

HAYNES

MODEL 45 (1919-20) SERIAL NOS. 33,500 to 38,500
LEECE-NEVILLE GENERATING, STARTING AND LIGHTING SYSTEM
KINGSTON IGNITION

BATTERY.—Willard, Type SXR-6, 6 volt, 100 ampere-hour. The two-wire system is used.

IGNITION.—Breaker contacts separate .020 inch. When the condition of the contacts affects the ignition, resurface with a fine, flat jeweler's file or worn No. 00 sandpaper.

OILING.—Refill the grease cup under the breaker head with soft cup grease and turn down every month. If the car is driven more than 1000 miles in a month, this must be done every 1000 miles.

TIMING.—Breaker contacts begin to separate when the top dead center mark on the fly-wheel is $\frac{3}{4}$ inch past the indicator, spark control lever and breaker assembly in the fully retarded position.

FIRING ORDER.—The firing order is 1, 4, 2, 6, 3, 5.

SPARK PLUG GAPS.—Spark plug gaps are .025 inch.

STARTER.—Type 186M. Starter is connected to the engine through a Bendix drive. Starter cranks the engine at 100-150 R.P.M., taking 150-250 amperes. Lock torque is 16 pound-feet, current being 700 amperes at 3.5 volts. Running freely, starter takes 60 amperes, armature revolving at 4000 R.P.M.

OILING.—Put 5 or 6 drops of light engine oil in each of the starter oilers every month.

GENERATOR.—Type E400. Generator current regulation is by the third brush system. Maximum charging rate is 16 amperes, reached at 1200 R.P.M. of the armature or 20 miles per hour. Charging rate is varied by turning the adjusting thumb nut on the front end cover of the generator. Before turning the thumb nut, loosen the lock screw just below and to the left of the nut. Turn the nut to the left to increase the charging rate and to the right to decrease the charging rate. Tighten the lock screw after adjustment is made.

OILING.—Put 5 or 6 drops of light engine oil in each of the generator oilers every 500 miles. If the car is driven more than 500 miles in two weeks, the oiling must be done every 500 miles.

RELAY.—Relay closes at 8-10 miles per hour or 450-500 R.P.M. of the armature and opens at 6-8 miles per hour or 400-450 R.P.M. of the armature. The charging current is 1-3 amperes at closing and the discharge current 0-1 ampere at opening of relay contacts. Contacts separate .030 inch. Clean contacts by drawing unglazed paper between them. If badly burned or pitted, resurface with well worn No. 00 sandpaper. Remove all grit. Adjust before again putting into service.

LAMPS.—Head lamps are 6-8 volt, 18 cp. Dimmer lamps are 6-8 volt, 5 cp. Dash and tail lamps are 6-8 volt, 2 cp.

FUSE.—Fuse on relay base is 5 ampere.

CIRCUIT BREAKER.—A circuit breaker takes the place of fuses in the lighting and ignition circuits. It requires 25 amperes to open the circuit.

