

HANSON

MODEL 54 (1920-21) 54 AND 60 (1922-23-24-25)

DELCO GENERATING, STARTING AND LIGHTING SYSTEM

DELCO IGNITION

7-R CONTINENTAL ENGINE

BATTERY:—Prest-O-Lite (1920-21) 6 volt, 80 ampere hour (1922) Type 613 RHN, 6 volt, 100 ampere hour. The negative (—) terminal is grounded.

IGNITION:—Coil Model No. 2159. Distributor Model No. 5207. Breaker contacts separate .018 inch. They are made of platinum. When the condition of the contacts affects the ignition, remove and resurface with fine emery cloth or against the flat side of an emery wheel, finishing on a hard oilstone.

OILING:—Put 3 or 4 drops of light engine oil in the ignition unit oilers every two weeks. If the track of the rotor button in the distributor head is not well polished, apply a small amount of vaseline with a soft cloth. If the car is driven more than 500 miles in two weeks, these attentions must be given every 500 miles.

TIMING:—Breaker contacts begin to separate when the top dead center mark on the fly wheel is $1\frac{3}{8}$ inches past the indicator, spark control lever and breaker assembly in the fully retarded position.

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

SPARK PLUG GAPS:—Spark plug gaps are .030 inch.

STARTER:—Model No. 164 or 181. Starter is connected to the engine through a Bendix drive. The direction of rotation is clockwise, looking at the commutator end. Running free the starter takes 36 amperes at 6 volts. Lock torque is 27 lb. ft. at 2.75 volts. The brush tension should be $2\frac{1}{4}$ to $2\frac{3}{4}$ pounds on each brush.

Oiling:—Put 8 or 10 drops of light engine oil in each of the starter oilers every month or each 1000 miles. Remove the grease plug and refill the reduction gear housing with medium soft grease every six months. Saturate the wick in the oiler on the end of the Bendix gear with light engine oil once a year.

GENERATOR:—Model No. 165. Rotation is counter-clockwise, looking at the commutator end. Generator current regulation is by the third brush system. Maximum charging rate is 11-15 amperes, reached at 1200 R.P.M. of the armature, or 16-20 miles per hour.

Amperes	Generator Data	R.P.M.
Neutral		550
4		800
8		1000
11-15		1200
11-14		2000

Charging rate is varied by adjustment of the third brush setting. To move the third brush, loosen the three screws holding the bearing retainer plate on the commutator end and shift the plate. Move in a counter-clockwise direction to increase the charging rate, or in the opposite direction to decrease the charging rate. Tighten the adjusting screws and reseat the brush after making the adjustment. Maximum charging rate must not exceed 16 amperes.

OILING:—Put 4 or 5 drops of light engine oil in each of the generator bearing oilers every two weeks. If the car is driven more than 500 miles in two weeks, the oiling must be done every 500 miles.

RELAY:—Relay is mounted on the generator frame. Relay closes at 550-600 R.P.M. of the armature or 7-8 miles per hour, and opens at 500-550 R.P.M. of the armature or 5-6 miles per hour. Relay contacts separate .046 to .062 inch. Air gap between relay armature and coil core is .020 to .035 inch, contacts closed. To adjust relay, connect a voltmeter between the positive (+) generator brush and the ground. Then slowly speed up the generator and adjust the relay spring tension by turning the thumb nut, until the contacts close when the voltmeter indicates 7.5 volts. Clean relay 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, 21 cp. Dimmer lamps are 6-8 volt, 4 cp. Dash and tail lamps are 6-8 volt, 2 cp. On 1920 and 1921 cars head lamps are 6-8 volt 15 cp. On 1920 cars, dimmer bulbs connected to No. 4 terminal were used instead of a dimming resistance.

CIRCUIT BREAKER:—A vibrating circuit breaker takes the place of fuses. It requires 25 amperes to start the vibrator, but 3-5 amperes will cause it to continue.

