



Engine Block Heater Kits (Tank Type)
33RZ/45RZ (CSG-649 Ford-Powered)
Standby Generator Sets

Model	Voltage	Kit No.
All Models	120	PA-276213
All Models	240	PA-276214



⚠ 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.

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.

2. With generator set sufficiently cooled, drain the coolant into a suitable container.

Do NOT pollute the environment. Dispose of used coolant and other contaminants in a safe and approved manner.

NOTE

Petcock valve is located on radiator bottom and/or engine bottom.

INSTALLATION

1. Place controller master switch to OFF position. Disconnect battery of generator set, negative lead first.

3. Locate sensor block at rear of engine (as viewed from generator end). Remove pipe plug, see Figure 1 for location.

NOTE

Pipe plug will not be reused.

Apply pipe sealant to one end of pipe nipple X-209-18 and install in sensor block.

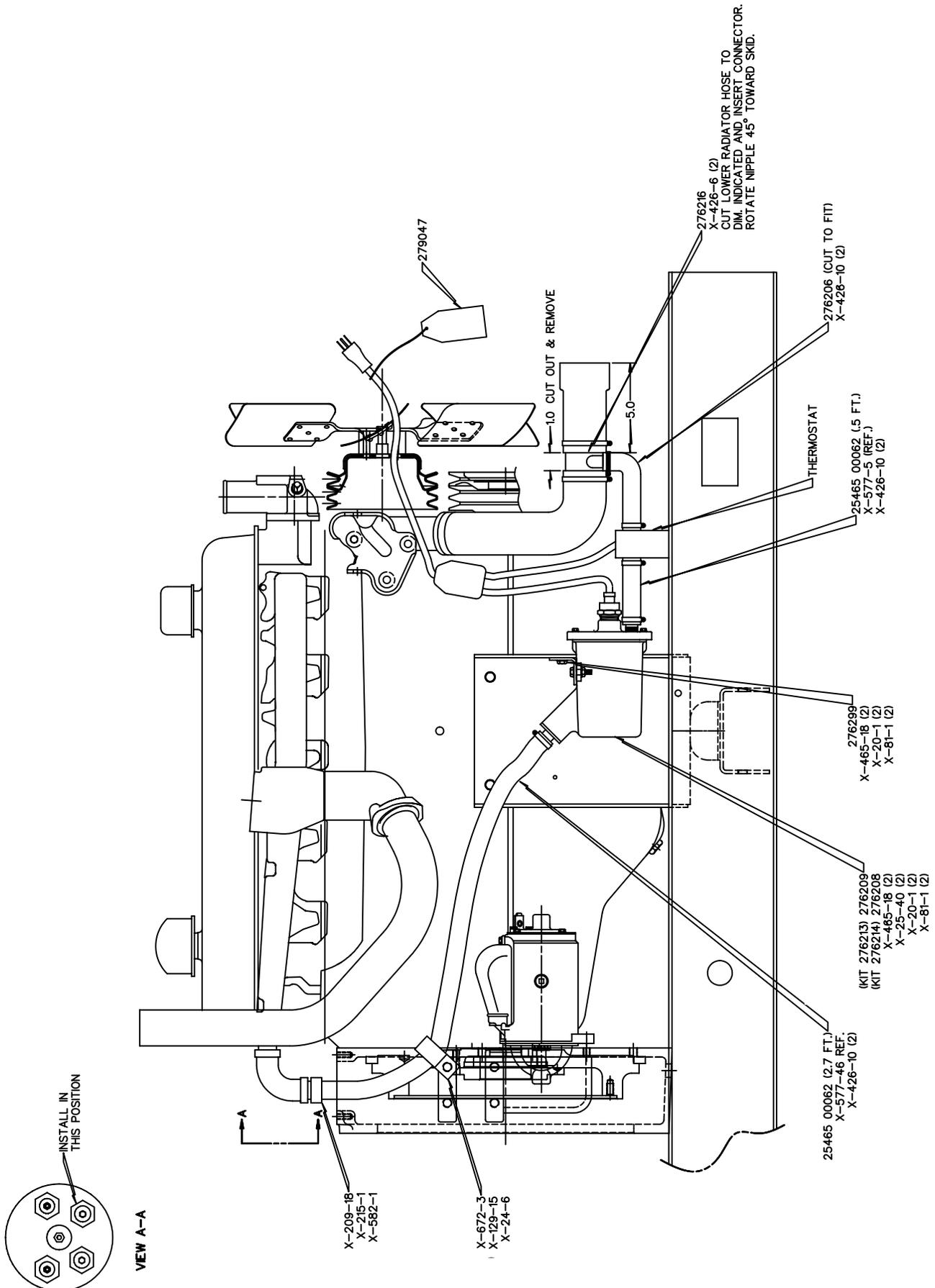


Figure 1. Block Heater Installation

4. Apply pipe sealant to the other end of pipe nipple and install pipe elbow X-215-1. Rotate pipe elbow to the 4 o'clock position (as viewed from the generator end).
5. Apply pipe sealant to hose connector X-582-1 and install in pipe elbow.
6. Locate lower radiator hose and mark hose at 5 in. (127 mm) and 6 in. (152 mm) from radiator outlet. Cut at these marks to remove 1 in. (25 mm) from hose.
7. Place two large hose clamps X-426-6 on cut radiator hose (one on each end). Install tee connector 276216 with nipple pointing to the 8 o'clock position (as viewed from the radiator end). Locate hose clamps 1/4 in. (6 mm) from end of hose and tighten.
8. Attach block heater bracket 276299 to engine mounting using two screws X-465-18, lock washers X-20-1, and nuts X-81-1.

NOTE

Early generator sets may not have pre-drilled holes in engine mount. Use bracket as a template and drill two 19/64 in. dia. holes. Locate holes 3 in. (76 mm) from top of engine mount. Center-to-center dimension is 1-3/4 in. (44 mm).

9. Install block heater to bracket using two screws X-468-18, plain washers X-25-40, lock washers X-20-1, and nuts X-81-1.
10. Place two hose clamps X-426-10 on each end of hose X-577-5. Connect one end to inlet of block heater 276208 and one end to thermostat. Thermostat can be installed with either end toward radiator. Locate hose clamps 1/4 in. (6 mm) from end of hose and tighten.
11. Place two hose clamps X-426-10 on each end of molded hose 276206. Attach short end to tee connector. Cut long end of molded hose, as

necessary, to properly reach thermostat. Attach long end to thermostat. Locate hose clamps 1/4 in. (6 mm) from end of hose and tighten.

12. Place two clamps X-426-10 on rubber hose X-577-46. Connect hose to hose connector and block heater outlet. Locate hose clamps 1/4 in. (6 mm) from end of hose and tighten.
13. Secure hose connected between block heater and engine sensor block using hose clamp X-672-3, split-lock washer X-24-6, and screw X-129-15. Mount bolt in flywheel adapter boss.
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 Radiator	Remote Radiator	City-Water Cooled
Model			
All Models	7.6 (28.8)	3.5 (13.3)	4 (15)

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 the generator set for a few minutes and check for leaks.

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.

Parts Listing

Qty.	Description	Common Parts	Kit Numbers	
			PA-276213	PA-276214
1	Screw, 1/2-13 x 3/4	X-129-15		
4	Washer, 1/4 split lock	X-20-1		
1	Pipe, 1/2 NPTF x 4 in.	X-209-18		
1	Elbow, 1/2 NPT pipe	X-215-1		
1	Washer, 1/2 split lock	X-24-6		
2	Washer, 9/32 x 5/8 x 1/16	X-25-40		
6	Clamp, 1 in. hose	X-426-10		
2	Clamp, 2-1/2 in. hose	X-426-6		
4	Screw, 1/4-20 x 7/8, Gr. 5	X-465-18		
1	Hose, 5/8 in. ID x 32 in.	X-577-46		
1	Hose, 5/8 in. ID x 5.5 in.	X-577-5		
1	Connector, hose	X-582-1		
1	Clamp, insulator hose	X-672-3		
4	Nut, 1/4-20	X-81-1		
1	Hose, molded	276206		
1	Heater, block		276209	276208
1	Connector, tee hose	276216		
1	Bracket, block heater	276299		