

# Installation, Operating, & Maintenance Instructions



Models 8500-02, 8500-03, 8500-03X, 8593-02,  
8593-03/294-11REV.06 and 8593-03X/294-11REV.06X

VULCAN

and

**COPPERHEAD**

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**ELKHART BRASS**  
FIRE FIGHTING EQUIPMENT A SAFE FLEET BRAND



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8500-03  
8500-03X



8500-02



8593-03/294-11REV.06  
8593-03X/294-11REV.06X



8593-02

# 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 supplying this equipment 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 7.



**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. 3" NPT Base

Apply an appropriate thread sealant to the 3" NPT nipple. Thread the monitor base onto the nipple. Ensure that the alignment of the fixed monitor base for the 8500-03X and 8593-03X/294-11REV.06X is in the correct position for access to the left/right hand wheel. Alignment for other monitors is not critical as the monitor is capable of 360° continuous rotation.

### 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. Ensure that the alignment of the fixed monitor base for the 8500-03X and 8593-03X/294-11REV.06X is in the correct position for access to the left/right hand wheel. 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® #242 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

Ensure that the alignment of the fixed monitor base for the 8500-03X and 8593-03X/294-11REV.06X is in the correct position for access to the left/right hand wheel. 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® #242 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 or butterfly valve, it is critical that bolts be tightened uniformly to prevent cocking of the monitor relative to the flange or valve. 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.

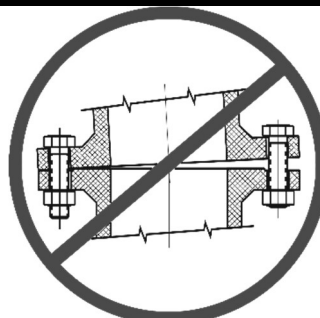


Figure 1  
Improper Flange Installation

## III. OPERATING

### 1. Tiller Handle Monitor 8500-02 and 8593-02

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.

### 2. Dual Hand Wheel Monitor 8500-03 and 8593-03/294-11REV.06

The left/right and up/down hand wheels will rotate with the monitor. Turn the up/down hand wheel clockwise to lower nozzle or counterclockwise to raise nozzle. Turn the left/right hand wheel clockwise to move nozzle left or counterclockwise to move nozzle right.

### 3. Dual Hand Wheel Fixed Base Monitor 8500-03X and 8593-03X/294-11REV.06X

The left/right hand wheel remains fixed while the up/down hand wheel will rotate with the monitor. Turn the up/down hand wheel clockwise to lower nozzle or counterclockwise to raise nozzle. Turn the left/right hand wheel clockwise to move nozzle left or counterclockwise to move nozzle right.

## IV. MAINTENANCE & INSPECTION

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

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.

**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.

## V. PARTS DRAWINGS

To view the most current parts list, drawings, or demonstrations of common EXM commands, please visit [www.elkhartbrass.com](http://www.elkhartbrass.com).