

CORD

FRONT WHEEL DRIVE—MODEL L-29 (1929)
PRODUCTION STARTED JULY 1, 1929. SERIAL NUMBERS 2,925,001 UP
DELCO-REMY GENERATING, STARTING SYSTEM
DELCO-REMY IGNITION

The Cord as America's first Front Wheel Drive automobile to be placed in production involves a number of new features. The engine, while essentially a stock engine, is reversed in the chassis with the flywheel and transmission at the forward end. The timing chain is likewise at the forward end between the engine block and the flywheel. The crankshaft revolves counter-clockwise. The starter drives to the flywheel and is mounted on the rear of the flywheel case which is thus the forward end of the engine. The battery is mounted near the starter on a bracket above the transmission case under the engine hood. The electrical units are similar to those used on ordinary rear wheel drive cars and no trouble should be experienced in service work.

BATTERY:—U.S.L. Type XY-15-X-6, 6 volt. The positive (+) terminal is grounded. Starting capacity (20 minute rate) is 119 amperes for 20 minutes. Lighting capacity (5 ampere rate) is 5 amperes for 21 hours. Battery is mounted on special bracket directly above transmission case under the engine hood at the forward end of the engine.

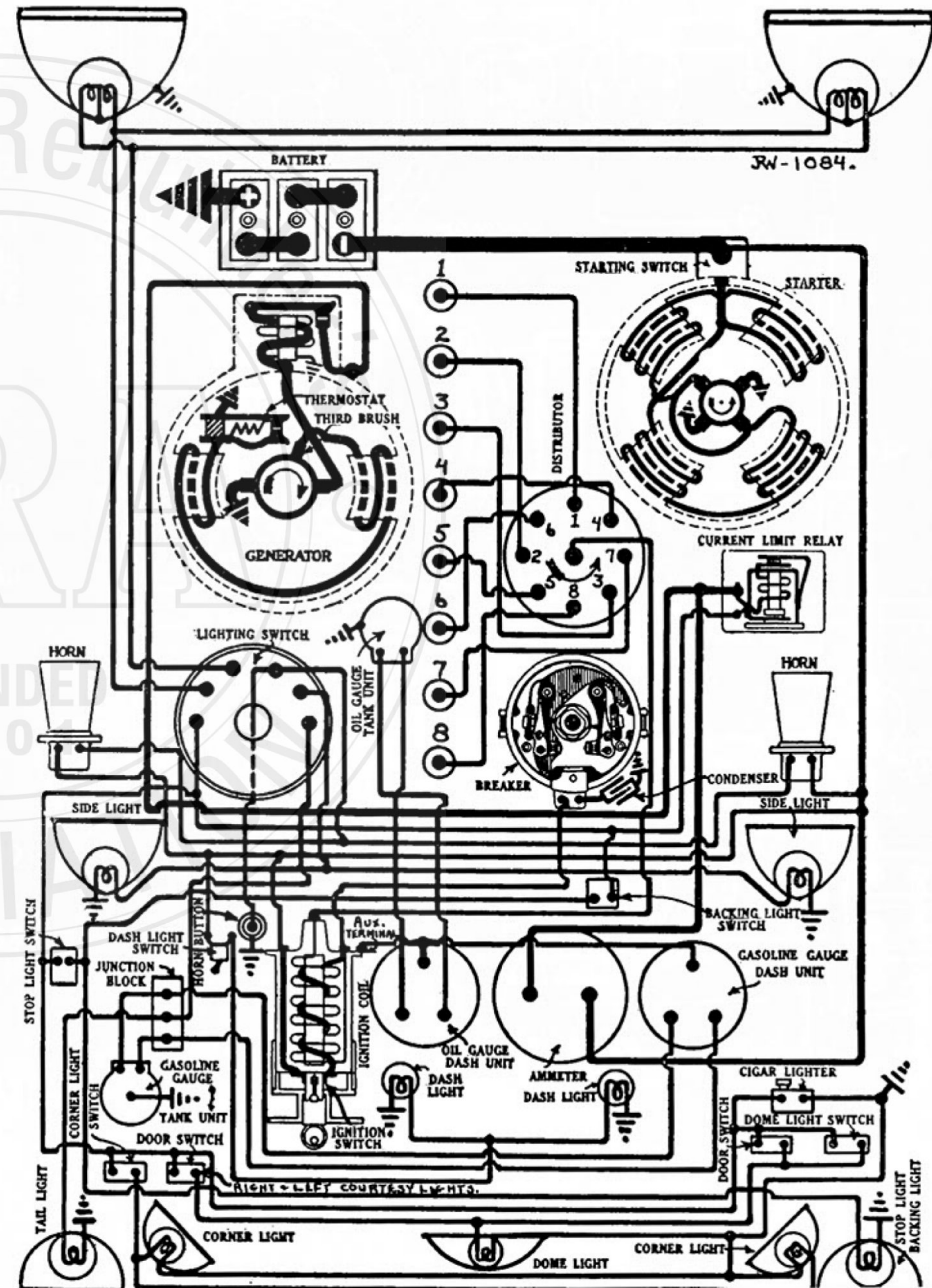
IGNITION:—Coil Model 526-V. Coil is mounted on the back of the instrument board with the ignition switch (which is built in the base of the coil) extending through to the face of the instrument panel. An extra terminal is located on the end of the coil from which the feed for the gasoline and oil gauge is taken. Ignition current is .6-3.0 amperes at 6 volts with engine running and 5 amperes at 6 volts with engine stopped.

Distributor Model 658-W. 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. Resurface contacts when necessary with a fine flat contact file or on a medium hard oilstone. Breaker arm spring tension is 18-21 ounces. Distributor is semi-automatic. Maximum manual advance is 15 degrees (engine). Automatic advance begins at 800 R.P.M. of engine. Maximum automatic advance is 13-17 degrees reached at 3600 R.P.M. Distributor has two sets of contacts on a four sided cam. Contacts separate alternately at intervals of 45 degrees corresponding to the firing interval of 90 degrees on the engine crankshaft. Contacts must be synchronized for correct ignition performance. See Timing.

Mounting:—Distributor is mounted on the cylinder head. To remove distributor, disconnect manual control rod and primary lead and take off distributor head with cables intact. Then remove hold-down screw in advance arm and lift distributor from place.

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

Timing:—Synchronization of Contacts:—To synchronize contacts use special Delco-Remy Tool and follow directions on Page S-31. Contacts can be synchronized without use of tool after distributor has been timed to engine by cranking engine over 90 degrees from firing position of piston No. 1 when piston No. 6 will reach top dead center entering power stroke. If the second set of contacts do not open at this point, loosen the two lock screws on the movable breaker plate and turn the eccentric adjusting screw until the contacts begin to open. Tighten the lock screws and check the contact with the breaker arm on the lobe of the cam. If outside limits of .018-.024 inch, reset at .022 inch and repeat synchronization.



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Timing Distributor to Engine:—Breaker contacts begin to separate when the piston entering power stroke reaches a position 3 teeth on the flywheel before top dead center with the manual spark control in the fully advanced position. To set timing, crank engine over until piston No. 1 enters compression stroke (the engine is hand cranked in the usual way through an opening in the differential case at the front of the engine. The hand crank engages the crankshaft through an idler shaft and spur gear so that the crank should be turned clockwise in the usual way). Fully advance spark control lever. Continue to crank engine over until a point on the flywheel 3 teeth before the top dead center mark '1-8DC' is directly opposite the indicator in the inspection hole in the flywheel case. The crankshaft rotates in the opposite direction from an ordinary engine which reverses the position of the mark on the flywheel. Then loosen advance arm clamp screw and rotate distributor until one set of contacts begin to open. Tighten the clamp screw and make certain that the segment opposite the rotor is connected to the plug in cylinder No. 1.

The proper ignition setting is determined by setting breaker contacts to open at top dead center with the manual spark control fully advanced and then rotating distributor clockwise to advance spark until a slight 'ping' or spark knock is noticed throughout the speed range of the car.

Firing Order:—The firing order is 1-6-2-5-8-3-7-4. No. 1 cylinder nearest the radiator.

Spark Plugs:—Spark plugs are 18MM. Metric. Gaps are .030 inch.

VALVE TIMING:—INLET VALVES:—Head diameter, 1 $\frac{5}{8}$ inches. Stem diameter, .341-.3425 inch. Stem length, 4 $\frac{7}{8}$ inches. Valve lift, 11/32 inch. Tappet clearance, .006 inch (hot). Spring pressure, 45.5 pounds (valve closed). Inlet valves open at top dead center and close 45 degrees after lower dead center. The flywheel is marked '1-8DC' at point of inlet opening. Degrees on the flywheel can be changed into number of teeth before or after dead center by dividing the number of degrees by 3.22.

EXHAUST VALVES:—Head diameter, 1 15/32 inches. Stem diameter, .341-.3425 inch. Stem length, 4 $\frac{7}{8}$ inches. Valve lift, 11/32 inch. Tappet clearance, .008 inch (hot). Spring pressure, 45.5 pounds (valve closed). Exhaust valves open 50 degrees before lower dead center and close 10 degrees after top dead center. Valve stem guides are removable. Valves with oversize stems are made.

STARTER:—Model 724-N. Starter is connected to the engine through reduction gears and a Bendix drive. The direction of rotation is counter-clockwise, viewed from the commutator end. Brush spring tension is 24-28 ounces. Starter switch is Delco-Remy Part No. 821627.

Starter Data

Torque	R.P.M.	Volts	Amperes
0 lb. ft.....	3500.....	5	70
22 "	Lock.....	3	600

Mounting:—Starter is flange mounted at right of engine on rear of flywheel case. To remove starter, disconnect engine ventilator pipe and starter cable and take out three flange mounting cap screws. Then pull starter to the

rear to clear drive and lift from place.

Oiling:—Put 8 or 10 drops of light engine oil in starter oiler every month or each 1000 miles of operation.

GENERATOR:—Model 941-T. The direction of rotation is clockwise, viewed from the commutator end. Generator current regulation is by third brush shunt field and thermostat. Thermostat contacts open at 165° cutting the resistance across the thermostat contacts in series with the shunt field and reducing the output approximately 40%. To adjust generator output, loosen the small round headed screw on the end plate and remove the commutator cover band. Then shift the third brush in a 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 19-21 amperes at 8.5 volts reached at 1450 R.P.M.

Generator Data

Cold Test			Hot Test		
Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
7	7-7.3	750			
19-21.....	8.3-8.5.....	1450	9-12.....	7.35-7.65.....	1800-2000
10-12.....		2500			

Motoring, generator draws 5.5 amperes at 6 volts. Shunt field current is 4-6.1 amperes at 6 volts. Brush spring tension is 14-18 ounces.

Mounting:—Generator is base mounted at left of engine and is driven by accessory shaft from the chain case. To remove generator, disconnect lead and two screws in flexible drive coupling. Then take out four screws in base and lift generator from place.

Oiling:—Put 8 or 10 drops of light engine oil in each of the generator bearing oilers every month or each 1000 miles of operation.

RELAY:—Model 265-F. Relay is mounted on the generator. Relay contacts close at 575 R.P.M. when the generator voltage reaches 6.8-7.3 volts and open with a discharge current of 0-2.5 amperes. Relay contact gap is .015-.025 inch. Air gap is .014-.020 inch with contacts closed.

LIGHTING:—Soreng Manegold Switch Model 5650-A. Switch is mounted at the base of the steering column. 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 light is 6-8 volt, 15 cp. S.C. Mazda 87. Tail light is 6-8 volt, 15 cp. S.C. Mazda 87. Dash and dome lights are 6-8 volt, 3 cp. S.C. Mazda 63. Corner lights are 6-8 volt, 6 cp. S.C. Mazda 81.

CURRENT LIMIT RELAY:—Delco-Remy Part No. 823617. This device is a vibrating circuit breaker mounted on the dash and connected in the lighting circuits to protect them from overload. It begins to vibrate when the current reaches 25-30 amperes and continues limiting the current to 15 amperes. Circuit breaker contact gap is .012-.030 inch. Air gap is .019-.025 inch with contacts closed.