

GENERATOR CONTROLS

Various units have been used with generators since 1934 to control the output of the generator, shunt wound generators with a light switch controlled field resistance or a current regulator, voltage regulator or a combined current and voltage regulator.

DELCO-REMY LAMP LOAD TYPE GENERATORS

This type generator with a switch controlled resistance is a two pole machine with its field winding brought out to an external insulated terminal in the generator frame rather than being grounded within the machine. This terminal is then connected to the headlight switch. When the lighting switch is in its "off" or "park" position, the ground is through a resistance in the headlight switch. When the headlamps are turned on, the resistance is cut out by a direct ground at the switch. This allows a higher output to be taken from the generator when driving at night and affords protection to the battery from overcharging when extensive daylight driving is done.

The generator output is adjusted by shifting the third brush. Moving the brush in the direction of armature rotation increases the output and moving it in the opposite direction decreases the output. In order to obtain the specified setting the resistance unit should be cut out of the field circuit. This can be quickly accomplished by grounding the field terminal on the generator field frame. Correct adjustments will not be ob-

tained by burning the lights in order to cut out the field resistance.

A one ohm resistance is the standard used on the switches but $\frac{1}{2}$, $\frac{3}{4}$ and $1\frac{1}{2}$ ohm resistances are available. The one ohm resistance is suitable for average driving. An excessive amount of any one type of driving will warrant changing to another size resistance. Without disturbing the adjustment of the third brush, the generator output for day driving can be increased by decreasing the resistance of the unit on the switch, likewise, the output can be decreased by increasing the resistance. Where trouble is experienced with discharged batteries, because of an excess of night driving a $\frac{1}{2}$ or $\frac{3}{4}$ ohm resistance unit should be used. The lighting switch used on 1934 Oldsmobile cars may be pulled out to the first position to cut the resistance out of the field circuit, without turning on the lights. If excessive day driving results in an overcharged battery the $1\frac{1}{2}$ ohm resistance will reduce the charging rate without need of adjusting the third brush.

All connections in the field circuit must be tight. If the generator does not charge when the lights are off but charges when the lights are on it indicates that the resistance unit is open circuited and should be replaced. Any open circuit or loose connections between the generator and the switch should be remedied.

DELCO-REMY CURRENT REGULATOR

The current regulated lamp load

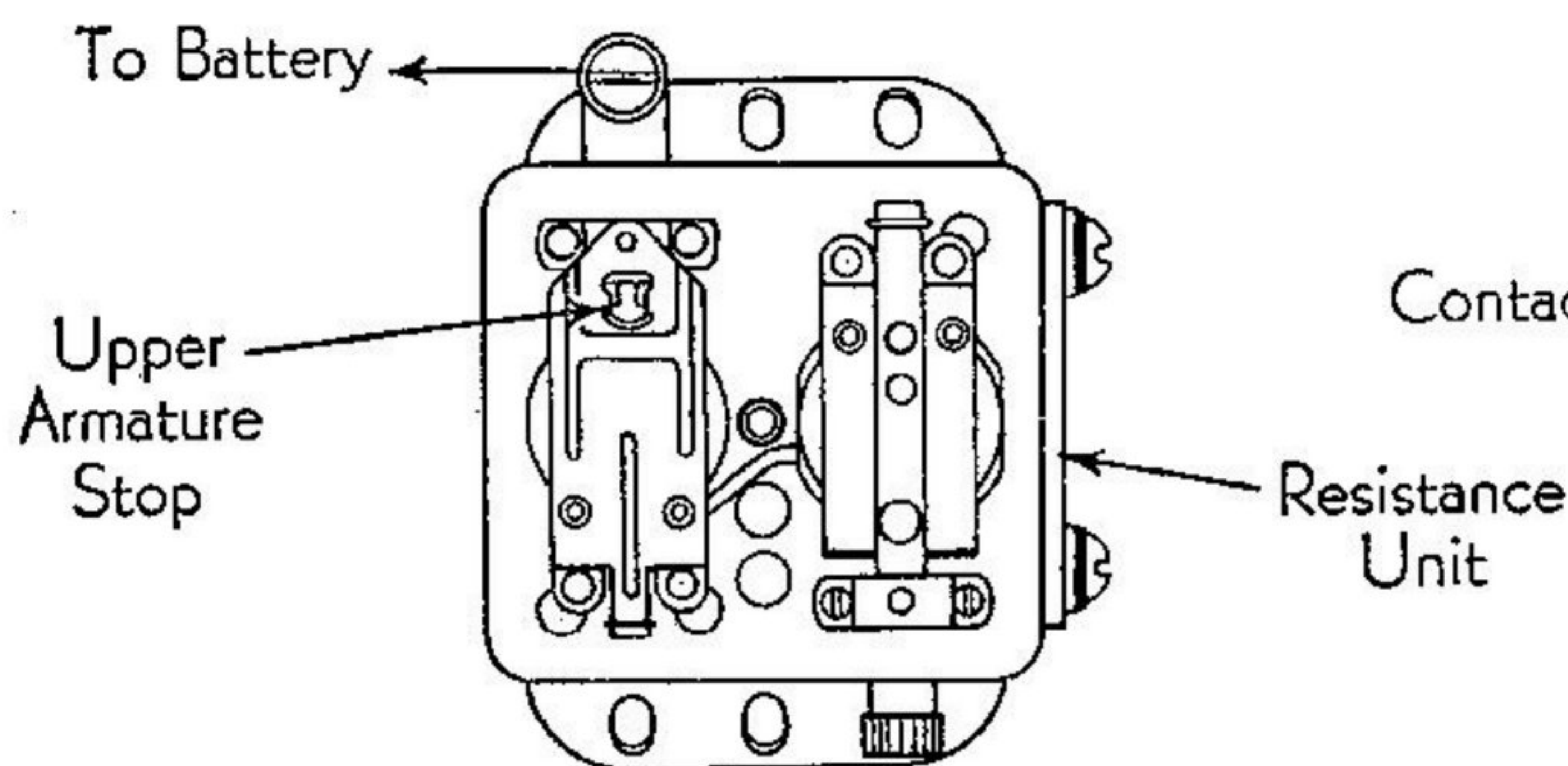
type of generator has a shunt field. The current regulator replaces the third brush, therefore, only the two main brushes are necessary. The current regulator unit has two coils. When the lights are off the current is regulated at the value specified for the particular generator. With the lights turned on the generator current output will be increased 50 per cent of the allowable lamp load. In other words, if the generator is charging at 15 amperes and the generator is connected to an 11 ampere light load when the lights are burning the increase in output will be 5.5 amperes or the generator will give a total output of 20.5 amperes. This output is constant throughout the speed ranges of the car.

Increasing the spring tension on the current regulator armature increases the current setting. Likewise, decreasing the spring tension decreases the current output. Since the current regulator gives constant output, the specified setting may be too high in some cases of excessive driving, therefore, the rate charge should be reduced to prevent overcharging the battery which results in high voltage.

The allowable lamp load for these cars is 11 amperes and it should not be exceeded or the generator will be overloaded.

The current regulator consists of a current regulator unit and a cutout relay mounted on the generator or the engine side of the dash.

Cutout Relay. The cutout relay is of the standard type and is used to open



AUTO-LITE VOLTAGE REGULATOR

