

# PHILCO

**PHILCO**  
**Factory-Supervised**  
**Service**

# SERVICE

## AIR CONDITIONER

### INSTALLATION OF WATER-COOLED REPLACEMENT UNITS

(PART Nos. 4010-15, 4010-16, and 4010-59)

FOR AIR CONDITIONER MODELS  
150-FCW, 200-FCW, 200-GCW, and 1204-J

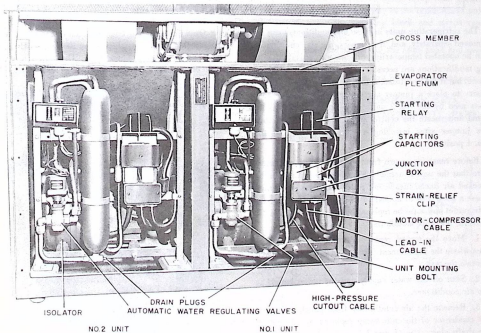


Figure 3. Front View of Units Installed in Air Conditioner

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## REMOVAL AND INSTALLATION

The air conditioner models covered by this pamphlet contain dual refrigerating units. A replacement unit, as shown in the table below, may be installed in either the No. 1 (right-hand) or No. 2 (left-hand) position in the air conditioner. (See figure 1.) However, in some cases

it will be necessary to make minor modifications in the wiring of some of the models when installing a replacement unit in the No. 1 position. Refer to the following table in each case to determine whether wiring modifications are necessary.

DATA FOR INSTALLATION OF REPLACEMENT UNIT

| Year           | Model               | Replacement Unit | Position       | Ref. Fig. | Wiring Modification                                                                  |
|----------------|---------------------|------------------|----------------|-----------|--------------------------------------------------------------------------------------|
| 1950           | 150-FCW             | 4010-15          | No. 1 or No. 2 | 4         | None                                                                                 |
| 1950-1951-1952 | 200-FCW and 200-GCW | 4010-16          | No. 1 or No. 2 | 4         | None                                                                                 |
|                |                     | 4010-59          | No. 1          | 5         | Connect lead (dotted line) to put start winding in series with interlock relay coil. |
|                |                     | 4010-59          | No. 2          | 5         | None                                                                                 |
| 1953           | 1204-J              | 4010-16          | No. 1 or No. 2 | 4         | None                                                                                 |
|                |                     | 4010-59          | No. 1 or No. 2 | 5         | None                                                                                 |

The refrigerating units in these air conditioners can be removed separately, and, if necessary, the air conditioners can be operated temporarily, with one unit only. No wiring modifications are necessary to operate the No. 1 unit alone, but if the unit intact is the No. 2 unit, it will be necessary to place a jumper across the interlock relay contacts used by the No. 2 unit. The interlock relay is located underneath the control switch. Be sure to remove the jumper after installing a replacement unit in the No. 1 position.

Before removing a unit from the air conditioner, make sure that the unit is actually defective; electrical defects, blocked air ducts, insufficient water circulation, etc. may cause a good unit to appear to be defective. A defective refrigerant unit must be replaced by a new unit (figure 2). Perform the work as follows:

1. Move the crated replacement unit to the working area where the replacement installation is to be made, and uncrate the unit.
2. Shut off the water supply and the power supply to the air conditioner.
3. Remove the air conditioner front panel, and drain the condenser of the unit being replaced by unscrewing the drain plug. (See figure 1.)
4. At the rear of the unit, disconnect the condenser water inlet and outlet connections. (See figure 3.)

5. Open the junction box (figure 1), and check the wiring with the appropriate wiring diagram. (Use the table to select the correct diagram.) Then disconnect the lead-in cable wires in the junction box. The lead-in cable

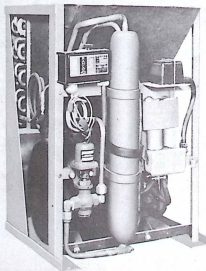


Figure 2. Replacement Unit

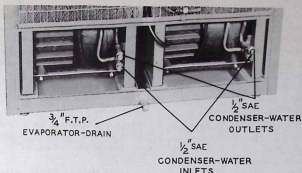


Figure 3. Rear View of Units Installed in Air Conditioner

enters the junction box through the knock-out in the lower right-hand corner of the box.

6. Remove the lead-in cable from the junction box, and also the strain-relief clip attaching the lead-in cable to the frame. Leave the lead-in cable attached to the control box containing the interlock relay.

7. Remove the sheet-metal screws which fasten the evaporator plenum to the cross member supporting the fan scroll.

8. Remove the four unit mounting bolts which fasten the bottom of the unit to the air conditioner framework.

9. Grasp both the right-side and the left-side supports of the unit and pull forward, removing the unit from the frame.

10. Unbolt the new unit from the shipping crate base; for replacement unit Part No. 4010-59, also remove the shipping block and straps, and install the two rubber isolators furnished.

11. Install the replacement unit in the air conditioner by reversing the procedure used in the removal.

#### Note

Refer to the appropriate section below for instructions on making the lead-in cable wiring connections at the junction box.

12. Fasten the defective motor-compressor securely to the unit base in the same way as the replacement unit was fastened, using the shipping block and straps removed from the new unit.

13. Fasten the old unit to the crate base, and assemble the crate.

14. Fill out the return tag in the proper manner.

#### ELECTRICAL CONNECTION DATA CONNECTING REPLACEMENT UNIT PART NO. 4010-15 TO MODEL 150-FCW Unit in No. 1 or No. 2 Position

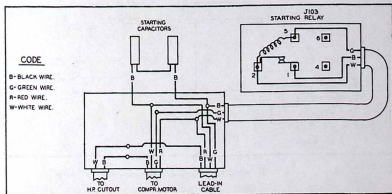


Figure 4. Junction Box and Starting Relay Wiring Diagram-Replacement Unit Part No. 4010-16

Connecting replacement unit in the No. 1 or No. 2 position requires no wiring modification. Reconnect the junction box wiring as before, using figure 4.

#### CONNECTING REPLACEMENT UNIT PART NO. 4010-16 TO MODELS 200-FCW AND 200-GCW

Unit in No. 1 or No. 2 Position

Connecting replacement unit in the No. 1 or No. 2 position requires no wiring modification. Reconnect the junction box wiring as before, using figure 4.

#### CONNECTING REPLACEMENT UNIT PART NO. 4010-16 TO MODEL 1204-J

Unit in No. 1 or No. 2 Position

Connecting replacement unit in the No. 1 or No. 2 position requires no wiring modification. Reconnect the junction box wiring as before, using figure 4.

#### CONNECTING REPLACEMENT UNIT PART NO. 4010-59 TO MODELS 200-FCW AND 200-GCW

Unit in No. 1 Position

Connecting replacement unit in the No. 1 position re-

quires wiring modification. The start winding of the motor-compressor must be connected in series with the interlock relay coil. (See figure 5.) Connect the green-coded wire of the lead-in cable at the junction box to the junction of the red-coded and black-coded wires as shown by the dotted line. No wiring change is required in the control box. Reconnect the remaining junction box wiring as before, using figure 5.

Unit in No. 2 Position

Connecting replacement unit in the No. 2 position requires no wiring modification. Reconnect the junction box wiring as before, using figure 5.

#### HIGH-PRESSURE CUTOUT—MANUAL RESET

The automatic type high-pressure cutout, used in earlier type models, may produce excessive cycling of the unit (every 6 seconds) if water failure occurs. If an automatic cutout requires replacement, install a manually reset type cutout, Philco Part No. 4561-6.

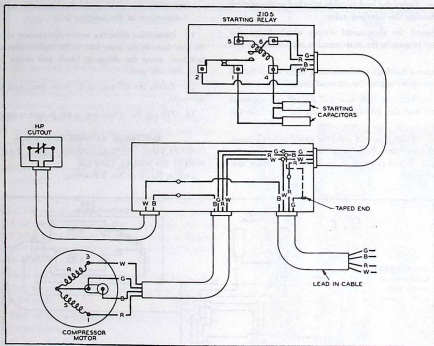


Figure 5. Junction Box and Starting Relay Wiring Diagram—Replacement Unit Part No. 4010-59