

The magneto breaker points must be set to open sufficiently to permit the insertion of the thickness of an ordinary business card, or regular magneto point thickness gauge between the points without force.

Oil the magneto about once every fifty hours service. Then only a drop of best sewing machine oil.

34—Battery Timer Ignition trouble can usually be traced to the following:

Loose connections.

Weak or entirely run down battery—Dirty Timer—Pitted, dirty, or burnt points. For pitted, dirty or burnt points, proceed the same as for magneto points. (See instruction 33.)

The breaker points for battery timer are usually set to open about twice as much as for magneto points.

35—Points burnt away may be due to points not being set properly, or defective condenser. Replace with new points, and if trouble continues, have competent service station test for defective condenser or other reason for burning.

36—Keep the outside of distributor head around the terminals clean and free from oil and moisture.

37—If in doubt about magneto or battery timer, consult an expert, or authorized service station.

(Special instructions covering the magneto or Battery Timer system sent on request. Mention type and name of magneto or Battery Timer system.)

**ELECTRIC STARTER—GENERATOR SYSTEM**

38—Where Flexifour engine Models are equipped with Bosch automobile six-volt electric starter and generator system, the wiring arrangement is as shown in Fig. 4.

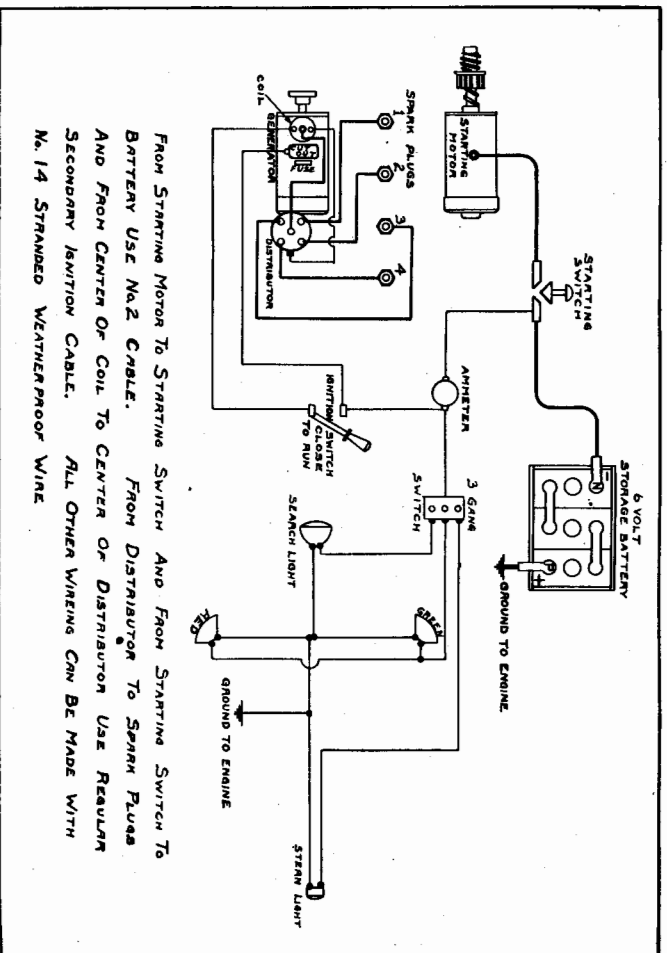


FIGURE 4

(NOTE: On the Flexifour the generator shaft rotates left-hand when viewed from coupling end. However, the distributor brush rotates righthand when viewed from top of distributor so that the arrangement of wires from distributor to spark plugs for the Flexifour is as shown in Fig. 4.)

(See Bosch Instruction Book covering the 6-volt Starter and Generator.)

**VALVE AND CAM SHAFT TIMING**

39—In case it is necessary to remove the cam shaft or replace with a new cam shaft, the cam shaft should be set so that the valve timing is such that the exhaust valve closes exactly at upper dead center of piston on the exhaust stroke of that particular cylinder of which exhaust valve just closed. This can be determined by any cylinder, for if one cylinder is correct, all other cylinders will be in relative order.

## VALVE AND TAPPET SETTING

40—Adjustment and clearance between valve stem and tappets should be from .006 to .008. This is about the thickness of an ordinary business card. It is best to have slightly too much clearance between tappet and valve stem than too little, as plenty of clearance will permit the valve to seat in case of carbon accumulation while too fine adjustment might prevent valve from seating hard enough and permit carbon to fill around seat and hold valve slightly open.

41—In case of loss of compression due to carbon under the valves. Adjust tappets to give plenty of clearance, then pour a little kerosene in the cylinder through the spark plug hole. Pour kerosene so it will flow around valve seats, and let set for several hours. This will tend to loosen carbon, and blow out when engine is started again.

## USING KEROSENE

42—Although it is not recommended to use kerosene unless the cost between gasoline and kerosene warrants it, (which is if the cost of gasoline is about twice the cost of kerosene) kerosene can be used, especially in hot temperatures.

An attachment, comprising a hot air drum to fit over the exhaust pipe, and flexible tube to carburetor, which supplies hot air thereto must be used. See Fig. 5.

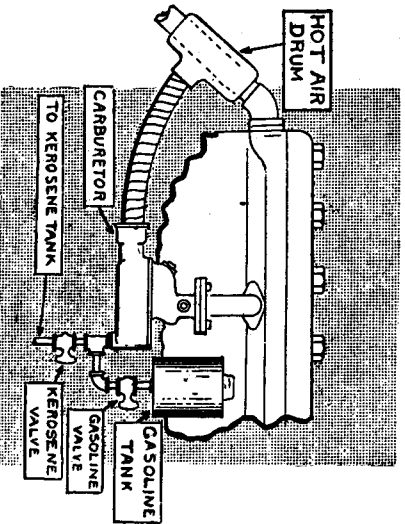


FIGURE 5

Also an extra gasoline tank is mounted as shown for use in starting and heating up the parts, after which the gasoline is closed off and the kerosene turned on. We always recommend, however, that gasoline and kerosene be mixed together (about one quarter gasoline) so as to give better vaporizing mixture. This will work more economically than the clear kerosene in cost of operation.

43—When using kerosene be sure to watch out for crank case dilution, and change oil frequently. Also, it may be advisable to use a grade of oil slightly heavier than recommended for use with gasoline.

44—KEEP ENGINE CLEAN AND REMEMBER IT REQUIRES REASONABLE ATTENTION.