Installation, Operation and Maintenance Manual

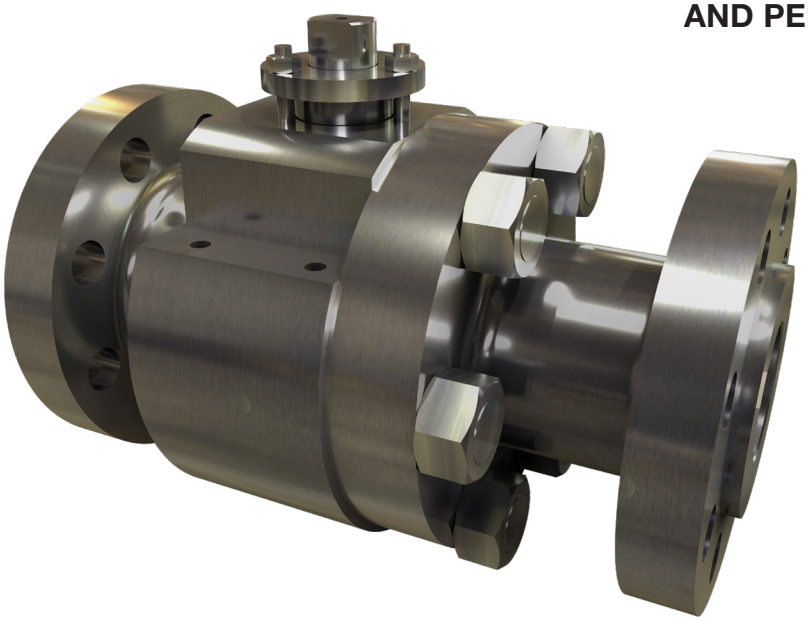
for the

MOGAS Watson Series™ Ball Valve

PREPARE THE VALVE FOR INSTALLATION

INSTALL THE VALVE PROPERLY

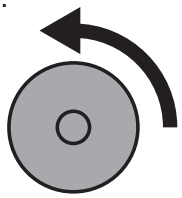
MAINTAIN THE VALVE FOR OPTIMAL OPERATION AND PERFORMANCE



MOGAS®

Read Before Installing Valve

All MOGAS valves operate **counter-clockwise to open, clockwise to close**.

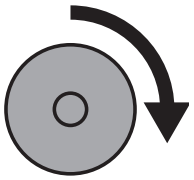


OPEN

MOGAS valves are supplied in a variety of operator configurations based upon customer requirements, and may be operated by

- manual actuation (handlever)
- worm gear actuation (handwheel)
- pneumatic actuation
- hydraulic actuation

Each of these operator configurations may be installed and tested prior to shipping, or shipped separately, depending on customer requirements.



CLOSE

Some valves are supplied with a bare stem or stem adaptor kits to accommodate a variety of manual or actuated operators.

Please note the configuration of each individual valve and proceed with any necessary operator adaption procedures prior to installing the valve.

How to Read this Manual

All information within this manual is relevant to the safe and proper care of your MOGAS ball valve. Please understand the following examples of instructional information:

5 **INSTALL STEM ADAPTOR**
Align stem adaptor **13** so the keyways on stem adaptor correspond with the keys **6** on stem **5**.

Sequential procedure *required to perform operation.*

Bold *numbers correspond with items shown in the* ***Valve Item Reference Number*** *sections.*

▶ **PRE-INSTALLATION STORAGE**
Valves shall remain stored in their shipping crates with the lids secured.

General information *or an alternate / variation procedure.*

CAUTION!
Ensure key length provides and maintains full engagement.

THIS WILL AFFECT THE VALVE WARRANTY.

Warning statement *to prevent unwanted consequence.*

Note:
The normal direction of flow is from the higher pressure end (upstream) to lower pressure end when the valve is ***closed****.*

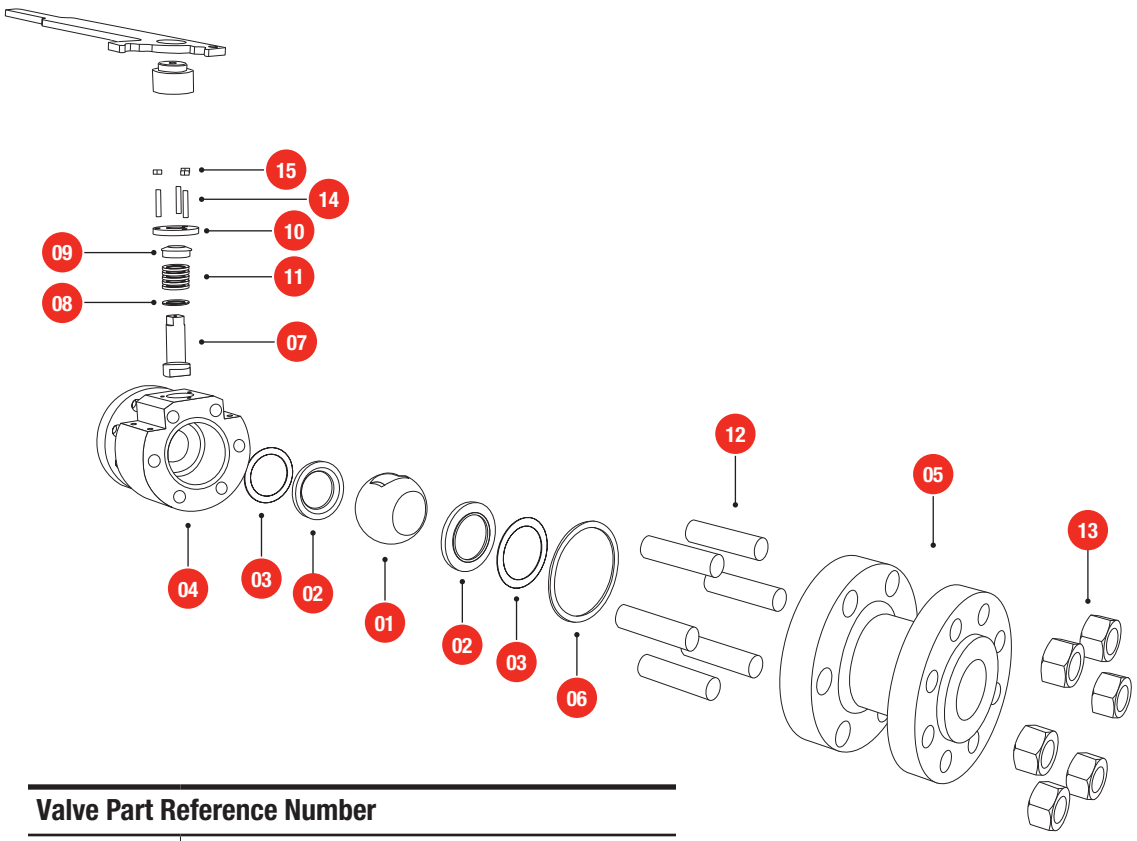
Note(s) *to support procedure.*

Contents

VALVE ITEM REFERENCE NUMBER 4
TRANSPORT AND STORAGE 6
PRE-INSTALLATION 7
INSTALLATION 8
OPERATION 10
MAINTENANCE 11
REPLACE BALL & SEAT 12
REPLACE STEM PACKING 13
DISASSEMBLY 17
RE-ASSEMBLY 23
LOCATE VALVE INFORMATION 31
RETURN MERCHANDISE AUTHORIZATIONS (RMA) 32
SERVICE CONTACT 32

Valve Item Reference Number

Manual Adaption (Handlever)



Valve Part Reference Number

Item	Description
01	Ball
02	Seat
03	Seat Ring
04	Body
05	End Connect
06	Body Gasket, Spiral Wound
07	Stem
08	Stem Seal
09	Thruster, Gland Flange
10	Gland Flange
11	Ring, Stem Packing [1]
12	Stud, Body
13	Nut, Body
14	Stud, Gland
15	Nut, Gland

[1] Quantity varies with valve size

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Transport and Storage

These procedures outline the general requirements for storage of MOGAS valves.

TRANSPORT

For export shipping, valves will be shipped in sea-worthy, export-packed, plastic-lined wooden crates.

Upon arrival at the site, inspect the general condition of the valve (and actuator, if supplied) for any potential shipping damage.

PRE-INSTALLATION STORAGE

Valves shall remain stored in their shipping crates, or on their pallets, with the lids secured.

Valves are shipped with corrosion-resistant paint and desiccant dries (dryer bags) for storage up to six months.

For long-term storage, the machined internal parts of carbon and low alloy steel valves should be sprayed with a rust preventative.

Keep all protective covers and plastic liners in place.

REMOVING VALVE FROM SERVICE

Before the valve is removed from the line, it should be placed in the partially **open** position to relieve trapped pressure and prevent further internal damage to valve components.

Do not place the valve in the fully open position until it has been cleaned of service debris in the next step.

The valve should be placed in a vertical position, or raised at an angle. The bore of the valve should be either steamed cleaned or power washed to remove slurry and debris.

Rotate the valve to the fully open position to drain and dry. A petroleum-based rust inhibitor should be applied through the bore of the valve immediately after the valve is dry.

Flange protectors need to be secured to each end of the valve to prevent any foreign debris from entering the valve. It is recommended to place desiccant dryer bags inside the valve before storage.

The valve should be stored in the vertical position, out of the weather (inside), until repairs can be made.

Pre-Installation

1 REMOVE VALVE

Remove the valve (and actuator, if supplied) carefully from the shipping crate or pallet using lifting lugs or nylon straps around the **valve body** and sturdy section of the actuator. **Do not** lift by the actuator alone.

2 INSPECT VALVE

Inspect the general condition of the valve (and actuator, if supplied) for any potential shipping damage.

Review the valve manual, assembly drawing with the bill of materials, and the actuator manual (if supplied) shipped with the valve.

3 REMOVE PROTECTIVE COVERS

Remove protective covers from the valve ends.

Inspect internally for shipping debris or damage.

4 INSTALL OPERATOR

The valve comes configured with a handlever from MOGAS. It should arrive pre-assembled and tested from the factory. If already assembled, proceed to **Installation** (page 8) and continue with the valve installation.

If the valve **does not** have a handlever installed, you **must** install the appropriate adaptor and handlever to open and close the valve prior to valve installation.

Installation

Note:
*Valve item numbers shown in **bold** correspond with items shown in the **Valve Item Reference Number** section (pages 4 – 5) of this document.*

1 VERIFY OPERATING POSITION

Note:
*The MOGAS Watson Series™ valve operates **counter-clockwise to open, clockwise to close**.*

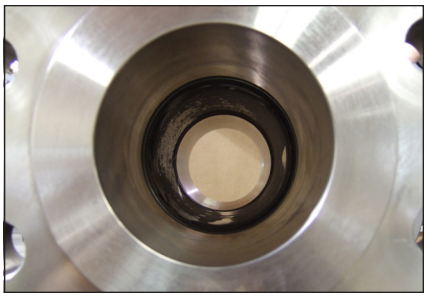
While looking in the bore, **open** and **close** the valve.

Note:
Larger valves may require the actuator to be in place to rotate the ball.

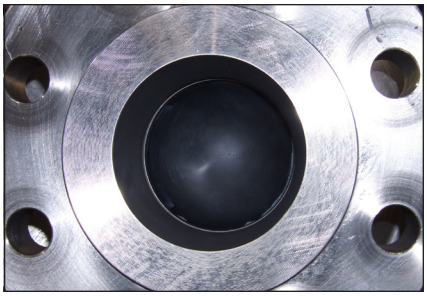
Verify that the ball **open** / **closed** position matches the handlever or actuator **open** / **closed** position indicators.

MOGAS Watson Series Valves are bi-directional valves and may be installed in either direction.

Note:
If a choice is available, the valves should be installed with the flow of the media from the end piece to the body.



Fully OPEN position.



Fully CLOSED position.

CAUTION!

The actuator, if supplied, must not be re-oriented without removal from the valve. This prevents 180° rotation of the ball and assures the mate-lapped ball and seat surfaces match. (Seat leakage may occur when the ball and seat surfaces are not matched per the engineered design.)

THIS WILL AFFECT THE VALVE WARRANTY.

CAUTION!

All welding / grinding debris must be thoroughly flushed from all associated piping before valve is installed.

THIS WILL AFFECT THE VALVE WARRANTY.

Installation

CAUTION!

Temperature and media compatibility should be verified prior to installation to assure the valve is able to perform in the desired application.

2 PROTECTING THE VALVE

The valve should be lifted with slings around the valve and not from the stem or actuator.

Flanged raised faces should be protected at all times prior to installation to prevent possible damage.

Note:

Actuator, gear operators and handle stops are pre-set at the factory and should not require any further adjustments. Should the actuator or gear operator require removal for installation, please call the factory or authorized Service Company first.

3 POSITION VALVE IN PIPING

Verify that the valve and actuator / handlever orientation is correct.

Verify that the valve is in the **open** position to prevent any damage to the ball surface from debris.

Position the valve in line with mating flanges.

Note:

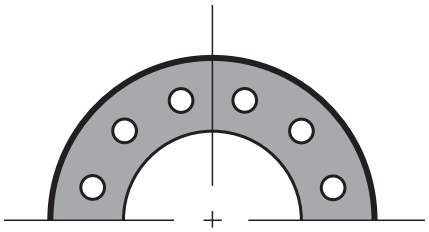
Support or lift as required, using lifting lugs or nylon straps around the valve body. Do not lift or support by the actuator alone.

4 SECURE VALVE IN PLACE

For raised-face flange connections, install flange gaskets and bolting per customer requirements. When securing other end types, please contact MOGAS Service for proper procedures.

Note:

MOGAS valve flanges are supplied in the customary "straddle centerline" hole orientation, unless otherwise specified.



Straddle centerline hole orientation

Operation

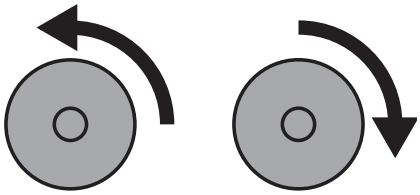
VERIFY OPERATION

The valve should be **opened** and **closed** several times and the packing gland nut or bolts should be checked to make sure they are snug and applying a sealing force on the packing prior to applying pressure.

OPEN / CLOSE

All MOGAS Watson Series ball valves are designed for on / off services only.

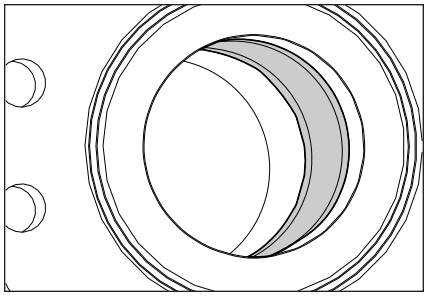
To operate, turn **counter-clockwise to open** and **clockwise to close**.



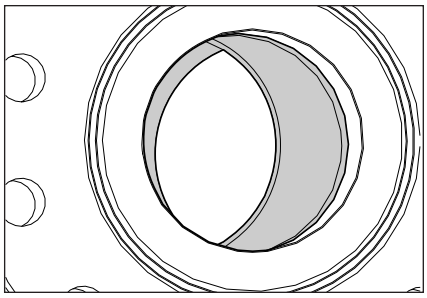
OPEN ***CLOSE***

Note:

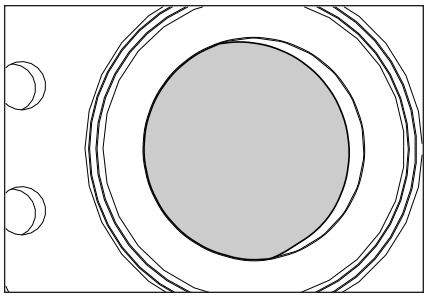
*When cycling the valve **open** or **close**, make sure that the valve is **fully opened** and **fully closed**. This wipes debris from the ball and ensures optimal performance and long valve life.*



Fully OPEN position.



Partially OPEN position (not recommended).



Fully CLOSED position.

CAUTION!

Throttling with ball valves is **NOT** recommended. Prolonged exposure of a portion of the ball to flow can compromise the sealing integrity of the valve.

THIS WILL AFFECT THE VALVE WARRANTY.

Maintenance

CAUTION!

It is **extremely important** to follow these steps to ensure maximum valve performance.

THIS WILL AFFECT THE VALVE WARRANTY.

VERIFY BOLTING TORQUE

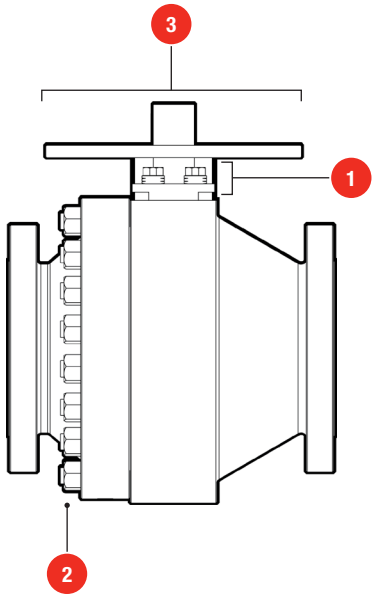
After the first exposure to elevated temperature and the valve has completely cooled-down, verify bolting torque at these locations:

1 Packing gland flange

2 Body to end connection

3 Actuator to valve mounting (if present)

Check the bolting at these same locations periodically.



CAUTION!

If bolting torque is lower than specified values on the **test certificate** provided for each **individual** valve serial number, re-torque bolting as necessary.

THIS WILL AFFECT THE VALVE WARRANTY.

OPEN / CLOSE VALVE REGULARLY

Valves remaining **open** or **closed** for a long period of time should be cycled **open** / **closed** at least once a year.

Valves should always be **fully opened** and **fully closed** to wipe away any accumulation on the sealing surfaces.

ACTUATOR LUBRICATION

Keep hydraulic, pneumatic and worm gear actuators fully lubricated according to actuator manufacturer's specifications.

Replace the Ball and Seat Set

A repair kit is available for the valve, which consists of two seats, two seat gaskets, a body seal, stem packing, a ball, and a thrust washer. The metal seats and ball are fitted together as a matched set and must be fitted to the valve as a set.

Note:

This operation must be performed by authorized service organization or a factory trained technician.

1 **PULL VALVE OUT OF SERVICE**

Remove all equipment attached to the valve and disconnect at the ends.

2 **CLEAN THE VALVE**

Remove all remaining media from the valve.

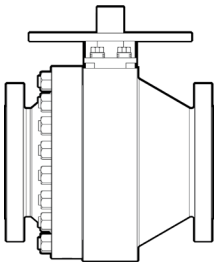
3 **MOVE VALVE TO AUTHORIZED REPAIR ORGANIZATION**

Remove all remaining media from the valve.

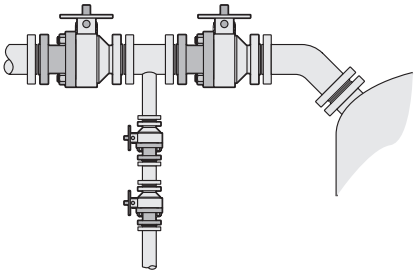
The service organization will refurbish the valve by replacing all gaskets, seals, packing, and ball and seat set.

Replace Stem Packing

It is best practice to remove the valve from the piping system before replacing the packing.



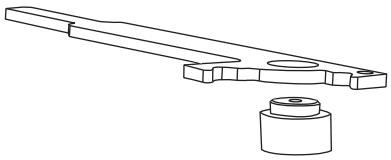
If the valve must remain in-line, it must be isolated using an approporiate block and bleed arrangement that is consistent with the system's hazard classification. There must be no internal pressure acting upon the valve or adjacent piping and fittings prior to gland and packing removal.



▶ Relieve all pressure from the valve and the valve's body cavity by cycling a removed valve to the 45° position, or half open.

1 ACCESS PACKING

Remove the handle or actuator, and any other obstruction and expose the top of the stem.

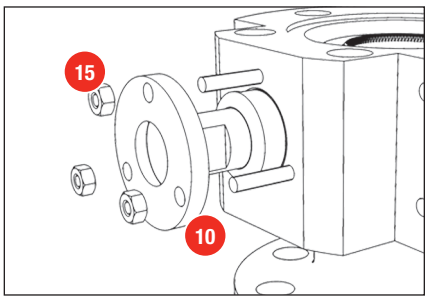


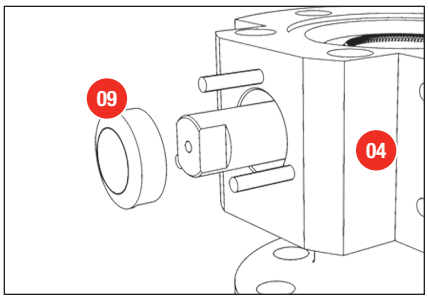
2 REMOVE GLAND FLANGE / THRUSTER

Loosen gland nuts **15** slowly in case there is trapped pressure in the stem area.

Remove gland flange **10**, followed by gland flange thruster **09**. Use plyers to work the gland flange thruster **09** off the stem.

Inspect for corrosion, erosion and damaged surfaces.





CAUTION!

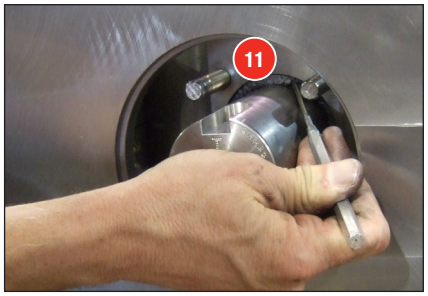
Do not scratch or create any burrs, which could cause a leak.

THIS WILL AFFECT THE VALVE WARRANTY.

Replace Stem Packing

3 REMOVE STEM PACKING

Using a small pick, scribe or screwdriver, carefully remove the packing material **11**.



CAUTION!

Do not scratch the packing bore in the body. Scratches could cause a leak.

THIS WILL AFFECT THE VALVE WARRANTY.

CAUTION!

Care should be taken at all times in removing the packing in case the media is hazardous and harmful. Safety glasses, gloves or other personal protective equipment should be worn.

Make sure that all of the packing is removed. If possible, blow all old packing pieces from the packing box.

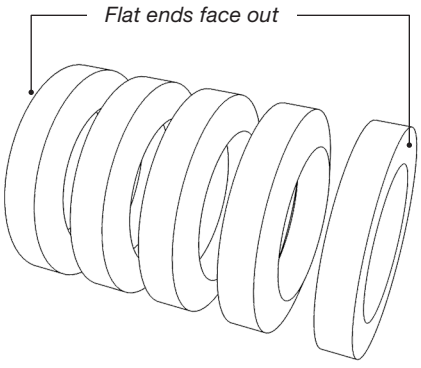
Note:
Always wear a face shield or mono-goggles to protect eyes from flying debris.

Clean the stem **07** outter diameter and check for scratches or burrs. If there is excessive damage to the stem, the valve must be removed for repair.

▶ PACKING RING SET

Prepare the packing set by removing them from their protective packing container. Care should be taken when handling the packing rings not to damage them.

Note:
Each MOGAS Watson Series stem packing set will contain three to five rings total. They are all made from the same graphite material, but sets are different diameters, thicknesses, and shapes, depending on bore size.

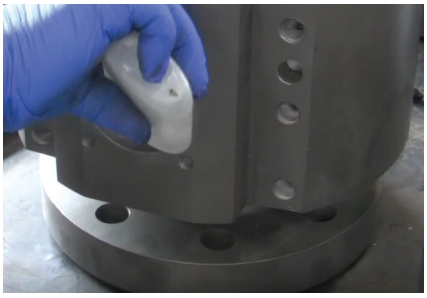


Packing configuration for MOGAS Watson Series 4-in valve.

Replace Stem Packing

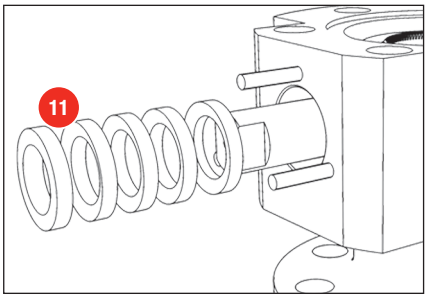
4 INSTALL NEW PACKING RING SET

Apply Krytox™ or equivalent lube inside packing box.



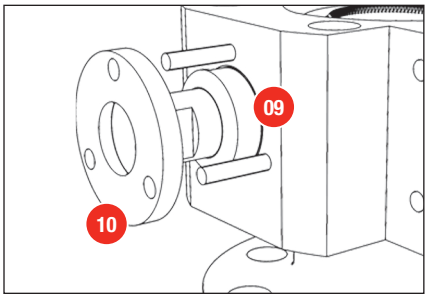
Install the set of packing rings **11** one ring at a time, in the order as illustrated.

Ensure all rings are snugly fitted all the way down against the previous ring.



5 RE-INSTALL GLAND FLANGE THRUSTER AND FLANGE

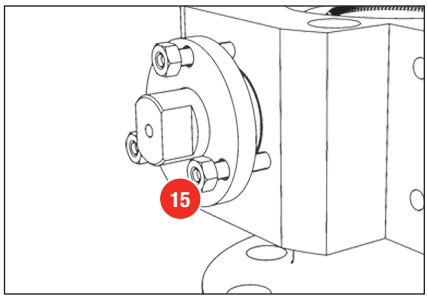
Slide gland fland thruster **09** over stem **07** and push snugly against stem packing **11**, followed by gland flange **10**.



Replace Stem Packing

6 TIGHTEN GLAND NUTS

Install gland nuts **15** onto gland studs **14**. Only finger tighten the nuts.



CAUTION!

The gland flange **must** be pushed in evenly to prevent “cocking” or side loading, as this could cause damage to the packing and prevent the valve from operating properly.

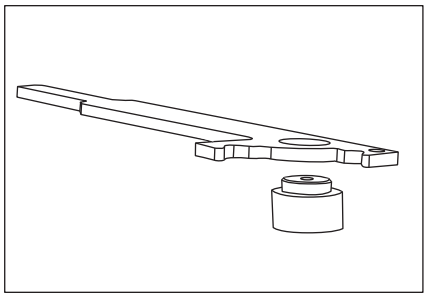
Watch the gland flange to ensure that it remains **perpendicular** to the stem, and the gap around the stem remains **concentric** during the tightening process.

▶ The valve should be cycled several times and gland nuts **15** re-tightened. The nuts should only be snugged and not over tightened.

Once the valve is placed into operation, torque all nuts evenly per the specifications included with the test certificate for each individual valve serial number.

7 RE-INSTALL TOP WORKS

Repostion the handle or actuator, being careful of the alignment.



Disassembly

CAUTION!

If you disassemble, rework and re-assemble this ball valve, **YOU WILL VOID YOUR WARRANTY**.

Before beginning any work, identify the valve model by checking the number on the side of the valve body.

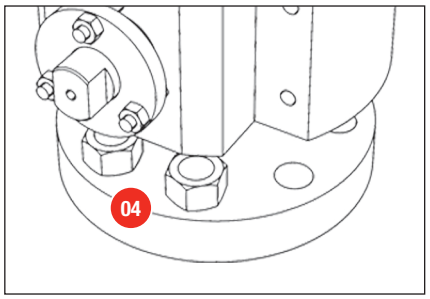
Mark any matching components with a marker prior to disassembly, for ease of reassembly and to identify orientation.

CAUTION!

Verify that the ball is in the **fully closed** position prior to valve disassembly.

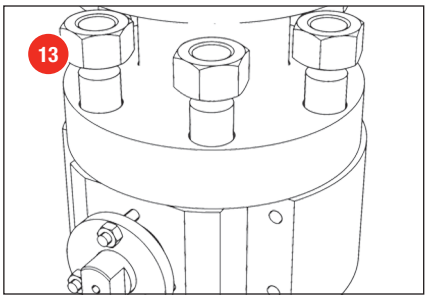
1 SECURE VALVE

Turn valve on body end **04** and secure valve with clamps or bolts to allow for stable disassembly.



2 REMOVE NUTS

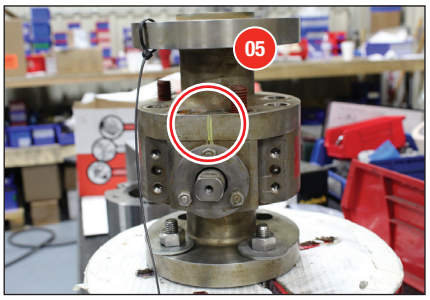
Loosen body nuts **13** from body bolts **12**, and then remove all nuts.



Disassembly

3 MARK END CONNECTION

Mark centerline on end connection **05**.

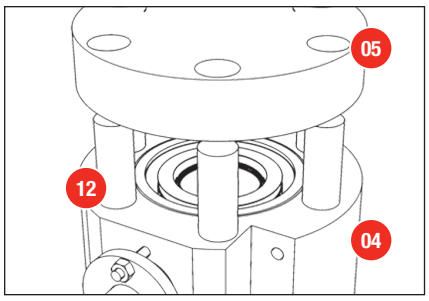


4 REMOVE END CONNECTION AND BODY STUDS

Pull end connection **05** off valve body **04**.

It may be necessary to use a tool, such as a rubber mallet, to loosen the end connection.

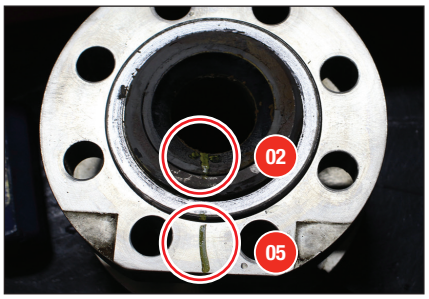
Remove body studs **12**.



Disassembly

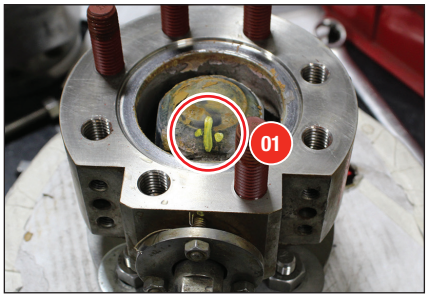
5 **MARK COMPONENTS**

Mark centerline on end connection **05** internal face and on seat **02** inside end connection.



Mark centerline and orientation (two dots) on ball **01** facing end connection.

Remove and inspect ball for damage. It may be necessary to loosen the ball with a screw driver or similar leverage tool.

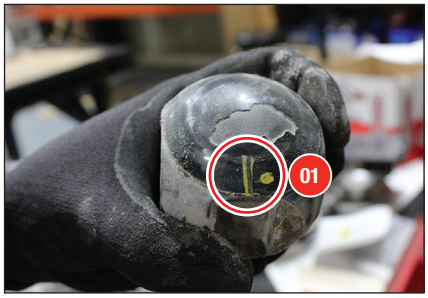


CAUTION!

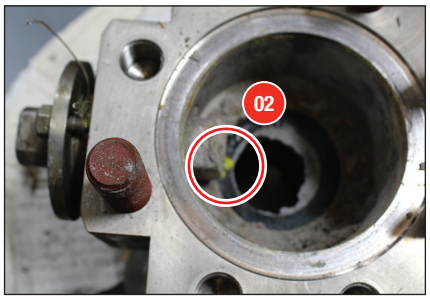
Do not scratch the ball or internal components. Scratches could cause a leak.

THIS WILL AFFECT THE VALVE WARRANTY.

Mark ball **01** (one dot) facing body. Inspect ball for damage.



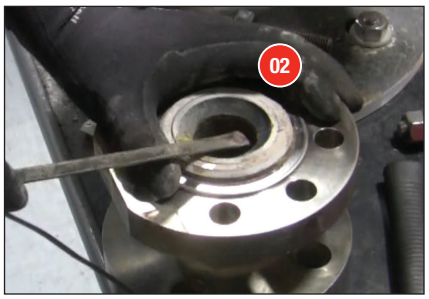
Mark centerline on seat face **02** inside body cavity.



Disassembly

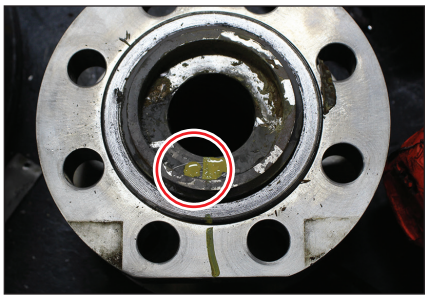
6 REMOVE SEAT

Use a thin flathead screwdriver and mallet to pry the seat **02** away from end connection **05**.



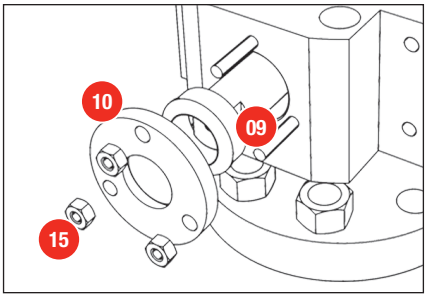
7 MARK SEAT LANDING

Mark centerline on end connection **05** seat landing.



8 REMOVE GLAND FLANGE / THRUSTER

Remove gland nuts **15** and gland flange **10**, followed by gland flange thruster **09**.

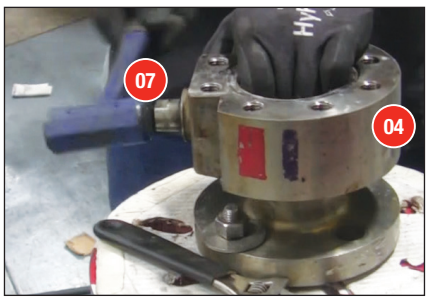


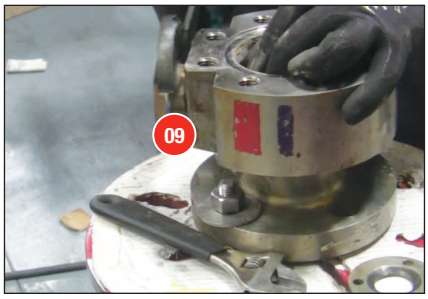
▶ LOOSENING THE THRUSTER

It may be necessary to push most of the stem **07** through the packing bore and into the valve body **04** before the gland flange thruster **09** can be worked off the stem.

Do this by using a rubber mallet to tap the stem further into the the valve body cavity.

Use plyers to work the gland flange thruster **09** off the stem.

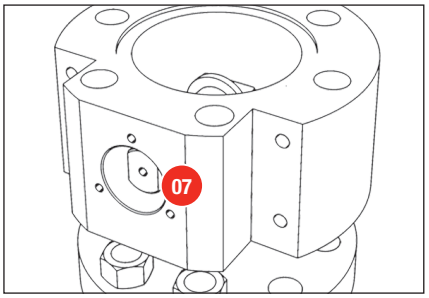




Disassembly

9 REMOVE STEM

Continue to push stem **07** through packing bore and into valve body cavity by gently tapping on stem top.



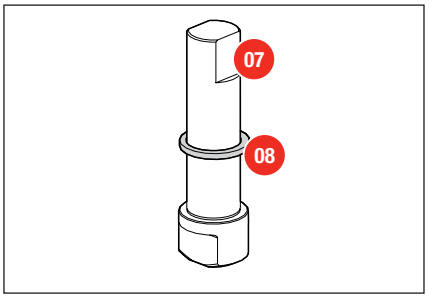
CAUTION!

Do not scratch surface of stem shaft by gripping with plyers or similar metal tool.

THIS WILL AFFECT THE VALVE WARRANTY.

INSPECT STEM FOR STEM SEAL

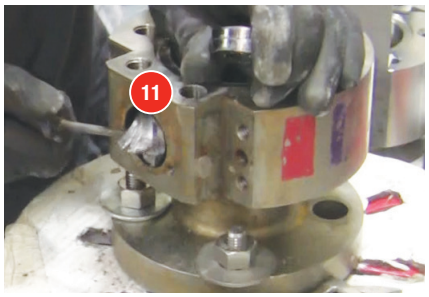
Remove and inspect stem. If the stem seal **08** is on the stem's shoulder, remove it.



10 REMOVE STEM PACKING

Using a small pick, scribe or screwdriver, carefully remove the packing material **11**.

Make sure that all of the packing is removed.



CAUTION!

Do not scratch the packing bore in the body. Scratches could cause a leak.

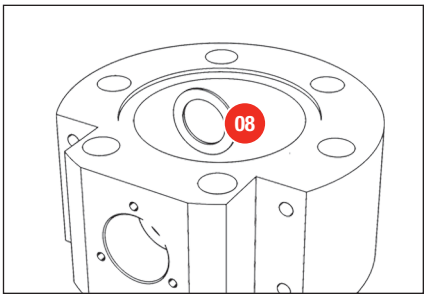
THIS WILL AFFECT THE VALVE WARRANTY.

Note:

Always wear a face shield or mono-goggles to protect eyes from flying debris.

11 REMOVE STEM SEAL

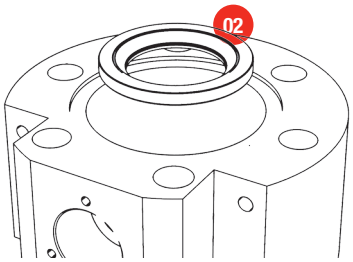
If the stem seal **08** did not separate from the stem shoulder when stem was removed, it will be in the packing bore in the valve body **04**. Use a small pick, scribe or screwdriver, and remove the stem seal.



Disassembly

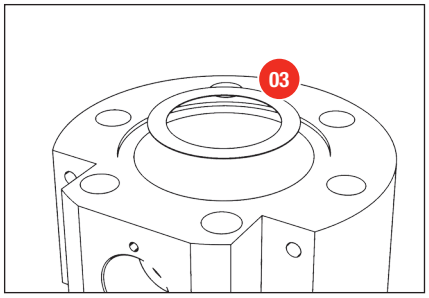
12 REMOVE SEAT

Use a thin flathead screwdriver and mallet to pry away the seat **02** from inside body **04**.



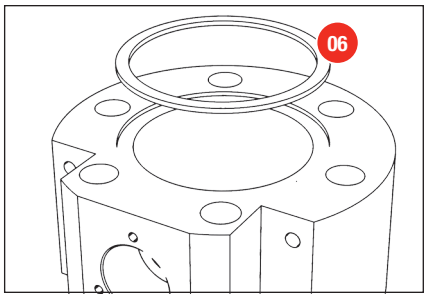
13 REMOVE SEAT RING

Remove seat ring **03** from body seat landing. The seat ring may be afixed to the bottom of the seat **02**.



14 REMOVE BODY GASKET

Remove body gasket **06** from body **04**.



Re-Assembly

1 CLEAN ALL PARTS

Clean all parts before assembly and / or parts replacement.

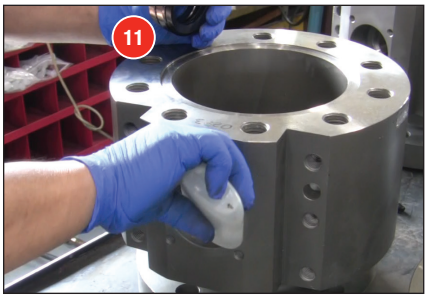
CAUTION!

If you disassemble, rework and re-assemble this ball valve, **YOU WILL VOID YOUR WARRANTY**.

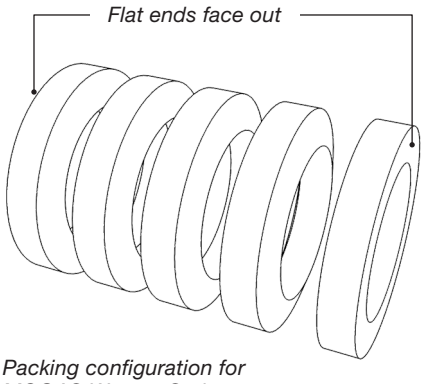
2 INSTALL NEW PACKING RING SET

Position valve upright so it lays on the body flange.

Apply Krytox™ or equivalent lube inside packing box.



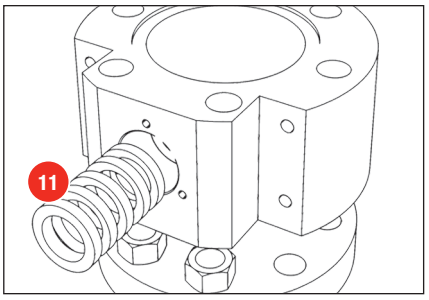
Note:
Each MOGAS Watson Series stem packing set will contain three to five rings total. They are all made from the same graphite material, but sets are different diameters, thicknesses, and shapes, depending on bore size.



Packing configuration for MOGAS Watson Series 4-in valve.

Install the set of packing rings **11** one ring at a time, in the order as illustrated.

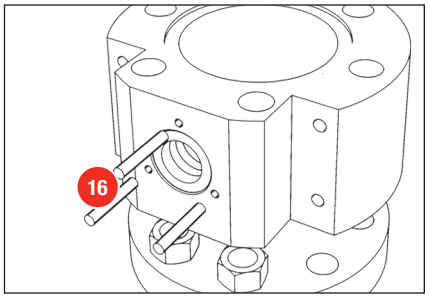
Ensure all rings are snugly fitted all the way down against the previous ring.



Re-Assembly

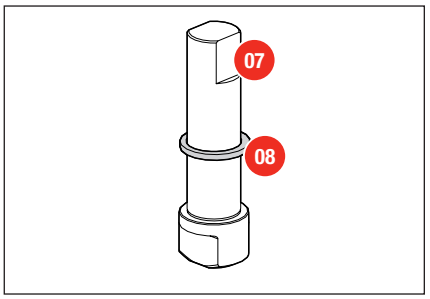
3 INSTALL GLAND STUDS

Apply anti-seize compound before inserting the gland studs **16**. Turn the threads finger tight until they reach the bottom.



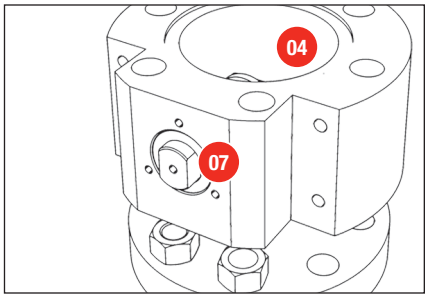
4 INSTALL STEM SEAL

Slide the stem seal **08** onto the stem **07** pushing all the way down so it rests on stem shoulder.

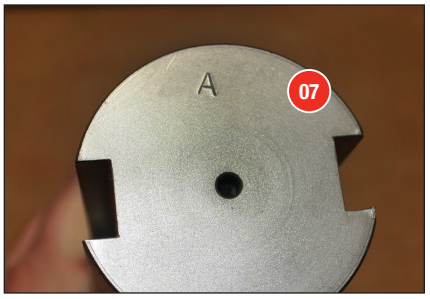


5 INSERT STEM

Insert the stem **07** from inside the body **04** and out through the top stem bore.



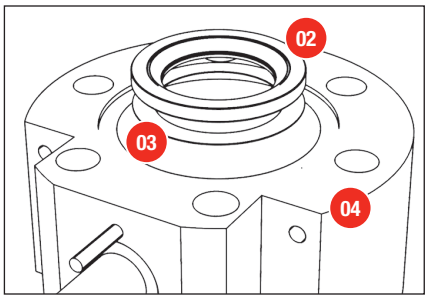
If there is a letter stamped on the stem, orientate stem **07** so the letter, which is etched on stem end, faces the valve's bottom.



Re-Assembly

6 **INSTALL SEAT RING AND SEAT**

Lay the seat ring **03** onto the face goove inside the valve body **04**.



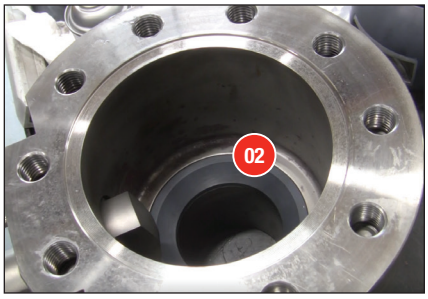
Thoroughly clean both seats **02** with solvent degreaser and a lint-free cloth.

CAUTION!

Entrapped debris between the seat and seat ring will affect a tight seal.

Slightly lubricate the seat **02** sealing surface that has the smaller number marked on outside of ring.

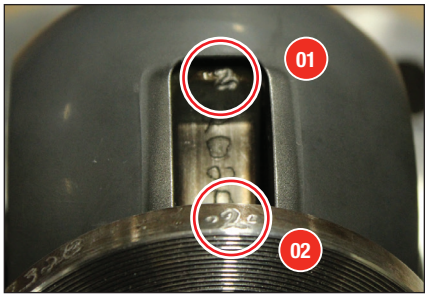
Install this seat **02** onto the seat ring **03** with curved sealing face facing upward, towards the ball side. The newly installed seat should spin with ease.



Notes:

*IMPORTANT: The seats are uniquely identified to fit **only** a body or end connection. Seats identified with a odd number fit the body only; seats identified with an even number fit the end connection only.*

Seat identification is also provided inside the stem slot of the ball to ensure correct assembly of mate-lapped components.



Re-Assembly

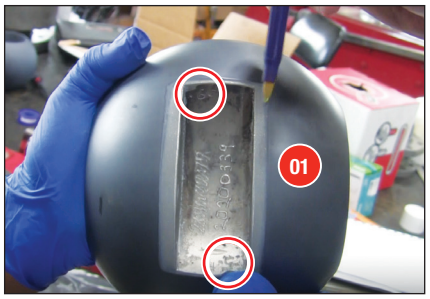
7 INSERT BALL

Lubricate the ball **01** with silicon or another light lubricant.

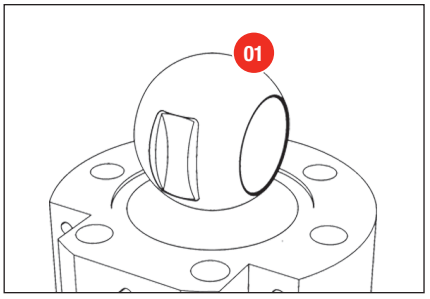
CAUTION!

Do not use WD-40 as lubricant.

Match number inside ball slot to newly installed seat **02**.

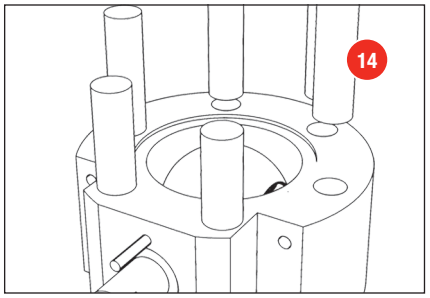


Lower ball **01** in the closed position into body ensuring matching numbers on ball and seat.



8 INSTALL BODY STUDS

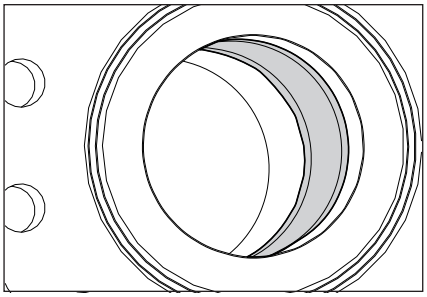
Apply anti-seize on body studs **14** and hand tighten studs into body holes until they bottom out.



Re-Assembly

9 INSTALL 2ND SEAT RING SEAL AND SEAT

Ensure ball **01** is in full open position.



Fully OPEN position.

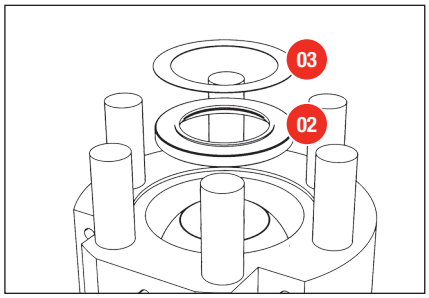
Slightly lubricate the second seat **02** sealing surface. This seat has the larger number marked on outside of ring when compared to the first seat.

Notes:

*IMPORTANT: The seats are uniquely identified to fit **only** a body or end connection. Seats identified with a smaller number fit the body only; seats identified with a larger number fit the end connection only.*

Seat identification is also provided inside the stem slot of the ball to ensure correct assembly of mate-lapped components.

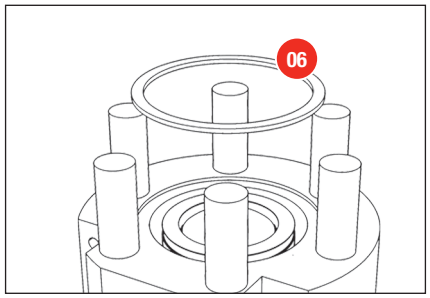
Install second seat **02** onto ball **01** with curved sealing face facing downward.



Lay the second seat ring seal **03** onto the back of the second seat **02**.

10 INSTALL BODY GASKET

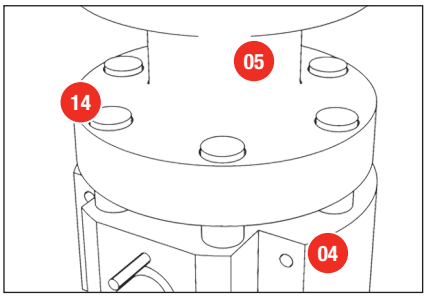
Lay the body seal **06** onto the groove on valve body **05**.



Re-Assembly

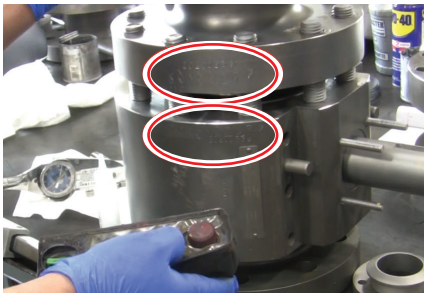
11 INSTALL THE END CONNECT

Align matching serial number (or centerline arrows) etched on both body **04** and end connect **05**, and lower end connect through body studs **14** and onto body.



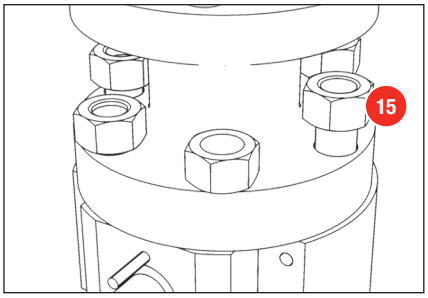
CAUTION!

Visually inspect that seat **02** and seat ring seal **03** are centered on ball **01** and body seal **06** is still in position on body **04**.



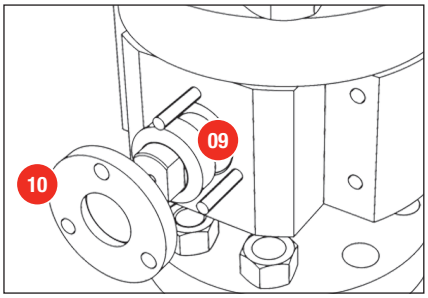
12 FINGER-TIGHTEN BODY NUTS

Install body nuts **15** onto body studs **14**. Only finger tighten the nuts.



13 INSTALL GLAND FLANGE AND THRUSTER

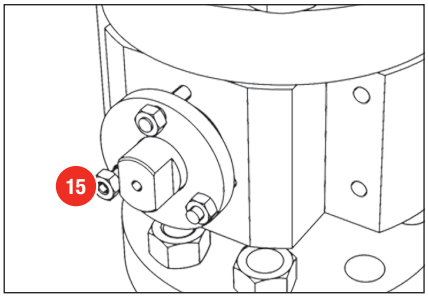
Slide gland fland thruster **09** over stem **07** and push snugly against stem packing **11**, followed by gland flange **10**.



Re-Assembly

14 FINGER-TIGHTEN GLAND NUTS

Install gland nuts **15** onto gland studs **14**. Only finger tighten the nuts.



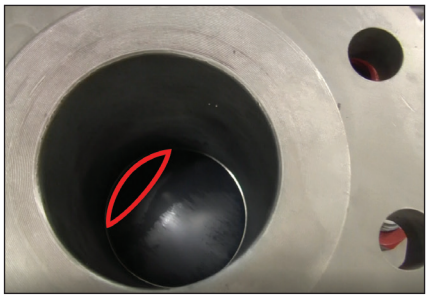
CAUTION!

The gland flange **must** be pushed in evenly to prevent “cocking” or side loading, as this could cause damage to the packing and prevent the valve from operating properly.

Watch the gland flange to ensure that it remains **perpendicular** to the stem, and the gap around the stem remains **concentric** during the tightening process.

15 PREPARE FOR SEAT LEAK TEST

Use stem **07** to open ball **01** (counter-clockwise) slightly. This will allow water to fill valve body cavity from top and drain at bottom during seat leak testing.



16 TIGHTEN BODY NUTS

Secure valve during torquing.

Use a proper squence to tighten the body nuts **15** using a wrench.

When all body nuts are snug, use a torque tool and continue the tightening sqeuence. Torque should be applied to the specified values in three equal steps utilizing a ‘star’ pattern, followed by one last check applying the specified torque to each fastener sequentially in a clockwise pattern.

CAUTION!

Torque the valve body bolting per the specifications included with the **test certificate** for each individual valve serial number.

Re-Assembly

17 TIGHTEN GLAND FLANGE NUTS

Use a proper squence to tighten the gland flange nuts **17**.

CAUTION!

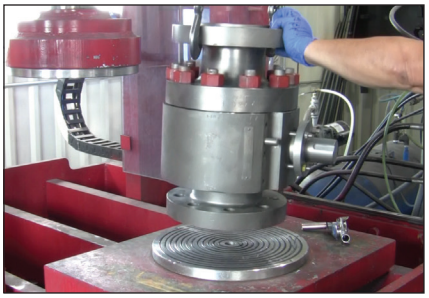
The gland flange **must** be pushed in evenly to prevent “cocking” or side loading, as this could cause damage to the packing and prevent the valve from operating properly.

Watch the gland flange to ensure that it remains **perpendicular** to the stem, and the gap around the stem remains **concentric** during the tightening process.

Do not over-tighten nuts. Torque all nuts **evenly** per the specifications included with the **test certificate** for each individual valve serial number.

18 PRESSURE TESTS

Move valve to test stand.



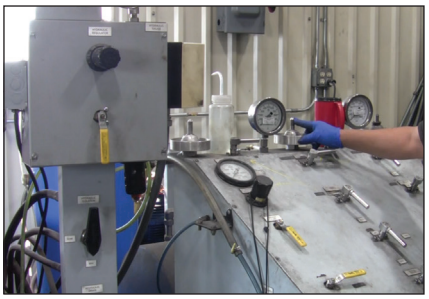
Hydrostatic Shell Test

This test is performed at MOGAS while the ball is partially open. This test is not possible at the field. If partially opening the ball is not possible due to high initial torque, pressure the valve from one side to about 1000 psi while ball is closed. This will reduce the initial breaking torque significantly. Partially open the ball to start the Hydro shell test.

Refer to MOGAS test certificate for pressures or allowable leak rates.

Seat Leakage Test

Verify that the valve is fully closed. Conduct a seat leakage test at 1.1 CWP (cold working pressure)



Re-Assembly

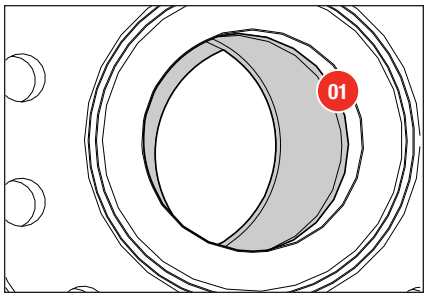
19 **INSTALL HANDLEVER AND VERIFY OPERATION**

Align length of handlever inline on stem **07**. Handlever should slide into place.

Note:

*The MOGAS valve operates **counter-clockwise to open, clockwise to close**.*

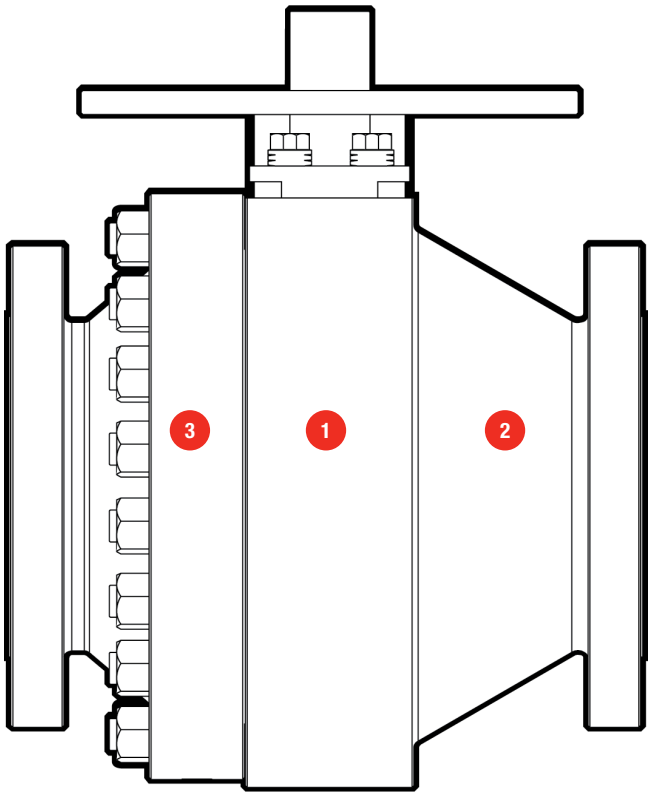
Using the handlever, stroke the ball **01** to ensure it is rotating properly, and that the ball's position matches the **open** / **closed** position of the handlever.



Stroke the ball to ensure proper rotation.

Locate Valve Information

▶ Valve information is provided on the valve in the locations shown.



1 BODY

MANUFACTURER
SIZE
PRESSURE CLASS
MODEL
MATERIAL
HEAT NUMBER
SERIAL NUMBER
MAX. TEMPERATURE
BODY PART NUMBER

2 PRESSURE END

3 END CONNECTION

SIZE
PRESSURE CLASS

▶ Additional information may also be provided on identification tags per customer request.

Return Merchandise Authorizations (RMA)

All valve or valve parts that are **returned** require a Return Merchandise Authorization (RMA). Please have the following information available prior to submitting an RMA request:

- Serial number
- Valve owner
- Application specifics (where the valve is used)
- Media (what goes through the valve)
- Total estimated cycles (from last installation)
- Operating temperature (max. F)
- Operating pressure (max. PSI)
- Actuator specifics

Contact the MOGAS Service department to obtain authorization and to receive shipping instructions. The RMA request may also be submitted online by accessing the **Service** page of our website (**www.mogas.com**).

Service Contact

MOGAS Service may be reached
24 hours per day / 7 days per week.

Telephone: **+1 281.449.0291**

Email: **service@mogas.com**

