

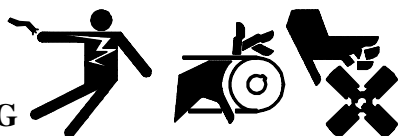
## Engine Block Heater Kits (Tank-Type) 20-100ROZ 4B/BT AND 6B/BT Cummins-Powered Standby Generator Sets

Model	Voltage	Kit No.
20-100ROZ	120	PA-256434
20-100ROZ	240	PA-256435

The engine block heater kit heats engine coolant, making starting easier and warm-up quicker. The thermostat will automatically turn off when coolant temperature reaches 120°F (49°C).



**WARNING**



**Accidental starting can cause death or serious personal injury.** Turn Generator Master Switch to OFF position, disconnect power to battery charger, and remove battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.



**CAUTION**



**Engine block heater can cause electrical shock.** Remove engine block heater plug from electrical outlet before working on block heater electrical connections.

### NOTE

**Block heater will fail if not immersed in water.** Always unplug block heater(s) before draining coolant and fill engine block with coolant prior to plugging in block heater(s). Block heater element **MUST** be immersed in engine coolant before being energized.

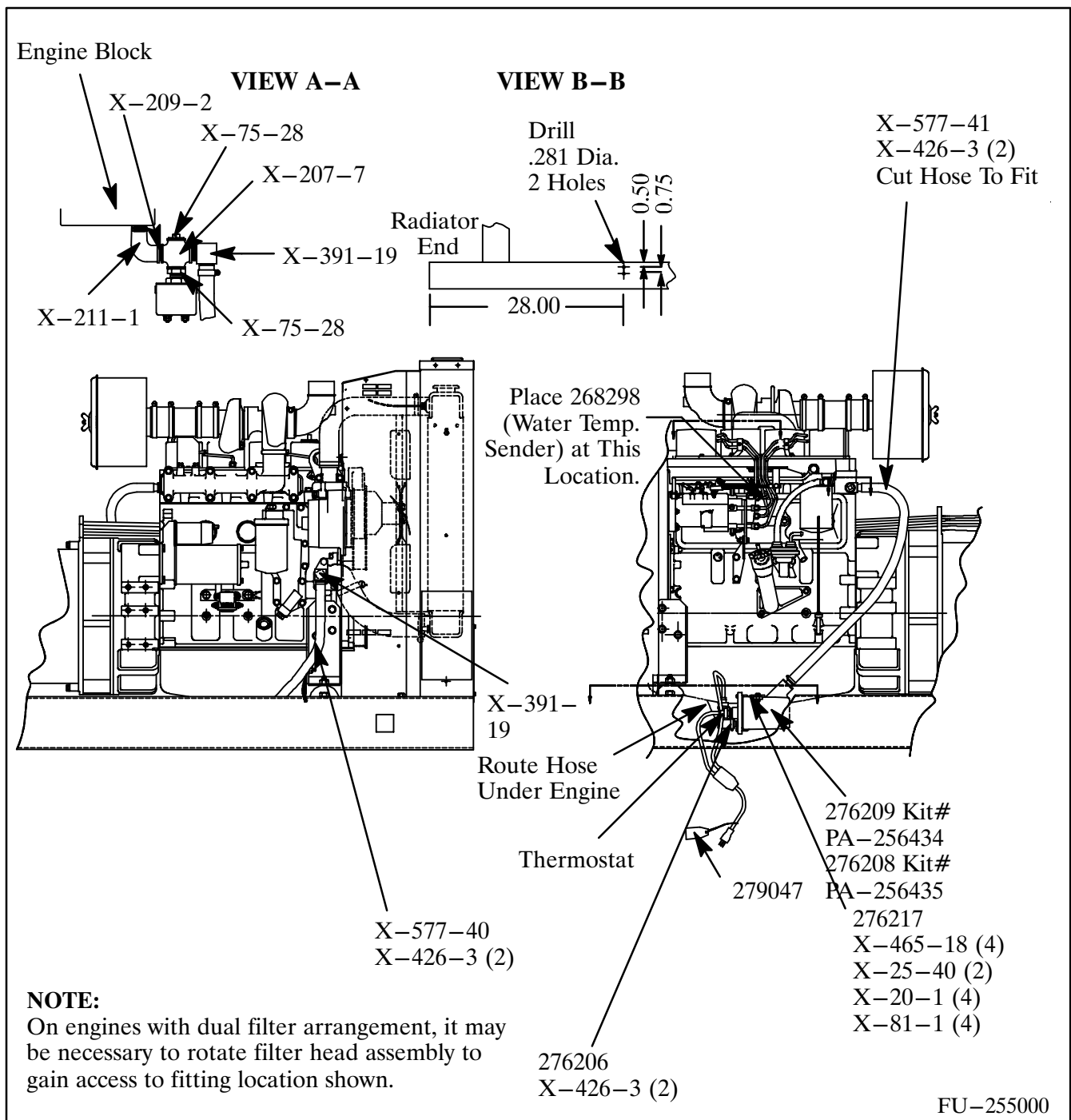


**WARNING**



**Hot coolant can cause severe burns.**

Allow engine to cool and release pressure from cooling system before opening pressure cap. To release pressure, cover the pressure cap with a thick cloth then turn it slowly counterclockwise to the first stop. After pressure has been completely released and the engine has cooled, remove cap. If generator set is equipped with a coolant recovery tank, check coolant level at tank.



**Figure 1. Block Heater Installation (Tank-Type)**

## Installation

1. Move controller master switch to OFF position. Disconnect battery of generator set, negative lead first.
2. With generator set sufficiently cooled, drain the coolant into a suitable container. **Dispose of used engine coolant in an**

**environmentally safe manner. Take used coolant to a suitable collection facility in your area. Do not pour used coolant on the ground, down sewers, or into streams and other bodies of water.**

## NOTE

Drain valve is located on radiator bottom and/or side of engine crankcase.

3. Remove water temperature sender (268298) and reposition at location shown on Figure 1.

**NOTE**

Apply pipe sealant to male threads of all components when assembling.

4. Install street elbow (X-211-1), pipe nipple (X-209-2), pipe cross (X-207-7), pipe plugs (X-75-28) on top and bottom of pipe cross, and hose elbow connector (X-391-19) into block where water temperature sender was located. See Figure 1. View A-A.

**NOTE**

When installing and tightening street elbow (X-211-1), be careful not to damage fuel return line.

5. Locate hose clamp (X-426-3) 1/4 in. (6 mm) from end of hose (X-577-41) and tighten to hose elbow connector installed in Step 4.

**NOTE**

Early generator sets may not have pre-drilled holes in engine skid. Use bracket as a template and drill two 0.281 dia. holes. Locate holes 28 inches from radiator end of generator. Drill first hole 0.50 inches on skid. Drill second hole 1.25 inches. See Figure 1 (View B-B).

6. Attach mounting bracket (276217) to skid using mounting hardware supplied.
7. Install block heater (276209 or 276208) to mounting bracket. Locate hose clamp (X-426-3) 1/4 in. (6 mm) from end of hose (X-577-41) and tighten to block heater.

8. Connect hose (276206) to block heater outlet with hose clamp (X-426-3). Locate hose clamp 1/4 in. (6 mm) from end of hose. Connect thermostat to other end of block heater hose and secure with hose clamp (X-426-3). (Thermostat can be installed with either end towards radiator with electrical connections to the top.)
9. Connect hose (X-577-40) to other end of thermostat and secure with hose clamp (X-426-3). Route hose from thermostat under engine support.
10. Remove 1/2 in. pipe plug or temperature switch from right side of engine at water pump inlet casting. Install hose elbow connector (X-391-19) at this location. See Figure 1.
11. Locate hose clamp (X-426-3) 1/4 in. (6 mm) from end of hose (X-577-40) and tighten to hose elbow connector (X-391-19) installed in step 10.
12. Use cable ties, as necessary, to protect and secure wiring from sharp objects, exhaust system, and any moving parts.
13. Close petcock valves on radiator and/or engine block.
14. Fill cooling system to proper level with fresh coolant. A solution of 50% ethylene glycol and 50% clean, softened water is recommended to inhibit rust/corrosion and provide freezing protection. See Table 1 for coolant capacities.

**NOTE**

Coolant mixtures exceeding 50% ethylene glycol may cause block heater element failure.

<b>Model</b>	<b>Standard Radiator</b>	<b>Remote Radiator</b>	<b>City—Water Cooled</b>
20ROZ	4.3 (16.3)	7.25 (27.4)	4.85 (18.4)
30ROZ	4.3 (16.3)	7.25 (27.4)	4.85 (18.4)
40ROZ	4.3 (16.3)	7.25 (27.4)	4.85 (18.4)
50ROZ	4.3 (16.3)	7.25 (27.4)	4.85 (18.4)
60ROZ	4.3 (16.3)	7.25 (27.4)	4.85 (18.4)
80ROZ	5.1 (19.3)	12.2 (46.1)	6.77 (25.6)
100ROZ	5.1 (19.3)	12.2 (46.1)	6.77 (25.6)

**NOTE:** Capacities shown may vary from model to model and are subject to change.

**Table 1. Coolant Capacities – U.S. Gal. (L)**

15. Check that the controller master switch is in the OFF position. Reconnect battery, negative lead last.

16. Test run generator set for a few minutes and check for leaks. Stop generator set and after set has cooled, check coolant level.

### **NOTE**

Special attention should be given when checking for proper coolant level. After a radiator has been drained, it normally requires some time before complete refill of all air cavities takes place.

17. Connect block heater electrical plug to proper voltage outlet. Tie hang tag (279047) to electrical cord coming from block heater.

## **Parts Listing**

<b>Qty</b>	<b>Description</b>	<b>Common Parts</b>	<b>Kit Numbers</b>	
			<b>PA-256434</b>	<b>PA-256435</b>
4	Washer, Lock 1/4"	X-20-1		
1	Cross, Pipe	X-207-7		
1	Nipple, Pipe 1/2" x 1-3/16"	X-209-2		
2	Washer, Plain 9/32" x 5/8" x .05"	X-25-40		
1	Elbow, Street 1/2	X-211-1		
2	Connector, Hose Elbow	X-391-19		
6	Clamp, Hose 1/2-1-13/32"	X-426-3		
4	Screw, Hex Cap	X-465-18		
1	Hose, Molded	276206		
1	Hose 45"	X-577-40		
1	Hose 33"	X-577-41		
2	Plug, Pipe 1/2"	X-75-28		
4	Nut, Hex. 1/4"-20	X-81-1		
1	Heater, Block		276209	276208
1	Bracket, Heater	276217		
1	Tag, Hang	279047		