

CADILLAC

MODEL V-63 (1923-24-25)

DELCO GENERATING, STARTING AND LIGHTING SYSTEM DELCO IGNITION

BATTERY:—Exide, Type 3-LXRV-15-2G. 6 volt, 130 ampere hour. The positive (+) terminal is grounded.

IGNITION:—Coil Model No. 2179A. Distributor Model No. 5239. Breaker contacts separate .020 inch on new cars or for new set contact arms. Set contact gaps .015-.018 inch on cars having been driven over 2000 miles with one set of contact arms. They are made of tungsten. Resurface contacts with a fine, flat contact file or on a medium hard oilstone. Distributor is semi-automatic. Manual advance is 18-22 degrees. Automatic advance begins at 800 R.P.M. Maximum automatic advance is 16½-18 degrees reached at 2000 R.P.M.

Mounting:—Distributor is mounted between the cylinder banks on forward end of engine. To remove distributor, disconnect primary lead and manual advance rod. Remove shaft between starter-generator and distributor. Then remove hold-down screws and lift distributor out.

Oiling.—Put 8 or 10 drops of light engine oil in the oiler every two weeks or each 500 miles. The distributor gears and lower bearings are oiled from the timing gear case. Put a small amount of medium heavy grease on the surface of the breaker cam every 1000 miles.

Timing:—**Synchronization of Contacts:**—Breaker uses two sets of contacts on an eight-sided cam. Both sets of contacts must open at the same time. To synchronize contacts, short out the ignition coil by connecting both primary leads to the same terminal. Connect a 6 volt lamp across each set of contacts. Crank engine slowly. The lamps will light as contacts open. Both lamps should light at the same instant. If they do not, loosen the 3 screws holding the breaker plate in position and shift the plate until the lamps light simultaneously.

Timing Distributor to Engine:—Breaker contacts separate when piston entering firing stroke is 1 21/32 inch before top dead center measured on the flywheel, with the manual advance lever in the fully advanced position. To set timing, crank engine until cylinder No. 1 of the left hand block enters compression stroke. Fully advance spark lever and continue to crank engine until the flywheel mark IG/A is opposite the indicator on the flywheel case. The flywheel mark is 1 21/32 inches before top dead center position. Then loosen lock screw in center of breaker cam and rotate until contacts begin to separate. Tighten the lock screw and make certain that the segment opposite the rotor button is connected to the spark plug in cylinder No. 1 in the left hand block.

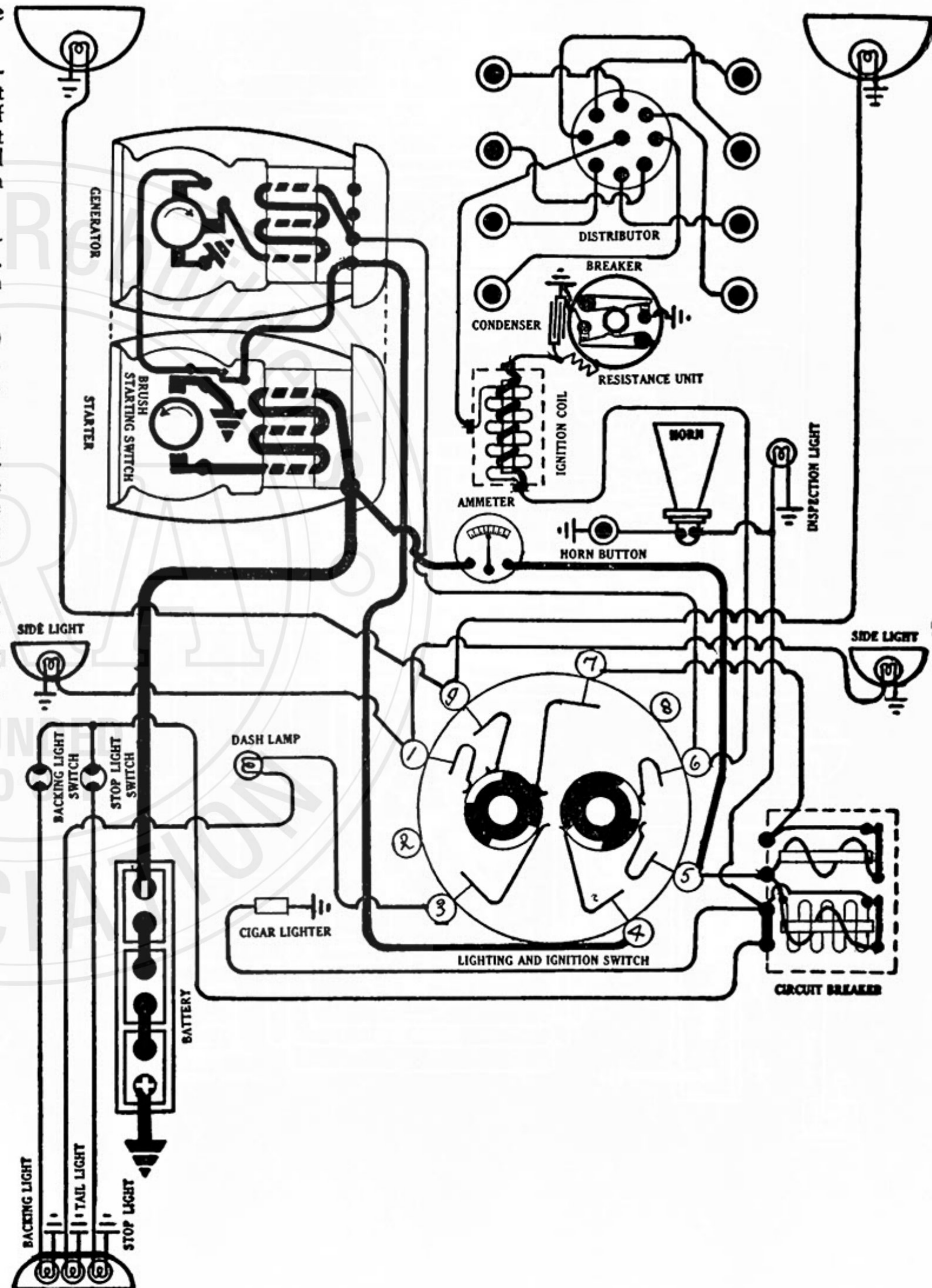
Firing Order:—The firing order is 1L-4R-4L-2L-3R-3L-2R-1R.

Spark Plugs:—Spark plugs are A.C. 7/8 Standard. Gaps are .023 inch.

VALVE TIMING:—**INLET VALVES:**—Head diameter is 1 11/16 inches; stem diameter is 3/8 inch. Tappet clearance is .004 inch (cold). Inlet valves open at top dead center and close at 46.7 degrees after lower dead center.

EXHAUST VALVES:—Head diameter is 1 11/16 inches; stem diameter is 3/8 inch. Tappet clearance is .006 inch (cold). Exhaust valves open at 46.7 degrees before lower dead center and close at top dead center.

STARTER-GENERATOR:—Model 98. Starter and generator are combined in one frame but are electrically separate. When the ignition switch is closed current flows through the generator winding causing the armature to revolve slowly which assists in meshing the gears. An overrunning clutch at the generator end permits this rotation. Depressing the starting switch meshes the starter gears, opens the generator circuit and completes the starter circuit by bringing the starter brushes in contact with the commutator, allowing the machine to run as a starter to crank the engine. When the pedal is released a spring reverses this operation. The direction of rotation is counter-clockwise, looking at the starter commutator end.



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Starter cranks the engine at 90-100 R.P.M. drawing 140-150 amperes. The tension of the starter brushes should be $2\frac{1}{4}$ - $2\frac{3}{4}$ pounds each.

Starter Data			
Torque	R.P.M.	Volts	Amperes
0 lb. ft.	Free	6	70
6 lb. ft.	Lock	3	

GENERATOR:—Generator direction of rotation is clockwise, looking at the generator commutator end. Current regulation is by the third brush system. To adjust the generator output, loosen the generator cover band and the two screws holding the third brush mounting arm. Shift the third brush in the direction of armature rotation (clockwise) to increase the charging rate and in the opposite direction to decrease the charging rate. Tighten the screws after making the adjustment.

Generator Data	
Amperes	R.P.M.
0	420
2	500
15	1000
17-19	1500
13-17	2000

Shunt field current is 2.5 amperes at 6 volts. The generator brush spring ten-

sion should be $1\frac{1}{4}$ - $1\frac{3}{4}$ pounds.

Mounting:—Starter-generator is mounted on the rear of the engine between the cylinder banks. To remove the starter-generator, relieve the gasoline pressure and disconnect feed line at carburetor and move to side. Disconnect all leads at generator and starter terminals. Disconnect generator drive shaft and remove starter clutch housing cover plate. Remove two large starter clutch housing hold-down screws and starter-generator hold-down screws and lift out.

Oiling:—Put 8 or 10 drops of light engine oil in each of the starter-generator oilers every two weeks or each 500 miles. Once each year remove and clean the motor and generator clutches and repack with vaseline.

LIGHTING:—Delco Switch Model No. 1272. Head lamps are 6-8 volt, 21 cp. Side and inspection lamps are 6-8 volt, 3 cp. Stop and backing lamps are each 6-8 volt, 21 cp. Dash and tail lamps are in series. They are each 3-4 volt, 2 cp.

RELAY:—There is no relay. The circuit between the generator and battery is controlled by the ignition switch.

CIRCUIT BREAKER:—A vibrating circuit breaker takes the place of fuses. It requires 25 amperes to start the vibrator but 10-15 amperes will cause it to continue. A lockout circuit breaker protects the horn, backing lamp and signal lamp circuits. A current of 25-30 amperes causes it to open the circuit.

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