ELKHART BRASS
Fire Fighting Equipment

Spit-Fire®

08394159 Monitor
Installation, Operation, & Maintenance Instructions For ATEX Applications

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PRODUCT SAFETY INFORMATION

- Whenever possible, this equipment should be operated from a remote location to avoid exposing personnel to dangerous fire conditions.
- Drain all water from monitor after each use or freeze damage may occur.
- All personnel who may be expected to operate this equipment must be thoroughly trained in its safe and proper use.
- Before flowing water from this device, ensure that all personnel (fire service and civilian) are clear of the stream path. Confirm stream direction will not cause avoidable property damage.
- Become thoroughly familiar with the hydraulic characteristics of this equipment, as well as the pumping system used to supply it.
- Water valve's that are provided by Elkhart Brass are programmed to close slowly to avoid water hammer. Always open and close valves slowly to avoid water hammer.
- After each use, and on a scheduled basis, inspect equipment per instructions in the maintenance section.
- Keep fingers and hands clear of moving parts.
- Disconnect power before servicing the motors, electric valve, or electric valve controller.
- Any modifications to the electrical motors will destroy the IP-66 rating and void warranty coverage of the enclosure and all components within.
- All equipment must be installed in accordance with ATEX requirements (EN/IEC 60079-14) as appropriate and in areas where equipment classification is suitable.

Important: Before installing and operating this equipment, read this manual thoroughly. Proper installation is essential to safe operation.

Warning: Do not attempt to disconnect or work on any electrical equipment in this system unless power is removed, or the area is known to be non-hazardous.

MONITOR INFORMATION:

SERIAL NUMBERS:_____

DETAILS:

_____

_____

_____

_____

_____

MONITOR CALLOUT

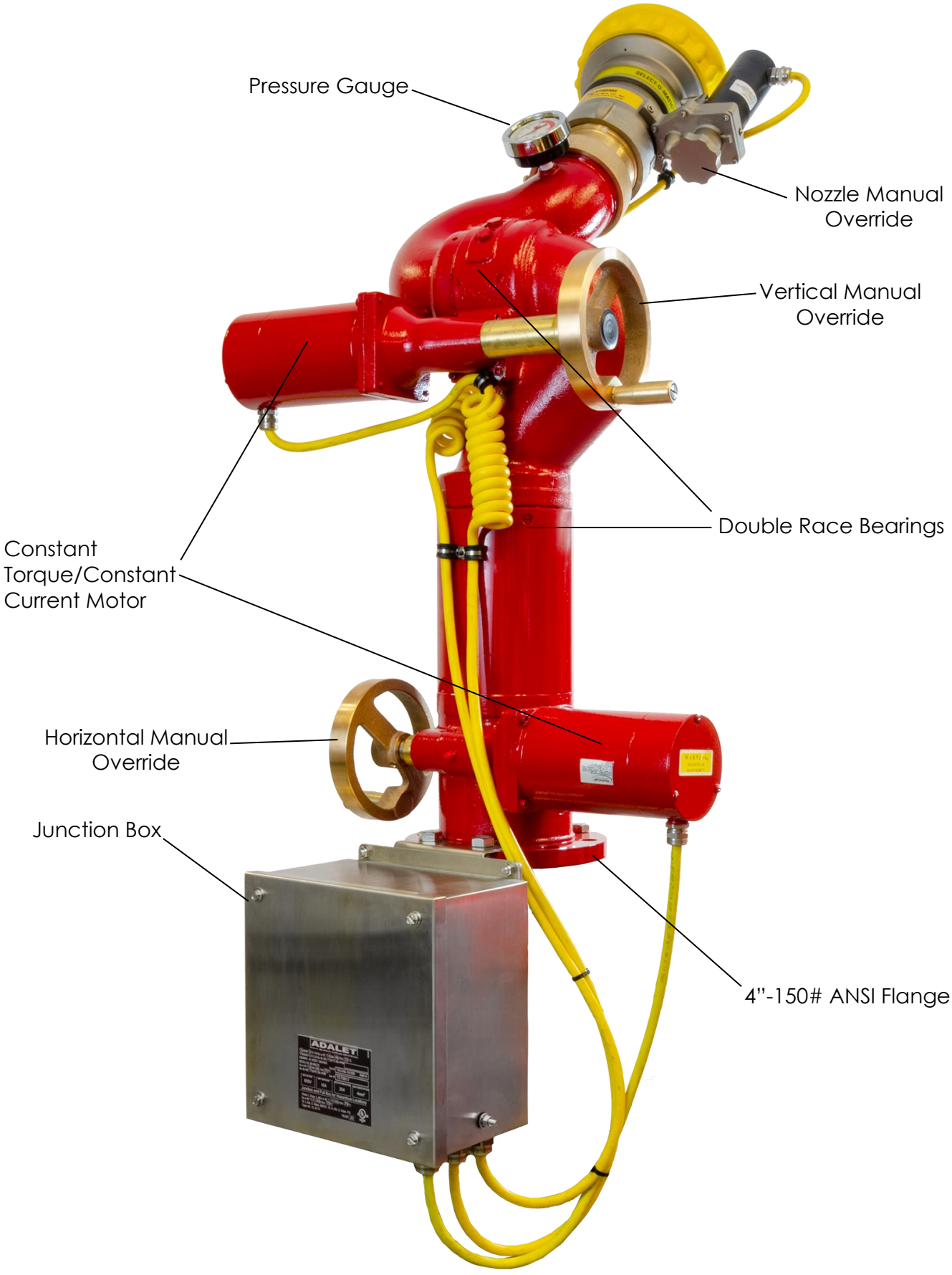


Figure 1: Monitor Callout Drawing

OVERVIEW

ATEX Spit-Fire Monitor Features:

- **Construction:** All brass with vaned 4" waterway
- **Mounting Flange:** 4" 150# flat-face ANSI flange (raised face flange available as option)
- **Discharge:** 3½" NHT male outlet
- **Stream Shaper:** #284-B brass shaper included
- **Flow:** 2000 GPM, 200 PSI (7570 LPM,14 BAR) max working pressure (with optional SM-2000BE-HL nozzle)

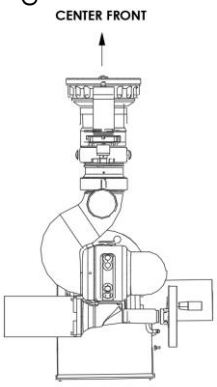
- **Monitor:**
  - ATEX Certified to:
    CE_{2776} Ex II 2 GD
    Ex db eb h IIC T4 Gb
    Ex h tb IIIC T130°C Db
    IP66
- **Motor:**
  - 240 VAC synchronous motors (non-arcing)
  - Constant torque and current draw in start, running, and stall
  - Motors are capable of sustained, continuous oscillation.
  - Instantaneous start, stop, and reverse
  - Residual (Power Off) torque is always present
  - Long life and exceptional reliability
  - 240 VAC, 50/60 Hz., 1 Phase, 0.40 Amp current per motor
  - Class I, Div. 2. Groups A, B, C, & D, T4
- **Junction Box:** CE_{0539} Ex II 2 G Ex e IIC T4 Gb
  -50°C ≤ Ta ≤ 70°C
  CE_{0539} Ex II 2 D Ex tb IIIC T120°C Db IP66
  DEMKO 01 ATEX 130438X
  IECEx UL 09.0017X
- **Range of Motion:** Monitor stops are factory set at 346° horizontal (+173° to -173° from front center), and 135° vertical (+90° to -45°)
- **Rate of Horizontal Motion:** 0.116 °/second at 50 Hz.
- **Manual Override:** Hand wheels provided for vertical, horizontal, and nozzle movements. Hand wheel will not rotate when monitor is operated electrically.

Warning: DO NOT TAKE COVER OFF OR DISASSEMBLE MONITOR MOTORS. If cover is/has been removed, the warranty is void and the service life of the motor is significantly reduced. Disassembling the motor will ruin the waterproof characteristics of the motor.

INSTALLATION INSTRUCTIONS

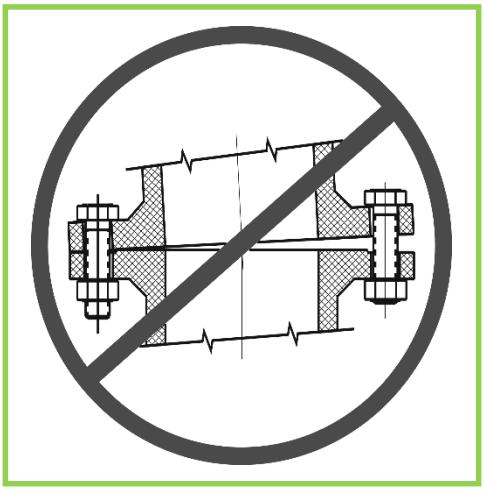
Monitor Installation

1. Attach companion flange to water supply pipe so that the bolt pattern will allow the monitor to be installed with the "CENTER FRONT" position (shown below) properly aligned. Alignment is correct when the motors are oriented to match the illustration below with the hand wheels for the horizontal and vertical motor are facing 180° from each other



2. Install the monitor assembly on the water supply flange so that it matches up to a 4"-150# flat faced ANSI flange on the inlet of the monitor, with a flange gasket between the flanges. Install motor cable junction box by aligning the two-holed bracket with the flange mounting holes on the rear of the monitor. Secure the inlet flange with eight (8) 5/8"-11 UNC Grade 5 hex head bolts. Torque bolts to 60-70 ft-lbs. if using Elkhart Brass supplied gaskets. If using a gasket supplied by others, follow manufacture's guidelines.
3. Standpipe must be structurally strong enough to withstand reaction forces of the nozzle when discharging a straight stream at 90° of the standpipe tower. The formula for calculating nozzle reaction is: [REACTION FORCE = 0.0505 x GPM x √ PSI]
4. The inlet pressure at the base of the monitor must be high enough to allow for pressure loss through the monitor. To accomplish this, use the pressure loss for GPM flowing and add to nozzle pressure. See Monitor Hydraulic Data section for pressure loss chart.

Warning: When installing the monitor on a raised face companion flange or wafer type valve, it is critical that the bolts be tightened uniformly to prevent misalignment of the monitor relative to the flange or valve. If the monitor becomes misaligned, the base flange will fracture and fail when the bolts on the "high" side are tightened.



OPERATING INSTRUCTIONS

One Monitor Control

The Monitor Control Panel (MCP) has one set of switches and pilot lights to operate one monitor.

- **Monitor Functions** – UP, DOWN, LEFT, RIGHT, STREAM, and FOG are operated with spring return knob lever switches. This is accomplished by using the proper selector to move the monitor the direction desired. When the switch is released, it will return to the neutral (off) position, and monitor movement will stop.

Monitor Manual Control

- **Vertical Manual Override** – Push hand wheel inward to engage override. While holding the hand wheel in, rotating it clockwise will raise the nozzle, and rotating it counterclockwise will lower the nozzle.
- **Horizontal Manual Override** – Push hand wheel inward to engage override. While holding hand wheel in, rotating it clockwise will move the monitor right, and rotating it counterclockwise will move the monitor left.
- **Valve Manual Override** – The manual hand wheel will turn whenever the actuator is electrically operated. Do not attempt to operate the manual override handwheel if the actuator is in operation. Turning the manual override wheel on an Elkhart Brass supplied actuator clockwise closes the valve and turning the manual override wheel counterclockwise will open the valve.

MAINTENANCE

After every use Inspection & Maintenance

When monitor operation is completed, move vertical movement to full down position to allow water to drain from nozzle. After water is drained from the nozzle, move monitor to the "park" position, so it is prepared for fighting a fire.

Monthly Inspection & Maintenance

- Cycle all monitor functions (UP, DOWN, LEFT, RIGHT, STRAIGHT, FOG) to ensure the complete system is fully functional.

Six-Month Inspection & Maintenance

- 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 Mobilith SHC-100 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.
- Fill monitor with grease until full.
- Check motor control cables for damage.
- Check all painted surfaces for chips or scratches and repaint as required. Motors are coated with a black waterproofing coating. Paint should be applied any time the black coating is visible.
- Visually check all electrical equipment.

Warning: Do not attempt to disconnect or work on any electrical equipment in this system unless power is removed, or the area is known to be non-hazardous.

SPECIFICATIONS

General Specs

- Input Power 240 VAC (50/60Hz.) 1 Phase
- Electrical Load 0.40 AMPS Per Motor
- Monitor Dimensions 23" dia. x 52" h
- Monitor Weight Approx. 300 lbs.

MONITOR HYDRAULIC DATA

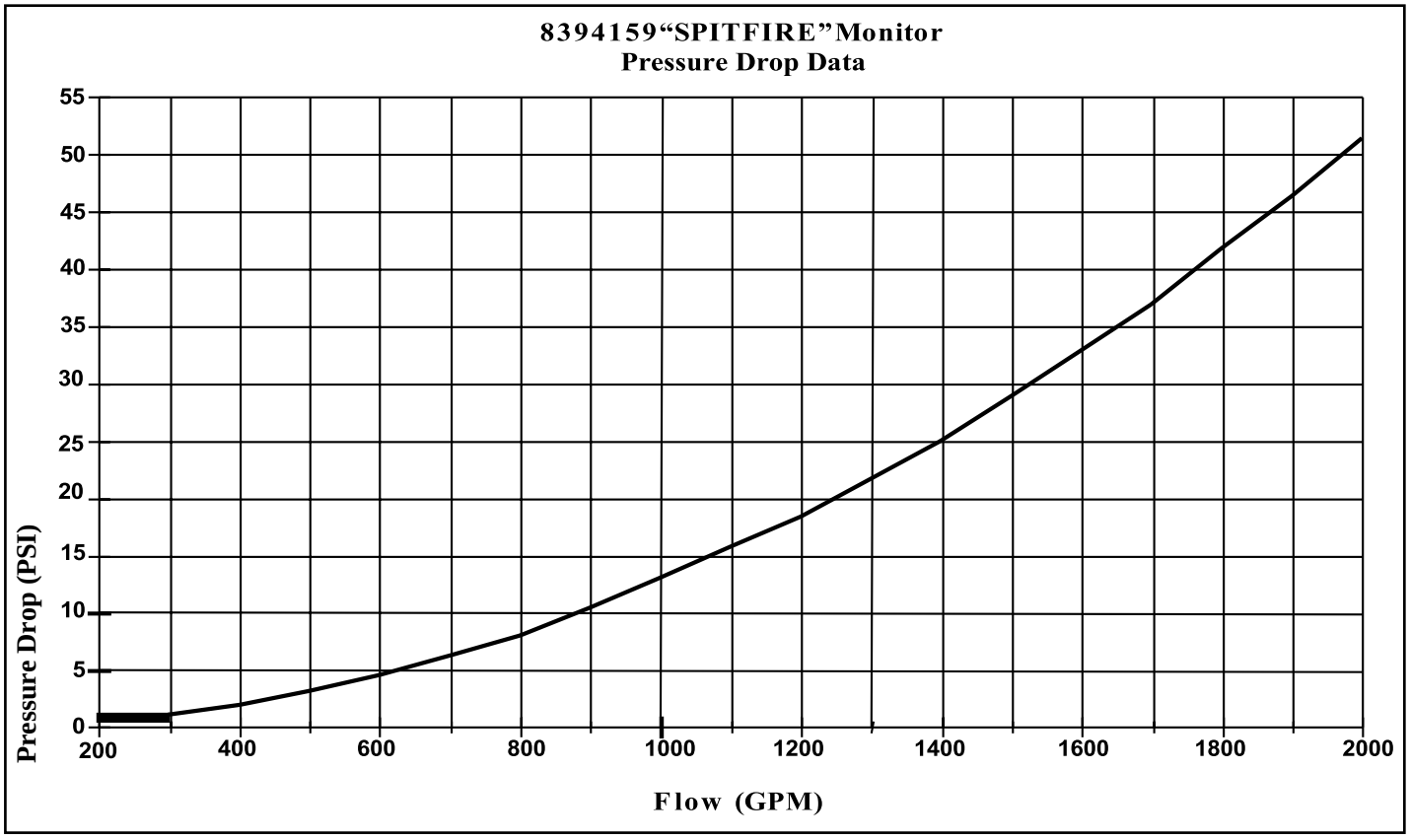


Figure 4: Monitor Friction Loss Chart

DIMENSIONAL DRAWING

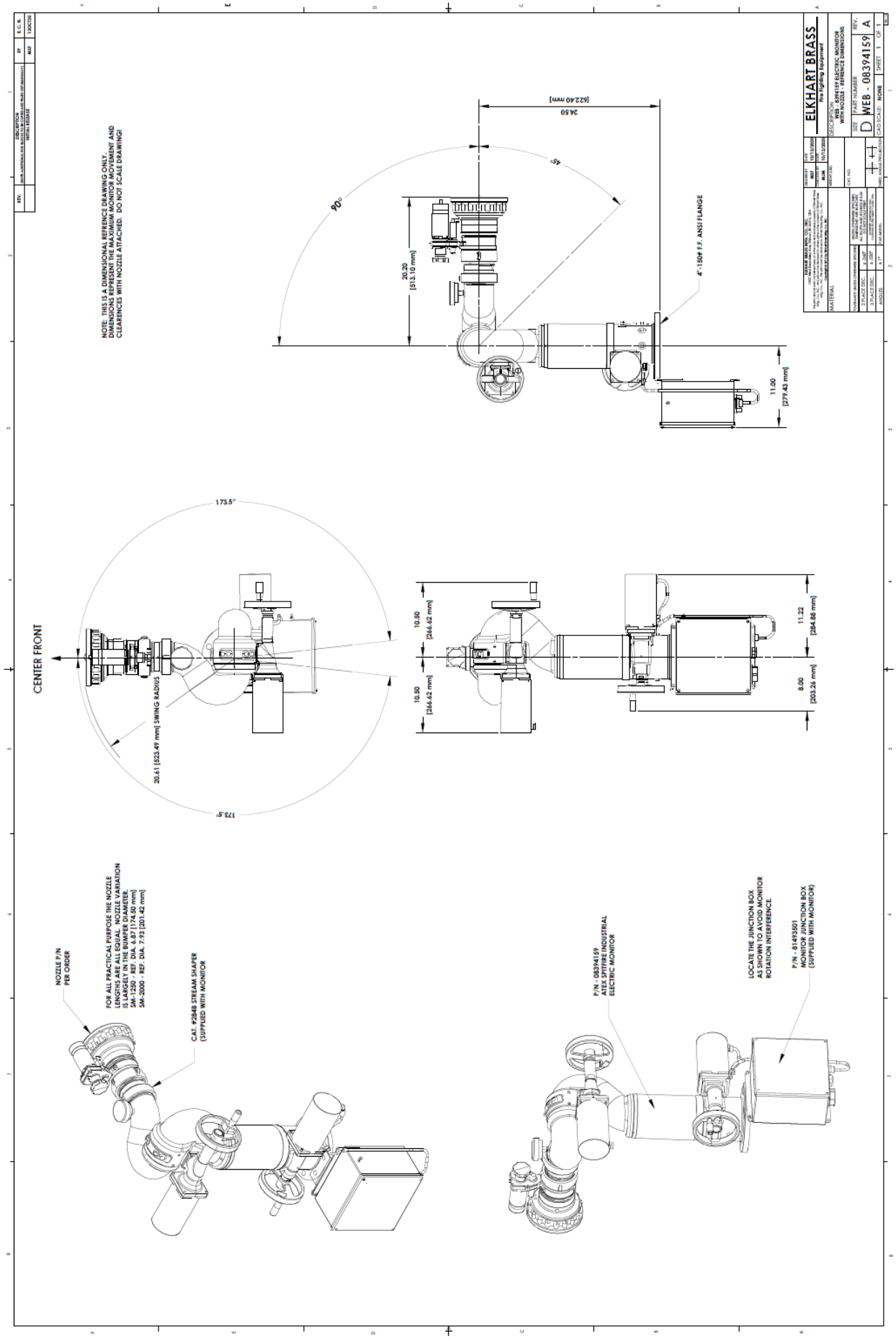


Figure 5: Monitor Dimensional Drawing

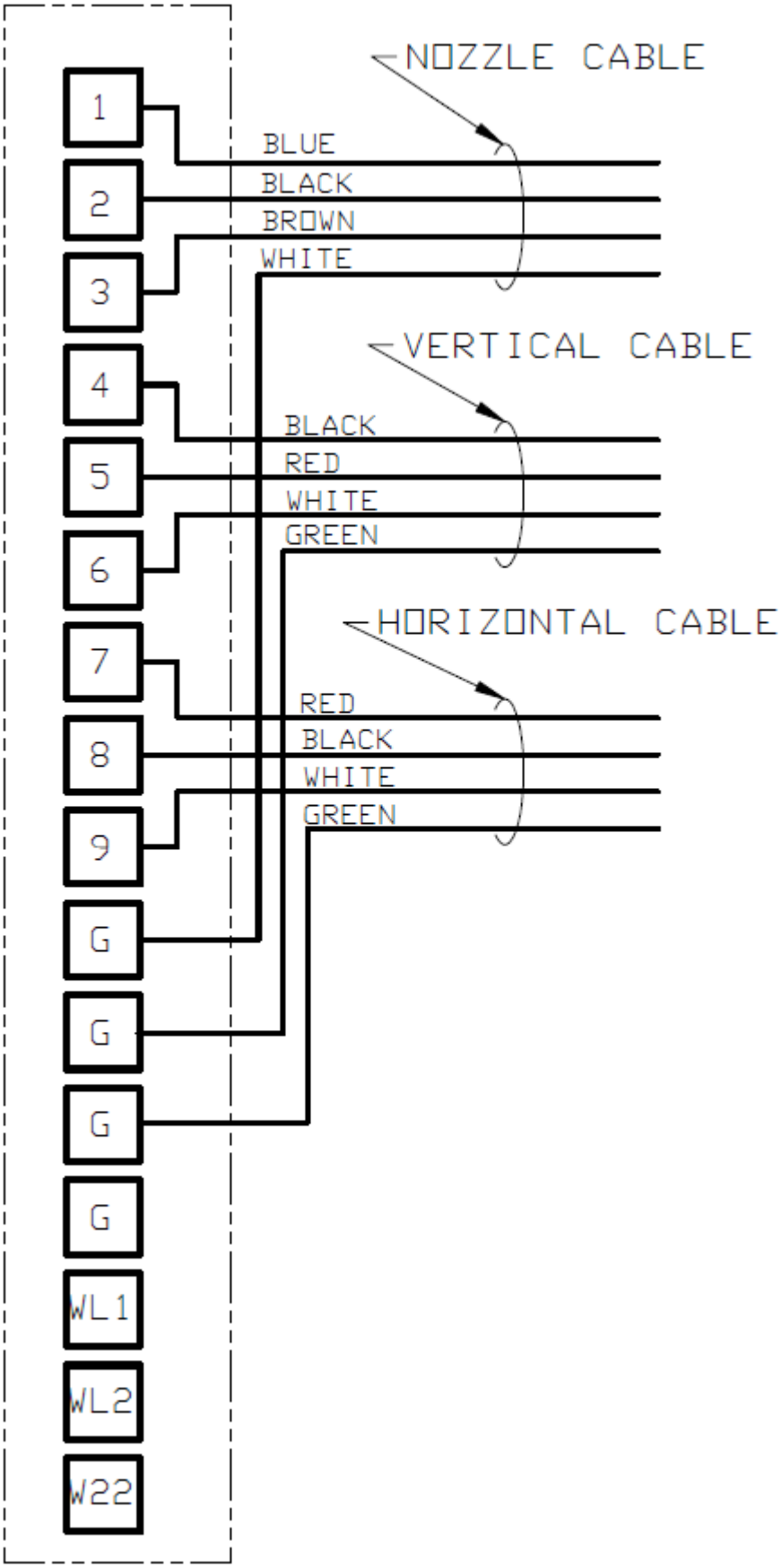
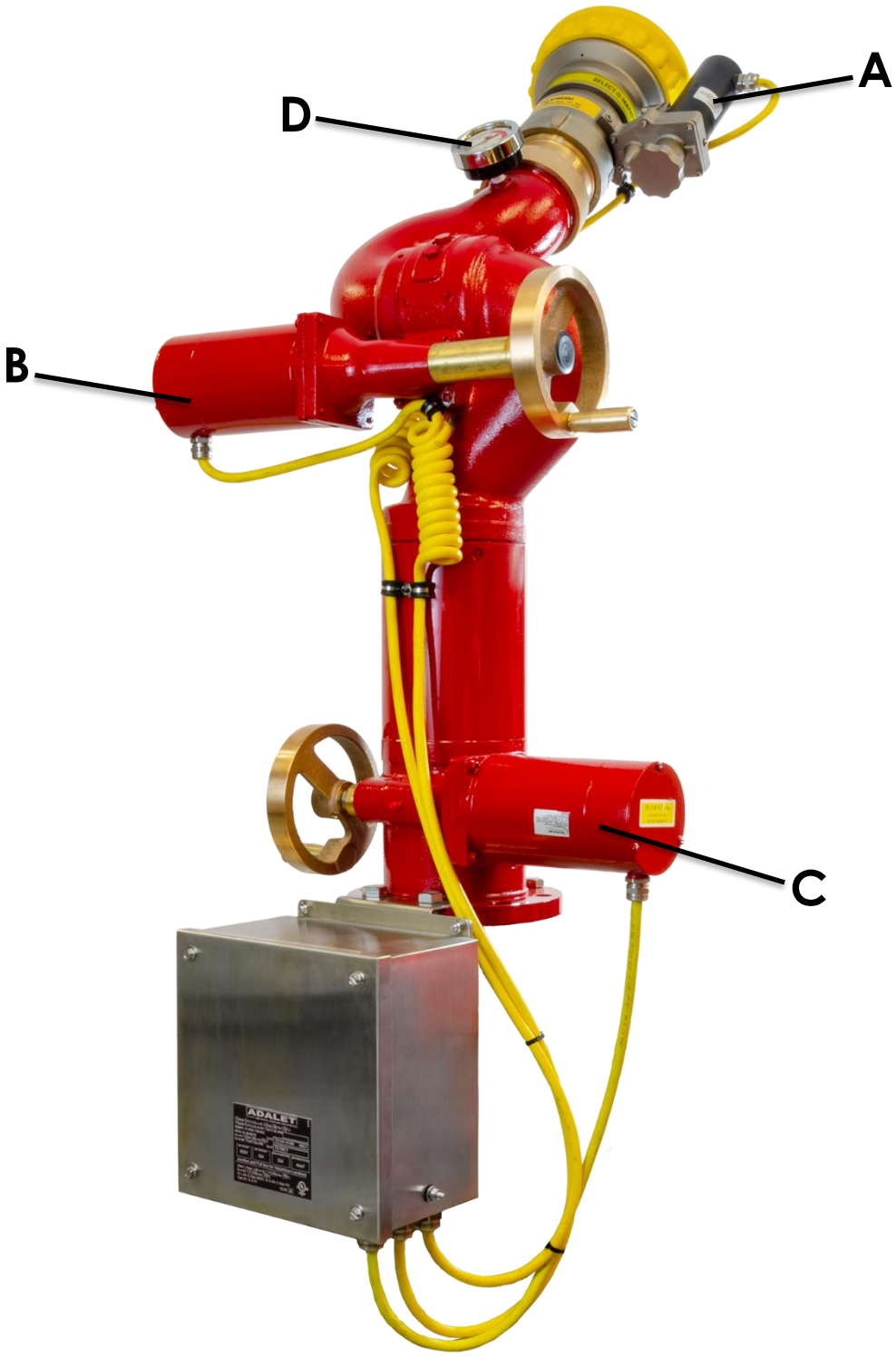


Figure 6: Monitor Cable Wiring to Junction Box Terminals

SPARE PARTS



	ATEX SPITFIRE MODEL # 8394159	
	PART NO.	**DESCRIPTION**
A	**460910SP1**	MOTOR AND CABLE-ELECTRIC (240VAC) NOZZLE
B	**46092SP1**	MOTOR AND CABLE-ELECTRIC (240VAC) VERTICAL
C	**460921SP1**	MOTOR AND CABLE-ELECTRIC (240VAC) HORIZONTAL
D	**33587000**	PRESSURE GAUGE (0-300 PSI)

NOTES

ELKHART BRASS
1302 WEST BEARDSLEY AVE
P.O. BOX 1127 ELKHART,
IN 46514
PHONE: 574-295-8330 • 800-346-0250
FAX: 574-293-9914
WWW.ELKHARTBRASS.COM

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SPITFIRE®
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98370000 REV. D