CLOW

Clow Valve Co.

902 South 2nd Street
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14"- 24" RESILIENT SEAT GATE VALVE WITH NO GEARING

O & M MANUAL

TABLE OF CONTENTS

Page 1	General Info/Installation Instructions
Page 2	Operation/Inspection & Maintenance
Page 3	Records
Page 4	RW GV 14" & 16" Parts List Recommended Spare Parts
Page 5	RW GV 18" & 20" Parts List Recommended Spare Parts
Page 6	RW GV 24" Parts List Recommended Spare Parts
Page 7	14" – 20" RW Valve Dissassembly
Page 8	24" RW Valve Dissassembly
Page 9	Troubleshooting

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INSTALLATION, OPERATION AND MAINTENANCE MANUAL

RESILIENT SEAT GATE VALVE

GENERAL; *Inspect all valves at time of delivery for shipping damage and to confirm compliance with specifications. Valves are completely tested per the appropriate standards and specifications by the manufacturer. The valves should be stored in such a manner to protect them from weather and blowing dirt and debris. In cold climates, if water is allowed to freeze in the valve, severe damage to the valve components could result. Any packaging should be replaced if removed for inspection. Proper slinging and handling methods should be used when moving valves. Do not place slings or other devices around operating stem or through the valve port opening.*

I. Installation

1. *Check that valve end joints are clean. Again check for damage to the valve. Open and close valve to insure proper operation. Close wedge before placing valve in trench or line.*

2. *Handle valve carefully. Do not drop into position. Do not sling through the port opening.*

3. *Prepare pipe ends according to manufacturer's instructions. Install valve per proper methods according to end joint type. All piping should be properly supported to avoid line stress on the valve. Do not use the valve as a jack to force a pipeline into position.*

4. *A valve box or vault should be provided for each valve used in buried service application. These should be installed such that no load is transferred to the valve.*

5. *Before pressurization of the pipeline and valve, all pressure containing bolting (cover, follower plate, end connection) should be inspected for adequate tightness (usually 90 ft. lb.).*

6. *Buried valves should be pressurized before backfilling.*

7. *With valve in open position, the entire system should be thoroughly flushed to clean the system. Debris in the valve could prevent valve from closing or possibly damage the resilient material on the wedge.*

8. *Upon completion of the installation: gate valve location, size, type, date of installation, number of turns to open, direction of opening, and any other special information should be entered on permanent records.*

II. Operation

1. *Do not operate valves in systems that exceed the rated working pressure of the valve, (14"-24" 250 psi).*

   System should be completely flushed before valve is operated in normal cycle.

2. *The R/W valve opens and closes by turning the main valve stem with an operating nut or handwheel. The valve closes by compressing the resilient material bonded to the wedge against the valve body. As the material is being compressed (at end of closing cycle) torque requirements will approach maximum. Opening the valve requires significantly less torque.*

3. *If the valve should fail to seal after necessary number of turns, open the valve four or five times and reseat.*

   Emergency Operation;

   Turn the handwheel of operating nut faster in the desired direction.

III. Inspection and Maintenance

1. *Frequency of inspection should be based on frequency of operation. Semi annual inspections are minimum recommended. Valves should not be disassembled unless a breakdown has occurred.*

2. *During inspection, the valve should be opened and closed with pressure in the pipeline. The valve should function freely with no binding or vibration. Count the number of turns to full closed, this will reveal an obstruction if correct number of turns are not achieved. See table;*

TURNS TO OPEN
14" - 52
16" - 52
18" - *64*
20" - *64*
24" - 76

3. *All gaskets and joints should be checked for leakage and tightness.*

4. *With the valve closed and pressure against the disc, a check for leakage Is possible by "listening" to the valve for flow. A stethescope will help in this procedure.*

5. *OS&Y valves should have the exposed stem lubricated at each inspection. Check stuffing box bolts for tightness.*

6. *A permanent inspection record should be kept for each valve.*

RECORDS

1. Trouble can be anticipated with a good Inspection Program. Such a program can not exist without good records. Poor records are worse than none.

2. A printed 5 x 8 record card for each valve and hydrant in the system is most convenient.

   a. Identification of each valve is essential. Setting up a numbering system is one of the first steps to take. A reasonably simple method is to assign a number to each street intersection, then identify each valve numerically or alphabetically between intersection numbers.
   For instance; I9-I10, would be the number of second valve from street intersection number 9 in going toward street number 10.

   b. Location should be recorded first. Measurements must be made from property lines or street center lines – not power poles fence lines - or the like.

VALVE RECORD

No._____

Location _____FT._____of_____Prop. Line of_____

And_____ FT._____of_____Prop. Line of_____

Size_____Make_____Type_____ Gearing_____Bypass_____

Opens_____Turns to Operate _____Depth of Nut_____

Remarks_____

Maintenance & Inspection Record

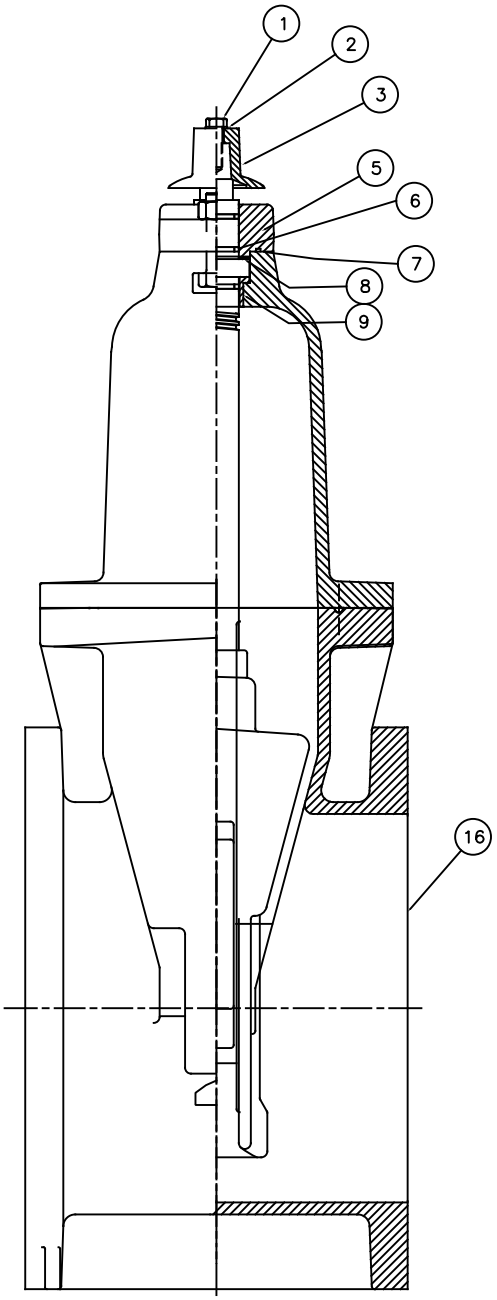
Date	Work Done	O.K.	By	Date	Work Done	O.K.	By

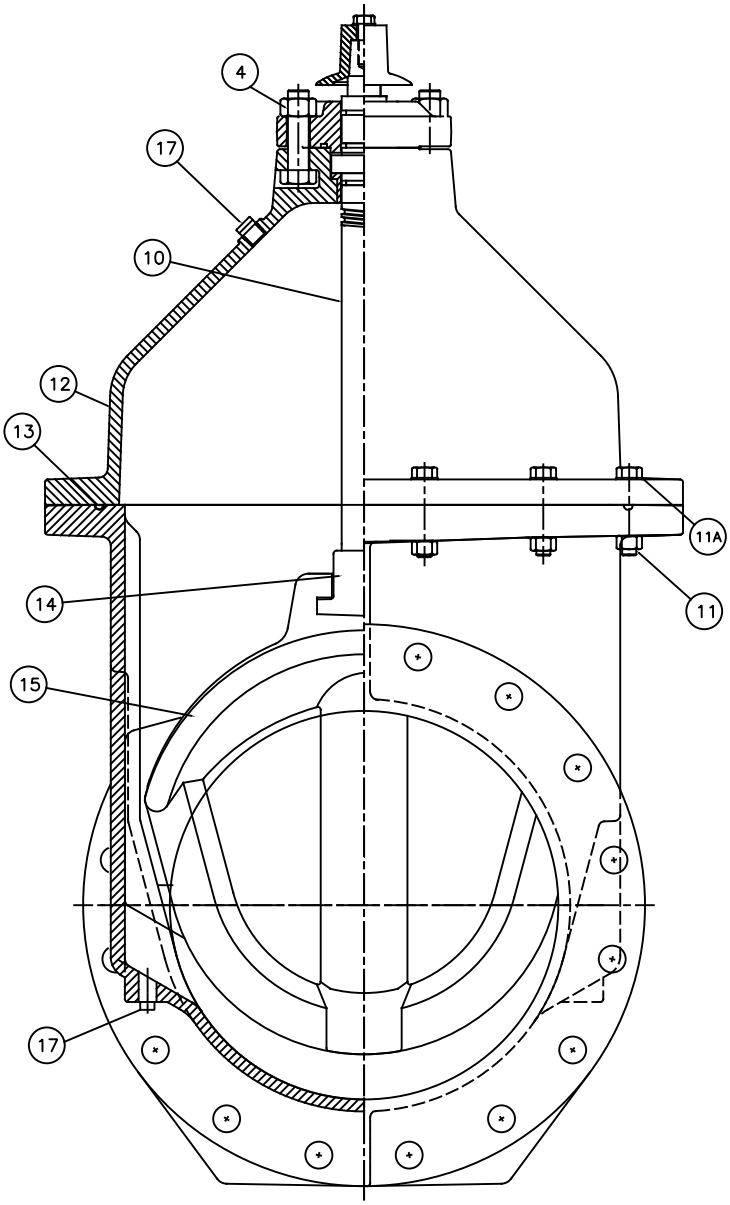
Complies with applicable requirements of AWWA C515

14" & 16" R/W VALVE - NO GEAR
MATERIAL LIST

CLOW VALVE COMPANY

MODEL 2638





	ITEM	DESCRIPTION	MATERIAL	ASTM SPEC.
	1	Hex Head Bolts	Stainless Steel	304 SST
	2	Flat Washer	Stainless Steel	304 SST
	3	Operating Nut or Handwheel	Gray Iron	ASTM A126 CLASS B
	4	Hex Head Bolts & Nuts	Stainless Steel	304 SST
	5	Follower Plate	Ductile Iron	ASTM A536 65-45-12
***	6	Stem O-Ring	EPDM	-----
***	7	Follower Plate O-Ring	EPDM	-----
	8	Thrust Washer Bearing	Delrin	-----
	9	Bonnet Bushing	Copper Alloy	ASTM B584 C87850
	10	Stem	Copper Alloy	ASTM B584 C86700
	11	Hex Head Bolts & Nuts	Stainless Steel	304 SST
	11A	Flat Washer	Stainless Steel	304 SST
	12	Cover	Ductile Iron	ASTM A536 65-45-12
***	13	Cover O-Ring	EPDM	-----
	14	Stem Nut	Copper Alloy	ASTM B584 C87850
	15	Wedge	Ductile Iron & EPDM	ASTM A536 65-45-12
	16	Body - all types	Ductile Iron	ASTM A536 65-45-12
	17	Pipe Plug	Stainless Steel	316 SST

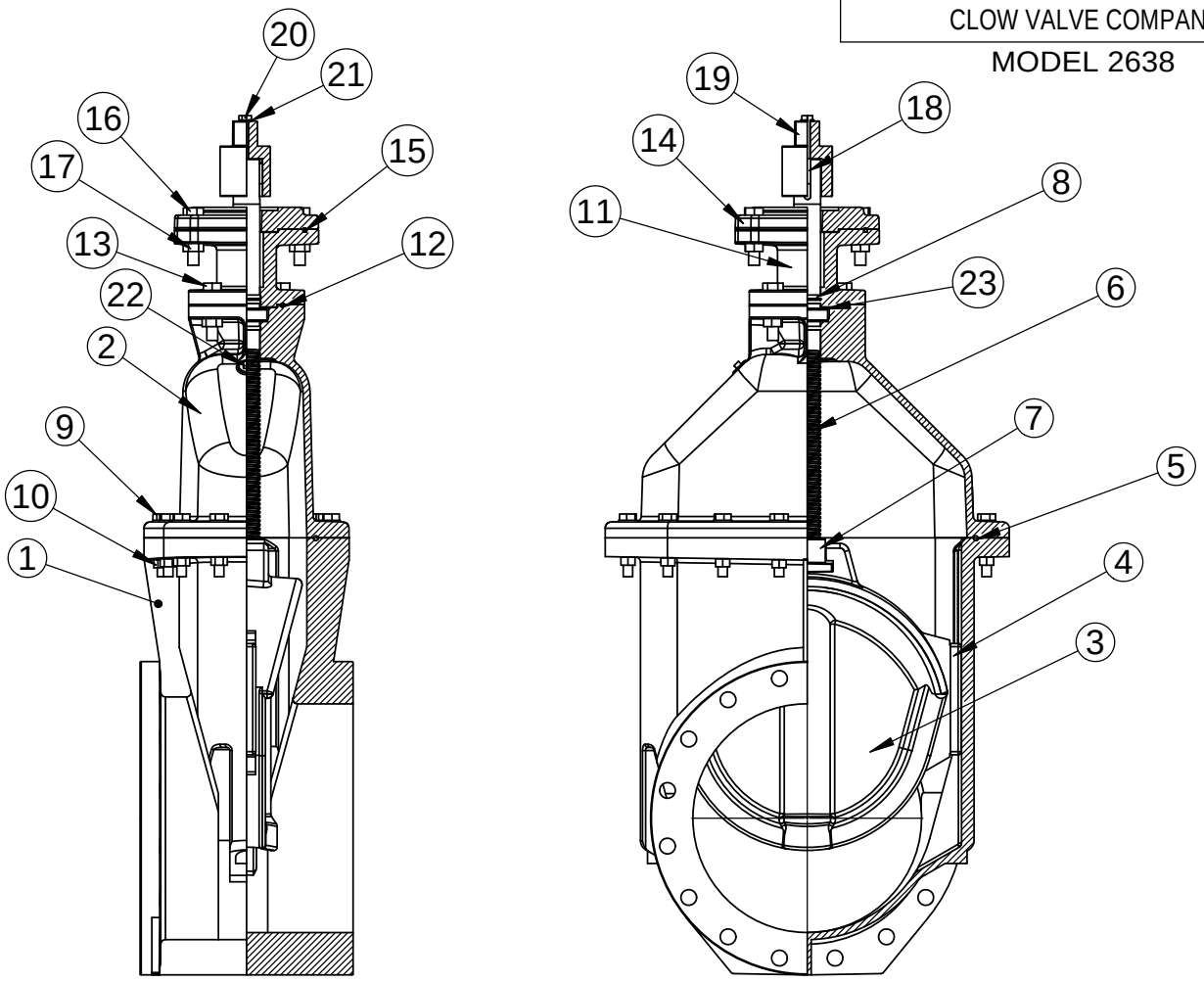
*** RECOMMENDED SPARE PARTS

COMPLIES WITH APPLICABLE
REQUIREMENTS OF AWWA C515

18" & 20" RW VALVE - NO GEAR
MATERIAL LIST

CLOW VALVE COMPANY

MODEL 2638



	ITEM	DESCRIPTION	MATERIAL
	1	BODY	DUCTILE IRON
	2	COVER	DUCTILE IRON
	3	WEDGE	EPDM RUBBER
	4	WEDGE CAP	DELRIN
***	5	ORING	EPDM RUBBER
	6	STEM	STAINLESS STEEL
	7	STEM NUT	COPPER ALLOY
***	8	ORING	EPDM RUBBER
	9	HEX HEAD BOLT	STAINLESS STEEL
	10	HEX NUT	STAINLESS STEEL
	11	EXTENSION	DUCTILE IRON
***	12	ORING	EPDM RUBBER
	13	HEX HEAD BOLT	STAINLESS STEEL
	14	FOLLOWER PLATE	DUCTILE IRON
***	15	ORING	EPDM RUBBER
	16	HEX BOLT	STAINLESS STEEL
	17	HEX NUT	STAINLESS STEEL
	18	KEY	STEEL
	19	OP NUT	GRAY IRON
	20	BOLT	STAINLESS STEEL
	21	WASHER	STAINLESS STEEL
	22	PIPE PLUG	STAINLESS STEEL
	23	THRUST WASHER	DELRIN

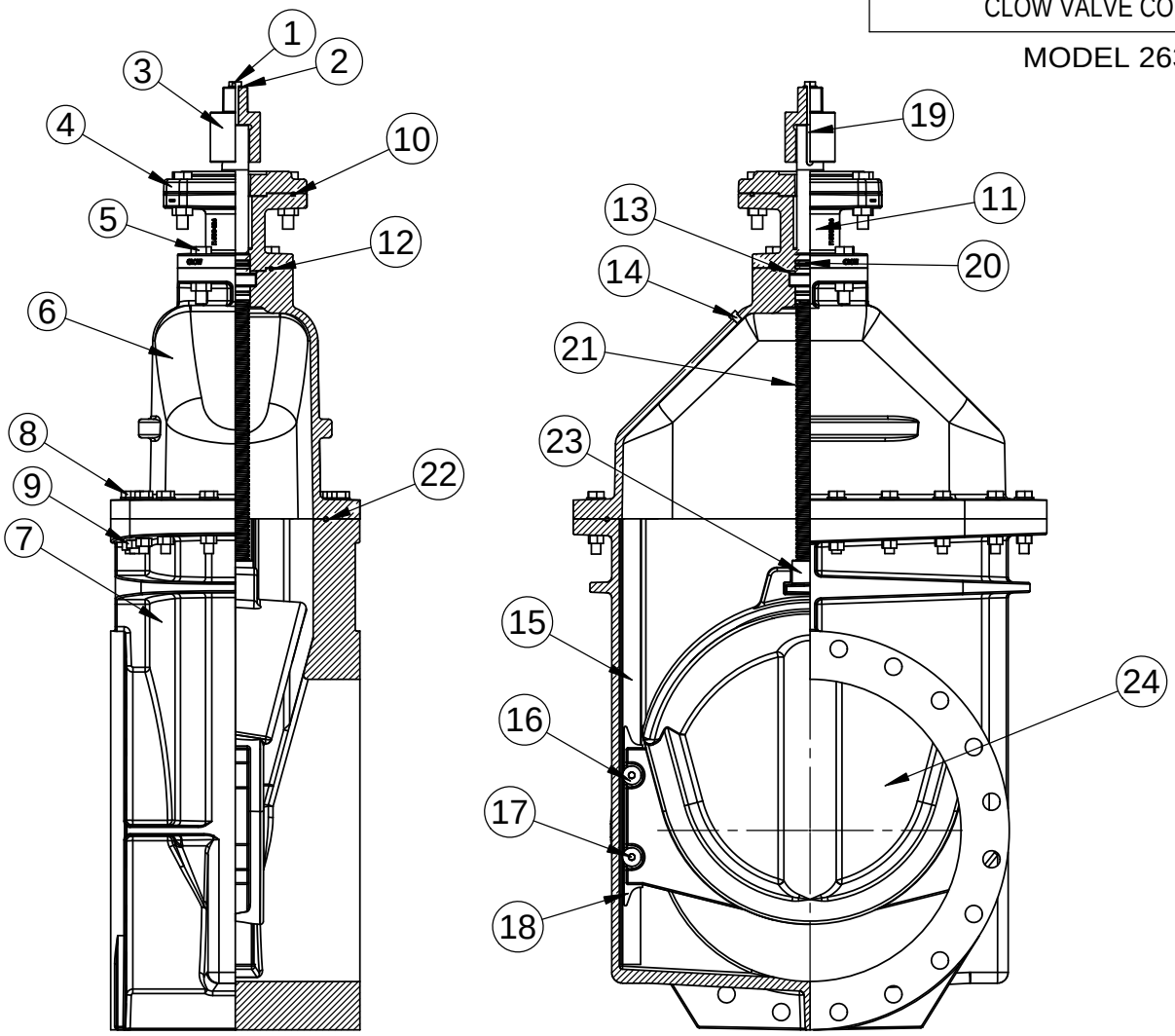
*** RECOMMENDED SPARE PARTS

COMPLIES WITH APPLICABLE
REQUIREMENTS OF AWWA C515

24" RW RTS - NO GEAR
MATERIAL LIST

CLOW VALVE COMPANY

MODEL 2638



*** RECOMMENDED SPARE PARTS

ITEM NO.	DESCRIPTION	MATERIAL	ITEM NO.	DESCRIPTION	MATERIAL
1	BOLT	STEEL	13	THRUST WASHER	DELRIN
2	WASHER	STAINLESS STEEL	14	PIPE PLUG	STAINLESS STEEL
3	OP NUT	GRAY IRON	15	TRACK	STAINLESS STEEL
4	FOLLOWER PLATE	DUCTILE IRON	16	ROLLER	COPPER ALLOY
5	HEX HEAD BOLT	STAINLESS STEEL	17	PIN	STAINLESS STEEL
6	COVER	DUCTILE IRON	18	SCRAPER	COPPER ALLOY
7	BODY	DUCTILE IRON	19	KEY	STEEL
8	HEX HEAD BOLT	STAINLESS STEEL	***20	ORING	EPDM RUBBER
9	HEX NUT	STAINLESS STEEL	21	STEM	STAINLESS STEEL
***10	ORING	EPDM RUBBER	***22	ORING	EPDM RUBBER
11	EXTENSION	DUCTILE IRON	23	STEM NUT	COPPER ALLOY
***12	ORING	EPDM RUBBER	24	WEDGE	DUCTILE IRON/EPDM RUBBER

Dis-assembly Instructions 14" & 16" No Gear Valve

Ref; 14" & 16" RW Valve Material List (page 4)

1. Remove (1)bolt, (2)flat washer, & (3)op nut.
2. Remove (4)bolts, nuts from (5)follower plate.
3. Remove (5)follower plate.
4. Remove (10)stem by turning the stem in the opposite direction of opening the valve.
5. Remove (11)bolts, nuts & (11A)flat washer from (12)Cover.
6. Lift (12)cover off.
7. Grasp (14)stem nut and lift out (15)wedge. **Note; Threading stem back into stem nut may make removal of wedge easier.**
8. Reassemble in reverse order replacing (13)cover o-ring, (7)follower plate o-ring, & (6)stem o-rings if necessary.

Dis-assembly Instructions 18" & 20" No Gear Valve

Ref; 18" & 20" RW Valve Material List {page 5)

1. Remove (20)bolt, (21)flat washer, & (19)op nut.
2. Remove (18)key & retain.
3. Remove (16)bolts, (17)nuts from (14)follower plate.
4. Remove (14)follower plate.
5. Remove (13)bolts, nuts from (11)extension.
6. Remove (11)extension.
7. Remove (6)stem by turning the stem in the opposite direction of opening the valve.
8. Remove (9)bolts, (10)nuts from (2)Cover.
9. Lift (2)cover off.
10. Grasp (7)stem nut and lift out (3)wedge. **NOTE; Threading stem back into stem nut may make removal of wedge easier.**
11. Reassemble in reverse order replacing (5)cover o-ring, (12)extension o-ring, (15)follower plate o-ring, & (8)stem o-rings if necessary.

Dis-assembly Instructions 24" No Gear Valve

Ref; 24" RW Valve Material List {page 6)

1. Remove (1)bolt, (2)flat washer, & (3)op nut.
2. Remove (19)key & retain.
3. Remove bolts & nuts from (4)follower plate.
4. Remove (4)follower plate.
5. Remove (5)bolts, nuts from (11)extension.
6. Remove (11)extension.
7. Remove (21)stem by turning the stem in the opposite direction of opening the valve.
8. Remove (8)bolts, (9)nuts from (6)Cover.
9. Lift (6)cover off.
10. Grasp (23)stem nut and lift out (24)wedge. **NOTE; Threading stem back into stem nut may make removal of wedge easier.**
11. Reassemble in reverse order replacing (22)cover o-ring, (12)extension o-ring, (10)follower plate o-ring, & (20)stem o-rings if necessary.

Troubleshooting
RW GV'S

Possible Malfunction	Symptoms – Causes	Corrective Action
Joint Leakage	*Bolt Tension Relaxing*	*Tighten Bolts*
Seat Leakage	*Foreign material caught in seat*	*Operate valve to flush Out debris.*
	Seats Dirty/Carroded	*Flush or dis-assemble & clean.*
	Seats Damaged	*Inspect-repair or Replace*
Leak Past Stem	*Bolts loose*	*Tighten Bolts*
	(NRS) Orings worn/damaged	*Inspect/replace*
	(OS&Y) Packing worn/damaged	*Inspect/replace*

Inspection for the above should be done semi/annually at the minimum.
There are no lubrication requirements other than;
*OS&Y valves should have the exposed stem **lubricated at each inspection.*
*** Food grade grease similar to Mystic FG2*

For Parts and Service Contact mfg's rep: