

HUPMOBILE

MODEL A (1925-26)

AUTO-LITE GENERATING, STARTING AND LIGHTING SYSTEM AUTO-LITE IGNITION

BATTERY.—Willard, Type CRR-15. 6 volt, 105 ampere hour. Starting capacity is 125 amperes for 20 minutes. Lighting capacity is 5 amperes for 20 hours. The positive (+) terminal is grounded.

IGNITION.—Coil Model IG-4061 and IG-4065. Distributor Model IG-4117-A. Breaker contacts separate .020-.024 inch. Resurface contacts with a fine flat jeweler's file or on a medium hard oilstone. Distributor is of the semi-automatic type. Manual advance is 30°. Automatic advance begins at 1500 R.P.M. and reaches a maximum of 19-21° at 3600 R.P.M.

Oiling.—Put 4 or 5 drops of light engine oil in the oiler on the side of the distributor housing every week or each 250 miles. Put a small bit of vaseline on the face of the breaker cam under the fiber bumper of the contact arm every month.

Timing.—Breaker contacts begin to separate when Piston No. 1 on compression stroke (with both valves closed) reaches top dead center with the manual spark control lever advanced one-half or midway between the fully retarded and fully advanced position.

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

Spark Plugs.—Spark plug diameters are $\frac{7}{8}$ in. Gaps are .025 inch.

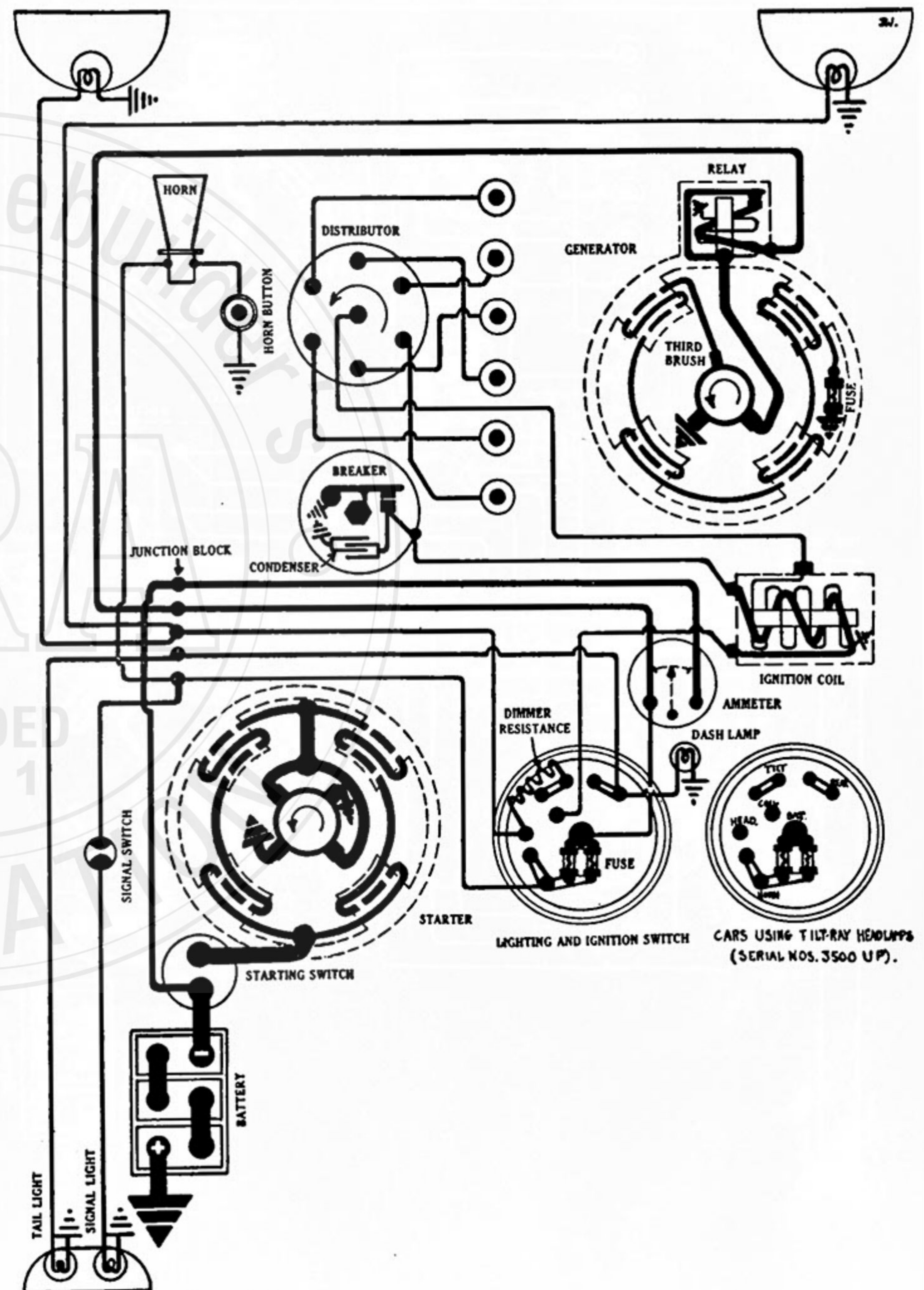
STARTER.—Model MN-4109. Starter is connected to the engine through a Bendix drive. The direction of rotation is counter-clockwise, looking at the commutator end. Starter cranks the engine at 160 R.P.M., taking 130 amperes at 4.8 volts. Starter brush tension should be $1\frac{1}{4}$ - $1\frac{1}{2}$ pounds each. Starter switch is Model SW-4002.

Starter Data			
Torque	R.P.M.	Volts	Amperes
0 lb. ft.	Free	5	45 (Without Bendix)
0 "	Free	5	50 (With Bendix)
0.5 "	2800	5.5	100
2.4 "	1450	5	200
4.8 "	950	4.5	300
7.2 "	650	4	400
13.6 "	Lock	3	620

Mounting.—Starter is flange mounted at left of engine. To remove starter, remove three flange mounting screws and slide starter forward from position.

Oiling.—Put 5 to 10 drops of light engine oil in the oiler on the drive end of the starter every month or each 1000 miles if the car is driven more than 1000 miles in a month. The commutator end bearing is oilless and requires no attention.

GENERATOR.—Model GJ-4112. The direction of rotation is counter-clockwise, looking at the commutator end. Generator current regulation is by the third brush system. To adjust the generator output, remove the commutator cover band and shift the third brush mounting plate by tapping with a screwdriver. Shifting the third brush in a counter-clockwise direction increases the charging rate and in the opposite direction decreases the charging rate. The mounting plate is held in any desired position by friction between the holder stud and the generator end plate caused by the tempered steel spring in the end of the plate. Maximum charging rate is 16 amperes, reached at 1600 R.P.M.



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Generator Data

Cold Test			Hot Test		
Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
0.....	6.5	600	0.....	6.5	600
2.....	6.6	675	2.....	7.2	750
5.....	7	780	5.....	7.4	900
10.....	7.3	940	10.....	7.7	1200
14.....	7.7	1300	12.5		1600
16.....	8	1600	11.5		2400
15.....		2400			

Motoring freely, generator draws 5 amperes at 6 volts. Shunt field test current is 2 amperes at 6 volts. Generator brush spring tension should be $1\frac{1}{4}$ - $1\frac{1}{2}$ pounds each.

Mounting.—Generator is flange mounted at right of engine. Generator drive is by

timing chain at forward end of engine.

Oiling.—Put 4 or 5 drops of light engine oil in the oiler on the commutator end of the generator every month or each 1000 miles if the car is driven more than 1000 miles in a month. The drive end bearing is oiled by splash from the gear case.

RELAY.—Model CB-4009. Relay is mounted on top of the generator. Relay closes when the voltage of the generator reaches 6.5-7 volts and opens with a discharge current of .5-2.5 amperes. Relay contacts separate .025-.035 inch. Air gap between relay armature and coil core is .010-.030 inch, contacts closed.

LIGHTING.—Head and stop lamps are each 6-8 volt, 21 cp. S. C. Dash and tail lamps are each 6-8 volt, 2 cp. S. C.

FUSES.—Generator field fuse is 5 amperes.

