



## STYLE 3462 FORESTRY BUMPER MONITOR INSTALLATION, OPERATING and MAINTENANCE INSTRUCTIONS

The following is intended to provide the basic instructions for installation, operating and maintenance of the 3462 forestry Bumper Monitor.

### PRODUCT RATINGS

Maximum motor current draw:

12 volt versions	50 amps each for elevation and rotation motors (Locked rotor current) 3.0 amps for nozzle pattern motor
24 volt versions	25 amps each for elevation and rotation motors (Locked rotor current) 1.5 amps for nozzle pattern motor

Normal operating current (depending on operating conditions - pressure, flow, etc.):

12 volt versions	3 - 10 amps each for elevation and rotation motors 0.7 amps for nozzle pattern motor
24 volt versions	2 - 5 amps each for elevation and rotation motors 0.4 amps for nozzle pattern motor

Minimum Voltage: **(Truck engine must be operating for proper voltage requirement.)**

All 12 volt motors: 11.5 volts while operating

All 24 volt motors: 23 volts while operating

Mass: 23 lbs. (10.4 kg) with out nozzle or quick disconnect base

Maximum Flow: 300 GPM (1135 lpm)

Maximum Pressure: 200 PSI (14 bar)

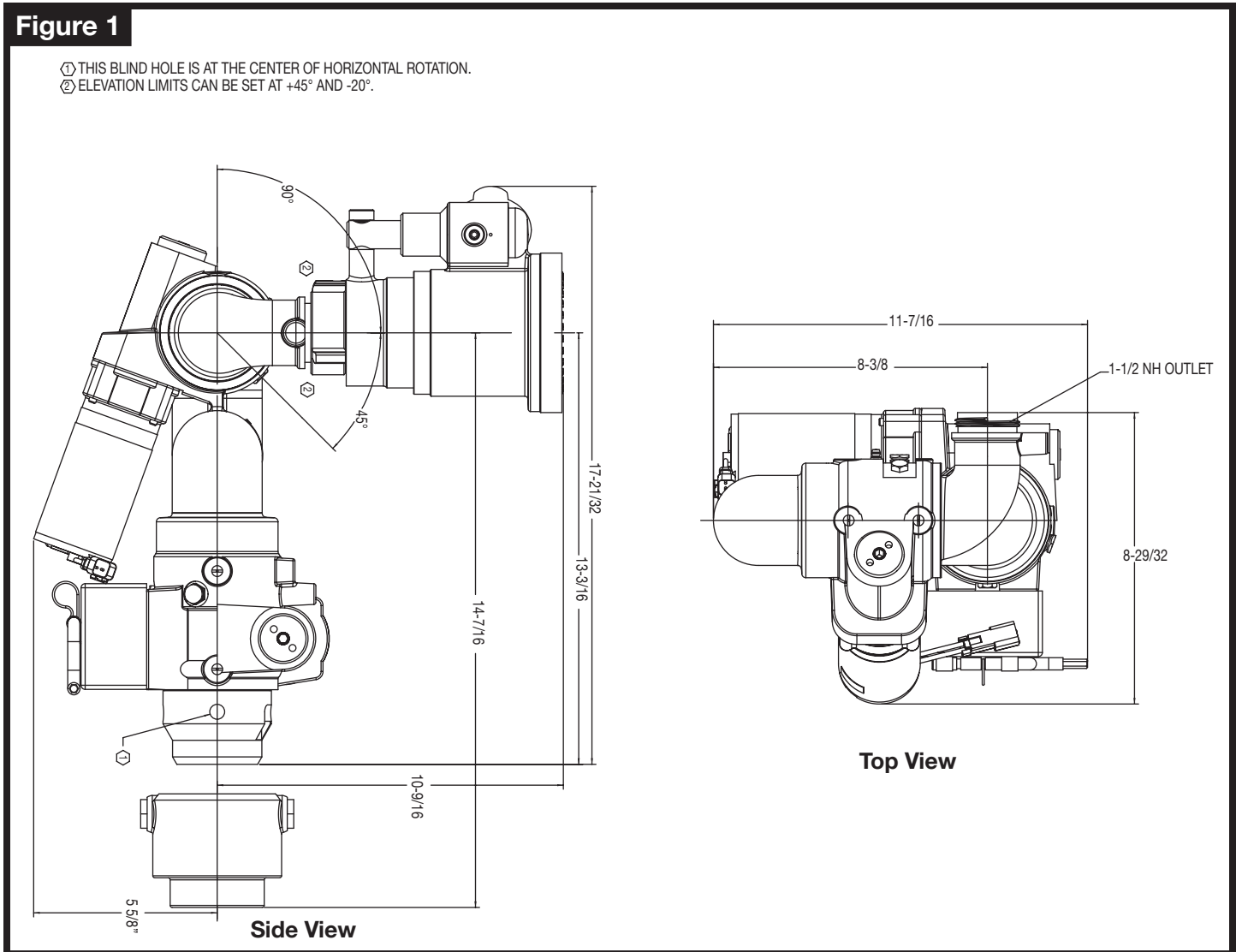
### PRODUCT WARNINGS

- WARNING:** The maximum flow of the Bumper Monitor is 300 GPM. The center of the waterway outlet is 13 <sup>9</sup>/<sub>16</sub>" inches from the bottom of the inlet. Ensure these values and an appropriate safety factor is used to determine a proper support structure.
- WARNING:** Aim the Bumper Monitor in a safe direction before pumping water through it.
- WARNING:** The Bumper Monitor uses current limiting for both the monitor and nozzle stops. Use only appropriate Akron Brass nozzles.
- WARNING:** Do not use the electric controls when the override cranks are being used or are in position for use.
- WARNING:** If any tags or bands are worn or damaged and cannot be easily read, they should be replaced.
- WARNING:** Disconnect power and disable flow before maintenance.
- WARNING:** Keep all personnel out of the Danger Zone (in front of the outlet of the monitor) when the water source is attached. Dangerous flow velocities can cause serious injury.

- WARNING:** The Bumper Monitor contains moving parts. Keep hands, fingers and objects away from pinch points.
- WARNING:** Not designed for explosive environments.
- WARNING:** Exceeding the maximum pressure and flow of the Bumper Monitor or nozzle may cause damage.
- WARNING:** Do not disconnect Bumper Monitor from quick disconnect base while flowing.

**GENERAL INSTRUCTIONS**

- Review the instructions, wiring diagram, component layout and rotational stops diagram before installing this unit. This unit operates on 12 or 24 volt DC depending on the unit chosen. All electrical current flows through the wires. The Bumper Monitor does not act as a ground.



- Not recommended for use in salt water applications.
- For firefighting by trained firefighters only.
- For use with water or standard fire fighting foams only. After use with foam, flush with fresh water.
- Do not use the nozzle as a forcible entry tool.
- Drain the monitor and nozzle after use to prevent “freeze damage”.
- Ensure that the thread in the nozzle swivel matches the thread on the Bumper Monitor outlet. Do not overtighten the nozzle.
- The Bumper Monitor, nozzle, logic box, control boxes and field adjustable rotation stops are made for optimal performance, Do not alter in any manner.
- Do not install shutoffs on the outlet of the Bumper Monitor.

## ELECTRICAL INSTALLATION INSTRUCTIONS

### A. JOYSTICK AND VALVE ATTACHMENT

The following steps will prepare the joystick and valve for attachment to the control harness.

- STEP 1** Plug Power and Valve Harness (part #721564 Figure 4) into Control harness power/valve connector on the monitor (Figure 2).
- STEP 2** Plug either end of the CAN Communications Harness (part #721565 Figure 4) into Control box CAN connector located on the monitor (Figure 2).
- STEP 3** Plug the remaining end of the CAN Communications Harness (part #721565) into the CAN Joystick.
- STEP 4** Plug the mating end of a Valve Harness (part #721290) into the Power and Valve Harness (part #721564) valve connector located at the vehicle end of the harness.
- STEP 5** Plug the remaining end of the Valve Harness (part #721290) into the Valve Actuator Motor connector.
- STEP 6** Recognizing that as the monitor moves in the rotation axis, the three cables move with it. You must allow sufficient free length of the cables before affixing to a stationary point. Assure that the cables experience no sharp bends throughout the rotation range of travel.

### B. BATTERY ATTACHMENT

The Battery connection should be the last connection made.

Connect the flying leads at the end of the Power and Valve Harness (part #721564) opposite the monitor to a switched battery power source. The black lead should connect to battery negative, and the red lead to battery positive. Use butt splices or other appropriate method of choice.

### D. MECHANICAL MONITOR ATTACHMENT

The Bumper Monitor is to be mounted on the waterway with a 2" NPT thread. The front of the monitor is identified in Figure 2. The 2" NPT Inlet will have the Quick Disconnect Latch Pin Hole facing to the right when looking towards the vehicle.

E. THE ROTATIONAL AND ELEVATION STOPS SET THE BOUNDARIES FOR THE AREA IN WHICH THE BUMPER MONITOR IS ALLOWED TO TRAVEL. The monitor is shipped with rotation stops at 90° right, and at 90° left. All other positions are achieved by switching the factory set stop and the plug in the desired stop location. Both the stops and the plugs have a 1/2 inch hex head. Refer to Figure 2 and 3 to determine which stop location is needed for the desired rotation. The elevation stop sets the upper limit of the elevation. The monitor is shipped with elevation stops at 90° above horizontal and 45° below horizontal to meet NFPA. All other vertical positions are achieved by switching plugs and stops to the desired locations as indicated in Figures 2 and 3. Additional stops and plugs are provided in the instruction kit for all possible elevation and rotation positions.

## OPERATING INSTRUCTIONS

### A. Joystick with Trigger FOR VALVE

To change the nozzle pattern toward the straight stream or fog press the corresponding button on top of the Joystick. To change the horizontal position right or left move the Joystick towards the appropriate direction. To change the vertical position up or down move the Joystick forward for down and backwards for up. To open and close the valve, press the trigger to open the valve and release the trigger to close the valve. The valve can be maintained open by quickly pressing the trigger twice. Press the trigger and release once to close the valve.

### B. Quick Disconnect

The Bumper Monitor is designed for an optional quick disconnect inlet. If equipped with a quick disconnect inlet, first mount the inlet on the 2" NPT piping. Make sure the latch pin on the inlet is facing towards the right (see figure 2). Place the monitor into the inlet so the two guide pins line up with the groove. Slide the monitor all the way in and rotate 15° clockwise until the latch pin locks in place. To remove the monitor, pull the latch pin, rotate the monitor 15° counterclockwise, and lift the monitor out of the inlet.

**WARNING:** Make sure the monitor is locked in place before flowing water. The latch pin must be flush with the housing. (See warning tag on the quick disconnect inlet for further information)

### C. MANUAL OVERRIDE CONTROLS

THE MANUAL OVERRIDE CONTROL IS TO BE USED WHEN THE POWER TO THE MONITOR IS OFF. A 1/4 inch Allen wrench will actuate the overrides. An override crank is included on the monitor. See figure 2 for location of crank. To use the manual override insert the hex head end of the override crank in the hexagon shaped hole. Then rotate or spin the override crank either clockwise or counterclockwise to aim the monitor in the desired direction.

WHEN THE OVERRIDE CRANKS ARE NO LONGER IN USE PUT THEM BACK IN THE STORAGE POSITION.

**WARNING:** DO NOT USE THE ELECTRIC CONTROLS WHEN THE OVERRIDE CRANK IS BEING USED OR IS IN POSITION FOR USE.

## MAINTENANCE INSTRUCTIONS

Your Bumper Monitor and nozzle should be inspected prior to and after each use, to ensure it is in good operating condition. Periodically, an unanticipated incident occurs where the Bumper Monitor is misused in a manner that is inconsistent with standard operating practices and those listed in IFSTA. A partial list of potential misuse includes:

- Operating above maximum rated pressure and flow.
- Not draining, and allowing water to freeze inside.
- Prolonged exposure to temperatures above 130°F, or below -25°F.
- Operating in a corrosive environment.
- Having the nozzle hit a fixed object during operating or transportation.
- Other misuse that might be unique to your specific environment.

Also there are many “tell tale” signs that indicate repair is in order, such as:

- Controls that are either inoperable or difficult to operate.
- Excessive wear.
- Poor discharge performance.
- Water leaks.

If any of the above situations are encountered, the Bumper Monitor should be taken out of service, repaired, and tested by a qualified technician before placing it back in service.

## MOTOR REPLACEMENT

To replace either the horizontal or vertical rotational motors:

1. Disconnect Power from the unit.
2. Loosen and remove the four socket screws (Item 49 on the Parts List) from the gearbox housing (19).
3. Slowly remove the motor assembly (15) and gearbox housing (19) from the unit.

**IMPORTANT: Make sure the internal gear, (Item 25 on the Parts List), remains in place, (hold with a screwdriver), to avoid gear alignment problems.**

4. Loosen and remove the four socket head capscrews (21) from the inside of the gearbox housing that hold the housing and the motor assembly together.
5. Remove gearbox housing (19) from the motor assembly (15).
6. Replace o-ring seal (18) on the gearbox housing (19).
7. Attach the new motor assembly (15) to the gearbox housing (19) making sure all four screws (21) are tight.
8. Install the motor and gearbox housing assembly to the unit making sure all four socket screws (49) are tight. It may be necessary to rotate the motor slightly to get the motor gear to line up with the gears inside the gearbox.
9. Restore power to the unit.
10. Test the operation of the unit.

Call Akron Brass Customer Service Department if any problems are encountered.

Symptom	Potential Cause	What to Check	Solution
Totally Inoperative	Lack of Power	Remove the Power/Valve Cable connector from the control box mounted on the side of the monitor/turret. Check for voltage approximately equal to vehicle battery voltage between pins 1 (Pos.) and 2 (Neg.) of the cable's connector.	If no measurable voltage is present, insure proper DC power is applied to pins 1 and 2.
	Damaged Control Box	Remove the CAN Cable connector from the control box mounted on the side of the monitor/turret. Check for voltage approximately equal to vehicle battery voltage between pins 1 (Pos.) and 2 (Neg.) of the control box connector.	If no measurable voltage is present, return the Control Box/Harness for replacement.
		Insert an empty USB Flash Drive (with a status LED) into the USB connector. Check for lighting of the Flash Drive status LED.	If the Flash Drive status LED does not light, return the Control Box/Harness for replacement.
	No CAN Communication	Check status LED's located near the Joystick connector for power and CAN activity.	If no status LED's are lit, check CAN cable continuity end to end (1 to 1, 2 to 2, etc.), and retest.
If only Power status LED is lit, return the Joystick for replacement.			
If only Power and Transmit LED's are lit, return the Control Box/Harness for replacement.			

**Figure 2**

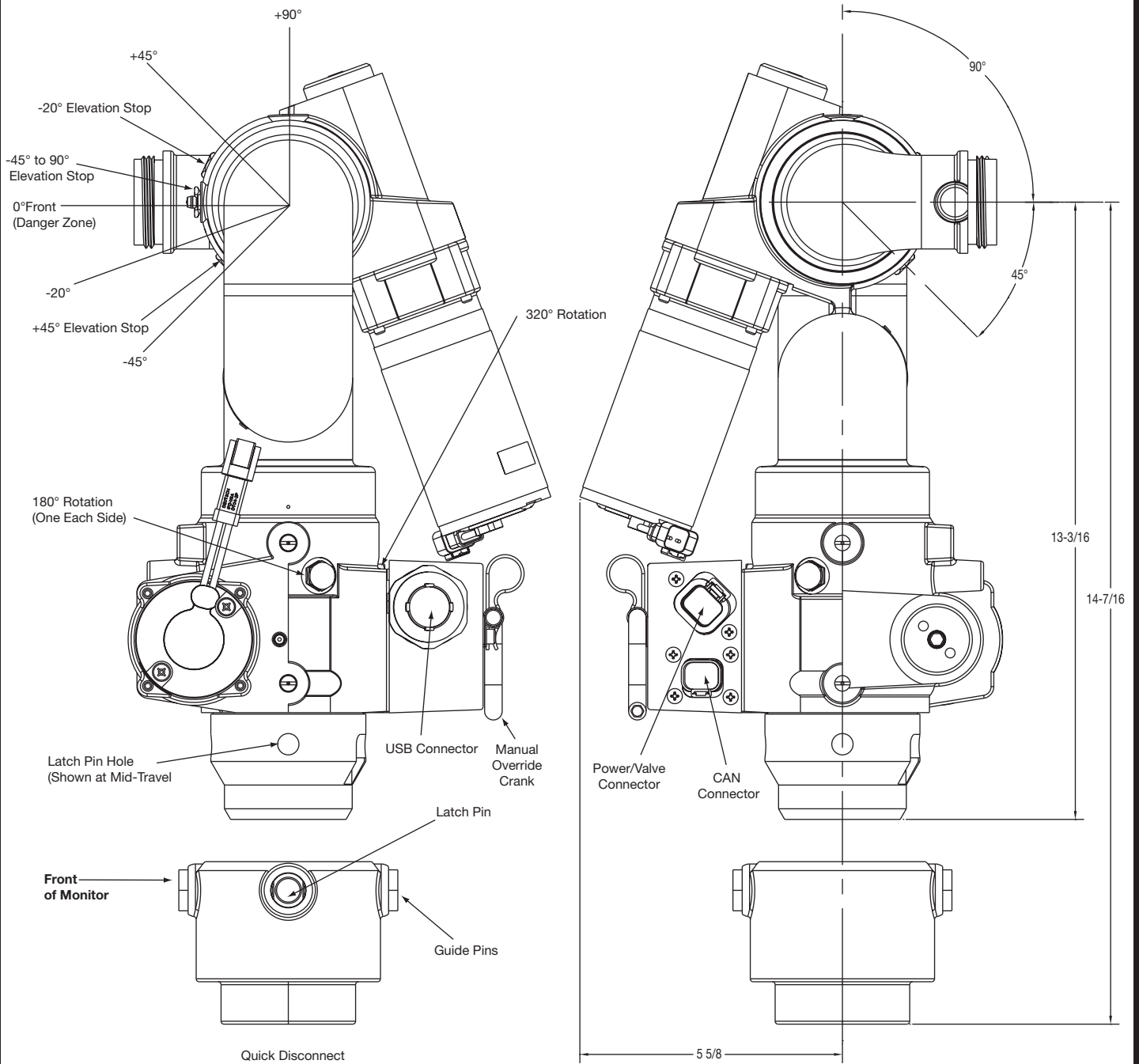
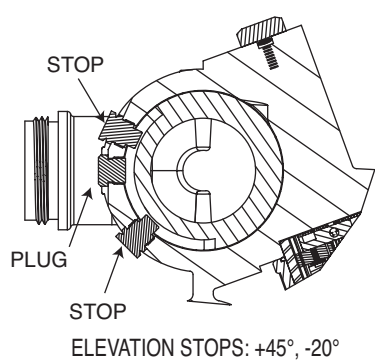
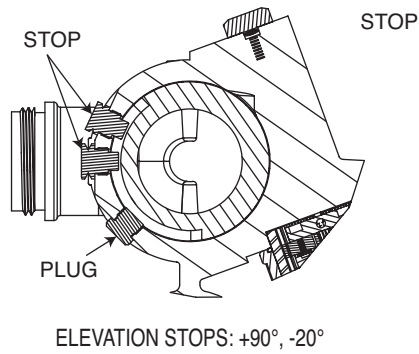
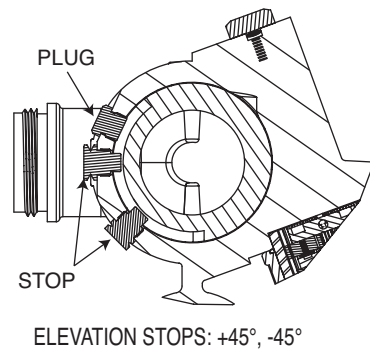
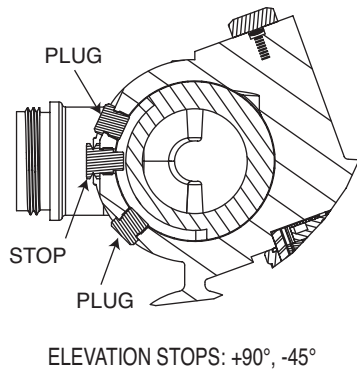
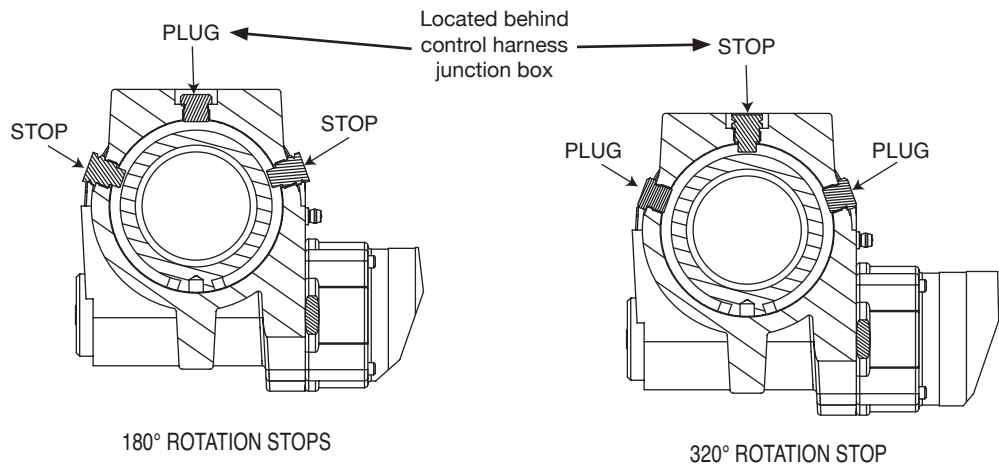
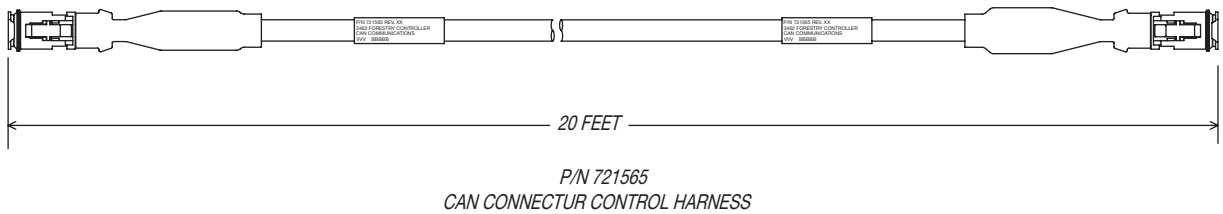
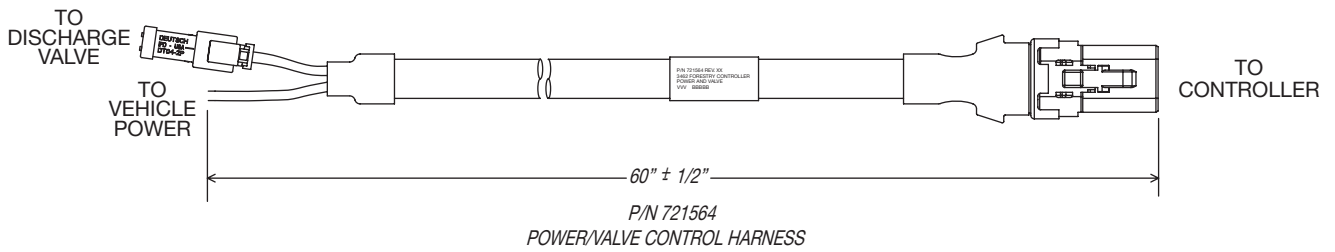
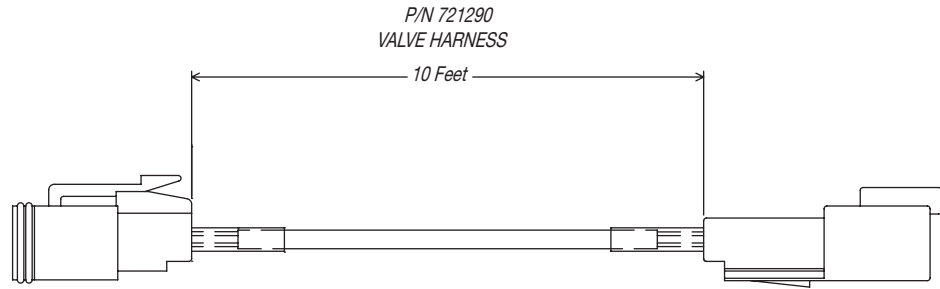


Figure 3

ROTATION AND ELEVATION STOPS



**Figure 4**



**NOTES:**



PHONE: 330.264.5678 or 800.228.1161 | FAX: 330.264.2944 or 800.531.7335 | [www.akronbrass.com](http://www.akronbrass.com)

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