

# WILLYS-KNIGHT

MODEL 70 (1926)

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

**BATTERY.**—U. S. L., Type 3-HVX-7X. 6 volt. Starting capacity is 148.5 amperes for 20 minutes. Lighting capacity is 5 amperes for 28.4 hours. The negative (—) terminal is grounded.

**IGNITION.**—Coil Model IG-4065. Distributor Model IG-4107-B. Breaker contacts separate .020-.024 inch. Resurface contacts with a fine, flat tungsten 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 20°. Automatic advance begins at 600 R.P.M. and reaches a maximum of 20° at 2400 R.P.M. Total advance is 40° measured on engine flywheel.

**Mounting.**—Distributor is mounted at right front of engine. To remove, disconnect manual advance rod and remove two mounting screws. Then lift distributor from place.

**Oiling.**—Fill the grease cup on the side of the distributor shaft with pure vaseline and turn down one turn every week or each 250 miles if the car is driven more than 250 miles in a week.

**Timing.**—Breaker contacts begin to separate when the piston entering power stroke reaches a position 8° or 51/64 inch before top dead center as measured on the flywheel with the spark control lever in the fully advanced position. An allowable variation of 1° or 1/8 inch is permitted. With timing correctly set, piston will be .026 inch before top dead center.

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

**Spark Plugs.**—Spark plug diameters are 7/8 inch. Gaps are .025 inch.

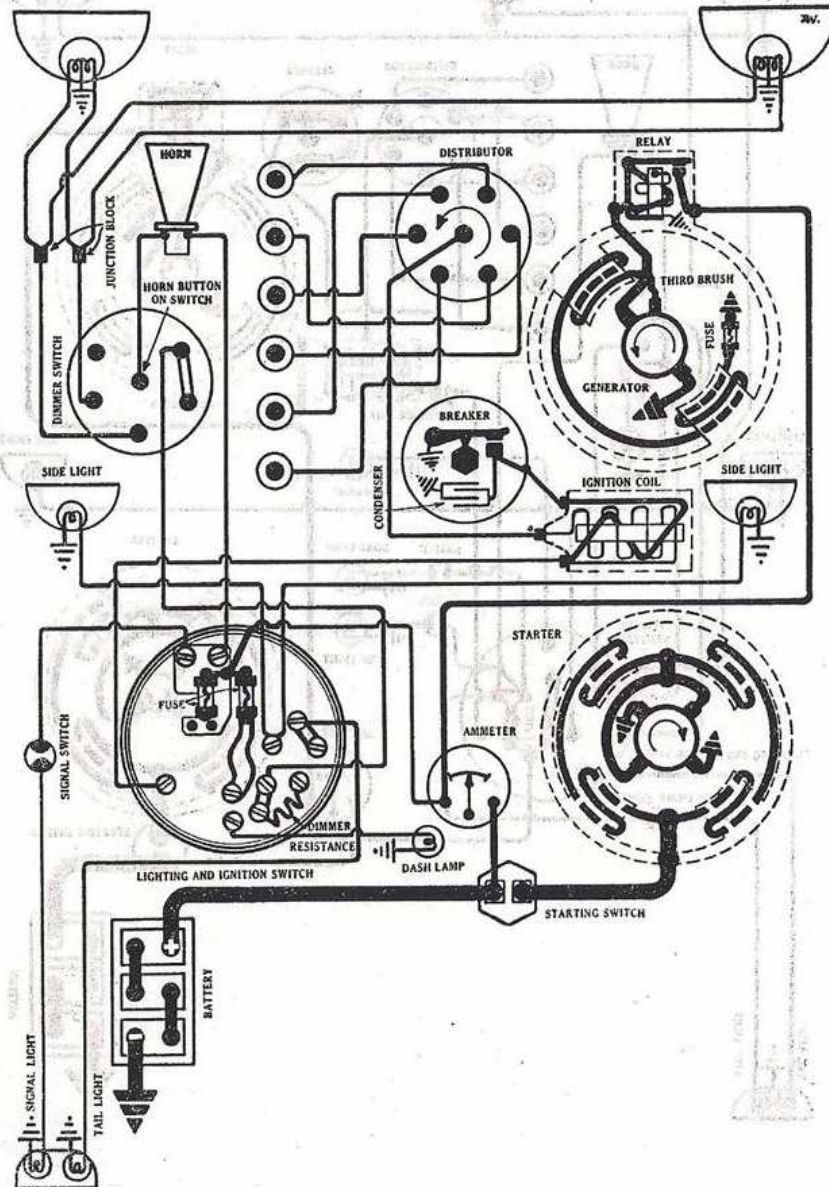
**STARTER.**—Model ML-4106. Starter is connected to the engine through a Bendix drive. The direction of rotation is clockwise, looking at the commutator end. Starter cranks the engine at 140 R.P.M., taking 180 amperes at 5.2 volts. Starter brush tension is 1 1/4-1 1/2 pounds each.

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
4.3 "	1050	5	200
7.8 "	650	4.5	300
11.4 "	360	4	400
16 "	Lock	3	560

**Mounting.**—Starter is mounted at right of transmission at rear of flywheel housing by a barrel mounting. To remove starter, remove large pilot mounting screw and slide starter from place.

**Oiling.**—Put 7 or 8 drops of light engine oil in the oiler on the drive end of the starter every two weeks or each 500 miles if the car is driven more than 500 miles in two weeks. The commutator end bearing requires no attention.

**GENERATOR.**—Model GY-4103. The direction of rotation is counter-clockwise, looking at the commutator end. Generator current regulation is by the third brush system. To adjust generator output, remove the commutator cover band and shift third brush mounting bracket by tapping 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 mounting bracket is held in any desired position by the friction between the mounting stud and the generator end plate. Maximum charging rate is 15.5 amperes at 8 volts.



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## Generator Data

Cold Test			Hot Test		
Amperes	R.P.M.	M.P.H.	Amperes	R.P.M.	M.P.H.
2.....	650.....	9.....	2.....	720.....	10.....
5.....	740.....	10.....	5.....	870.....	12.....
10.....	930.....	12.5.....	10.....	1210.....	16.7.....
14.....	1200.....	16.5.....			
15.5.....					

Motoring freely, generator draws 5 amperes at 6 volts. Shunt field current is 3.25 amperes at 6.2 volts. Generator brush spring tension should be 1/4-1/2 pounds each.

**Mounting.**—Generator is mounted at right front of engine.

**Oiling.**—Put 7 or 8 drops of light engine oil in each of the generator bearing oilers every week or each 250 miles if the car is driven more than 250 miles in a week.

**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 current discharge of .5-2.5 amperes. Relay contacts separate .025-.035 inch. Air gap between relay armature and coil core .010-.030 inch, contacts closed.

**LIGHTING.**—**Clum Switch**. Head lamps are 6-8 volt, double filament, 21 cp. each D. C. Stop lamp is 6-8 volt, 21 cp. S. C. Dash, side and tail lamps are each 6-8 volt, 3 cp. S. C.

**FUSES.**—Generator field fuse is 5 amperes. Lighting fuse on switch is 20 amperes.

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