

Series 54/FS54/D54 IOM

REVISION: A
DATE: 6-2021

INSTALLATION, OPERATION AND MAINTENANCE FOR SHARPE® SERIES 54/FS54/D54 STANDARD PORT, UNI-BODY FLANGED BALL VALVES



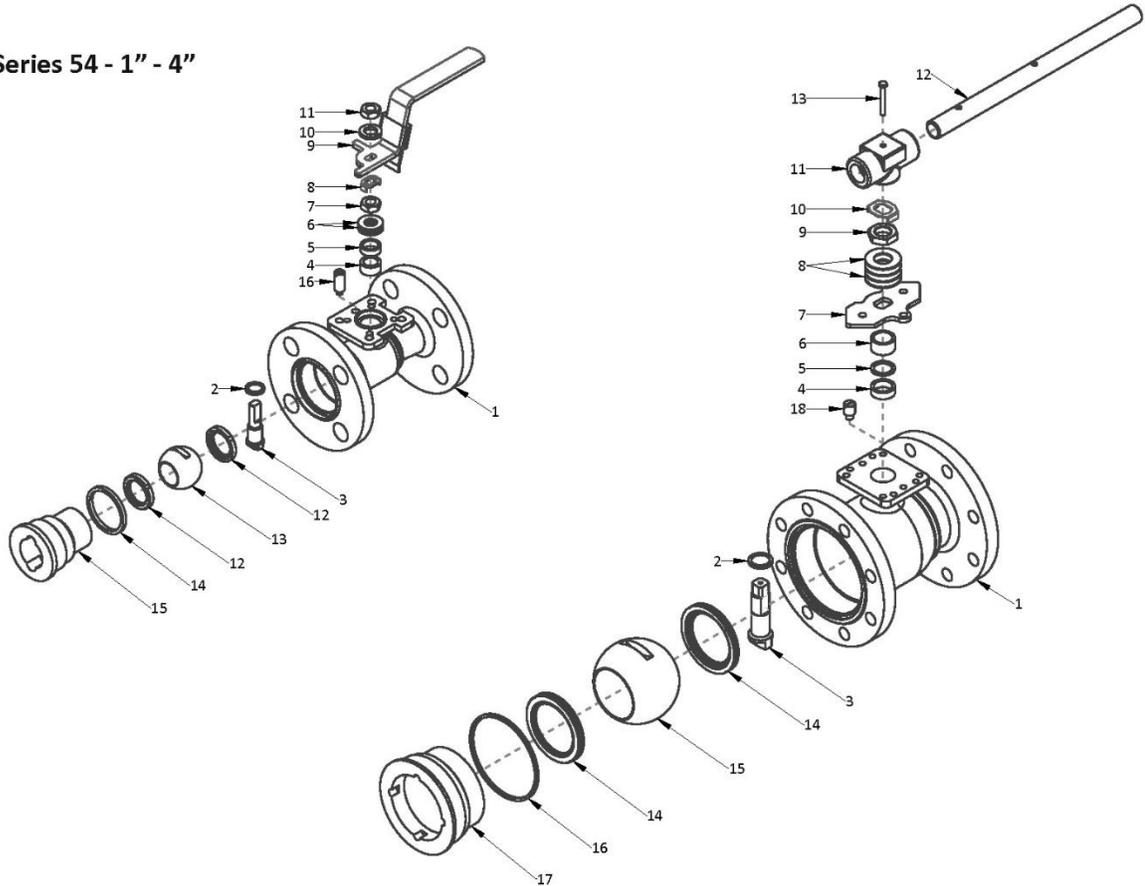
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It is the responsibility of the customer to determine the suitability of ASC-ES products in their particular application.
Disclaimer: Supplier shall not be liable or responsible for omissions or errors in its bulletin

Sharpe® Series 54

Series 54 - 1" - 4"



1" - 2½"

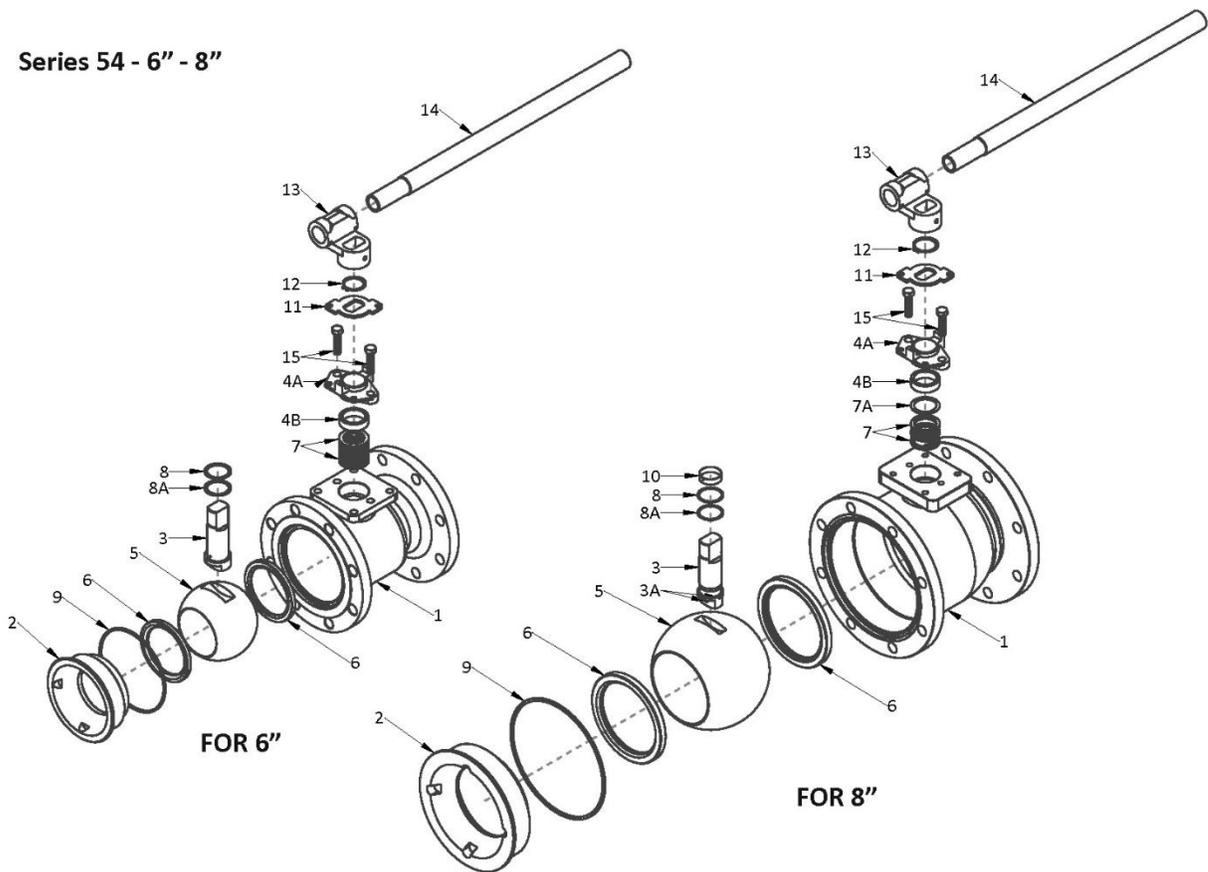
No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	Thrust Bearing	PTFE	1
3	Stem	316 Stainless Steel	1
3A	Anti-Static Device Ball Spring	Located on Stem (Not Shown) 300 Series Stainless Steel Hard Drawn Stainless	2 2
4	Stem Packing	RTFE or Graphite (Fire-Safe)	1-3
5	Packing Gland	300 Series Stainless Steel	1
6	Belleville Washer	300 Series Stainless Steel	4
7	Gland Nut	300 Series Stainless Steel	1
8	Lock Tab	300 Series Stainless Steel	1
9	Handle	300 Series Stainless Steel	1
10	Handle Washer	300 Series Stainless Steel	1
11	Handle Nut	300 Series Stainless Steel	1
12	Seat	TFM™, RTFE	2
13	Ball	316 Stainless Steel	1
14	Body Seal	RTFE or Graphite (Fire-safe)	1
15	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
16	Stop Pin	300 Series Stainless Steel	1

3" - 4"

No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	Thrust Bearing	PTFE	1
3	Stem	316 Stainless Steel	1
3A	Anti-Static Device Ball Spring	Located on Stem (Not Shown) 300 Series Stainless Steel Hard Drawn Stainless	2 2
4	Stem Packing	RTFE or Graphite (Fire-Safe)	1-3
5	Plain Washer	300 Series Stainless Steel	1
6	Packing Gland	300 Series Stainless Steel	1
7	Stop Plate	300 Series Stainless Steel	1
8	Belleville Washer	300 Series Stainless Steel	4
9	Gland Nut	300 Series Stainless Steel	1
10	Lock Tab	300 Series Stainless Steel	1
11	Wrench Block	300 Series Stainless Steel	1
12	Handle Pipe	Galvanized Steel	1
13	Handle Bolt	300 Series Stainless Steel	1
14	Seat	TFM	2
15	Ball	316 Stainless Steel	1
16	Body Seal	RTFE or Graphite (Fire-safe)	1
17	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
18	Stop Pin	300 Series Stainless Steel	1

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Sharpe® Series 54



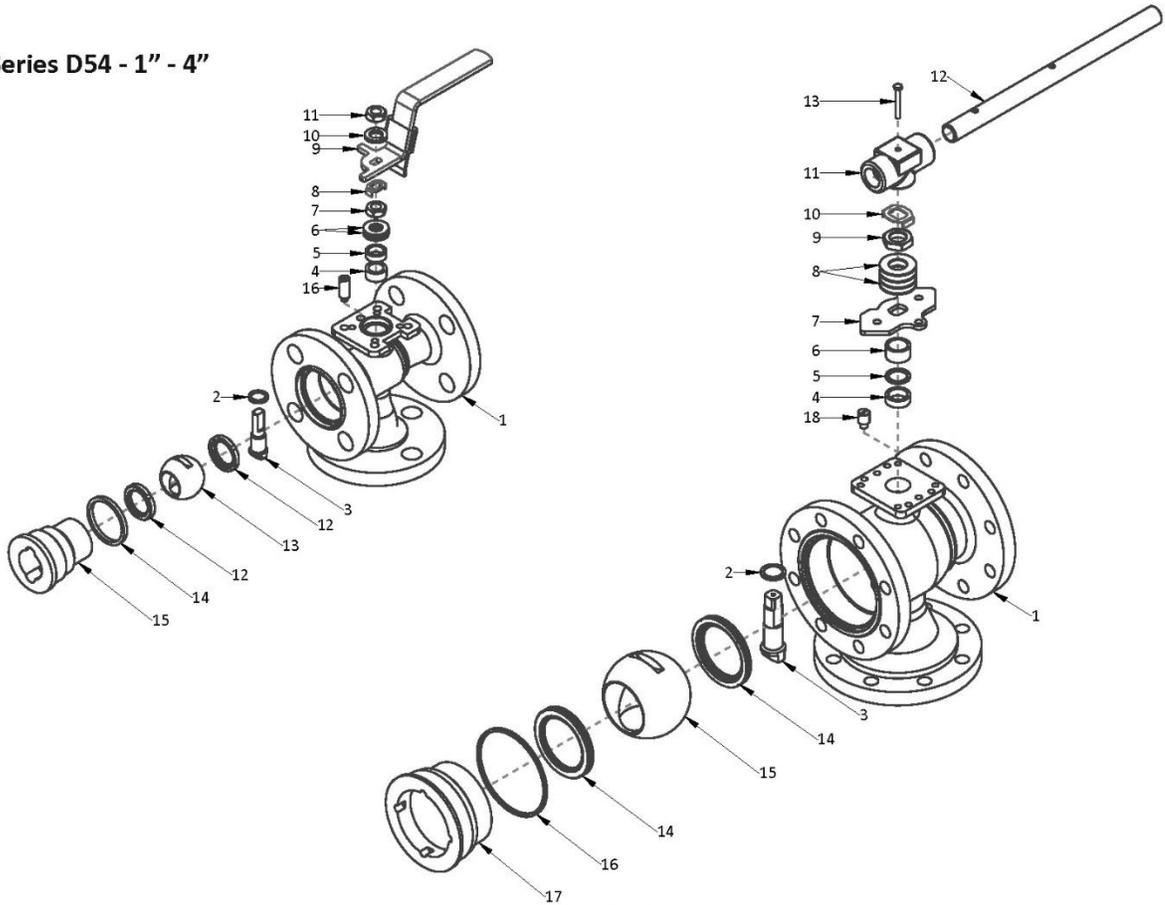
No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
3	Stem	316 Stainless Steel	1
3A	Anti-Static Device Ball Spring	Located on Stem 300 Series Stainless Steel Hard Drawn Stainless	2 2
4A	Gland Flange	300 Series Stainless Steel	1
4B	Sleeve	Carbon Steel 300 Series Stainless Steel	1
5	Ball	316 Stainless Steel	1
6	Seat	RTFE	2

No.	Part Name	Material	Qty
7	Stem Packing	PTFE	4
7A	Ring Gland (8" Only)	300 Series Stainless Steel	1
8	Thrust Bearing (6" Only)	PTFE	1
8	Thrust Bearing (8" Only)	RTFE	1
8A	Thrust Bearing	PTFE	1
9	Body Seal	PTFE	1
10	Stem Bearing (8" Only)	RTFE	1
11	Travel Stop	Zinc Plated Carbon Steel 300 Series Stainless Steel	1
12	Snap Ring	Nickel Plated Carbon Steel	1
13	Wrench Block	300 Series Stainless Steel	1
14	Handle Pipe	Galvanized Steel	1
15	Gland Bolt	Carbon Steel 300 Series Stainless Steel	2

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Sharpe® Series D54

Series D54 - 1" - 4"



1" - 2½"

No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	Thrust Bearing	PTFE	1
3	Stem	316 Stainless Steel	1
3A	Anti-Static Device Ball Spring	Located on Stem (Not Shown) 300 Series Stainless Steel Hard Drawn Stainless	2 2
4	Stem Packing	RTFE	1-3
5	Packing Gland	300 Series Stainless Steel	1
6	Belleville Washer	300 Series Stainless Steel	4
7	Gland Nut	300 Series Stainless Steel	1
8	Lock Tab	300 Series Stainless Steel	1
9	Handle	300 Series Stainless Steel (1"-2") Galvanized Steel (2-1/2")	1
10	Handle Washer	300 Series Stainless Steel	1
11	Handle Nut	300 Series Stainless Steel	1
12	Seat	TFM™, PTFE, Nova	2
13	Ball	316 Stainless Steel	1
14	Body Seal	PTFE or Graphite	1
15	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
16	Stop Pin	300 Series Stainless Steel	1

3" - 4"

No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	Thrust Bearing	PTFE	1
3	Stem	316 Stainless Steel	1
3A	Anti-Static Device Ball Spring	Located on Stem (Not Shown) 300 Series Stainless Steel Hard Drawn Stainless	2 2
4	Stem Packing	RTFE or Graphite	1-3
5	Plain Washer	300 Series Stainless Steel	1
6	Packing Gland	300 Series Stainless Steel	1
7	Stop Plate	300 Series Stainless Steel	1
8	Belleville Washer	300 Series Stainless Steel	4
9	Gland Nut	300 Series Stainless Steel	1
10	Lock Tab	300 Series Stainless Steel	1
11	Wrench Block	300 Series Stainless Steel	1
12	Handle Pipe	Galvanized Steel	1
13	Handle Bolt	300 Series Stainless Steel	1
14	Seat	TFM™, PTFE, RTFE, Nova	2
15	Ball	316 Stainless Steel	1
16	Body Seal	PTFE or Graphite	1
17	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
18	Stop Pin	300 Series Stainless Steel	1

It is the responsibility of the customer to determine the suitability of ASC-ES products in their particular application.

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Sharpe® brand ball valves have been designed and engineered to provide long lasting and trouble-free service when used in accordance with the instructions and specifications herein.

• General

- The following instructions only refer to the Sharpe® brand standard valves as described in this document.
- Keep the protective covering in place until the moment of installation. Valve performance depends upon the prevention of damage to the ball surface. Upon removal of the covers, make sure that the valve is completely open and free of obstructions.
- When shipped, valves may contain a silicon based lubricant which aids in the assembly of the valve.

• Safety Precautions

- Before removing valve from pipeline: media flowing through a valve may be corrosive, toxic, flammable, or of a contaminant nature. Where there is evidence of harmful fluids having flowed through the valve, the utmost care must be taken. It is suggested that at least the following safety precautions should be taken when handling the valves. More precautions may be required, refer to the media's Safety Data Sheet for additional precautions.
 1. Always wear eye shields
 2. Always wear gloves and overalls
 3. Wear protective footwear
 4. Wear protective headgear
 5. Ensure that running water is easily available
 6. Have a suitable fire extinguisher ready if the media is flammable
- By checking line gauges, ensure that no pressure exits on either the upstream or the downstream sides of the valve.
- Ensure that any media is released by operating the valve slowly to the half-open position.
- Ideally, the valve should be decontaminated when the ball is in the half-open position and then leave the valve in the fully open position.

OPERATION

- Sharpe® brand valves provide tight shut off when used under normal conditions and in accordance with Sharpe® brand valves published pressure/temperature charts.
- If these valves are used in a partially open (throttled) position, seat life will be reduced and it is not recommended.
- Any media which might solidify, crystallize or polymerize should not be allowed to stand in the ball valve cavities unless regular maintenance is provided.

• Manual Operation

- The type of handle which is fitted to valves sizes 1" to 2½" is a formed handle with integral stop.
- The type of handle which is fitted to valve size 3" to 8" is a wrench block with a handle pipe and a stop plate. Note that the D54 series is only offered up to 4".
- Sharpe® brand valves have a ¼ turn operation.
 - It is possible to see when the valve is open or closed by the position of the handle:
 - When the handle is perpendicular to the pipeline the valve is closed.
 - When the handle is parallel to the pipeline the valve is open.

• Remote Operation

- Where manual operation is not required, valves may be automated for remote operation, instrument control, etc. A range of Sharpe® brand pneumatic and electric actuators are available.
- Operation will be in accordance with the Sharpe® brand installation, operation and maintenance instructions for the relevant actuator.

INSTALLATION

- ASC Engineered Solutions cannot anticipate all of the situations a user may encounter while installing and using the valve.
- The user must know and follow all applicable industry specifications and government regulations for the safe installation and use of these valves.

- Only qualified personnel or technicians who are trained for maintenance work and have read the instructions are to install the valve.
- Misapplication of the product may result in injuries or property damage of which ASC Engineered Solutions is not liable for.
- Before installing the valves, the pipes must be flushed clean of dirt, burrs and welding residues, or you will damage the seats and ball surface.
- These valves should be installed using good pipe fitting practices.

MAINTENANCE

• General

- Sharpe® brand valves are designed to have a long, trouble-free life.
- When necessary, valves may be refurbished, using a small number of components, none of which require machining.
- Sharpe® brand valves are designed for easy service and assembly in the field.
- The following checks should, however, help to extend valve life or reduce plant problems.

• Stem Seal Adjustment:

- If leakage is evident from the stem packing area examine the disk springs for damage. If in good condition, tighten the packing nut until disk springs are firmly compressed, then back the nut off 1/16" of a turn.
 - If not cured by the simple means described above, it would necessitate dismantling valve
- If the disc springs are damaged, dismantle the stem down to the gland, fit new disk springs with their outer edges touching. Put the first spring concave side up and the second spring concave side down. Repeat that with the other two springs. Further maintenance necessitates dismantling of the valve.

• In-Line Leakage

- Check that the valve is fully closed. If it is, leakage may be due to a damaged seat or ball sealing surface and it will be necessary to dismantle the valve.

• Leakage at Pipeline Joint

- Test for tightness of the flange connection bolts. If loose, tighten with standard wrench - excessive force will only damage the connection. Normal jointing materials should be used in the correct quantity.

• Refurbishing

Before disassembly of valves follow these instructions.

- Cycle the valve with the line pressure fully relieved before attempting to the remove the valve from the pipeline to insure pressure has also been discharged from the valve cavity.
- Remove flange bolts and nuts and lift valve from the line. Care should be taken to avoid scratching or damaging flange facings.
- Remove the handle nut/ wrench bolt, handle/wrench block, and travel stop plate.
 - Actuated valves will not have handle nut/ wrench bolt, handle/wrench block, and travel stop plate.
- Remove stem nut locking tab, stem nut, disc springs, and gland ring from stem. It is normally not possible to remove the stem packing at this stage.
- Unscrew end plug, using a spanner wrench. One seat should come out with end plug.
- Remove body seal and dispose of it along with the used seats. A new body seal and seats should always be used after the end plug has been removed and the valve taken apart.
- To take out the ball, rotate stem so ball is in fully closed position. Carefully lift the ball off the stem tang and from body with a “rolling” motion. Note: Extreme caution should be taken to avoid damage to the ball.
- Remove the other seat and discard it.
- The stem can only be removed from inside the body. The thrust bearing should come out with the stem. Stem packing may now be removed from the top of the stem bore.
- Clean and inspect all metal parts. Replace the ball and/or stem if the seating or sealing surfaces have been damaged, worn, or corroded.

- Stem seals, seats, and body seal must be replaced whenever the valve is disassembled to avoid seal leakage and ensure proper performance. Use only Sharpe® brand replacement parts.

• Rebuilding

Before rebuilding, check that all the correct components are available and that they are fit for re-assembling. When rebuilding, cleanliness is essential to allow long valve life and provide cost-effective maintenance.

Note: The valve may be assembled and operated dry where no lubricants are allowed in the system; however, a light lubrication of mating parts will aid in assembly and reduce initial operating torque. Lubricant used must be compatible with the intended line fluid.

- Install one seat in the body cavity with the spherical curvature facing the ball.
- Install the thrust bearings on the stem and slide the stem up through the body into the stem hole.
- Install the new stem seals, gland ring, and disc springs onto the stem.
- Install gland nut and tighten to the torque values given in Table 1.
- Install the gland nut locking tab or cap. If needed, tighten gland nut slightly if necessary to align nut with locking device surfaces.
- Install travel stop and handle. Make sure handle aligns with the flow bore through the ball. Install handle nut or wrench block and bolt.
 - Actuated valves will not have a handle, handle nut, wrench bolt/block, or travel stop.
- Turn the handle to the CLOSED position. Line up the ball slot with the stem tang and slide the ball into position on the stem tang. Turn the handle to the OPEN position to hold the ball in place.
- Thread the end plug into the body with no seal or seat until it stops at its final position.
 - Some anti-seize lubricant should be used on the threads to aid in removal if the application allows for it.
- Mark a temporary radial line across the end piece and the body to indicate that position and then remove the end plug.

- Install the remaining seat into end plug.
- Place new body seal into counter bore in the valve body.
- Install the end plug into the body using the spanner wrench and tighten until the marked lines of the body and end piece align.
 - Note: Be careful not to damage body seal when installing the end plug.
- Cycle the valve open and close several times slowly to ensure that the operation is smooth and free of binding or sticking.
- Pressure test valve, if possible, before reinstalling in pipeline.

• Repair kits

- Repair kits are available from Sharpe® that contain all the soft parts as well as new spring washers.
- When ordering repair kits, please be sure to specify type and size of valve and seating material required.
- Where a valve needs repairing, rather than maintaining, it must be noted that only Sharpe® brand authorized spare parts should be used, and these include basic components such as bolts, screws, and nuts, etc.
- In addition to maintenance kits, spare parts available from Sharpe® are balls, stems, and glands. If additional parts are required, it is normally recommended that the complete valve be replaced.
- Parts from different series should not be interchanged. This is to ensure, so far as it is reasonably practicable, that the valve remains capable of being used for the purpose for which it was designed and constructed, without risk to health and safety of plant personnel.

❖ Gland Nut Tightening Torque Table 1

Valve Size	Torque (lb-ft)
1"	6
1 ½" – 4"	22
6" – 8"	42

- Note: Torque values are for TFE/RTFE or flexible graphite packing seals. For other materials contact Sharpe®.