

M Installation documentation

Cold start for Thermo Top Evo water heater

Jeep Wrangler

Left-hand drive vehicle

| Manufacturer | Model | Type | Model year | EG-BE-No. / ABE | | |
|--------------|----------|-------------------|-------------------|------------------------|---------------------------------|-------------|
| Jeep | Wrangler | JL | from 2018 | e4* 2001/116* 0116*... | | |
| Motorisation | Fuel | Emission standard | Transmission type | Output [kW] | Displacement [cm ³] | Engine code |
| 2.2 CRDi | Diesel | Euro 6d Temp | 8-speed AG | 147 | 2143 | N-S14 |

| Total installation time | Note |
|-------------------------|--|
| 1.5 hours | Applies only to the retrofitting of a cold start system in vehicles with an already retrofitted parking heater |

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1 List of abbreviations

AG Automatic transmission

CLR Cold start module

RTD Temperature sensor

2 Installation notes

2.1 Information on Validity

This installation documentation applies to vehicles listed on page 1, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded.



Vehicle and engine types, equipment variants and other specifications not listed in this installation documentation have not been tested. The installation is not permitted.

2.2 Components used

| Designation | Order number |
|---|--------------|
| Additional cold start kit for Jeep diesel | 1325525C |
| Cold start installation documentation for Jeep Wrangler 2018 diesel | 1327162A |

2.3 Validity notes

This installation documentation applies only in combination with:

| Designation | Order number |
|---|--------------|
| Installation kit for Jeep Wrangler diesel 2018 TT-Evo | 1327159 |
| Installation documentation for Jeep Wrangler diesel 2018 TT-Evo | 1327160_ |

2.4 Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater.

The total installation time may vary for vehicle equipment other than provided.

3 About this document

3.1 Purpose of the document

This installation documentation is part of the product and contains all the information required to ensure professional vehicle specific installation of the:

| |
|----------------|
| Cold start kit |
|----------------|

3.2 Warranty and liability

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components must audibly snap into place during assembly.

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components.

The initial start-up is to be executed with the Webasto Thermo Test Diagnosis.

When installing a programmable control module (e.g. a PWM Gateway), the corresponding settings must be checked or adjusted.

3.2.1 Statutory regulations governing installation

The Thermo Top Evo heater has been type-tested and approved in accordance with ECE-R 10 (EMC) and ECE-R 122 (heater). The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

The heater is licensed in accordance with paragraph 19, section 3, No. 2b of the StVZO (German Road Traffic Licensing Authority).

3.3 Safety

Qualifications of installation personnel

The installation personnel must have the following qualifications:

- Successful completion of Webasto training
- Corresponding qualification for working on technical systems

Regulations and legal requirements

The regulations from the heater's general installation and operating instructions must be observed.

3.3.1 Safety information on installation

Danger posed by live parts

- ▶ Prior to installation, disconnect the vehicle from the voltage supply.
- ▶ Make sure the electrical system is earthed correctly.
- ▶ Always comply with legal requirements.
- ▶ Observe data on type label.

Danger of fire and leaking toxic gases due to improper installation

- ▶ Vehicle parts in the vicinity of the heater must be protected against excessive heating by the following measures:
 - ⇒ Maintain minimum safety distances.
 - ⇒ Ensure adequate ventilation.
 - ⇒ Use fire-resistant materials or heat shields.

Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage
- ▶ Fit protectors on sharp edges.

3.4 Using this document

Before installing, read this installation documentation, the installation instructions of the heater, the operating instructions and supplementary sheets provided.

3.4.1 Explanatory Notes on the Document:

There is an identification mark near the respective work step to allow you to quickly allocate the other applicable documents to the Webasto components to be installed:

| | |
|---|--|
| Generally valid Webasto documentation | |
| Vehicle-specific installation documentation | |
| Vehicle-specific installation documentation of the cold start kit | |
| Webasto Comfort A/C control | |
| Webasto Standard A/C control | |
| Tank extracting device (e.g. FuelFix) | |
| Exhaust end fastener (EFIX) | |
| Combustion air intake silencer | |
| Spacer bracket (ASH) | |

3.4.2 Use of symbols



DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

► Actions to protect yourself against risks.



WARNING

Type and source of the risk

Consequences: Failure to follow the instructions can lead to serious or even fatal injuries

► Actions to protect yourself against risks.



CAUTION

Type and source of the risk

Consequences: Failure to follow the instructions can lead to minor injuries

► Actions to protect yourself against risks.



Type and source of the risk

Consequences: Failure to follow the instructions can lead to material damage

► Actions to protect yourself against risks.



Reference to the vehicle manufacturer's specific documents.



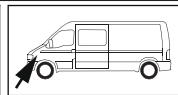
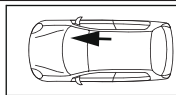
a note on a special technical feature

3.4.3 Work step identification marks

The ongoing work step is indicated on the outside top corner of the page:

| | | | |
|-------------------|-------------------|--------------|----------|
| Mechanical system | Electrical system | High-voltage | Coolant |
| | | | |
| Combustion air | Fuel | Exhaust | Software |
| | | | |

3.4.4 Orientation aid



The arrow indicates the position on the vehicle and the viewing angle

3.4.5 Use of highlighting

| Highlight | Explanation |
|----------------------------------|---|
| ► | Necessary action |
| ⇒ | Result of an action |
| 1 / 12 / a1 | Position numbers for the image descriptions |
| ① / ⑫ / Ⓐ | Position numbers for the image descriptions for electrical wires and wiring harnesses and coolant hose sections |

4 Technical Information

Dimension specifications

- All dimensions specified in mm
- Perforated brackets and mounting angles are shown to scale
- Observe data regarding scale on the templates

Tightening torque specifications

- Tighten all screw connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology

Necessary special tools

- Automatic wire stripper 0.2 - 6 mm²
- Crimping pliers for cable lugs 0.5 – 10 mm²
- Crimping pliers for male connector 0.14 – 6 mm²
- Crimping pliers for connector 0.25 – 6 mm²
- Torque wrench for 2.0 - 10 Nm
- Deep-hole marker

5 Installation Overview

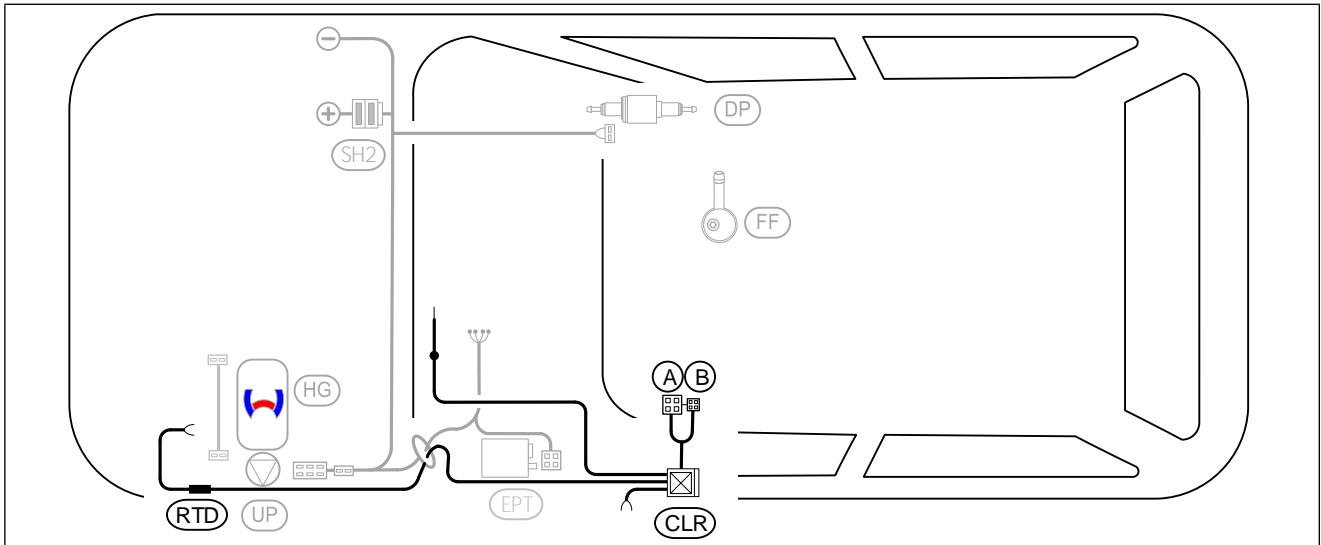


Fig. 1

Legend to installation overview

| Abbreviation | Component |
|--------------|--------------------|
| CLR | CLR module |
| RTD | Temperature sensor |
| A/B | Adapter connector |



6 Electrical system

6.1 Electrical system preparation

Assigning wires / cutting wires to length

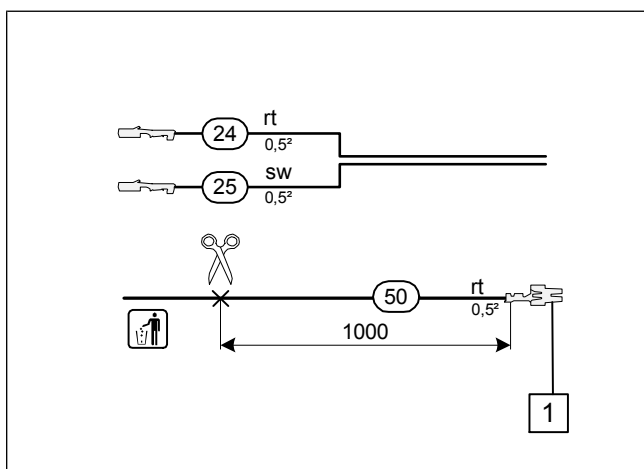


Fig. 2

► Draw wire **50** in provided protective sleeving.

1 Flat spring contact

24 Red (rt) wire of cold start wiring harness

25 Black (sw) wire of cold start wiring harness



Preparing CLR module

- ▶ Detach black (sw) wire from terminal A and insulate.
- ▶ Mount wires 24 and 25.
- ▶ Connect wire 50 with wire 21.

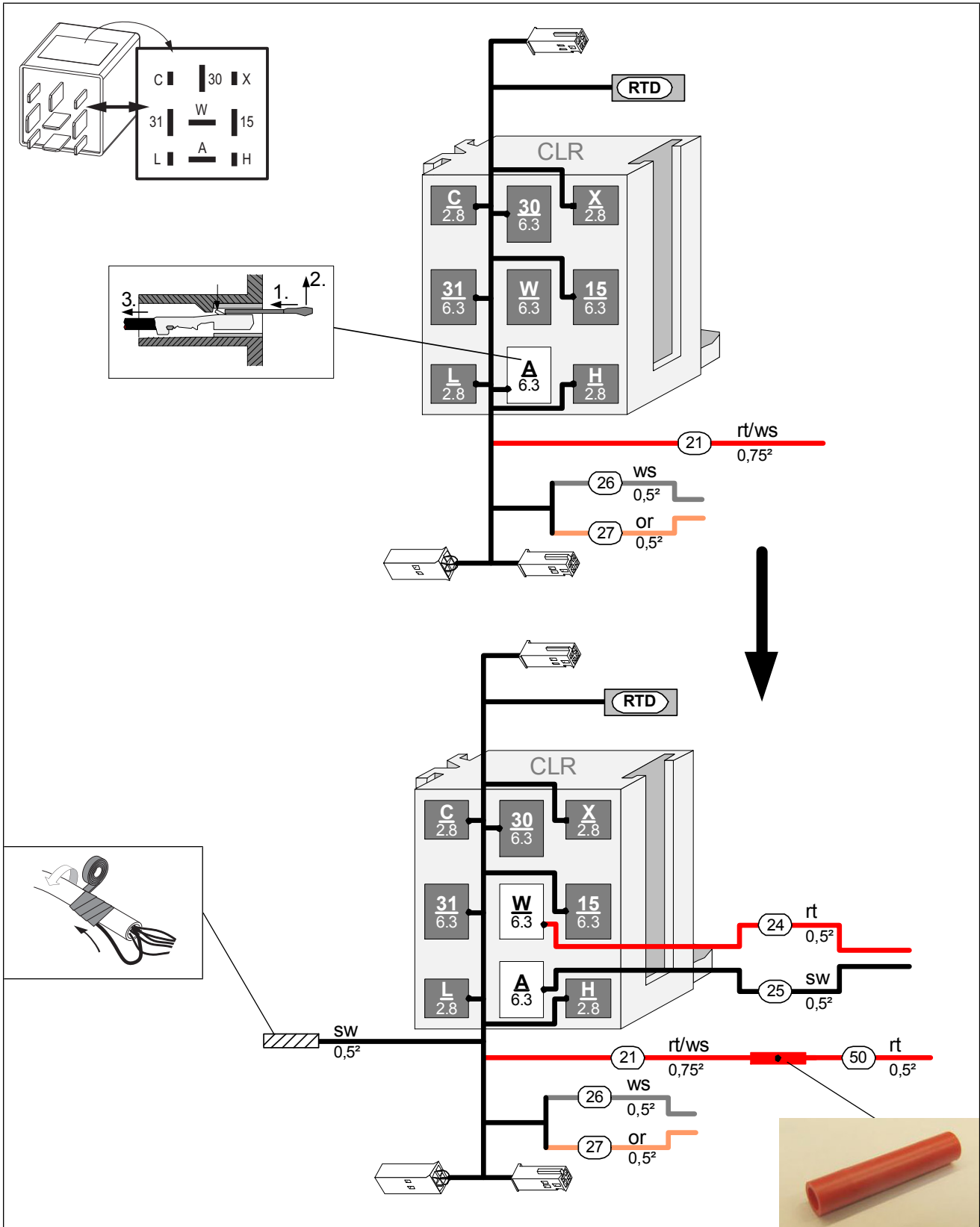


Fig. 3



Cutting to length and bending perforated bracket

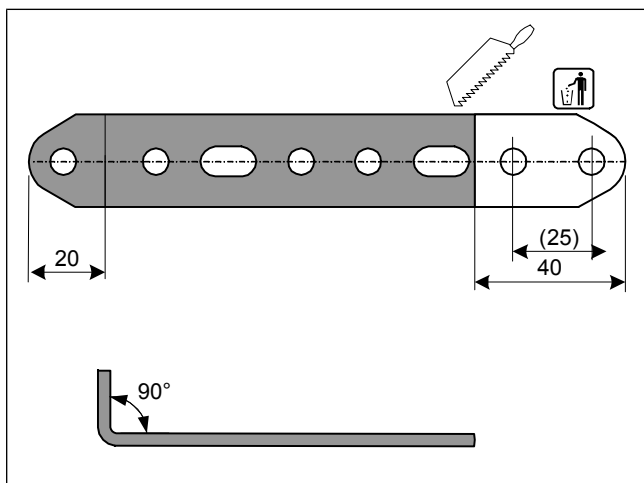


Fig. 4

Premounting CLR module socket

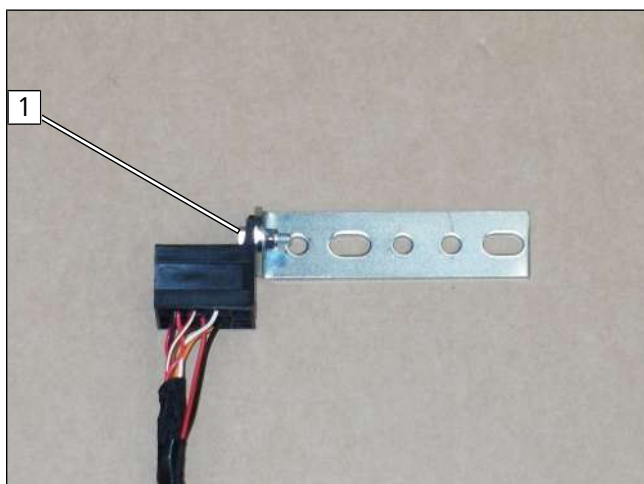


Fig. 5

- 1 M5x16 bolt, large diameter washer, CLR socket, perforated bracket, large diameter washer, nut

Installing CLR module

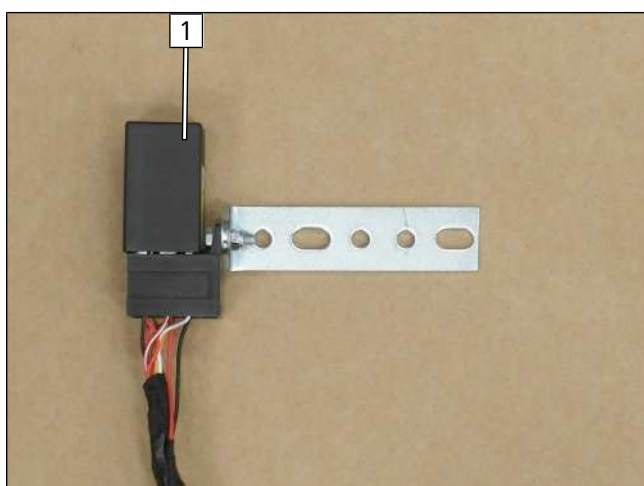


Fig. 6

- 1 CLR module



6.2 Wiring diagram

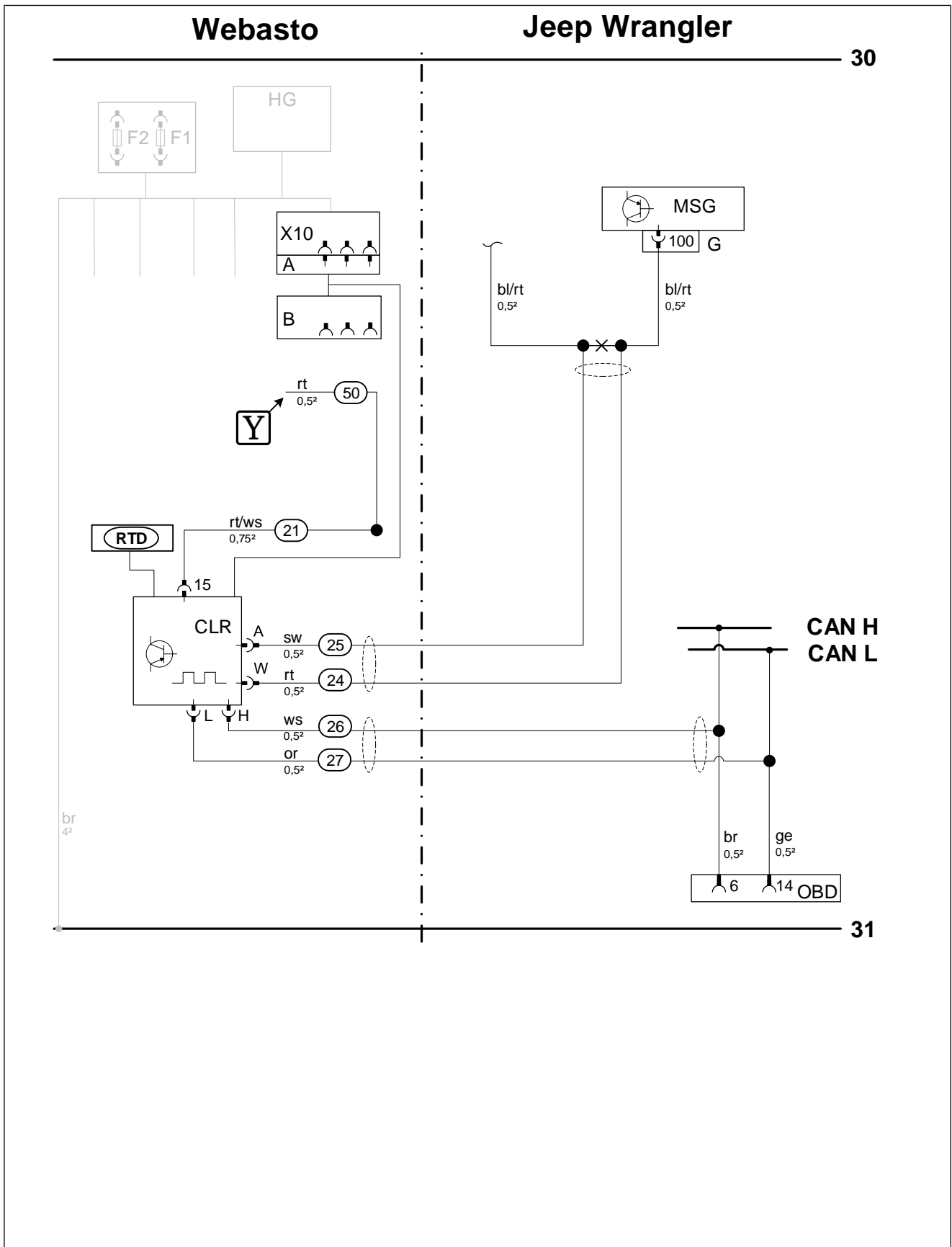


Fig. 7



Legend to wiring diagram



The vehicle connector and component designations are freely chosen by Webasto.
Cable colours may vary.

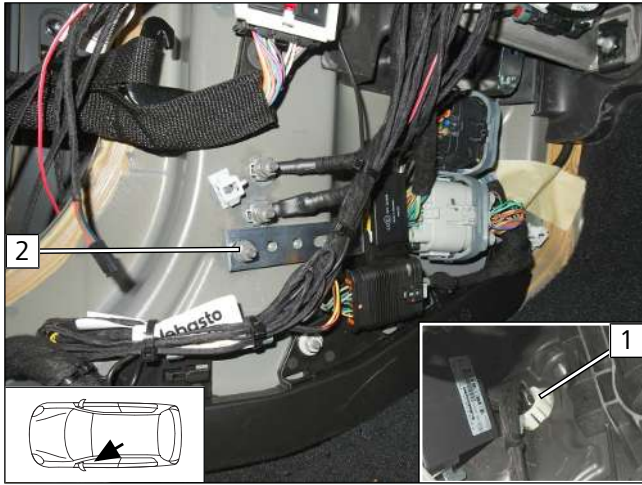
| Vehicle components | | Symbols | |
|--------------------|--------------------------|--------------|---|
| Abbreviation | Component | Abbreviation | Designation |
| MSG | Engine control unit | X | Cutting point |
| G | 105-pin connector of MSG | | The connection is carried out in the "fan controller" section with the A/C control installation documentation |
| OBD | ON-Board Diagnosis | | |
| | | | |

| Webasto components | | Cable colours | |
|--------------------|--|---------------|-------------|
| Abbreviation | Component | Abbreviation | Colour |
| A | Male plug for CLR module wiring harness | bg | beige |
| B | Female plug for CLR module wiring harness | bl | blue |
| C | Male plug for adapter wiring harness | br | brown |
| D | Female plug for adapter wiring harness | dbl | dark blue |
| E | Male plug for Plug&Play wiring harness | dgn | dark green |
| F | Female plug for Plug&Play wiring harness | ge | yellow |
| CCL GW | CAN CAN LIN Gateway | gn | green |
| CL GW | CAN LIN Gateway | gr | grey |
| CLR | Cold start module | hbl | light blue |
| D1 | Diode | hgn | light green |
| D2 | Diode group | or | orange |
| F0 | Additional fuse for power supply | pk | pink |
| F1 | Heater main fuse | rt | red |
| F2 | Passenger compartment fan controller main fuse | sw | black |
| F3 | Control element fuse | vi | violet |
| F4 | Fan controller fuse | ws | white |
| F5 | Additional fuse | | |
| HG | Heater TT-Evo | | |
| K1 | Relay K1 | | |
| K2 | Relay K2 | | |
| K3 | Relay K3 | | |
| LIN GW | LIN Gateway | | |
| PWM GW | Pulse width modulator gateway | | |
| RSH | Relay and fuse holder of passenger compartment | | |
| RTD | Temperature sensor | | |
| X10 | Female plug for control element | | |
| Y | Power adapter | | |



6.3 Connection in passenger compartment

Installing CLR module



Produce all following electrical connections as shown in the system wiring diagram.

- ▶ Route wires (24) and (25) as well as temperature sensor RTD through cable grommet (1) into the engine compartment.
- ▶ Route wires (26) and (27) to the OBD socket outlet.
 - 2 Original vehicle stud bolt, premounted perforated bracket, original vehicle nut

Fig. 8



Connecting connectors and sockets

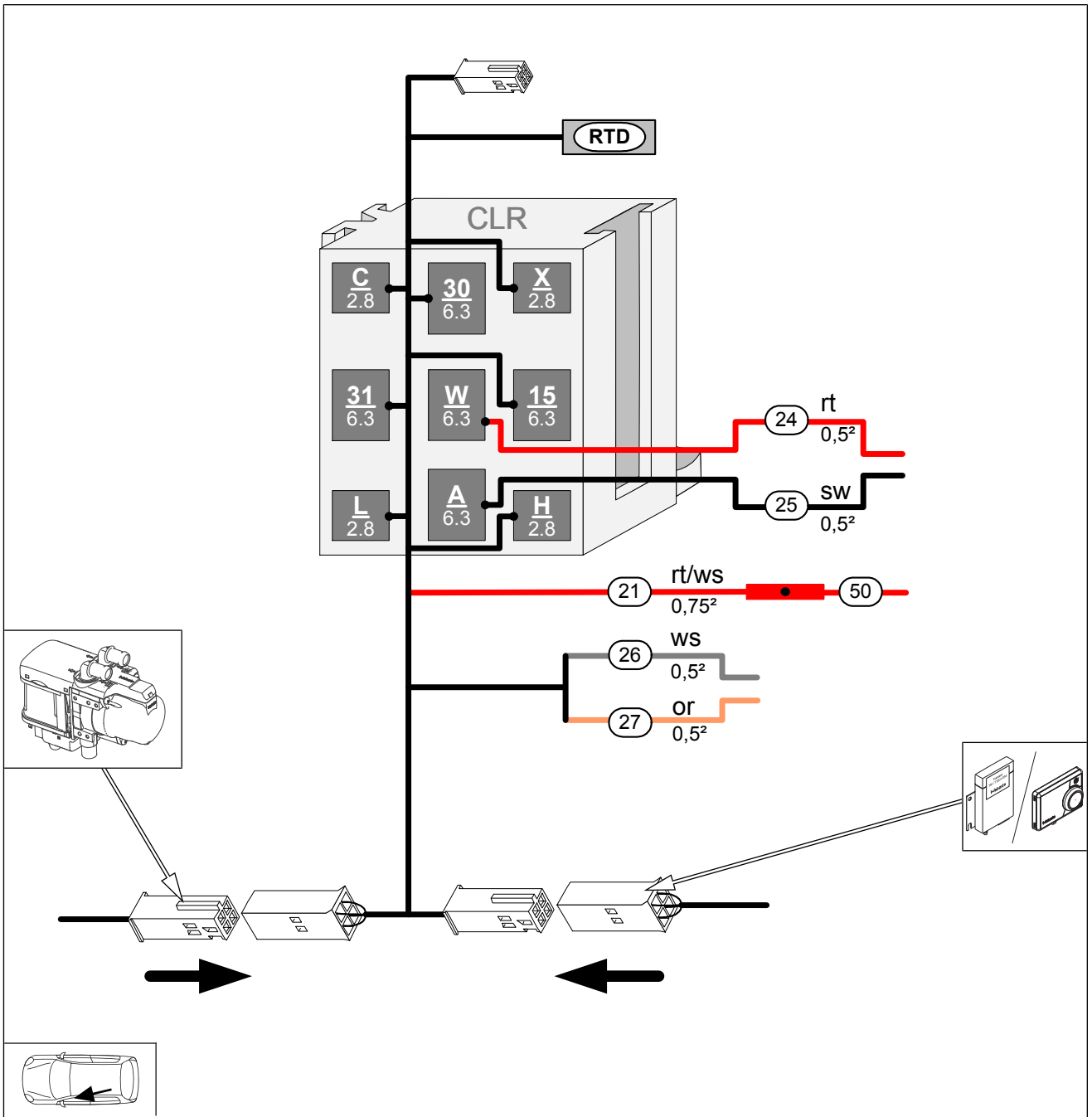


Fig. 9



Connection to OBD socket outlet

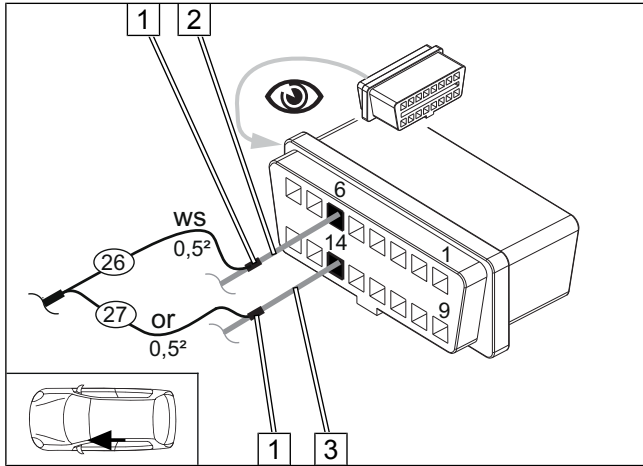


Fig. 10



Further information can be found in the vehicle manufacturer's technical documentation.

► Remove OBD socket outlet from bracket.



► Crimp and shrink butt connector **1**

- 2** Brown (br) wire of OBD socket outlet/ pin 6
- 3** Yellow (ge) wire of OBD socket outlet/ pin 14
- 26** White (ws) wire of CLR module/ H cold start wiring harness
- 27** Orange (or) wire of CLR module/ L cold start wiring harness

6.4 Connection in engine compartment

Fastening temperature sensor (RTD)

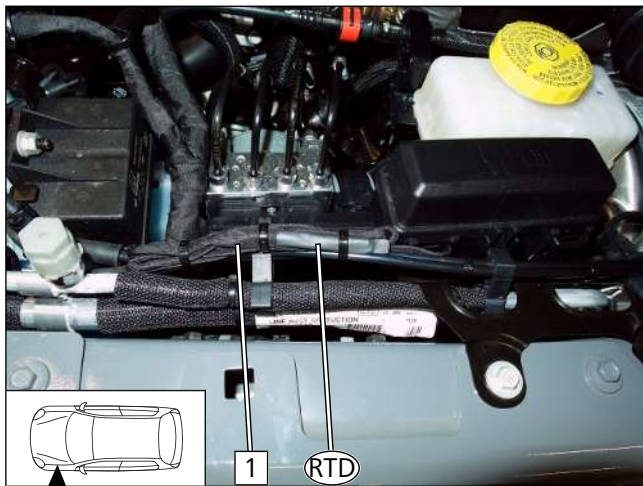


Fig. 11

- Attach temperature sensor (RTD) to wiring harness **1** with cable ties.
- Route wires **24** and **25** to the engine control unit.

View of engine control unit

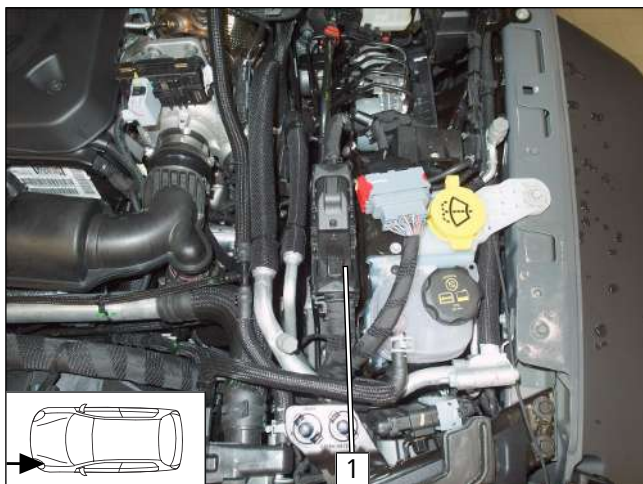


Fig. 12

- 1** 105-pin connector G of engine control unit



6.5 Connection to engine control unit

View of engine control unit connector G, contact side

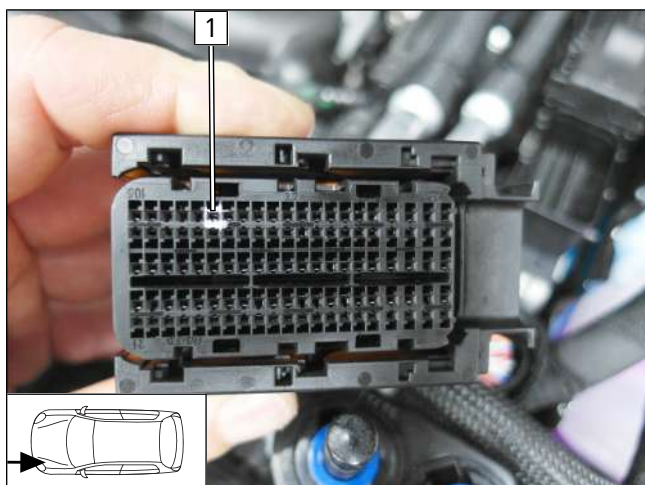


Fig. 13

- 1 Engine control unit connector G, pin 100

View of engine control unit connector G, wiring side

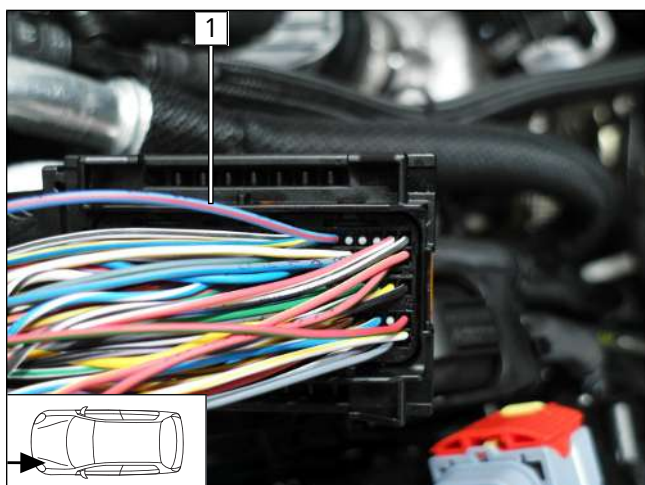


Fig. 14



► Remove the upper cover from connector G and detach part of the wiring harness wrapping. Insulate and reinstall after completion.

- 1 Blue/red (bl/rt) wire of engine control unit connector G, pin 100

Connection to engine control unit

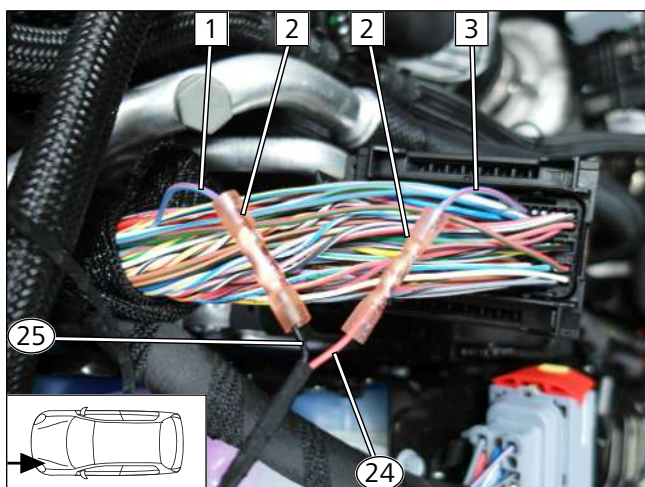


Fig. 15



► Crimp and shrink the butt connector.

- 1 Blue/red (bl/rt) wire
- 2 Butt connector
- 3 Blue/red (bl/rt) wire of 105-pin engine control unit connector G/ pin 100
- 24 Red (rt) wire of CLR module/W from cold start wiring harness
- 25 Black (sw) wire of CLR module/A from cold start wiring harness



7 Final work



- ▶ Final work is not carried out until the installation of the heater in the vehicle has been completed
- ▶ Check all electrical connections for firm seating
- ▶ Insulate and tie back loose lines



These are the original instructions. The German language is binding.
You can request your language if it is missing. The telephone number of each country can be found in the Webasto service centre leaflet or the website of the respective Webasto representative of your country.

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