

Electrical testing of Bosch common rail piezo injectors

Applies to generation CRI3:

Bosch 10-position order number

0 445 115 ... = CRI 3-16 (CRI 3.0) 1600 bar

0 445 116 ... = CRI 3-18 (CRI 3.2) 1800 bar

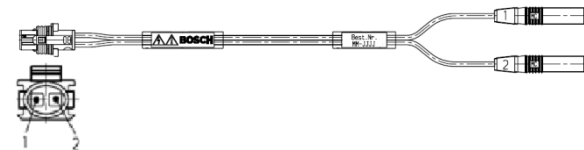
0 445 117 ... = CRI 3-20 (CRI 3.3) 2000 bar

Tools required:

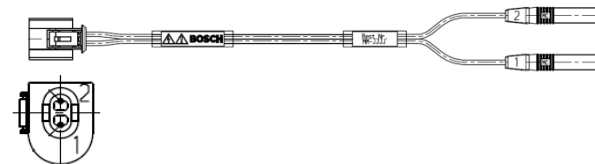
Hybrid tester FSA 050, article number 0 684 010 050 →



Adapter cable "K", article number 1 684 463 849
(in preparation) →



Adapter cable "AK", article number 1 684 463 850
(in preparation) →



Automotive Aftermarket



BOSCH

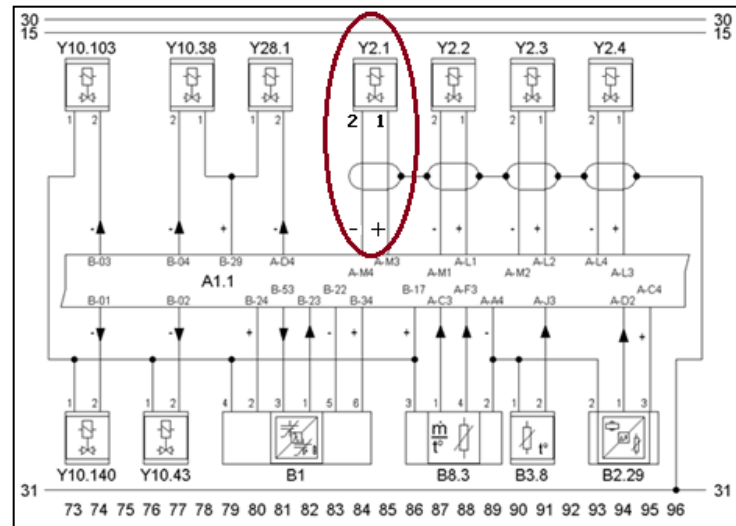
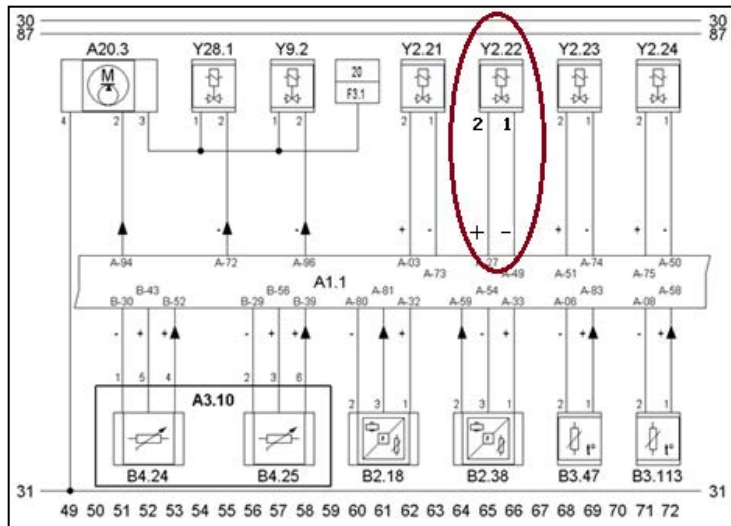
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Important:

Testing is described in conjunction with the Bosch FSA 050 and the corresponding test cables. Ensure safe contact if use is made of universal insulation testers and test cables. Always heed the following with regard to actuator module testing:

! Pay attention to correct polarity at the plug connection of the injector and the tester. Incorrect polarity can damage the actuator module.

Refer to the service documentation of the vehicle manufacturer or the "Electrical terminal diagram" section of the Bosch ESI[tronic] vehicle instructions for details. Refer to the examples (Y2.xx = Injector):



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Use of testers

- When using testers, it is essential to heed the technical documentation of the manufacturer and in particular the safety instructions.
- All testers used must be appropriate to and approved for the intended application.
- The testers and the associated safety devices must be in a reliable safe condition.
- The equipment must exhibit the relevant safety and approval marks.
- Work with testers and in particular insulation testers is only to be performed by trained personnel.
- Take care when using insulation testers, as hazardous voltages can occur at the measurement outputs of the tester, at the test specimen and in the surrounding area.
- Special safety measures must be taken before starting work when using insulation testers.



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1. Insulation test

- ! Heed the setting and connection information for high-voltage and insulation testing in the tester operating instructions.
- i To permit leakage current localization, do not clean the injector before performing insulation testing.



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1. Insulation test

! Deactivate test mode before changing the plug contacts.

1. Connect the black test cable of the tester to the negative connection and to the metal part of the injector (Fig. 1, Pos. 1).
2. Connect the corresponding adapter cable (K or AK) to the electrical connection of the injector (Fig. 1, Pos. 2).
3. Insert one plug contact of the adapter cable (Fig. 1, Pos. 3) in the positive connection of the tester.
4. Switch on the tester, set a test voltage of 100 V and press the start button for testing.
5. Then insert the 2nd plug contact of the adapter cable (Fig. 1, Pos. 4) in the positive connection of the tester and repeat testing.

Set value in each case: => 10 MΩ

➔ Replace the injector if the set values are not attained.



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2. Checking discharge resistor (Fig. 1, Pos. 2) of actuator module (Fig. 1, Pos. 1)

! Heed the setting and connection information for resistance testing in the tester operating instructions.

1. Connect the corresponding adapter cable (K or AK) to the electrical connection of the injector (Fig. 2, Pos. 2) and to the tester (Fig. 2, Pos. 1).
2. Activate resistance measurement on the tester (k Ω range) and perform testing.

Set value: 150 k Ω – 210 k Ω

→ Replace the injector if the set value is not attained.

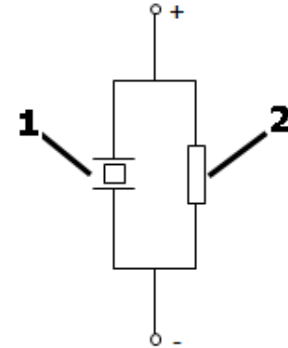


Fig. 1



Fig. 2

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3. Checking actuator module for damage

! Heed the setting and connection information for high-voltage and insulation testing in the tester operating instructions.

1. Use the appropriate adapter cable (K or AK) to connect the injector to the tester (Fig. 1, Pos. 1 and 2).

! **Pay attention to correct polarity (Fig. 1, Pos. 1). Incorrect polarity can damage the actuator module. Refer to the notes on Page 2. Heed the latching position for the K connector (Fig. 2, Pos. 1).**

2. Switch on the tester, set a test voltage of 100 V and press the start button for testing.

Limit value: 170 k Ω

→ Replace the injector if the limit value is undershot.



Fig. 1

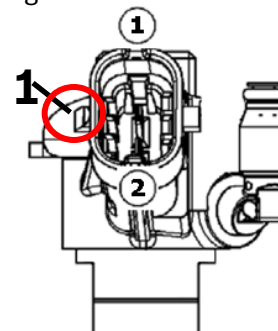


Fig. 2