

# Specification: Diesel Fuel Primary Day Tank



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## A. Manufacturer Qualifications

Manufacturer shall have a minimum ten years' experience in the design and construction of Underwriters Laboratories (UL) listed day tank systems.

## B. Construction

Day tank shall be Tramont Model TRX or approved equivalent, and constructed in accordance with Underwriters Laboratories Standard UL-142. The day tank shall also be constructed in accordance with Flammable and Combustible Liquids Code, NFPA 30; and The Standard for Installation and use of Stationary Combustible Engine and Gas Turbines, NFPA 37. Day tank shall be made of heavy gauge steel construction. Tank shall be coated with rust inhibitor inside, primed and finish painted outside. Required tank connections include:

- 1" NPT engine supply
- 1" NPT engine return
- NPT fitting for emergency vent, sized as appropriate.
- 1" NPT overflow.
- 2" NPT normal vent
- 4 ½" square inspection port with manual fuel level gauge and manual fill cap

It shall be provided with atmospheric (normal) vent cap with screen and appropriately sized zinc-plated emergency vent cap. Emergency vent cap shall be spring-pressure operated. Opening pressure shall be 0.5 psig; full opening pressure shall be 2.5 psig. Limits shall be marked on top of each vent.

## C. Fuel Containment Basin

The day tank shall include a welded steel containment basin to prevent escape of fuel into the environment in the event of a tank rupture.

Rupture basin (indoor applications only): The basin shall consist of an open-top, welded heavy gauge steel structure sized at a minimum of 150% of the tank capacity. The basin shall be primed and finish painted.

Double wall basin (outdoor applications and indoor applications where required by local codes): The basin shall consist of a welded heavy gauge steel structure sized at a minimum of 150% of the tank capacity. The exterior of the basin shall be primed and finish painted. The basin shall include a welded steel top with an appropriately sized NPT fitting for emergency vent, and appropriately sized zinc-plated emergency vent cap. Emergency vent cap shall be spring-pressure operated. Opening pressure shall be 0.5 psig; full opening pressure 2.5 psig. Limits shall be marked on top of each vent.

## D. Leak Detection System

A rupture basin leak detector switch shall be wired into the electronic control module (ECM). This will shut down the supply pump and motor in case of a fuel leak into the containment basin.

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## E. Electronic Control Module (ECM)

The electronic control module (ECM) shall be Tramont System 2000PLUS™ or approved equivalent. The system shall have a single electrical analog float sensor to provide level signal to the ECM. The following shall be provided as part of the system:

- LED fuel level indicator
- High fuel level warning (activates at 106% of tank capacity)
- Low fuel level warning (activates at 62% of tank capacity)
- Critical low level shut off (activates at 6% of tank capacity)
- Fuel in basin alarm
- Pump control (Pump on at 87% of capacity, off at 100% of capacity)
- ECM functional signal

All warnings shall provide contacts for remote annunciation (3 amps @ 120 VAC). All signals and warnings shall be indicated by LED lights. All warnings shall be provided with normally open and normally closed contacts for remote annunciation. The ECM shall be capable of being manually controlled with "On", "Off", and "Test" buttons. A secure internal test button shall be provided to verify relays' functionality. The system shall be UL-508 listed. Electrical characteristics shall be 120 VAC, 1 phase, 60 Hz.

## F. Pumps

The tank shall include a fuel oil pump to draw fuel oil from the main tank to the day tank. Pump capacity shall be sized as

Appropriate, and provide a minimum of 17 feet of vertical lift at sea level. A motor shall be provided of sufficient horsepower to operate the pump; electrical characteristics designated as appropriate.

## G. Duplex Pumping System

In applications requiring a duplex pumping system the tank shall include two pump and motor combinations. The pump/motors shall alternate as the lead when the tank is pumping fuel. The lead pump shall activate when the fuel level declines to 87% of tank capacity; the second pump shall activate and operate in tandem with the lead pump if the fuel level declines to 75% of capacity. Appropriately sized solenoid valves with strainers shall be provided on the pump fuel inlets.

## H. Reverse Pumping System

A reverse pumping system shall be provided in applications where the main tank's maximum fuel level is at a higher level than the day tank. The reverse pump/motor will return fuel to the main tank in the event the day tank level exceeds 110% of its normal capacity. The reverse pump shall be activated by a separate, critical high level float switch. The reverse pump capacity will be equal to or greater than the capacity of the supply pump. If the tank includes a duplex supply pumping system, the reverse pump shall be equal to or greater than the combined capacity of the two supply pumps.