

DANIELS

MODEL D-19 (1920-21-22)
 MODELS 23-32, 23-38 (1923) 24-32, 24-38 (1924)
 MODELS 25-32, 25-38 (1925-26-27)
 DELCO-REMY GENERATING, STARTING AND LIGHTING SYSTEM
 DELCO-REMY IGNITION

BATTERY.—Willard, Type SJR-5. 6 volt, 135 ampere hour. Starting capacity is 145 amperes for 20 minutes. The lighting capacity is 5 amperes for 26 hours. The negative (—) terminal is grounded.

IGNITION.—Coil Model No. 2127. Distributor Model No. 5212. Breaker contacts separate .018 inch. They are made of tungsten. 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. Manual advance is 18-22°. Automatic advance begins at 580 R.P.M. and reaches a maximum of 13-15° at 2400 R.P.M. The tension of breaker arm spring should be 16-20 ounces.

Mounting.—To remove distributor, disconnect manual advance rod and remove two hold down screws. Then lift distributor from place.

Oiling.—Put 4 or 5 drops of light engine oil in the upper ball bearing every two weeks. If the track of the rotor in the distributor head is not well polished, apply a small amount of vaseline with a soft cloth. Clean out and repack the distributor housing with soft cup grease every six months. This housing contains the automatic advance and retard mechanism.

Timing.—Breaker contacts begin to separate when the piston entering power stroke is on top dead center, spark control lever and breaker assembly one-third advanced.

Firing Order.—The firing order is 1L, 2R, 3L, 1R, 4L, 3R, 2L, 4R.

Spark Plugs.—Diameter $\frac{7}{8}$ inch. Spark gaps are .031 inch.

STARTER.—Model No. 170. Starter is connected to the engine through a set of reduction gears meshed by the operator. The raising and lowering of the two grounded starter brushes serves as a starting switch. Lock torque is 27 lb. ft. at 2.75 volts. The starter running free takes 60 amperes at 6 volts. The direction of rotation is clockwise, looking at the commutator end. The tension of each of the starter brushes should be from $2\frac{1}{4}$ to $2\frac{3}{4}$ pounds.

Mounting.—To remove starter, remove starting pedal return spring and pedal rod. Then remove water pump. Remove motor hold down screws and lift from place.

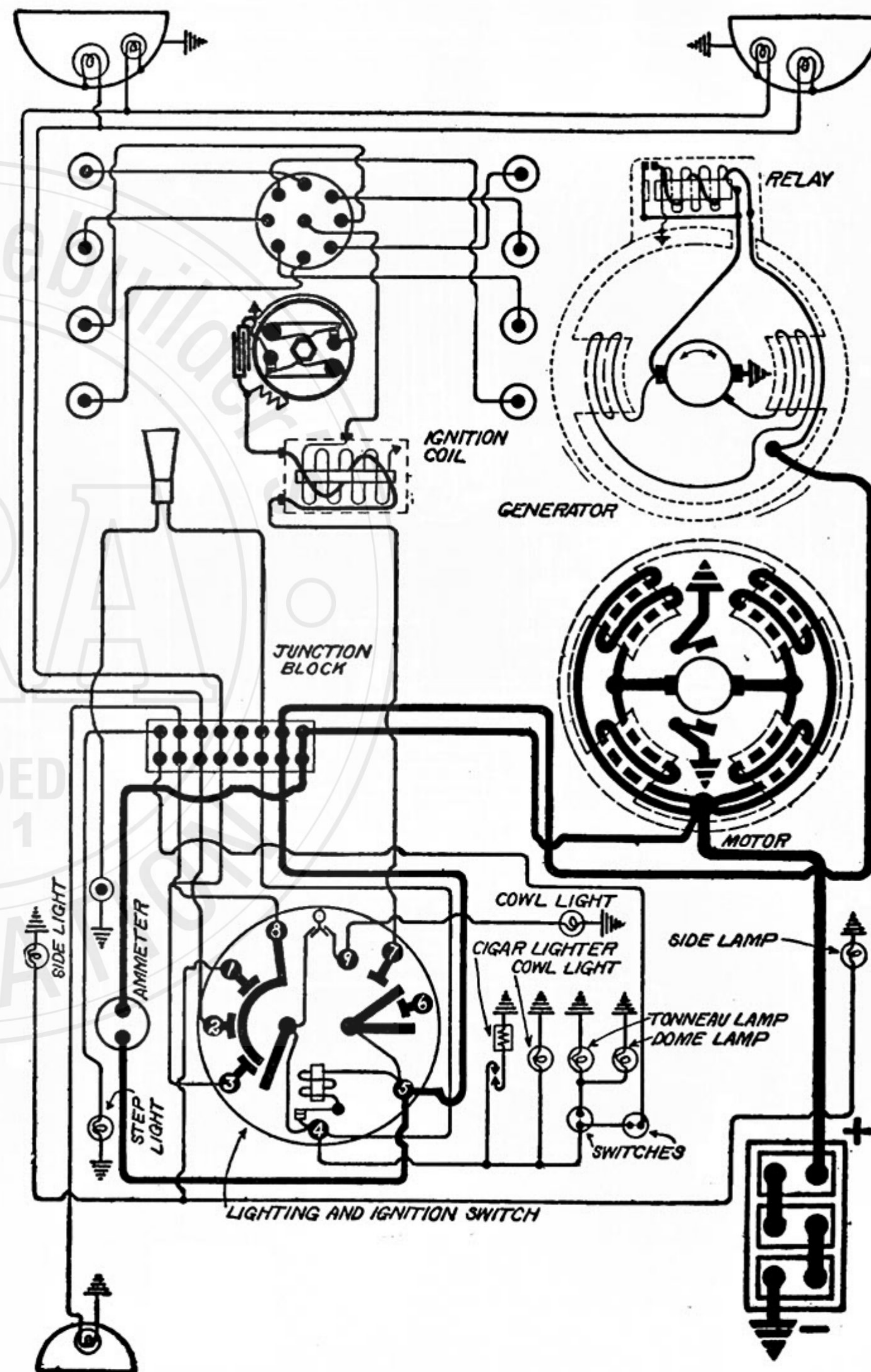
Oiling.—Put 8 or 10 drops of light engine oil in each of the starter bearing oilers every 1000 miles or each month. Saturate the wick in the oiler at starter gear end of motor once each year. Remove grease plug and repack reduction gear housing with medium heavy cup grease once every six months. Disassemble motor clutch once each year and after cleaning it, repack with vaseline.

GENERATOR.—Model No. 169. Generator current regulation is by the third brush system. The direction of rotation is counter-clockwise, looking at the commutator end. The maximum charging rate is 20-22 amperes, reached at 1450 R.P.M. of the armature or approximately 20 M.P.H. To adjust the charging rate, loosen the three screws in the bearing retainer plate on the end of the generator and shift the third brush. Moving the third brush in the direction of rotation (counter-clockwise) increases the charging rate and in the opposite direction decreases the charging rate. After making the adjustment tighten the three screws.

Generator Data

Amperes	R.P.M.
0.....	600
12.....	1000
18-22.....	1450

The shuntfield current is 2 amperes at 6 volts. The tension of the generator brushes should be $1\frac{1}{2}$ -2 pounds each.



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Mounting.—To remove generator, drain radiator and remove. Then jack up front end of engine and remove all engine bolts. Remove front gear cover and water pump. Then remove generator mounting studs and lift generator from place.

Oiling.—Put 5 or 6 drops of light engine oil in each of the generator 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 8 miles per hour or 500-550 R.P.M. of the armature, and opens at 6 miles per hour or 450-500 R.P.M. of the armature. Relay contacts separate .046 to .062 inch. Air gap between relay armature (moving member) and coil core is .040 inch, contacts closed. To adjust relay, connect a voltmeter between the positive generator brush and ground.

Then slowly speed up the generator and adjust the relay spring tension until the relay contacts close when the voltmeter indicates 7.5 volts. Clean the 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. Dome lamp is 6-8 volt, 2 cp.

Switch.—Combination switch is Delco Model 1161.

CIRCUIT BREAKER.—A vibrating circuit breaker takes the place of fuses. It requires 25 amperes to start the vibrator. While vibrating the current is 10-15 amperes.

