

HUPMOBILE

CENTURY EIGHT MODEL M (1929)

AUTO-LITE GENERATING, STARTING SYSTEM AUTO-LITE IGNITION

BATTERY:—Willard, Type SJRR-4, 6 volt. The positive (+) terminal is grounded. Starting capacity (20 minute rate) is 125 amperes for 20 minutes. Lighting capacity (5 ampere rate) is 5 amperes for 22 hours. Battery is mounted under the left front seat.

IGNITION:—Coil Model IG-4065. Coil is mounted on the dash. Ignition current is 1.5-3 amperes at 6 volts with engine running and 3.4-5 amperes at 6 volts with engine stopped.

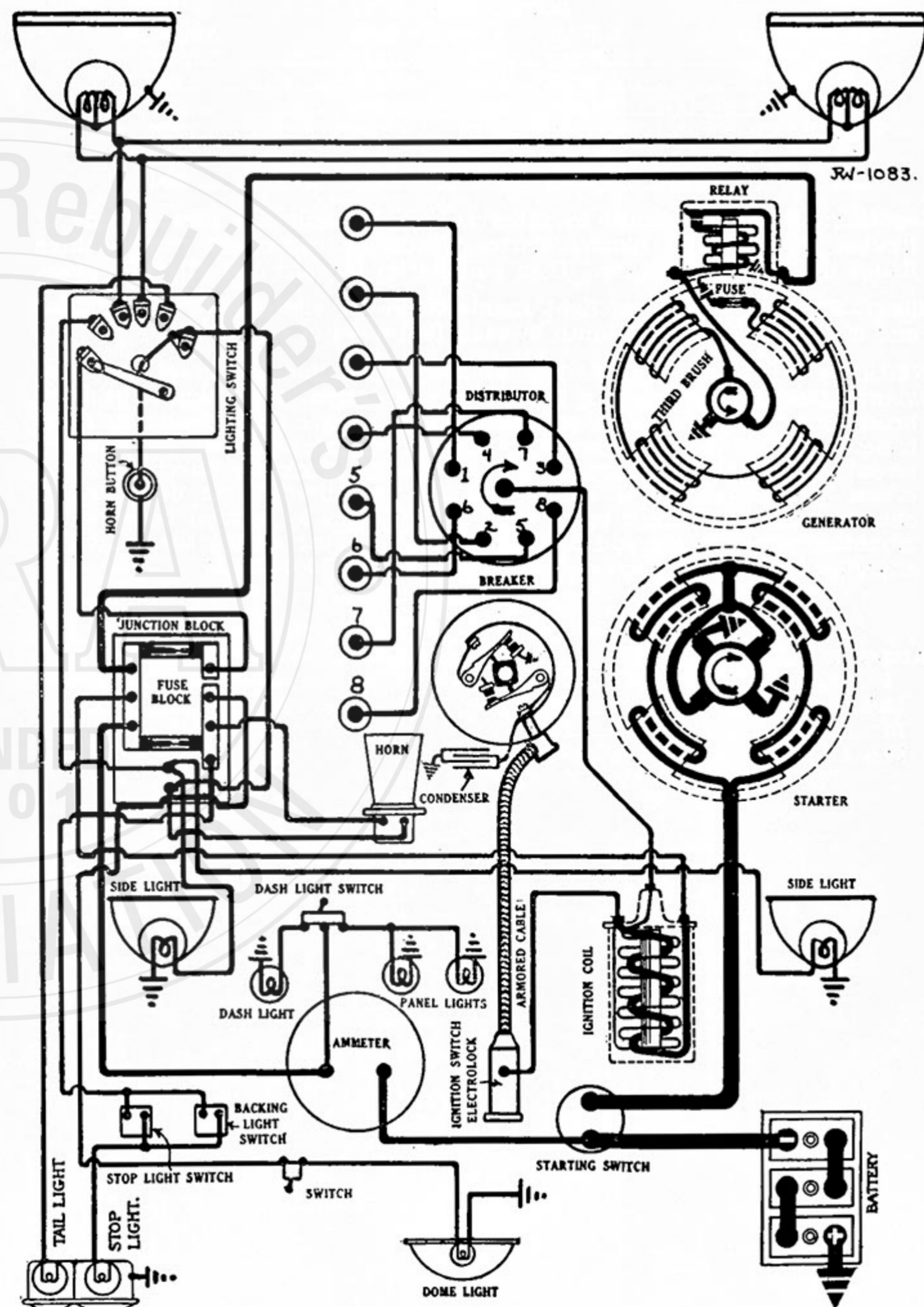
Distributor Model IGH-4002. Breaker contacts separate .018-.020 inch. There are two sets of contacts on a four sided cam. Set contact gap on contacts with breaker arm mounted on base plate by loosening the two lock screws on stationary contact mounting plate and turning eccentric adjusting screw until correct gap is secured with breaker arm on lobe of cam. Set the contact gap on the other contacts with breaker arm mounted on movable plate by loosening the lock nut on the stationary contact mounting stud and turning up the stud to secure the correct gap. Resurface contacts when necessary with a fine flat contact file. Breaker arm spring tension is 16-20 ounces. Distributor is semi-automatic. Maximum manual advance is 38 degrees (engine). Automatic advance begins at 800 R.P.M. of engine. Maximum automatic advance is 16 degrees reached at 3600 R.P.M. The two sets of contacts open alternately at intervals of 45 degrees which corresponds with the firing interval of 90 degrees of the engine crankshaft. Contacts must be synchronized for satisfactory ignition performance. See Timing. The ignition switch is a Type 5-A Electrolock.

Mounting:—Distributor is mounted at right of engine. The Electrolock must be removed with the distributor as a unit whenever the distributor is taken off the car. To remove distributor, disconnect Electrolock at the dash, disconnect manual spark control and remove distributor head with cables intact. Then take out hold-down screw and lift distributor from place.

Oiling:—Put 8 or 10 drops of light engine oil in the oiler on the side of the distributor every two weeks or each 500 miles of operation. Every 1000 miles remove the distributor head and rotor and put a small bit of vaseline on the face of the breaker cam.

Timing:—**Synchronization of Contacts.** To synchronize contacts connect a six volt test lamp across the contacts by connecting one lamp lead to the insulated breaker arm terminal inside the distributor case and grounding the other lamp lead to the distributor housing. The lamp will burn when the contacts open and will go out as the contacts close. Then block open the set of contacts with the breaker arm mounted on the stationary base plate. Turn on the ignition. Turn the distributor shaft until the other set of contacts begin to open and the lamp lights. Note the position of the leading line scratched on the tail of the distributor rotor and clip the special synchronizing tool on the edge of the distributor directly opposite this line. Then remove the insulation from between the breaker contacts and block open the other set. Continue to turn distributor shaft until the other line on the rotor (which is just 45 degrees after the first line) is opposite the synchronizing pointer. If the lamp does not light at this point, indicating that the contacts are just opening, loosen the lock screw on the movable base plate and turn the eccentric adjusting screw until the contacts open. The contacts are then properly synchronized.

Timing Distributor to Engine:—Breaker contacts begin to separate when the piston entering power stroke reaches a position 9 degrees before top dead center with the manual spark control fully advanced. To set timing,



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crank engine over until piston No. 1 enters compression stroke (the up stroke with both valves closed). Fully advance manual spark control. Continue to crank engine until piston reaches firing position. Then loosen advance arm clamp screw and rotate distributor until one set of contacts begins to open. 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 1-4-7-3-8-5-2-6.

Spark Plugs:—Spark plugs are Metric. Gaps are .025 inch.

VALVE TIMING:—Head diameter, 1 15/32 inches (inlet) and 1 11/32 inches (exhaust). Valve lift, 11/32 inch. Tappet clearance, .008 inch (cold).

Timing:—Inlet valves open 4 degrees after top dead center and close 51 degrees after lower dead center. Exhaust valves open 47 degrees before lower dead center and close at top dead center.

STARTER:—Model ML-4139. Starter is connected to the engine through a Bendix drive. The direction of rotation is clockwise, viewed from the commutator end. Brush spring tension is 1 1/4-1 1/2 pounds. Starter cranks the engine at 145 R.P.M. drawing 125 amperes at 5.4 volts.

Starter Data			
Torque	R.P.M.	Volts	Amperes
0 lb. ft.	Free	5.8	70
19 "	Lock	2.5	425

Mounting:—Starter is sleeve mounted at right of engine on rear of flywheel case. To remove starter, take up floor boards in front compartment, disconnect cable and remove large pilot mounting screw directly above starter sleeve. Then pull starter to the rear to clear Bendix and lift from place.

Oiling:—Starters manufactured after Feb. 1929, are equipped with oilers for commutator end and intermediate bearings. Put 4 or 5 drops of light oil in each oiler every 1000 miles.

GENERATOR:—Model GAG-4106. The direction of rotation is counter-clockwise, viewed from the commutator end. Generator current regulation is by third brush shunt field. To adjust generator output, remove the commutator cover band and shift the third brush by tapping on the brush mounting stud with a screwdriver. Shift the third brush in a counter-clockwise direction to increase the charging rate and in the opposite direction to de-

crease the charging rate. The brush is held in position by friction between the mounting stud and the end plate. With standard car setting the maximum charging rate is 17 amperes (cold) at 8 volts reached at 1250 R.P.M.

Generator Data		
Amperes	Volts	R.P.M.
0	6.5	570
5	7.0	730
10	7.3	900
16	8.0	1400

Motoring, generator draws 5-5.5 amperes at 6 volts. Shunt field current is 4.3 amperes at 6 volts. Brush spring tension is 1 1/4-1 1/2 pounds.

Mounting:—Generator is flange mounted at right of engine on rear of timing chain case. To remove generator, take off oil filler and cover plate on front of chain case. Disconnect drive shaft at rear of generator. Back off chain adjustment set screw and take out three flange mounting cap screws. Then pull generator to the rear and tie up chain to prevent it slipping on camshaft sprocket.

Adjustment of Timing Chain:—Timing chain is adjusted by shifting generator. To take up timing chain, loosen the flange mounting cap screws and turn up adjustment set screw until the chain begins to hum with the engine running. Then back off adjustment screw until chain runs noiselessly and tighten mounting screws.

Oiling:—Put 4 or 5 drops of light engine oil in each of the generator oilers every two weeks or each 500 miles of operation.

RELAY:—Model CB-4012. Relay is mounted on the generator. Relay closes at 550 R.P.M. when the generator voltage reaches 7-7.5 volts and opens with a discharge current of .5-2.5 amperes. Charging current at closing of contacts is approximately 2 amperes. Relay contact gap is .025-.035 inch. Air gap is .010-.030 inch with contacts closed.

LIGHTING:—Briggs and Stratton Switch. Lighting switch is mounted at base of steering column. Double filament headlights using the second 21 cp. filament instead of dimmers are standard equipment. Headlights are 6-8 volt, 21-21 cp. D.C. Mazda 1110. Stop and backing light is 6-8 volt, 15 cp. S.C. Mazda 87. Side, dash, dome and tail lights are each 6-8 volt, 3 cp. S.C. Mazda 63.

FUSES:—Generator field fuse is 5 ampere capacity. Lighting fuses mounted on junction block on dash are 15 ampere capacity.