

# Willys-Overland

Model 89-6 (1918)

## Auto-Lite Starting and Lighting System Connecticut Ignition

**Battery.**—Battery is 6 volt, 80 ampere-hour. The negative (—) terminal is grounded at the starting motor.

**Ignition.**—Breaker contacts should separate .016 inch to .018 inch. They are made of tungsten. They will operate properly even though quite rough. Should they become badly worn, affecting the ignition, the inner breaker mechanism should be renewed as directed on Page 50. In an emergency, contacts may be resurfaced enough to give service for 300 or 400 miles by drawing a piece of fine emery cloth between them.

**Timing.**—Contacts should begin to separate when the mark "1-6 D-C" on the flywheel is  $1\frac{1}{8}$  inches past the indicator, spark control lever and breaker assembly in the fully retarded position.

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

**Spark Plug Gaps.**—Spark plug gaps should be about .023 inch.

**Ignition Thermostat.**—There is a thermostat in the ignition switch case to open the circuit should switch be left "On," engine idle, contacts closed. This device is treated on Page 41.

**Oiling.**—Refill the cup under the breaker head with pure vaseline and turn down every month. If car is driven more than 1000 miles in a month, this must be done every 1000 miles. Do not put grease or oil in the cup.

**Starter.**—Starter is connected to the engine through a Bendix drive. It should crank the engine at 100 to 125 R. P. M., taking about 250 amperes. Cold engine, tight bearings, heavy oil or other obstructions will cause a greater current flow and reduce the speed.

**Oiling.**—Clean and repack starter bearings with soft cup grease every six months.

**Generator.**—Generator current regulation is by reverse series field. Relay should close at 8-10 M. P. H., or 300-380 R. P. M., of generator armature. Charging current should be .6 to 1.5 amperes at closing and discharge current 0 to 1 ampere at opening.

Amperes	GENERATOR DATA, MODEL GA	R. P. M.
5	.....	550-560
10	.....	980-1120
12.5	.....	1365-1570
15	.....	1850-2400
16-18	.....	3000-3750

A variation of 1.5 amperes from these rates is allowable. Output may be varied slightly by adjusting brush pressure on commutator. The pressure should be 1 to  $1\frac{1}{4}$  pounds. If operated freely as a motor, armature should revolve at 200 R. P. M., taking 2 amperes. Much higher speed indicates damp, grounded or short circuited field coils. Greater current or lower speed indicates tight bearings or damp, grounded or short circuited armature windings or commutator. Periodic swinging of ammeter needle indicates grounded or short circuited armature coils or commutator bars. Shunt field should take about 1.4 amperes.

**Oiling.**—Put 5 or 6 drops of light engine oil in each of the generator oilers every two weeks. If car is driven more than 500 miles in two weeks, the oiling must be done every 500 miles.

**Lamps.**—Head lamps are 6-7 volts, 16 cp. Dash and tail lamps are in series. They are each 3-3.5 volts, 2 cp.

**Fuses.**—Fuses are 20 ampere.

