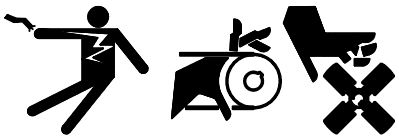
INSTALLATION INSTRUCTIONS

Original Issue Date: **10/95**
Model: **500-600 kW**
Market: **Industrial**
Subject: **Wiring Harness Kit 347163**

The wiring harness kit replaces the engine wiring harness on 500-600 kW standby generator sets. The wiring harness supplied may not be identical to the original engine wiring harness. Installation of this new engine wiring harness requires either relocating sensors or modifying lead lengths.

Do not remove the original wiring harness from the engine prior to installing the new harness if possible. Use the original harness as a guide for installing the new harness.

⚠ WARNING



Accidental starting.
Can cause severe injury or death.

Disconnect battery cables before working on generator set (negative lead first and reconnect it last).

Accidental starting can cause severe injury or death. Turn generator set 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 set. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.

Hazardous voltage can cause severe injury or death. Whenever electricity is present, there is the hazard of electrocution. Open main circuit breaker on all power sources before servicing equipment. Electrically ground the generator set and electrical circuits when in use. Never come into contact with electrical leads or appliances when standing in water or on wet ground, as the chance of electrocution is increased under such conditions.

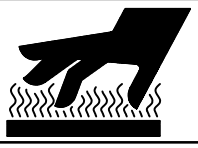
Hazardous voltage can cause severe injury or death. Disconnect generator set from load by opening line circuit breaker or by disconnecting generator set output leads from transfer switch and heavily taping ends of leads. If high voltage is transferred to load during test, personal injury and equipment damage may result. Do not use the safeguard circuit breaker in place of the line circuit breaker.

⚠ WARNING

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

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

⚠ WARNING



Hot engine and exhaust system.
Can cause severe injury or death.

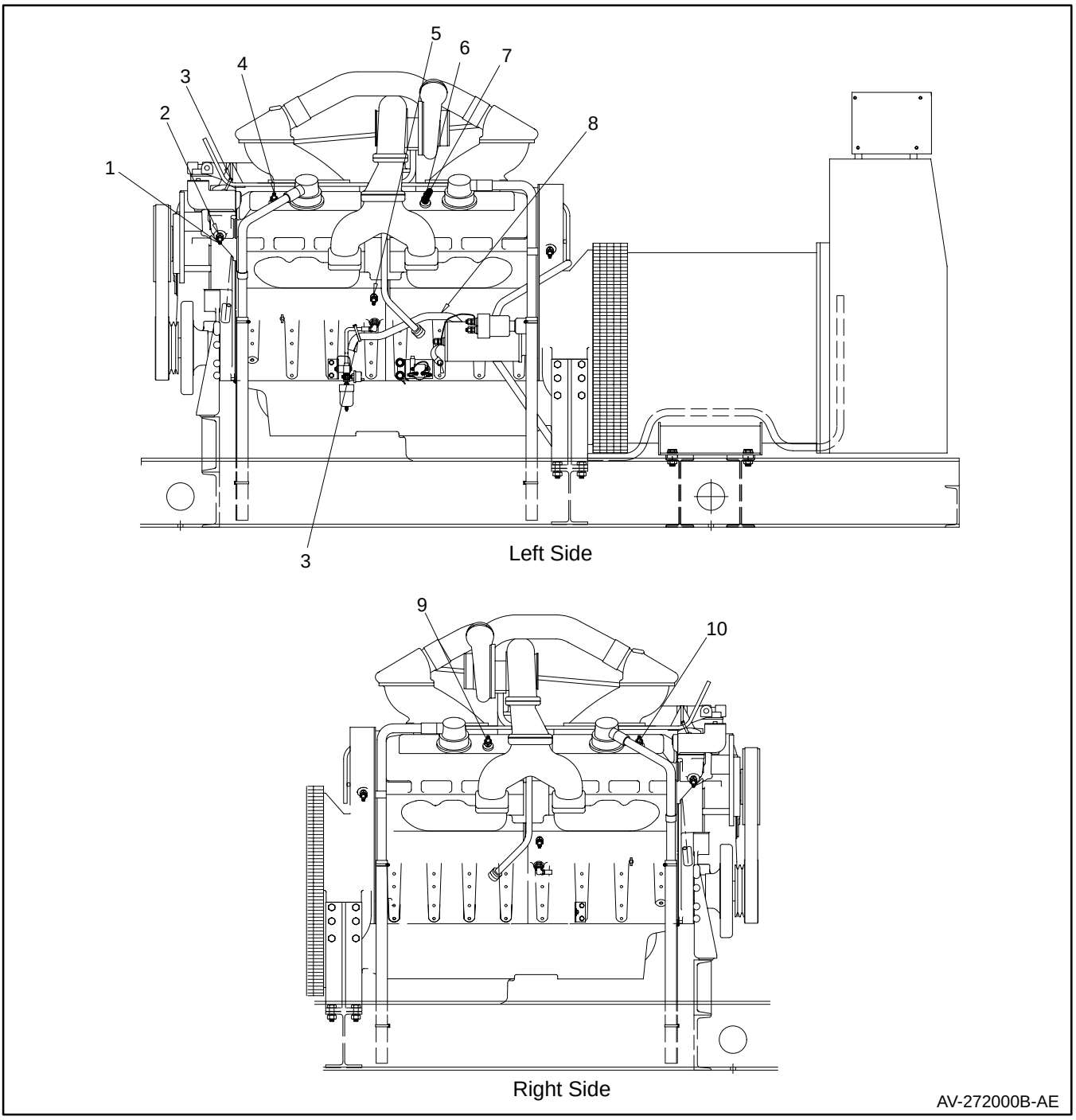
Do not work on generator set until it is allowed to cool.

Hot coolant can cause severe injury or death. 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 slowly turn it counterclockwise to the first stop. Remove cap after pressure has been completely released and the engine has cooled. Check coolant level at tank if generator set is equipped with a coolant recovery tank.

Hot parts can cause severe injury or death. Do not touch hot engine parts. An engine gets hot while running and exhaust system components get extremely hot.

Installation

1. Turn the generator set master switch to OFF. Disconnect the generator set engine starting battery, negative (–) lead first.
2. Allow generator set to cool completely before proceeding.
3. Drain radiator coolant into a suitable container so the standard high water temperature (HWT) switch, prealarm low water temperature (LWT) switch (if equipped), and standard water temperature sender can be relocated on the engine. The LWT switch is only on engines equipped with prealarms. Completely draining the cooling system may not be necessary. Keep coolant clean so it can be reused.
4. See Figure 1 for the original location of the low water temperature (LWT) switch (if equipped), standard high water temperature (HWT) switch, and water temperature sender.
5. If generator set is equipped with the LWT switch prealarm sender continue to step 5. If generator set is not equipped with prealarm sender go to step 9.
6. Remove plug from engine for relocation of LWT switch. See Figure 1 for location.
7. Disconnect and remove LWT switch from engine.
8. Apply pipe sealant to threads of LWT switch and connect to reducer bushing (153659). Coat threads of reducer bushing with pipe sealant and install LWT switch and reducer bushing in engine. See Figure 1.
9. Remove pipe plug from engine for relocation of water temperature sender if LWT switch was not previously removed. See Figure 1 for location.
10. Disconnect and remove the water temperature sender from engine. Apply pipe sealant to threads of water temperature sender and install in engine. See Figure 1 for location.
11. Remove pipe plug from engine for HWT switch. See Figure 1 for location. Apply pipe sealant to threads of pipe plug and install into opening where water temperature sender was removed.
12. Disconnect and remove HWT switch from engine. Apply pipe sealant to threads of switch and install in engine. See Figure 1 for location.
13. Apply pipe sealant to threads of pipe plug (X-75-3) and install where HWT switch was removed.
14. Install engine wiring harness according to appropriate wiring diagram in generator service manual, wiring diagrams book, or operation manual. Refer to Figure 1 for location and routing of harness.
15. Locate wiring harness leads that were not used. Tape lead ends and secure them to the harness to avoid electrical damage.
16. Reconnect generator set starting battery, negative (–) lead last. Verify that the generator set starts/stops and operates according to the controller features of the generator set operation manual or switchgear literature if so equipped. If generator set operation is not correct, immediately shut down generator set and disconnect engine starting battery, negative (–) lead first. Consult appropriate wiring diagram and verify lead connections.



1. High water temperature switch (anticipatory only)
2. Reducer bushing (153659)
3. Cable tie
4. High water temperature switch (standard)
5. Low water temperature switch (anticipatory)
6. Low water temperature switch (anticipatory) original location
7. Water temperature sender (Standard)
8. Engine wiring harness (274438)
9. Water temperature sender (standard) original location
10. High water temperature switch (standard) original location

Figure 1. Wiring Harness Routing

Engine Wiring Harness Kit Parts List		
KIT 347163		
Qty.	**Description**	**Part Number**
1	Pipe, plug	X-75-3
1	Bushing, reducer 3/4 x 1/2	153659
1	Harness, wiring	274438