

Models 80, 81 and 82 (1915)
Auto-Light Starting and Lighting System
Dixie Magneto Ignition

Battery.—Battery is 6 volt, 100 ampere-hour. The negative (—) terminal is grounded at the starting motor.

Ignition.—Breaker contacts should open exactly .020 inch. When necessary, resurface contacts with a fine flat jeweler's file, or a strip of worn No. 00 sandpaper.

Spark Plug Gaps.—The spark plug gap must be the same (.020 inch). It is very important that these distances be exact, as this car is especially sensitive to improper gaps.

Magneto is treated on Page 189. Starting is aided by making the ignition system duplex. See Page 51.

Timing.—Contacts should begin to separate when the top dead center mark, "U.P. 1 and 4" or "U. P. 1 and 6," is $1\frac{1}{4}$ inches past the indicator, spark control lever and breaker assembly in fully retarded position.

Firing Order.—The firing order of the four cylinder cars is 1, 3, 4, 2. The firing order of the six cylinder cars is 1, 5, 3, 6, 2, 4.

Oiling.—Fill magneto oil cups every month. At the same time put a drop of light machine oil on the breaker contact lever bearing.

Starter.—The starter is connected to the engine by a pinion shifted by the operator on Models 80 and 81. Model 82 is equipped with the Bendix drive. On Models 80 and 81 there is a device mounted on top of the gear housing, to prevent the gears being accidentally meshed when the engine is running, or the starter being used when the lighting switch is locked. This device is shown on next page. When the "Start" button in the lighting switch is pressed, the current flowing through the solenoid produces an electro-magnet, which draws up the iron plunger permitting the depressing of the starting switch on the floor of the car, which in turn meshes the pinion with the flywheel gear and closes the switch contacts. When the "Start" button in the lighting switch is released, the iron plunger is allowed to drop down, locking the main starting switch in the off position. The brown wire coming out of the switch leads to the solenoid. A ground in this wire will cause the solenoid to fail to release the switch.

On Model 82 cars, equipped with the Bendix drive, there is a similar device to lock the starting switch "Off." It operates the same as the one described above. The switch will not operate if the "Start" button is not pressed.

Care.—The rear motor bearing is packed with grease. This grease should be renewed every season. Use soft cup grease in the cup at the gear end. Tighten this cup a turn every week. Do not lubricate the Bendix drive. Keep spiral clean with gasoline. The manually operated, sliding gear, and the flywheel gear on this type, should be cleaned with kerosene and lubricated with a mixture of graphite and oil every month.

Brushes.—Use only the special copper-carbon composition brushes as furnished by the manufacturers. Ordinary carbon brushes will cause trouble.

Generator.—Generator current regulation is by reverse series winding. The diagram shown below applies to the Model GC generator supplied on the Models 80 and 81 cars. The Model GA generator supplied on Model 82 cars does not have the lower field coils.

Output.—The normal generator output at 1800-2000 R.P.M., or about 18 miles per hour car speed, is 14 amperes. Variation in the output can be accomplished by adjusting brush tension. Before changing tension of brushes see that the commutator is clean and the connections are intact.

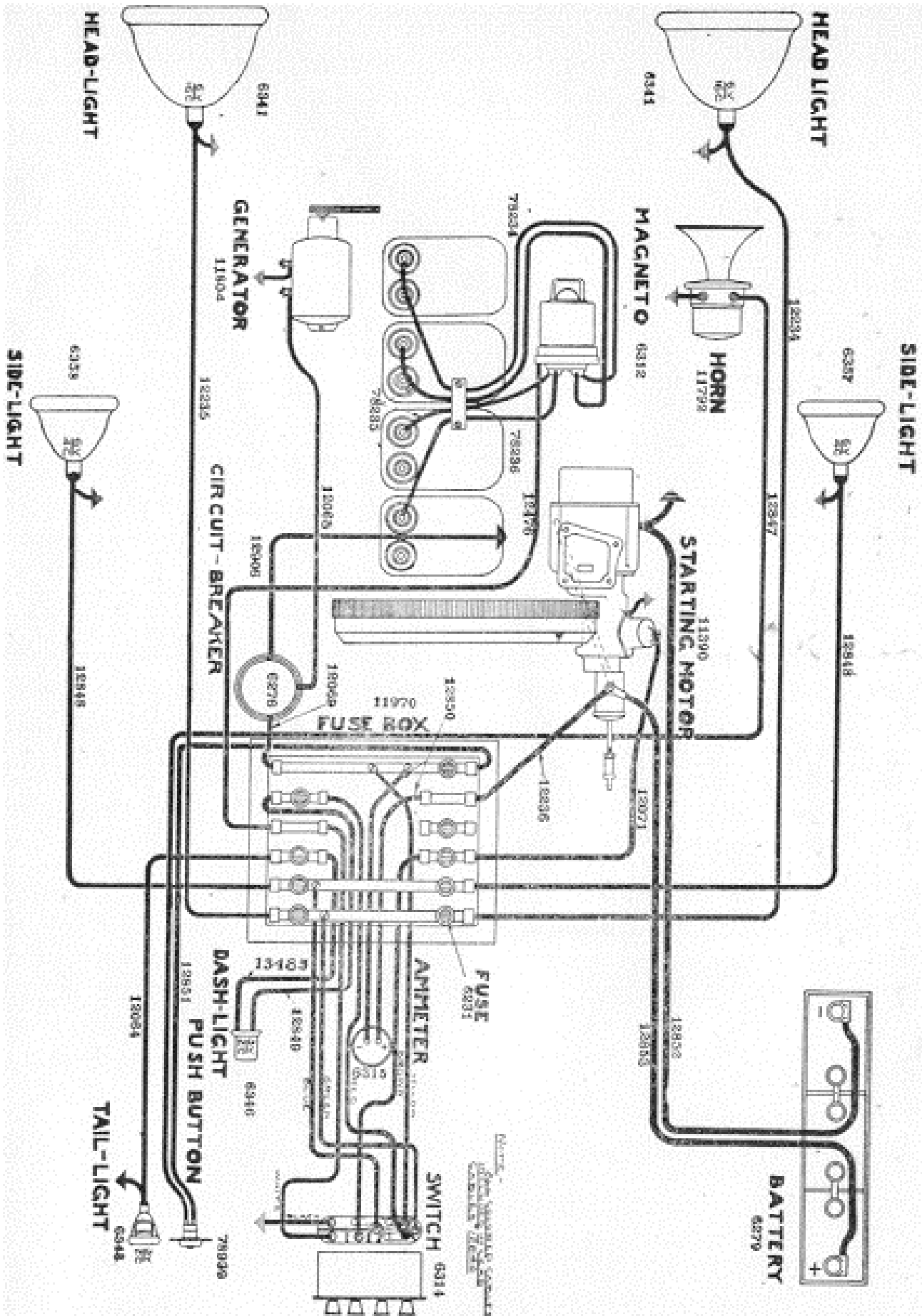
The shunt winding is grounded (through the series winding) at the negative (—) generator terminal.

Tests.—To test shunt field with generator in the car, raise brushes and insert a piece of fiber, dry wood or heavy cardboard between brushes and commutator. Then close relay by touching the contact lever. The ammeter should indicate one ampere. To test armature, remove the driving chain to allow generator to run free as a motor, and then close relay contacts. The generator on Models 80 and 81 should run at 650 to 750 R. P. M., and take 3 to $3\frac{1}{2}$ amperes if armature is O. K. The generator on Model 82 should run at 275 R. P. M., and take 2 to $2\frac{1}{2}$ amperes.

Relay should close at 8-10 and open at 6-7 miles per hour. If car is operated with relay removed or out of order, the generator terminals must be connected. Service conditions may cause the relay contacts to ground on the metal cover. In such event the cover must be removed and insulated. Clean contacts by drawing a piece of soft paper between them. The maximum charging rate should be 10-12 amperes.

Oiling.—Ball bearings are packed with grease. Put one drop of light engine oil in each of the generator oilers every two weeks to keep grease soft. If the car is driven more than 500 miles in two weeks, the oiling must be done every 500 miles.

Lamps.—Head lamps are 6-8 volts, 15 cp. Dash and tail lamps are in series. They are each 3-4 volts, 2 cp. Other lamps are 6-8 volts, 4 cp.



Sectional view of Starting Switch and Gear Release. Model 80 and 81

Solenoid-operated gear latch

