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**INSTALLATION INSTRUCTIONS**


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Original Issue Date: **10/05**

Model: **Alpha 5 and COM5**

Market: **Commercial**

Subject: **Choke Solenoid Service Kit GM42302 and Carburetor Service Kit GM42303**

## Introduction

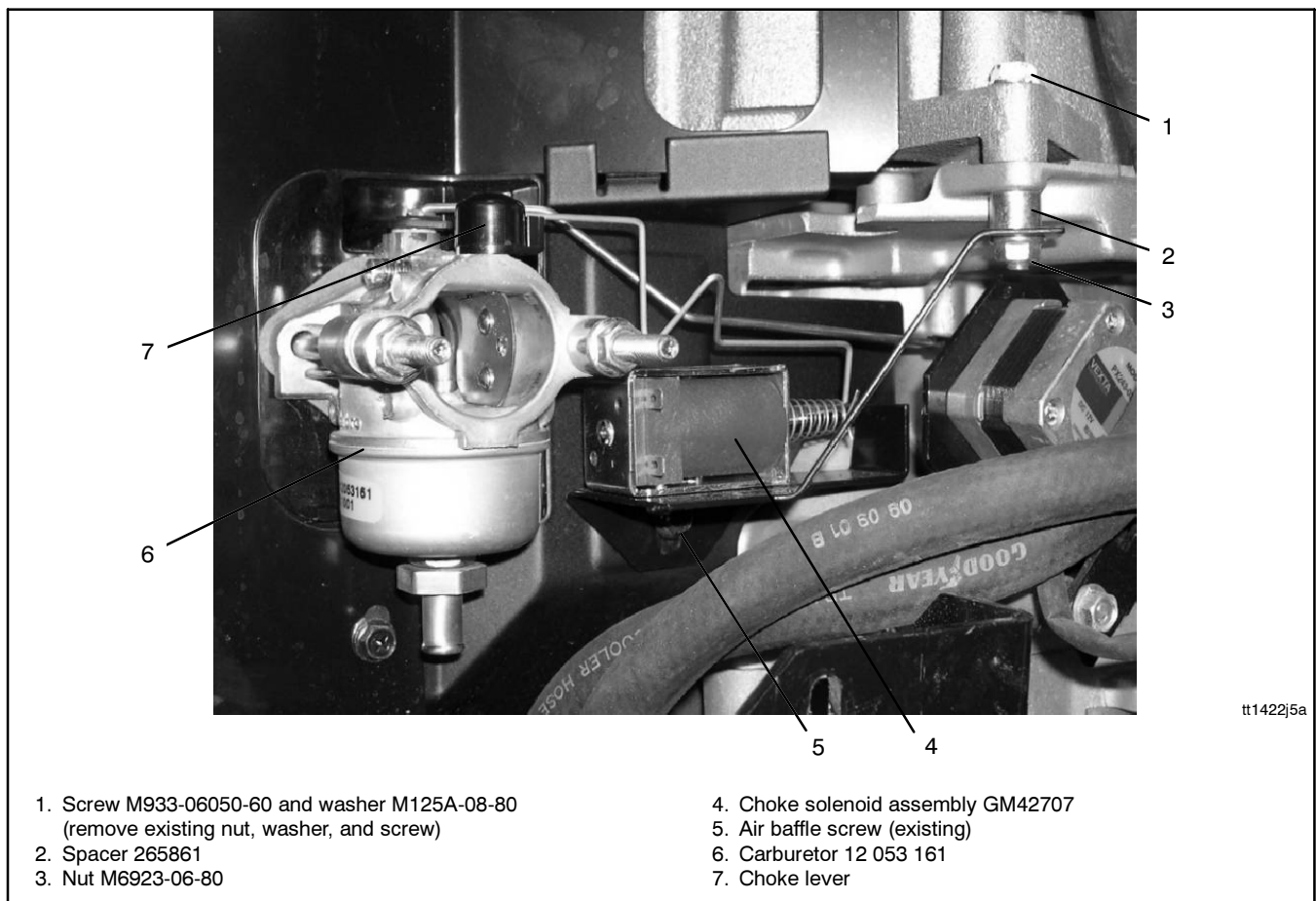
The choke solenoid kit GM42302 improves engine starting in cold weather. The solenoid activates the choke for approximately 5 seconds at startup.

The choke solenoid assembly requires carburetor 12 053 161 with choke plate. Generator sets built before fall of 2001 include the carburetor with the choke plate. Install service kit GM42303 if the unit is not already equipped with the choke-style carburetor.

Read the entire installation procedure and compare the kit parts with the parts list at the end of this publication before beginning installation. Perform the steps in the order shown.

Figure 1 shows the installed choke solenoid assembly with carburetor 12 053 161.

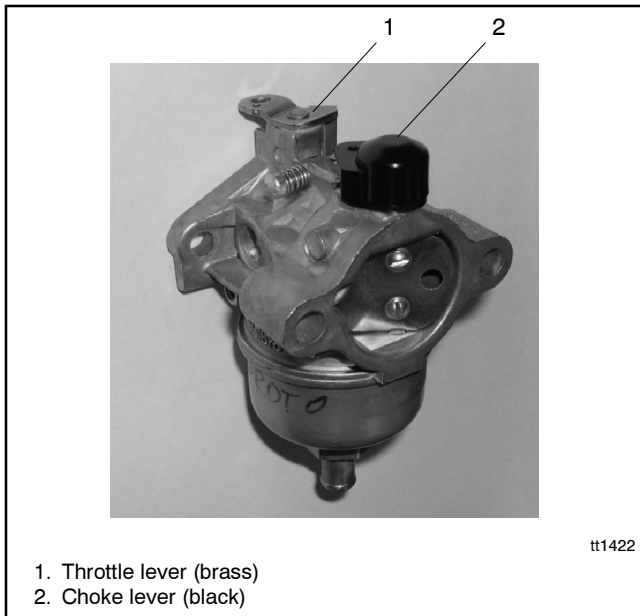
The choke-style carburetor can be identified by the presence of a black choke lever in addition to the brass throttle lever. See Figure 1 and Figure 2.



1. Screw M933-06050-60 and washer M125A-08-80  
(remove existing nut, washer, and screw)
2. Spacer 265861
3. Nut M6923-06-80

4. Choke solenoid assembly GM42707
5. Air baffle screw (existing)
6. Carburetor 12 053 161
7. Choke lever

**Figure 1** Installed Choke Solenoid Kit GM42302 with Carburetor 12 053 161 (wiring harness not shown)

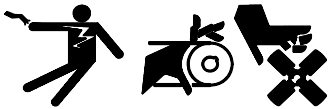


**Figure 2** Choke-Style Carburetor, 12 053 161

## Safety Precautions

Observe the following safety precautions while installing the kit.

### **⚠ WARNING**



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

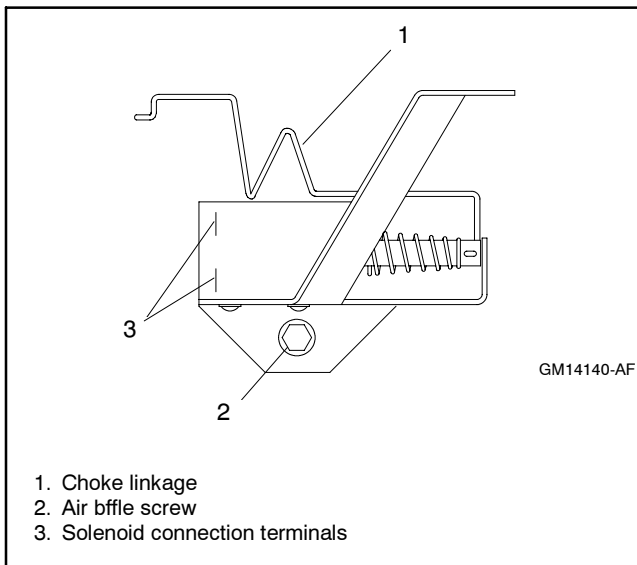
Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.

**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.

## Installation Procedure

1. Place the generator set master switch and the remote start/stop switch in the OFF position.
2. Disconnect the power to the battery charger, if equipped.
3. Disconnect the generator set engine starting battery(ies), negative (-) lead first.
4. Refer to the instructions provided with the generator set to open the enclosure and gain access to the generator set engine assembly.
5. Remove the air cleaner cover and base assembly from carburetor. Save the mounting hardware but discard the carburetor gasket.
6. If the unit is equipped with the choke-style carburetor, proceed to step 7. See Figure 2. Otherwise, replace the carburetor with a choke-style carburetor using kit GM42303.
  - a. Remove the carburetor from the engine. Discard the gasket.
  - b. Disconnect the throttle linkage from the carburetor throttle lever.
  - c. Install new gasket 12 041 01 (supplied with kit GM42303) onto the carburetor mounting studs on the engine.
  - d. Connect the throttle linkage into the brass throttle lever on the new carburetor. See Figure 2.
  - e. Install new carburetor 12 053 161 onto the mounting studs on the engine with the throttle lever on the engine side and the choke lever on the air cleaner side.

7. Remove the screw from the air baffle just below the carburetor, and save for mounting the solenoid assembly.
8. Remove the existing 6 mm nut, washer, and screw from the engine assembly at the location of items 1, 2, and 3 in Figure 1.
9. Attach the free end of the linkage from the solenoid subassembly GM47207 to the choke lever on the carburetor. See Figure 1.
10. Position the solenoid subassembly pointing toward the governor servo motor, and loosely fasten to the engine using the air baffle screw that was removed in step 7. See Figure 3.
11. Use screw M933-060-60, spacer 265861, washer M125A-08-80, and nut M9623-06-80 to loosely attach the support bracket to the engine assembly. See Figure 1.
12. Adjust the solenoid bracket to align the choke linkage parallel to the governor linkage.
13. Tighten all fasteners and recheck the alignment.
14. Adjust the choke linkage to close the choke plate approximately 75% when the solenoid coil is activated.
  - a. Push the plunger toward the carburetor (into the solenoid) until it stops. This is the activated solenoid position.
  - b. Use a pliers to adjust the Z bend on the choke linkage, if necessary. See Figure 3. Shorten the linkage to open the choke plate, or lengthen the linkage to close the choke plate.
15. Reinstall the air cleaner base using new gasket 12 041 02, included with choke solenoid service kit GM42302. Tighten the nuts to 10 Nm (7.4 ft. lbs).
16. Replace the air cleaner cover.



**Figure 3** Choke Solenoid Assembly

17. Connect leads CL+ and CL- of choke solenoid harness GM42301 to the choke solenoid terminals. See Figure 4 and Figure 5.

**Note:** Circuit board PCB is built into harness GM42301.

18. Route the choke solenoid harness along the engine harness to the starter side of the generator set. Connect lead N to the engine block ground. Connect lead 71 to the crank relay. See Figure 5 and Figure 6.

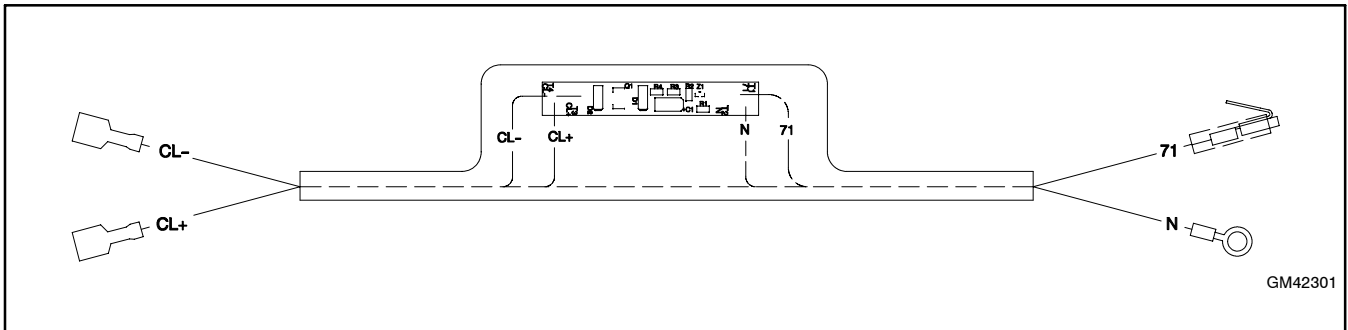
**Note:** Lead 71 has a piggyback-style connector. Disconnect one of the existing connections to the crank relay (CR) terminal, connect it to the piggyback connector on the choke solenoid harness, and connect the piggyback connector to the CR terminal.

19. Check that the generator set master switch and remote start/stop switch are in the OFF position.

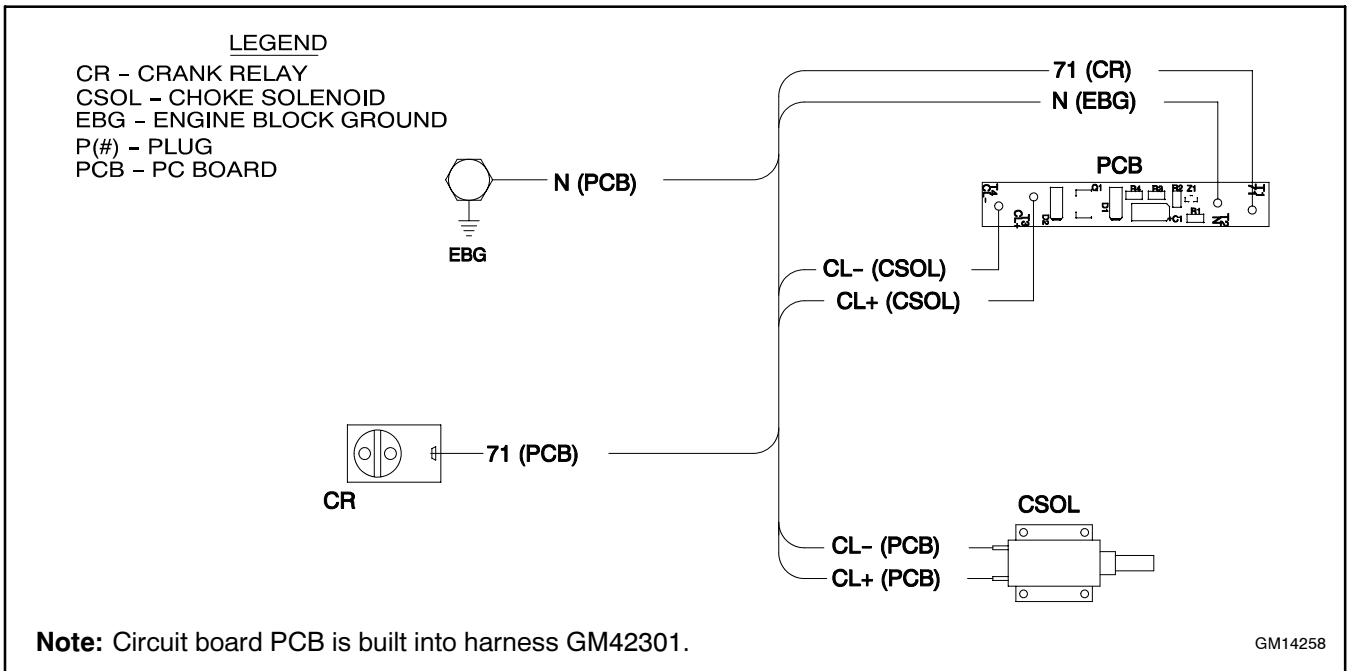
20. Reconnect the generator set engine starting battery, negative (-) lead last.

21. Reconnect power to the battery charger, if equipped.

22. Follow the instructions provided with the generator set to move the unit into the enclosure and set it for automatic operation.



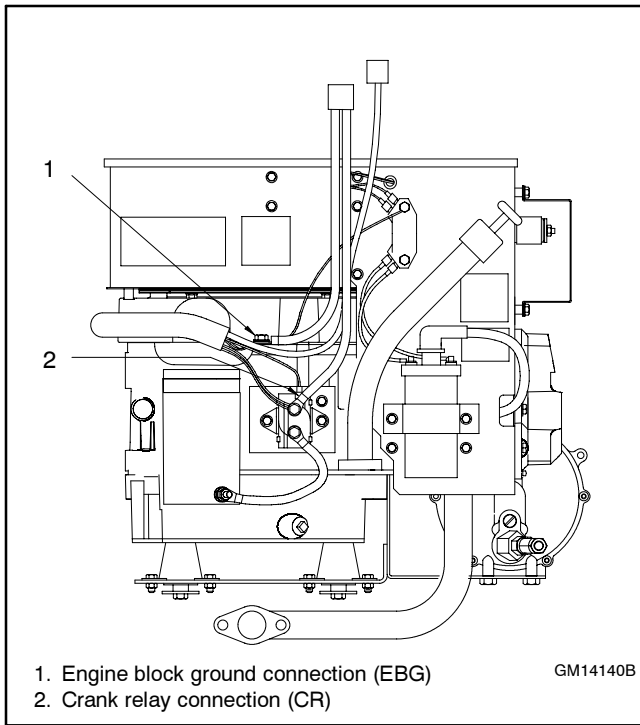
**Figure 4** Choke Solenoid Harness



**Note:** Circuit board PCB is built into harness GM42301.

GM14258

**Figure 5** Choke Solenoid Connections



**Figure 6** Connection Points, Starter Side

## Parts List

### Choke Solenoid Service Kit

Kit: GM42302		
Qty.	Description	Part Number
1	Gasket	12 041 02
1	Spacer	265861
1	Harness, choke solenoid	GM42301
1	Solenoid Assembly	GM47207
1	Washer	M125-08-80
1	Nut, hex 6 mm	M6923-06-80
1	Screw	M933-06050-60

### Carburetor Kit

Kit: GM42303		
Qty.	Description	Part Number
1	Gasket	12 041 01
1	Carburetor assembly	12 053 161

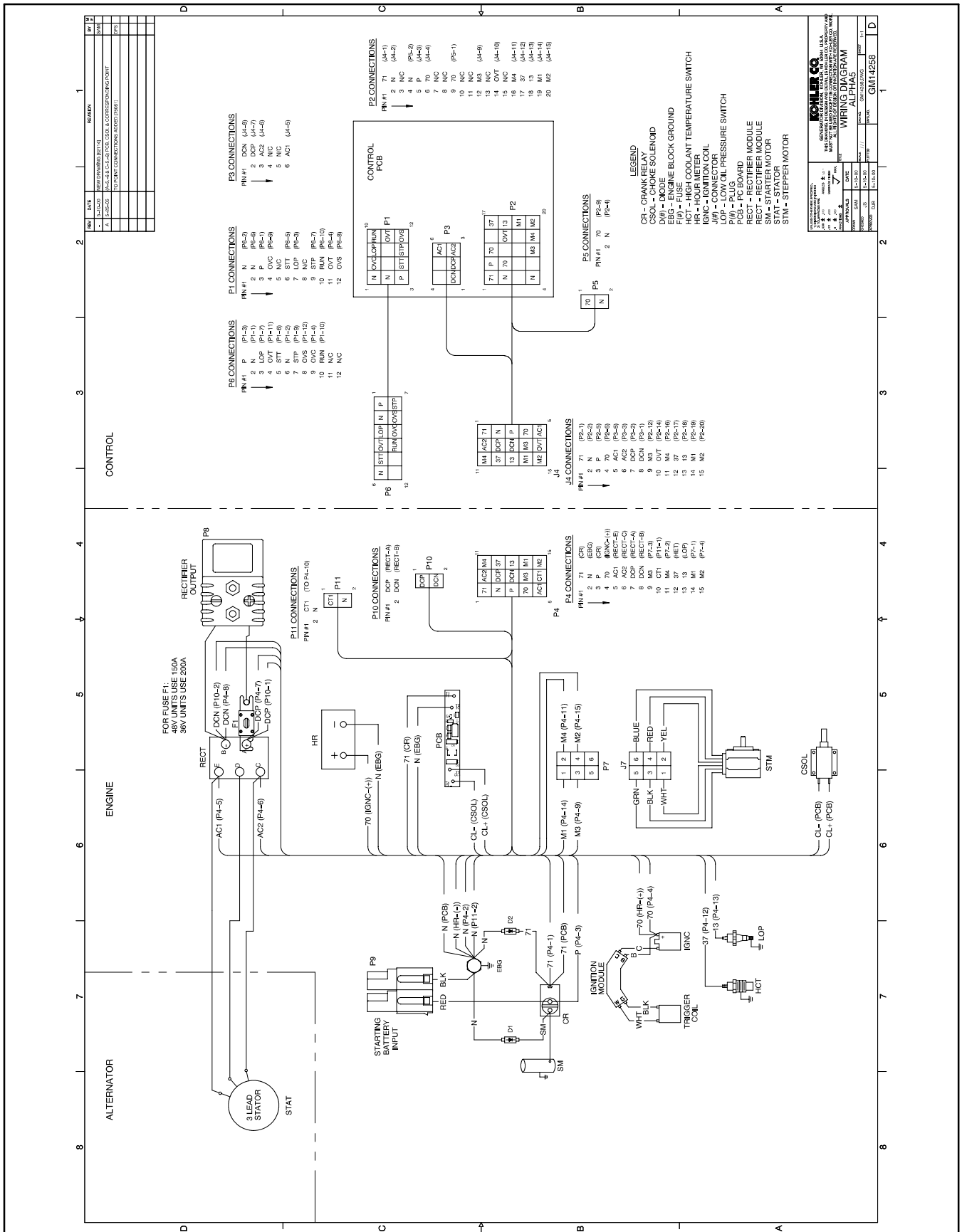


Figure 7 Wiring Diagram