



# Fuel Technologies International

## **Model FTI-2.8** Single Tank Automated Diesel Fuel Maintenance System

### **Installation Manual**

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\*Remove sheets not related to the specific job.

## 1. Installation Notes

- a. FTI systems operate on either above ground or underground tanks. Any installation to be completed by a qualified plumbing contractor and qualified electrician.
- b. Wall mount or pedestal mount is bolted into place. Engineer to comply with local jurisdiction regarding seismic compliance.
- c. 115/230V AC, Single Phase, 15 Amp. Power supply shall be available at system location.
- d. All FTI models are factory tested using lightweight oil. Some of this fluid may remain in the system. It will not interfere with the performance of the equipment.
- e. Pipe plugs were installed in the supply and return line for shipping purposes only, and must be removed prior to installation.
- f. Holes will need to be added in cabinet for Electrical, Fuel supply line and Fuel return line.
- g. On initial startup, if the system does not fill with fluid, the pump may require priming. (see priming tee location on 3.a. diagram)
- h. System inlet connection: 0.75" NPT
- i. System outlet connection: 0.75" NPT

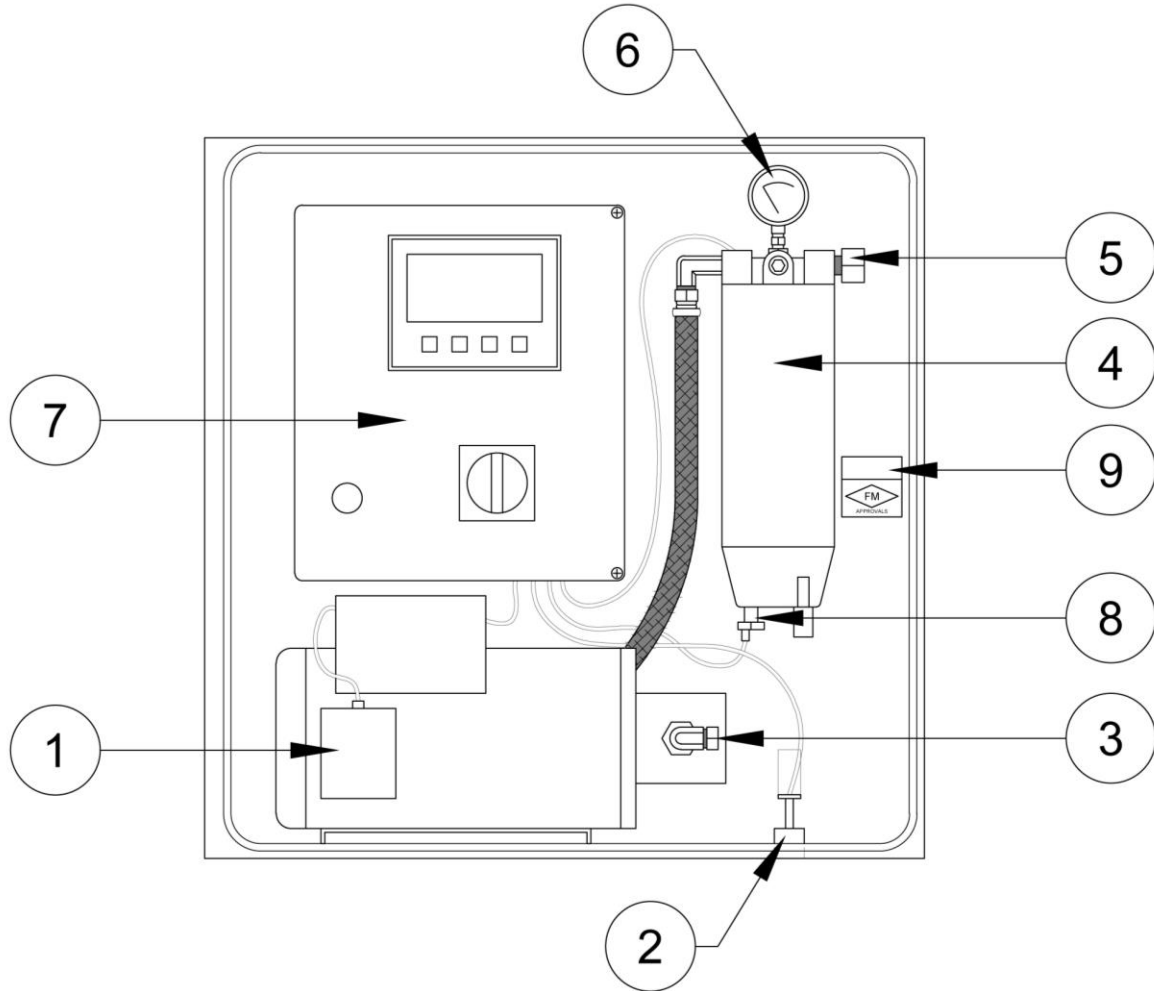
## 2. Strong Recommendations

- a. The **supply** or suction line to be installed at the **sump**, or low end of the Diesel Fuel Storage Tank, with a **Foot Valve**, 1" from the bottom. (not supplied)
- b. **Ball Valves** shall be installed on the fuel supply line and return line to isolate the system for any required filter maintenance. (ball valves not included)
- c. Return line shall be installed to return fuel to the opposite end of the storage tank. A **check Valve** may be required on return line, on some installations to prevent back flow pressure.
- d. Caution should be taken **not to exceed the 15-ft. lift** capability of the fuel circulation pump.
- e. Stabilizer to be added to the existing fuel tank, and proportionally when additional fuel is added to the storage tank.
- f. Biocide to be added to stored diesel fuel annually.

## 3. Installation Precautions:

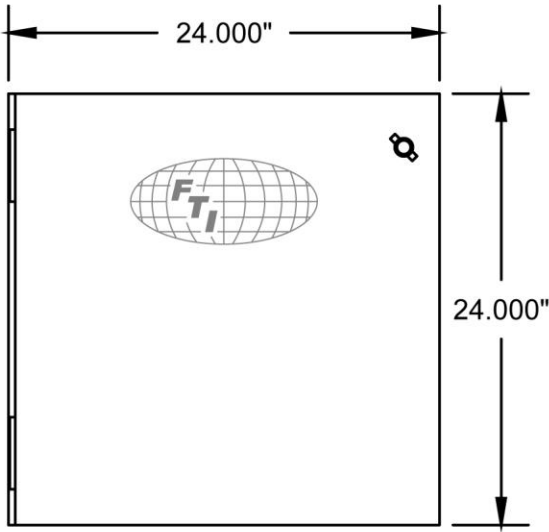
- a. Model FTI-2.8 Single Tank has no protection against thermal expansion for the fuel lines. If the fuel lines are installed without pressure relief, damage may occur to the pump, motor or filters.
- b. Installer should prevent any closed loop with the FTI-2.8 system in the middle.
- c. FTI will not be responsible for any damage due to excessive line pressure caused by thermal expansion.
- d. **DO NOT RUN LONGER THAN THREE MINUTES WITHOUT FLUIDS**

### Identifying Parts

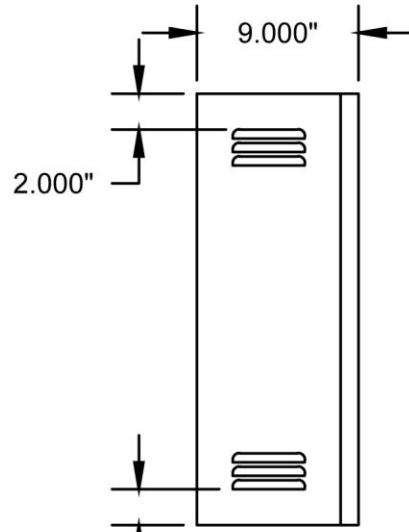


1. Pump / Motor
2. Leak Detector
3. Return Line Connection
4. Water Separator & 2 Micron Filter
5. Supply Line Connection
6. Vacuum Switch Gauge
7. Control Panel
8. Water Sensor

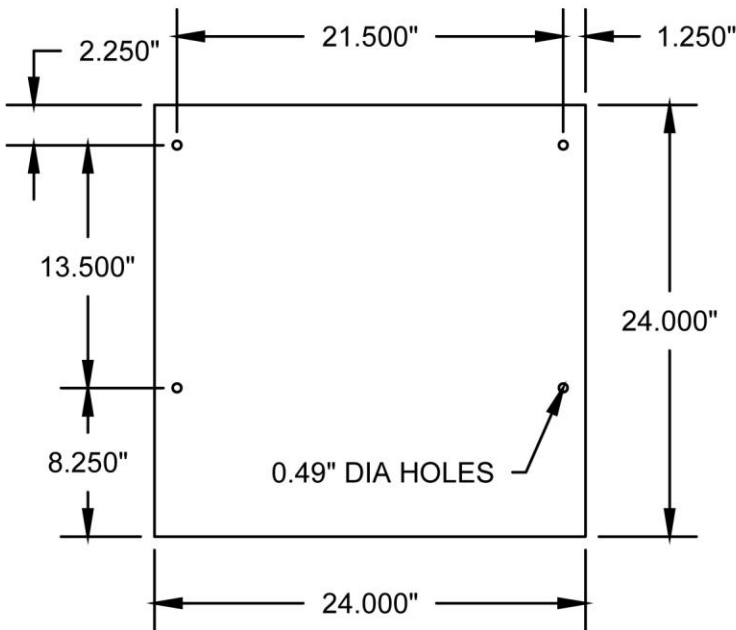
### FTI-2.8 – Cabinet Specifications



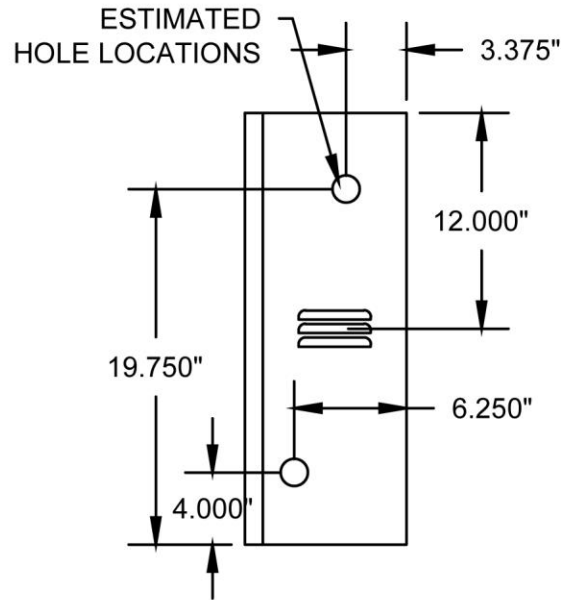
FRONT VIEW



SIDE VIEW

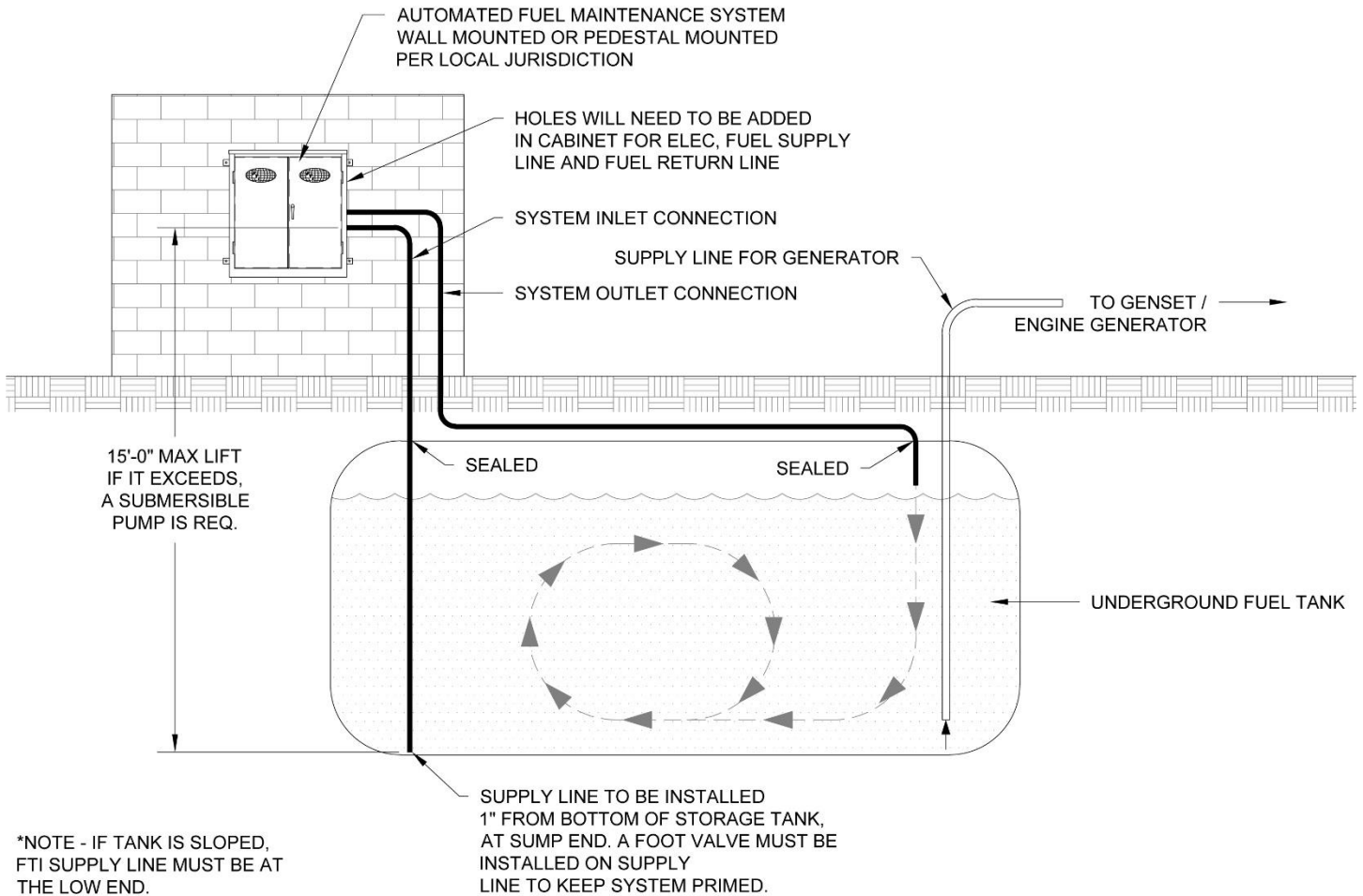


INTERNAL VIEW



SIDE VIEW

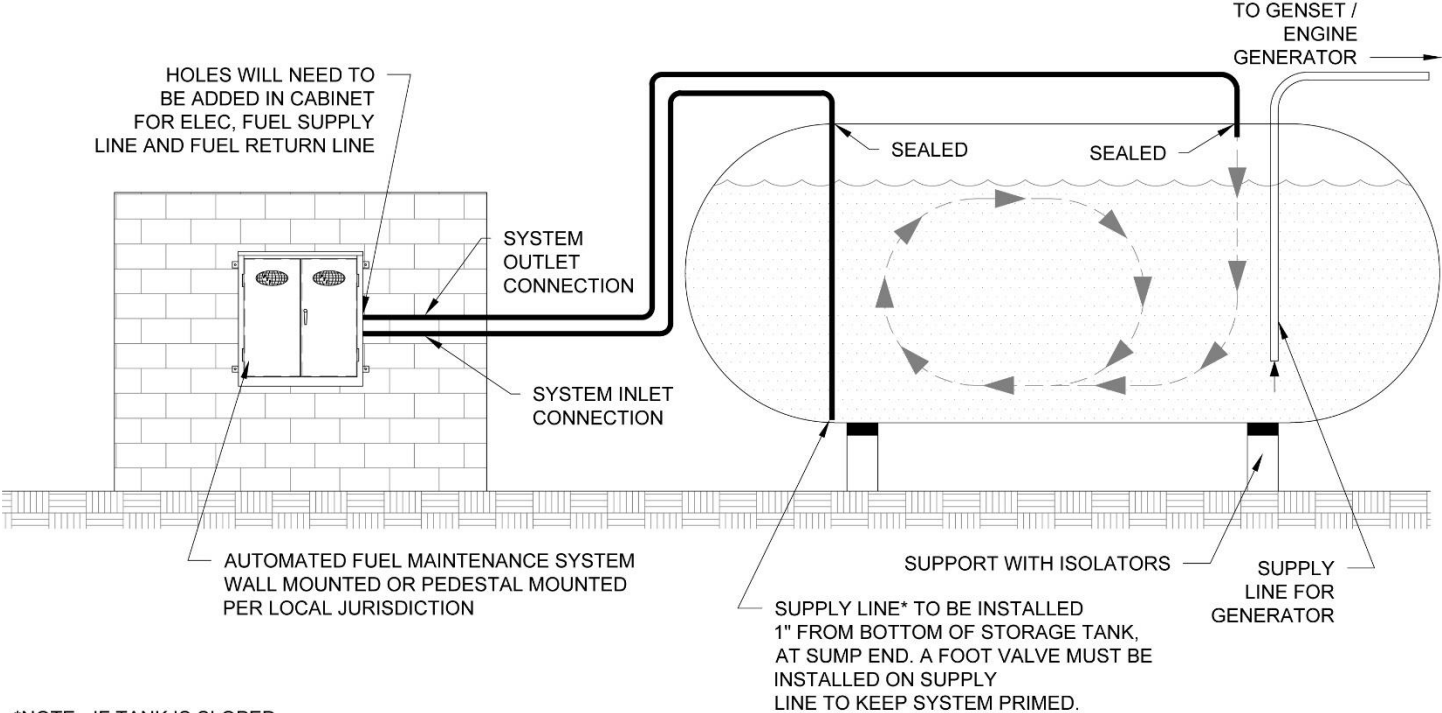
## Underground Tank installation



### 1. Underground Tank Installation

- a. Max uplift of 15'-0" for supply line to system inlet.
  - i. If exceeded, a submersible pump is required. (provided by others)
- b. Supply pickup installed 1.0" from bottom (low end) of tank.
- c. Return line installed on opposite end of tank for proper circulation.
- d. A Foot valve must be installed on the supply line to keep the system primed. (provided by others)
- e. All tank penetrations must be sealed per local jurisdiction.
- f. System Inlet 0.75" NPT
- g. System Outlet 0.75" NPT
- h. System to be wall or pedestal mounted per local jurisdiction.

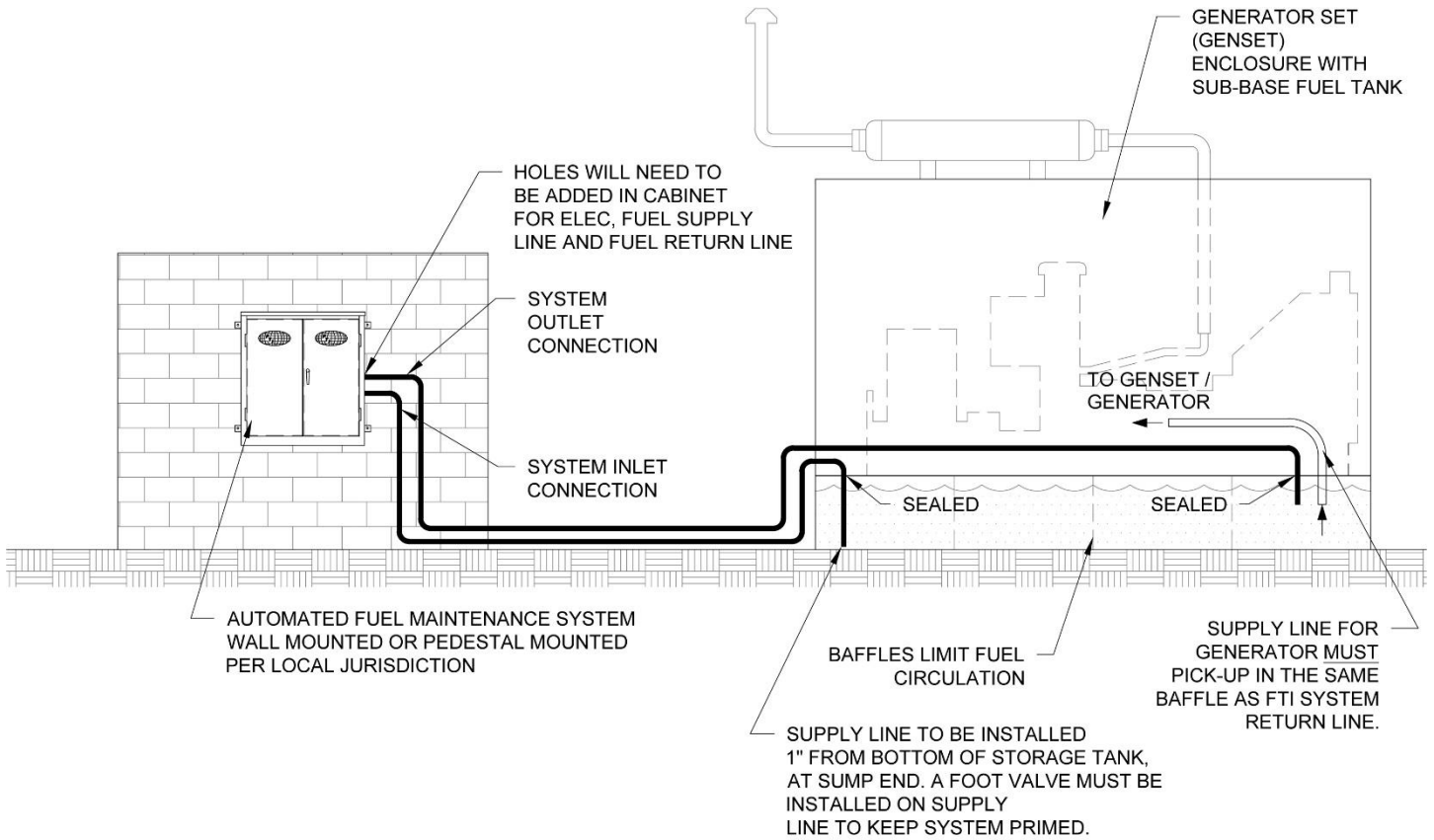
## Above Ground Tank installation



\*NOTE - IF TANK IS SLOPED, FTI SUPPLY LINE MUST BE AT THE LOW END.

### 1. Above Ground Tank Installation

- a. Supply pickup installed 1.0" from bottom (low end)\* of tank
  - i. \*Low end - 2% tank slope is recommended but not required.
- b. Return line installed on opposite end of tank for proper circulation.
- c. A Foot valve must be installed on the supply line to keep the system primed. (provided by others)
- d. All tank penetrations must be sealed per local jurisdiction.
- e. System Inlet 0.75" NPT
- f. System Outlet 0.75" NPT
- g. System to be wall or pedestal mounted per local jurisdiction.



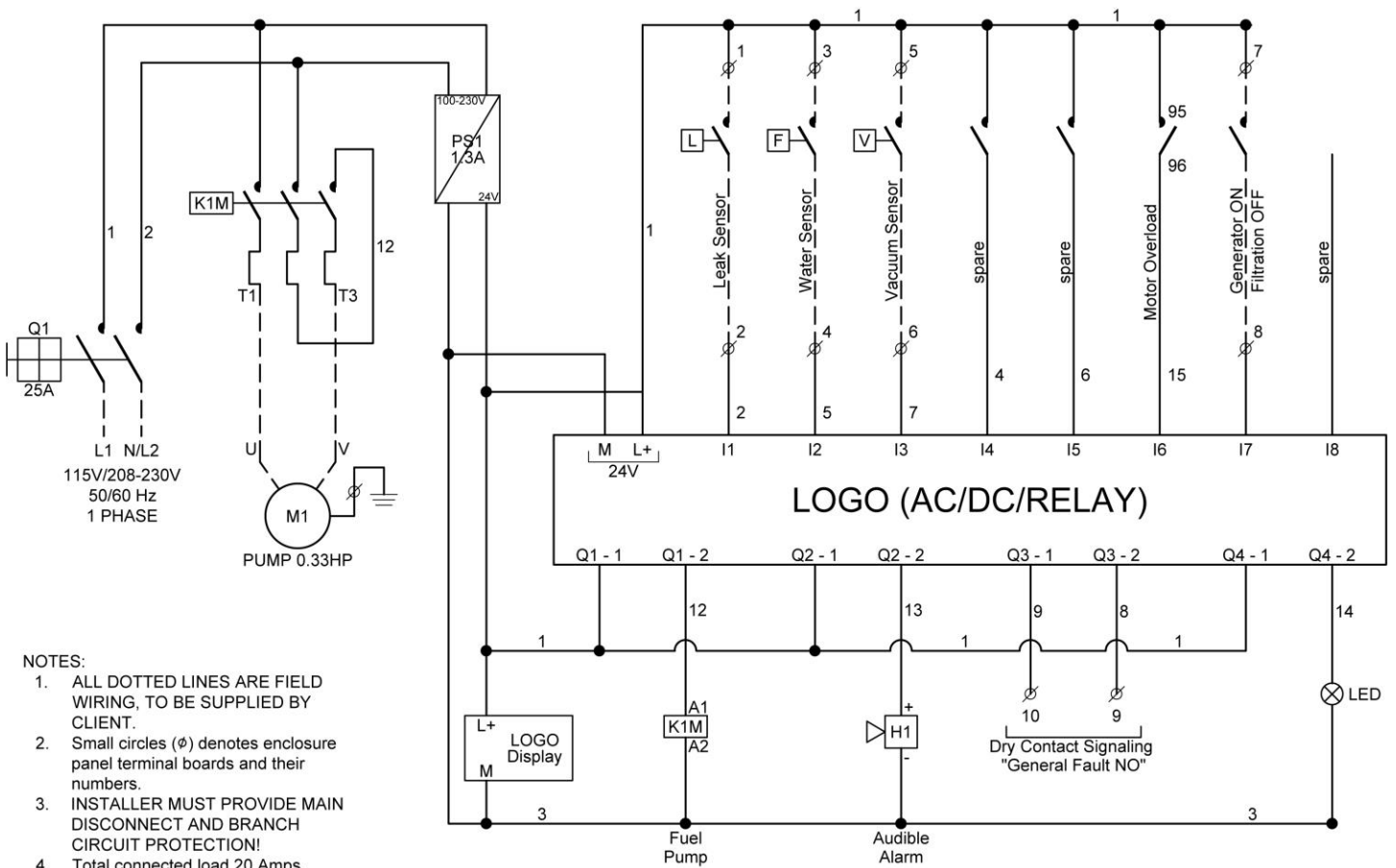
### 1. Sub-Base (Baffled) Tank Installation

- a. Supply pickup installed 1.0" from bottom of tank
- b. Return line installed on opposite end of tank for proper circulation.
  - i. Generator Supply line MUST be in the same baffle as FTI system return line.
- c. A Foot valve must be installed on the supply line to keep the system primed. (provided by others)
- d. All tank penetrations must be sealed per local jurisdiction.
- e. System Inlet 0.75" NPT
- f. System Outlet 0.75" NPT
- g. System to be wall or pedestal mounted per local jurisdiction.
- h. \*NOTE – Baffles typically limit fuel circulation, fuel testing is recommended every 6 months to ensure proper filtration.



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## Electrical Schematic

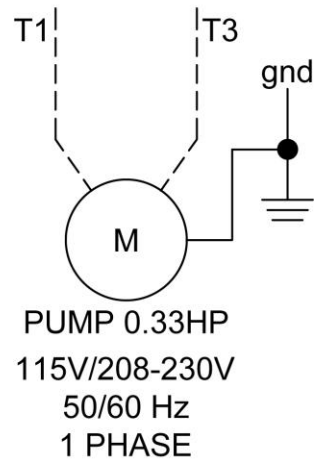




### Terminal Connections (Electrical Cont.)

1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
1	2	3	4	5	6	7	8	9	10
+V	-V	blank	Water Sensor	blank	Vacuum Sensor	blank	Generator Running Interlock	blank	General Alarm (dry contact ON)

Connect Motor Leads to terminal T1 and T3 on overload OL1



## FTI Automated Filtration system Start-up Procedure

Technician \_\_\_\_\_ Observer \_\_\_\_\_

### 1. System to be tested

- a. FTI automated filtration system – Model **[FTI-2.8]**

### 2. FTI Filtration System Start-up Procedure

- a. Program system to automatically filter for 1 hour. Reset clock to within 1-5 minutes of start time (See Operations Manual for instructions) Place the Control Panel in AUTO mode.

Wait for filtration to start

- i.  Check FILTER PUMP RUNNING status.

NOTES: \_\_\_\_\_

- b. Place the control panel in MANUAL mode.  
Start manual filtration. (See Operations Manual for Instructions)

- i.  Check FILTER PUMP RUNNING status.

NOTES: \_\_\_\_\_

- c. Simulate a strainer HIGH VACUUM ALARM at the strainer ball valve.  
Slowly close supply line ball valve until the needle at the strainer/Vacuum Gauge contacts set point and alarm sounds

- i.  Check filter high vacuum alarm. (16-18 in hg)

NOTES: \_\_\_\_\_

- d. Simulate a LEAK in cabinet. Lift leak detector. Alarm will sound  
Reset control panel.

- i.  Check leak alarm.

NOTES: \_\_\_\_\_

- e. Simulate WATER FULL in the collection bowl. Remove water sensor cable from 1 Micron Filter Housing. Short with wire between the 2 pins.  
Reset control panel.

- i.  Check Water alarm.

NOTES: \_\_\_\_\_

**TEST COMPLETE**