

PART FIVE

FUNCTIONING OF PARTS

| Possible Cause | Check | Remedy |
|------------------------------|--|---------------------------------|
| (9) Shorted commutator bars. | Check for rim fire indicating high mica. Inspect slots for dirt. | Undercut mica. Clean out slots. |

b. Sparking at Brushes.

| Possible Cause | Check | Remedy |
|--|---|---|
| (1) Dirty brushes or commutator. | Check condition of each. | Clean brushes and commutator with dry cleaning solvent. |
| (2) Improper brush contact. | Check to see if brushes are struck. Check spring tension. | Correct spring tension. Replace brush, if necessary. |
| (3) Loose armature lead. | Check lead. | Connect lead properly. |
| (4) Commutator rough. | Inspect for uneven places. | Dress with No. 00 sandpaper. |
| (5) Load too heavy. | Check load. | Reduce load. |
| (6) Grounded, open or shorted field coils. | Test as directed in paragraph 35. | Replace defective coils. |
| (7) High mica between commutator bars. | Check for rim fire. | Undercut mica. |

c. Voltage Too High or Too Low.

| Possible Cause | Check | Remedy |
|-----------------------------|-----------------------------------|---|
| (1) Engine speed incorrect. | Check engine rpm with tachometer. | Adjust governor. Proper engine speed (1,200 rpm). |

(2) Load shorted. Check external wiring. Correct deficiencies.

d. Armature Too Hot.

| Possible Cause | Check | Remedy |
|-------------------------------------|-----------------------------------|--|
| (1) Armature coil shorted. | Check for breaks. | Replace coil. |
| (2) Poor ventilation. | Check air space around generator. | Provide 2-ft. clearance all around unit. |
| (3) Excessive load. | Check load. | Reduce load. |
| (4) Foreign matter in air passages. | Check. | Remove obstructions. |

17. ENGINE.

a. General. The engine is a 4-cycle, internal-combustion type, with radiator cooling. The theory of operation is explained in The Internal Combustion Engine, TM 10-570. The cylinder firing order is 1, 3, 4, 2.

b. Ignition System. The voltage required for the spark ignition is supplied by a high tension magneto. The magneto contains an interrupter, distributor and capacitor. The only other parts necessary to complete the system are the spark plugs. The interrupter opens the primary circuit of the armature when it has reached its peak voltage position. The distributor completes the circuit from the magneto to the individual spark plugs at the correct instant to ignite the fuel mixture during the compression stroke of the piston. The spark plugs in the ignition system are shielded to prevent radio interference (fig. 1).

c. Fuel System. The fuel is contained in a 10-gallon tank. The fuel passes through a fuel line and fuel pump to the fixed jet carburetor. From there it is drawn through the intake manifold to the intake valves and the cylinders.

d. Governor. A centrifugal governor controls the engine speed of the Kohler power unit. The governor is adjusted at the factory for 1,200 revolutions per minute. The method of readjusting is explained in paragraph 124.

e. Cooling System. The cooling system uses the gravity method of circulation. This type of system requires no water pump. The water jacket is cast integrally with the cylinders and has two openings; one for the water to enter, and the other for the water to escape through. Pipes connect the water jacket openings to the radiator. The radiator is shown in figure 15.

f. Lubricating System. The lubrication system provides for forced oiling to the main bearings and rocker arms, and splash oiling to connecting rods, pistons, and piston pins. The oil pump is a plunger type, operated by a cam on the camshaft. An oil filter is mounted on the crankcase on the muffler side of the engine.