

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

Model	Voltage	Kit No.
20-100ROZ	120	254419
20-100ROZ	240	254420

This service kit details removal of the immersion type block heater and installation of the tank type block heater kit.

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).



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.

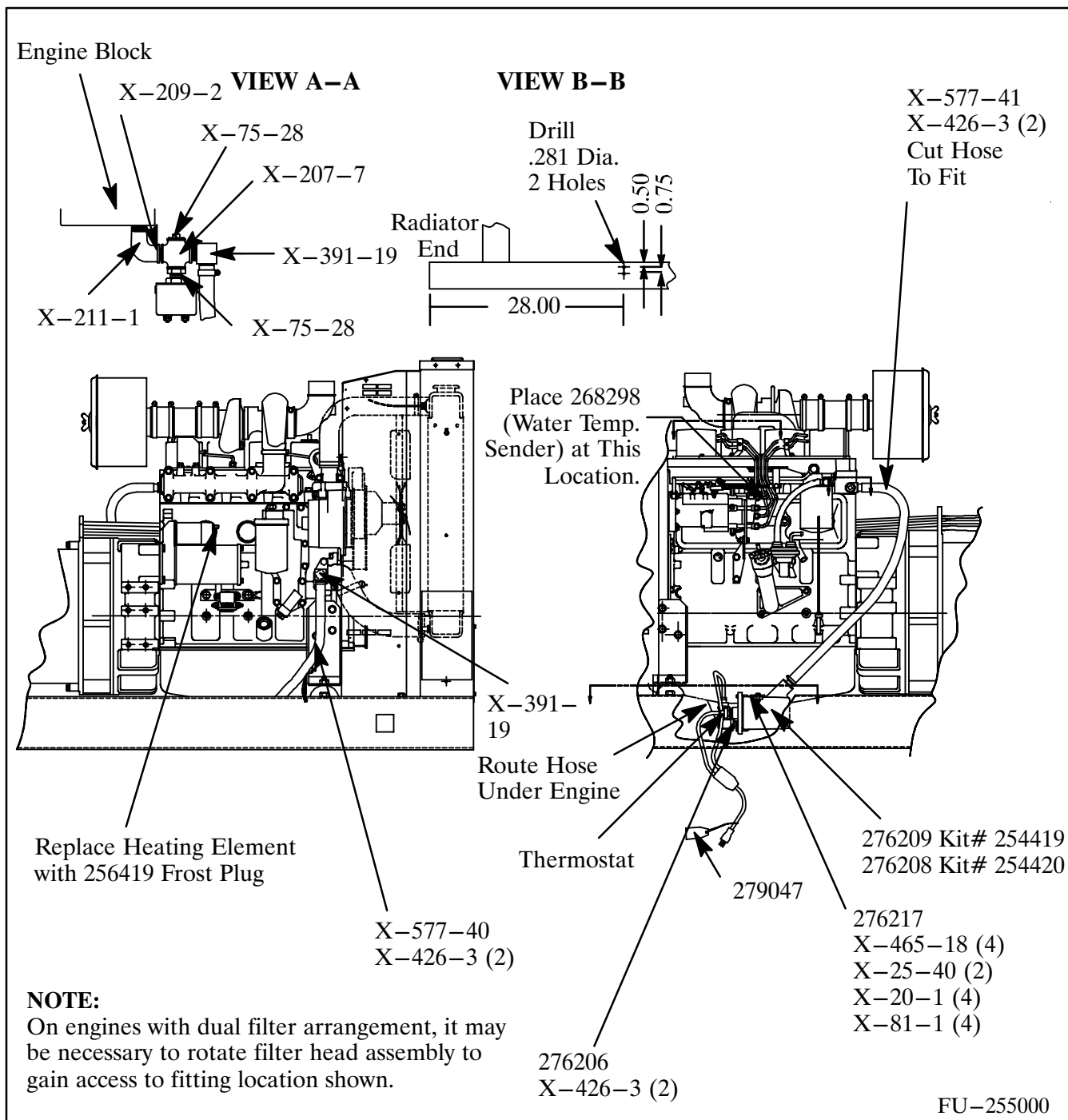


Figure 1. Block Heater Installation (Tank-Type)

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 electrical connections to block heater and thermostat. Discard electrical connections these parts will not be reused.
4. Remove heating element from engine. Replace heating element with frost plug (256419). See Figure 1 for location.

With components clean and dry, apply Loctite® threadlocker 290 (green) or equivalent to frost plug and hole. Install frost plug using hardwood dowel and hammer. Drive frost plug into engine block so that it is flush with the outside surface of the block. Do NOT drive frost plug beyond that point or it may be forced into the water jacket.

5. 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.

6. 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 thermostat 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.

7. 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 6.

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).

8. Attach mounting bracket (276217) to skid using mounting hardware supplied.
9. 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.
10. 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.)
11. 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.
12. 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.
13. 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 12.
14. Use cable ties, as necessary, to protect and secure wiring from sharp objects, exhaust system, and any moving parts.
15. Close petcock valves on radiator and/or engine block.

16. 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.

	Standard	Remote	City–Water
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Model	Radiator	Radiator	Cooled
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)

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

18. 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.

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

Parts Listing

Qty	Description	Common Parts	Kit Numbers	
			254419	254420
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	Plug, Frost	256419		
1	Heater, Block		276209	276208
1	Bracket, Heater	276217		
1	Tag, Hang	279047		