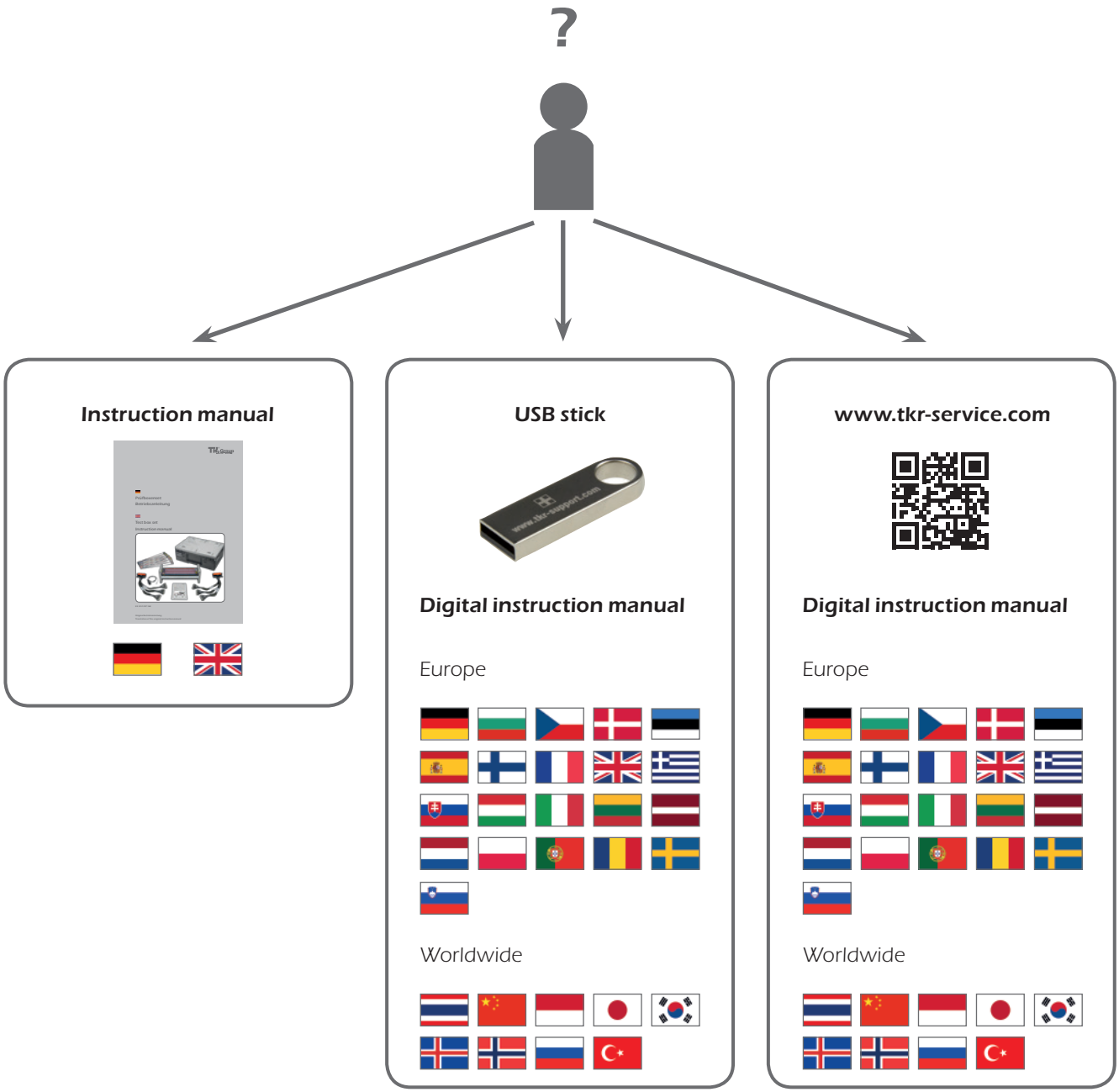
Test box set

Instruction manual

83 30 2 457 168

Original instruction manual



1.1 Notes for the instruction manual

State of the art
The BMW test box set reflects the latest technological standards. To ensure that the device functions properly, it must be operated in a professional and safety-conscious manner.

Technical modifications
In the interests of quality assurance, we fully reserve the right to carry out technical modifications on the basis of further technological developments and product improvements, without prior notice.

Read the instruction manual
Before using the test box set, the instruction manual must be carefully read and understood. This manual must always be available on site where the product is used. In addition to the instruction manual and the applicable rules for accident prevention in the country and place of use, the generally recognised regulations for safe and professional work must be observed.

Operation
All actions necessary for correct operation are described in the instruction manual. No methods of working other than those approved by the manufacturer may be used.

Malfunctions
If malfunctions occur, only those malfunctions for which corrective measures have been appropriately outlined in the manual may be repaired independently.

1.2 Explanation of symbols

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

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


Observe the instruction manual!


Ground device tag


Turn clockwise


Observe the general instructions!


IN control unit


Arrows to indicate compression


Prohibited for persons with pacemakers


OUT car

For further information, see section...


Attention!
General hazard


Please pay attention to...

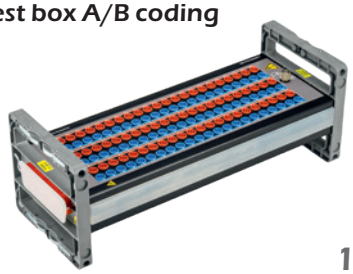
Arrow showing direction


Warning: Dangerous electrical voltage


Audible locking

1.3 Delivery contents

Test box A/B coding



1x

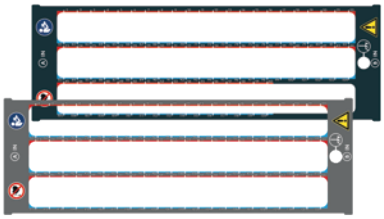
Grounding cable

1x

Instruction manual
BMW test box set

1x

Basic template

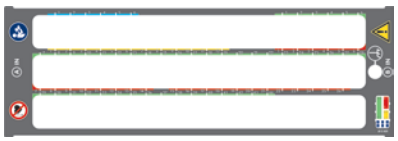


1x

Test box template for
12 7 241/83 30 0 494 963

1x

Test box template for
61 2 421/83 30 0 494 894



1x

3-fold adapter A coding

1x

3-fold adapter B coding

1x

Suitcase test box set BMW

1x

Accessories not included:

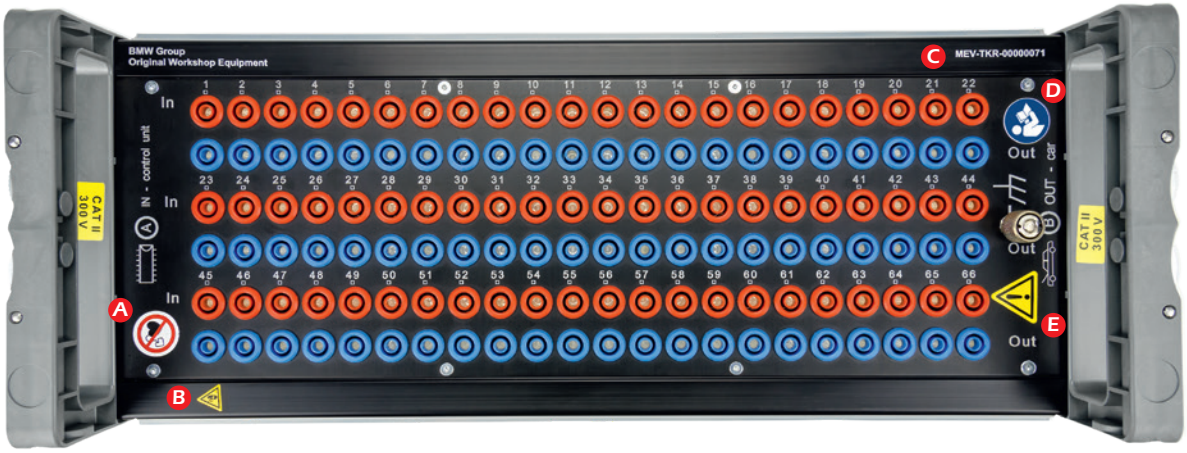
Clip

1x

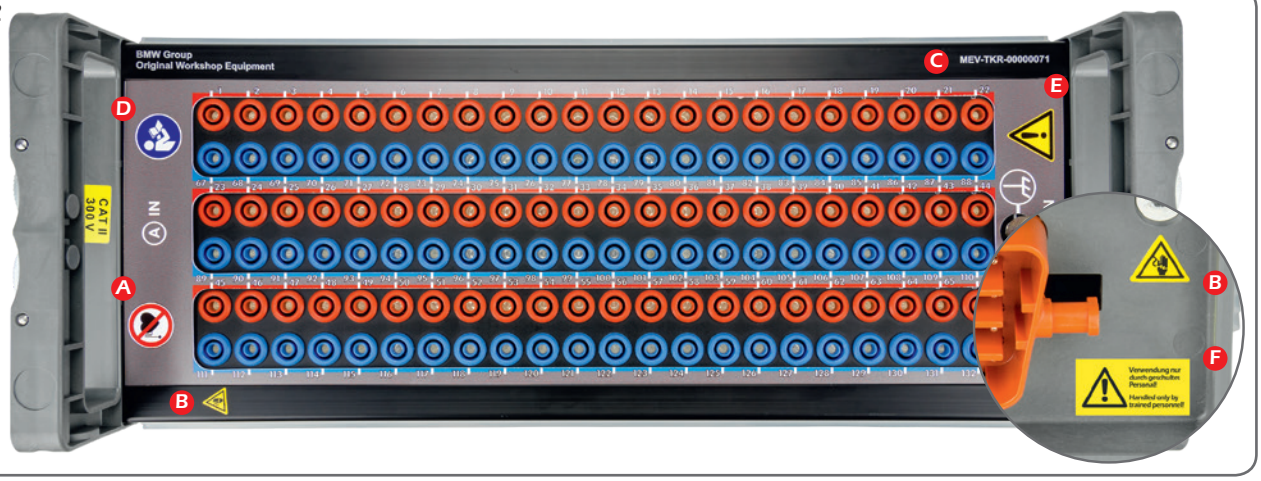
83 30 2 299 408
Clip
Red and black
1 pair

1.4 Labels

1.4.1



1.4.2



1.4.3

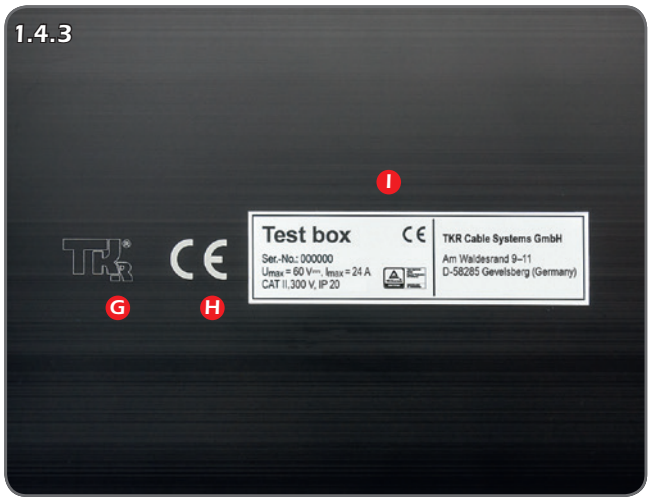


Fig. 1.4.1 Test box without template
Fig. 1.4.2 Test box with template and side view
Fig. 1.4.3 Test box floor

A	Prohibited for persons with pacemakers
B	Warning: Dangerous electrical voltage
C	Type number
D	Observe the instruction manual!
E	Attention! General hazard
F	Use only by trained personnel!
G	Manufacturer label
H	CE label
I	Nameplate

1.5 Safety instructions

This test box is only approved for the application intended by the manufacturer. Only original accessories may be used. There is a high safety risk if no original tool or original accessories are used. To determine which accessories may be used, please refer to the current repair instructions for the respective application.

Personnel who have not been trained or instructed in the use of the device are prohibited from using it. Ensure that the instruction manual is made available to the operating personnel.

The accident prevention regulations valid in the respective countries must be observed.

Only accessories that are expressly approved for the respective application may be used.

Never throw or drop the test box. Never misuse the test box.

The test box may only be used at ambient temperatures above 5 °C and up to a maximum of 45 °C.

Never use the test box in potentially explosive areas.

Check all components for damage before each use. In case of defects or abnormalities, the test box may not be used. Contact the manufacturer's service.

2.1 Technical data

2.1.1

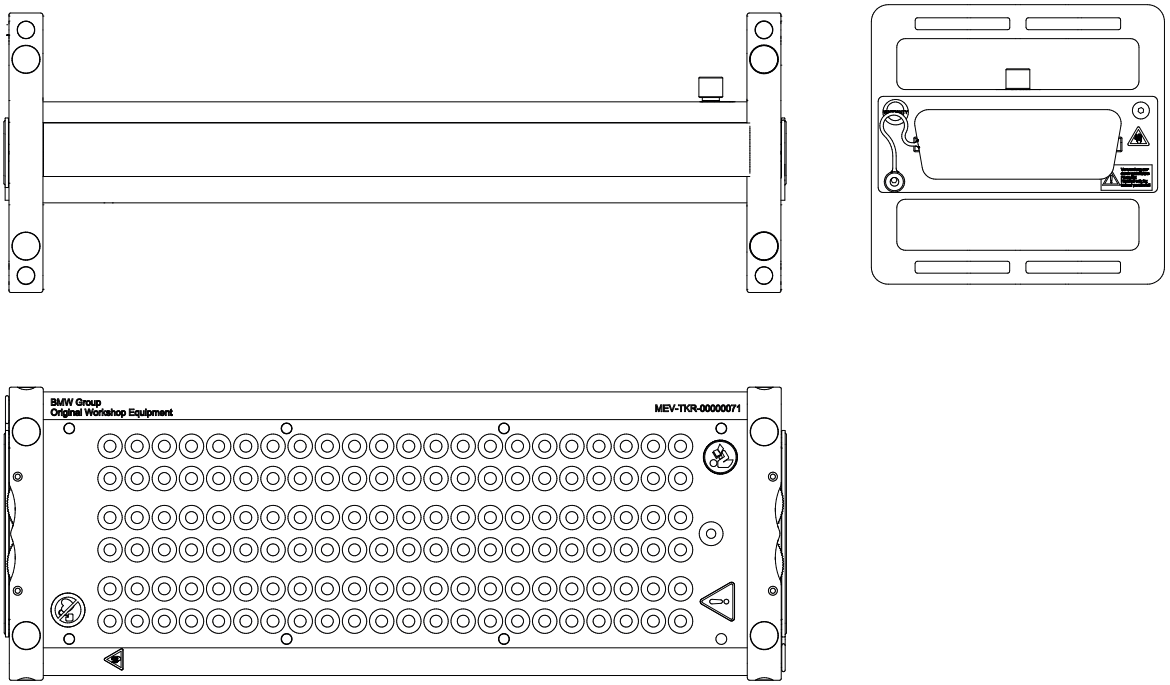


Fig. 2.1.1
Test box

Rated voltage:	60 V⎓
Rated current at any 2 connection points:	24 A
Measurement category:	CAT II 300 V
Weight:	6.00 kg

Length:	450 mm
Width:	172 mm
Height:	165 mm
Test socket-Ø:	4 mm

2.1.2

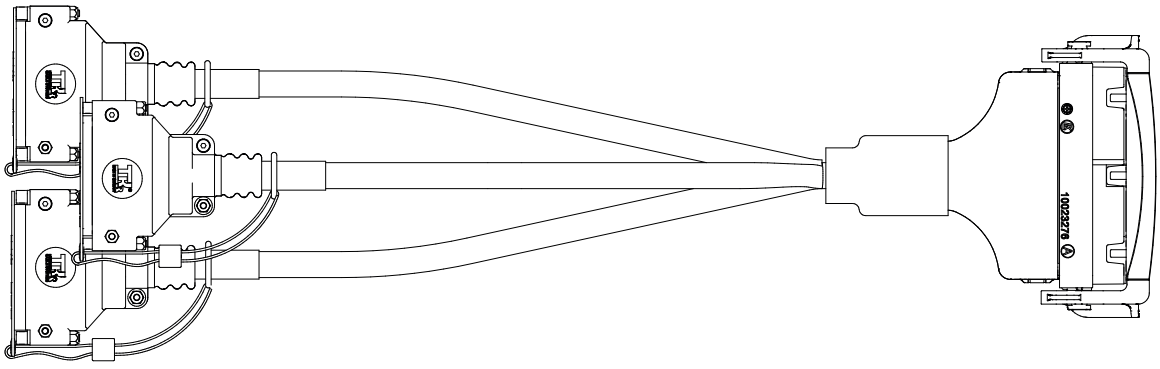


Fig. 2.1.1
3-fold adapter cable

Rated voltage:	60 V⎓
Rated current:	$I_{max.}$ 1 A

2.2 Device components

2.2.1

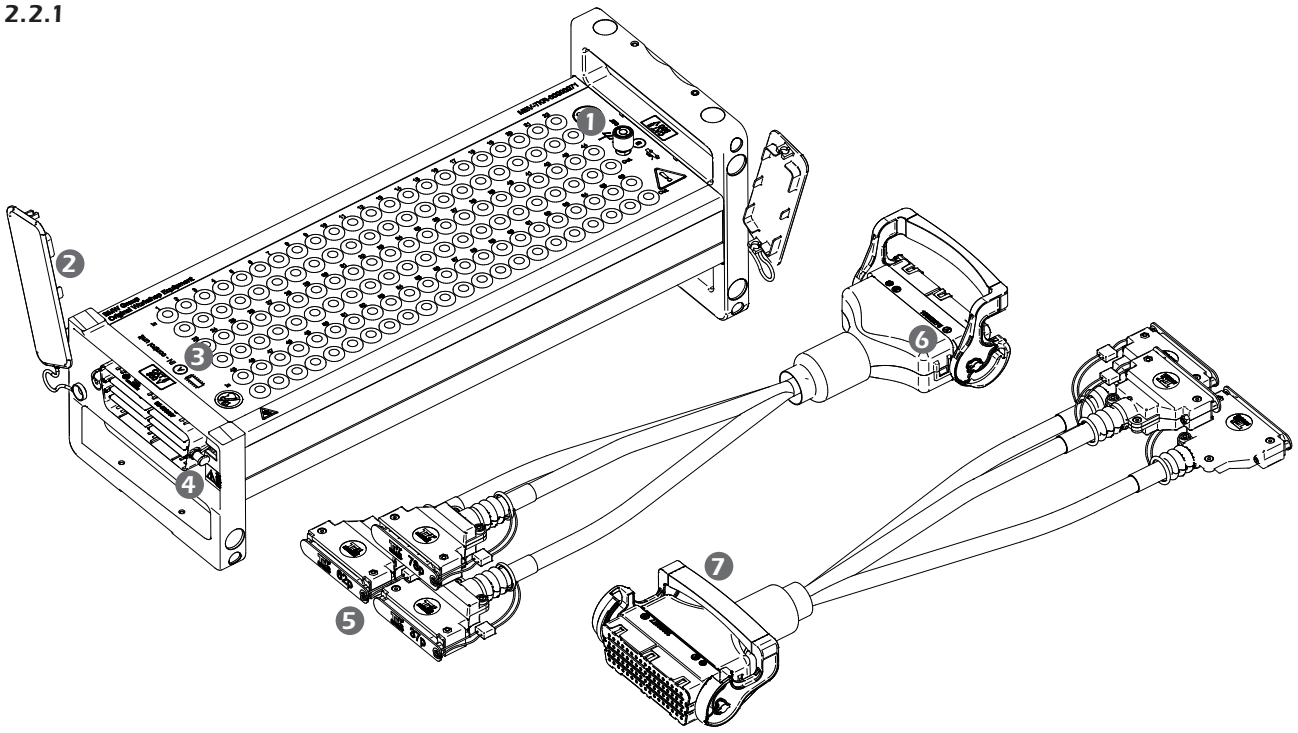


Fig. 2.2.1
Test box with 3-fold adapters

1. Ground connection
2. Dust cover
3. Test box coding specification
4. 3-fold adapter connection
5. D-SUB connector
6. 3-fold adapter coding specification
7. Handgriff

2.3 Operating conditions

Climatic conditions

Storage temperature:	-40 °C to +80 °C (-40 °F to +176 °F)
Operating temperature:	-5 °C to +45 °C (+41 °F to +113 °F)
Ambient humidity:	up to 95% (non-condensing)
Protection class:	IP20

Electromagnetic compatibility (EMC)

DIN EN 61 326 - 1

- Electrical measuring, control, regulating, and laboratory equipment

EMC requirement - Part 1: General requirements

3.1 Principles for handling the test box

Risk of injury
Please ensure that you and your colleagues handle the test box correctly. Any misuse or divergent use of the test box is expressly prohibited. The test box may only be used as intended.

Lay all cables so that no one can trip over them.

Before beginning work, the test box user must discharge himself at a suitable ground potential with the gauge in order to avoid discharge via the test box.

Warranty
The manufacturer assumes no liability for damage resulting from improper repair or the use of third-party spare parts. The warranty is void for damage to the device caused by improper operation.

Surroundings
Make sure that the text box set is used in a working area that is free from heat sources (max. 45 °C / 113 °F) as well as corrosive liquids, fats, and oils.

Declaration of Conformity
The test box set has been tested and manufactured in accordance with European guidelines. The corresponding Declaration of Conformity is attached to this instruction manual.

3.2 Intended use

The test box is used for guided troubleshooting in low-voltage vehicle on-board power systems in accordance with diagnostic systems.

The following tests and measurements are possible using specific adapter cables (shorter than 3 m):

- Measuring potentials against vehicle mass using a multimeter or other diagnostic equipment
- Testing of potential differences with the help of a multimeter or other diagnostic equipment
- Measuring resistances between terminals with the aid of a suitable multimeter or ohmmeter

Qualified personnel
Trained and instructed personnel have specialist training that enables them to repair/maintain the respective vehicles and vehicle components.
These workers have also demonstrably participated in training that enables them to do specific tasks with the tool.

Misuse
The supply of currents by means of the 3-fold adapter is considered misuse and is therefore expressly prohibited.

3.3 Startup - Preparation

Fig. 3.3.1
Remove the dust protection cap on both sides of the test box.

Fig. 3.3.2
Connect the 3-fold adapter according to the coding on the test box.

Fig. 3.3.3, 3.3.4
Determine whether the 3-fold adapter is properly plugged into the test box. Lock the 3-fold adapter by pulling down the handle.

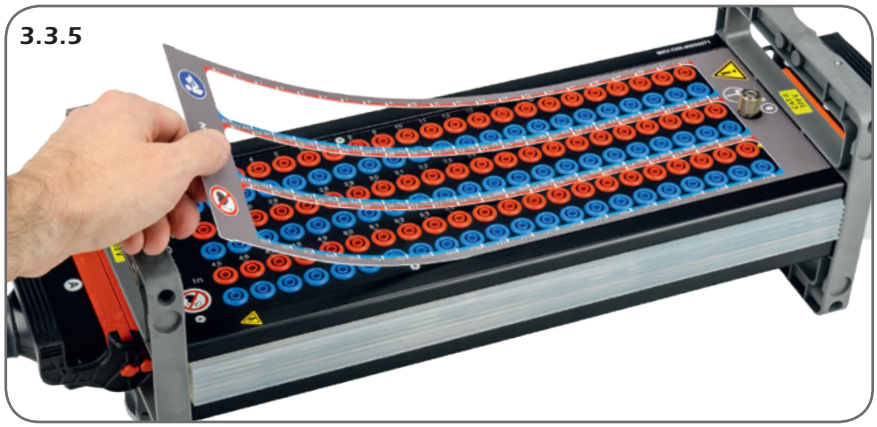
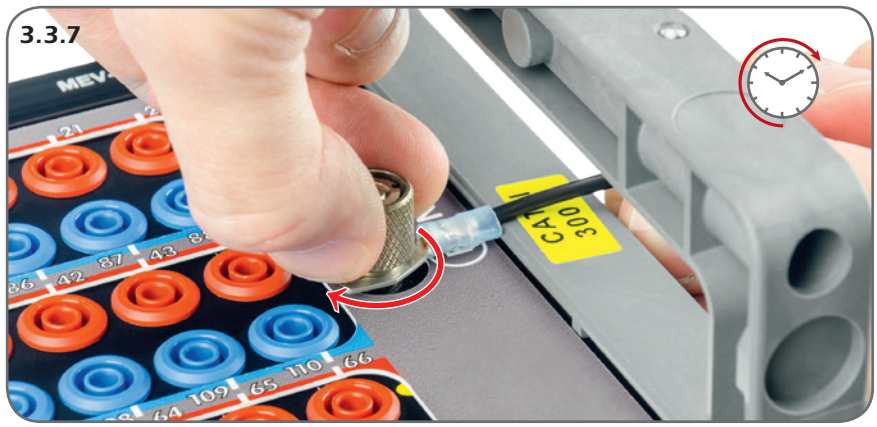


Fig. 3.3.5
Place the template on the test box.

Fig. 3.3.6 to 3.3.8
Connect the ground connection cable to the test box by connecting the ground contact as shown in Fig. 3.3.7, tightening clockwise.



3.4 Connecting the BMW adapter cable

Fig. 3.4.1
Remove the D-SUB protective cover before use.

Attention! There is voltage at the contacts of the D-SUB connector! Attach protective covers to all unused plugs during and after measurement.

3.4.1

Fig. 3.4.2
Connection of a BMW adapter cable with a maximum of 66 pins
Connect the BMW adapter cable to the 3-fold adapter (A coding). Use one of the three D-SUB connectors (37, 62 or 78 pin).

3.4.2

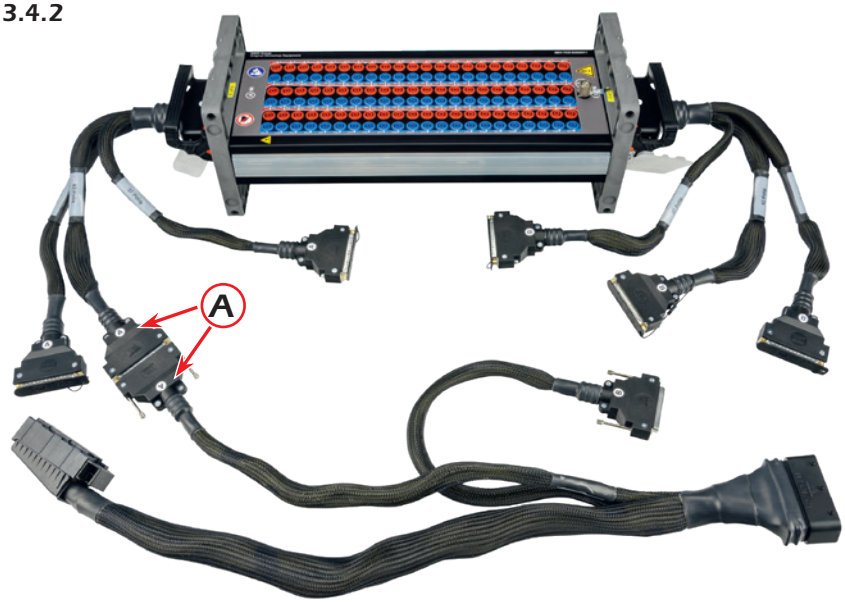
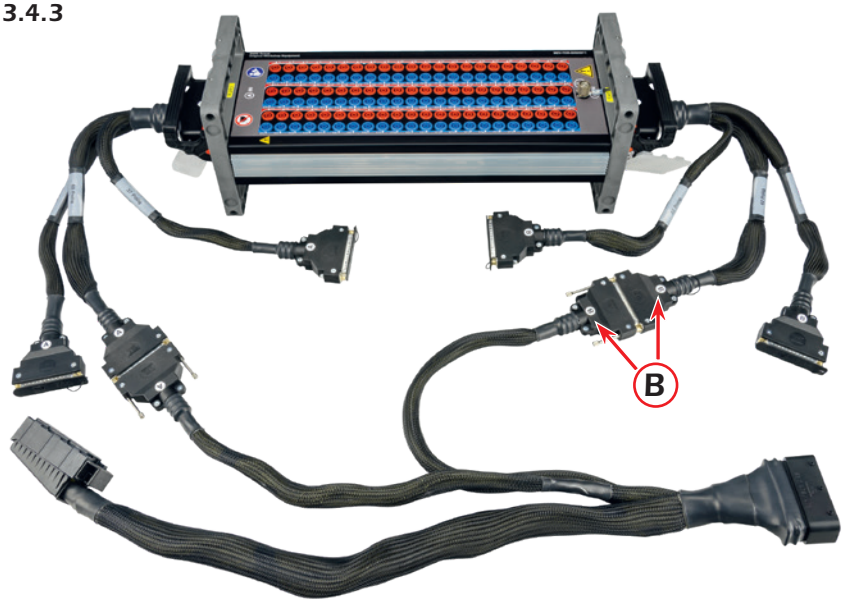


Fig. 3.4.3
Connection of a BMW adapter cable with a maximum of 132 pins
For cables with more than 66 pins, the second 3-fold adapter (B coding) must also be used. Connect the second D-SUB plug of the cable here. As a result, the other pins of the cable (up to a maximum of 132) will be connected to the test box.

Short circuit hazard! Never use more than one connector on the 3-fold adapter! The vehicle electronics can otherwise be severely damaged.

3.4.3



3.5 Connecting the test box to the vehicle

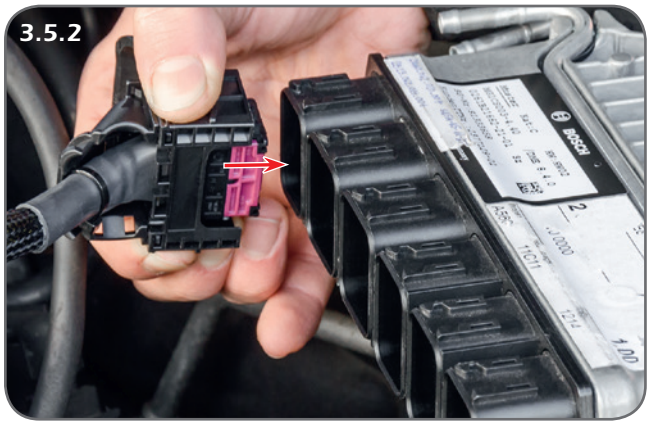


Fig. 3.5.1
Clamp the ground connection cable to the ground pin of the external jump-starting point (FSSP). Do not connect the ground connection cable to the positive contact.

Fig. 3.5.2, 3.5.3
Connect the test box to the control unit.

Fig. 3.5.4, 3.5.5
Connect the test box to the vehicle wiring harness.

3.6 Possible applications

To start up the test box, follow the instructions:

- **3.3 Startup - Preparation**
- **3.4 Connecting the BMW adapter cable**
- **3.5 Connecting the test box to the vehicle**

3.6.1

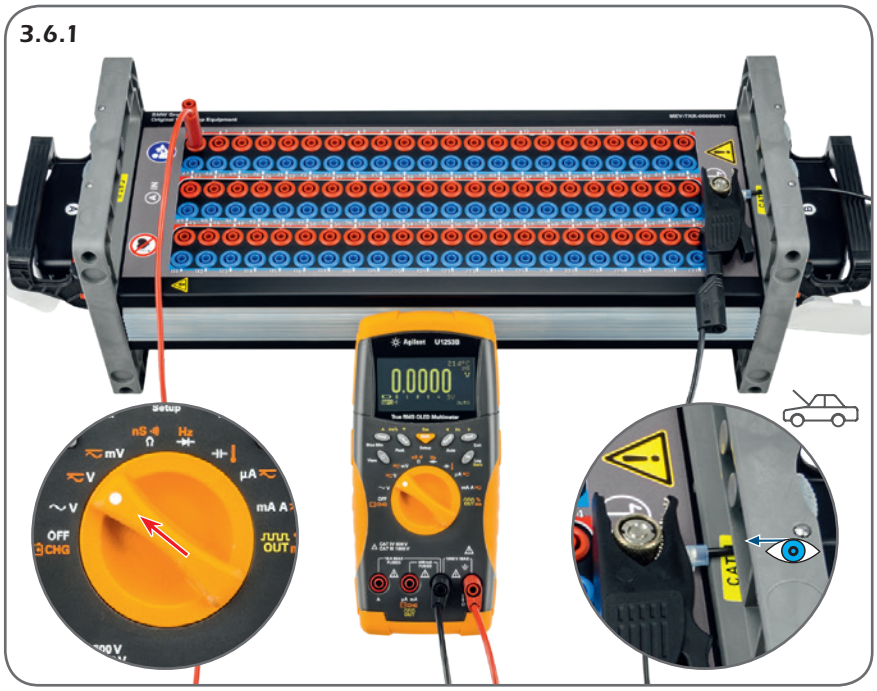


Fig. 3.6.1
Connection to voltage measurement: potentials with regard to vehicle mass
To measure potentials compared to the vehicle mass, first close the COM or ground connection of the gauge using suitable clamps[1] to the ground contact of the test box. Join the positive connection of the gauge with the test box socket to be measured. The resulting voltage can now be read on the gauge.

3.6.2

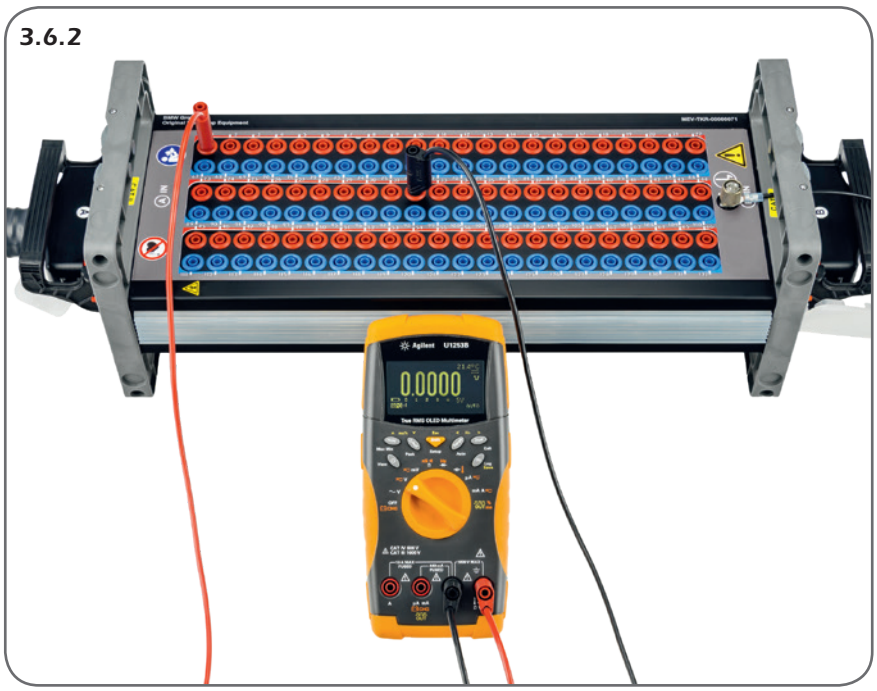


Fig. 3.6.2
Connection to voltage measurement: Potential differences
To measure potential differences, close the COM or connect the ground connection of the gauge to the socket of the test box to be measured using suitable measuring cables. Then connect the positive terminal of the gauge to another socket. Depending on the potential difference, the positive or negative potential difference (voltage) is displayed on the gauge.

[1] e.g. items 83 30 2 299 408 from the BMW automotive measuring cable set (83 30 2 299 380)

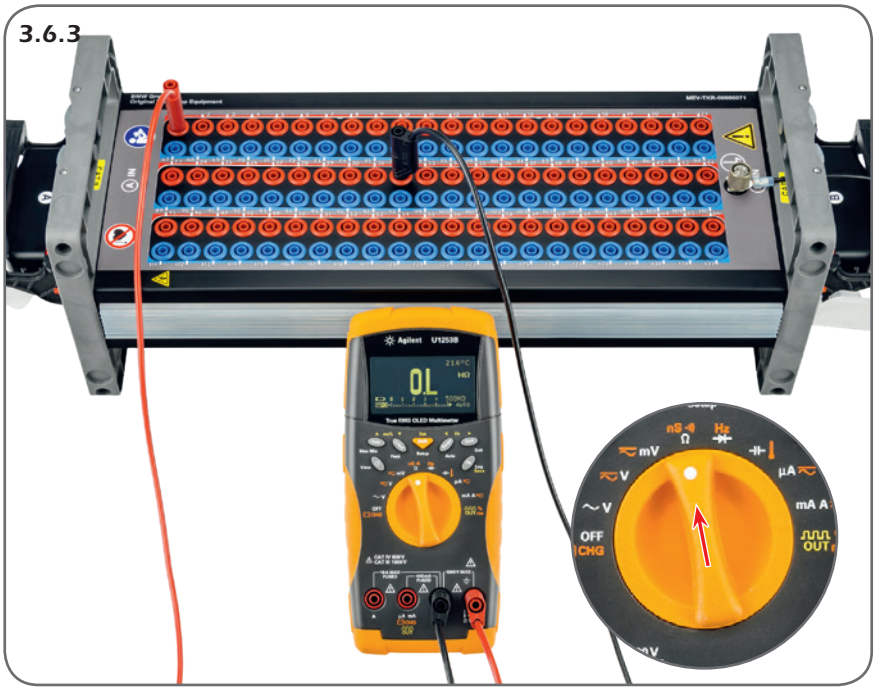


Fig. 3.6.3
Connection to the resistance measurement
To measure resistance, connect the COM or connect the ground connection of the gauge to the socket of the test box to be measured using suitable measuring cables. Then connect the positive terminal of the gauge to another socket. The resulting resistance can now be read on the gauge.

Attention! The gauge supplies power during resistance measurement. Resistances may only be measured in a zero voltage and zero current state! If disregarded, there is a high risk that the gauge will be destroyed and components damaged.

3.7 Storing the test box

Fig. 3.7.1
To protect the test box against contamination and damage, store the test box and its accessories in the transport case provided for this purpose.

4.1 Maintenance

Care / Cleaning
If necessary, clean the test box with a dry cloth after use. Then replace the dust protection caps and place the box in the carrying case.

Maintenance
The test box is maintenance-free except for occasional cleaning.

Service address
TKR Cable Systems GmbH
Am Waldesrand 9–11
D-58285 Gevelsberg (Germany)

4.2 Troubleshooting

Malfunction	Problem	Remedy	Chapter
3-fold adapter cannot be plugged in	3-fold adapter is worn	Replacement of the 3-fold adapter	4.3
	3-fold adapter was not inserted correctly	Determine whether the 3-fold adapter is properly plugged into the test box.	3.3
Handle of the 3-fold adapter cannot be pulled down	3-fold adapter was not inserted correctly	Determine whether the 3-fold adapter is properly plugged into the test box.	3.3
Expected voltage is not displayed	Ground connection cable was not connected	Connect ground connection cable	3.3
	3-fold adapter, ground connection cable or BMW adapter cable was not inserted correctly	Check all connections	3.3, 3.4, 3.5, 3.6
	Wrong coding (A connected with B, B with A)	Connect BMW adapter cable and 3-fold adapter according to the coding (A with A, B with B)	3.4

4.3 Spare parts

Item number	Designation
MEV BMW 00000071	Test box A/B coding
4-01-000000C	Grounding cable
DOK-BMW-00000010	BMW test box set instruction manual
77-001111	Basic template 1 - 132 pins
77-001116	Test box template for 12 7 241/83 30 0 494 963
77-001117	Test box template for 61 2 421/83 30 0 494 894
77-001124	Basic template 1 - 120 pins
BGR BMW 10000114	3-fold adapter A coding
BGR BMW 10000115	3-fold adapter B coding
WZK-BMW-0000006	Suitcase test box set BMW

5.1 Disposal

Devices, machinery, and the components of devices and machinery must be disposed of in accordance with the laws, regulations and other stipulations of the country in which they are located.

We recommend disposal by licensed specialist companies.

EU Declaration of Conformity

according to the Low Voltage Directive
2014/35/EU

Manufacturer:	TKR Cable Systems GmbH Am Waldesrand 9–11 58285 Gevelsberg, Germany
Person authorised to compile the technical documentation:	Thorsten Weyland
Tool type:	Test box set
Type designation:	83 30 2 457 168
	Developed and constructed in accordance with the standards and guidelines stated below, by
	TKR Cable Systems GmbH **Am Waldesrand 9–11** **58285 Gevelsberg (Germany)**
Applied harmonised standards:	EN 61010-1 : 2010
Serial number range:	00001–10000
Low voltage directive:	2014/35/EU
As the manufacturer, we declare:	The correspondingly labelled products fulfil the requirements of the stated directive and standards.

Thorsten Weyland

Gevelsberg, 20.01.2018 Thorsten Weyland
Technical Manager

TKR Group
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