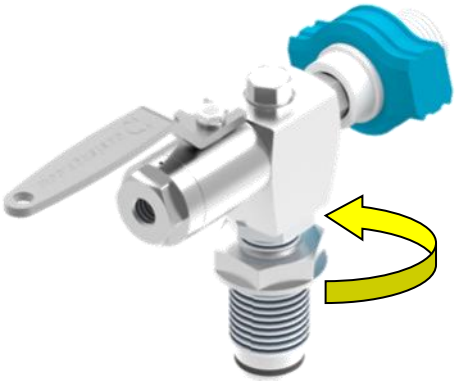
1. Closed



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

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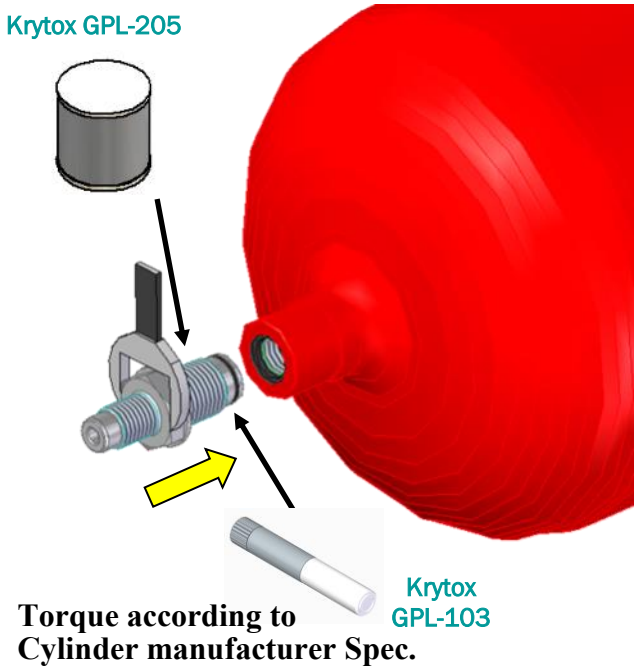
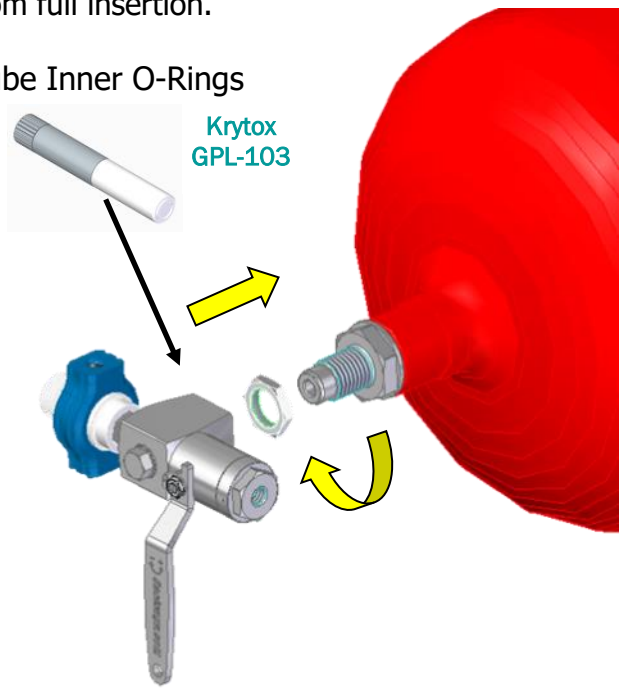
1. Apply Anti-seize to the Adaptor Thread and Lube O-Rings



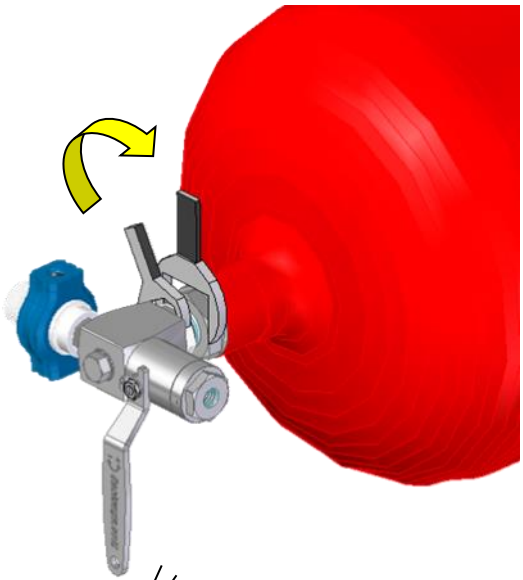
Torque according to Cylinder manufacturer Spec.

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

Lube Inner O-Rings

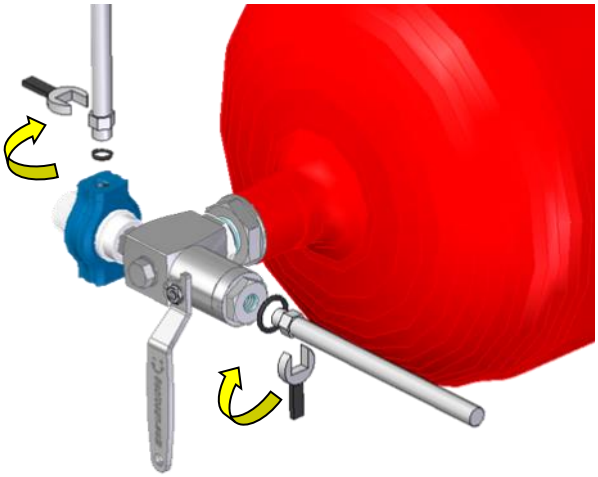


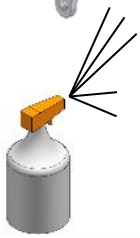
3. Using 2 wrenches, Torque lock nut to 50Nm.



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

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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.

2 x Seats

1 x Stem

1 x Ball

1 x Plug O-Ring

1 x Gland

1 x Inner Body O-ring

1 x Cap O-ring

2 x Cylinder Adapter O-Ring

1 x Krytox GPL 103

1 x Inner Body Back-up Ring

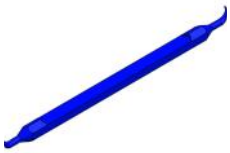
1 x Cap Back-up Ring

2 x Cylinder Adapter Backup Ring

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

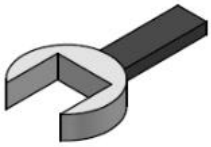
Tools Required

Cleaner (Suitable for Hydrogen Components and Seals)



Pick Tool
Part Number:
TOOL-PICK
(Sold separately)

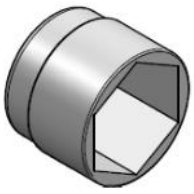
Anti Seize Grease
(Krytox GPL-205)
For All Threads



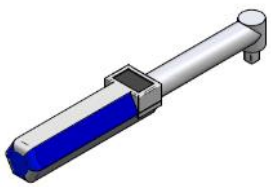
Spanner

Stem Tool
Part Number:
TOOL-STEM BV
(Sold separately)

Spray bottle
(Snoop or suitable equivalent)



Sockets



Torque Wrench

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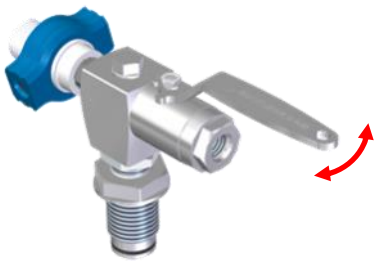
1. Trapped Pressure Release

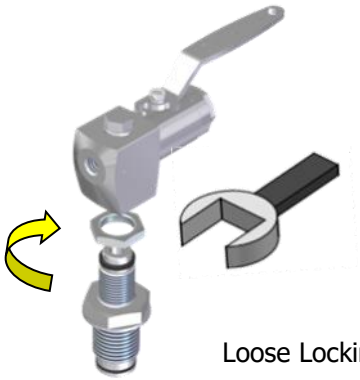


Open and close valve to ensure all trapped gas is released.

2. Remove PRD

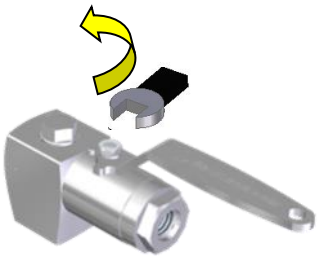
Place PRD in a clean sealed container during servicing.

3. Remove Valve Adaptor



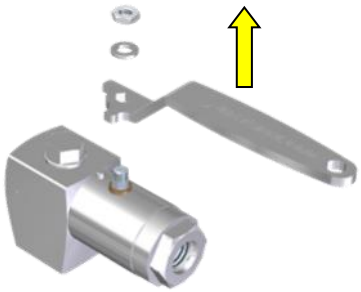
Loose Locking Nut

4. Unscrew Stem Nut.



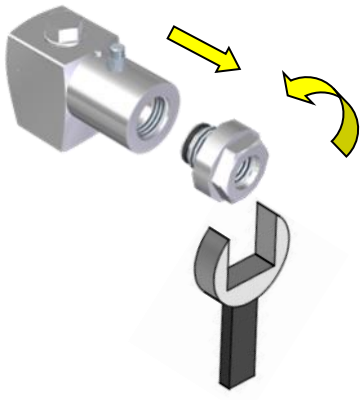
Note stem line orientation

5. Remove Handle.

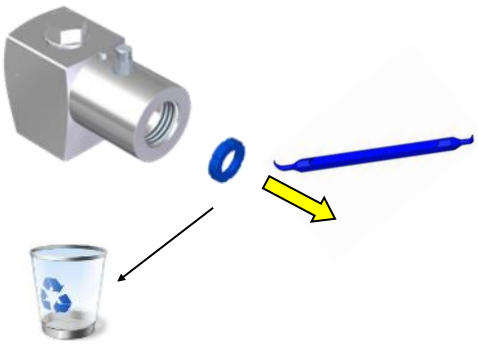


6. Remove and Discard Gland

7. Remove End Cap.



8. Remove and Discard Seat.



9. Remove and discard ball.

Stem Position

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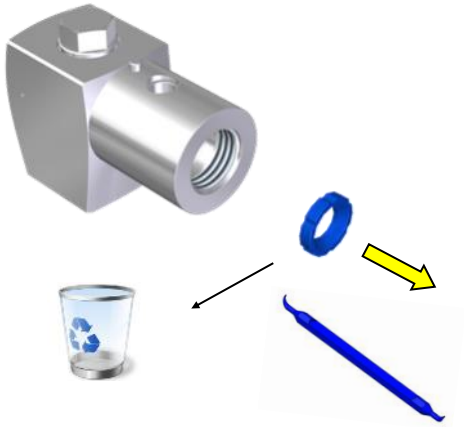
10. Remove and Discard Stem

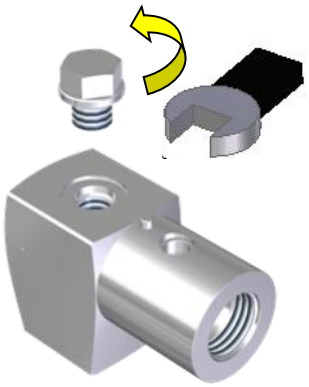
11. Remove and Discard 2nd Seat.



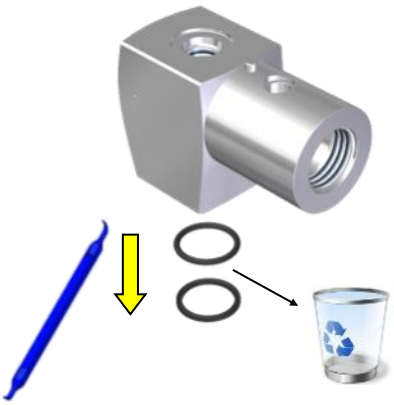
CAUTION

DO NOT SCRATCH BODY

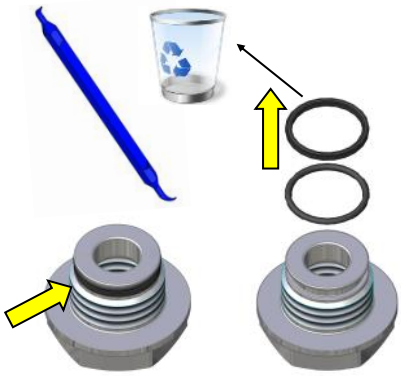
12. Remove Plug



13. Remove and Discard Body Inner O-Rings



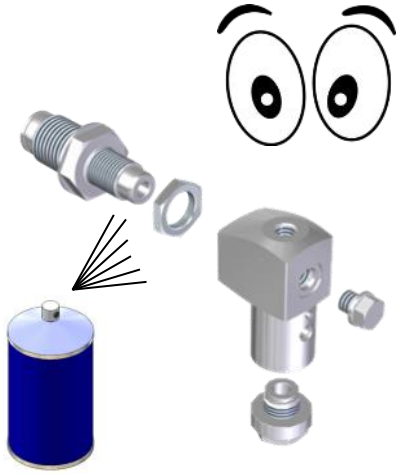
14. Remove and Discard End Cap O-rings



15. Remove and Discard Plug O-Ring

16. Remove and Discard Cylinder Adaptor O-Rings

17. Clean and Visually Inspect all Parts for Damage.



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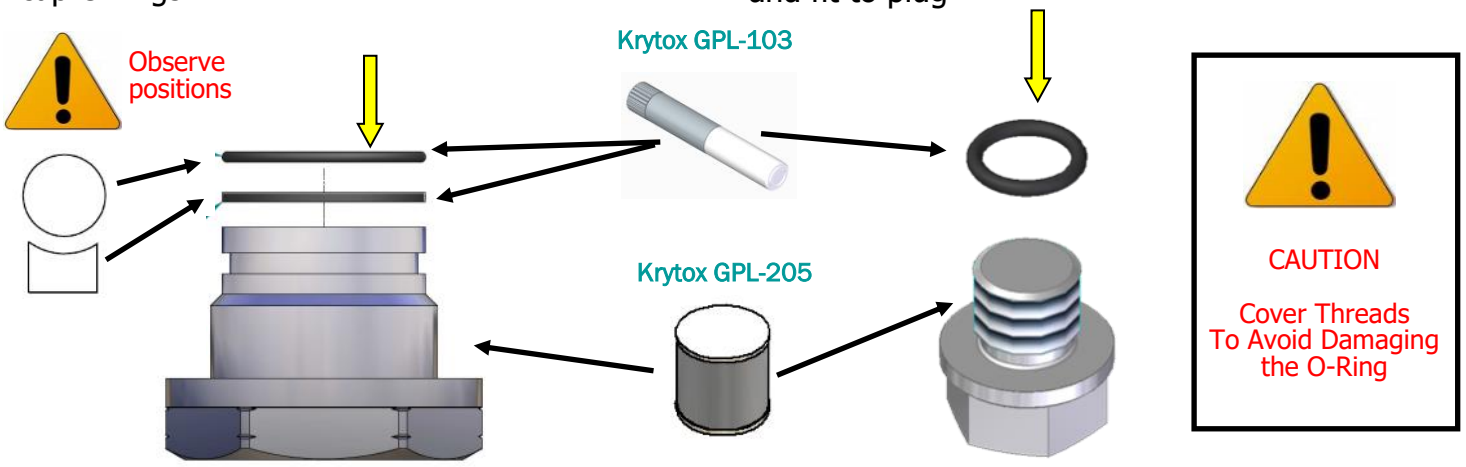
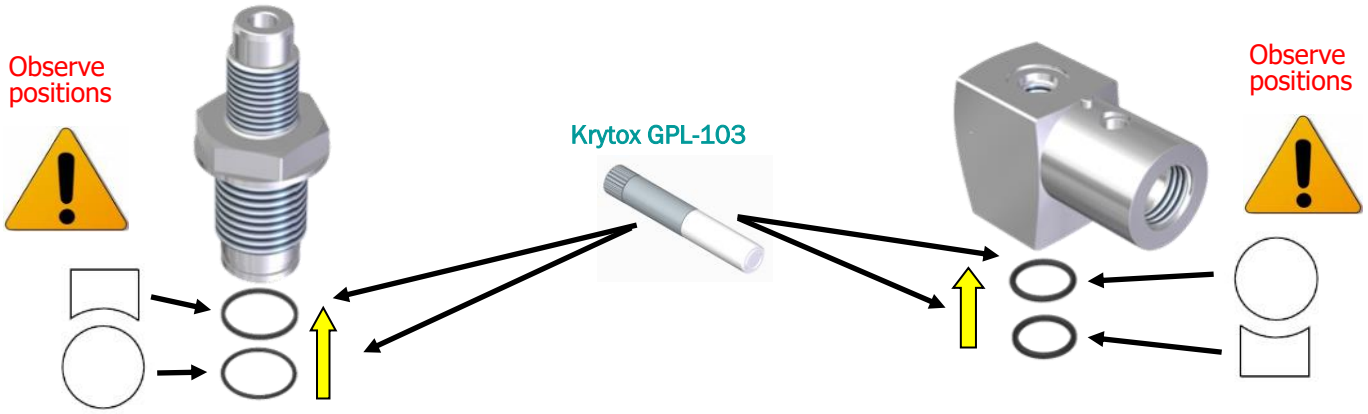
1. Apply Krytox GPL 103 to end cap O-rings

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



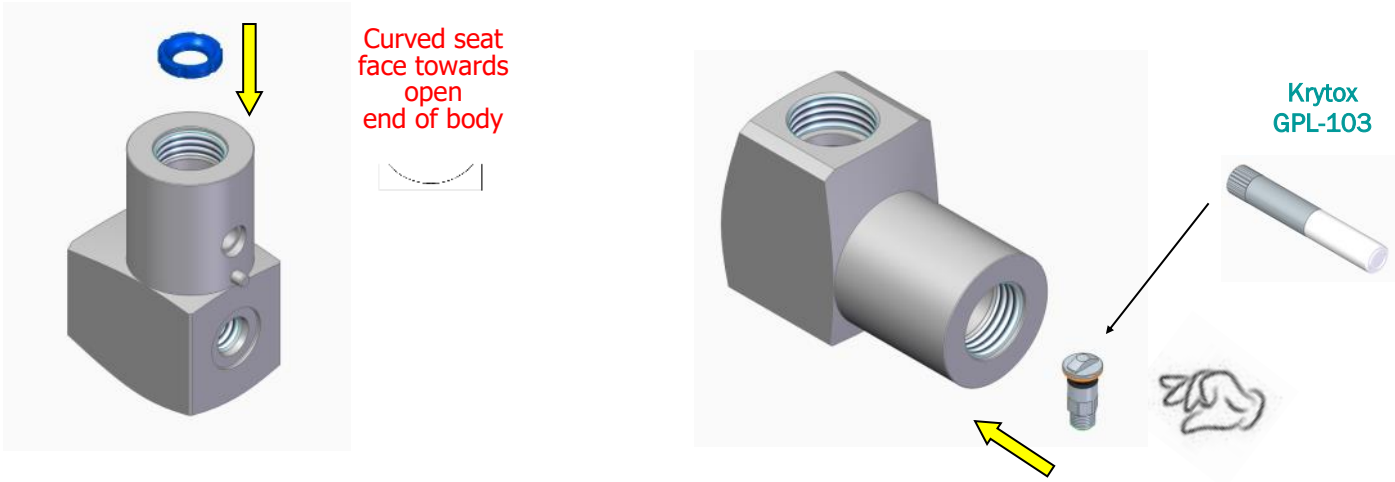
3. Apply Krytox GPL 103 to cylinder adaptor O-Rings

4. Apply Krytox GPL 103 to inner body O-Rings



5. Install First New Seat

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



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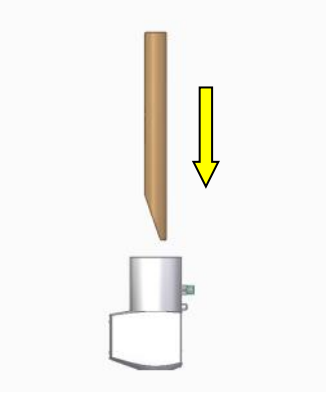
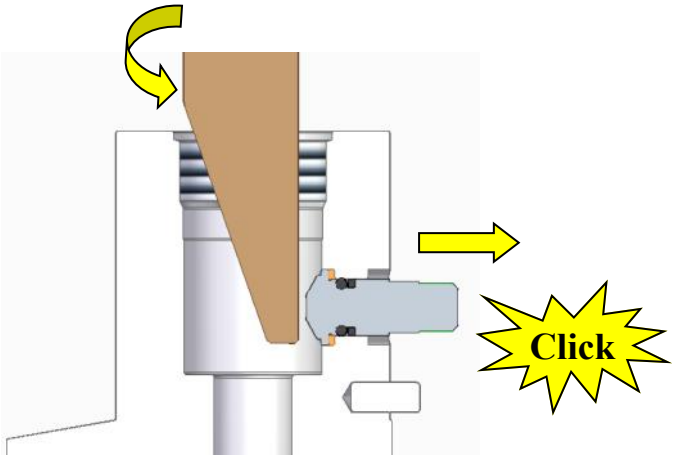
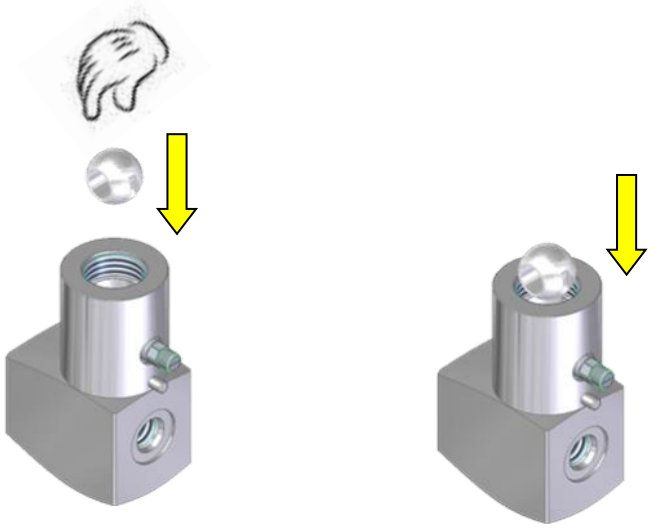
7. Insert the stem tool.



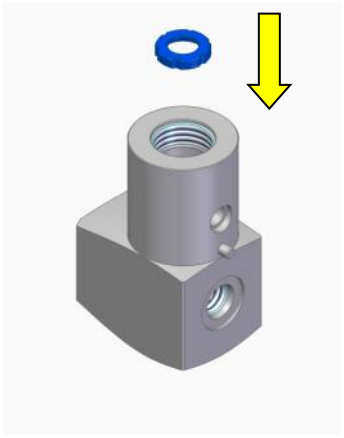
8. Use the tool to push the stem into position.



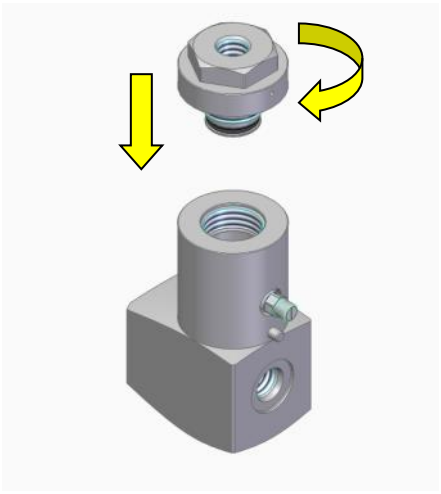
9. Insert the Ball



10. Install the New Second Seat



11. Screw in End Cap Thread



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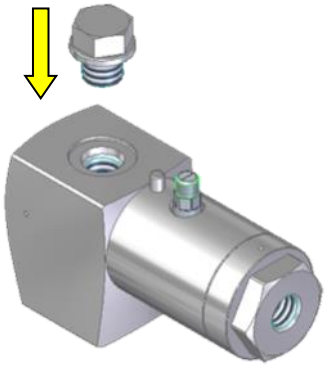
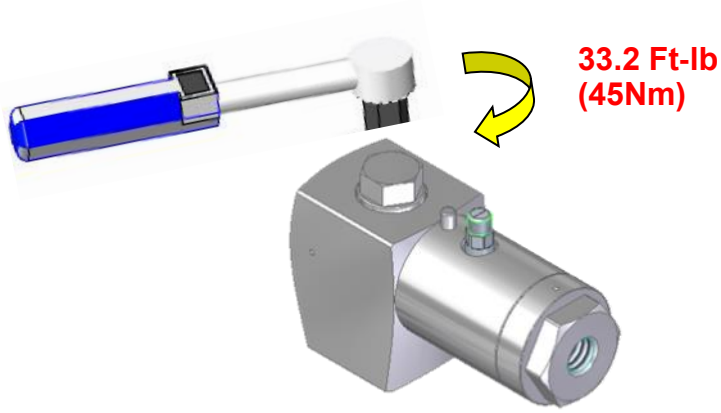
12. Install Plug

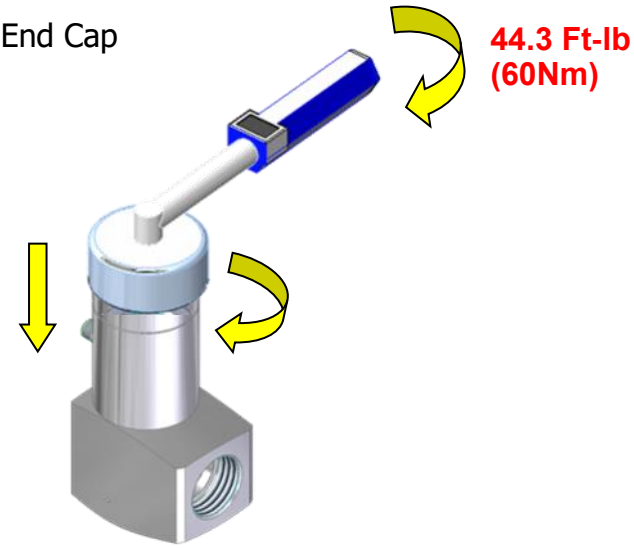
Check:
Krytox GPL-103 on O-Rings
Krytox GPL-205 on Thread



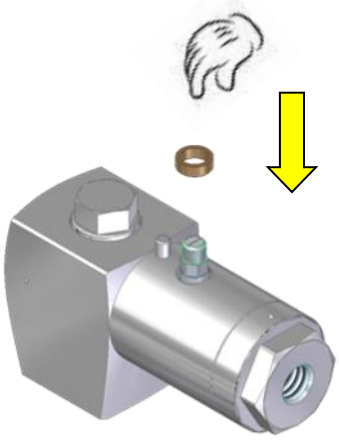
13. Torque the Plug



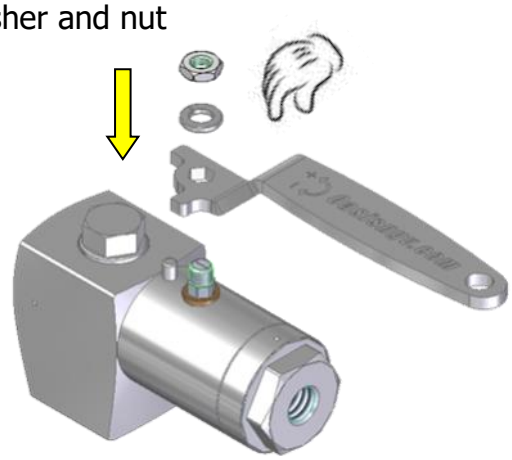
14. Torque End Cap



15. Install the Gland



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



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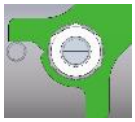
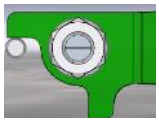
17. Tighten Stem nut

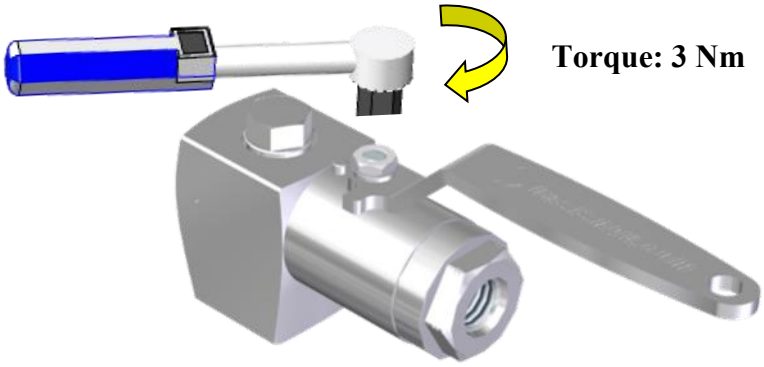
Observe handle alignment



45° Handle



Straight Handle



Torque: 3 Nm

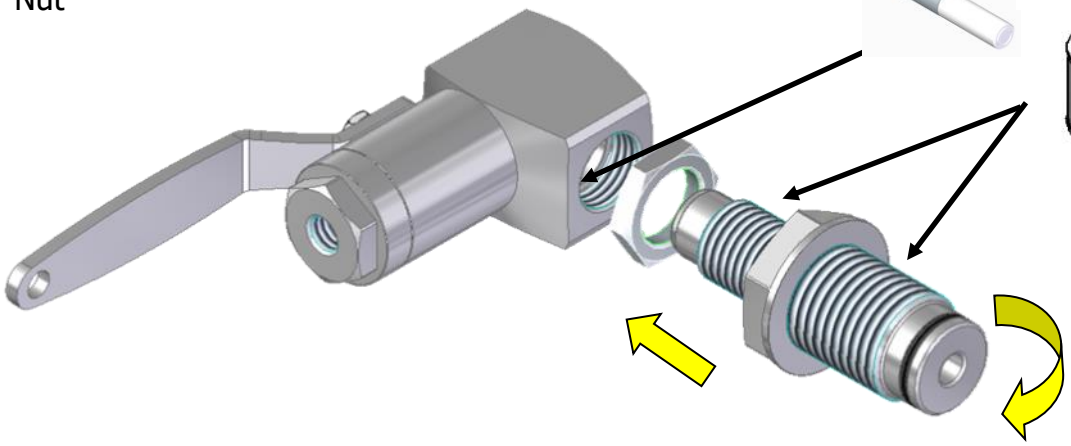
Valve Open

Valve Closed

18. Install the Cylinder Adaptor and Locking Nut

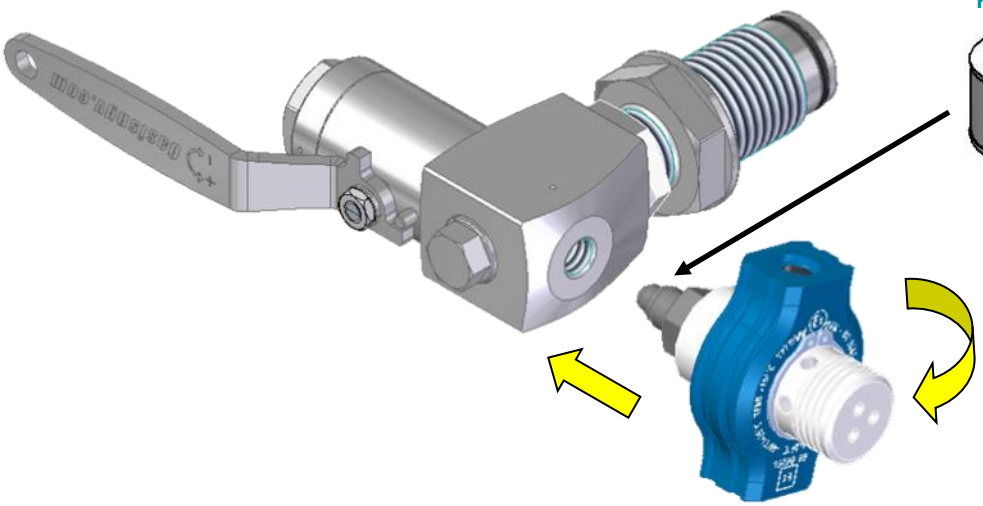
Krytox GPL-103

Krytox GPL-205



19. Install PRD

Krytox GPL-205



Torque PRD fitting to manufacturer's instructions

We reserve the right to modify product specifications without prior notice.

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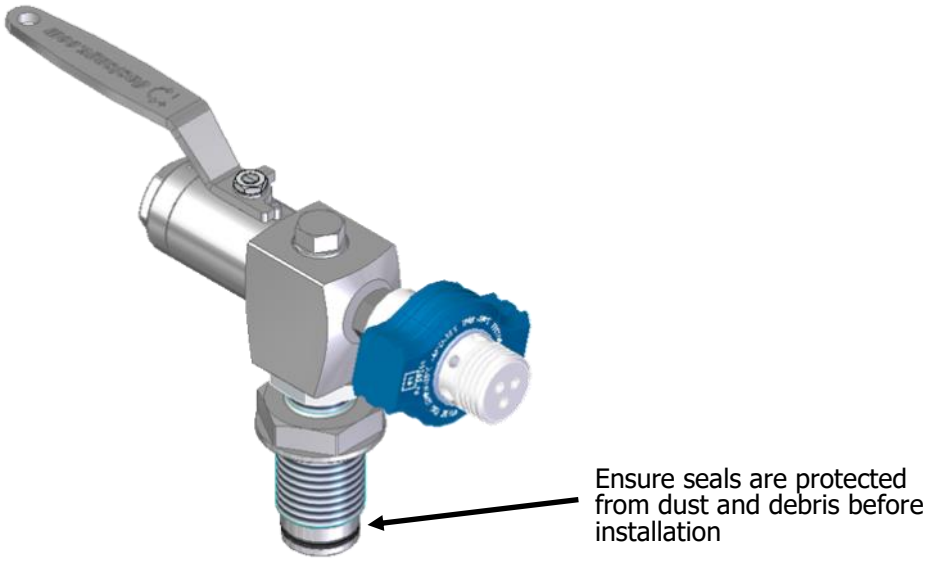
20. Servicing Complete. Re-install as per the Instruction on Page 5.



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