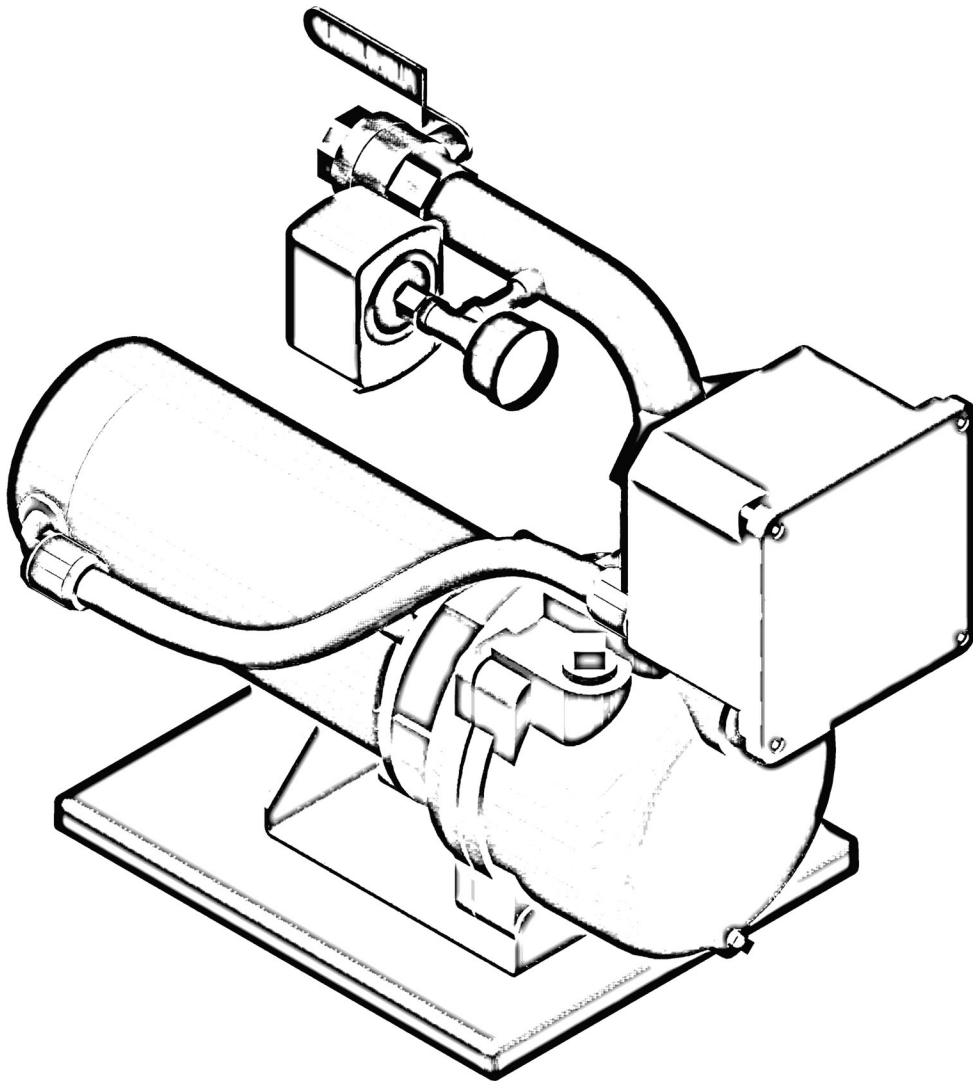




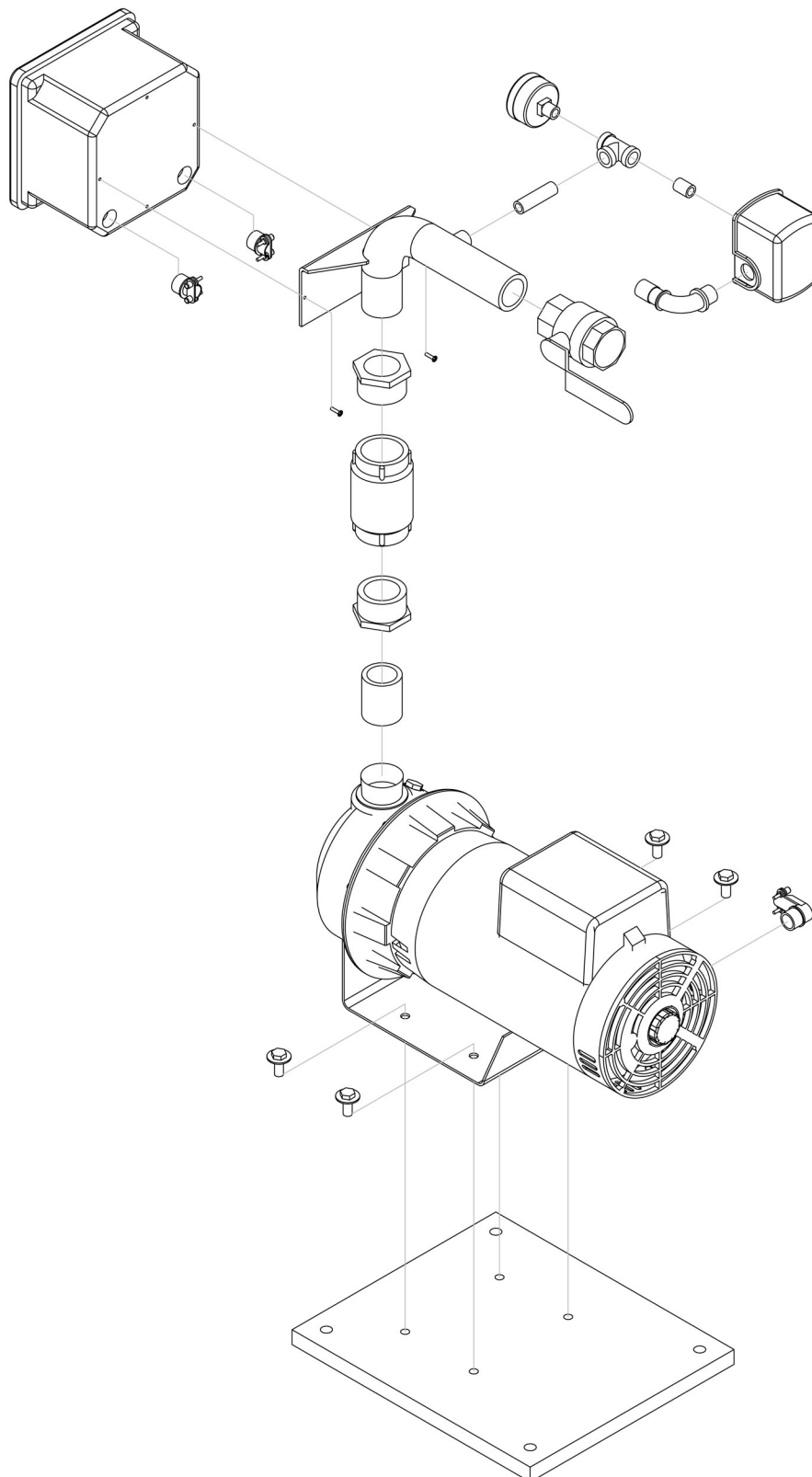
# O&M INSTRUCTION MANUAL

## LSF



# RESIDENTIAL FIRE PUMP SYSTEM

# OVERALL VIEW OF LSF



# SAFETY INSTRUCTIONS

TO AVOID SERIOUS OR FATAL INJURY OR MAJOR PROPERTY DAMAGE, READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN MANUAL AND ON PRODUCT.

THIS MANUAL IS INTENDED TO ASSIST IN THE INSTALLATION AND OPERATION OF THIS UNIT AND MUST BE KEPT WITH THE UNIT.

**UNIT NOT DESIGNED FOR USE WITH HAZARDOUS LIQUIDS OR FLAMMABLE GASSES. THESE CAN CAUSE FIRE, BURNS, OR DEATH.**

The following **SAFETY SYMBOLS** in the manual or on the product warn of **HAZARDS** that can cause death, personal injury, or property damage as described below.



Warns of **ELECTRICAL HAZARDS** that can cause death, serious personal injury, or major property damage.



Warns of **NON-ELECTRICAL HAZARDS** that can cause personal injury or property damage.

## IMPORTANT:

- 1.1 Inspect unit for damage. Report damage to carrier or distributor immediately.
- 1.2 Electrical supply must be a separate branch circuit with fuses or circuit breakers, wire sizes, etc. per national and local electrical codes.



**Always disconnect electrical power when working on or handling pump controls.**

- 1.3 Unit must be wired for 230V single phase 60hz power. Follow all national and local electrical codes. Size electrical supply accordingly.
- 1.4 Protect from freezing or flooding.

# SAFETY INSTRUCTIONS

## INSTALLATION (cont.):

- 2.1 Connect 1-1/4" discharge piping to sprinkler system. All connecting piping must be supported independently of the LSF and be naturally aligned.



**Do not force pipe connections into place in order to make them line up.**

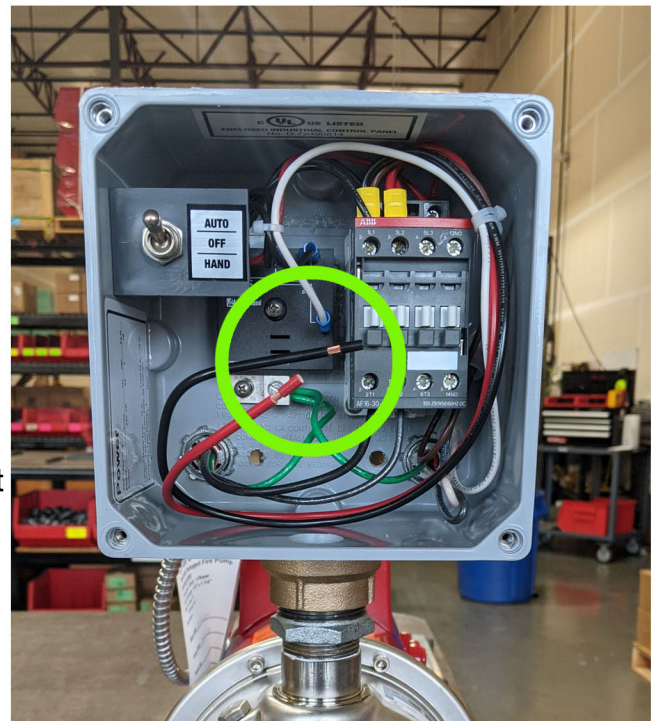
- 2.2 **Do not install check valve in discharge piping.** Duplicating the check valve installed on the LSF will cause unstable operation.

- 2.3 Install an isolation valve in sprinkler piping if allowed by local code.

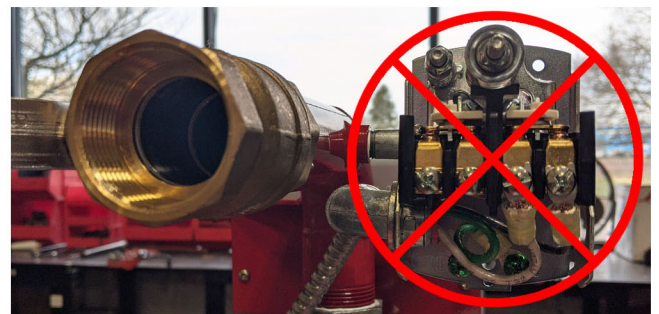


**DO NOT APPLY POWER. Breaker should be in off position until all installation steps are completed.**

- 2.4 Open the gray control box above the fire pump. Set control box toggle switch to "off" before making electrical connections. A dedicated 230V single-phase circuit is required for the fire pump. Incoming power goes to the red and black wires within the gray control box. Connect the ground wire to one of the two included ground lugs.



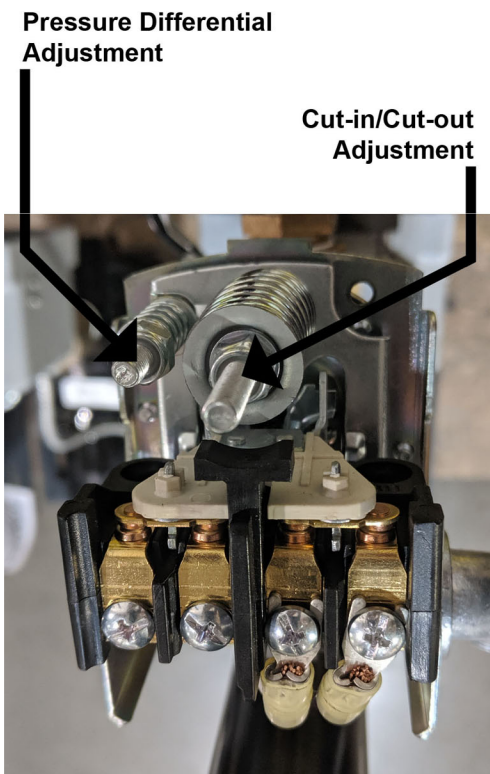
**Do not connect incoming power to the pressure switch!!!**



# SAFETY INSTRUCTIONS

## START-UP:

- 3.1 Be sure there is water in the pump. Bleed air at all high points in the system and at the plug located next to the discharge in the top of the pump casing. If possible, allow water to flow through the pump and system drain.
- 3.2 Once all air is bled from the pump volute and piping close the discharge valve and turn the pump on by placing the toggle switch in the "MANUAL" position. Observe the discharge pressure gauge and note the peak pressure.
- 3.3 If the pump fails to quickly build pressure, makes excessive noise, or vibrates turn it off immediately and see the "TROUBLESHOOTING" section for help. If the pump does build pressure quickly, flip the toggle switch from "MANUAL" to "AUTO" and let the pump run. If the pump will not run in "AUTO" bleed pressure from the system drain to cycle the pressure switch. If the pump still does not run in "AUTO" see the "TROUBLESHOOTING" section for help.
- 3.4 Once the pump starts in "AUTO" it should quickly build enough pressure to trip the pressure switch (you should hear it click if you listen closely). Allow the pump to run until the 3-minute minimum-run timer expires and the pump cycles off. Now partially open the discharge ball valve. The pump should turn back on and fill the system. Once the system is charged to the maximum pressure noted earlier and the pump cycles off fully open the discharge ball valve. The system is now ready for normal operation.



## PRESSURE SWITCH ADJUSTMENT:

The pressure switch has been factory wired and adjusted. In the unlikely event adjustment of the pressure switch is required please note the following:

- A) The large spring affects both the cut-in and cut-out points equally. Turn the adjusting nut clockwise to equally raise the pressure for both.

*Note: If the cut-out pressure has been raised above the maximum pressure of the pump the system will not shut off.*

- B) The small spring controls the differential between cut-in and cut-out pressure. This is factory set for a 20PSI differential. Turn the adjusting nut clockwise to increase.

*Note: We do not recommend changing this setting.*

# **SAFETY INSTRUCTIONS**

## **PERIODIC TESTING:**

The system can be tested at any time by slowly opening the system drain until the pump starts. After the pump starts slowly close the system drain, observe the manimum pressure, and verify that the pump stops automatically when the 3-minute timer expires.

## **TROUBLESHOOTING:**

**!!!WE STRONGLY RECOMMEND THAT A QUALIFIED ELECTRICIAN OR PUMP TECHNICIAN PERFORM ALL TROUBLESHOOTING!!!**

### **PUMP WON'T START:**

- A) Make sure incoming power has been routed into the gray control box and tied into the red & black wires with stripped leads. NOT THE PRESSURE SWITCH.
- B) Check for incoming power. LSF systems require 230/240 volt single-phase power. Two "hots" and a ground. Check the circuit breakers feeding the pump and reset as necessary.
- C) Check for motor overload. Compare motor running amps to the values noted on the shop test report. If overload condition is present check for low input voltage or foreign material binding the pump. Motor overloads may have tripped and will need to cool in order to reset. Determine and correct the cause of the overload.
- D) Place the toggle switch in the "MANUAL" position. If the pump runs in "MANUAL" but not "AUTO"
  - (1) The pressure switch cut-in pressure is set too low and needs to be raised.
  - (2) There is a problem with the pressure switch and it should be replaced.
  - (3) There is a problem with the timer in the control box and it should be replaced.
- E) If the motor smells burnt it may be burned out. Have a qualified motor shop test the motor and replace as necessary.

### **MOTOR RUNS BUT PUMP MAKES NOISE:**

- A) Check for debris in the pump case.
- B) Check to make sure there is adequate water from the supply.
- C) The motor bearings may be bad. This needs to be remedied by a qualified technician.

From Main Power Panel  
230 VAC, 1 Phase, 60 Hz.  
Branch Circuit Protection  
And Main Disconnect  
Provided By Others.

Wiring diagram for the pump and motor control system. The diagram shows a power supply with L1, L2, and GND lines. A pressure switch (PS) is connected to the L1 and L2 lines. The pump is connected to L1 and L2 through a motor contactor (M1) and a delay on break timer (PT). The motor is connected to the L1 and L2 lines through a motor contactor (M1) and a delay on break timer (PT). The motor is also connected to a hand/auto selector switch. The pump is labeled "PUMP 230 VAC 1Ø 17 AMP MAX". The motor is labeled "MOTOR CONTACTOR ABB A16-30-10-80". The delay on break timer is labeled "DELAY ON BREAK TIMER ABB KSDB611505". The hand/auto selector switch is labeled "HAND OFF AUTO". The pressure switch is labeled "PRESSURE SWITCH (Supplied by others)".

MOTOR  
CONTACTOR  
ABB A16-30-10-80

# TALCO FIRE SYSTEMS

## Limited Warranty

All goods are warranted to be free of defects in material and workmanship for a period of one year from start-up or (18) months from the date of shipment, whichever comes first. Except as specifically indicated, TALCO makes no warranties, expressed or implied, oral or written, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

### **THIS WARRANTY IS SPECIFICALLY SUBJECT TO THE FOLLOWING:**

1. The limited warranty is limited to replacement or repair of defective materials and workmanship at the discretion of TALCO.
2. Equipment sold, but not manufactured by TALCO, is subject to the manufacturer's warranty only. TALCO makes no warranties, either expressed or implied, for goods manufactured by others.
3. The limited warranty is conditioned on the purchaser giving TALCO notice within five days of discovery of any alleged defect. Notice should be directed to TALCO FIRE SYSTEMS, by mail: 6040 NE 112th Ave, Portland OR, 97220; by fax: (503) 688-1234; or via E-mail: admin@talcofire.com.
4. The limited warranty shall be considered null and void if any product or part of the packaged system has been repaired or altered in any way by others without prior authorization from TALCO. Fitting leaks and electrical damage are considered the responsibility of the installing contractor.
5. TALCO shall not be liable for any incidental or consequential loss, damage or expense arising directly or indirectly from the use of any goods subject to this limited warranty, nor shall TALCO be liable for any damages or charges for labor or expense in making repairs or adjustments to the goods. TALCO shall not be liable for any damages or charges sustained in the adaptation or use of its engineering data or services.
6. This warranty shall not apply to any goods subject to misuse due to common negligence or accident, nor to any goods manufactured by TALCO which are not operated in accordance with TALCO printed instructions.
7. The liability of TALCO is limited to material replacements FOB Portland, Oregon.
8. All shipments are FOB TALCO dock and it will be the responsibility of the purchaser to check the goods when they are received and report to the Freight Company any damage that might have occurred.