

DE SOTO

MODEL K (1929) PRODUCTION STARTED FEBRUARY 1, 1929
NORTH EAST GENERATING, STARTING SYSTEM
NORTH EAST IGNITION

BATTERY:—Willard, Type WSB-13, 6 volt. The positive (+) terminal is grounded. Starting capacity (20 minute rate) is 98 amperes for 20 minutes. Lighting capacity (5 ampere rate) is 5 amperes for 16.8 hours. Battery is mounted under front floor boards on left frame member.

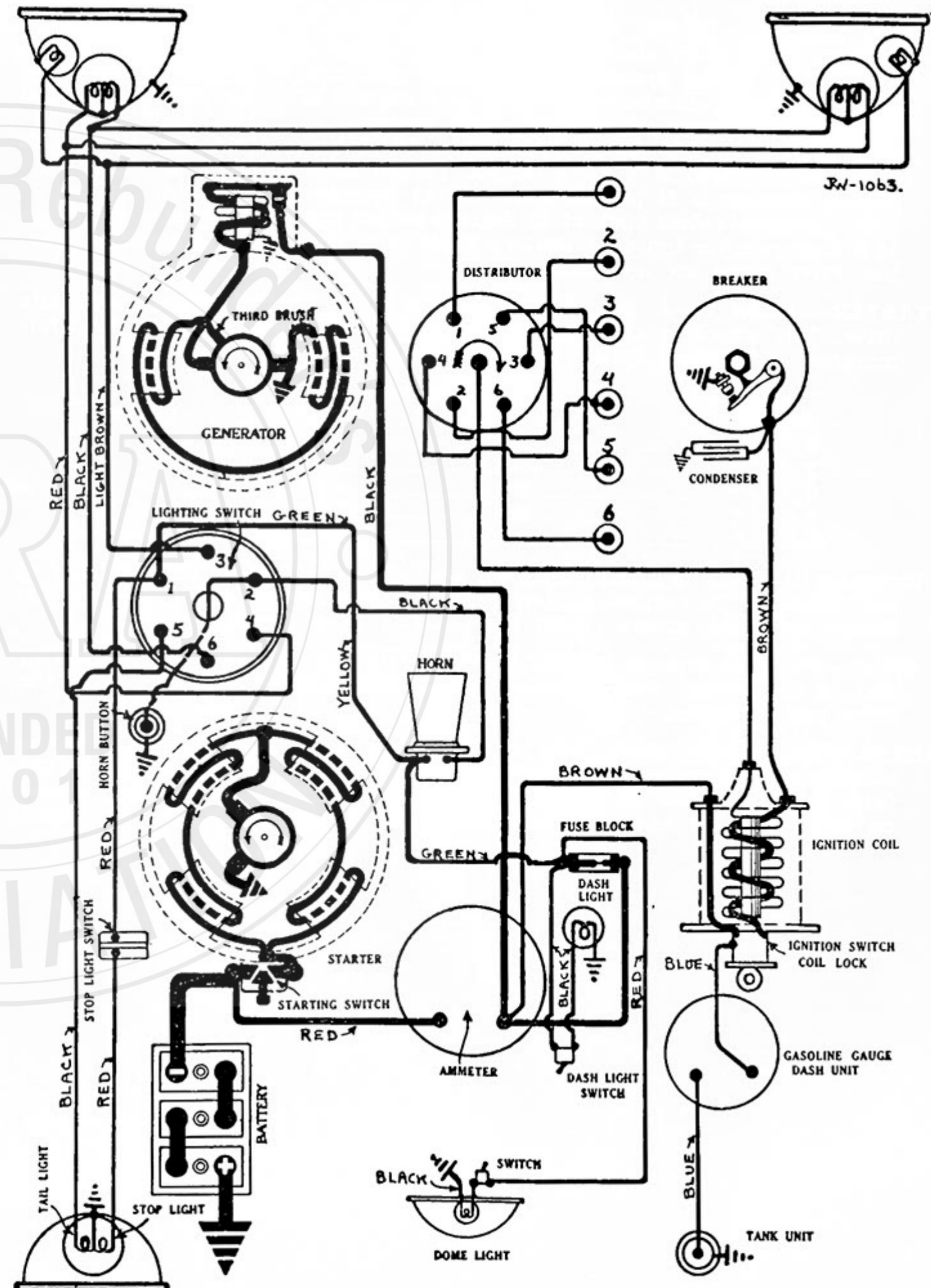
IGNITION:—Coil Type 21998. Coil is mounted on the back of the instrument board and the ignition switch, which is built in the base of the coil, extends through to the face of the instrument panel. Ignition current is 2.5 amperes at 6 volts with engine running and 5 amperes at 6 volts with engine stopped.

Distributor Model TBU Type 10849. Breaker contacts separate .020 inch. Set contact gap by loosening lock nut on stationary contact stud and turning up stud until correct gap is secured with breaker arm on lobe of cam. Resurface contacts when necessary with a fine flat contact file or on a medium hard oilstone. Breaker arm spring tension is 16-20 ounces. Distributor is semi-automatic. Maximum manual advance is 20 degrees (engine). Automatic advance begins at 600 R.P.M. (engine). Maximum automatic advance is 18 degrees reached at 2500 R.P.M.

Mounting:—Distributor is mounted on a diagonal shaft at the right of the engine and is driven by a gear on the camshaft. To remove distributor disconnect primary lead and manual advance rod and remove distributor head with cables intact. Then take out screw at rear of manual control lever and lift distributor from place.

Oiling:—Fill the grease cup on the side of the shaft with medium cup grease and turn down two turns every month or each 1000 miles. At the same time remove the distributor head and rotor and saturate the wick oiler in the center of the shaft with light engine oil. Every 2000 miles put a small amount of vaseline on the face of the breaker cam.

Timing:—Breaker contacts begin to open when the piston entering power stroke reaches a position .035 inch before top dead center on standard 5.2-1 compression engines and .008 inch before top dead center on 6.2-1 high compression head engines with the manual spark lever in the fully advanced position. To set timing, remove the $\frac{1}{8}$ inch pipe plug from the cylinder head above No. 6 piston and screw the special micrometer gauge which must be used in timing these engines in place in the tapped hole. Connect a small six volt test lamp between the distributor primary terminal and the battery terminal of the generator relay. If the battery is out of the car, connect one terminal of the lamp to a battery and ground the other battery terminal to the engine block. The test lamp will burn when the breaker contacts are closed but will go out when the contacts open, serving as an accurate check of the contact opening. Set distributor in full manual advance position. Turn engine over and locate top dead center position. Set micrometer gauge at zero on top dead center. Then crank engine over until piston No. 1 comes up on compression stroke and stop with piston .035 inch before top dead center on standard compression engines and .008 inch before top dead center on high compression engines. Take up all backlash in distributor gear by pressing rotor back against direction of rotation. Loosen the advance arm clamp screw and rotate the distributor counter-clockwise until the contacts break when the lamp will go out. Tighten the clamp screw and connect the segment opposite the rotor to the spark plug in cylinder No. 1. Connect the remaining spark plugs in order 5-3-6-2-4 clockwise around the distributor head. Check timing by cranking engine over several times and then stop when contacts break with piston No. 1 on compression stroke. The gauge should read within limits of .030-.040 inch before top dead center for standard compression engines and .006-.010 inch before top dead center for high compression engines.



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

Spark Plugs:—Spark plugs are Champion Metric 18MM. Gaps are .027-.030 inch.

VALVE TIMING:—**INLET VALVES:**—Head diameter, 1 15/32 inches. Stem diameter, 11/32 inch. Stem length, 4 11/16 inches. Valve lift, 5/16 inch. Spring pressure, 88 pounds with valve open and 47 pounds with valve closed. Tappet clearance, .004 inch (hot). Inlet valves open 6 degrees after top dead center and close 46 degrees after lower dead center.

EXHAUST VALVES:—Head diameter, 1 15/32 inches. Stem diameter, 11/32 inch. Stem length, 4 11/16 inches. Valve lift, 5/16 inch. Spring pressure, 88 pounds with valve open and 47 pounds with valve closed. Tappet clearance, .006 inch (hot). Exhaust valves open 42 degrees before lower dead center and close 8 degrees after top dead center. Valve stem guides are removable. Oversize valves are not made.

STARTER:—Model SBH Type 6534. Starter is connected to the engine through an outboard Bendix drive. The direction of rotation is counter-clockwise, viewed from the commutator end. Brush spring tension is 3 pounds. Starter switch is Type 22050.

Starter Data

Torque	R.P.M.	Volts	Amperes
0 lb. ft.	4000	5.6	80
1.6 "	2100	5.2	150
3.0 "	1500	5.0	200
4.3 "	1100	4.7	250
6.0 "	800	4.5	300
9.6 "	350	4.0	400
13.0 "	Lock	3.5	500

Mounting:—Starter is flange mounted at left of engine on forward side of fly-wheel bell housing. To remove starter, disconnect cable and remove two flange mounting cap screws. Then pull starter forward and lift from place.

Oiling:—Starter bearings are oilless. They require no attention.

GENERATOR:—Model LAB Type 6530. The direction of rotation is counter-clockwise, viewed from the commutator end. Generator current regulation is by third brush shunt field. To adjust generator output, remove the commutator cover band and loosen the lock screw on the end plate. Then shift the third brush by hand in a counter-clockwise direction to increase the charging rate and in the opposite direction to decrease the charging rate.

Tighten the lock screw after making the adjustment. With the standard car setting, the maximum charging rate is 12 amperes reached at 2000 R.P.M. or 24.5 M.P.H. with generator hot.

Generator Data

Cold Test			Hot Test		
Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
0	6.3	675	0	6.4	725
5	6.9	875	5	6.9	1025
10	7.4	1150	10	7.5	1500
14	7.9	1475	12	7.7	2000
16	8.1	1800	9	7.3	3000
13.4	7.8	2500			

Brush spring tension is 12-16 ounces.

Mounting:—Generator is mounted on special swinging bracket at left of engine and is driven by the fan belt. To remove generator, disconnect lead and loosen adjustment clamp bolt. Swing generator toward engine and take off drive belt. Then remove two bolts holding generator on bracket and lift generator from place.

Belt Adjustment:—To adjust fan belt, loosen the adjustment clamp bolt and swing generator out from engine until correct belt tension is secured and tighten clamp bolt. Do not get too much tension on the belt or the belt will crowd the generator bearings.

Oiling:—Put a few drops of light engine oil in the oiler at each end of the generator every 2000 miles.

RELAY:—Type 20220. Relay is mounted on the generator. Relay contacts close when the voltage of the generator reaches 6.75 volts and open with a discharge current of 1-2 amperes. Contacts separate .020-.025 inch. Air gap is .015 inch with contacts closed.

LIGHTING:—Soreng Manegold Switch Model 5500-A. Lighting switch is mounted at the lower end of the steering column. Headlights are double filament using the second 21 cp. filament instead of dimmers. Headlights are 6-8 volt, 21-21 cp. D.C. Mazda 1110. Parking lights on cowl are 6-8 volt, 3 cp. S.C. Mazda 63. Dash light is 6-8 volt, 3 cp. D.C. Mazda 64. Stop and tail light is 6-8 volt, 21-3 cp. D.C. 1158 (double filament bulb). Dome light is 6-8 volt, 15 cp. S.C. Mazda 87.

FUSES:—Lighting fuse mounted on back of instrument panel is 20 ampere capacity.