

---

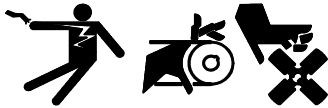
## INSTALLATION INSTRUCTIONS

---

Original Issue Date: **9/93**  
 Model: **10/12CCE/CEZ**  
 Market: **Mobile**  
 Subject: **Heat Recovery Kit PA-254921**

The external heat recovery kit is designed to use the engine coolant as an interior heating source in various mobile and stationary applications. Read the entire procedure before installing the kit. Observe the following safety precautions while installing the kit.

### ⚠ WARNING



**Accidental starting.**  
**Can cause severe injury or death.**

Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.

**Disabling the generator set. Accidental starting can cause severe injury or death.** Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

### ⚠ WARNING



**Hot coolant and steam.**  
**Can cause severe injury or death.**

Before removing the pressure cap, stop the generator set and allow it to cool. Then loosen the pressure cap to relieve pressure.

**Checking the coolant level. Hot coolant can cause severe injury or death.** Allow the engine to cool. Release pressure from the cooling system before opening the pressure cap. To release pressure, cover the pressure cap with a thick cloth and then slowly turn the cap counterclockwise to the first stop. Remove the cap after pressure has been completely released and the engine has cooled. Check the coolant level at the tank if the generator set has a coolant recovery tank.

### NOTE

Pay special attention to the coolant level. After draining the coolant, allow time for complete refill of the engine water jacket. Check coolant level as prescribed in the Prestart Checklist of the Operation Manual.

### NOTE

**Engine Damage!** Failure to bleed air from cooling system may cause overheating and subsequent engine damage.

## Installation

1. Place the generator set master switch in the STOP position.
2. Disconnect the generator set engine starting battery(ies), negative (-) lead first.
3. Allow the engine to cool completely.
4. Drain the engine coolant into a suitable container by removing the radiator cap and opening the radiator petcock.

### NOTE

Dispose of the engine coolant in an environmentally safe manner. Do not pour used engine coolant on the ground, down sewers, or into streams or other bodies of water.

---

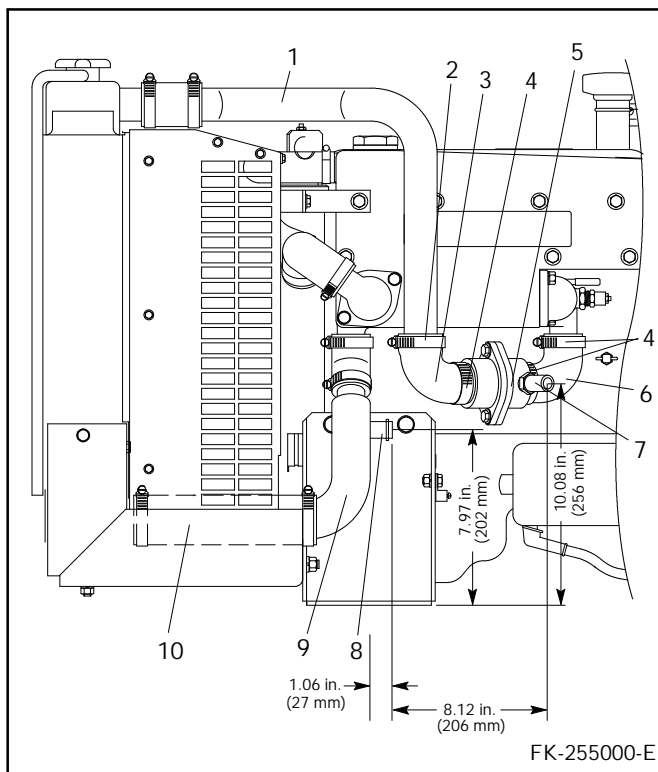
5. Remove and discard the lower radiator outlet tube. Save the hose clamps. See Figure 1.
6. Install the kit-supplied lower radiator outlet tube (254918) between the lower radiator outlet hose and the lower exhaust manifold inlet hose. Use the hose clamps saved in step 5. See Figure 1.
7. Remove and discard the radiator inlet tube between the upper radiator inlet hose and the exhaust manifold outlet hose. See Figure 1. Save the hose clamps.
8. Install the thermostat housing assembly inlet hose (254915) to the exhaust manifold outlet with a hose clamp (X-426-4). See Figure 1.
9. Install the thermostat housing assembly (A-326937) in the inlet hose secured in step 8. Position the thermostat housing assembly as shown in Figure 1 and secure the assembly to the hose with a hose clamp (X-426-4).
10. Secure the thermostat housing assembly outlet hose (254916) to the thermostat housing assembly with a hose clamp (X-426-4). Position the hose as shown in Figure 1.
11. Install the radiator inlet tube (254917) between the radiator inlet hose and the thermostat housing assembly outlet hose. Secure the tube with the hose clamps saved in step 7. See Figure 1.
12. Close the radiator petcock valve.
13. Fill the cooling system with fresh coolant. Use a solution of 50% ethylene glycol and 50% clean, softened water to inhibit rust/corrosion and to provide freezing protection.
14. Reinstall the radiator cap.

**NOTE**

Coolant mixtures exceeding 50% ethylene glycol may cause block heater element failure. Failure to bleed all air from the system may cause block heater element failure.

15. Check that the generator master switch is in the STOP position.

16. Reconnect the generator set engine starting battery, negative (-) lead last.
17. Test run the generator set for a few minutes to check for leaks.
18. Stop the generator set and correct any leaks, if required.



1. Radiator inlet tube (254917)
2. Hose clamp (existing)
3. Outlet hose (254916)
4. Hose clamp (X-426-4)
5. Thermostat housing assembly (A-326937)
6. Inlet hose (254915)
7. 0.75 in. (19 mm) outlet hose connection
8. 0.75 in. (19 mm) inlet hose connection
9. Radiator outlet tube (254918)
10. Lower radiator outlet hose (existing)

**Figure 1. Heat Recovery Kit Installation**

**Heat Recovery Kit**

Parts List		
Kit: PA-254921		
Qty.	Description	Part Number
1	Housing assembly, thermostat	A-326937
3	Clamp, hose, 1.375 x 2.10	X-426-4
1	Hose, inlet	254915
1	Hose, outlet	254916
1	Tube, radiator inlet (metal)	254917
1	Tube, radiator outlet (metal)	254918