Automotive measuring lead set

Operating manual

83 30 2 299 380

1.1 Explanation of symbols

In this instruction manual, some sections use internationally known warning symbols, warning notes and general instructional symbols.

The individual symbols are explained below. Follow all instructions and safety rules.


Observe the instruction manual


Warning: dangerous electric voltage

Arrow showing direction


Pacemaker-wearers prohibited


Please note the following

For more information, see section ...


Warning: General source of danger


Arrow to clarify compression


Audibly engage

1.2 Information regarding this manual

State-of-the-art

This automotive measuring lead set represents state-of-the-art technology. To ensure functionality, it must be operated in a proper and safe manner.

Technical modifications

In the interests of quality assurance, we reserve the unrestricted right to proceed with technical modifications arising out of further developments in technology and product improvements, without prior notification.

Read instruction manual

Read the instruction manual carefully before using the automotive measuring lead set.

Handling

All handling necessary to ensure correct operation is described in the instruction manual. No methods of working other than those approved by the manufacturer may be undertaken.

1.3 Operating principles

Our automotive measuring lead set has been developed specially for making contact with almost all plug connectors found in the automotive sector. With its numerous possible combinations it is suitable for universal use. Many innovative details permit flexible and reliable fault diagnosis.

1.4 Safety instructions

Read the operating instructions.

Observe caution when touching hot components: risk of burns.

Do not use the measuring lead set if any leads are faulty.

Do not allow leads to hang over the edge of the desk, working area or counter, or come into contact with hot manifolds or moving parts.

Always replace leads so they lie loosely in the carry-case. Make sure that they do not get jammed!

To reduce the risk of electrical shock, do not use the measuring lead set on wet surfaces or in the rain.

Only use the measuring lead set in the manner described in these operating instructions. Only use accessories approved by BMW.

1.4 Safety instructions

Usage as described in instruction manual

The automotive measuring lead set is intended exclusively for testing voltages and currents in the automotive sector. The tool must only be used for purposes which do not entail any risk to man and machine.

Improper use

The automotive measuring lead set must be used only as described in the operating instructions. Any modification of the automotive measuring lead set or other usage forms are the responsibility of the user.

Make sure that the automotive measuring lead set is in perfect condition and that it has all functionality necessary to ensure safe operation.

Follow all health and safety regulations in the country of operation. Wear personal protection equipment.

Use of the tool by personnel that have not been trained and instructed is prohibited.

Make sure that the automotive measuring lead set is used in a work area that is free from heat sources (max. 50C / 122F), corrosive liquids, oil and grease.

The automotive measuring lead set must never be used in any areas where there is a risk of explosion.

Only use tools and accessories that do not show signs or wear or damage. Damaged tools or accessories can lead to serious injury.

The manufacturer accepts no liability for damage or injury caused by improper repair or use of non-original spare parts.

Warranty

Any incorrect use of the automotive measuring lead set resulting in damage to either the appliance or the vehicle nullifies the warranty.

Important Notes for Maintenance

In the event of any noticeable damage, the components must be replaced. Damaged components can lead to serious injury.

Use only original spare parts. Check contacts and connections for damage.

Service address

For further details please contact our service address:

TKR Automotive GmbH
Am Waldesrand 9-11
D-58285 Gevelsberg (Germany)

2.1 Scope of Supply – Accessories

83 30 2 299 380

2.1.1

83 30 2 299 394
Contact gauge,
1 pc.

2.1.2

83 30 2 299 399
Extension lead, 2 m,
1 set

2.1.3

83 30 2 299 404
Blade-type safety fuse adapters, 1 set

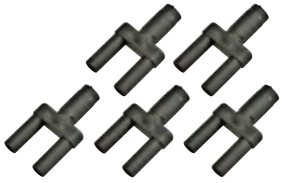
2.1.4

83 30 2 299 408
Terminal clips, red and black,
1 pair

2.1.5

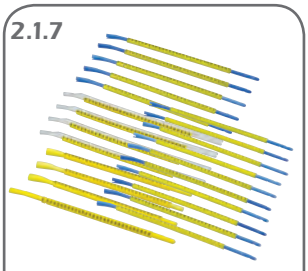
83 30 2 299 407
Test prods, red and black,
1 pair

2.1.6



83 30 2 299 400
Connector plugs,
1 set

2.1.7



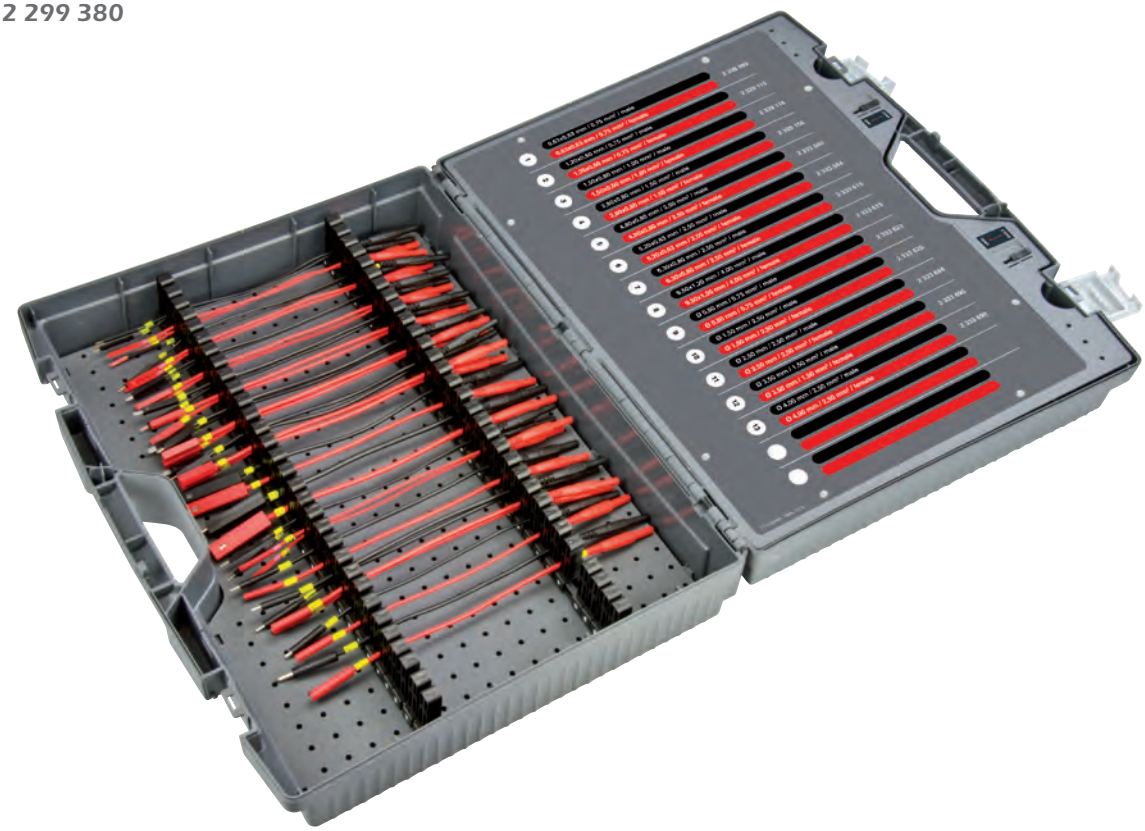
83 30 2 333 697
Lead markers,
1 set

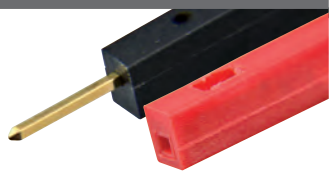
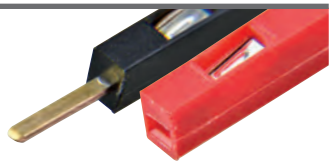
2.1.8

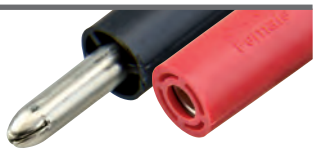
Instruction manual

2.2 Scope of Supply – Measuring Leads

83 30 2 299 380



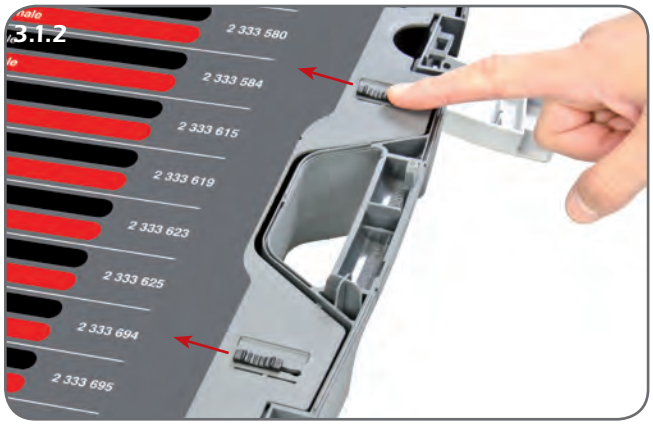
Item	BMW No.	1) Contact dimension WxD 2) Lead Ø 3) Permitted up to max. A	Case contents	Illustration
1	83 30 2 328 993	1) 0.63x0.63 mm 2) 0.75 mm² 3) 3A	2 pairs	
2	83 30 2 329 115	1) 1.20x0.60 mm 2) 0.75 mm² 3) 6A	2 pairs	
3	83 30 2 329 116	1) 1.50x0.60 mm 2) 1.00 mm² 3) 10A	2 pairs	
4	83 30 2 329 156	1) 2.80x0.80 mm 2) 1.50 mm² 3) 13A	2 pairs	

Item	BMW No.	1) Contact dimension WxD 2) Lead Ø 3) Permitted up to max. A	Case contents	Illustration
5	83 30 2 333 580	1) 4.80x0.80 mm 2) 2.50 mm² 3) 16A	2 pairs	
6	83 30 2 333 584	1) 5.20x0.63 mm 2) 2.50 mm² 3) 16A	2 pairs	
7	83 30 2 333 615	1) 6.30x0.80 mm 2) 2.50 mm² 3) 16A	1 pair	
8	83 30 2 333 619	1) 9.50x1.20 mm 2) 4.00 mm² 3) 25A	1 pair	
9	83 30 2 333 623	1) Ø 0.80 mm 2) 0.75 mm² 3) 3A	2 pairs	
10	83 30 2 333 625	1) Ø 1.50 mm 2) 2.50 mm² 3) 6A	1 pair	
11	83 30 2 333 694	1) Ø 2.50 mm 2) 2.50 mm² 3) 16A	2 pairs	
12	83 30 2 333 695	1) Ø 3.50 mm 2) 1.50 mm² 3) 10A	1 pair	
13	83 30 2 333 696	1) Ø 4.00 mm 2) 2.50 mm² 3) 16A	1 pair	

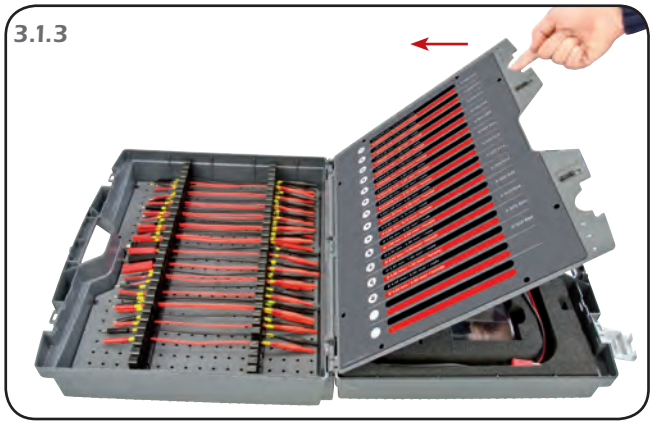
3.1 Open case

3.1.1

3.1.2



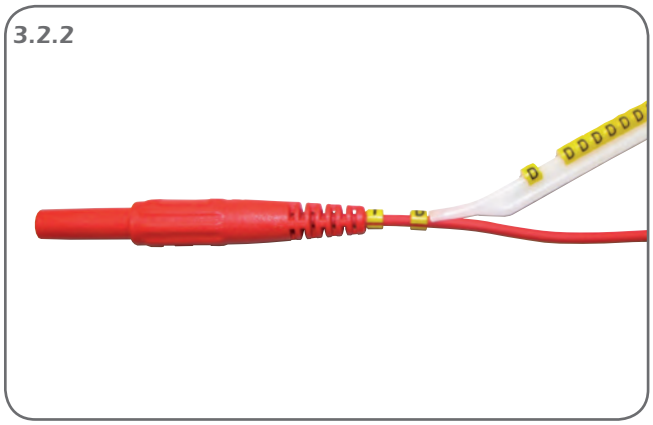
3.1.3



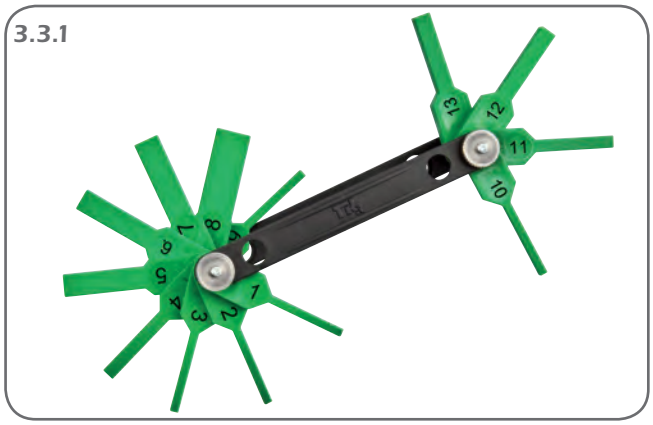
3.2 Positioning the lead marker

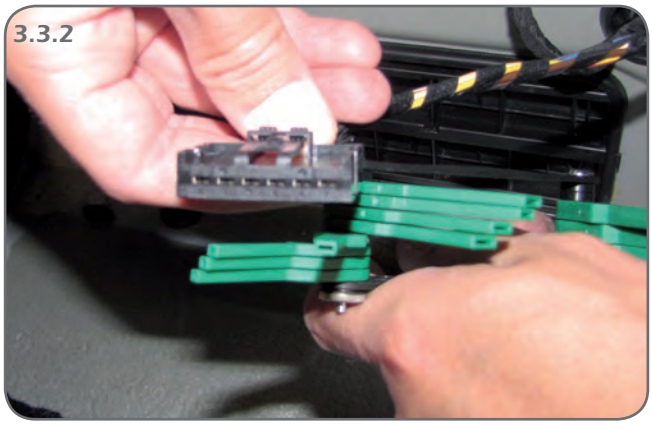
3.2.1

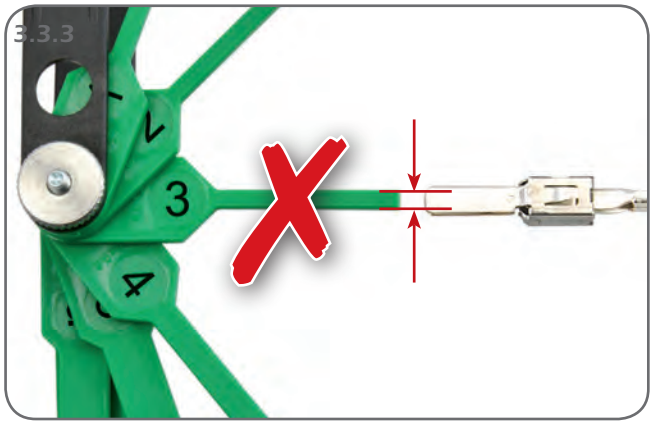
3.2.2

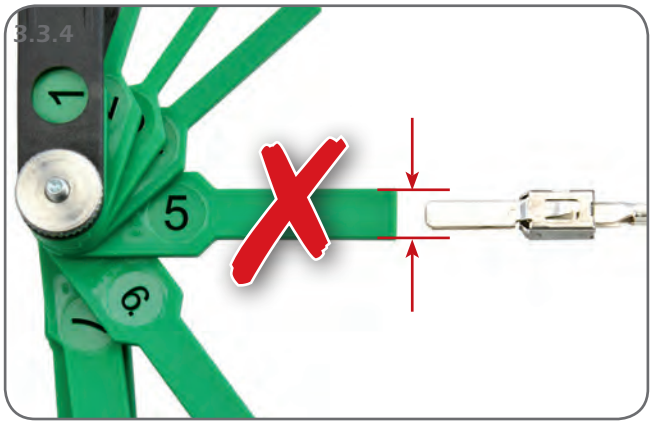


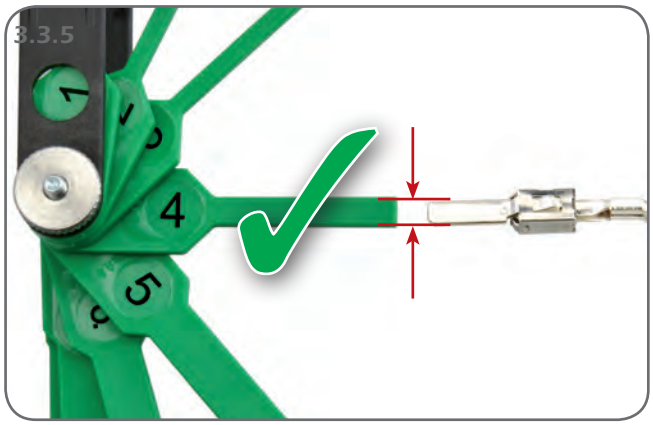
3.3 Determining the right measuring lead

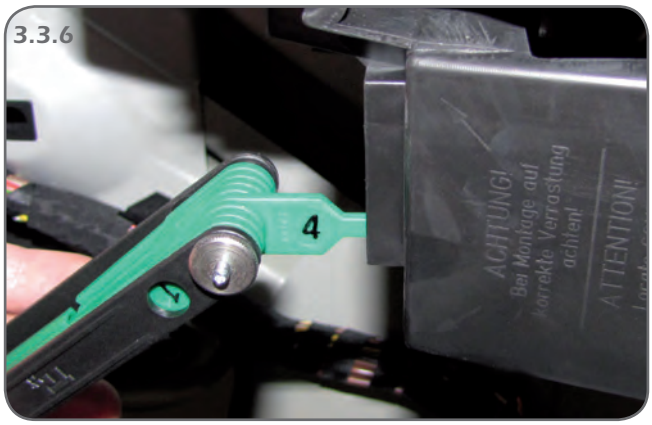










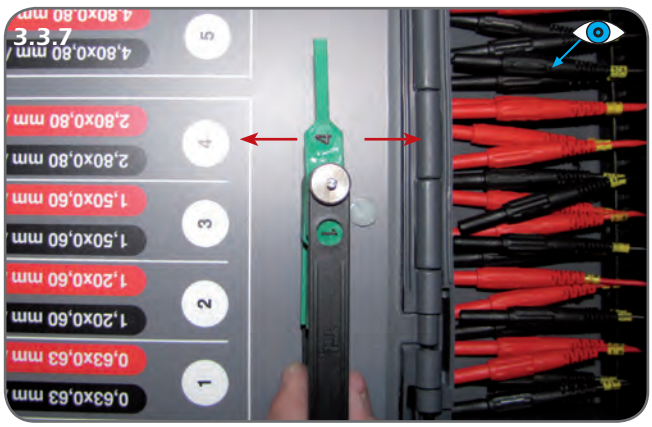


3.3.2
Judge the initial selection of the right gauge for the casing by eye.

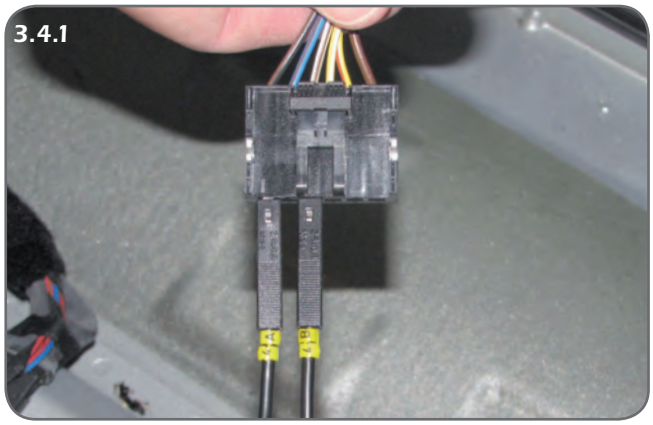
3.3.3 – 3.3.6
Check the choice of gauge is correct.

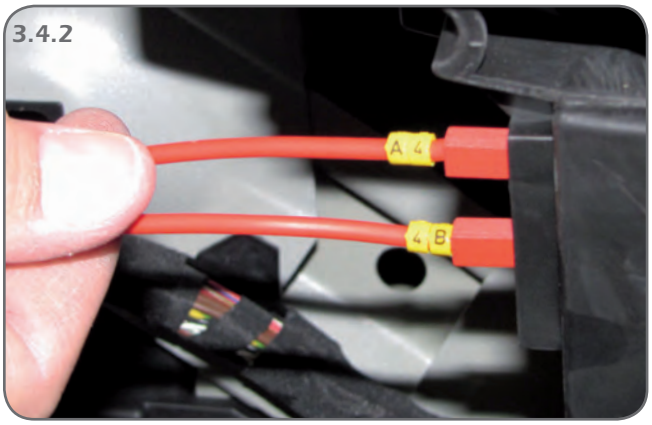
3.3.7
The matching test lead set in each case is identified with the same number as that printed on the gauge selected.

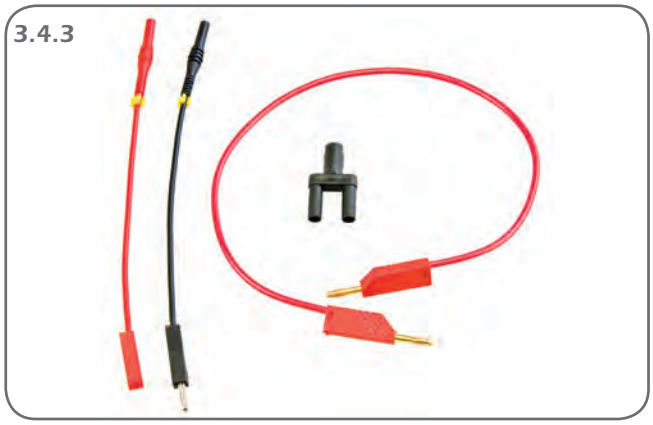
The letter on the lead is for differentiation purposes, where a number of test leads with the same number are being used at the same time.

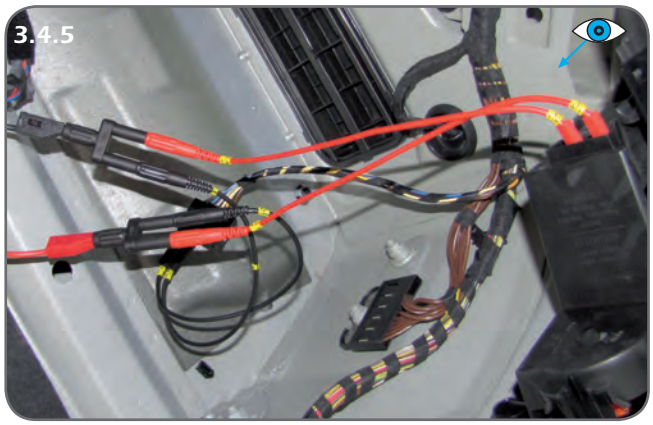


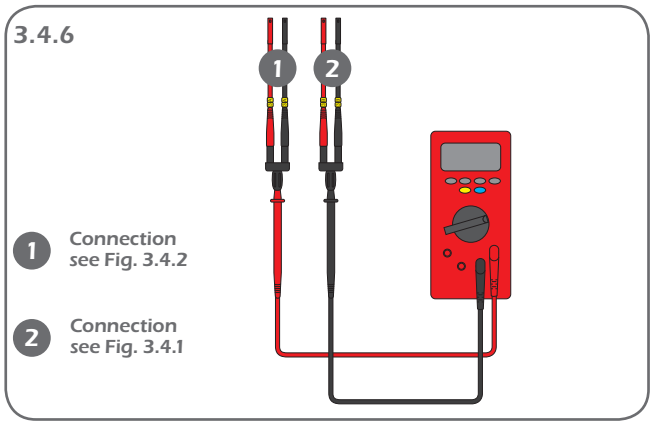
3.4 Connecting with a Y-lead











3.4.1
Socket-side connection

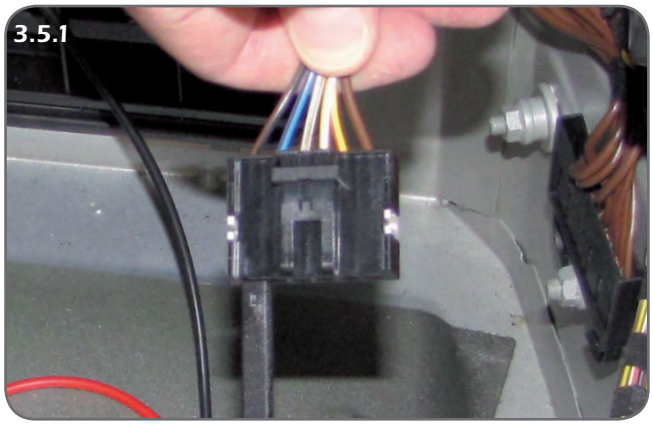
3.4.2
Plug-side connection

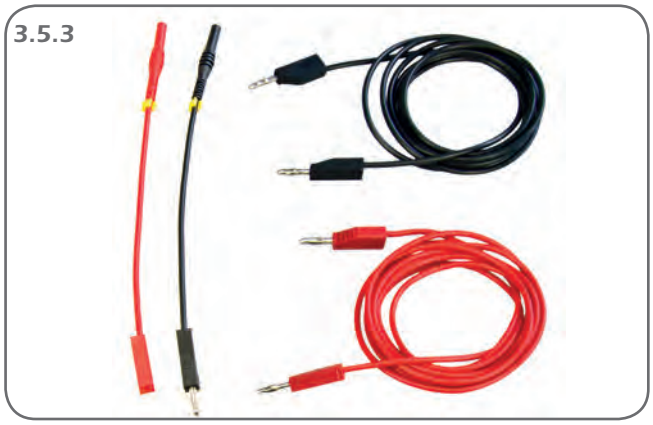
3.4.3, 3.4.4
T-pieces allow test leads to be connected to measuring leads. A Y-lead of this kind guarantees max. conductivity in the consumer path. The voltage measured is tapped off.

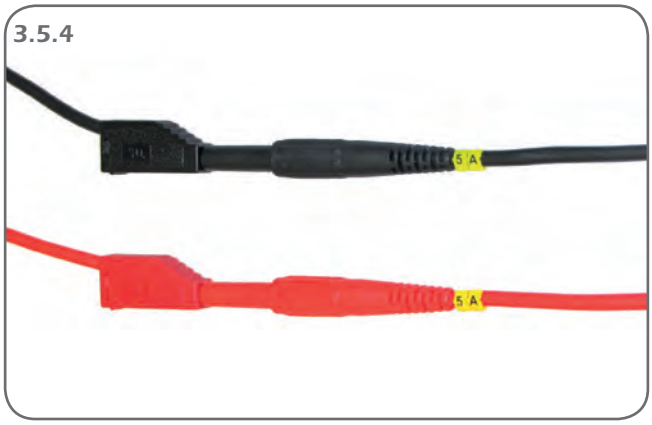
3.4.4
When using a number of measuring leads, always ensure that the leads marked A and B are correctly assigned.

3.4.5
Always connect the measuring instrument first – the bare ends of the leads must never come into accidental contact with the bodywork or other bare metal parts.

3.5 Connecting with an I-lead





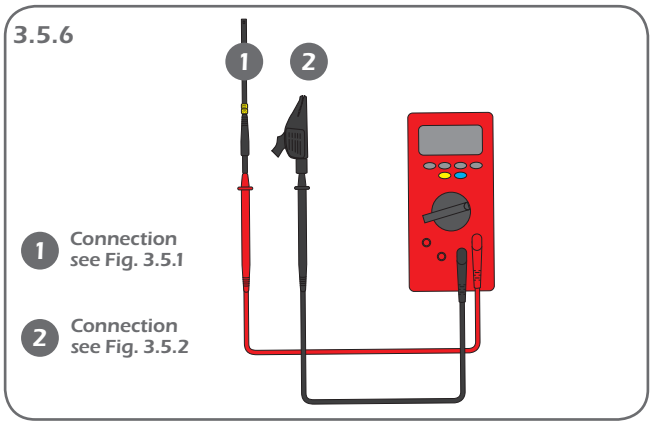


3.5.1
Socket-side connection

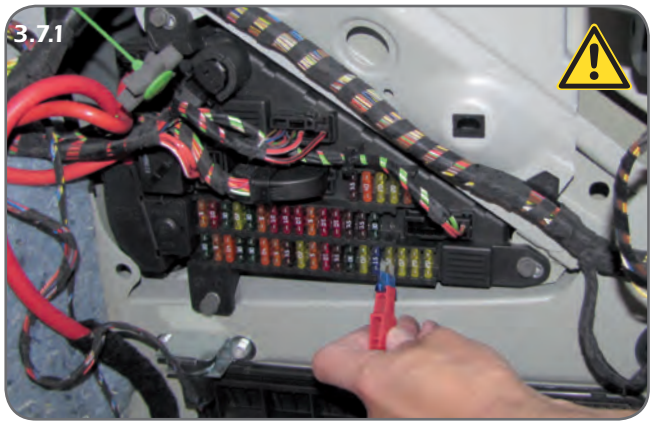
3.5.2
Connecting to ground potential

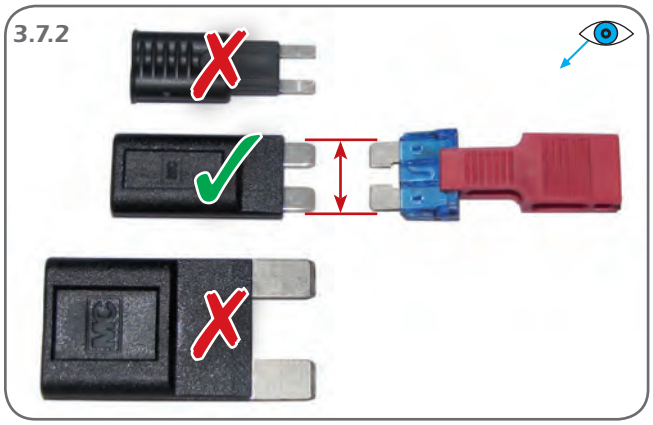
3.5.3 – 3.5.5
I-connection – test leads to measuring leads

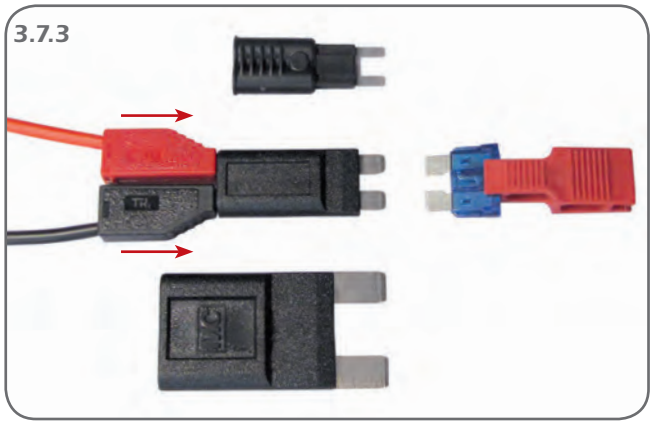
3.5.6
Always connect the measuring instrument first – the bare ends of the leads must never come into accidental contact with the bodywork or other bare metal parts.

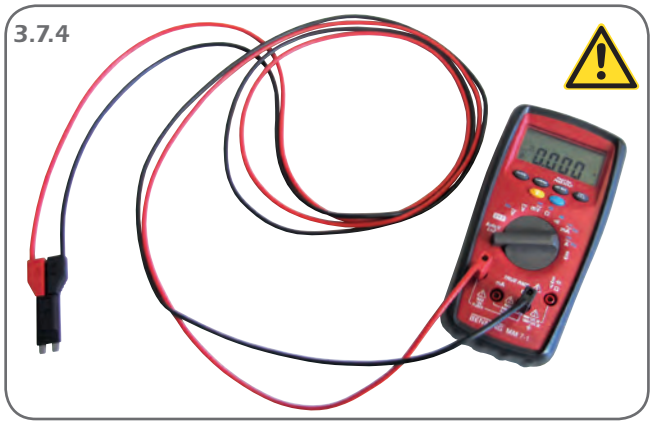


3.6 Bridging the safety fuse









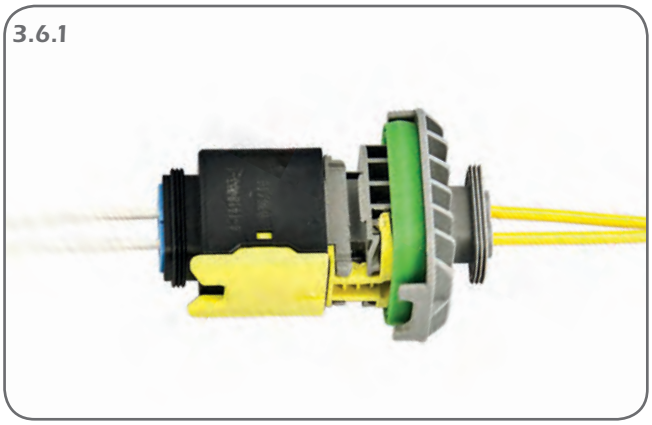
Warning:
Any measurements before the safety fuse must be carried out by professionally qualified personnel only.

Warning:
You are working in an unprotected current circuit. Bridging safety fuses can result in subsequent damage to the vehicle's electrical and electronics systems.

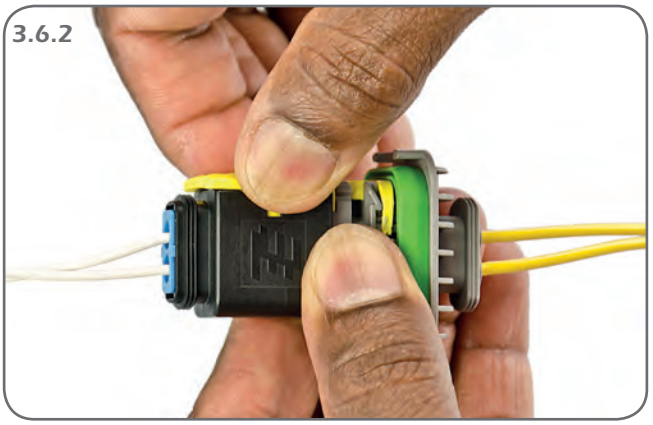
3.7.4
Always ensure that you connect up the measuring instrument first, so that no bare lead ends can come into contact with the bodywork.
Bare lead ends could produce a short circuit and even cause the lead to catch fire.

3.7 Testing

3.6.1

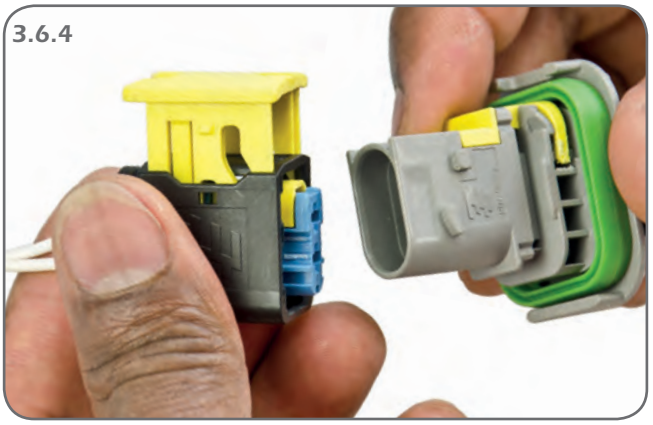


3.6.2

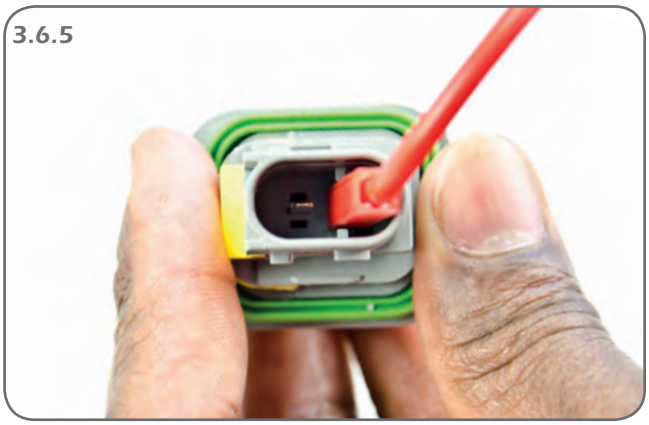


3.6.3

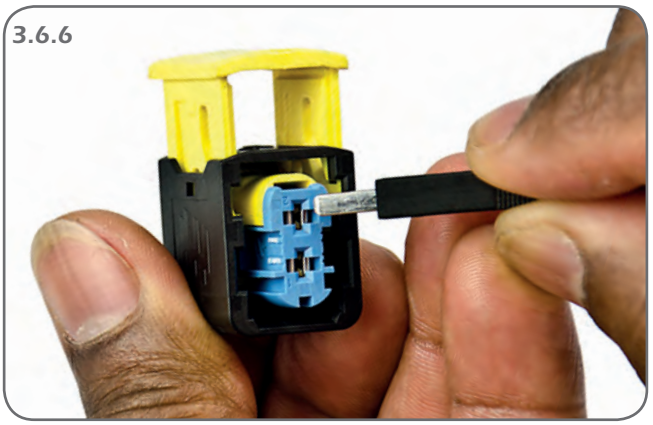
3.6.4



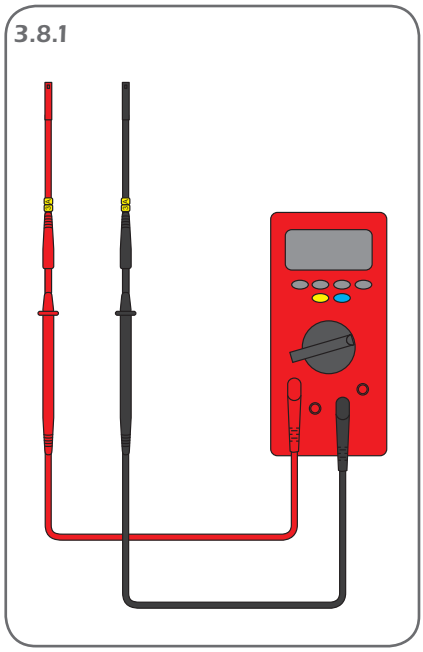
3.6.5



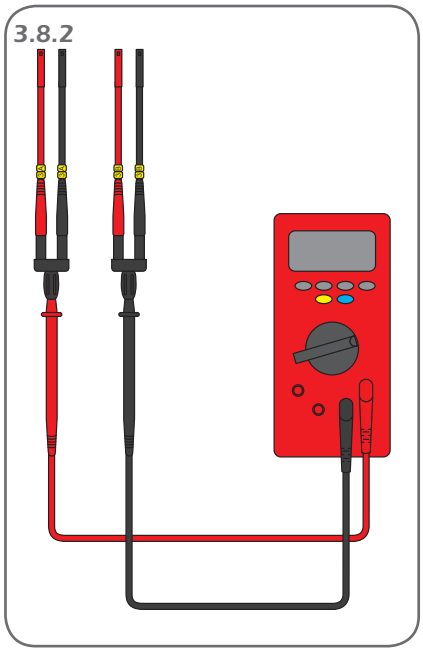
3.6.6



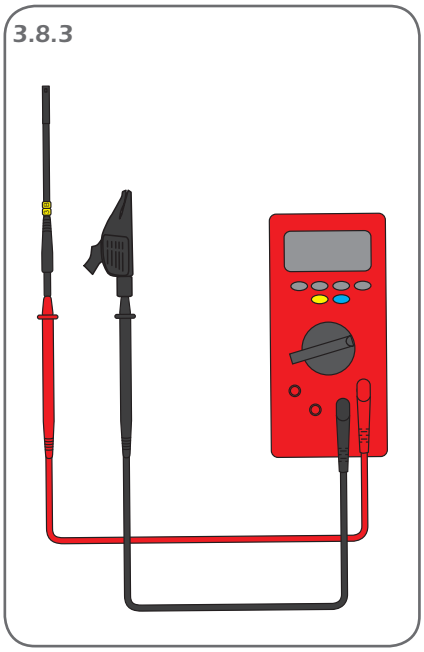
3.8 Measurement instrument connectivity



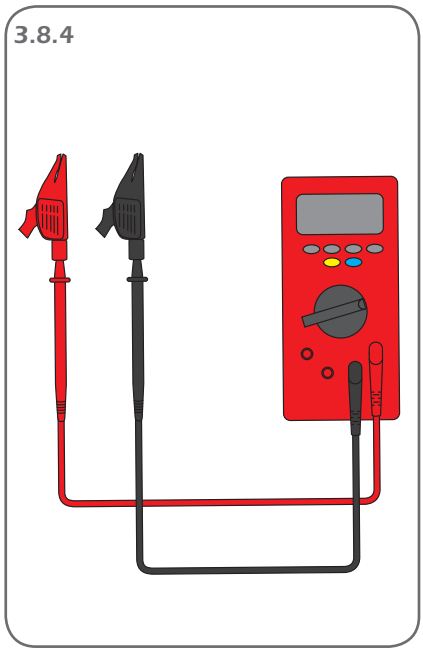
3.8.1
I-connector for current measurement

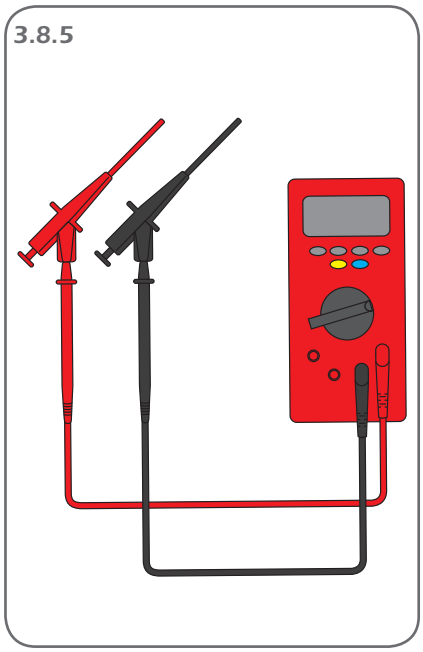


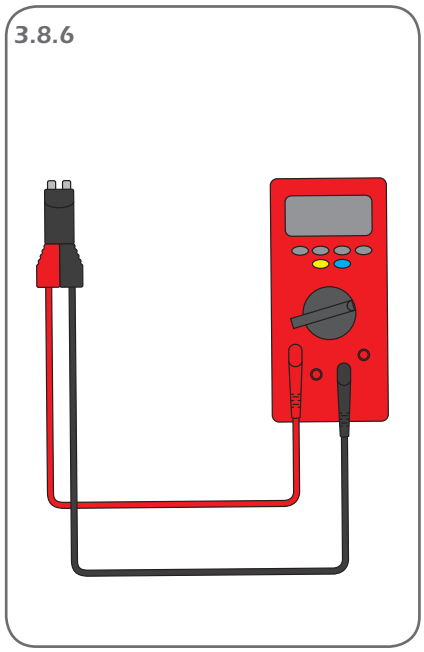
3.8.2
Y-connector for voltage measurement



3.8.3
Plug combination with respect to ground - predominantly for measuring voltage, current measurement also possible







3.8.4 – 3.8.6
Measurement instrument equipped with universal alligator clips for widest variety of uses.

4.1 Spare parts

The individual items described in this guide are integral parts of the case and can be re-ordered as spare parts or additions to the set.
Test lead sets can be re-ordered as spare parts or as additions. This means that entire plug connectors with a number of identical contacts can be tested. Depending on the number of poles, as many test leads as required can be added. The case has spaces available for the purpose.

BMW No.	Designation	Unit
83 30 2 299 394	Contact gauge	1 pc.
83 30 2 299 399	Extension lead, 2 m	1 set
83 30 2 299 408	Terminal clips, red and black	1 pair
83 30 2 299 407	Test prods, red and black	1 pair
83 30 2 299 400	Connector plugs	1 set
83 30 2 333 697	Lead markers	1 set
83 30 2 299 404	Blade-type safety fuse adapters	1 set
83 30 2 328 993	Measuring leads, 0.63x0.63 mm	1 pair
83 30 2 329 115	Measuring leads, 1.20x0.60 mm	1 pair
83 30 2 329 116	Measuring leads, 1.50x0.60 mm	1 pair
83 30 2 329 156	Measuring leads, 2.80x0.80 mm	1 pair
83 30 2 333 580	Measuring leads, 4.80x0.80 mm	1 pair
83 30 2 333 584	Measuring leads, 5.20x0.63 mm	1 pair
83 30 2 333 615	Measuring leads, 6.30x0.80 mm	1 pair
83 30 2 333 619	Measuring leads, 9.50x1.20 mm	1 pair
83 30 2 333 623	Measuring leads Ø 0.80 mm	1 pair
83 30 2 333 625	Measuring leads Ø 1.50 mm	1 pair
83 30 2 333 694	Measuring leads Ø 2.50 mm	1 pair
83 30 2 333 695	Measuring leads Ø 3.50 mm	1 pair
83 30 2 333 696	Measuring leads Ø 4.00 mm	1 pair

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