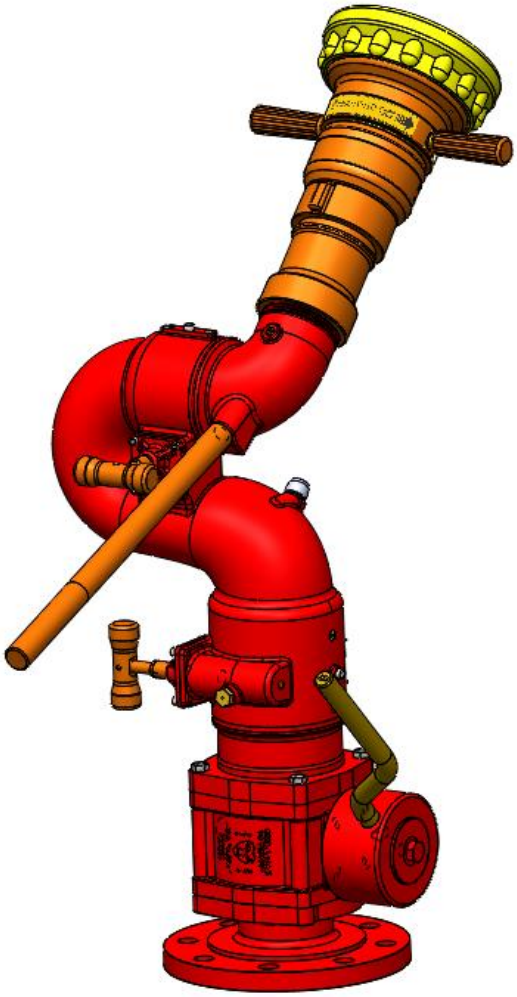
Installation, Operating, & Maintenance Instructions



Model 8593-IV

COPPERHEAD

With Integral Valve

98483000 REV. E

1-574-295-8330
www.elkhartbrass.com

ELKHART BRASS
FIRE FIGHTING EQUIPMENT A SAFE FLEET BRAND

I. PRODUCT SAFETY

Important:
Before installing and operating this equipment, read & study this manual thoroughly. Proper installation is essential to safe operation. In addition, the following points should be adhered to in order to ensure the safety of equipment and personnel:

1. All personnel who may be expected to use this equipment must be thoroughly trained in its safe and proper use.

2. Before flowing water from this device, check that all personnel (fire service and civilian) are out of the stream path. Also, check to make sure stream direction will not cause avoidable property damage.

3. Become thoroughly familiar with the hydraulic characteristics of this equipment, and the pumping system used to supply it. To produce effective fire streams, operating personnel must be properly trained.

4. Open water valve slowly, so that the piping fills slowly, thus preventing possible water hammer occurrence.

5. After each use, and on a scheduled basis, inspect equipment per instructions in Maintenance & Inspection on page 8.

Warning: The piping must be able to withstand a horizontal reaction force of at least 950 lbs. at the height of the discharge elbow and from any angle of rotation that the monitor is capable of turning. Serious injury to personnel and equipment can result from improper installation.

II. INSTALLATION INSTRUCTIONS

1. Handling

The monitor should be lifted by a strap around the monitor body casting. Lifting the monitor by nozzle, tiller handle, valve handle, or lock handles could result in damage. If lifting by hand, no less than two people should lift the monitor, one lifting by the inlet flange, and the other lifting by the monitor body. The monitor with stream shaper and nozzle weighs approximately 120 pounds so care and proper lifting techniques should be used to avoid injury.

2. 3" 150# Flat Faced Flange

Attach a 3" 150 lb. class ANSI pattern companion flange to the water supply pipe. Elkhart Brass recommends using the 81315001 Companion Flange Kit. Attach the monitor inlet flange to the companion flange on the water supply pipe with four (4) 5/8-11 UNC grade 5 carbon steel or stainless-steel bolts, 2-1/2 inches long, with nuts. If a wafer type butterfly valve is installed between the monitor and the companion flange, required bolt length will be 4-1/2 inches. Seal the flange joint with a gasket, or suitable flange sealant. Most wafer type butterfly valves have seats that serve as flange gaskets, and separate gaskets or sealant is not required. Apply Loctite #243 to the bolt threads, then thread on the nuts, and torque them to 60-70 ft-lbs uniformly in increments of approximately 20ft-lbs.

3. 4" 150# Flat Faced Flange

Attach 4" 150 lb. class ANSI pattern companion flange to water supply pipe. Elkhart Brass recommends using the 81317001 Companion Flange Kit. Attach monitor inlet flange to companion flange on water supply pipe with eight (8) 5/8-11 UNC grade 5 carbon steel or stainless-steel bolts, 2-1/2 inches long, with nuts. If a wafer type butterfly valve is installed between the monitor and the companion flange, required bolt length will be 4-1/2 inches. Seal flange joint with gasket, or suitable flange sealant. Most wafer type butterfly valves have seats that serve as flange gaskets, and separate gaskets or sealant is not required. Apply Loctite #243 to bolt threads, then thread on nuts, and torque to 60-70 ft-lbs uniformly in increments of approximately 20ft-lbs.

4. 6" 150# Flat Faced Flange

Attach 6" 150 lb. class ANSI pattern companion flange to water supply pipe. Attach monitor inlet flange to companion flange on water supply pipe with eight (8) 5/8-11 UNC grade 5 carbon steel or stainless-steel bolts, 2-1/2 inches long, with nuts. If a wafer type butterfly valve is installed between the monitor and the companion flange, required bolt length will be 4-1/2 inches. Seal flange joint with gasket, or suitable flange sealant. Most wafer type butterfly valves have seats that serve as flange gaskets, and separate gaskets or sealant is not required. Apply Loctite #243 to bolt threads, then thread on nuts, and torque to 60-70 ft-lbs. uniformly in increments of approximately 20ft-lbs.

Warning: When installing monitor on a raised face companion flange, it is critical that bolts be tightened uniformly to prevent cocking of the monitor relative to the flange. If the monitor becomes cocked, (see Figure 1) the monitor cast flange base will fracture and fail when the bolts on the "high" side are tightened.

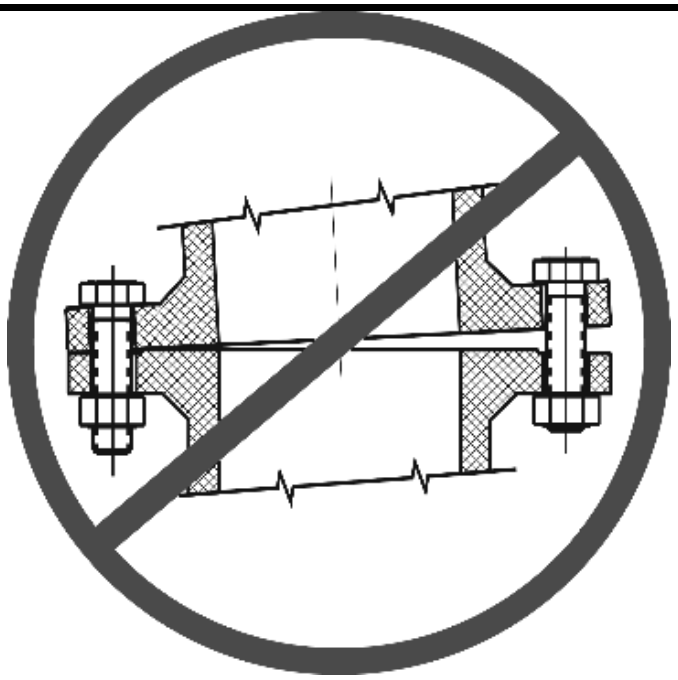


Figure 1
Improper Flange Installation

5. Valve Handle Orientation (Lever Handle)

The 8593-IV has been designed such that the valve handle may be oriented in any one of eight possible positions that are incremented by 45 degrees. The handle may also be oriented so that the valve opens in a clockwise or counter-clockwise rotation. The following procedure describes proper orientation of the valve handle:

- Position the valve handle to the fully closed position
- Remove the hex bolt that attaches the valve handle (See Figure 2)

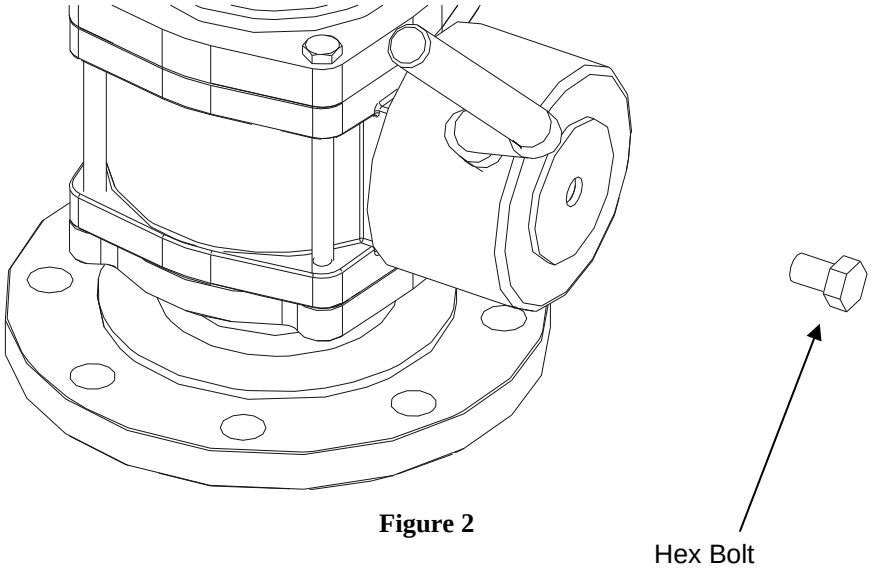


Figure 2

- Remove the handle assembly from the actuator shaft(See Figure 3)

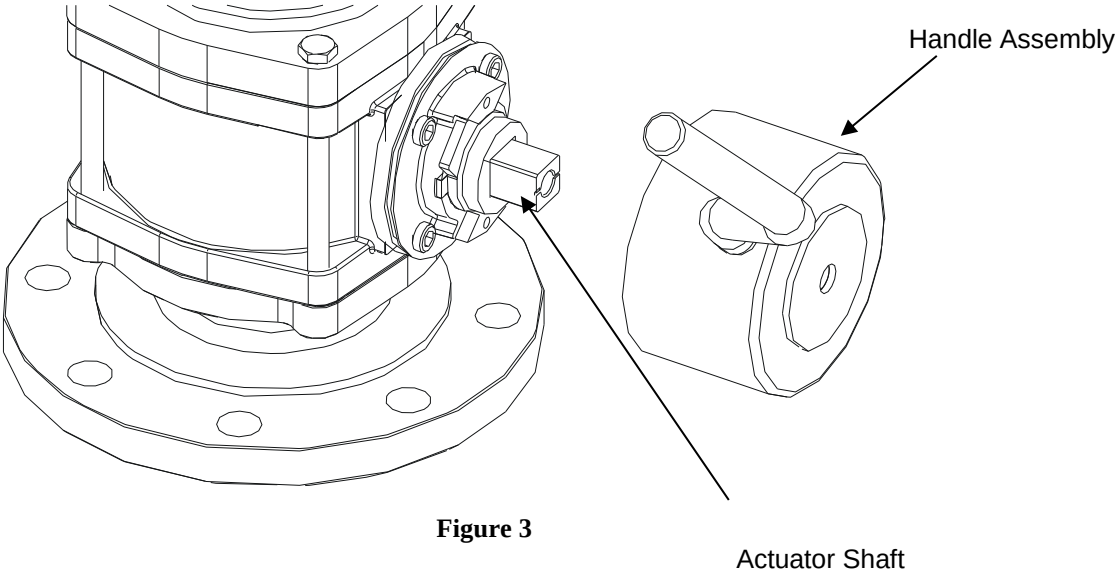


Figure 3

- If the direction of rotation is to be changed, remove the stop plate from the actuator shaft, rotate 90 degrees with respect to the actuator shaft, then replace the stop plate on the actuator shaft.

Then rotate the actuator shaft so that the ball is in the closed position. (See Figure 4)

- Ensure that the bearing break is lined up with the slot in the handle adapter. If the parts are not properly aligned during installation the handle will bind up during operation. (See Figure 4)

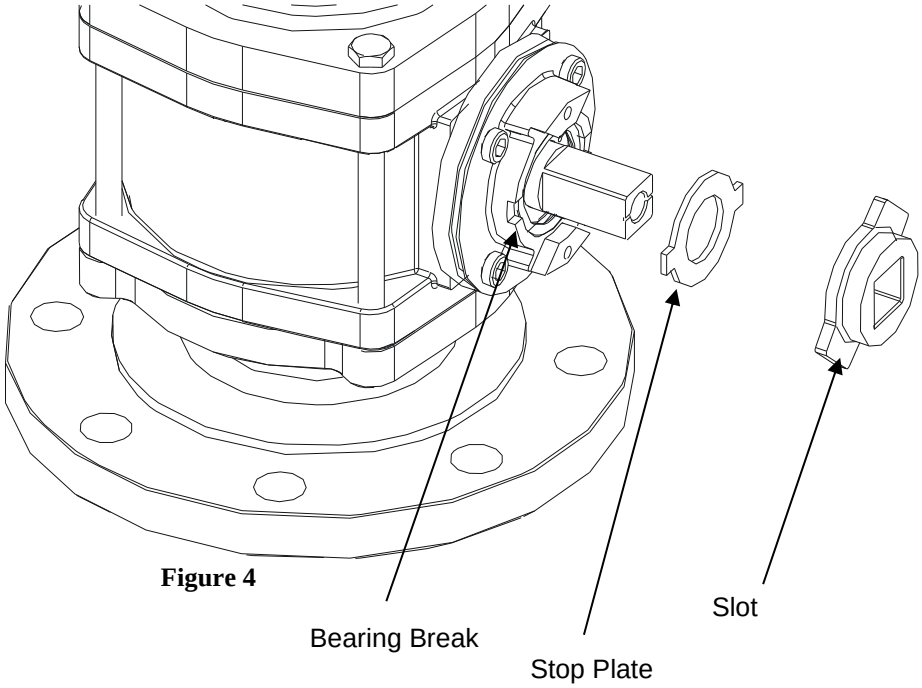


Figure 4

- Place the valve handle assembly on the actuator shaft in the desired orientation for the closed position. (See Figure 5)

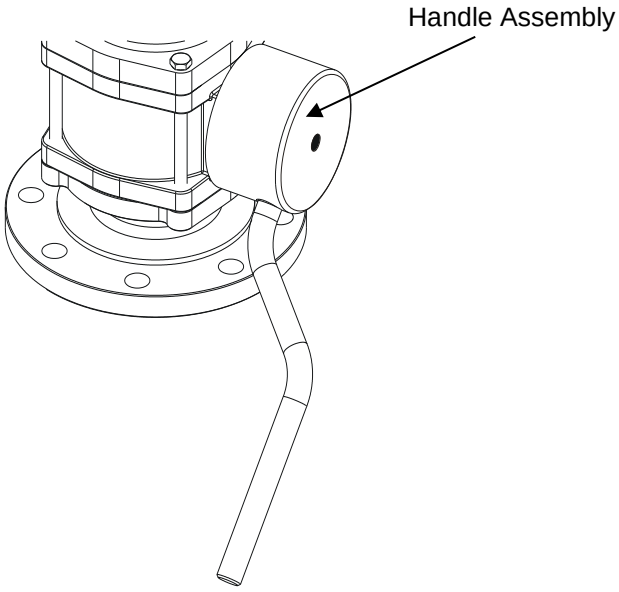


Figure 5

- Replace the label washer and hex bolt on the handle assembly. Apply Loctite #243 on the hex bolt threads. Ensure that the label washer displays the correct direction for opening the valve. (See Figure 6)

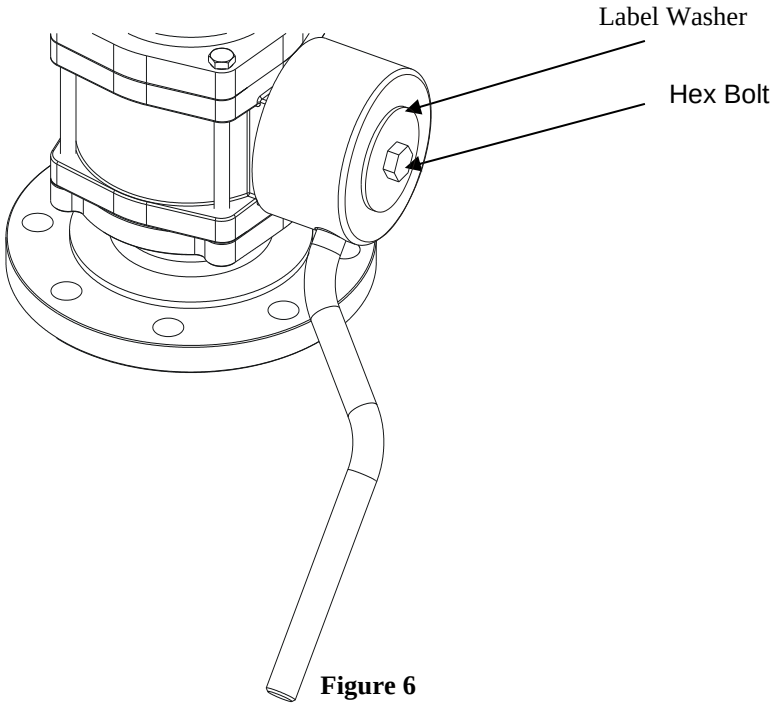


Figure 6

- Tighten the hex bolt to 40 to 45 ft-lbs.

III. OPERATING

Monitor Tiller and Position Locks

Turn both left/right and up/down lock handles counterclockwise to disengage lock. Move tiller handle to desired left/right and up/down positions. Turn both lock handles clockwise to engage lock.

Cold Weather Storage

The monitor should be drained after use in freezing temperatures. 1) Shut off the water supply valve. 2) Open the monitor's weather control valve. 3) Turn the hand wheel until the monitor's discharge is at its lowest vertical position. 4) Drain the monitor and piping by means of automatic ball drip or the other drain valve. 5) After the system has been drained, close the monitor's water control valve and place the monitor discharge back in the desired position.

Storage

Turn the hand wheel until the monitor's discharge is at its lowest vertical position to aid drainage and prevent accumulation of rainwater.

IV. MAINTENANCE & INSPECTION

1. Monitor Visual Inspection

The monitor should be inspected regularly. Careful inspection for damage to the monitor or nozzle is especially important after use in emergency operations.

2. Flow Inspection

Flow water to check nozzle pattern. If pattern is disrupted, remove nozzle and check for debris lodged between the nozzle stem and body, or in the stream shaper inlet. During nozzle flow test, inspect monitor swivel joints for leaks.

3. Valve Repair

Debris in the water way could cause damage to the internal seats and or valve ball. If leakage is detected from the internal ball valve, the seats and ball should be replaced using one of these kits; #65495001(no ball), #65496001(ball included), or #65496201(vented ball included). Repair instructions (#39077000) are included in the kit.

4. Valve Actuator Removal/Installation

The 8593-IV monitor is available with both lever and gear operated integral valve. The valve actuators are interchangeable without need to break the monitor waterway. The gear operated valve option is not currently FM approved.

The following steps outline how to remove a valve lever actuator.

- Position the valve handle to the fully closed position
- Remove the hex bolt that attaches the valve handle (See Figure 2)
- Remove the handle assembly from the actuator shaft(See Figure 3)
- Remove the 4 socket head cap screws that attach the actuator adapter to the integral valve body (see Figure 12)

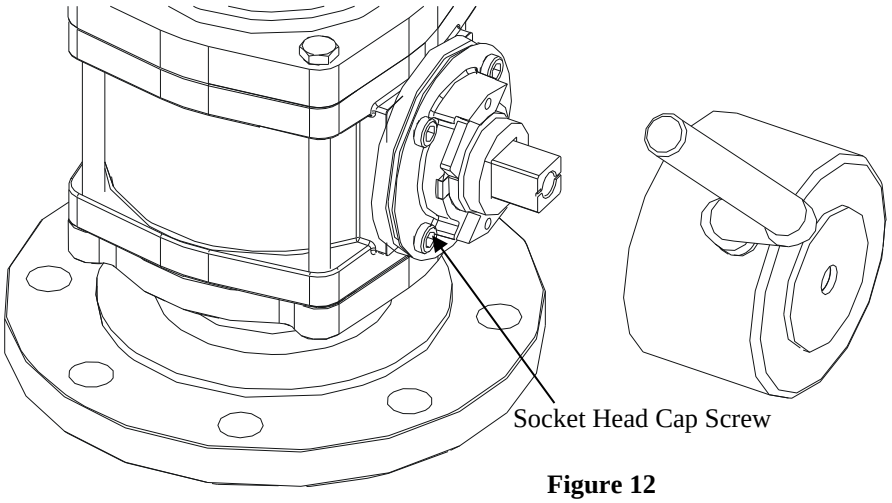


Figure 12

- Remove the remaining actuator assembly from the integral valve body (see Figure 13)

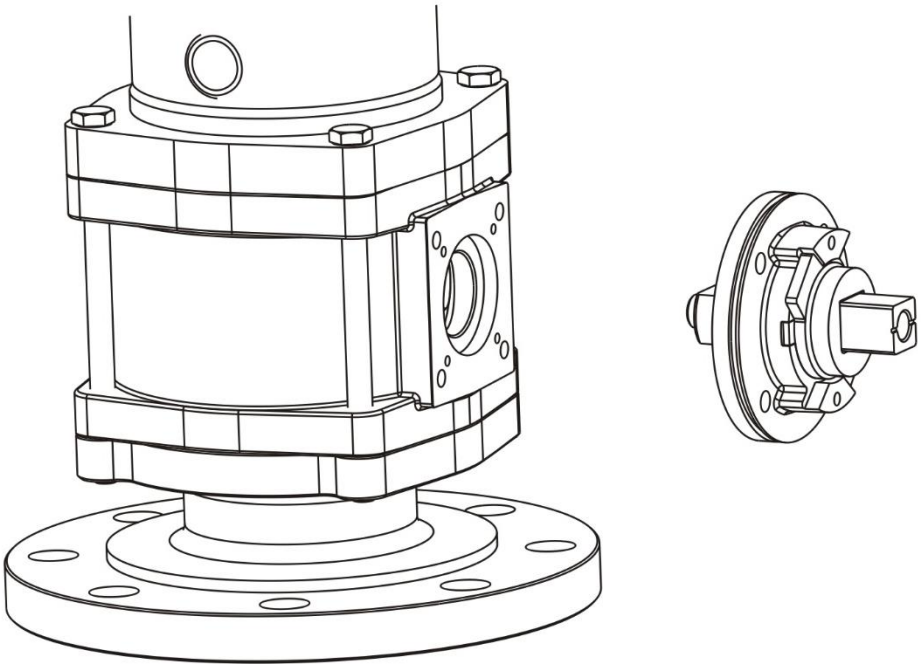


Figure 13

The following steps outline how to install a valve lever actuator.

- Install the actuator adapter sub assembly to the valve. Ensure the valve ball is in the closed position (see Figure 13)
- Install the socket head cap screws that attach the actuator assembly to the integral valve body use Loctite #243 thread lock or equivalent. (See Figure 13)
- Ensure the bearing break is lined up with the slots in the handle adapter. The handle may be installed such that the valve rotates clockwise or counter-clockwise to open. The direction of rotation is controlled by the installation of the stop plate. Take care to ensure the stop plate is installed with the desired rotation. (See Figure 4)
- Install the handle assembly with the valve lever in the proper orientation for the closed position; notice the valve lever may be oriented in 45-degree increments. (See Figure 3)
- Install the washer and hex bolt that hold the handle assembly to the valve actuator shaft, apply Loctite #243 thread lock or equivalent. (see Figure 2)

The following steps outline how to remove a valve gear actuator.

- Position the valve in the fully closed position
- Remove the socket head cap screws that attach the gear case cover to the gear case; also remove the gear case cover. (see Figure 14)

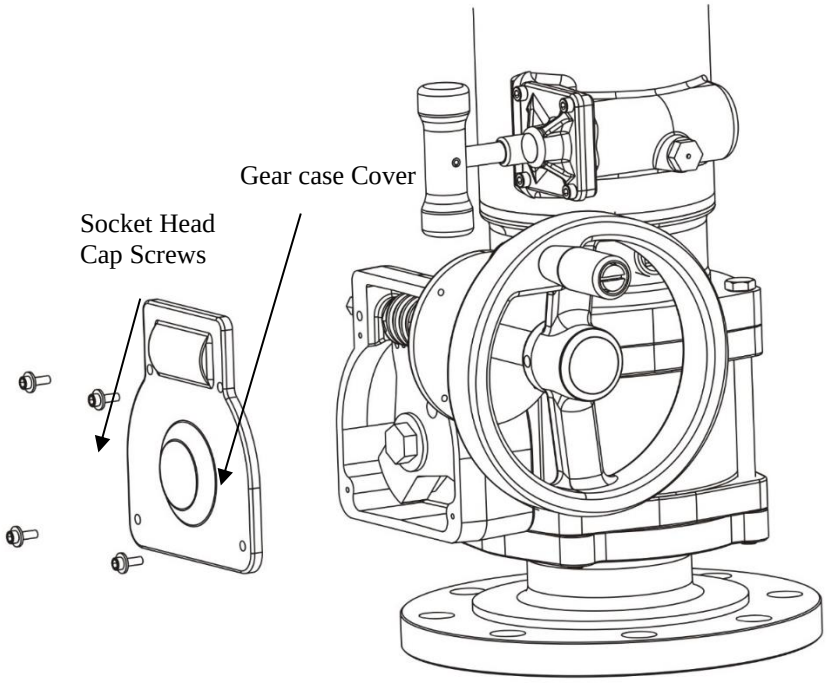


Figure 14

- Remove the socket head cap screws that attach the gear assembly to the integral valve body. (see Figure 15)

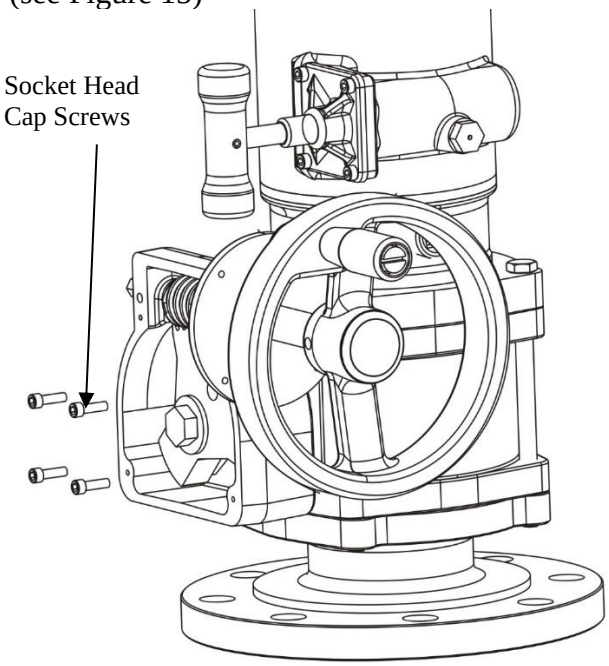


Figure 15

- Remove the gear assembly from the integral valve body. (see Figure 16)

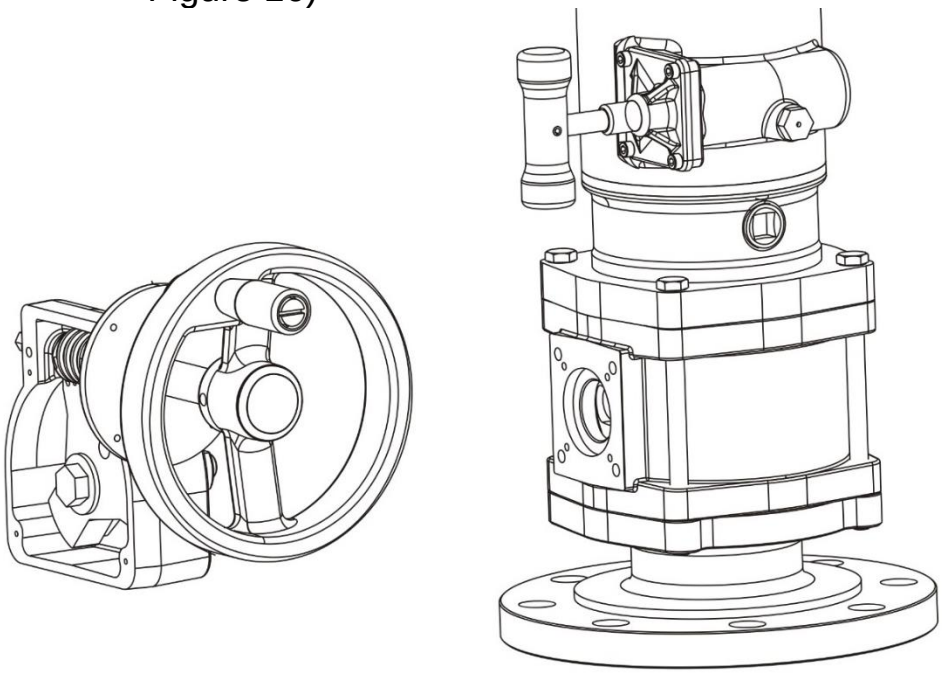


Figure 16

The following steps outline how to install a valve gear actuator.

- Position the valve ball in the fully closed position
- Rotate the gear actuator hand wheel either fully clockwise so that the actuator shaft will engage with the ball in the closed position
- Install the gear actuator on the valve body in the proper orientation (see Figure 16)
- Install the 4 socket head cap screws that attach the gear actuator to the integral valve body (see Figure 15)
- Install the gear case cover and the four socket head cap screws that attach the gear case cover to the gear case (see Figure 14)

Note: Grease fittings are provided for the up-down and left-right rotation joints, routine greasing should be performed to expel water & other contaminants that can get into the rotation joints. If the monitor is exposed to a high level of radiant heat for a prolonged period, it may be possible for the factory grease to thin and run out of the rotation joints. In such an event, fresh grease should be applied. Use Mobilux EP2 or equivalent. Start at one end of travel range and apply grease through the fitting of each joint until fresh grease comes out the joint. Repeat every 30 degrees throughout the full range of travel on each rotation joint. Wipe off any expelled grease when done.

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