

**DELCO-REMY GENERATING, STARTING SYSTEM
DELCO-REMY IGNITION**

BATTERY:—Willard, Type CWR-15, 6 volt, 15 plates. The negative (—) terminal is grounded. Starting capacity (20 minute rate) is 104 amperes for 20 minutes. Lighting capacity (5 ampere rate) is 5 amperes for 20 hours.

IGNITION:—Coil Model 525-A. Ignition current is 2 amperes at 6 volts with engine running and 5 amperes at 6 volts with engine stopped. Coil is mounted at right of engine.

Distributor Model 658-G. Breaker contacts separate .022 inch. Set contact gap by loosening lock screw on stationary contact mounting plate and turning eccentric adjusting screw until contact gap is .022 inch with breaker arm on lobe of cam. Resurface contacts with a fine flat contact file or on a medium hard oilstone. Breaker arm spring tension is 17-21 ounces. Breaker has two sets of contacts on a single four sided cam. Contacts open alternately at intervals of 45 degrees corresponding to 90 degrees of crankshaft rotation. This is the correct firing interval for the Davis engine and must be accurately set. See Timing. Distributor is semi-automatic. Maximum manual advance is 33 degrees (engine). Automatic advance begins at 400 R.P.M. of engine. Maximum automatic advance is 35 degrees reached at 2400 R.P.M.

Mounting:—Distributor is mounted at forward end of generator at right of engine. To remove distributor, disconnect primary lead and manual advance rod and remove distributor head with cables intact. Then loosen distributor clamp screw and lift unit from place.

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

Timing:—Synchronization of Contacts:—Use Delco-Remy tool, Part No. 820738, and follow directions on Page S-25 of National Service Manual. Contacts can be synchronized without tool after distributor has been timed to the engine. Crank engine over 90 degrees from firing position of piston No. 1 when piston No. 6 will reach top dead center entering power stroke. The second set of contacts should separate at this point. Loosen lock screws and turn eccentric adjusting screw until contacts begin to separate. Tighten the lock screws and connect segment opposite rotor to spark plug in cylinder No. 6. Connect remaining spark plugs in order 2-5-8-3-7-4-1 clockwise around the distributor head.

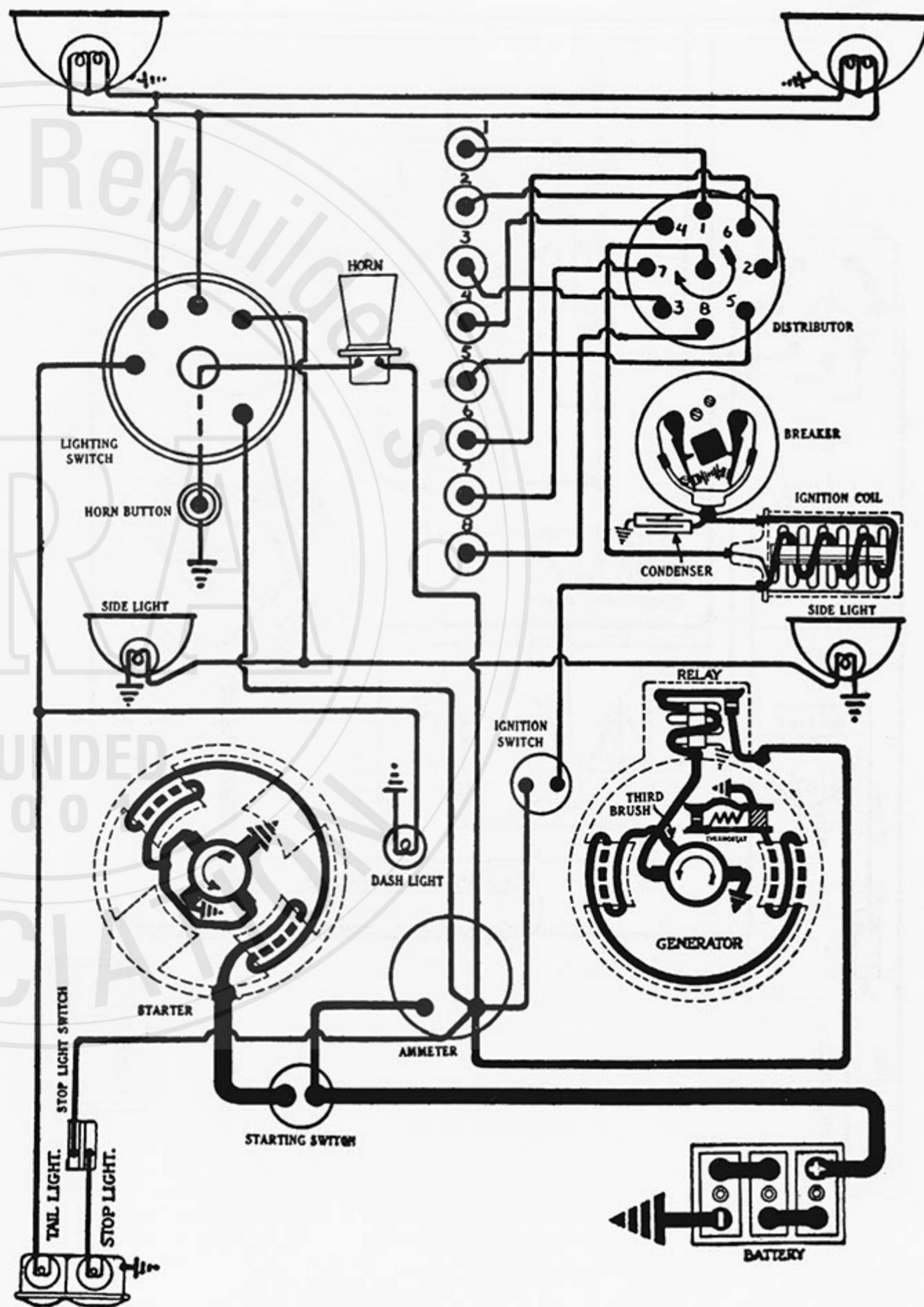
Timing Distributor to Engine:—Breaker contacts begin to separate when the piston entering power stroke reaches top dead center with the manual spark control lever fully retarded. To set timing, crank engine until piston No. 1 enters compression stroke (the upstroke with both valves closed). Fully retard spark control lever. Continue to crank engine until piston reaches top dead center. Then loosen advance arm clamp screw and turn distributor housing until one set of contacts begin to separate. Tighten the clamp screw and make certain that the segment opposite the rotor is connected to the spark plug in cylinder No. 1.

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

Spark Plugs:—Spark plugs are 7/8-18 S.A.E. Standard. Gaps are .025 inch.

VALVE TIMING:—INLET VALVES:—Head diameter, 1½ inches; stem diameter, .3095/.3085 inch; stem length, 5 61/64 inches (top of seat to end). Valve lift, 5/16 inch; spring pressure, 87 pounds total. Tappet clearance, .004 inch (hot). Inlet Valves open 8 degrees past top dead center and close 40 degrees past lower dead center.

EXHAUST VALVES:—Head diameter, $1\frac{3}{8}$ inches; stem diameter, .0395/.3085 inch; stem length, $5\frac{61}{64}$ inches (top of seat to end). Valve lift, $\frac{5}{16}$ inch;



DAVIS

MODEL 99 (1927-28)

DELCO-REMY GENERATING, STARTING AND LIGHTING SYSTEM DELCO-REMY IGNITION

spring pressure, 87 pounds total. Tappet clearance, .006 inch (hot). Valve stem guides are removable. Exhaust valves open 40 degrees before lower dead center and close 8 degrees past top dead center.

STARTER:—Model 716-B. Starter is connected to the engine through a Bendix Drive. The direction of rotation is counter-clockwise, looking at the commutator end. Starter switch is Model 406-A. Brush spring tension is 24-28 ounces.

Starter Data			
Torque	R.P.M.	Volts	Amperes
0 lb. ft.	3000	5	70
15 "	Lock	3.7	450

Mounting:—Starter is flange mounted at left of engine on forward side of flywheel housing. To remove starter, disconnect cable and remove 3 flange mounting cap-screws. Then slide starter forward and lift from place.

Oiling:—Put 8 to 10 drops of light oil in the commutator end oiler every month or each 1000 miles. The drive end bearing is oilless.

GENERATOR:—Model 944-D. The direction of rotation is counter-clockwise, looking at the commutator end. Generator current regulation is by third brush shunt field and thermostat. Thermostat contacts open at 165°F. cutting the resistance across the thermostat contacts in series with the shunt field and reducing the output approximately 40%. To adjust generator output, remove the commutator cover band and loosen the small round headed screw on the outside of the generator endplate. Then shift the third brush in a counter-clockwise direction to increase the charging rate and in the opposite direction to decrease the charging rate.

Tighten the screw after making the adjustment. With standard car setting the maximum charging rate is 20 amperes (cold) reached at 1300 R.P.M.

Generator Data

Cold Test			Hot Test		
Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
20	8.5	1300	12	7.65	1500

Motoring generator draws 6 amperes at 6 volts. Shunt field current is 5 amperes at 6 volts. Brush spring tension is 16-18 ounces.

Mounting:—Generator is flange mounted at right of engine on rear of timing chain case. To remove generator, disconnect lead and remove distributor. Remove 3 nuts from flange mounting bolts and pull generator to rear. Use care not to disturb timing chain adjustment.

Oiling:—Put 8 or 10 drops of light oil in each of the generator bearing oilers every two weeks or each 500 miles.

RELAY:—Model 265-B. Relay is mounted on the generator. Relay closes when the voltage of the generator reaches 7.25 volts and opens with a discharge current of 0-2.5 amperes. Relay contacts separate .020 inch. Air gap between relay armature and coil core is .016 inch, contacts closed.

LIGHTING:—Ross Switch. Head lights are 6-8 volt, 21-21 cp. (double filament-double contact base using second 21 cp. filament instead of dimming). Mazda No. 1110. Stop light is 6-8 volt, 15 cp. S.C. Mazda No. 87. Side lights are 6-8 volt, 6 cp. S.C. Mazda No. 81. Dash light is 6-8 volt, 3 cp. S.C. Mazda No. 63. Tail light is 6-8 volt, 3 cp. S.C. Mazda No. 63.

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