

# STEARNS KNIGHT

MODEL G-8-85 (1927-28). EIGHT CYLINDER MODEL  
DE JON GENERATING, STARTING AND LIGHTING SYSTEM  
DE JON IGNITION

**BATTERY:**—U.S.L. Type 3-CVX-10X, 6 volt. Starting capacity is 192 amperes for 20 minutes. Lighting capacity is 5 amperes for 38.4 hours. The negative (—) terminal is grounded. Battery is mounted in a special compartment in right splasher assembly.

**IGNITION:**—Coil Model CA-4023. Distributor Model IAA-4002. Breaker contacts separate .018-.020 inch. They are made of tungsten. Resurface contacts with a fine flat contact file or on a medium hard oilstone. Distributor is semi-automatic. Manual advance is 30° (engine). Automatic advance begins at 400 R.P.M. Total advance is 50° (engine) or 25° on distributor. Breaker arm spring tension is 20 ounces. Ignition current is 6.5 amperes at 6 volts with ballast resistor cold decreasing to 4-4.5 amperes as resistor becomes heated. On bench test the maximum spark gap between needle points is .400 inch with primary voltage of 6 volts and distributor running between 600 and 1600 R.P.M.

**Mounting:**—Ignition coil is mounted on the dash. Distributor is mounted on left side of engine by standard S.A.E. Type 'B' mounting. To remove distributor, disconnect primary lead and manual advance rod and remove distributor head and rotor. Then remove short bolt and nut in distributor arm and lift distributor from place.

**Oiling:**—Put 4 or 5 drops of light engine oil in the oiler on the side of the distributor housing every two weeks or each 500 miles. Every month put a small amount of vaseline on the face of the breaker cam.

**Timing:**—Breaker contacts begin to separate when the piston entering power stroke reaches top dead center with spark control lever in the fully retarded position. To set timing, crank engine until No. 1 piston enters compression stroke. This can be checked by removing spark plugs in other cylinders and cranking engine until compression is felt. Fully retard spark control lever and continue to crank engine until piston reaches top dead center when the dead center mark on the flywheel will be opposite the indicator in the clutch inspection hole. If breaker contacts are not separating, loosen taper screw in center of cam and rotate cam until contacts begin to separate. Tighten the screw.

**Firing Order:**—The firing order is 1-6-2-5-8-3-7-4.

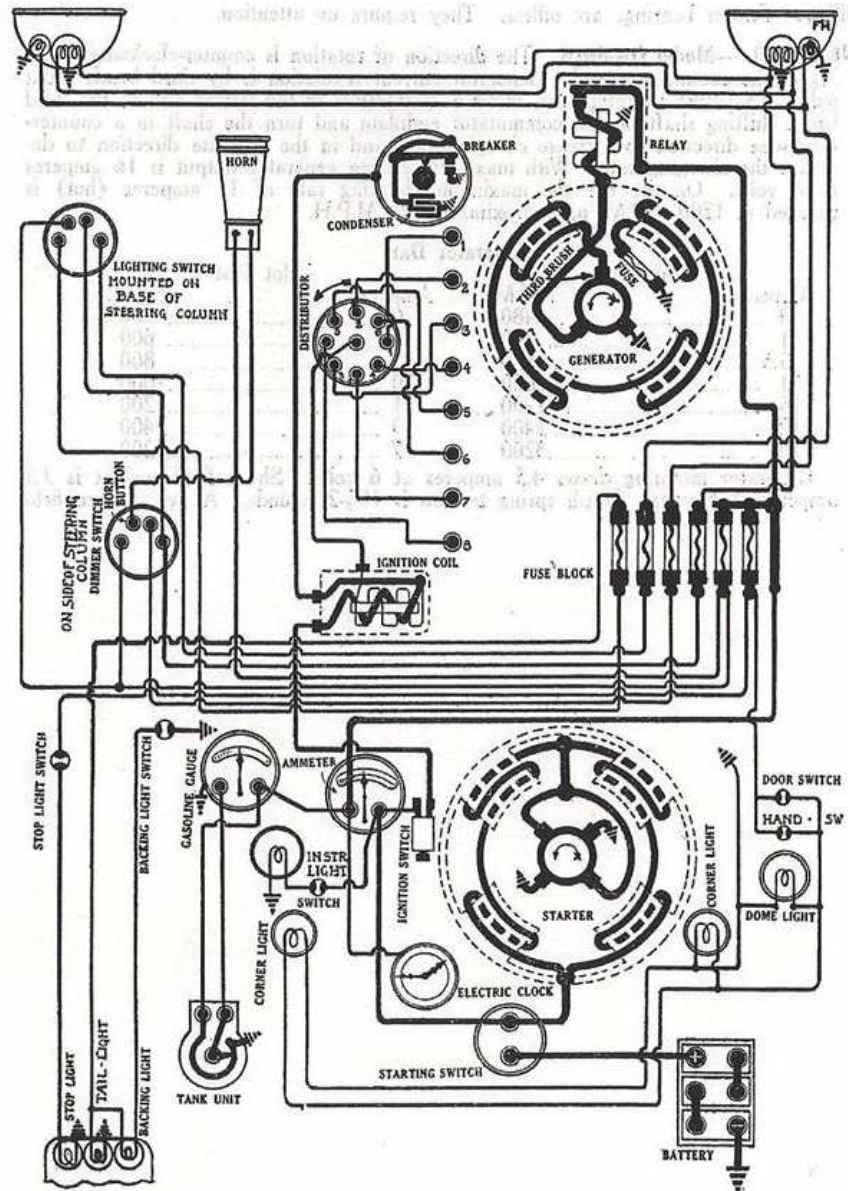
**Spark Plugs:**—Spark plugs are 7/8 S.A.E. Standard. Gaps are .028 inch.

**Valve Timing:**—Crank engine until piston No. 1 reaches top dead center. Then turn eccentric shaft until exhaust port in cylinder No. 1 has just closed when the top of the port in the outer sleeve has closed over lower edge of cylinder port. Then assemble the front timing chain (the short one). With chain in place crank engine over until crankshaft reaches a position 4 3/4 inches past lower dead center (measured on the outside diameter of the flywheel). Then set inner sleeve so that lower edge of exhaust port has just closed on junk rings.

**STARTER:**—Model SD-4102. Starter is connected to the engine through an inboard Bendix drive. The direction of rotation is counter-clockwise, looking at the commutator end. Switch is Model 4001. Brush spring tension is 2-3 pounds.

Starter Data			
Torque	R.P.M.	Volts	Amperes
0 lb. ft.	Free	6	75
24.4"	Lock	3	620

**Mounting:**—Starter is sleeve mounted at right of engine on forward side of flywheel case. To remove starter, first remove toeboard and remove black enameled cap at rear of flywheel housing in transmission case flange. This exposes Bendix drive.



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Remove Bendix drive. Then remove set screw in flywheel case directly above starter sleeve and disconnect starter cable. Pull starter forward and lift from place.

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

**GENERATOR:—Model DJ-4016.** The direction of rotation is counter-clockwise, looking at the commutator end. Generator current regulation is by third brush shunt field. To adjust charging rate, insert a screwdriver in the slotted end of the third brush shifting shaft on the commutator endplate and turn the shaft in a counter-clockwise direction to increase the charging rate and in the opposite direction to decrease the charging rate. With maximum setting generator output is 16 amperes at 6 volts. On the car the maximum charging rate of 11 amperes (hot) is reached at 1200 R.P.M. or approximately 25 M.P.H.

#### Generator Data

Cold Test		Hot Test	
Amperes	R.P.M.	Amperes	R.P.M.
0	480	0	500
1	500	2	600
5.5	600	7	800
11	800	10	1000
15	1200	9	2400
12	2400	9	2400
10	3200	7	3200

Generator motoring draws 4.5 amperes at 6 volts. Shunt field current is 2.5 amperes at 6 volts. Brush spring tension is 1½-2 pounds. A five ampere field fuse is mounted on the endplate.

**Mounting:**—Generator is base mounted at right of engine. To remove generator, disconnect lead and remove two bolts from drive coupling. Then remove four base mounting screws and lift generator from place.

**Oiling:**—Put 4 or 5 drops of light engine oil in the generator oilers every two weeks or each 500 miles.

**RELAY:—Model RA-4001-A.** Relay is mounted on the generator. Relay closes at 480-500 R.P.M. when the generator voltage reaches 7-7.5 volts and opens with a discharge current of .5-2.5 amperes. Charging current must not exceed 2 amperes at closing of contacts. Relay contacts separate .025-.035 inch. Air gap is .010 inch, contacts closed.

**LIGHTING:**—Head lamps are 6-8 volt, 21 cp. double filament using second 21 cp. filament instead of dimming. Auxiliary head lamps are 6-8 volt, 3 cp. S.C. Backing and stop lamps are 6-8 volt, 15 cp. S.C. Dash, tail, dome and corner lamps are each 6-8 volt, 3 cp. S.C.

**Switches:**—Lighting switch is mounted at base of steering column and is controlled by lever on steering wheel. A dimmer switch is located on the side of the steering column.

**FUSES:**—Generator field fuse is 5 amperes. Lighting fuses are 10 amperes.