

WILLYS-KNIGHT

MODEL 66 (1927) AUTO-LITE GENERATING, STARTING AND LIGHTING SYSTEM AUTO-LITE IGNITION

BATTERY:—U.S.L. Type 3-HVX-8X, 6 volt. Starting capacity is 170 amperes for 20 minutes. Lighting capacity is 5 amperes for 33.2 hours. The negative (—) terminal is grounded.

IGNITION:—Coil Model IG-4065. Distributor Model IG-4107 superseded by Model IG-4131. Breaker contacts separate .018-.020 inch. They are made of tungsten. Resurface contacts with a fine, flat contact file or on a medium hard oilstone. Ignition current is 1-3 amperes with engine running and 3.4-5 amperes with engine stopped. Distributor is semi-automatic. Manual advance is 30° (Engine). Automatic advance begins at 200 R.P.M. of the engine and reaches a maximum of 30° (Engine) at 3100 R.P.M. of the engine.

Oiling:—Fill the grease cup on the side of the distributor shaft with pure vaseline and turn down one turn every two weeks or each 500 miles if the car is driven more than 500 miles in two weeks.

Timing:—Breaker contacts begin to separate when the piston entering power stroke reaches a position 8° before top dead center as measured on the flywheel with the spark control lever in the fully advanced position.

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

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

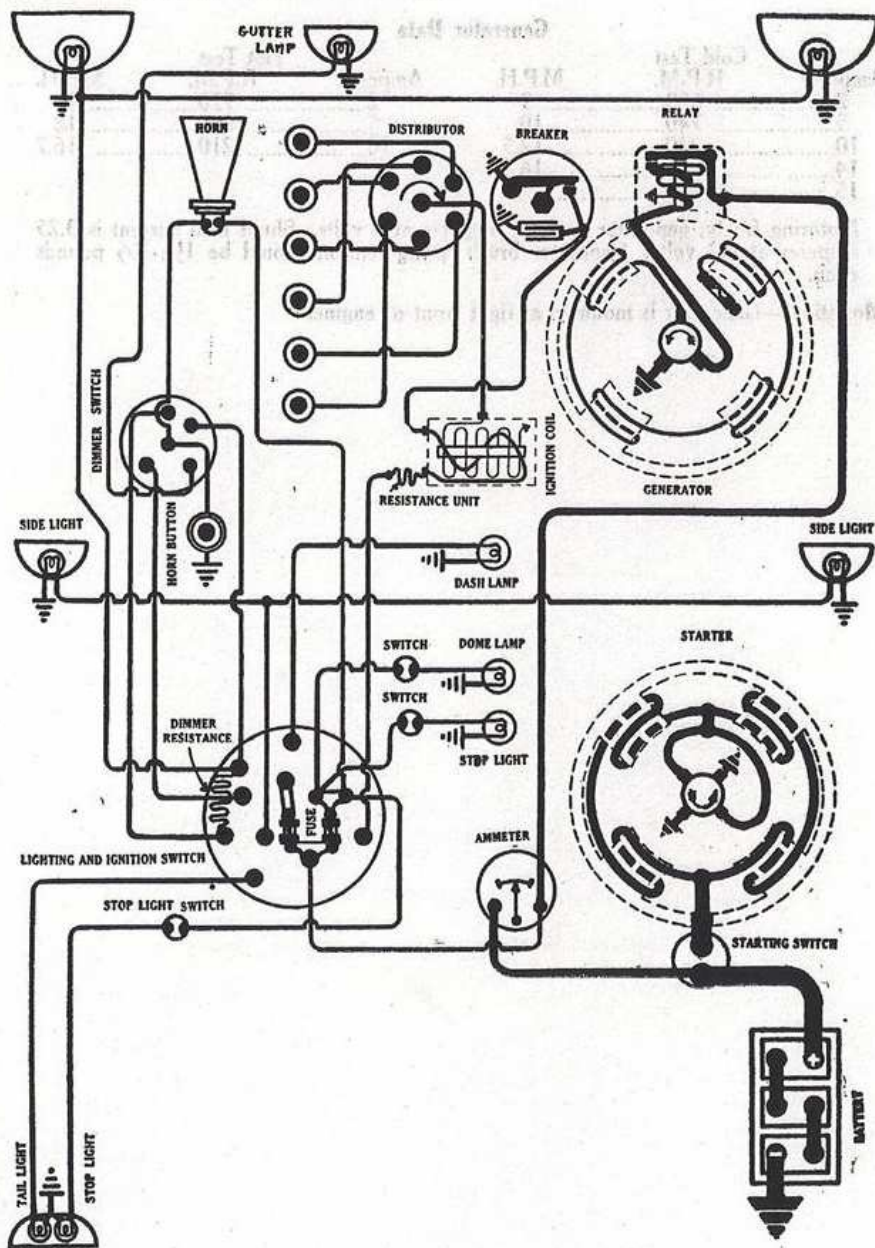
STARTER:—Model ML-4105. Starter is connected to the engine through a Bendix drive. The direction of rotation is counter-clockwise, looking at the commutator end. Starter cranks the engine at 120 R.P.M. drawing 150 amperes at 5.35 volts. Starter brush tension is 1¼-1½ pounds each. Starter switch is Model SW-4001.

Starter Data

Torque	R.P.M.	Volts	Amperes
0 lb. ft.	Free	5.5	45 (Without Bendix)
0 "	Free	5.5	50 (With Bendix)
1.1 "	1940	5.5	100
4.2 "	1050	5.0	200
7.8 "	650	4.5	300
11.4 "	360	4.0	400
16.0 "	Lock	3.0	560

Oiling:—Put 5 to 10 drops of light engine oil in each of the starter bearing oilers every month or each 1000 miles if the car is driven more than 1000 miles in a month.

GENERATOR:—Model GJA-4109 superseded by Model GRE-4207. 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 bracket by tapping on the third brush mounting stud 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 third brush is held in any desired position by friction between the third brush mounting stud and the generator end plate. The charging rate with maximum third brush setting is 17 amperes at 8 volts on the Model GJA-4109 generator and 18.4 amperes at 7.8 volts reached at 1200 R.P.M. on the Model GRE-4207 generator.



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AUTO-LITE GENERATING, STARTING AND LIGHTING SYSTEM

AUTO-LITE IGNITION

Generator Data

Model GJA-4109 (Car Setting)

Cold Test			Hot Test		
Amperes	R.P.M.	M.P.H.	Amperes	R.P.M.	M.P.H.
2.....	700.....	10.....	2.....	800.....	11.6.....
5.....	800.....	11.6.....	5.....	900.....	13.....
10.....	1000.....	14.5.....	10.....	1250.....	18.....
14.....	1450.....	18.....	13.5.....	1600.....	23.....

Generator Data

Model GRE-4207

Cold Test			Hot Test		
Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
0.....	6.5.....	400.....	0.....	6.6.....	475.....
6.....	7.0.....	520.....	6.....	7.2.....	650.....
10.....	7.2.....	620.....	9.5.....	7.5.....	800.....
14.....	7.5.....	750.....	13.....	7.8.....	1050.....
17.....	7.8.....	925.....	14.....	8.0.....	1350.....
18.4.....	7.8.....	1200.....	13.....	7.8.....	1800.....
12.6.....	7.4.....	2400.....	10.5.....	7.6.....	2400.....
10.2.....	7.3.....	3200.....			

Shuntfield test current is 2.2 amperes at 6.2 volts. Motoring freely, generator draws 5 amperes at 6 volts. Generator brush tension should be 1/4-1/2 pounds each.

Oiling:—Put 4 or 5 drops of light engine oil in each of the generator bearing oilers every two weeks or each 500 miles if the car is driven more than 500 miles in two weeks.

RELAY:—Model CB-4007. Relay is mounted on top of the generator. Relay closes when the voltage of the generator reaches 7-7.5 volts and opens with a discharge current of .5-2.5 amperes. Contacts separate .025-.035 inch. Air gap between relay armature and coil core is .010-.030 inch, contacts closed.

LIGHTING:—Briggs & Stratton Switch Model 10482. Head, stop and gutter lamps are each 6-8 volt, 21 cp. S.C. Side, tail and dash lamps are each 6-8 volt, 3 cp. S.C. Dome lamp is 6-8 volt, 3 cp. S.C.

FUSES:—Generator field fuse is 5 amperes. Lighting fuses are 20 amperes.