

Doc. No.	W070227		WORK INSTRUCTION FOR	Dembla Valves Ltd. THANE
Page No.	1 of 15			
	No	Date	Trunnion Mounted Ball Valve Series-8200 FO	
Issue	01	02.01.15		
Revision	00			

PREPARED BY		APPROVED BY	
SIGNATURE	Design Department	SIGNATURE	CTO
DATE	02.01.15	DATE	02.01.15



Dembla

Instruction Manual

Trunnion Mounted Ball Valve Series-8200FO





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1.0 Foreword

1.1 Scope of Instruction Manual

This Instruction Manual covers information regarding Installation and Maintenance of Dembla's O Ball Valve Flange Design, Series 8000.

1.2 Copyrights and Modification Rights Reservation

Dembla Valves Ltd. retains the Copyright on the contents of this Instruction Manual.

The Total content of this Instruction Manual described here corresponds to the Information during preparation of the Instruction Manual. It is user's responsibility to refer the latest version.

All data, specifications and Illustrations here are subjected to Technical Modifications and improvements and hence Modification can be done by us at any time without any prior notice. No claim to Modification or repair of these Valves, which have already been supplied by us, can be made.

2.0 Storage & Preservation

All Valves are dispatched in the closed/open position as ordered and it is recommended that they are left in this position during storage. All protective packing should remain in position until the Valve is to be installed. Valve should be stored in a clean and dry environment, without disturbing company setting. (e.g. Gland, Seat etc.) Protect it from shock & lifting damage.




If hoisting the Valve, use a nylon sling to protect the surface. Carefully position the sling to prevent damage to Actuator tubing and any accessory. Also, take care to prevent people from being injured in case the hoist or rigging slips unexpectedly. For Valve Weight refer Valve Packing Slip.

3.0 Valve Marking

- 1) Valve name plate attached on Valve by riveting carrying all Valve Identification Information.
- 2) Markings like Valve Size, Rating, Material etc. are as cast on valve Bodies.
- 3) Valve Serial no. punched on Valve Body Flange for Valve Traceability.
- 4) If the product is not CE marked, Then name plate also without CE mark.

TAG No.	<input type="text"/>	PS@TS bar(g)@°C	<input type="text"/>	MAXIMUM OPERATING PRESSURE AT MAXIMUM OPERATING TEMPERATURE.
Sr. No.	<input type="text"/>	PS@TS bar(g)@°C	<input type="text"/>	MAXIMUM OPERATING PRESSURE AT MINIMUM OPERATING TEMPERATURE.
SERIES	<input type="text"/>	IMPACT °C	<input type="text"/>	IMPACT TEST TEMPERATURE
DNxRATING	<input type="text"/>	AIR TO	<input type="text"/>	AIR TO OPEN/AIR TO CLOSE
⊕ TYPE	<input type="text"/>	ACT. MODEL	<input type="text"/>	⊕ VALVE TRAVEL
BODY MOC	<input type="text"/>	STROKE	<input type="text"/>	
BALL / DISC MOC	<input type="text"/>	AIR SUPPLY	<input type="text"/>	
SHAFT MOC	<input type="text"/>			
MONTH-YR	<input type="text"/>			



Name plate for Series:-8000 Valves



4.0 Health & Safety

- 1) Before attending to Valve Installation / Maintenance, the Instruction Manual must be compulsorily read and understood properly.
- 2) Valve must be operated by qualified personnel.
- 3) Ensure that the operator handling these Valves must follow Safety and Accident Prevention Rules and Regulations.
- 4) Follow the Safety Instructions before Installation, Maintenance or removing the Valve.
- 5) Always wear protective gloves, clothing and eyewear when performing any Installation operations to avoid personal injury.
- 6) All Safety Messages such as Cautions, Warnings and Notes are highlighted in this Instruction Manual which must be strictly followed to avoid any possibility of arising danger / risk of damage to the equipment/person's life
- 7) No Liability on Manufacturer for any wrong handling, improper commissioning and wrong assembly.
- 8) Line must be fully drained and de-pressurized before Installation or Maintenance of Valve.
- 9) Never handle Valves that have been used on harmful substances unless they have been completely decontaminated and certified safe to handle.
- 10) Due to the large physical size and weight of some size of this product, always use correct lifting methods and equipment when Installing , removing and Maintaining the product: Use lifting lugs on the body, wherever provided. Valve without lifting lugs-use chains or slings wrapped around the Body. Do not attempt to lift the Valve using the sealant fittings, gear unit, handwheel, Actuator, or the Valve Stem.
- 11) If the processes or environments that the products are used in are likely to cause temperature (high or low) that may cause injury to person if touched, then adequate insulation /protection must be fitted. It is recommended that the insulation allows easy access for Maintenance , to the sealant fittings , and to the Valve operator.
- 12) Valve must be protected from earthquake loading, traffic & wind.
- 13) No Modification / Conversions are allowed without written authorization from Dembla Valves Ltd.

5.0 Unpacking

For Carton

Keep Carton in position (Carton 'up side' should not be 'down').

Cut plastic strip properly which is tied around Carton & remove it. (White in colour).

Cut cello tape properly which is stuck on Carton opening.

Open Carton properly.

Remove foam properly along with polythene wrapping.

Lift the valve properly & keep on clean & dry place

For Wooden Box

Keep Wooden Box in Position ('upside' of Wooden Box should not 'down').

Cut iron strip properly which is tied around Wooden Box & remove it.

Remove nail properly from top cover with proper equipment.

Loosen and remove Valve fixing nut (from inside of Box).

Lift the valve properly as shown in figure 1

6.0 Lifting Details

Valve should be lifted by using chain

or bearer cables that are looped around

the valve body as shown in figure 1.

(Take care valve should not damage while handing).

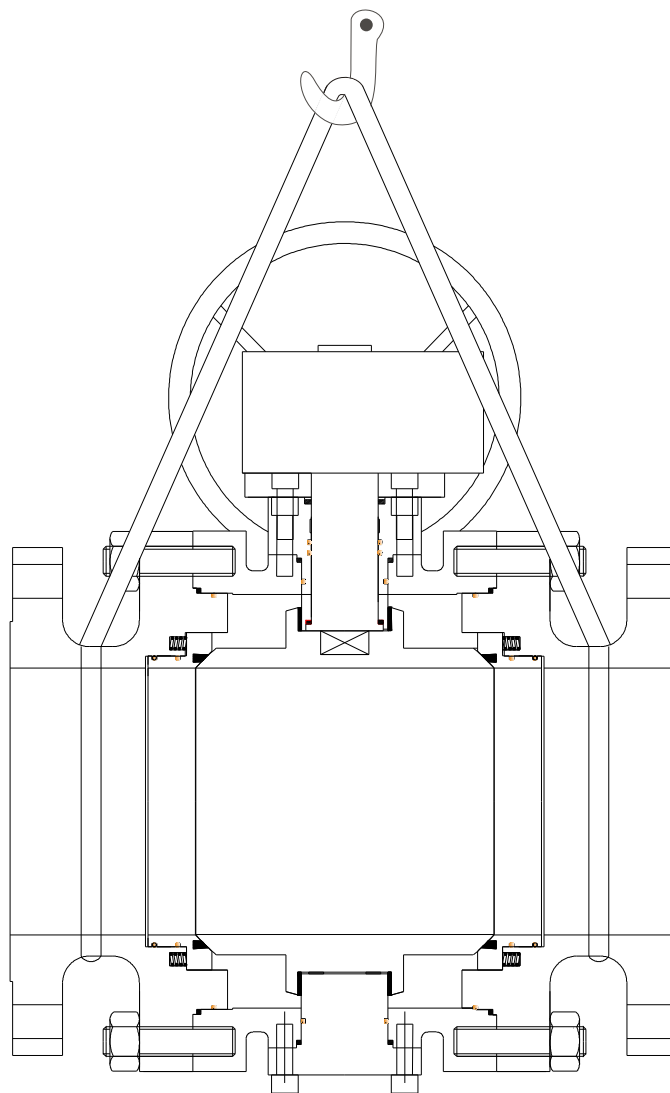


Fig. 1

7.0 Installation

7.1 Pre-installation Checks:-

Before installing any Control Valve

Inspect it for any shipment damage and for foreign material that might have collected during packing and shipment.

Blow out all pipelines to remove pipe scale-chips, welding-slag, and other foreign materials.

Install the Valve using accepted piping practices. Use a suitable gasket between the Body and pipeline Flanges and tighten the Bolts evenly to avoid any strain on the Body or cracking of Flange.

Install the Control Valve preferably in a straight run of pipe away from bends or sections of abnormal Velocity.

Control valves can be installed in any orientation but the normal method is with the actuator vertical.

An air supply pressure regulator with filter should be installed in the air line ahead of any instrument mounted on the valves.



Always wear protective gloves, clothing, and eye ware when performing any Installation operation to avoid personal injury.

Valve should be used by End-user with same pressure & temperature rating which was given in purchase order. If there is any change please contact Dembla Sales Office.

Avoid personal injury or property damage caused by components dropping .With the Valve or Actuator upside, components may drop during disassembly or assembly. Be careful not to position yourself below the Valve in the path of falling parts.

Our Valves can not be used for defiance, Nuclear, Telecommunication, Marine, Railway, Laboratory & Mines.

Our valve is valid for atmospheres having pressure ranging for 0.8 bar to 1.1 bar and temperatures ranging for -20°C to +60°C such atmospheres.

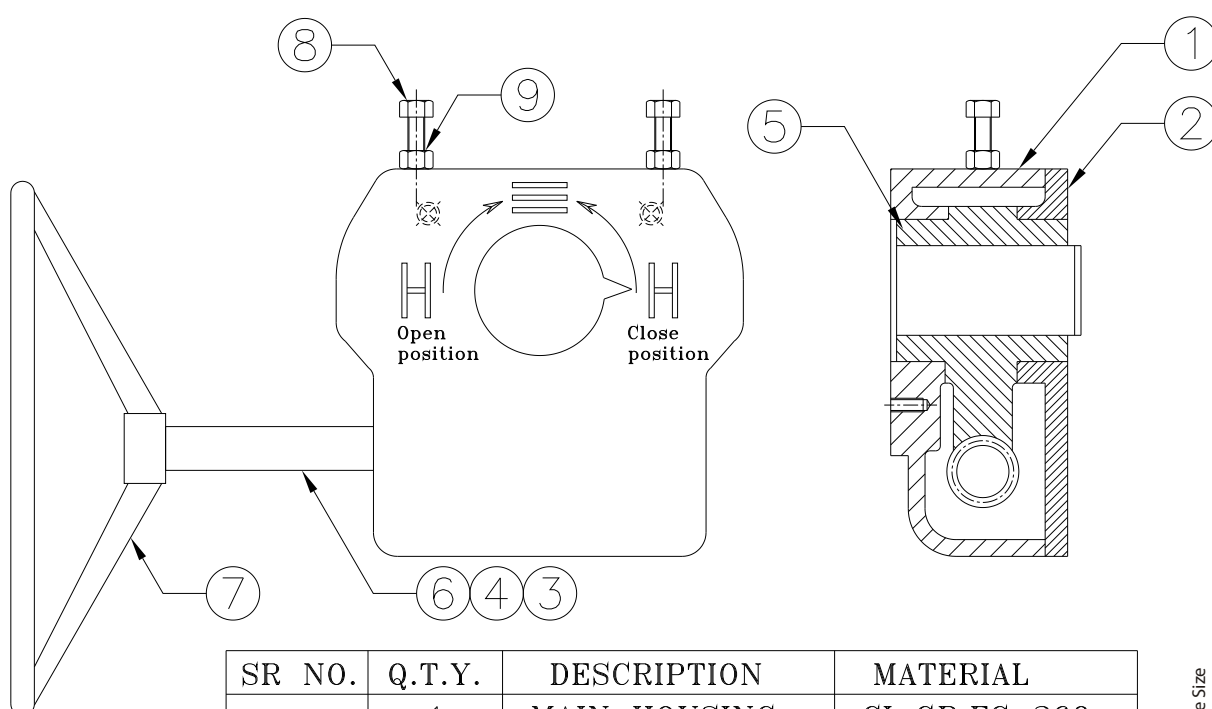
Please connect earthing with earthing pad on Body before operating the Valve.

8.0 Operation Of The Valve

Ensure that the force applied on the hand wheel of the Gear bore or Lever shall not exceed 360 N.

Clockwise rotation of Hand wheel close the valve & anticlockwise rotation open the Valve for gear operated Valves.

Do not disturb the Gear Box open / close adjustment bolt setting unless & utilities required.



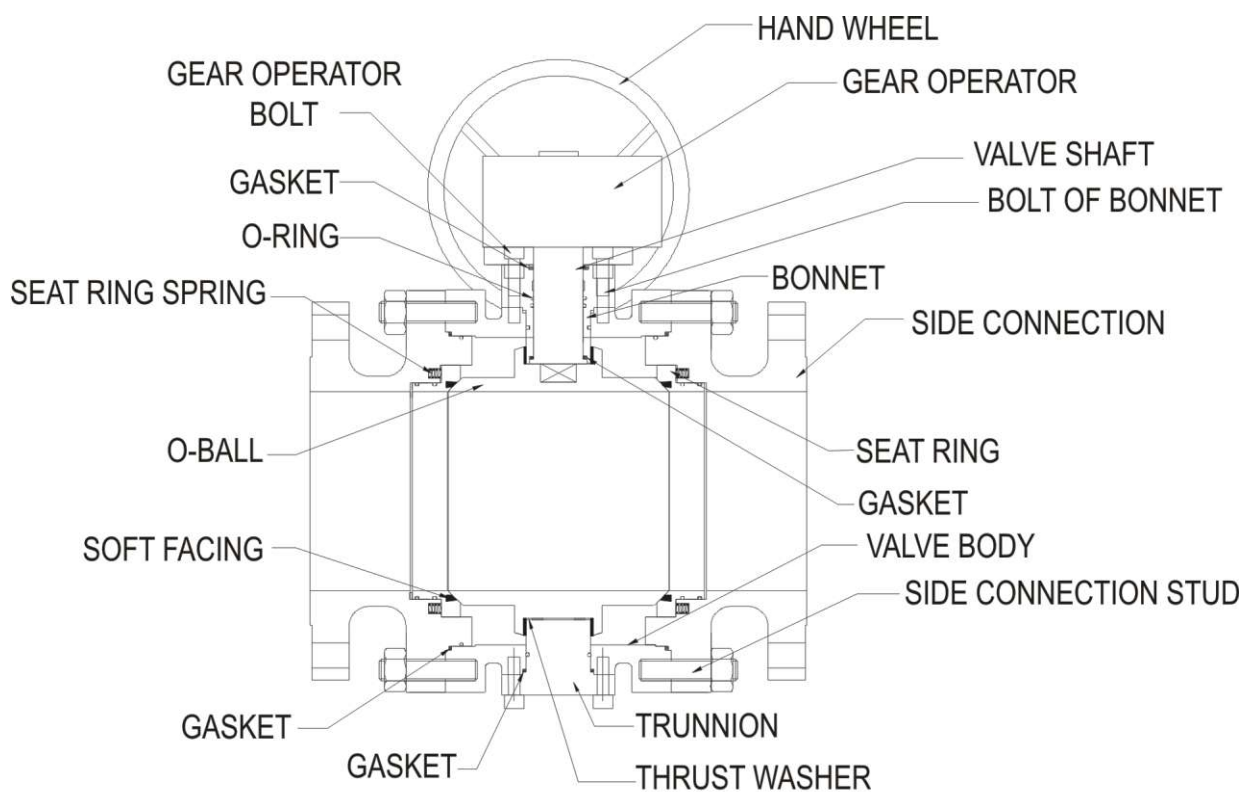
SR NO.	Q.T.Y.	DESCRIPTION	MATERIAL
1	1	MAIN HOUSING	CI GR.FG 260
2	1	COVER	CI GR.FG 260
3	1	INPUT SHAFT	En8
4	1	WORM	En8
5	1	WORM WHEEL	S.G.IRON
6	2	THRUST BEARING	STD
7	1	HAND WHEEL	M.S.
8	2	STOPPER	M.S.
9	2	LOCK NUT	M.S.

*According to valve Size

DRG No.1



9.0 General Instruction for Disassembly & Reassembly of Valve



Before starting disassembly.

Use by-pass Valve or completely shut off the process to isolate the Valve from process pressure.

Drain fluid from both ends of the Valve.

If the Valve opens with pneumatic signal pressure to actuator, remove air from the Actuator before attempting to remove Valve from line.

While dismantling the Valve, if any part is stuck up, do not use any pressure or force technique.

Use proven methods only.

10.0 A Disassembly Trunnion Mounted Ball Valves.

1. Keep the Valve in vertical position (Gear Operator at top side as shown).
2. Loosen & remove Gear operator Bolts carefully.
3. Lift the Gear Operator carefully from the Valve Body.
4. Loosen & remove Nuts form side connection Studs.(from both side)
5. Take out the side connections from the Valve Body along with 'O' ring, Seat Ring Spring & Seating.
6. Remove Seat Ring from Side Connection (Seat Ring is a set of 2 'O' Ring, Seat Retainer, Soft Facing).
7. Loosen and remove Actuator Mounting Flange Bolts.
8. Remove Actuator Mounting Flange.
9. Change the Valve position and keep it horizontal position on soft surface (Pipe Line center vertical).
10. Ball should be Guide form Bottom Side with Soft Guide.
10. Loosen & remove Bolt from Bonnet.
11. Insert 1 ½" long Bolt in Bonnet lifting tap hole (bolt size should be same with respect to tap hole)
12. Tighten Bonnet lifting Bolts with equal and opposite tightening. Because of tightening bonnet will come out with 'O' Rings.
13. Remove Body, Bonnet and Gasket.
14. Remove Valve Shaft form Valve Body.
15. Loosen and Remove Trunnion Bolt.
16. Insert 1 ½" Long Bolt in Trunnion lifting tap hole (bolt size should be same with respect to tap hole).
17. Tighten Trunnion lifting Bolt with equal and opposite tightening. Because of tightening trunnion will come out with 'O' Rings.
18. Remove 'O' ball from Valve Body with Thrust Washer.
19. Remove Thrust Washer from 'O' Ball.
20. Keep all parts of Ball Valve in clean dry & soft space.

10.0 B Reassembly - Trunnion Mounted Ball Valves.

Before reassembly, inspect all internal part of Valve.

Damaged internally to be replaced by genuine & with recommended parts only.

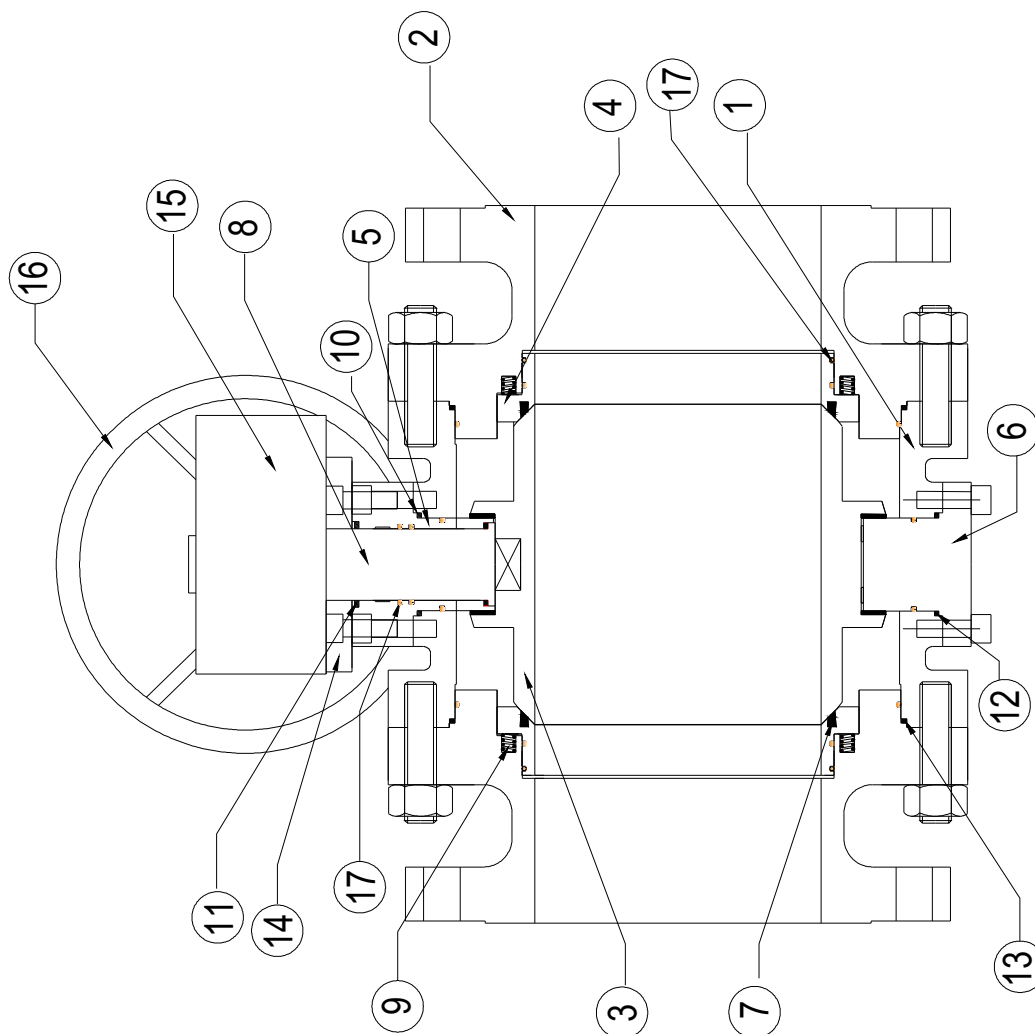
1. Keep the Valve Body horizontal on soft dry surface (pipe line center vertical).
2. Provided padding surface for 'O' Ball which maintain Shaft center of Valve Body.
3. Insert 'O' Ball in Valve Body with respect to shaft position & Thrust Washer should inside it with respect to position (as shown in figure1).
4. Insert Gasket for Trunnion.
5. Insert Trunnion in Valve Body with 'O' Rings. (If required change 'O' Ring before installation).
6. Insert Bolt in Trunnion.
7. Tighten Trunnion Bolt with equal & opposite position.
8. Insert Shaft in 'O' Ball from Bonnet side opening with Gasket.
9. Insert the Gasket in Body for Bonnet.
10. Insert the Bonnet in Body with 'O' Ring (if required change 'O' Ring before installation).
11. Insert Bolt in Bonnet.
12. Tighten the Bolt with equal & opposite position.
13. Put Actuator Mounting Flange on Bonnet in position.
14. Insert and tighten bolt in Actuator Mounting Flange.
15. Put Gear Operator on Actuator Mounting Plate Flange by maintaining the position of Valve Shaft.
16. Insert Seat Ring Springs in side connection.
17. Insert Seat Ring seating is a set of 2 'O' Rings, Seat Retainer, Soft Facing) in side connection properly refer. Fig.1
18. Install side connection with seating Gasket & 'O' Rings on Body.
19. Tighten side connection bolts properly.



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11.0 Parts Illustrated

Sr. No.	Part	Qty.
1	Body	1
2	Side Connection	2
3	O-Ball	1
4	Seat Ring	2
5	Bonnet	1
6	Trunnion	1
7	Soft Facing	-
8	Valve Shaft	1
9	Seat Ring Spring	*
10	Gasket (Body to Bonnet)	1
11	Gasket (Mounting Flange to Bonnet)	1
12	Gasket (Body To Trunnion)	1
13	Gasket (Side Connection & Body)	2
14	Actuator Mounting Flange	1
15	Gear Operator	1
16	Hand Wheel	1
17	"O" Ring (Seating)	2
18	"O" Ring (Side Connection)	1
19	"O" Ring (Bonnet)	3



*According To Valve Size

12.0 Preventive Maintenance

Periodically check for any damage to Valve seats, ball & stem of the Valve.

While doing periodical checks, it is recommended that the Seats, Gasket, Seals and Packing should be replaced by genuine spares.

Ensure periodical lubrication of Gear Box with suitable grade of grease.

13.0 Trouble Shooting

No.	Condition	Possible Cause	Corrective Action
1	Gland Leakage	Worn out 'O' Ring.	Replace Gland 'O' Ring
2	Seat Leakage	Sealing edge of seat damaged	Replace soft seat
		Valve pressurized to high pressure	Reduce line pressure to rated pressure
		Fluid is abrasive and eroding away the components	Replace the worn out component of valve with material suitable for abrasive media
3	Valve does not open / close fully	Foreign object got stuck up between 'O' Ball and seat	Open the valve and clean the line / valve to remove foreign object
		Disturbed calibration	Correct calibration.
4	Opening / Closing torque excessive	Foreign object got stuck up between 'O' ball and seat	Open the valve and clean the line / valve to remove foreign object

14.0 Recommended Spares

It is recommended to stock the following spares parts for commissioning and routine service.

SR. NO.	PART NAME	RECOMMENDED QUANTITY
4	Seat Ring	One Set for every valve
17,18,19	'O' Rings(all)	One set of 'O' Ring for every five valve
10,11,12,13	Gasket (all)	One set of gasket for every five valve

Note: While ordering spares, please do not miss to indicate 'Valve Serial No.' appearing on nameplate fixed on the Actuator Valve Serial No. also appears on the Valve Body dully punched. The valve serial no. Begins with prefix V, eg V - 12345.....

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Valve Disposal Detail : After the complete use of valve. Dispose the valve with accessories as per your local laws.



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