8393-H Installation/Operation/Maintenance

NOTICE; The maximum allowed reaction force for this monitor is 632 lbs. Use the friction loss for the monitor (and stream shaper if used) together with the available pressure and flow from your water supply to determine the pressure at the nozzle that you intend to use. Use one of the reaction force formulae below to then determine that the reaction force of the nozzle does not exceed 632 lbs. This monitor is designed for a maximum flow rate of 1250 GPM (US) and a maximum inlet pressure of 200 psi.

STRAIGHT BORE NOZZLES

$NR = 1.5\ d^2NP$

NR = Nozzle Reaction (Pounds)

d = Nozzle Diameter (Inches)

NP = Nozzle (Pitot) Pressure (PSI)

COMBINATION FOG NOZZLES

$NR = 0.0505\ Q\ \sqrt{P}$

NR = Nozzle Reaction (Pounds)

Q = Flow (US GPM)

P = Nozzle Pressure (PSI at base of nozzle)

INSTALLATION; Please refer to 8393-H assembly drawing on page 6.

1. Connect the hydrant elbow sub-assembly (11) to the 2.5” hydrant discharge with the flange parallel to the ground and tighten the swivel connection (5) just tight enough to hold the elbow in place.

2. Attach the hydrant bracket (1) to the barrel of the hydrant using the appropriate size U-bolt, 8” (2) or 10” (4). Place one nut on each side of the U-bolt, position the bracket as shown and tighten each nut hand tight.

3. Attach the support bracket (10) to the hydrant bracket (1) using the 2 bolts provided (3). Tighten finger tight.

4. Position the bracket assembly under the elbow (11) so the pad on the bottom of the elbow contacts the saddle of the support bracket (10) as described in figure 1. Tighten the nuts on the large U-bolt enough to hold the bracket assembly in position.

5. Install the 3.5” U-bolt (9) over the elbow and down through the holes in the support bracket (10) saddle. Install one nut on each side. Tighten both nuts alternately and equally until both are snug. Compare with figures 1 & 2 to make sure the fit between the elbow pad and the support bracket saddle is correct.

6. Tighten all fasteners in the sequence described to the torque values given.

    a. Tighten support bracket bolts (3) alternately and gradually to 140 ft./lbs.

    b. Tighten both large U-bolt nuts alternately and gradually to 140 ft./lbs. install a second nut on each side and lock it against the previously torqued nuts.

    c. Use a spanner wrench to tighten the 2.5” swivel (5) to the hydrant discharge.

    d. Check for correct contact and positioning between the elbow pad and support bracket saddle, as shown in Figures 1 & 2, and tighten the 3.5” U-bolt (9) nuts alternately and gradually to 70 ft./lbs. install a second nut on each side and lock it against the previously torqued nuts.

CAUTION; the 8393-H hydrant elbow flange and monitor flange have a non-standard bolt pattern. This is to insure that only the 8393 monitor designed for use with the hydrant elbow will fit. The 8393 monitor’s low discharge height greatly reduces the forces acting on the mounting system due to the nozzle reaction. ***Use of any other monitor is strictly prohibited.***

7. To install the monitor.

    a. Without a butterfly valve; place the ring gasket in the center of the elbow flange and set the monitor on the flange arranging the bolt hole patterns so they match (see figure 3). Install the four 2.5” long bolts (14) through the monitor flange using the 2 flat washers that came with the monitor under the heads of the bolts for holes 1 & 3. Install the 4 hex nuts (12) finger tight. Using a crisscross pattern tighten the nuts alternately and gradually to 100 ft/lbs.

    b. With the butterfly valve kit p/n 01354200; place the butterfly valve in the center of the elbow flange oriented as shown in the assembly drawing. Set the monitor on top of butterfly valve arranging the bolt hole patterns of the two flanges so they match (see figure 3). Install the four 4.5” long bolts (15) through the monitor and elbow flanges using the 2 flat washers that came with the monitor under the heads of the bolts for holes 1 & 3. Install the 4 hex nuts (12) finger tight. Using a crisscross pattern Tighten the nuts alternately and gradually to 100 ft/lbs. The resilient seat of the butterfly valve will seal against both flange surfaces.

8. Double check that all fasteners have been tightened properly.

9. Install stream shaper and smooth bore nozzle or combination fog nozzle onto monitor discharge and tighten all connections with a spanner wrench.

Operation;

Monitor

1) The monitor discharge can be raised by turning the hand wheel in a counterclockwise direction. It can be lowered by turning the hand wheel in a clockwise direction. There are internal stops at each end of travel.

2) The discharge can be rotated horizontally by releasing the horizontal twist-lock knob at the lower right and rotating the monitor. Turn the knob counterclockwise to release or clockwise to engage.

3) When monitor is left unattended, **ALWAYS** lock the horizontal movement.

4) Because of the worm gearing on the vertical movement, no lock is needed. The vertical discharge will stay in the position in which it was last set.

5) The monitor should be drained after use in freezing temperatures. 1) Shut off the hydrant. 2) Open the butterfly valve. 3) Turn the hand wheel until the monitor's discharge is at its lowest vertical position. 4) Drain the monitor and hydrant by means of the automatic drain feature of the hydrant. 4) After the system has been drained place the monitor discharge back in the desired position and close the butterfly valve.

Butterfly Valve;

1) The butterfly valve can be opened and closed by turning the hand wheel with the spinner knob. There is a visual valve position indicator located on the top of the gear actuator.

Maintenance:

1) Move the monitor through its entire range of motion monthly. At this time, inspect the monitor for proper lubrication, especially in corrosive environments or in climates where ice could form in the monitor. Keeping the gearing and rotation joints well lubricated is important.

2) 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.

3) If the monitor is subjected to vibration, check all fasteners and set screws for signs of loosening. If necessary, secure them with a "Loctite #242" or similar type of adhesive product.

4) For repair parts please consult the parts drawings on the Elkhart Brass website

5) Maintain the monitor paint as dictated by use and by the environment. The factory-applied paint is a red (RAL 3003) urethane enamel.