

Operation

The transistor is controlled by the contact breaker. The contact breaker switches the base current which is restricted by the base resistance.

When the contact breaker is closed, the transistor is conductive. The primary current will then flow from the plus battery via ignition switch, pre-resistance 0.4 Ω , emitter collector of transistor, pre-resistance 0.6 Ω , primary winding of ignition coil to ground connection. When the contact breaker opens, the transistor locks and the primary current circuit is interrupted. The circuit interruption in the primary winding will induce the ignition voltage in the secondary winding as before with conventional coil ignition.

A Zener diode is installed to protect the transistor against overloads. A capacitor prevents the entry of induction voltages from the electrical system of the vehicle.

During the starting operation the pre-resistance 0.4 Ω is bridged by contact 16 on starter.

Design of Transistor Ignition

The system comprises:

Control unit
Ignition coil
Pre-resistance 0.4 Ω
Pre-resistance 0.6 Ω

Control Unit

The control unit contains the control transistor, resistances and other components. They are enclosed in casting resin as a protection against corrosion and vibrations. The ribs on the housing serve to dissipate the heat from energy losses of the electronic components.

The control unit is radio-shielded by a built-in RF choke.

In the event of repairs, the entire control unit can be replaced.

Ignition Coil

The design and the external dimensions of the ignition coil are those of a normal heavy-duty ignition coil. But the windings are different. The turns ratio is approx. 1:185 as compared with 1:100 of conventional ignition coils.

External identification: blue finish.

Pre-Resistances

The resistances 0.4 Ohm and 0.6 Ohm are designed similar to former ignition coil pre-resistances: A ceramic body encloses the resistance winding and its extending connections. The ceramic body is provided with a sheet metal clip for making connections. The colour of the clip provides an indication concerning the resistance value, which is also punched in as a number.

Colour	Number	Resistance
blue anodizing	0.4	0.4 Ohm
metallic anodizing	0.6	0.6 Ohm

Instructions for Test Jobs

On engines with transistorized coil ignition the engine speed and the timing angle cannot always be measured in the conventional manner. Depending on the type of tester used, connections are made at varying points of the ignition system. The operating instructions of the tester must be observed. As shown in the wiring diagram of illustration 1, the connection between the ignition distributor and the control unit is made via a two-pole cable connector. The one pole has a free, off-set cable shoe (connector lug) for quick and easy connection of tester.

07.5.1 General Description of Transistorized Coil Ignition

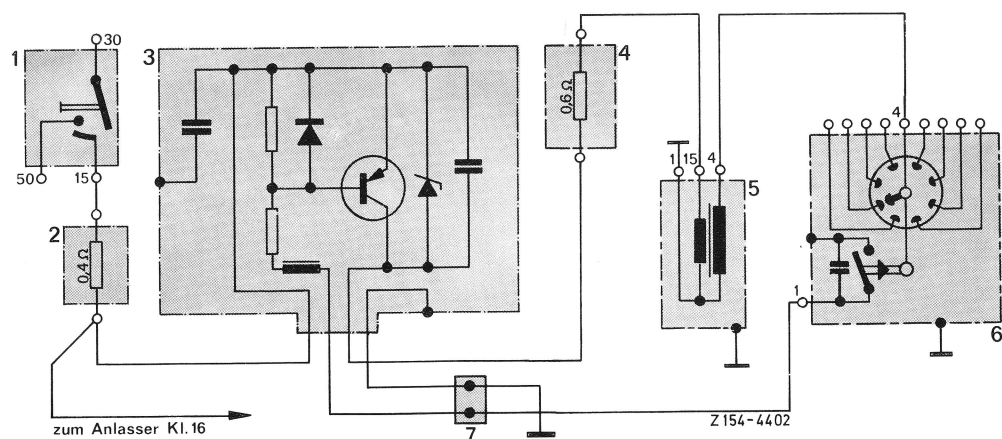


Fig. 1

Wiring diagram of transistorized coil ignition

- | | | | |
|---------------------------|--------------------------|------------------------|-------------------|
| 1 Ignition starter switch | 3 Control unit | 5 Ignition coil | 7 Cable connector |
| 2 Pre-resistance 0.4 Ohm | 4 Pre-resistance 0.6 Ohm | 6 Ignition distributor | |

Identification of 4-core supply line on control unit (3):

- | | | |
|--------------|-------|---|
| brown | | Ground connection |
| black | | Terminal 16 (leads to pre-resistance 0.6 Ohm) |
| red/black | | Terminal 15 (leads to pre-resistance 0.4 Ohm) |
| green/yellow | | Terminal 7 (leads to cable connector terminal 1 ignition distributor) |