Mounting instructions for the Hella Power Regulator for 12/24 V on-board voltage

Hella Part No.: 5DR 007 314-...

Table of contents

Mounting 13

Functional test 17

Determining the charging condition of the battery 18

Please read the mounting instructions all the way through before beginning mounting and adhere exactly to the order of the steps when working!

The Hella Power Regulator is a high-capacity electronic regulator that guarantees a maximum battery charge.

The charging system is based on a control voltage that switches between 2 values depending on time and temperature, see Fig.

This switching circuit logic prevents gassing of the battery on the one hand, and on the other, the battery is charged more quickly, more fully and more gently.

The Hella Power Regulator takes the surrounding temperature and the battery voltage into account.

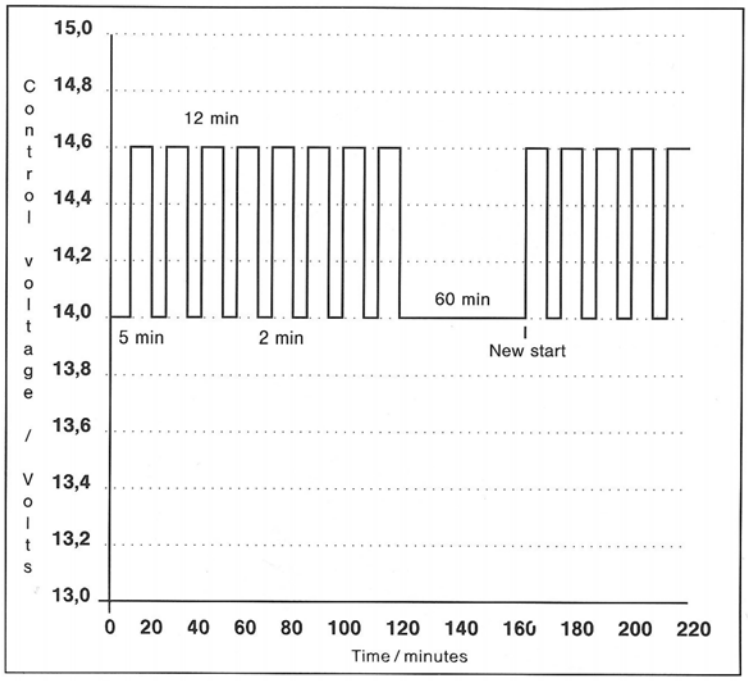
This has a positive effect on the service life of the battery

The practical advantages are:

- reliable starts thanks to a fully-charged battery
- and an increased service life

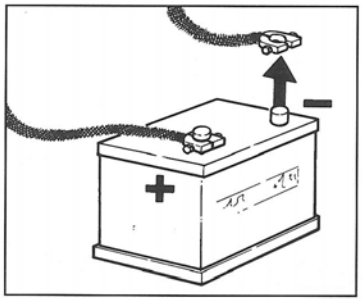
This charging system is patented for Europe.

HPR Charging system
charging voltage



Mounting

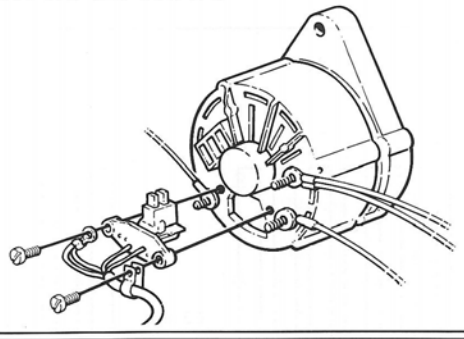
Before beginning with the wiring and connexion work, first disconnect the earth from the battery, see Fig.



Remove the existing generator regulator.

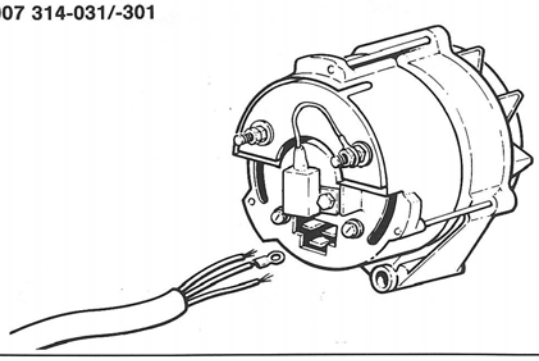
Hella Part No.:
5DR 007 314-011/-021/-311/-321
Screw the carbon brush holder (on the strand of leads) to the generator using the original screws. Secure the strand of leads with the enclosed clip (pull relief).

5DR 007 314-011/-021/-311/-321



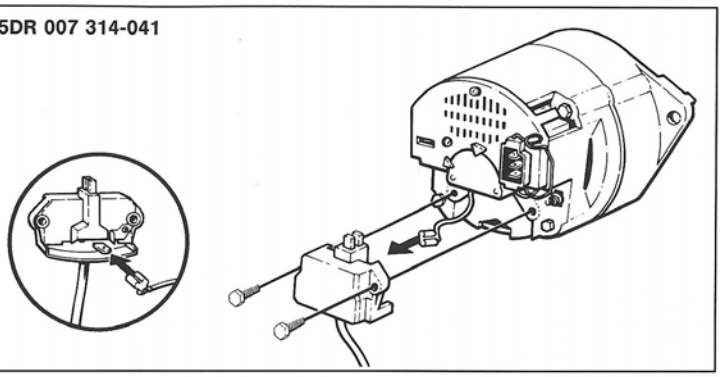
Hella Part No.: 5DR 007 314-031/-301
Connect black lead to generator terminal D-, brown lead to terminal D+ and green lead to terminal DF. Secure the strand of leads with the enclosed clip (pull relief).

5DR 007 314-031/-301



Hella Part No.: 5DR 007 314-041
Strip the red lead from the original regulator and plug in to the new carbon brush holder. Fasten the carbon brush holder to the generator with original screws. Secure the strand of leads with the enclosed clip (pull relief).

5DR 007 314-041

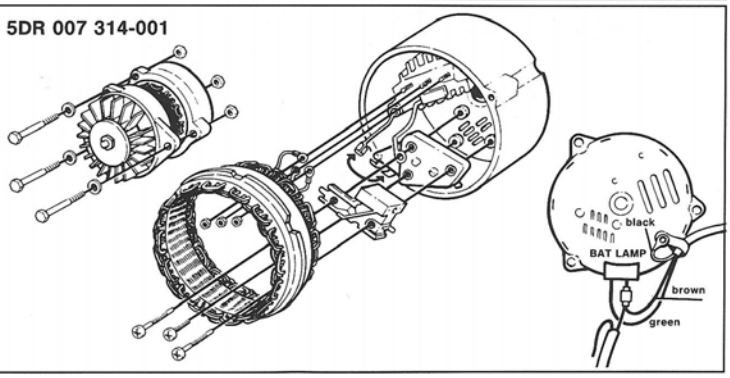


Hella Part no.: 5DR 007 314-001
Take apart the generator (3 screws). Separate the rear end plate of the generator and the rear end plate of the slip ring. Remove the brush holder and cross-head screws.
Insert the empty housing provided and, if necessary, bend the connection lugs downwards. Carry out assembly in the reverse order. **Important:** Make sure that the carbon brushes are first fixed in the brush holder with a wire. When assembly is complete, the wire must be removed.

Connect the leads as follows:

Black (D-):	To generator housing (earth)
Brown (D+):	Connect to existing cable (lamp)
Green (DF):	Remove existing cable (BATT) from the socket and locate it (insulated). Push green cable onto free terminal (see diagram).

5DR 007 314-001



Lay the set of leads to the battery and secure with cable ties (not supplied).

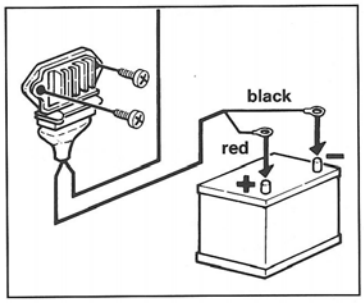
Warning! Do not shorten the leads, since this could have an effect on the integrated temperature sensor.

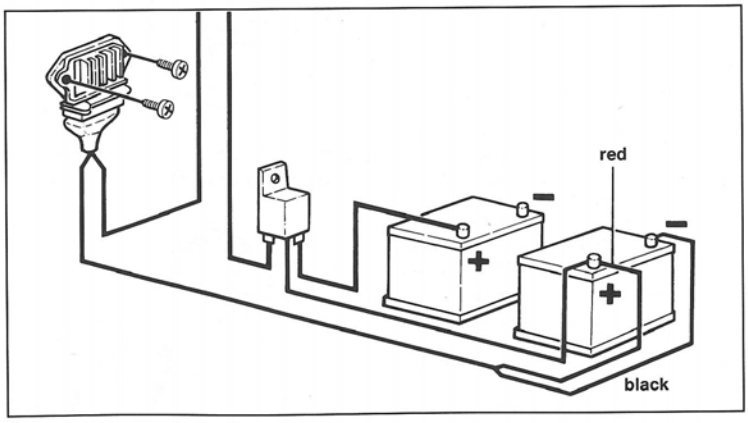
Connect the red lead to the positive terminal and the black lead to the negative terminal of the battery, see Fig.

The Hella Power Regulator can also be installed in vehicles with several batteries.

In this case, connect it to the battery that feeds the additional consumers (see Fig.).

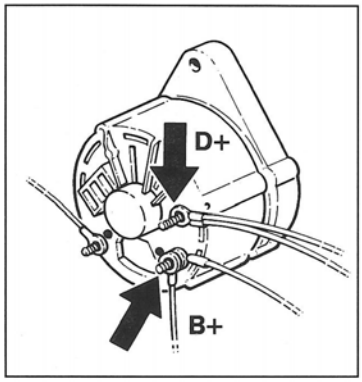
Mount the Hella Power Regulator with Parker screws (not supplied) in the engine compartment.





Functional test

After starting, the charge control lamp must go out. If the charge control lamp does not go out after installation, the generator must be magnetised. To accomplish this, short-circuit B+ and D+ for approx. 5 seconds with the motor running.



Determine the battery voltage with a voltmeter and increase the engine speed slightly. The charging voltage should rise to approx. 14 volts. After 5 minutes, the voltage will have risen to approx. 14.6 volts (see „Relationship between temperature and charging voltage").

After switching on several consumers (rear window heater, fan, etc.), measure the voltage drop between the positive terminal of the battery and the generator terminal B+.

If the voltage drop > 0.4 volts (at increased engine speed), check the connexions.

Determining the charging condition of the battery

Before charging, check the density of the battery acid (eg with acid siphon). Comparison measurements should be made after one week at the earliest.

The attainable improvement depends on the condition of the battery (sulphation).

In contrast to normal generator regulators (sulphation continues), the Hella Power Regulator avoids a further reduction of the battery's capacity as a result of its method of charging.

The Hella Power Regulator regulates the voltage provided by the generator to guarantee optimal charge.

Relationship between temperature and charging voltage
Double the figures for 24 V circuits.

Temperature	**+30**	**+30 to +10**	**+10 to -10**	**< -10**
Normal-charge	13.8 V	14.0 V	14.2 V	14.4 V
High-charge	14.4 V	14.6 V	14.8 V	15.0 V

If the battery is in poor condition, it heats up instead of storing energy.

Check with your hand whether the battery is heating up. If so, the battery is defective and should be replaced.

Comparison of terminal designations in accordance with DIN 72 552 with other terminal designations

DIN 72 552/Bosch	DF	D-	D+	B+	F	D+/61	61	31-
Delco-Remy	F	GRD	+	Bat B	F	GEN	L	— GND
Ducellier	Exc E	-,B-	+	BAT B	Exc	DYN D		M-
Femsa	Exc	31	+	30 BAT	67 Exc	51 DIN		31
Fiat	67	31	15	30	67	51/15		31
Ford	DF, F	D- -VE	D+, IND	BAT	Field	ARM		G
Lada (Shigulli)	67	31	15	30	67	51/15		31
Lucas	F	-	+ SW=15	A, B, B+ A1 *)	F F1, F2	D	WL IND	E/-
Marelli	67	31	15	B+ 51	F DF	D+	61	31-
Motorola, SEV-Motorola	Exc	-, B-	+					
Paris-Rhöne	Exc	-, B-	+ BOB	BAT	Exc	DYN		M-
Seri-Ducellier	DF	D-	+					
SEV-Marchal	DF	-, B-	+					

*) A1 = consumer