Battery and Connections

A separate 12-Volt battery is recommended for the generator set. With a separate battery, cables can be kept short which eliminates the problem of excessive voltage drop through long cables. See Table 2-6 for lengths and sizes. Refer to Figure 2-5 (View A) for cable connections — note that a grounding strap must be connected between the ground lug on the generator set and frame of the vehicle with this arrangement. When using a separate battery, provision must be made for charging battery.

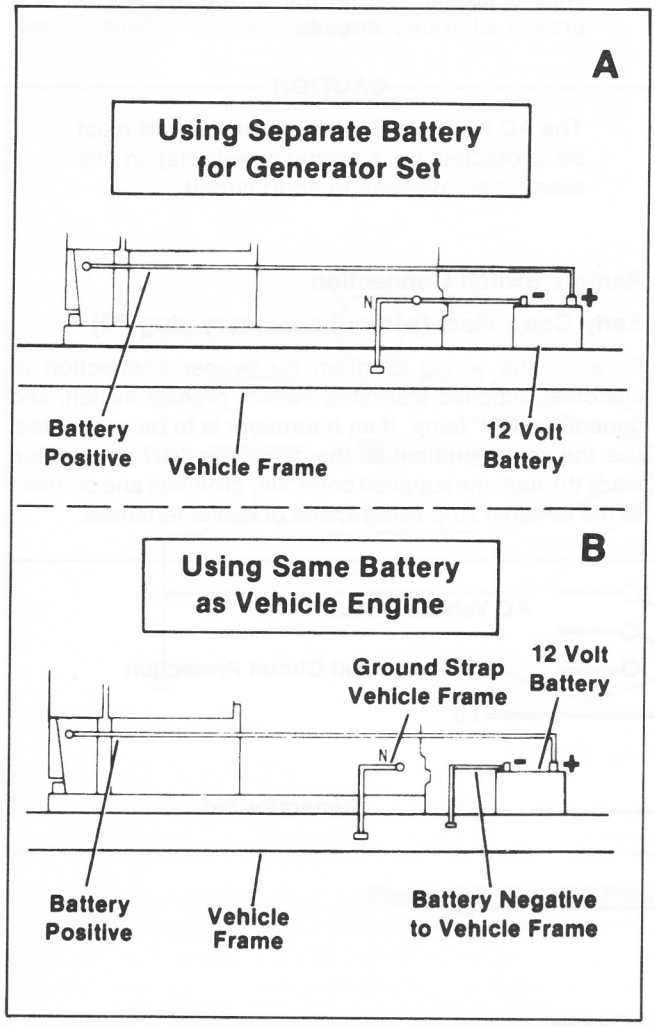


Figure 2-5. Battery Connection Details

Distance Between Generator Set & Battery	At 0° F (-18° C)	Cable Size (AWG) At 32° F (0°)	At 75° F (24° C)
40 Feet (12.2 m)	00	0	1
30 Feet (9.2 m)	0	1	2
25 Feet (7.6 m)	1	2	4
20 Feet (6.1 m)	2	2	6
15 Feet (4.6 m)	2	4	6
10 Feet (3.0 m)	4	6	8
5 Feet (1.5 m)	6	6	8
2.5 Feet (0.8 m)	8	8	8

Table 2-6. Battery Cable Size

If the starting battery for the vehicle engine must also be used for starting the generator engine, the negative battery terminal must be grounded to the vehicle frame and heavy gauge (#4) ground strap must connect the ground lug on the generator set to the vehicle frame as illustrated in Figure 2-5 (View B).

⚠ WARNING

EXPLOSIVE BATTERY GASES! The gases generated by a battery being charged are highly explosive. Do not smoke or permit flame or spark to occur near a battery at any time, particularly when it is being charged. Any compartment containing batteries should be well ventilated to prevent accumulation of explosive gases. Do not mount battery in generator compartment.

AC Load Lead Connections

Each set has four color-coded load leads and a connector for attaching flexible conduit from the generator end bracket to the load terminal junction box typically installed in the compartment. The black leads (L1 and L2) are hot, the white lead (L0) is neutral, and the green lead is the hazard ground.

NOTE

Route load leads through flexible conduit and keep circuit away from the generator set, specifically fuel and exhaust system components.

Figure 2-6 represents position and dimensions for typical junction box installation. Junction box should be installed to make it accessible for inspection and service.

AC load lead L0 (white or gray) is always the neutral lead on Kohler generator sets — make sure the neutral of the AC circuit in the vehicle is connected to the lead L0 (white or gray). If equipment ground-type plugs and receptacles (3-pronged) are used in the vehicle, the green wire must be connected to the "U" shaped pin. On vehicles which also have provisions for using an outside AC power

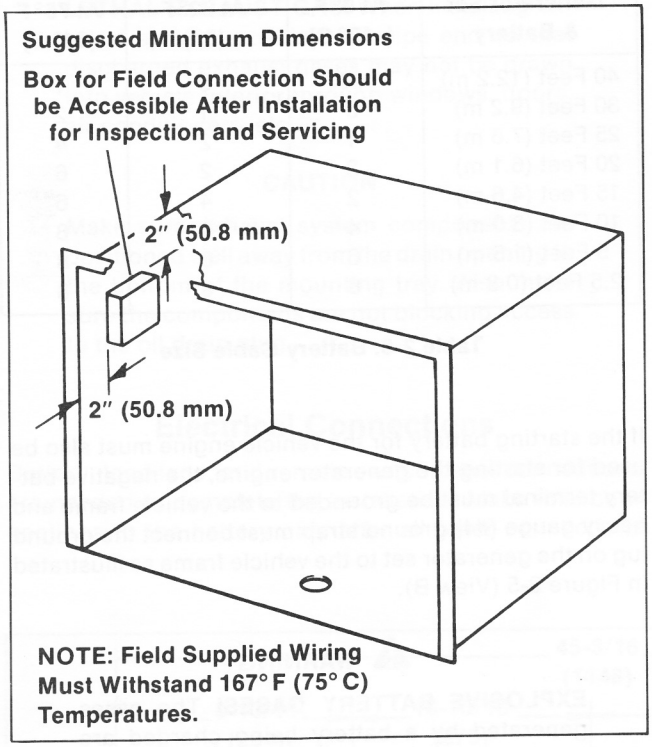


Figure 2-6. RV Junction Box

source, the neutral as well as the "hot" leads (or black) must be completely isolated from the generator set when power is switched to the outside source. See Figure 2-7.

CAUTION

A triple pole-double throw transfer switch, rated for the calculated load of the RV, must be used to transfer the load from one source to the other. A ground-fault circuit interrupter should be installed in the wiring system to protect all branch circuits.

CAUTION

The AC load circuit of the generator set must be protected by a circuit breaker(s) in the event of an overload or short circuit.

Remote Switch Connection

Early Controllers (without accessory plug P2)

Refer to the wiring diagram for proper connection of customer supplied start/stop switch, preheat switch, and generator "ON" lamp. If an hourmeter is to be connected, use the same terminal as the generator "ON" lamp. Run leads through the supplied controller grommet and connect to the terminal strip using spade or eyelet terminals.

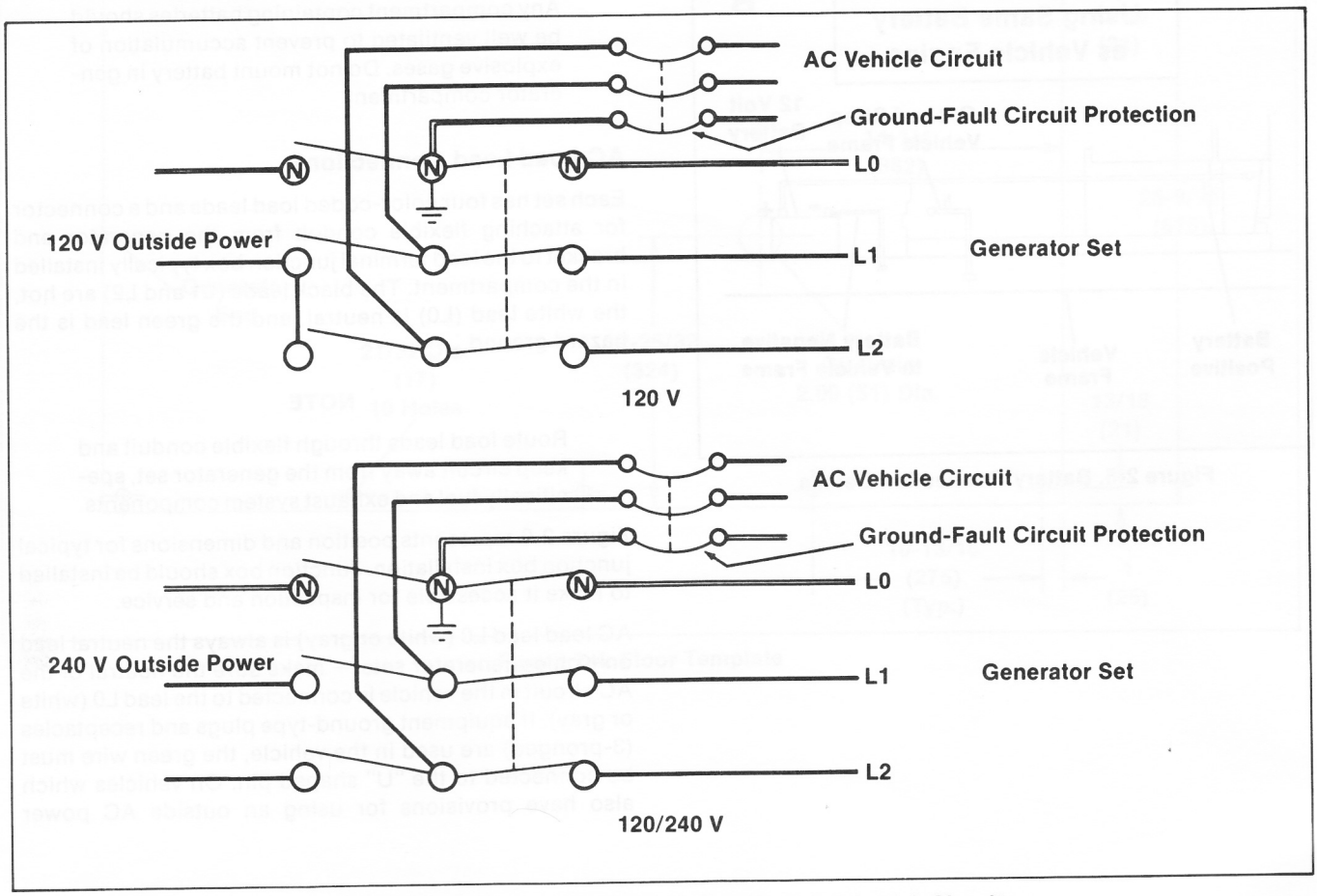


Figure 2-7. Transfer Switch Connection, 3-Wire AC Circuit

Later Controllers (with accessory plug P2)

Later model controllers include an accessory plug (P2) for easy connection of the remote switch, preheat switch, and generator "ON" lamp wiring harness (available separately). One end of the 12 in. (30.5 cm) P2 wiring harness plugs directly into the controller. The "pigtail" leads on the remaining end of the harness are connected to the appropriate remote panel terminals via customer supplied wiring. Be sure to connect the remote operating controls to the correct P2 wire harness lead. See figure 2-8 for identification of P2 harness leads.

Pin No.	Lead No.	Function
1	53	Gen "ON" lamp
2	—	Not Used
3	4	Ground
4	3	Start
5	2	Stop
6	34	Preheat

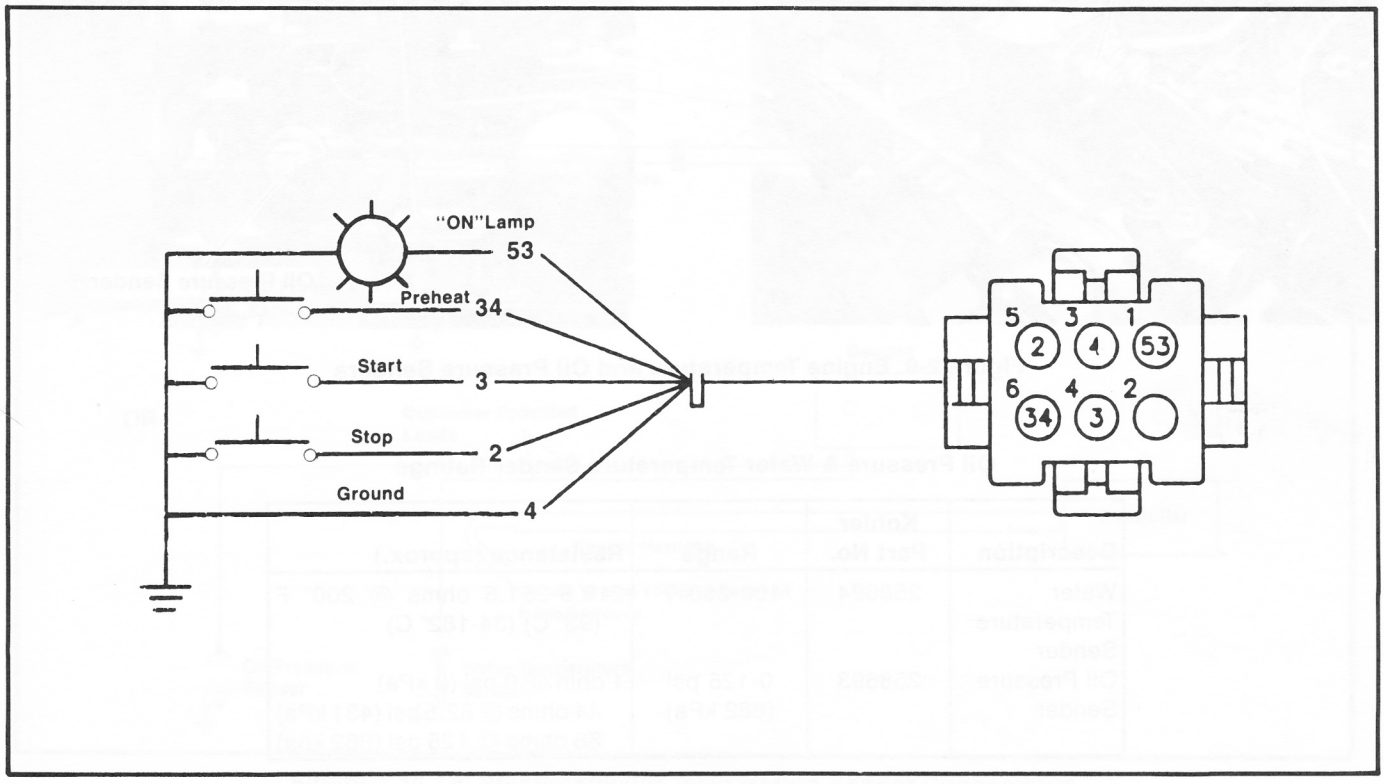


Figure 2-8. Remote Panel Wiring (P2 Wiring Harness)

Some models are equipped with sending devices for connection to oil pressure and water temperature gauges (not provided). Location of the oil pressure and water temperature senders is shown in Figure 2-9. Follow the recommendations of the gauge manufacturer in selecting a gauge compatible with each sender. The resistance and range of the gauge must match the resistance and range of the sending device (reference the sender ratings below). RV Coach manufacturers have successfully used the following gauges with the oil pressure and water temperature senders on 12.5/14.5CCO generator sets:

Water Temperature Gauge - Teleflex No. 53215
Oil Pressure Gauge - Teleflex No. 53214

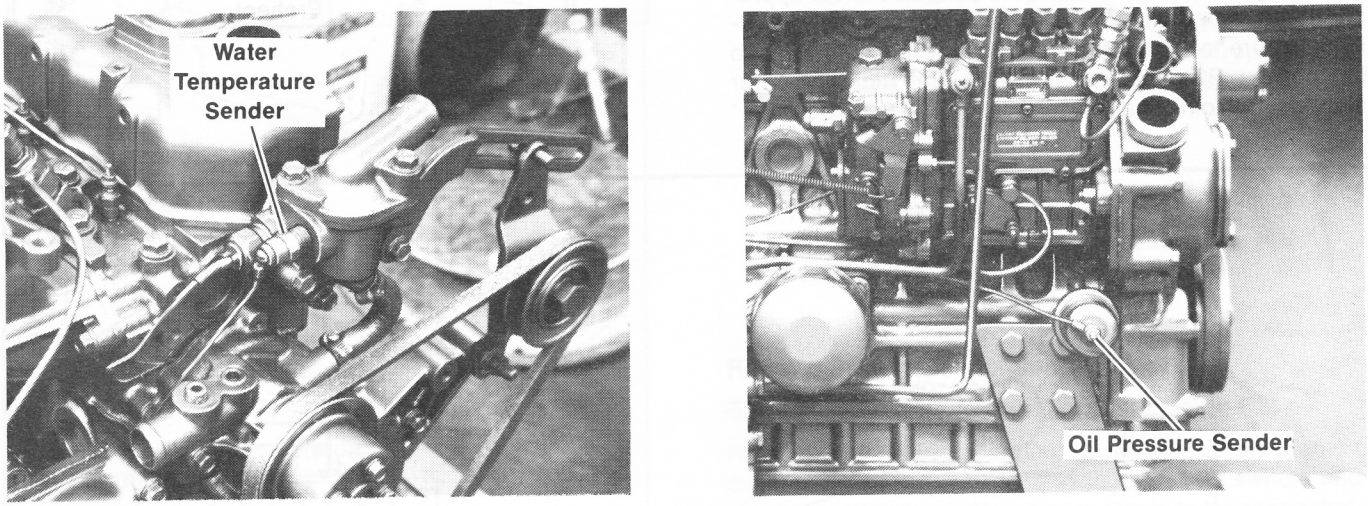


Figure 2-9. Engine Temperature and Oil Pressure Senders

Oil Pressure & Water Temperature Sender Ratings

Description	Kohler Part No.	Range	Resistance (approx.)
Water Temperature Sender	258694	100-360° F	218.5-251.5 ohms @ 200° F (93° C) (34-182° C)
Oil Pressure Sender	258693	0-125 psi (862 kPa)	1 ohm @ 0 psi (0 kPa) 44 ohms @ 62.5 psi (431 kPa) 88 ohms @ 125 psi (862 kpa)

NOTE

Generator set operating oil pressure is 21.3 - 56.9 psi (147 - 392 kPa).

To connect the sending units to the gauges, use spade connectors and 16 or 18 gauge wire. Since lead 10 (from water temperature sender) and lead 11 (from oil pressure sender) may not appear at controller plug J1 or P1, it may be necessary to access these leads in the engine harness or remote harness (if used). Leads 10 and 11 do not run the full length of the remote harness. Retrieve the ends of these leads from the harness for connection to the oil pressure and water temperature gauges. The installer may also elect to run separate leads from each sender directly to the gauges and bypass the harnesses entirely. Each of these options is illustrated in Figure 2-10 below. Use insulink or similar connectors at all spliced connections to insure reliable operation of the senders and gauges.

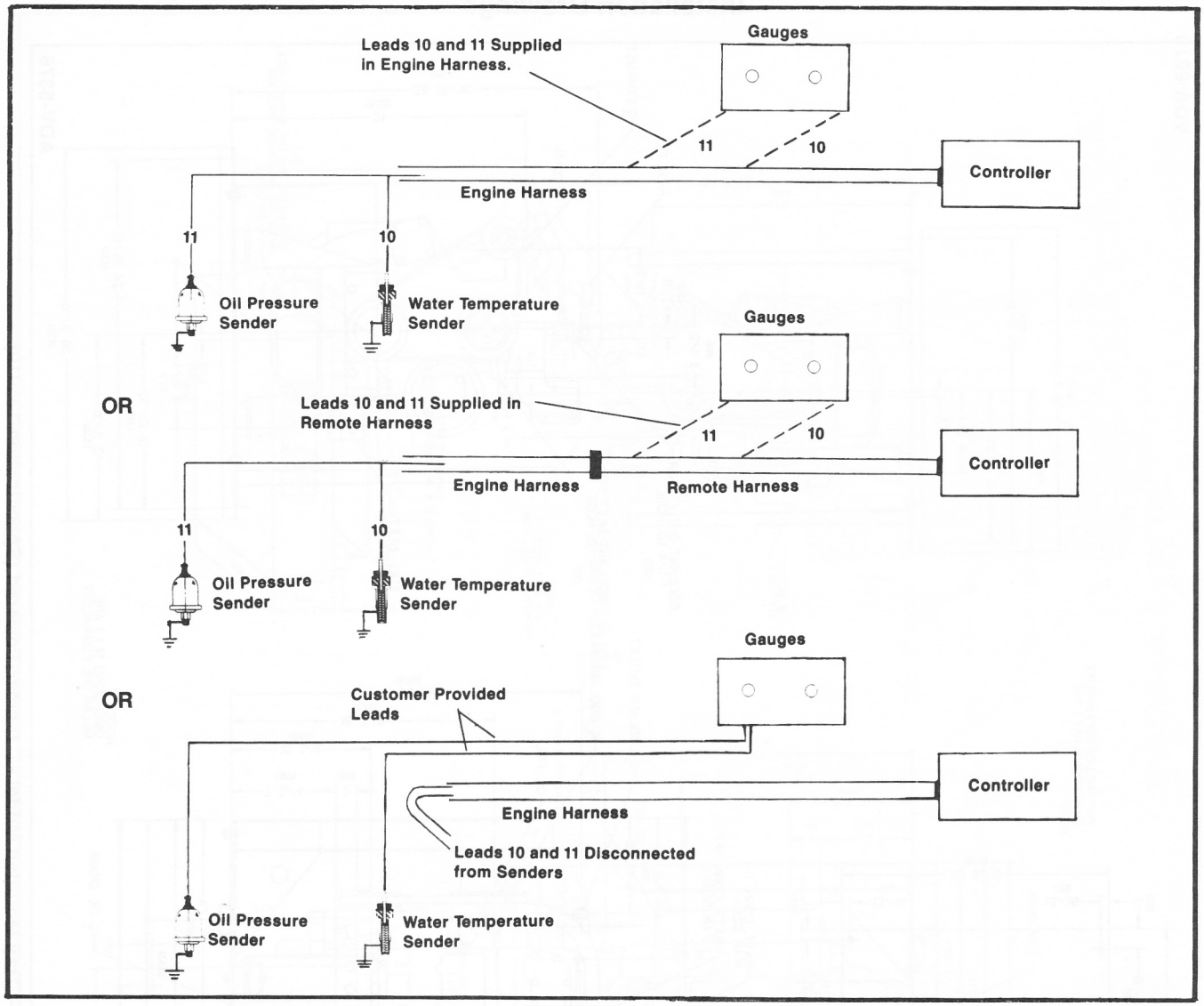
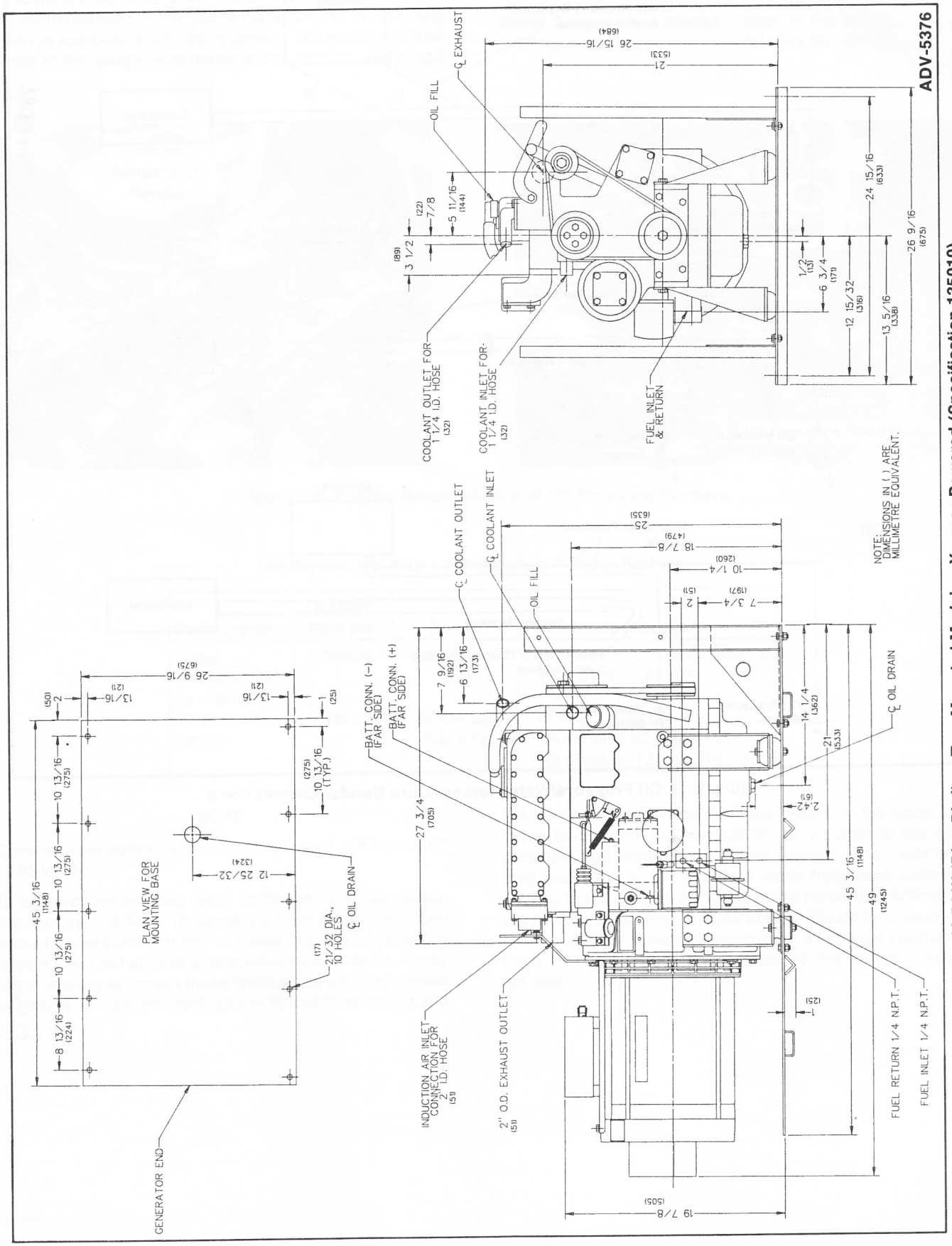
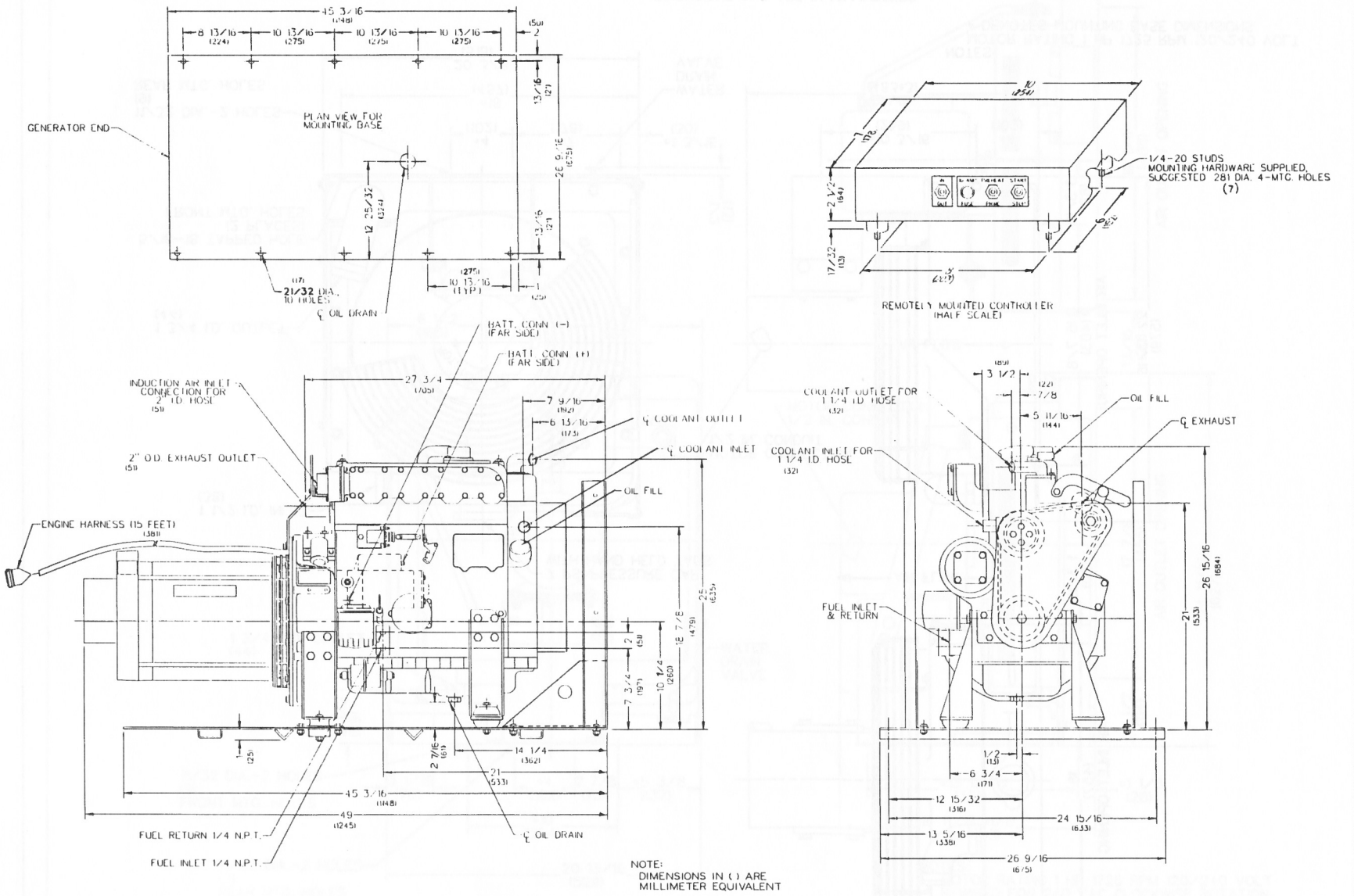


Figure 2-10. Oil Pressure/Water Temperature Sender Connections

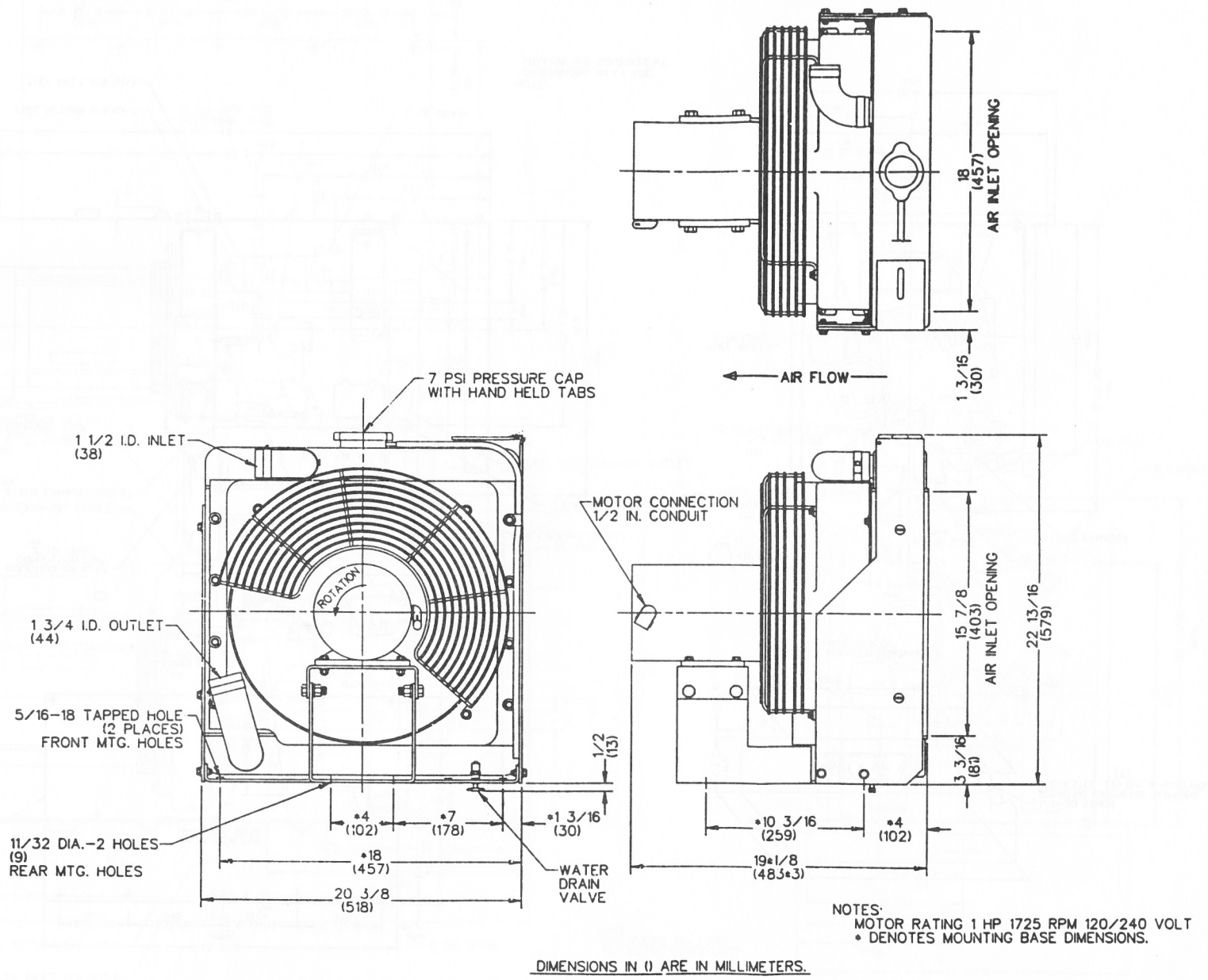


12.5 kW (Blue Bird) — Tray Mounted Model — Yanmar-Powered (Specification 135010)

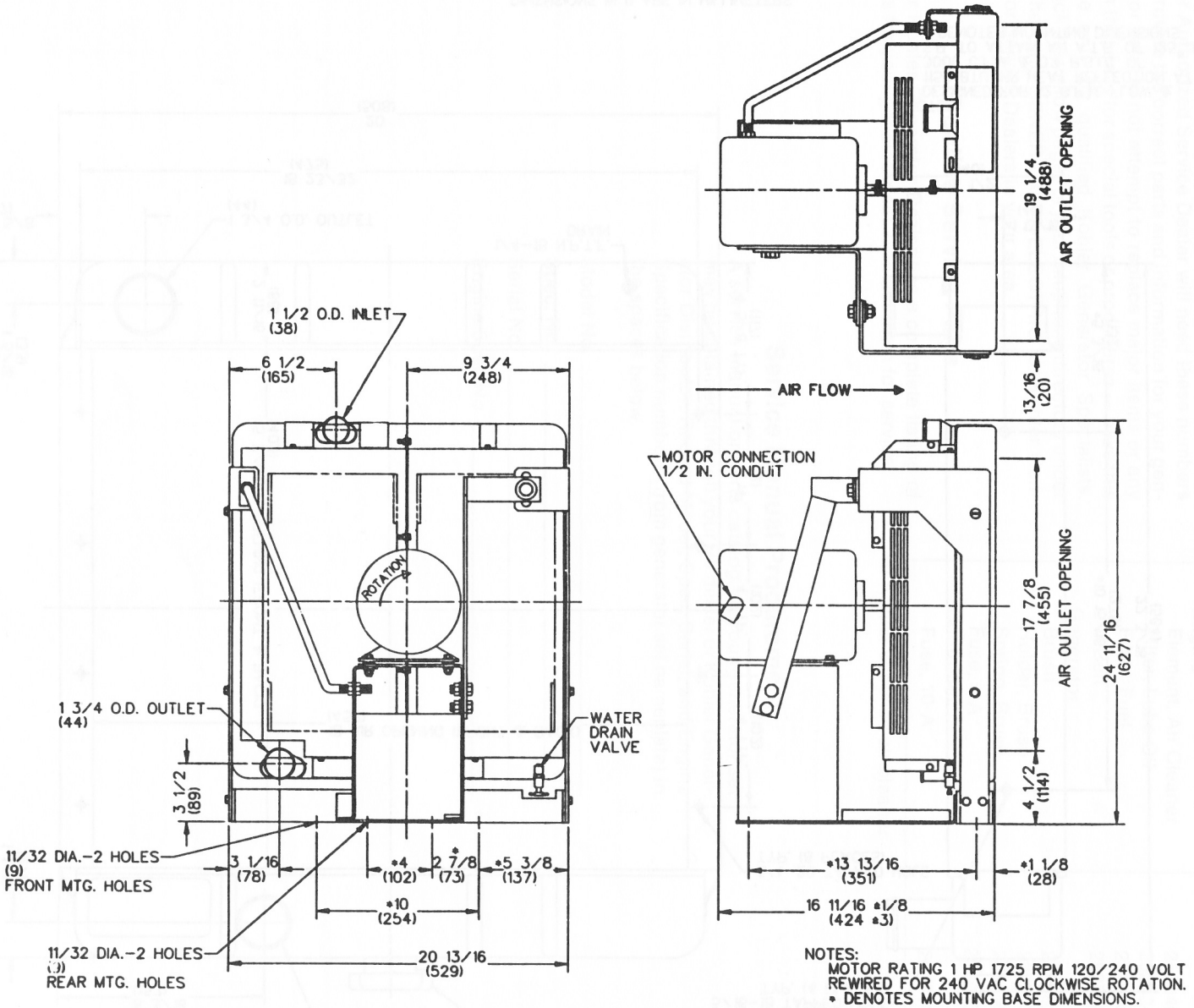


ADV-5510

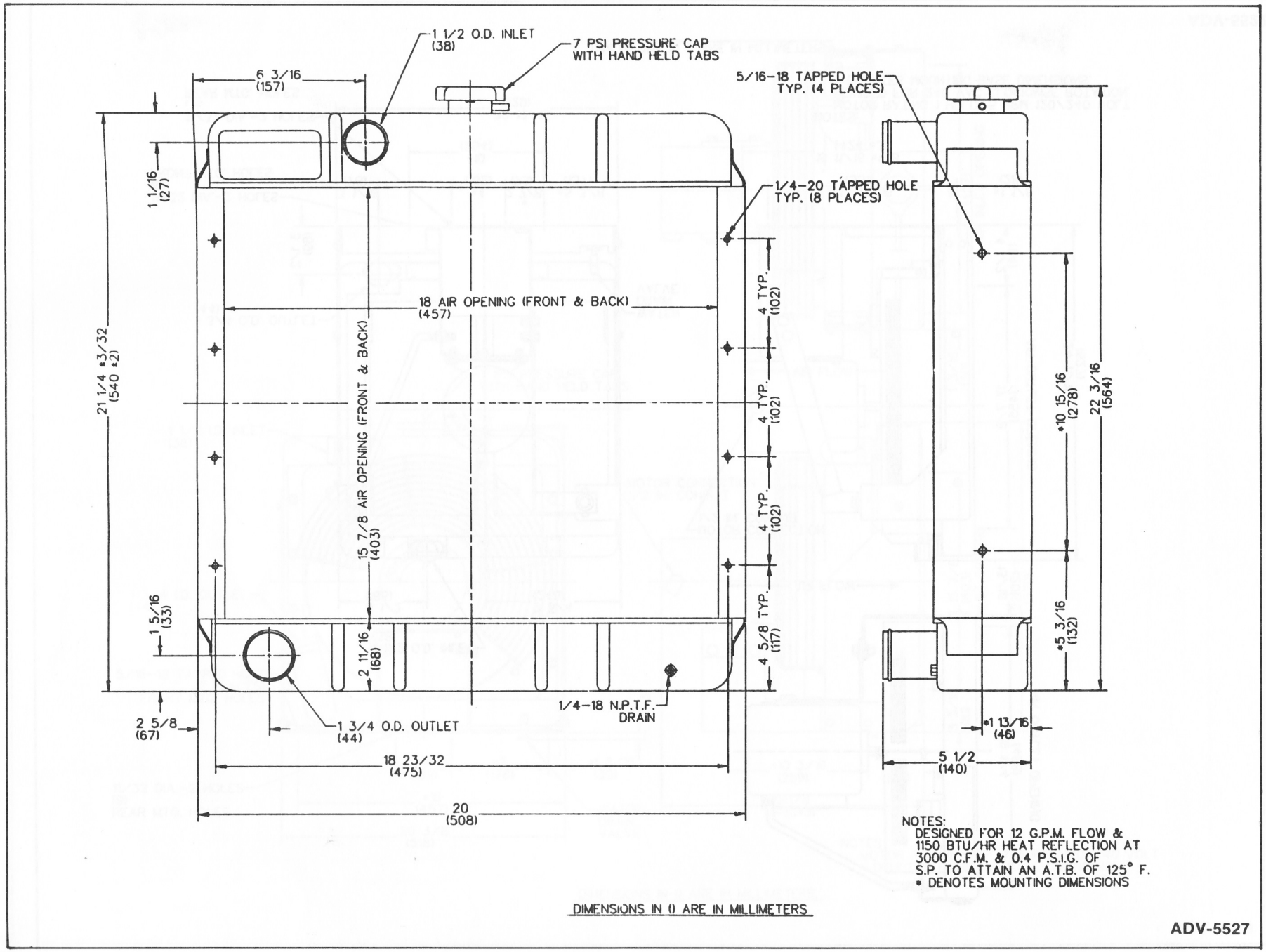
12.5 kW (Blue Bird)—Tray Mounted Model—Yanmar—Powered (Specification 135013)



12.5kW RV Radiator with Motor-Driven Suction Fan



12.5kW RV Radiator with Motor-Driven Blower Fan



12.5kW RV Radiator