

ELCAR

MODEL 120 (1929)

DELCO-REMY GENERATING, STARTING SYSTEM DELCO-REMY IGNITION

BATTERY:—U.S.L. Type 3-HVX-6X, 6 volt. The negative (—) terminal is grounded. Starting capacity (20 minute rate) is 127 amperes for 20 minutes. Lighting capacity (5 ampere rate) is 5 amperes for 23.4 hours. Battery is mounted under the right front seat.

IGNITION:—Coil Model 528-C. Coil is mounted on the dash. Ignition current is 1.8 amperes at 6 volts with engine running and 4 amperes at 6 volts with engine stopped.

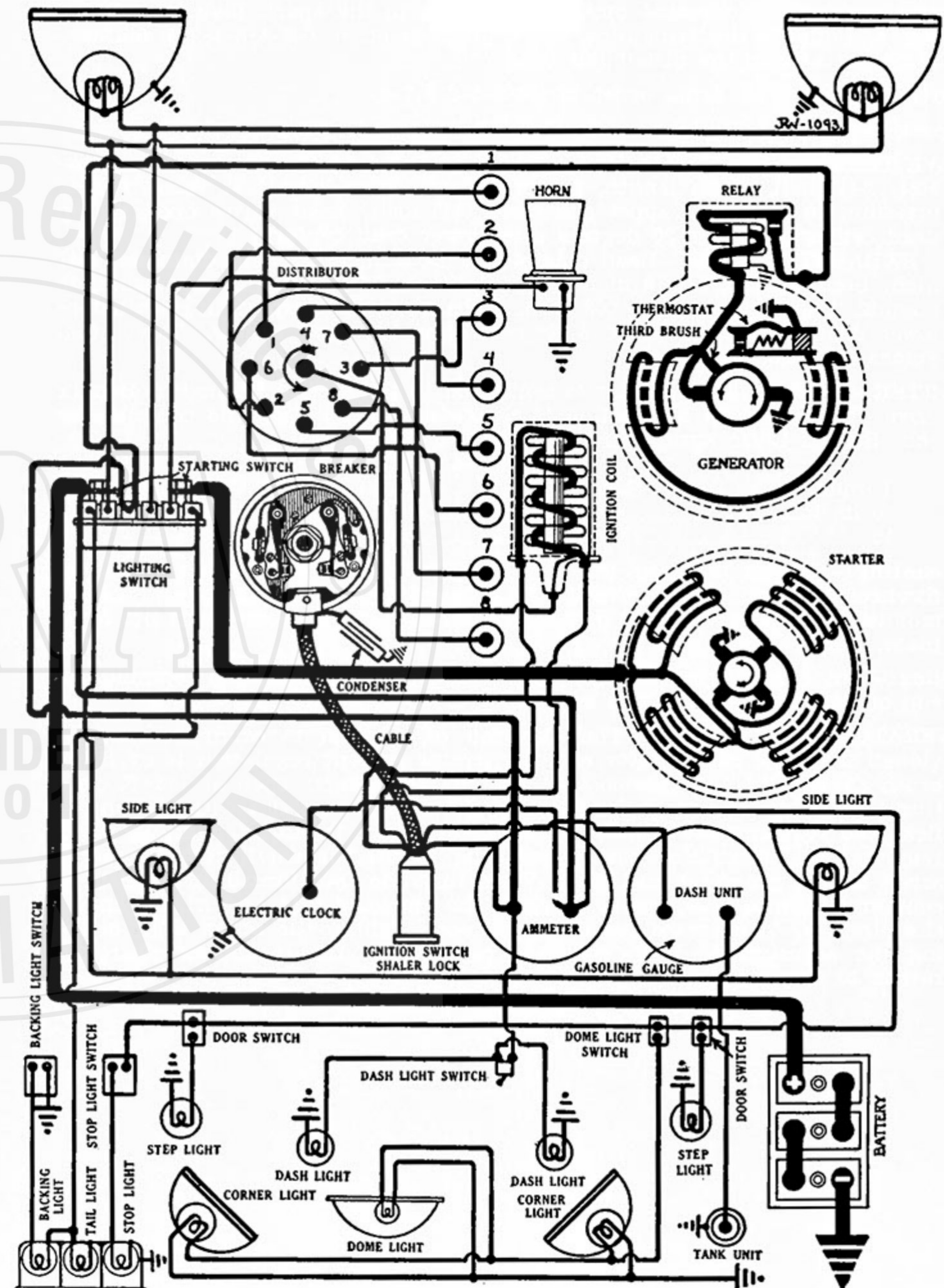
Distributor Model 651-B. Breaker contacts separate .018-.024 inch. Set contact gap by loosening lock screw on stationary contact mounting plate and turning eccentric adjusting screw until correct gap is secured with breaker arm on lobe of cam. Breaker arm spring tension is 18-21 ounces. Distributor is semi-automatic. Maximum manual advance is 20 degrees (engine). Automatic advance begins at 300 R.P.M. of engine. Maximum automatic advance is 15 degrees reached at 1800 R.P.M. of engine. Breaker has two sets of contacts on a four sided cam. Contacts open alternately at intervals of 45 degrees which correspond to the 90 degree firing interval of the engine crankshaft. Contacts must be synchronized for correct ignition performance. See Timing.

Mounting:—Distributor is mounted on the cylinder head. The Shaler lock, which is standard equipment, must be removed as a unit with the distributor whenever distributor is taken off the car. To remove distributor, disconnect the Shaler lock at the dash, disconnect the manual spark control and take off the distributor head with cables intact. Then take out the stop screw in the spark advance arm and lift the distributor from place. The Shaler lock can then be removed from the distributor by taking off the nut on the terminal stud inside the distributor case and withdrawing the trap mechanism and terminal stud from the distributor case.

Oiling:—Fill the grease cup on the side of the distributor housing with medium cup grease and turn down two turns every month or each 1000 miles. At the same time remove the distributor head and rotor and fill the wick oiler in the center of the shaft with light engine oil and put a small bit of vaseline on the face of the breaker cam.

Timing:—Synchronization of Contacts:—Use special Delco-Remy tool, Part No. 820738 and follow directions on Page S-25. Contacts can be synchronized without use of tool after distributor has been timed to the engine by cranking engine over 90 degrees from firing position of piston No. 1 when piston No. 6 will reach firing position. If the second set of contacts are not separating at this point, loosen the two lock screws on the moveable breaker plate and turn the eccentric adjusting screw until the contacts begin to open. Tighten the lock screws and check the contact gap with the breaker arm on the lobe of the cam. If outside limits of .018-.024 inch, reset at .022 inch and repeat synchronization.

Timing Distributor to Engine:—Breaker contacts begin to open when the piston entering power stroke reaches a position 5 degrees on the flywheel past top dead center with the manual spark control in the fully retarded position. To set timing, crank engine over until piston No. 1 enters compression stroke (the up stroke with both valves closed). Fully retard spark lever and continue to crank engine until piston reaches firing position when a point on the flywheel approximately 3 teeth after the top dead center mark for cylinders 1 and 8 will be opposite the indicator in the inspection hole in the flywheel housing. Then loosen advance arm clamp screw and rotate distributor until the contacts begin to open. Tighten the



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in cylinder No. 1. Connect the remaining spark plugs in order 6-2-5-8-3-7-4 counter-clockwise around the distributor head.

Firing Order:—The firing order is 1-6-2-5-8-3-7-4.

Spark Plugs:—Spark plugs are $\frac{7}{8}$ -18 S.A.E. Standard. Gaps are .025 inch.

VALVE TIMING:—**INLET VALVES:**—Head diameter, $1\frac{5}{8}$ inches. Stem diameter, .341 inch. Stem length, $5\frac{19}{32}$ inches. Valve lift, $11\frac{1}{32}$ inch. Spring pressure, 44 pounds. Tappet clearance, .006 inch. Inlet valves open at top dead center and close 45 degrees after lower dead center.

EXHAUST VALVES:—Head diameter, $1\frac{15}{32}$ inches. Stem diameter, .341 inch. Stem length, $5\frac{9}{16}$ inches. Valve lift, $11\frac{1}{32}$ inch. Spring pressure, 44 pounds. Tappet clearance, .008 inch. Exhaust valves open 50 degrees before lower dead center and close 10 degrees after top dead center. Valve stem guides are removable.

STARTER:—**Model 720-Y.** Starter is connected to the engine through a Bendix drive. The direction of rotation is counter-clockwise, looking at the commutator end. Starter brush tension should be 24-28 ounces. Starter switch is Model 406-D.

Starter Data			
Torque	R.P.M.	Volts	Amperes
0 lb. ft.....	6000.....	5.0	65
15 "	Lock.....	3.15.....	570

Mounting:—Starter is flange mounted at right of engine on the forward side of the flywheel housing. To remove starter, disconnect cable. Then remove 3 cap screws on flange. Lift starter forward and out.

Oiling:—Put 4 or 5 drops of light engine oil in the oiler on the starter every 1000 miles.

GENERATOR:—**Model 955-K.** The direction of rotation of the generator is counter-clockwise, looking at the commutator end. Current regulation is by the third brush system, combined with a thermostat. The thermostat contacts open at 150 degrees F. To adjust the generator output, loosen the

screw on generator end plate and shift the third brush mounting plate in a counter-clockwise direction to increase the charging rate and in the opposite direction to decrease the charging rate.

Generator Data

Cold Test			Hot Test		
Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
19-21.....	8.5.....	1450	9-12.....	7.5.....	2000

Generator motoring draws 5.5 amperes at 6 volts. Shunt field current is 5 amperes at 6 volts. Generator brush spring tension is 24-28 ounces.

Mounting:—Generator is flange mounted at right of engine on rear of timing chain case. To remove generator, take off hose connections at water pump, loosen plate on front of chain case and swing out of the way. Loosen generator flange nuts, push generator towards motor, lift off chain from sprocket; keep chain from dropping down in chain case by fastening up with wire. Take out flange mounting nuts and lift generator and pump assembly from place.

Oiling:—Put 4 or 5 drops of light engine oil in the generator oiler every 1000 miles.

RELAY:—**Model 265-B.** Relay is mounted on the generator. Relay contacts close at 675 R.P.M. of the generator armature or 6-7 miles per hour with a generator voltage of 6.5-7 volts. Contacts open with a discharge current of 2.5 amperes. Relay contacts separate .015-.025 inch. Air gap between relay armature and coil core is .014-.021 inch with contacts closed.

LIGHTING:—**Briggs and Stratton Switch Model 40941.** Lighting switch is mounted at the lower end of the steering column. The starting switch, horn button and lighting switch are combined in one unit controlled by the lever on the steering wheel. Double filament headlights using a second 21 cp. filament instead of dimmers are standard equipment. Headlights are 6-8 volt, 21-21 cp. D.C. Mazda 1110. Side lights are 6-8 volt, 3 cp. S.C. Mazda 63. Stop and backing lights are 6-8 volt, 15 cp. S.C. Mazda 87. Dash, dome, corner, step and tail lights are each 6-8 volt, 3 cp. S.C. Mazda 63.