

INSTALLATION INSTRUCTIONS

Original Issue Date: 2/97
 Model: 7/10CCO
 Market: RV
 Subject: **EMI/RFI Filter Kits 226216 and 226793**

The EMI/RFI filter kit allows the 7/10CCO generator sets to meet the CE standard EN55022 for EMI. Install the filter kit as described to prevent line impedance on the EMI/RFI filters. Increasing lead length between alternator and filter decreases the filter effectiveness. Observe the following safety precautions while installing the kit.



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

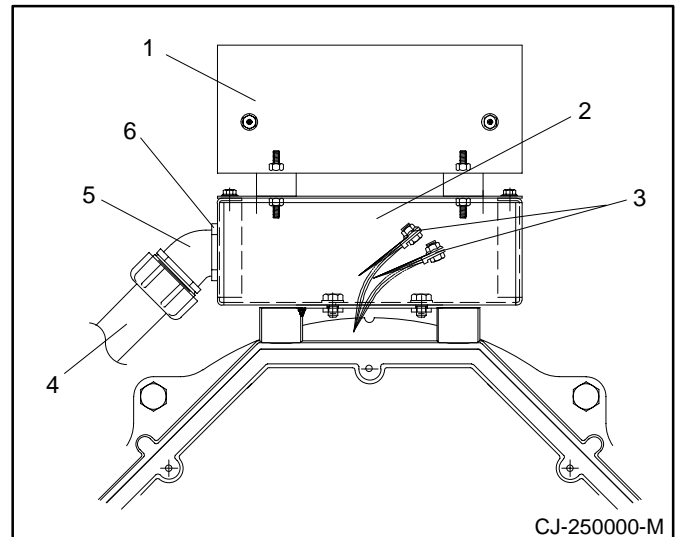
Disconnect battery cables before working on generator set (disconnect negative lead first and reconnect it last).

Disabling generator set. 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 the generator set or connected equipment. The generator set can be started by an automatic transfer switch or remote start/stop switch unless these precautions are followed.

Installation

1. Place the generator set master switch in the OFF position.
2. Disconnect the generator set engine starting battery, negative (-) lead first.
3. Remove generator set controller. See Figure 1.
4. Remove junction box cover. See Figure 1.
5. Disconnect alternator leads L1, L2, N, and Ground at lug points.

6. Loosen and remove lock ring on elbow inside of the junction box. Remove the elbow and leads from the junction box. See Figure 1.



1. Controller
2. Junction box
3. Leads L1 and L2
4. AC wiring harness
5. Elbow
6. Lock ring

Figure 1. Generator Set Controller and Junction Box

7. Separate alternator leads L1 and L2 from N and ground leads. Pull approximately 60 in. (1.5 m) of L1 and L2 out of the elbow of the power cable assembly.
8. Cut 32 in. (813 mm) off of leads L1 and L2 for use in wiring filters.

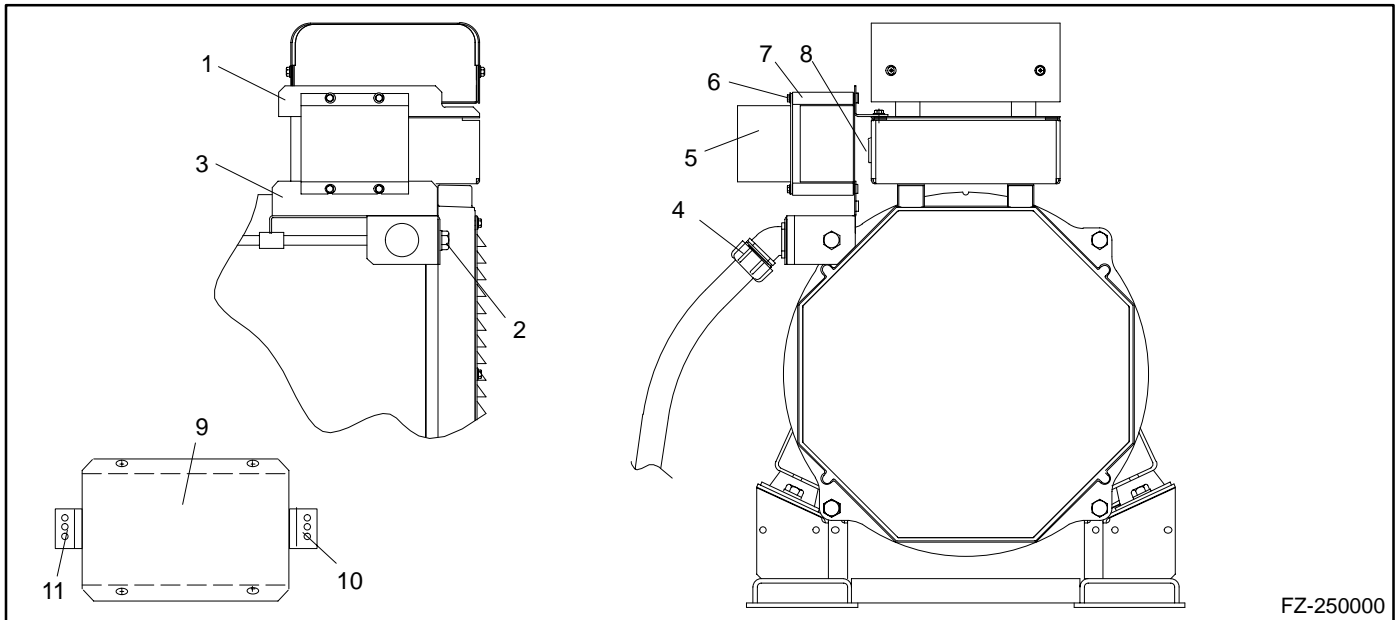
NOTE

Clearly mark all leads during procedure and use an ohmmeter to check work. Crossing alternator output leads results in an alternator short circuit.

9. Cut an 8 in. (203 mm) piece from each of the 32 in. (813 mm) pieces cut in step 8.
10. Strip 3/8 in. (9 mm) of insulation from each end of the four leads for insertion into the filter connections.
11. Crimp one 12-10 crimp connector (X-283-12) on one end of each 24 in. (610 mm) lead.

12. Connect the 24 in. (610 mm) leads to the L1 and L2 alternator lugs. Wrap the lug connections with insulating tape covering all bare metal of the connections.
13. Insert rubber grommet (X-294-3) into hole in junction box where elbow had been secured.

14. Insert the 24 in. (610 mm) sections connected to the alternator lugs into a section of the nylon convoluted conduit (X-6003-33). Run the conduit through the grommet in the back of the junction box and place the lead ends along the bottom of the junction box towards the engine.



1. Filter bracket (226213)
2. Overbolt
3. Filter bracket (226212)
4. Power leads from junction box
5. Filter (226210 or 226211)
6. Screw (X-465-35), lock washer (X-22-11), and washer (X-803-2)

7. Spacer (X-400-225)
8. Rubber grommet (X-284-3)
9. Filter (226210 or 226211)
10. Load side filter connections
11. Line side filter connections

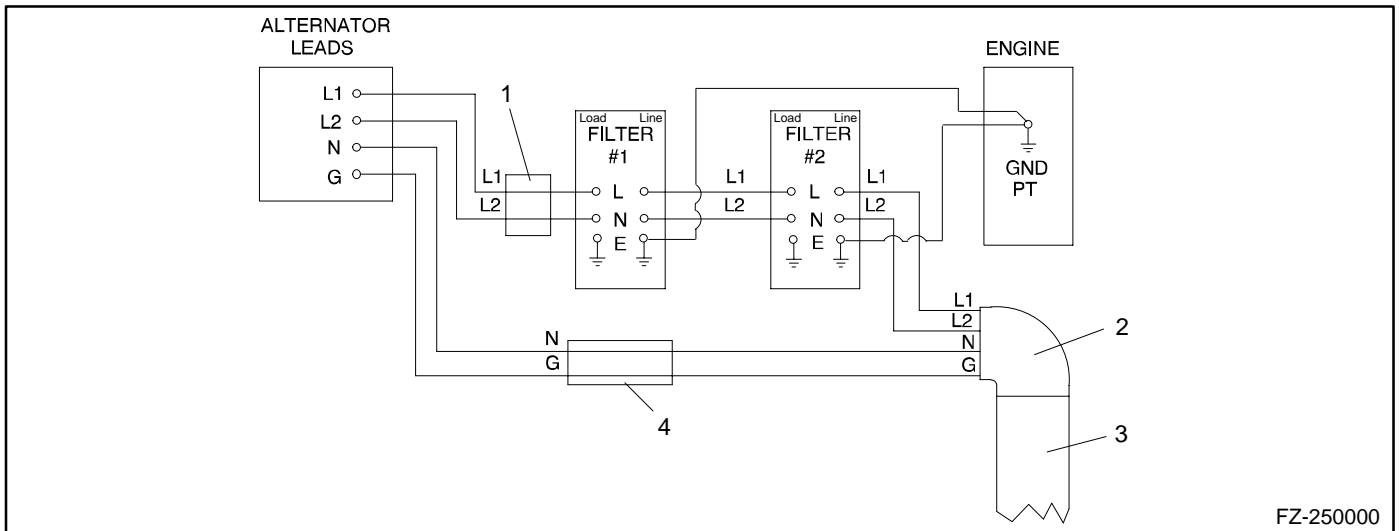
Figure 2. Filter Installation

15. Remove the alternator frame mounting bolt on the upper left corner (looking at the alternator).
16. Connect the elbow from the power cable assembly separating the L1 and L2 leads from the N and ground leads to the lower mounting bracket (226212).
17. Insert leads N and ground into a piece of nylon convoluted conduit (X-6003-33) and run it through the rubber grommet in the junction box.
18. Insert leads L1 and L2 from the cable assembly into a piece of convoluted conduit (X-6003-33) and place under the bracket toward the engine.
19. Align the bracket to the alternator frame bolt holes and insert the frame bolt removed in step 15 through the bracket and tighten the bolt to 27 ft. lbs. (37 Nm).
20. Connect leads N and ground to corresponding lugs in the junction box. Wrap the lug connections with insulating tape covering all bare metal of the connections.
21. Replace junction box cover.
22. Reinstall controller on junction box. Do not install left side controller mounting screws yet.

23. Align upper filter bracket (226213) with left side controller mounting holes. Secure controller and bracket to junction box cover.
24. Mount filters (226210 or 226211) to the inner mounting points on the bracket using bolts (X-465-35), washers (X-801-2), lock washers (X-22-11), and spacers (X-400-225). Torque bolts to 21 ft. lbs. (29 Nm) minimum.
25. Connect alternator leads to filter 1. See Figure 3.
26. Insert the two 8 in. (203 mm) L1 and L2 leads cut in step 9 into nylon convoluted conduit (X-6003-112). Connect leads between filter 1 and filter 2. See Figure 3.
27. Connect power cable harness to filter 2. See Figure 3.
28. Individually ground each filter to the engine frame for maximum filtering effectiveness.
29. Secure any loose conduit away from heat of the alternator and engine exhaust.
30. Reconnect control cables to the generator set controller.
31. Verify that all controller mounting screws are tight.

32. Check that the generator set master switch is in the OFF position.

33. Reconnect the generator set engine starting battery, negative (-) lead last.



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- 1. Convoluted tubing (X-6003-33) and terminals (X-284-3)
- 2. Elbow

- 3. Power cable harness
- 4. Convoluted tubing (X-6003-112)

Figure 3. EMI/RFI Filter Wiring Diagram

EMI/RFI Filter Kits

Parts List				
Kits: 226216, 226793			Unique Parts	
Qty.	Description	Common Parts	226216	226793
4	Washer, lock	X-22-11		
2	Connector, 12-10 crimp	X-283-12		
1	Grommet, 1 in. rubber	X-284-3		
4	Spacer	X-400-225		
4	Bolt, 1/4-20 x 3 in.	X-465-35		
4	Washer	X-801-2		
2	Conduit, nylon convoluted 20 in.	X-6003-33		
1	Conduit, nylon convoluted 6 in.	X-6003-112		
2	Filter		226211	226210
1	Bracket, lower filter mounting	226212		
1	Bracket, upper filter mounting	226213		