

Submittal Manual: Day Tank – TRX Series



Tramont Corporation
3701 N. Humboldt Blvd.
Milwaukee, WI 53212
Ph: 414.967.8800
Fx: 414.967.8811
www.tramont.com

Thank you for choosing Tramont

Included in this manual

- Standard TRX day tank
- Generic Tramont day tank diagrams
- Mechanical and plumbing guide
- Warranty

Warning

This tank has been pressure tested from 3 to 5 psi for weld integrity. However, it has not been designed as a pressure vessel.

This tank must be vented atmospherically through a minimum of a 2" NPT atmospheric pipe vent. Additional emergency venting requirements also may have to be met. All emergency fittings are supplied.

Tanks that are filled by fuel transfer pumps must have the "overflow" fitting plumbed in a continuous downward path to the main tank without downsizing. During an overflow condition, any upward plumbing will result in an undesirable fuel pressure situation. This may result in a Diesel Fuel Spill.

If a continuous downward path is not possible, a reverse pumping system, or reverse pumping tank is required. Consult factory for specification and sizing.

Standard Day Tank Parts

Listed below are parts currently standard on Tramont TRX day tanks. TRX Series tanks incorporate the same quality construction as the TRS & TRE Series. However, they do not include controls or pump and motor assembly.

TRX Series day tank

- Heavy gauge steel construction
- Rust inhibitor coated interior and gray painted exterior
- Tank 1" NPT fittings are engine supply, engine return, overflow and alternate engine return. Other fittings include 2" NPT for normal vent, NPT sized as appropriate for emergency vent, and one 3/8" NPT basin drain for tanks through 275 gallons, 1" NPT for larger tanks. (If tank includes containment basin, alternate engine fitting omitted and drain provided on basin only).
- Square 4 1/2" inspection port and gauge

Warranty

The Tramont Corporation warrants its products against defects in material or workmanship under normal use and service for a period of 12 months from date of shipment from its plant in Milwaukee, Wisconsin. All obligations and liabilities under this warranty are limited to repairing or replacing at our option F.O.B. Milwaukee, Wisconsin of such allegedly defective units or parts returned, carrier charges prepaid. No liability is accepted for consequential damage or reinstallation labor.

Warranty on accessories furnished by other manufacturers shall be limited by that manufacturer's warranty.

If field service, at the request of the Buyer, is rendered and the fault is found not to be with the Tramont Corporation product, the Buyer shall pay the time and expense of the Tramont Field Representative. Bills for service, labor or other expenses that have been incurred by the Buyer, their customer or agent will not be accepted.

Warranty does not cover failure resulting from improper installation or use. Changes or repairs made in the field without authorization from Tramont Corporation will void this warranty.

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.

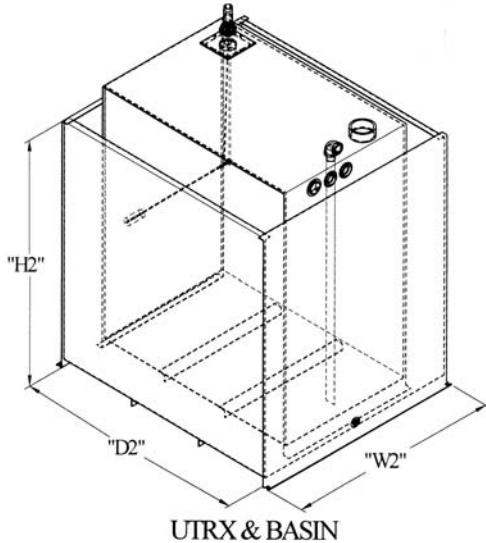
H. Reverse Pumping System

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.

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Dimensions for standard Day Tanks are listed below. Please consult a Tramont service representative if your application requires special dimensions.

Fuel Containment basins for day tanks are optional, most day tank users include them to satisfy local code requirements. Basins are available in standard sizes of 150% and 200% of the tank capacity. A 150% capacity basin is adequate for most applications; however, some jurisdictions require a 200% capacity basin. Check with your local fire marshal or other code enforcement authorities to verify basin requirements. There are two types of containment, open top rupture and closed top double wall basins.

Tank Capacity		Steel Gauge	Emergency Vent NPT	Tank Dimensions			Weight		
Gallons	(Liters)			Inches			Lbs.		
				Length	Width	Height	TRS	TRE	TRX
10	(38)	12	2	12	24	12	70	63	48
15	(57)	12	2	12	24	16	79	72	57
25	(95)	12	2	12	24	24	98	91	76
50	(189)	12	2	18	24	31	136	129	114
60	(227)	12	2	20	24	31	143	136	121
75	(284)	12	2	24	24	31	158	151	136
100	(378)	12	3	24	24	44	199	192	177
150	(568)	12	3	36	24	44	252	245	230
200	(757)	12	3	46	24	44	297	290	275
275	(1041)	12	4	66	24	44	386	379	364
300	(1136)	12	4	40	36	50	366	359	344
350	(1325)	12	4	46	36	50	400	393	378
400	(1514)	12	4	55	36	50	451	444	429
450	(1703)	12	4	61	36	50	485	478	463
500	(1893)	12	4	68	36	50	524	517	502
550	(2082)	10	4	74	36	50	711	704	689
600	(2271)	10	5	81	36	50	762	755	740
700	(2650)	10	5	70	48	50	804	797	782
800	(3028)	10	5	80	48	50	886	879	864
900	(3407)	10	5	90	48	50	969	962	947
1000	(3785)	10	5	100	48	50	1052	1045	1030

Rupture Basin

A rupture basin is open top. The day tank is placed in the basin. Because water and debris can collect in the containment area, rupture basins are used only for indoor applications.

Double Wall

A double wall basin is closed top. The top is sealed and welded into place. An additional pressure relief vent cap is required to vent the containment area. Double wall tanks typically are used in outdoor applications. Local codes may require a double wall for indoor applications. Other options may be required to dually weatherproof the tank.

Refer to CHARTS on following page for Basin Sizing

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Tank Capacity		150% Containment		Tank Dimensions			Weight		
		Option #		Inches			Lbs.		
Gallons	(Liters)	Open Top	Double	150% Open or Double Wall			150% Open or Double Wall		
		Basin	Wall	Length	Width	Height	TRS	TRE	TRX
10	(38)	2900	7000	16	36	13.5	137	130	115
15	(57)	2905	7005	16	36	17.5	160	153	138
25	(95)	2910	7010	16	36	25.5	206	199	184
50	(189)	2920	7015	22	36	32.5	293	286	271
60	(227)	2940	7020	28	36	32.5	325	318	303
75	(284)	2940	7020	28	36	32.5	340	333	318
100	(378)	2950	7030	28	36	45.5	440	433	418
150	(568)	2960	7035	40	36	45.5	554	547	532
200	(757)	2970	7040	50	36	45.5	650	643	628
275	(1041)	2990	7045	70	36	45.5	840	833	818
300	(1136)	2989	7050	45	48	51.5	795	788	773
350	(1325)	2991	7055	51	48	51.5	999	992	977
400	(1514)	2992	7060	60	48	51.5	1123	1116	1101
450	(1703)	2993	7065	66	48	51.5	1205	1198	1183
500	(1893)	2994	7070	73	48	51.5	1300	1293	1278
550	(2082)	2995	7075	79	48	51.5	1535	1528	1513
600	(2271)	2996	7080	86	48	51.5	1642	1635	1620
700	(2650)	2980	7085	84	60	51.5	1800	1793	1778
800	(3028)	2981	7090	96	60	51.5	1991	1984	1969
900	(3407)	2982	7095	108	60	51.5	2182	2175	2160
1000	(3785)	2983	7100	120	60	51.5	2373	2366	2351

Tank within Containment Only for Overall Height - Add 8" TRS or TRE/X Add 1.25"

Tank Capacity		200% Containment		Tank Dimensions			Weight		
		Option No.		Inches			Lbs.		
Gallons	(Liters)	Open Top	Double	200% Open or Double Wall			200% Open or Double Wall		
		Basin	Wall	Length	Width	Height	TRS	TRE	TRX
10	(38)	2905	7005	16	36	12.5	218	211	196
15	(57)	2910	7010	16	36	20.5	268	261	246
25	(95)	2920	7015	22	36	27.5	363	356	341
50	(189)	2940	7020	28	36	27.5	475	468	453
60	(227)	2940	7020	28	36	27.5	507	500	485
75	(284)	2950	7030	28	36	41.5	581	574	559
100	(378)	2960	7035	40	36	41.5	742	735	720
150	(568)	2970	7040	50	36	41.5	907	900	885
200	(757)	2990	7045	70	36	41.5	1104	1097	1082
275	(1041)	2997	7046	70	48	41.5	1525	1518	1503
300	(1136)	2993	7065	66	48	47	1515	1508	1493
350	(1325)	2994	7070	73	48	47	1775	1768	1753
400	(1514)	2995	7075	79	48	47	1947	1940	1925
450	(1703)	2996	7080	86	48	47	2085	2078	2063
500	(1893)	2980	7085	84	60	47	2296	2289	2274
550	(2082)	2981	7090	96	60	47	2640	2633	2618
600	(2271)	2982	7095	108	60	47	2855	2848	2833
700	(2650)	2983	7100	120	60	47	3121	3114	3099
800	(3028)								
900	(3407)								
1000	(3785)								

Consult Factory for 200% Containment Designs

Tank within Containment Only for Overall Height - Add 8" TRS or TRE/X Add 1.25"

Installation: Mechanical & Plumbing guide: Day Tank Systems



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Mechanical installation

This guide covers the mechanical installation of a standard Tramont day tank system. Installation should be performed by a qualified mechanical installer or plumber experienced in black iron piping, valves and connections. This guide primarily covers "standard" tanks; that is, tanks without optional accessories or equipment. Certain optional devices may require special consideration during installation. For TRE-Series tanks also see "Electrical installation guide: TRE-Series Day Tanks." For TRS-Series tanks also see "System 2000PLUS" specification sheet.

!WARNING!

THIS TANK IS DESIGNED AND CONSTRUCTED TO HOLD DIESEL FUEL ONLY.

Tank placement

Upon receipt of the Tramont day tank, inspect for obvious signs of shipment damage. If damage is visible (dents, water logging, etc.), notify the freight company and file a claim for damages with them. This step must take place on the receiving end of the shipment; Tramont cannot do this for the purchaser or end user. Unpack the unit and inspect closely. The Tramont day tank can withstand normal stresses of shipping. However, rough handling, such as dropping the unit, may result in scratches, dents and damage to tank components and weld seams. Again, if you detect any signs of damage notify the freight company immediately.

Place the tank as close to the gen-set as practical. It should be fully accessible from all sides. The front of the unit must be visible and accessible. Position the tank so that fittings and vents can be easily connected and checked. Make sure that there is room to access the basin/tank drain. Generally a minimum of 6" - 8" from any wall is required for

piping installation. Allowing adequate space for piping will make future repair and maintenance much easier.

Slots are located on the base of the tank if you choose to bolt it to the floor. Complete all piping *before* bolting the tank to any surface. This will make it much easier to correct any misalignment of piping. **The day tank is not designed to absorb the force exerted by improperly aligned pipe. "Forcing" pipes to line up with the fittings may damage the tank.**

Plumbing connections

Day tanks typically are installed with three 90° elbows in the fuel line between the day tank and the point where the line is firmly fixed to a wall or floor. This will facilitate minor adjustments when leading the piping to the tank. Pipe unions should be installed as needed to allow for future breakdown or maintenance of pipes. All threaded connections shall be covered with Teflon™ tape, thread sealant or comparable material. DO NOT use any sealant that is not compatible with #2 diesel oil. All threaded connections must be tightened leak-tight.

IMPORTANT: Gen-set installations generally are not set up so that high pressure can form in piping lines, and **the Tramont day tank is not a pressure vessel.** However, all connections still should be tightened so that the piping can withstand considerable pressure if necessary. Use only clean, new pipe connections. Rust, dirt, tars and other contaminants can prevent proper operation of tank components such as pumps, and may result in damage or destruction of these components.

Installation: Mechanical & Plumbing guide: Day Tank Systems



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Engine supply

The engine supply fitting (1" NPT) is located on the left-hand side at the bottom rear of tanks without a basin.

On tanks with a basin the supply fitting is located on the top rear of the tank, and a dip tube extends to the bottom of the tank. Follow the gen-set supplier's requirements for pipe size; flex hose and connections to the engine.

Fuel return

On tanks without a basin there are two 1" NPT fuel return fittings on the back of the tank. One is located at the lower right-hand side of the tank; the other is located near the top of the tank. On tanks with a basin there is a single fuel return fitting on the back of the tank near the top. The fuel return fittings are for excess hot fuel returned from the engine. If your tank does not include a basin Tramont recommends using the bottom fuel return fitting. Seal the unused fuel return fitting with a 1" NPT black iron pipe plug. Another option is to pipe the fuel return line directly to the main tank, thereby eliminating a possible fuel temperature increase in the day tank.

Overflow

The 1" NPT overflow fitting is located at the upper rear of the tank. It prevents overflowing of the day tank by routing excess fuel directly back to a main tank.