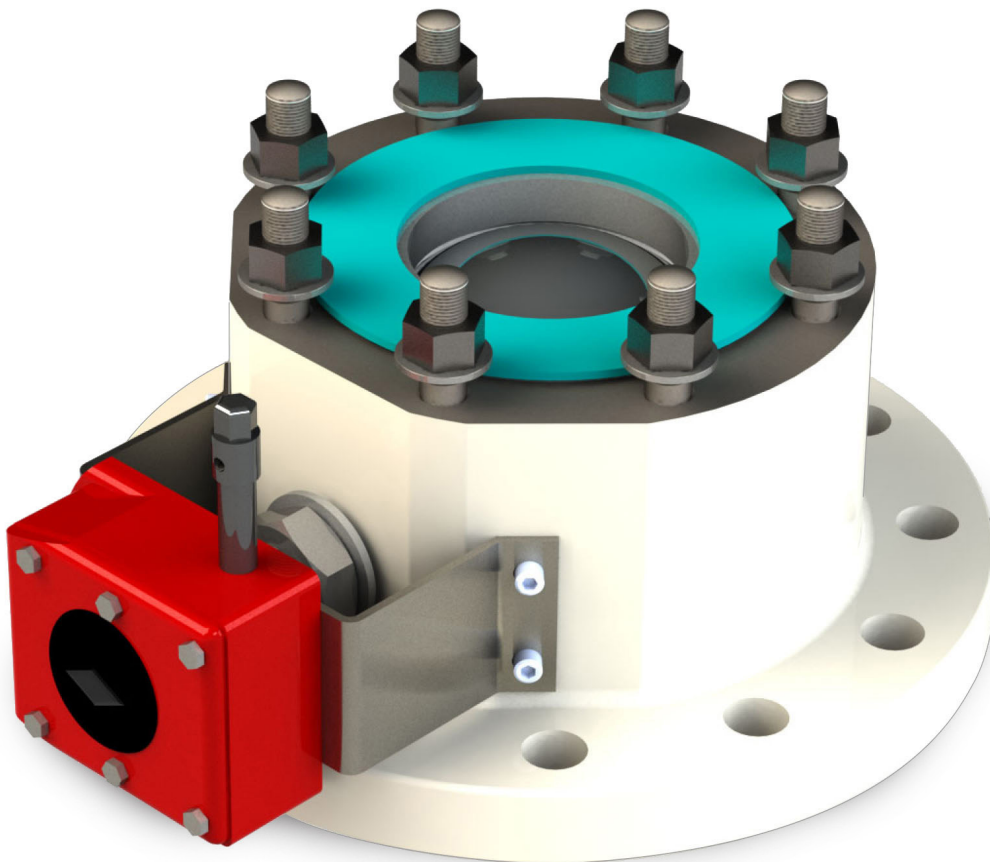




# CLA-VAL 355GF

Hydrant Isolation Valve  
Maintenance Manual





# CLA-VAL 355GF

## Hydrant Isolation Valve

### Maintenance Manual

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## 1.0 GEAR BOX

ITEM	DESCRIPTION	QTY.
3	O-RING	1
4	SEAL RING	2
7	O-RING	2
12	GEAR BOX	1

## 2.0 MAINTENANCE

### 2.1 GEAR BOX REPLACEMENT

**Note:** Gear Box should only be replaced when Isolation valve is taken out of service to avoid injury.

**You will need:**

- 3/16" Allen wrench or hex key.
- 3/16" Allen socket (for torque wrench)
- Loctite 243 or equivalent.
- Torque wrench for 40 in. lbs.
- An O-Ring lubricant that is specifically formulated for use with rubber O-Rings.

#### 2.1.0 Remove Gear Box (Assembly):

**Removal:**

- Loosen and remove the (4) Socket Head Cap Screws (13) from the Body (1).
- Slide complete assembly off drive stem (11).
- With Gear Box (12) face down (bracket side up) remove (4) Socket Head Cap Screws (13). (make note of the position of flats on inside of the gear box female drive.)
- Remove Gear Box (12).

#### 2.1.1 Remove Ball Seals and Ball Retainer O-ring:

**Removal:**

- Loosen and remove the 5/8-11 studs (17).
- Using a CLA-VAL Ball Retainer Tool, install by locating on (2) drive holes 180 degrees apart.
- Unscrew (counterclockwise) ball retainer (5) and remove.
- Remove O-ring (3) and discard.
- Remove upper seal (4).
- To remove ball (2), valve must be in the "closed" position. (when removing ball, stone guard and retainer might need to be removed to assist in pushing from the back side.)
- Remove lower seal (4).

#### 2.1.2 Remove and replace Drive Stem (Assembly):

**Removal:**

- To remove stem nut, first prevent the stem from turning by using a crescent wrench (or equivalent) on the flats of the drive. (Caution – avoid excessive marring on flanks to prevent stem from binding in ball slot).
- Remove nut (10), Belleville washers (9), Thrust washer (6).
- Remove stem by pushing drive stem inward from the gear box side.
- Remove O-rings (7) and Thrust washer (6) from stem. Discard O-rings.



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#### Replace:

- Clean drive stem and inspect O-ring glands for nicks, scratches, inclusions that would cause improper sealing. (consult factory for surface conditions if in question)
- Check housing bore for nicks, scratches, inclusions that would cause improper sealing. (consult factory for surface conditions if in question)
- Coat O-rings (7) with lubricant and install the corresponding grooves.
- Install Thrust washer (6). Note – stem and thrust washers should also be coated with xxx prior to assembly.
- Install stem assembly into housing from the bore I.D.
- Install Thrust washer (6) and Belleville washers (9).
- Install stem nut (10) and tighten until Belleville Washers (9) are completely flat. Rotate stem and check for binding.
- Rotate stem (11) so the flat (bore I.D.) are parallel with the axis of the bore.

#### 2.1.3 Replace Ball Seals and O-ring:

##### Replace:

- Clean seal bore in housing (1) and inspect for nicks, scratches, inclusions that would cause improper sealing. (consult factory for surface conditions if in question)
- Install seal (4). Seal “seat” (angled surface) to face upward.
- Clean ball (2) and inspect for nicks, scratches, inclusions that would cause improper sealing. (consult factory for surface conditions if in question). Install ball with slot parallel with housing bore axis. Lower ball into cavity carefully to avoid damage.
- Clean Ball Retainer (5) and inspect seal counter bore and O-ring gland. Inspect areas for nicks, scratches, inclusions that would cause improper sealing. (consult factory for surface conditions if in question).
- Install Ball Seal (4) with “angled” seal portion towards ball.
- Coat O-ring (3) with lubricant and install into corresponding groove.
- Install Ball Seal Retainer assembly by rotating clockwise into housing.
- Tighten Ball Retainer (5) using CLA-VAL Ball Retainer Tool. Tighten to achieve a positive seal with ball (2).
- Install 5/8-11 studs to full depth.

#### 2.1.4 Replace Gear Box (Assembly):

##### Re-assembly:

- With the new Gear Box (1) facing up, lower the Gear Box Mounting Bracket (14) onto Gear Box.
- Note: Prior to installing Socket Head Cap Screws, all threads (bolts and tapped holes) to be clean and free from any residual thread locker.
- Apply Loctite 243 and install (4) Socket Head Cap Screws (13) securing the mounting bracket to Gear Box. Tighten to 40 in/lbs.
- Make sure Gear box “flats” are in the same clocked position as the previous gear box taken out of service. (The gear box can manually be turned to align the flats. Aligning the flats will aid in installing the assembly on the body).
- Install Gear Box and bracket onto the isolation valve Body (1).
- Verify Gear Box bracket (14) thru holes align with threaded holes in body (1).
- Apply Loctite 243 and install (4) Socket Head Cap Screws (13). Tighten to 40 in/lbs.
- Operate Gear Box to confirm the Isolation Valve is not binding through the complete travel from the opened position to the closed position. Verify the Gear Box. Visual Indicator is timed correctly with the ball valve (2) (opened and closed position)



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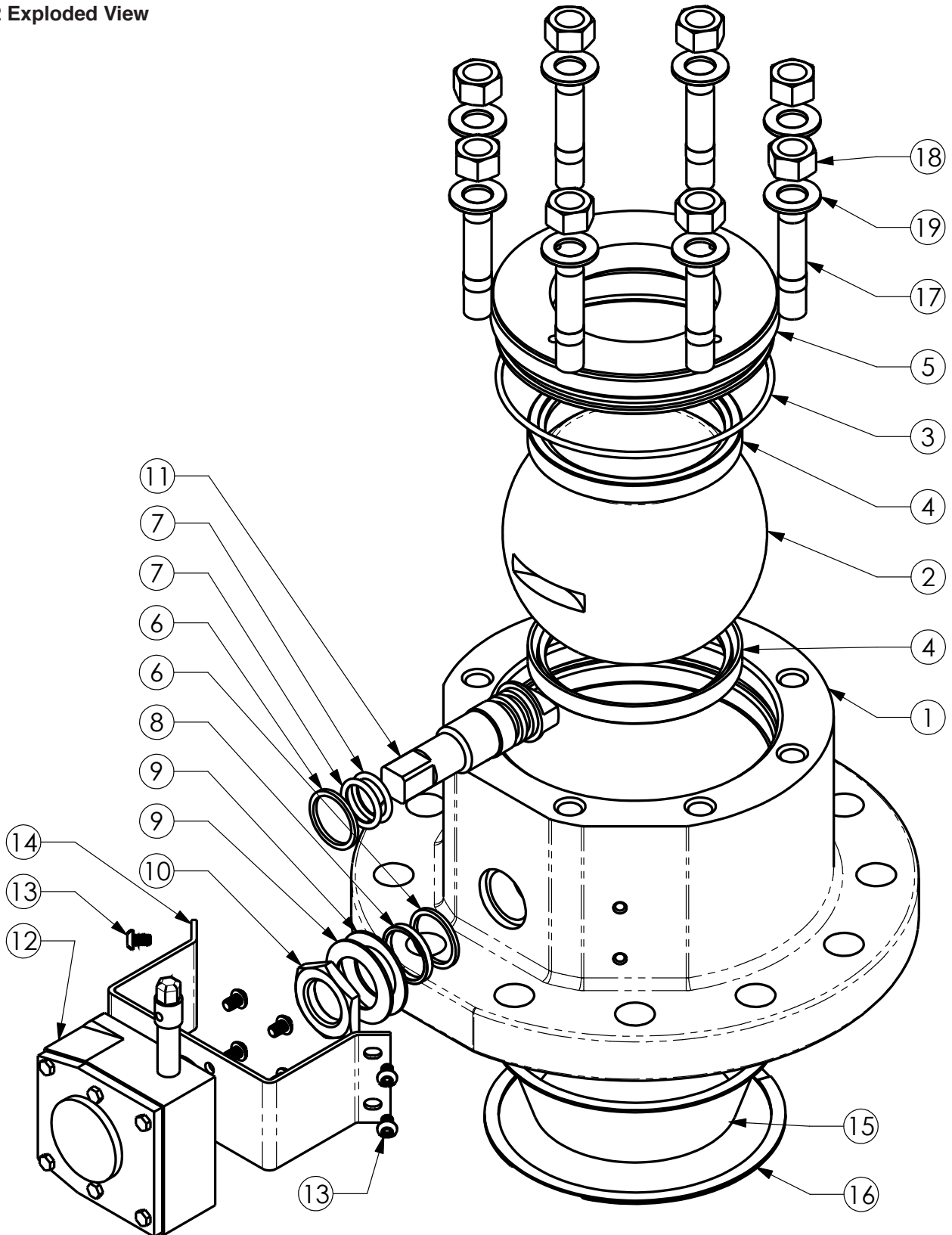
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### 3.0 PARTS LIST & EXPLODED VIEW

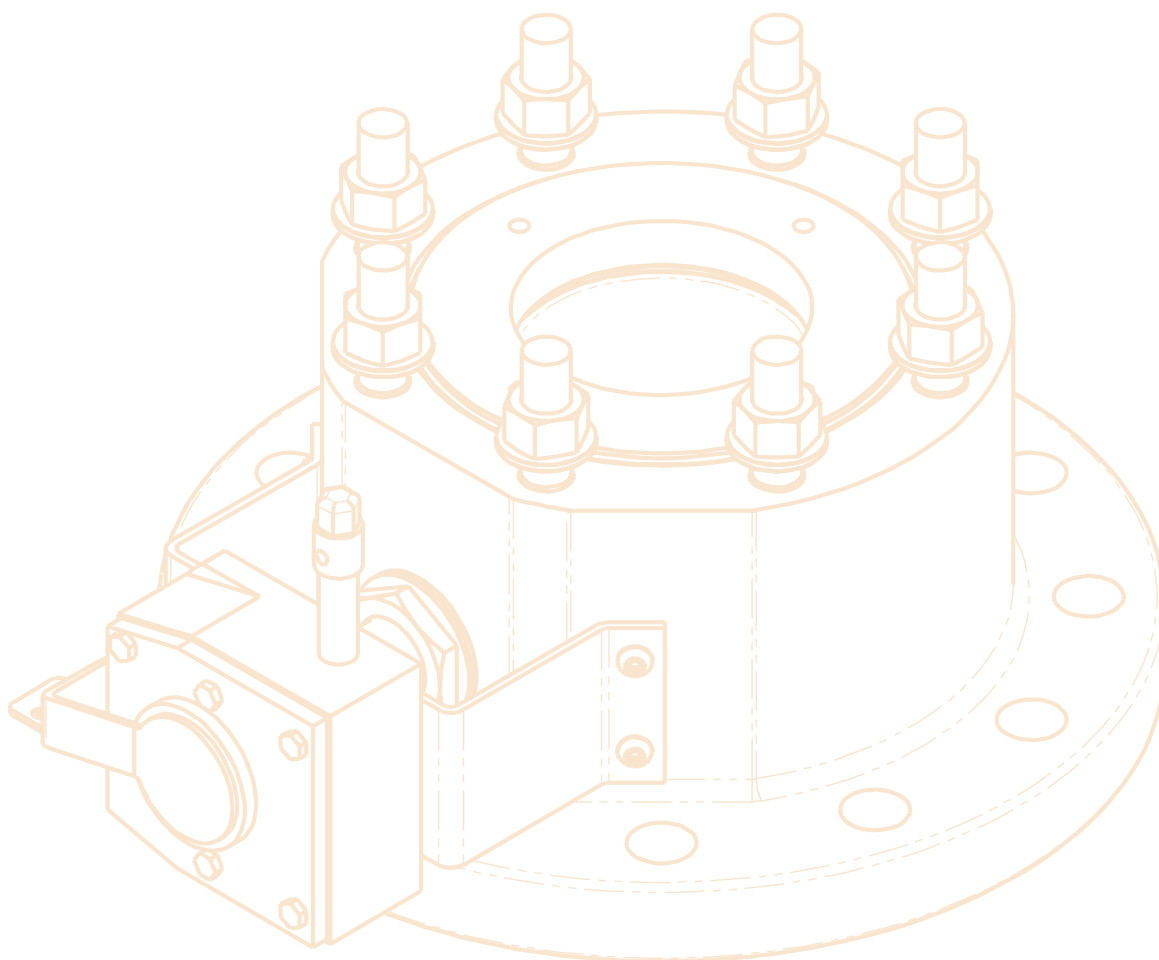
#### 3.1 Parts List

Bubble Number	Description	Quantity
1	Body	1
2	Ball	1
3	O-Ring	1
4	Seal	2
5	Ball Retainer	1
6	Thrust Washer	2
7	O-Ring	2
8	Retaining Spacer	1
9	Belleville Washer	2
10	Hex Nut	1
11	Drive Stem	1
12	Gear Box	1
13	Socket Head Cap Screw	8
14	Mounting Plate	1
15	Basket Strainer	1
16	Retaining Ring	1
17	Stud	8
18	Hex Nut	8
19	Washer	8

### 3.2 Exploded View



210369-EXP-J



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