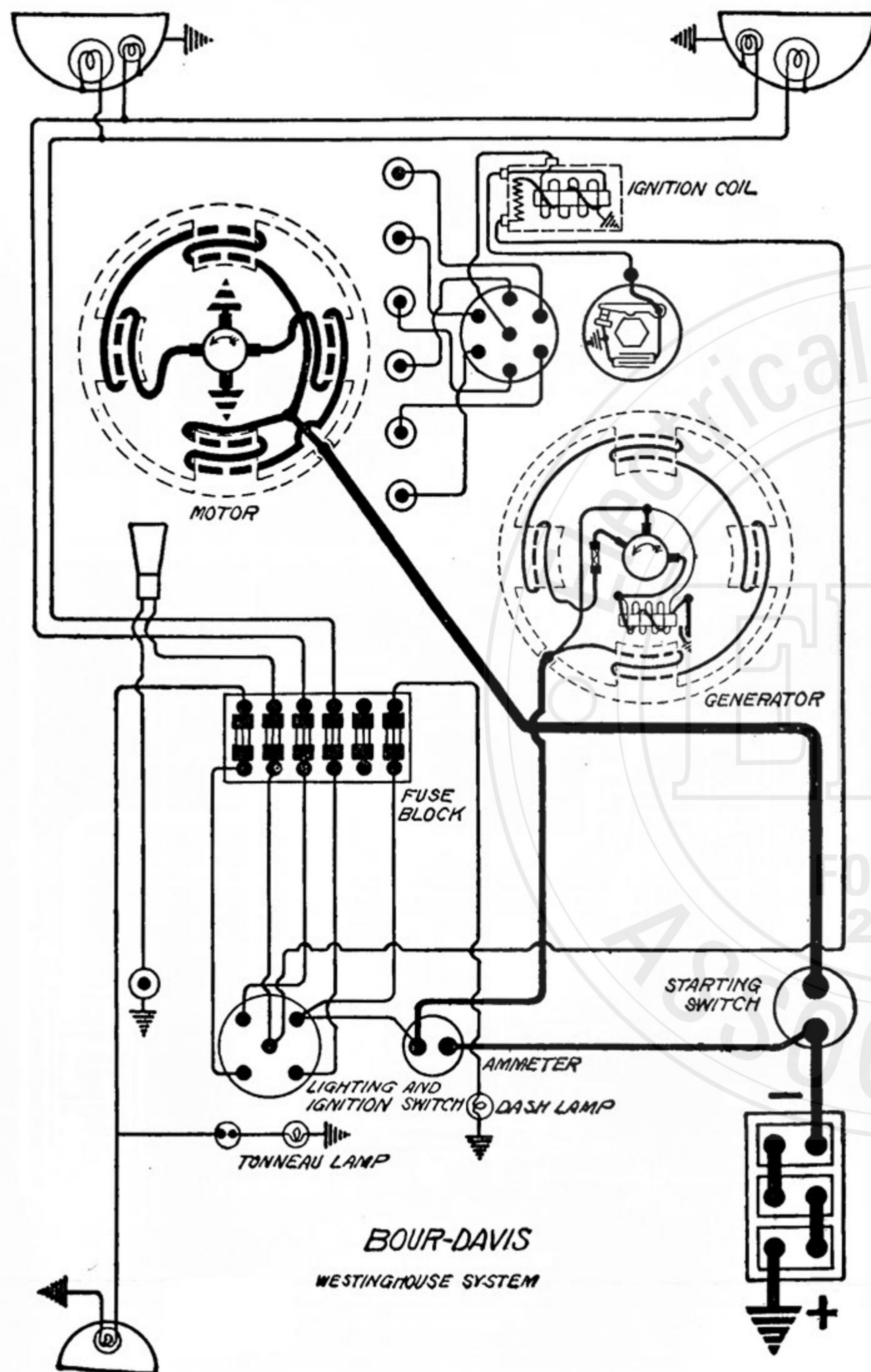




BOUR-DAVIS

MODEL 20 (1920) AND 21 (1921-22)

WESTINGHOUSE GENERATING, STARTING AND LIGHTING SYSTEM

WESTINGHOUSE IGNITION

BATTERY:—Willard, (20) Type SJWN-4, 6 volt, 102.8 ampere hour, (21) Type SJRN-4, 6 volt 118 ampere hour. The positive (+) terminal is grounded.

IGNITION:—Westinghouse, Type SC. Breaker contacts separate .012 to .016 inch. They are made of tungsten. When the condition of the contacts affects the ignition, remove and resurface with fine emery cloth or against the flat side of an emery wheel, finishing on a hard oil stone. The bumper on the contact spring is $\frac{1}{8}$ inch off center from the line through the centers of the shaft and terminal screw, this offset being opposite to the direction of rotation of the cam. The above adjustment is made by bending the solid arm at the terminal block. A pull of 20 to 25 ounces, applied to the movable contact, is required to separate the contacts .020 inch. The spring pressure is adjusted by bending the solid arm at the point of contact with the contact spring. Resistance of the primary winding of the ignition coil is 1 ohm. The resistance of the ballast resistor is .4 ohm. Resistance of the secondary winding is 3700-4700 ohms.

OILING:—Put 4 or 5 drops of light engine oil in the oiler at the side of the breaker box every two weeks. If the car is driven more than 500 miles in two weeks, the oiling must be done every 500 miles.

TIMING:—Breaker contacts begin to separate when the top dead center mark on the flywheel is $\frac{1}{2}$ inch 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 are .023 to .027 inch.

STARTER:—Frame 711. Starter is connected to engine through a Bendix drive. Torque at 1250 R.P.M. is 2.5 pound-feet. Lock torque is 16 pound-feet, current 525 amperes. The brush tension is $2\frac{1}{2}$ to 3 pounds.

OILING:—Refill starter oil wells with light engine oil every month.

GENERATOR:—Frame No. 760. Generator current regulation is by third brush system. Current output is varied by adjustment of third brush setting. Set the third brush so that at 1100-1500 R.P.M. the maximum current output is 15 to 17 amperes, at $7\frac{1}{2}$ volts. The cold test readings are obtained with the normal setting of third brush, and a generator temperature under 35°C . (95°F .). The hot test readings are obtained after the generator has been operated one hour at 1800 R.P.M., charging a half-charged battery or its equivalent.

Cold Test			Generator Data			Hot Test		
R.P.M.	Generator Output Amperes	Generator Voltage	R.P.M.	Generator Output Amperes	Generator Voltage	R.P.M.	Generator Output Amperes	Generator Voltage
500	0	6.5	1250	12-14	7.5	1250	12-14	7.5
750	8	6.5	2500	7-11	6.5-7.5	2500	7-11	6.5-7.5
1250	15-17	7.5						
2500	7-11	6.5-7.5						

Field current is 2.8 to 3.25 amperes, 6 volts. Field resistance is 1.9 to 2.25 ohms at 25°C . (77°F .).

Field Test, Generator Operating

Cold Test			
R.P.M.	Generator Output Amperes	Generator Voltage	Field Current
1250	15-17	7.5	1.5-2.4
Hot Test			
R.P.M.	Generator Output Amperes	Generator Voltage	Field Current
1250	12-15	7.5	1.5-2.2

Operating freely as a motor, current flow is 3.5 to 5 amperes, 6 to 6.6 volts.

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

RELAY:—Relay closes at 8-10 miles per hour or 500-550 R.P.M. of armature, and opens at 6-8 miles per hour, or 450-500 R.P.M. of armature. Charging current is 1 to 2 amperes at closing, and the discharge current 0 to 2 amperes at opening of relay. Air gap between relay armature (moving member) and coil core is .031 inch, contacts separated. Contacts separate .013 to .018 inch. Clean relay contacts by drawing unglazed paper between them. If badly burned or pitted, resurface with well worn No. 00 sandpaper. Remove all grit. Adjust before again putting into service.

WARRANTY:—Used lamps are 6.8 volts 21 amp. Dimension lamps are 6.8 volts 21 amp.