

# Electric Valve Kit

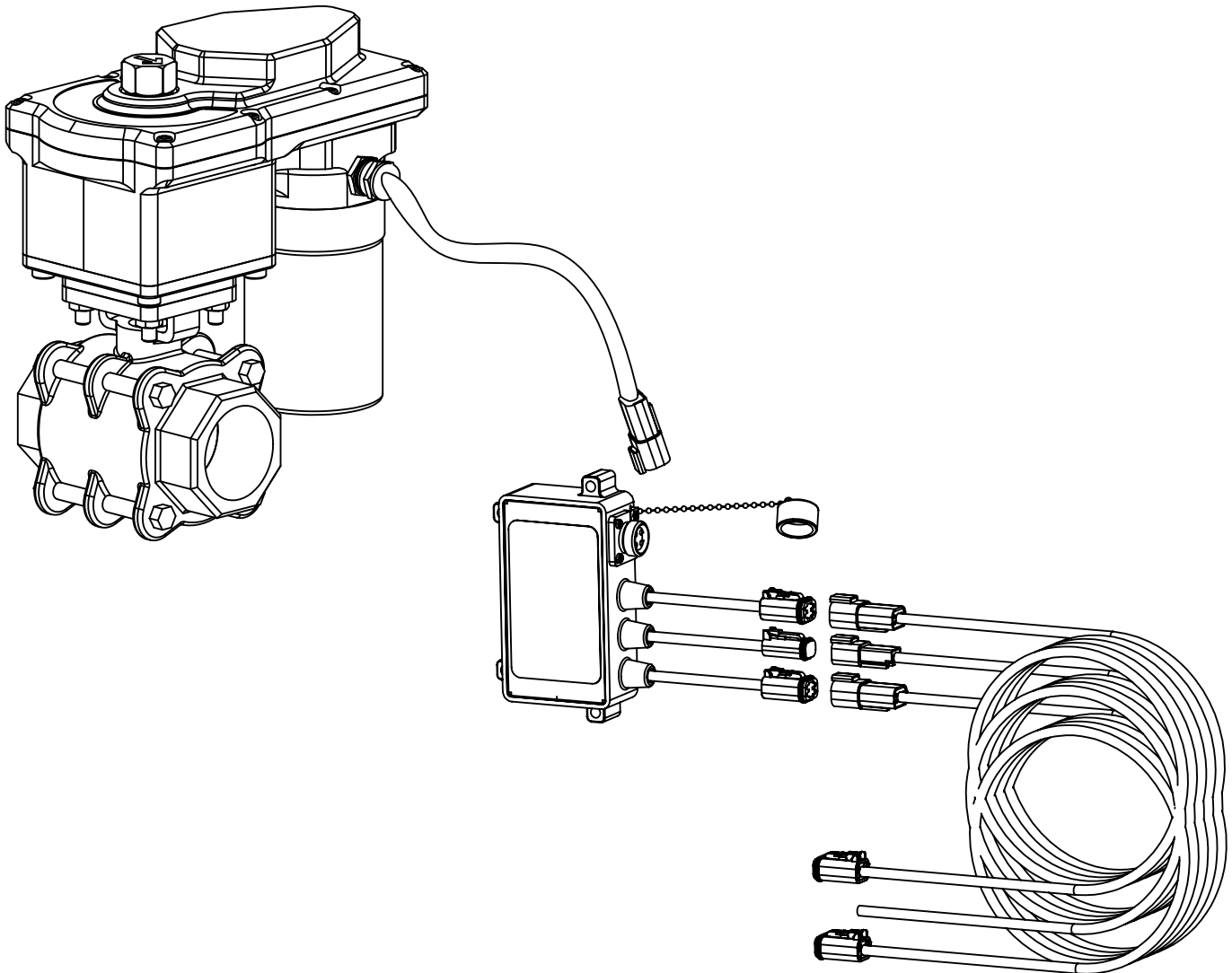
## INSTRUCTION FOR INSTALLATION, OPERATION, AND MAINTENANCE

**⚠ DANGER**

Understand manual before use. Operation of this device without understanding the manual and receiving proper training is a misuse of this equipment. Obtain safety information at [tft.com/serial-number](http://tft.com/serial-number).

This equipment is intended for use by trained and qualified emergency services personnel for firefighting. All personnel using this equipment shall have completed a course of education approved by the Authority Having Jurisdiction (AHJ).

This instruction manual is intended to familiarize firefighters and maintenance personnel with the operation, servicing, and safety procedures associated with this product. This manual should be kept available to all operating and maintenance personnel.



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# DANGER

## PERSONAL RESPONSIBILITY CODE

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

1. **Firefighting** and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. **IT IS YOUR RESPONSIBILITY** to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called on to use.
3. **IT IS YOUR RESPONSIBILITY** to know that you have been properly trained in Firefighting and/or Emergency Response and in the use, precautions, and care of any equipment you may be called upon to use.
4. **IT IS YOUR RESPONSIBILITY** to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. **IT IS YOUR RESPONSIBILITY** to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns or other severe injury.

Fire and Emergency Manufacturers and Service Association, Inc.  
PO Box 147, Lynnfield, MA 01940 • [www.FEMSA.org](http://www.FEMSA.org)

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**FEMSA**

## 1.0 MEANING OF SAFETY SIGNAL WORDS

A safety related message is identified by a safety alert symbol and a signal word to indicate the level of risk involved with a particular hazard. Per ANSI Z535.6, the definitions of the four signal words are as follows:



**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION** indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.



**NOTICE** is used to address practices not related to physical injury.

## 2.0 SAFETY



An inadequate supply of pressure and/or flow will cause an ineffective stream and can result in injury or death. Choose operating conditions to deliver adequate fire suppression.



This equipment is intended for use by trained personnel for firefighting. Use of this equipment for other purposes may involve hazards not addressed by this manual. Seek appropriate guidance and training to reduce risk of injury.



Equipment may be damaged if frozen while containing significant amounts of water. Such damage may be difficult to detect visually. Subsequent pressurization can lead to injury or death. Any time the equipment is subject to possible damage due to freezing, it must be tested and approved for use by qualified personnel before being considered safe for use.



Sudden changes in valve position can cause pressure spikes (water hammer) and could lead to hose or pipe failure or an out of control monitor. Open and close the valve slowly to avoid water hammer.



Interrupting flow to the device could cause injury or death. Avoid situations that may interrupt flow to the device such as: hose line kinks, traffic running over hose, and automatic doors or devices that can pinch the hose.



The electric drives are current limited but may still produce enough force to cause injury. To avoid injury from moving equipment:

- Be aware that equipment may be remotely operated
- Keep hands and fingers away from pinch points
- Never operate the manual override while electric controls are in operation



High-pressure spray can infiltrate connection points, causing damage to electrical components. Use care when using a pressure washer or other high pressure spray around this equipment. To avoid damage, **NEVER** apply high-pressure spray to any seams in the actuator housing or connection points on the electrical cable.



To prevent mechanical damage, do not drop or throw equipment.

### 3.0 GENERAL INFORMATION

Each kit includes a water valve with plug-in electrical connection(s) and an interface control for “plug and play” wiring for power, water valve, monitor, joystick control, and an extra operator station. The installer will need to mount the water valve and the interface box. The interface box is weatherproof and may be installed at any convenient location to route and connect all control system cables.

### 3.1 SPECIFICATIONS

<b>MECHANICAL SPECIFICATIONS</b>		
	STANDARD	METRIC
Waterway Size (at valve seat)	1.5", 2.0", 2.5", or 3.0"	38, 50, 64, or 75 mm
Standard Waterway Connection	NPT	NPT
Maximum Operating Pressure	300 psi	20 bar
Hydrostatic Proof Test Pressure	900 psi	62 bar
Operating Temperature Range of Fluid	33° to 120°F	0° to 50°C
Storage Temperature Range*	-25° to 135°F	-32° to 57°C
Materials Used	Aluminum 6000 and 7000 series hard anodized MIL8625 class 3 type 2, stainless steel 300 series	

\* For temperatures below 32° (0°C), valves must be drained after use to avoid damage.

<b>ELECTRICAL SPECIFICATIONS</b>				
Opening/Closing Speed	3 seconds*			
Motor Current	@12 VDC		@24 VDC	
	Nominal	Limit	Nominal	Limit
	2 amp	6 amp	1 amp	3 amp
Recommended Fuse or Circuit Breaker Size	15 amp		7.5 amp	
Environmental Rating	All components designed to meet minimum rating of NEMA 6 (IP67)			

\* Insufficient voltage will cause OPEN/CLOSE speeds to decrease.

Table 3.1

### 3.2 VARIOUS MODELS AND TERMS

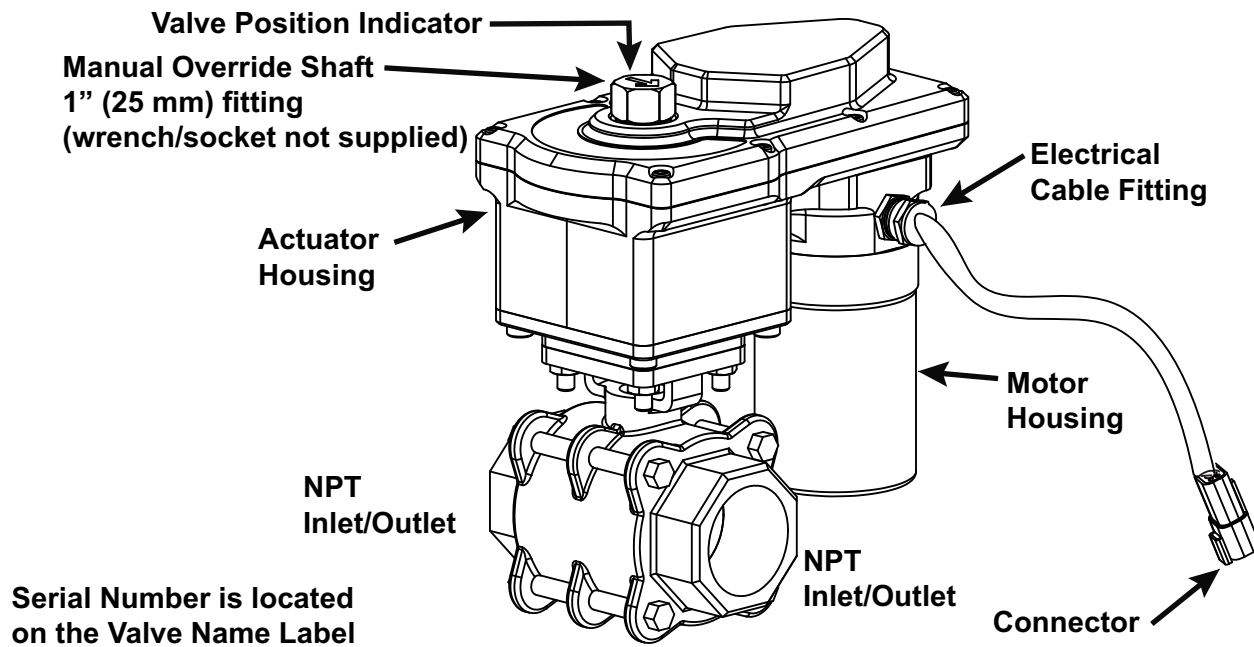


Figure 3.2A

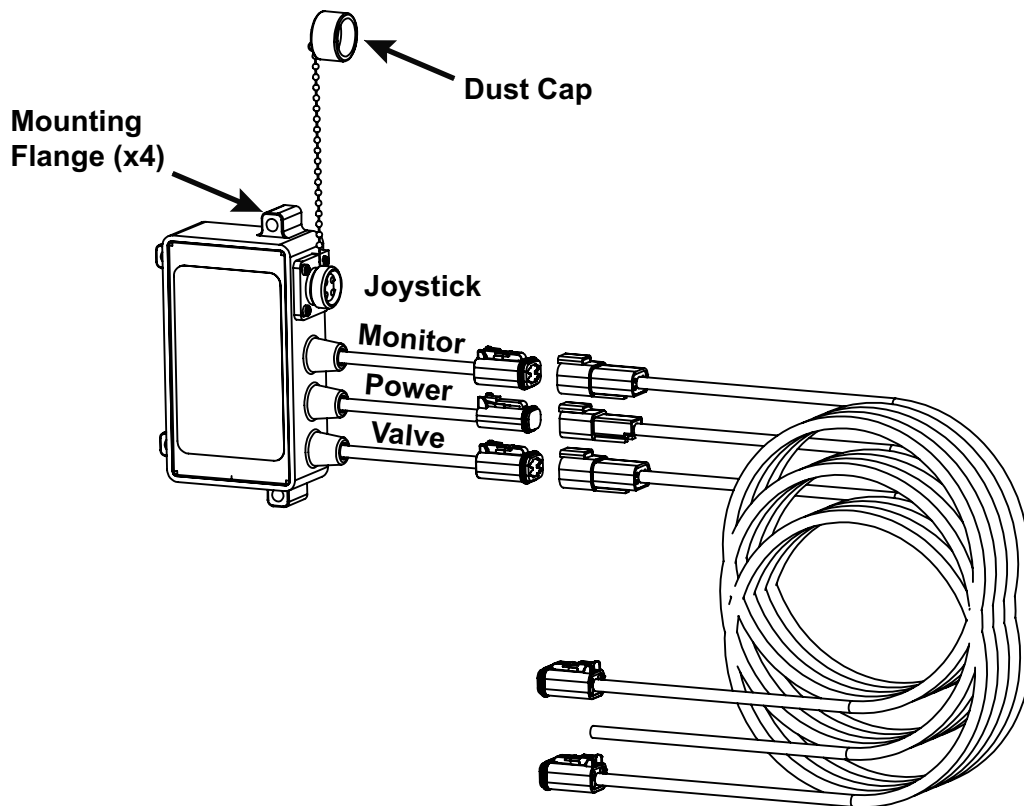


Table 3.2B

### 3.3 USE WITH SALT WATER

Use with salt water is permissible provided the equipment is thoroughly cleaned with fresh water after each use. The service life of the equipment may be shortened due to the effects of corrosion, and is not covered under warranty.

## 4.0 INSTALLATION

### 4.1 MOUNTING THE VALVE

The water valve may be mounted at any location within the plumbing and at any orientation. The wiring and connector from the valve actuator should be protected from pulling and abrasion.

#### ⚠ WARNING

Reaction forces generated by master stream flows are capable of causing injury and property damage if not properly supported. Valves should be securely installed by qualified individuals.

- Mounting objects must be capable of withstanding maximum reaction force.
- The valve must be securely mounted to rigid support members.
- Do not use flanges or pipe made from plastic for mounting.
- Torque all fasteners to specified values.

#### ⚠ CAUTION

Mismatched or damaged waterway connections may cause equipment to leak or uncouple under pressure. Failure could result in injury. Equipment must be mated to matched connections.

#### ⚠ CAUTION

Dissimilar metals coupled together can cause galvanic corrosion that can result in the inability to uncouple the connection, or complete loss of engagement over time. Failure could cause injury. Per NFPA 1962, if dissimilar metals are left coupled together, an anti-corrosive lubricant should be applied to the connection and the coupling should be disconnected and inspected at least quarterly.

### 4.2 MOUNTING THE INTERFACE BOX

The interface box should be mounted at a location to allow all factory-supplied cables to reach and connect. The enclosure is designed to be surface mounted. Clearance is needed for the cables that extend from one side. Refer to Figure 4.2 for hole layout.

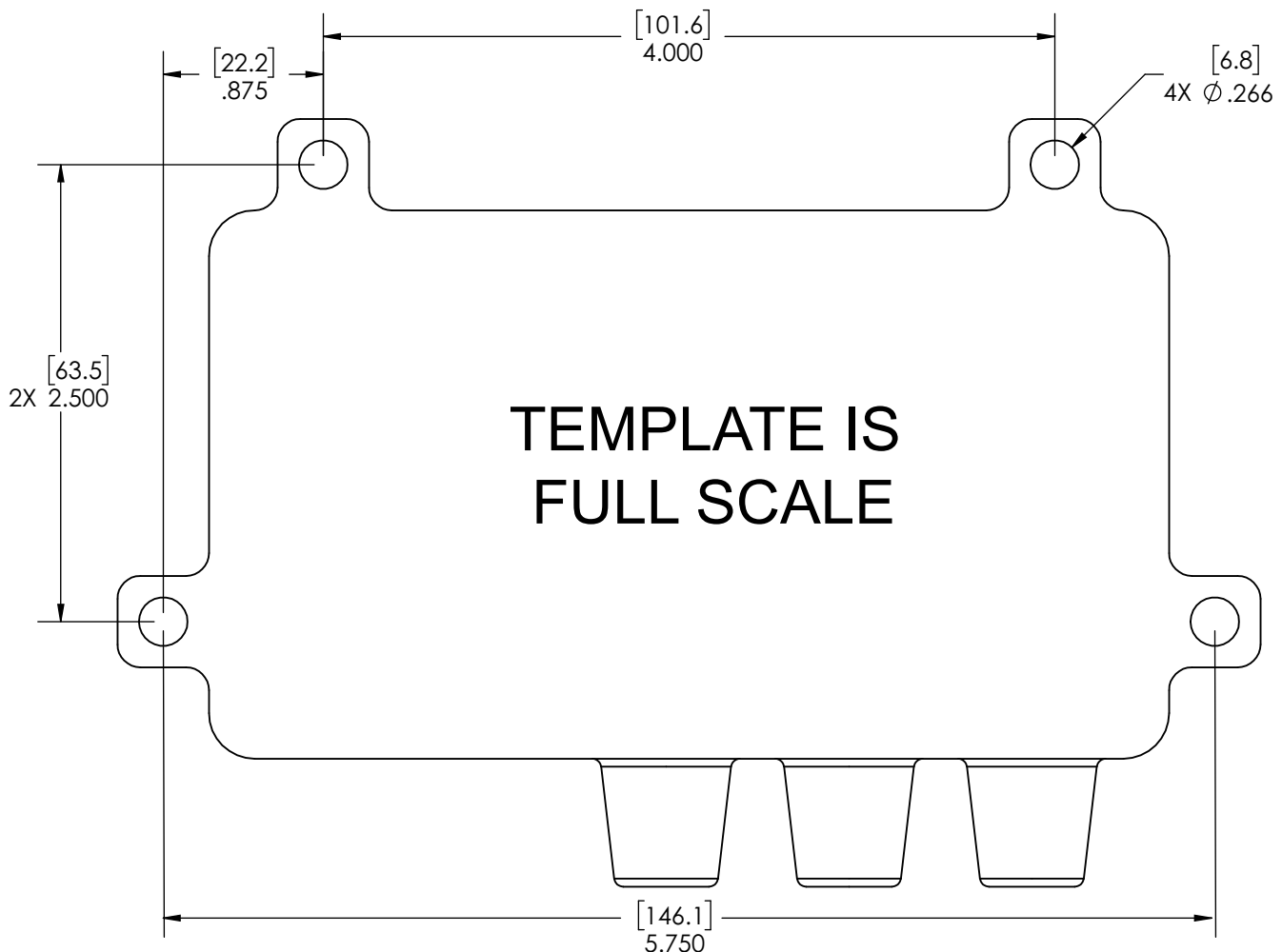


Figure 4.2

### 4.3 ELECTRONIC INSTALLATION AND WIRING



**WARNING** This device is not rated as ignition proof, explosion proof, or intrinsically safe. Use only in locations with adequate ventilation and no hazard of flammable vapor buildup.



**NOTICE** To avoid excessive voltage drop at the valve motor, do not lengthen factory supplied receptacle cable. Power cable selection is critical. Voltage supplied to the valve motor should not fall below 10 Volts when the valve is in operation.

Each valve interface box is equipped with several connection points. A receptacle is built-in for connection to a joystick operator station. A 4-pin plug is available for connection to a TFT RC monitor, typically a RC Tornado or EF1 monitor. A plug is available for control of a valve. The power cable should be routed to the truck's power distribution center and connected to a protected circuit.

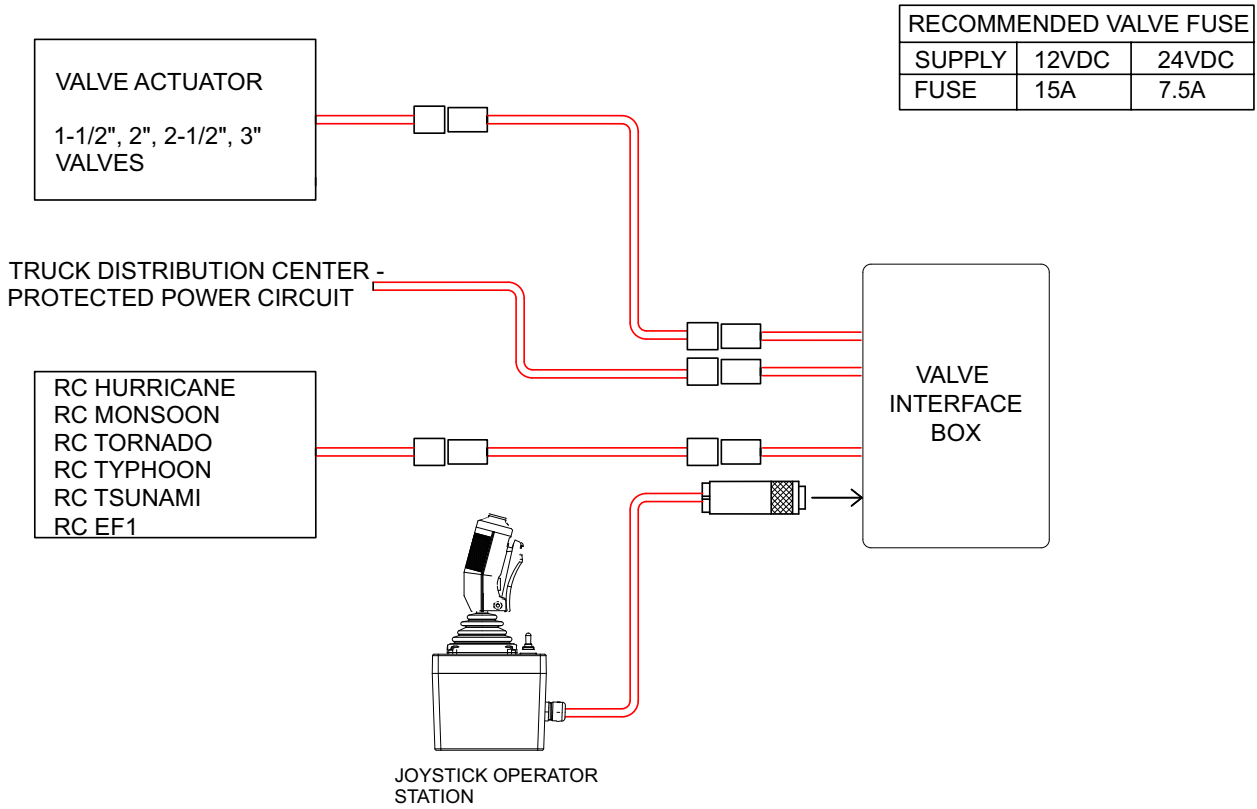


Figure 4.3



### 4.3.1 CONFIGURATION

The valve motor is factory set for AUX2 (Flow ON/OFF) and Momentary operation. This configuration is most suitable for joystick control of monitor and valve functions.

If another operator station with keypad is used, it may be desired to change from momentary to latching operation so that the Flow ON/OFF key may be pressed and released once to open the water valve, then pressed and released again to close the valve.

CONSULT FACTORY FOR INSTRUCTIONS TO CHANGE FROM MOMENTARY TO LATCHING OPERATION.

### 4.3.2 TESTING THE ELECTRICAL INSTALLATION

#### VERIFY PROPER VOLTAGE

The valve has built in circuit protection to guard against a circumstance where the unit's movement is blocked before reaching its full travel limits. Without this circuitry the motor would stall, overheat, and could be permanently damaged.



**Inadequate voltage can cause the valve to become damaged to the point of inability to properly open or close, resulting in inadequate water supply. Injury or death can occur. To reduce the risk of improper voltage:**

- Check wiring for proper gauge for the installed length, and for proper termination.
- Never lengthen factory supplied receptacle cable.
- Ensure that the power source supplying the valve and the grounding are adequate (other electrical loads on a shared circuit with the valve may cause a low-voltage situation).
- **ALWAYS** test for proper voltage after installation.

#### VOLTAGE TEST

When mechanical installation and electrical connections are complete, perform the following test to verify voltage supply is adequate and the current limiting feature is functioning.

1. Apply power to Valve Control.
2. Press Flow ON/OFF button or squeeze the trigger, and hold until valve reaches stop position. Continue to hold button down.
3. Once movement is stopped, manually turn override knob in opposite direction while continuing to hold button down. The override knob will only turn in one direction.
  - A. If hex can be turned, then voltage supply is adequate.
  - B. If hex can't be turned and motor continues to operate, the current limit was not reached because the voltage supply or wiring is not adequate.

#### SET TRAVEL STOPS

Once proper voltage is verified, perform the following to set the full travel limits:

1. Apply power to Valve Control.
2. Press Flow ON/OFF button or squeeze the trigger, and continue to hold until valve is fully closed. Motor must stop by current limit method.
  - A. If motor continues to operate, see proper voltage test above.
3. Press Flow ON/OFF button or squeeze the trigger, and continue to hold until valve is fully open. Motor must stop by current limit method.
  - A. If motor continues to operate see proper voltage test above.

## 5.0 WARRANTY

Task Force Tips LLC, 3701 Innovation Way, Valparaiso, Indiana 46383-9327 USA ("TFT") warrants to the original purchaser of its products ("equipment"), and to anyone to whom it is transferred, that the equipment shall be free from defects in material and workmanship during the two (2) year period from the date of purchase. TFT's obligation under this warranty is specifically limited to replacing or repairing the equipment (or its parts) which are shown by TFT's examination to be in a defective condition attributable to TFT. To qualify for this limited warranty, the claimant must return the equipment to TFT, at 3701 Innovation Way, Valparaiso, Indiana 46383-9327 USA, within a reasonable time after discovery of the defect. TFT will examine the equipment. If TFT determines that there is a defect attributable to it, TFT will correct the problem within a reasonable time. If the equipment is covered by this limited warranty, TFT will assume the expenses of repair.

If any defect attributable to TFT under this limited warranty cannot be reasonably cured by repair or replacement, TFT may elect to refund the purchase price of the equipment, less reasonable depreciation, in complete discharge of its obligations under this limited warranty. If TFT makes this election, claimant shall return the equipment to TFT free and clear of any liens and encumbrances.

This is a limited warranty. The original purchaser of the equipment, any person to whom it is transferred, and any person who is an intended or unintended beneficiary of the equipment, shall not be entitled to recover from TFT any consequential or incidental damages for injury to person and/or property resulting from any defective equipment manufactured or assembled by TFT.

It is agreed and understood that the price stated for the equipment is in part consideration for limiting TFT's liability. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

TFT shall have no obligation under this limited warranty if the equipment is, or has been, misused or neglected (including failure to provide reasonable maintenance) or if there have been accidents to the equipment or if it has been repaired or altered by someone else.

**THIS IS A LIMITED EXPRESS WARRANTY ONLY. TFT EXPRESSLY DISCLAIMS WITH RESPECT TO THE EQUIPMENT ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. THERE IS NO WARRANTY OF ANY NATURE MADE BY TFT BEYOND THAT STATED IN THIS DOCUMENT.**

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## 6.0 MAINTENANCE

TFT products are designed and manufactured to be damage resistant and require minimal maintenance. However, as the primary firefighting tool upon which your life depends, it should be treated accordingly. The unit should be kept clean and free of dirt by rinsing with water after each use. Any inoperable or damaged parts should be repaired or replaced before placing the unit in service. To help prevent mechanical damage, do not drop or throw equipment.

In applications where appliances are left continuously connected to the apparatus or other devices or are used where water is trapped inside the appliance, the appliance must be flushed with fresh water following each use and inspected for damage.

This appliance should be disconnected, cleaned and visually inspected inside and out at least quarterly, or as water quality and use may require. Moving parts such as handles, valve ball and couplings should be checked for smooth and free operation. Seals shall be greased as needed with Silicone based grease such as Molykote 112. Any scrapes that expose bare aluminum should be cleaned and touched up with enamel paint such as Rust-Oleum. Replace any missing or damaged parts before returning to service.

Any equipment taken out of service due to failure should be returned to the factory for repair or replacement. If you have any questions regarding the testing or maintenance of your valve, please call Task Force Tips at 800-348-2686.

## 6.1 TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	REMEDY
Leaks	Debris or damage in seal area	Clean out debris and/or replace damaged parts
Binding, Erratic Operation	Low voltage	Check connections and wiring
Slow Open/Close Operation	Low Voltage	Check connections and wiring

Table 6.1.0

## 6.2 SERVICE TESTING

In accordance with NFPA 1962, equipment must be tested a minimum of annually. Units failing any part of this test must be removed from service, repaired and retested upon completion of the repair.

## 6.3 REPAIR

Factory service is available. Factory serviced equipment is repaired by experienced technicians, wet tested to original specifications, and promptly returned. Call TFT service department at 1-800-348-2686 to troubleshoot and, if needed, directions for return. A return for service form can also be obtained at [tft.com/Support/Returning-an-Item-for-Service](http://tft.com/Support/Returning-an-Item-for-Service).

Repair parts and service procedures are available for those wishing to perform their own repairs. Task Force Tips assumes no liability for damage to equipment or injury to personnel that is a result of user service. Contact the factory or visit the web site at [tft.com](http://tft.com) for parts lists, exploded views, test procedures and troubleshooting guides.

Performance tests shall be conducted on the equipment after a repair, or anytime a problem is reported to verify operation in accordance with TFT test procedures. Consult factory for the procedure that corresponds to the model and serial number of the equipment. Any equipment which fails the related test criteria should be removed from service immediately. Troubleshooting guides are available with each test procedure or equipment can be returned to the factory for service and testing.



**It is the responsibility of service technicians to ensure the use of appropriate protective clothing and equipment. The chosen protective clothing and equipment must provide protection from potential hazards users may encounter while servicing equipment. Requirements for protective clothing and equipment are determined by the Authority Having Jurisdiction (AHJ).**



**Any alterations to the product or its markings could diminish safety and constitutes a misuse of this product.**



**All replacement parts must be obtained from the manufacturer to assure proper performance and operation of the device.**

## 7.0 EXPLODED VIEW AND PARTS LISTS

Exploded views and part lists are available at [tft.com](http://tft.com).

## 8.0 OPERATION AND INSPECTION CHECKLIST

**BEFORE EACH USE**, equipment must be inspected to this checklist:

1. All valves open and close fully and smoothly.
2. Waterway is clear of obstructions.
3. There is no obvious damage such as missing, broken or loose parts.
4. There is no damage to the appliance (e.g. dents, cracks, corrosion, or other defects that could impair operation).
5. All swiveling elements rotate freely.
6. There is no corrosion on any surface.

**BEFORE BEING PLACED BACK IN SERVICE**, equipment must be inspected to this list:

1. All valves open and close smoothly and fully.
2. The waterway is clear of obstructions.
3. There is no damage to any thread or other type connection.
4. Internal valve seats are in good condition
5. There is no damage to the appliance (e.g., dents, cracks, corrosion, or other defects that could impair operation).
6. All swiveling connections rotate freely.
7. There are no missing parts or components.
8. The marking for maximum operating pressure is visible.
9. There are no missing, broken, or worn lugs on couplings.



**Equipment failing any part of the checklist is unsafe for use and must have the problem corrected before use or being placed back into service. Operating equipment that has failed the checklist is a misuse of this equipment.**

**TASK FORCE TIPS LLC**

MADE IN USA · [tft.com](http://tft.com)

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