Installation of an Ignition Coil
Kits 541-0522 and -0523 are for Performer Engines

GENERAL

These kits are for Performer engines. Table 1 shows which Performer model(s) each kit is for. In addition to the ignition coil, each kit contains all mounting hardware.

<table>
<thead>
<tr>
<th>KIT NUMBER</th>
<th>PERFORMER MODEL(S)</th>
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<tbody>
<tr>
<td>541-0522</td>
<td>P216/P218/P220</td>
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<tr>
<td></td>
<td>(both vertical &amp; horizontal)</td>
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<tr>
<td>541-0523</td>
<td>P224G (horizontal)</td>
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</table>

Read these instructions completely and become familiar with the safety precautions and installation procedures before starting the installation. Wear safety glasses and protective clothing necessary for personal safety.

INSTALLATION

Disconnect the battery cables (negative [–] first) to prevent accidental starting while working on the engine.

**WARNING** Accidental starting of the engine while working on it can cause severe personal injury or death. Prevent accidental starting by disconnecting the starting battery cables (negative [–] first).

**WARNING** Arcing can ignite the explosive hydrogen gas given off by batteries, causing severe personal injury. Arcing can occur if the negative (–) battery cable is connected and a tool being used to connect or disconnect the positive (+) battery cable accidentally touches the frame or other grounded metal. To prevent arcing, always remove the negative (–) cable first, and reconnect it last.

Removing the Old Ignition Coil

*Models P216, P218 and P220* – Remove the old coil as follows:

1. Remove the high tension spark plug leads from the old coil.
2. Remove the low voltage leads from the terminal posts on the old coil.
3. Disconnect the capacitor lead. (Do not remove the capacitor.)
4. Loosen and remove the coil mounting screws. Save one of these screws for use again.
5. Remove the coil.
6. Remove the block screw as shown in Figure 1 on Page 2 or Figure 3 on Page 4. Save for use again.

*Model P224G* – Remove the old coil as follows:

1. Remove the high tension spark plug leads from the old coil.
2. Remove the low voltage leads from the terminal posts on the old coil.
3. Disconnect the capacitor lead.
4. Loosen and remove the coil mounting screws. Save these screws for use again.
5. Remove the coil.
6. Remove the capacitor from the intake manifold as shown in Figure 4 on Page 5. Save the capacitor and the mounting hardware for use again.
Installing the New Ignition Coil

Models P216V, P218V and P220V – Refer to Figure 1. Install the new coil as follows:

1. Temporarily mount the new coil bracket on the blower housing.
   A. Mount the long leg of the bracket to the blower housing using the block screw removed previously.
   B. Mount the short leg closest to the stationary guard with one of the old coil mounting screws removed previously.
   C. Mark the location of the hole in the remaining short leg of the bracket to locate the screw hole to be drilled in the housing.

2. Remove the coil bracket and drill a 3/16-inch hole at the location marked on the sheet metal.
   **CAUTION** Take care not to drill into the cooling fins behind the sheetmetal.

3. Install the clip on the bracket and start the screw from the kit into the clip.

4. Reinstall the bracket. Use the sheet metal screw in the kit for the hole just drilled in the sheet metal.

5. Install the new coil as shown in Figure 1 and tighten the clamp on the coil. The coil rests on the sheet metal. **Note the orientation of the coil in the figure.**

6. Reconnect the capacitor lead to the plus (+) terminal on the new coil.

7. Reconnect the low-voltage leads to the low-voltage terminal posts on the new coil. Do not overtighten.

8. Reconnect the high-tension spark plug leads.

![Diagram of the installation process](image_url)
Models P216G, P218G and P220G – Install the new coil as follows:

1. Refer to Figure 2. Loosen the thumb knob and remove the air cleaner cover. All the parts removed in Steps 1 through 6 must be saved for reassembly.

2. Remove the top spacer and wing nut.

3. Remove the air filter cover and the air filter element.

4. Remove the three carburetor mounting screws and mounting ring.

5. Remove the two support bracket mounting screws.

6. Lift off the air cleaner base. The air inlet tube and the crankcase breather hose are not attached to the base.

7. Refer to Figure 3. Temporarily mount the new coil bracket on the blower housing.
   A. Mount the long leg of the bracket to the blower housing using the block screw removed previously.
   B. Mount the short leg closest to the stationary guard with one of the old coil mounting screws removed previously.
   C. Mark the location of the hole in the remaining short leg of the bracket to locate the screw hole to be drilled in the housing.

8. Remove the coil bracket and drill a 3/16-inch hole at the location marked on the sheet metal.

   **CAUTION**  Take care not to drill into the cooling fins behind the sheetmetal.

9. Install the clip on the bracket as shown and start the screw from the kit into the clip.

10. Reinstall the bracket. Use the sheet metal screw in the kit for the hole just drilled in the sheet metal.
11. Install the new coil as shown in Figure 3 and tighten the clamp on the coil. The coil rests on the sheet metal. **Note the orientation of the coil in the figure.**

12. Reconnect the capacitor lead to the plus (+) terminal on the new coil. Do not install the nut, as yet.

13. Reconnect the B– lead to the minus (–) terminal post on the new coil. Do not overtighten.

14. Connect the extension lead to the existing B+ lead using the 8-32 nut, bolt, and external tooth lockwasher as shown in Figure 3. Slide the insulating sleeve over this connection. Connect the other end of the extension lead to the plus (+) coil terminal. Do not overtighten. These parts are supplied in the kit.

15. Reconnect the high-tension spark plug leads.

16. Refer to Figure 2. Reinstall the air cleaner base, using the hardware removed previously to mount it to the support bracket and the carburetor. Make sure the air inlet tube and the crankcase breather hose fit properly into the holes in the base.

17. Place the bottom spacer on the center stud.

18. Place the air filter element on the air cleaner base, making sure it seats properly.

19. Place the air filter cover on the air filter element.

20. Install the wing nut finger tight.

21. Place the top spacer on the center stud.

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![Diagram of ignition coil and related components](image-url)
**Model P224G** – Refer to Figure 4. Install the new coil as follows:

1. Install the cover plate from the kit over the opening for the old coil. Use the screws removed previously.

2. Install the L-shaped bracket onto the intake manifold using the 1/4-20 screws supplied in the kit.

3. Mount the existing capacitor on the top surface of the bracket, placing the star washer between the head of the screw and the bracket.

4. Install the new coil in the L-shaped bracket as shown in Figure 4, using the clamp to hold the coil in place. *Note the orientation of the coil in the figure.*

5. Install the screw and nut from the kit to fasten the clamp to the bracket.

6. Tighten the bracket around the coil, making sure the coil is still positioned properly.

7. Connect the capacitor lead to the plus (+) terminal on the new coil. Do not install the nut, as yet.

8. Reconnect the low voltage leads to the terminal posts. Install the nuts on the terminals. Do not overtighten.

9. Reconnect the high-tension spark plug leads.

10. Place the air cleaner cover on the center stud, making sure it mates properly with the air cleaner base.

11. Install the thumb knob finger tight.
TESTING

1. Reconnect the battery, negative (–) cable last.

WARNING Arcing can ignite the explosive hydrogen gas given off by batteries, causing severe personal injury. Arcing can occur if the negative (–) battery cable is connected and a tool being used to connect or disconnect the positive (+) battery cable accidentally touches the frame or other grounded metal part of the set. To prevent arcing, always remove the negative (–) cable first, and reconnect it last.

2. Start the engine following the procedure outlined in the Operator’s Manual for the particular engine.

3. If the engine does not start:

   A. Check the low-voltage connections. Be sure the capacitor lead is connected.
   
   B. Check the high-tension lead connections at both the coil and the spark plugs.

4. Remove a spark plug, reconnect the spark plug lead, and ground the plug side electrode to bare metal on the engine.

5. Do not touch the plug or plug wire during testing. Crank the engine and observe the plug. A good spark should be observed. If no spark is observed, refer to the Service Manual for the particular engine.

PLACE THESE INSTRUCTIONS WITH THE OPERATOR’S MANUAL WHEN THE JOB IS DONE TO DOCUMENT THE CHANGES MADE.