MARELLI REGULATORS

Fiat 124

DESCRIPTION

Fiat voltage regulators are of the dual stage vibrating contact type. An induction auxiliary coil, considerably smaller than the magnetizing coil, is mounted near contact side of the yoke. In addition to two regulating resistors, an additional resistor works in series with the main voltage coil. The regulator is grounded through the mounting flanges. Resistors are protected from impacts by a metal shield secured to mounting flange.

APPLICATION

Model	Part No.
124	RC2/12B

SPECIFICATIONS

Application	Specification
Alternator Test RPM	5000 RPM
1st Stage Testing (Amps)	25-35
2nd Stage Testing (Amps)	2-12
2nd Stage Testing (Volts)	14.2±3
Resistance Values (Ohms)	
Plug 15 & Ground	27.7±2
Plug 15 & 67 W/Contacts Open	5.6±.3
Armature Air Gap	
Point "A"	.055-.063"
Point "B"	.014-.022"

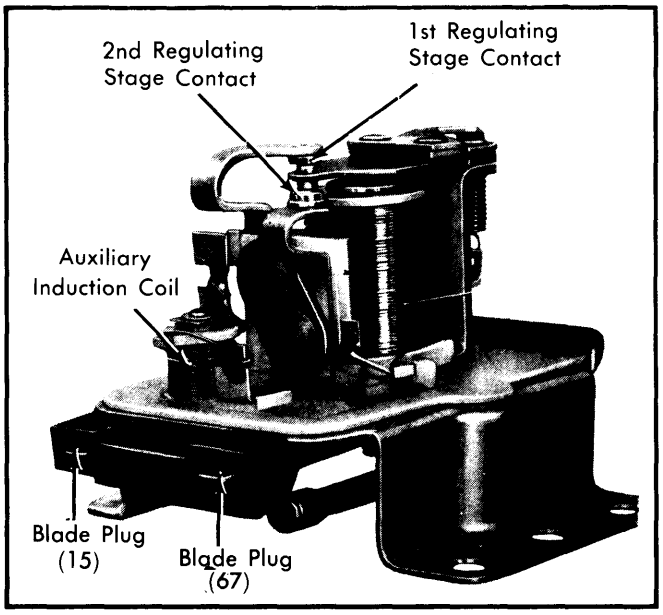

Fig. 1 Marelli Voltage Regulator

TESTING

BENCH TESTING

1) Install alternator and regulator on test bench equipped with gradual speed control. Connect ammeter, voltmeter, and rheostat as shown in illustration. Regulator must be placed vertically, with terminals "15" and "67" at base. Regulator must be checked without removing cover.

2) **CAUTION** – *DO NOT operate regulator with switch "I" open (battery disconnected) since this will damage regulator contacts.* Operate voltage regulator in an ambient temperature of 122±5.4°F for 30 minutes (thermal stabilization). Start with rheostat fully inserted, then adjust current output to one sixth of maximum alternator output. Alternator should be operated slowly at first and then be SLOWLY brought up to 5000 RPM.

3) **NOTE** – *Suitable thermostatic equipment must be available in order to maintain regulator at specified temperature throughout test.* Operate alternator at 5000 RPM. Adjust rheostat for specified current output. See specifications.

4) Check first stage immediately after second stage, and ensure that the conditions specified in step **2)** are still met. At 5000 RPM, adjust rheostat until specifications are met for 1st Stage Testing. Regulated voltage should be .2-.7 volts (model 124) or 0-.5 volts (all other models) less than the voltage recorded for the second stage. **NOTE** – *When testing the first and second stages, check that regulated voltage is stable, without any sudden surges or drops.*

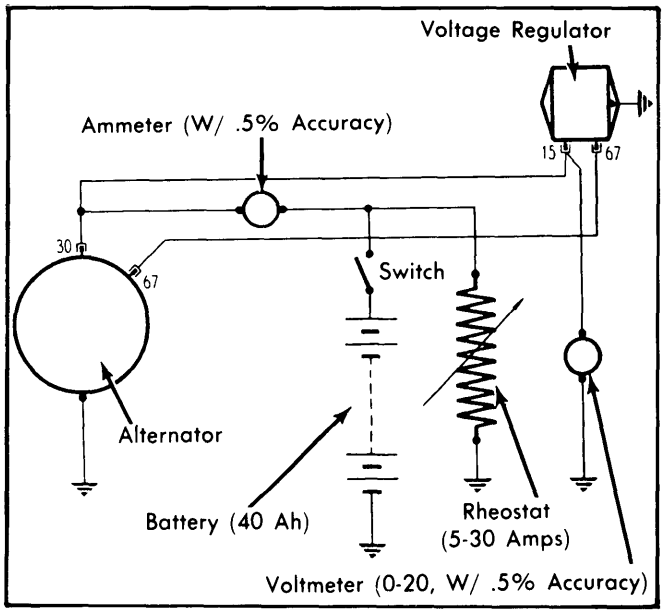

Fig. 2 Circuit for Conducting Bench Test

ADJUSTMENT

VOLTAGE REGULATOR

1) Disconnect positive battery cable then remove dust cover on voltage regulator. Inspect contact points for pitting and burn marks, then clean minor pitting and burn marks. **NOTE** – *Extreme damage to points requires regulator replacement.* Use a feeler gauge to check measurements at point "A" and "B" as shown in *Fig. 3*.

MARELLI REGULATORS (Cont.)

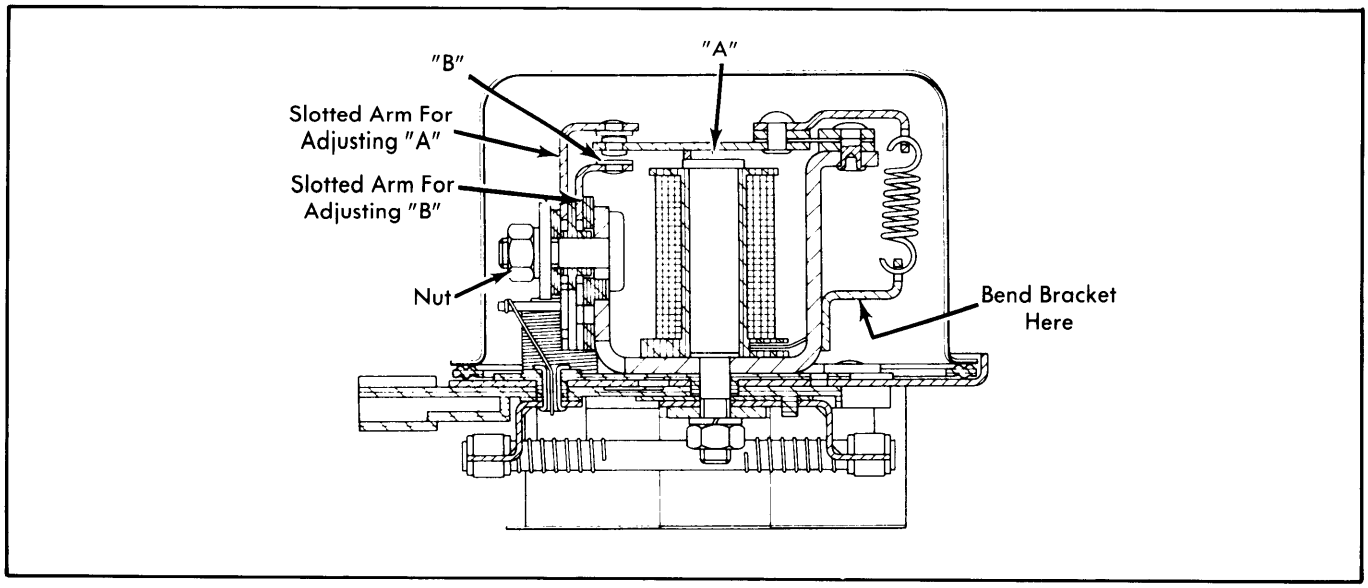

Fig. 3 Adjusting Voltage Regulator

2) If clearances are not within specifications, remove the regulator from vehicle. Loosen nut and adjust gaps by moving the slotted arms indicated in *Fig. 3.* until clearances are within specifications. Tighten nut and recheck clearances.

3) Install regulator in vehicle and connect battery cable. Run engine until normal operating temperature is reached, then connect a voltmeter positive lead to positive battery post and negative lead to a good ground. Voltmeter should read 13.9-14.5 volts at 2500 RPM with all electrical components off. If reading is not within specifications carefully apply slight pressure to lower spring bracket to adjust. Bending bracket down increases reading while bending bracket up decreases reading. **NOTE** – *Bend bracket a very small amount as a slight change will adjust voltage.* Disconnect voltmeter and install dust cover.