INSTALLATION RECOMMENDATION
HYDRONIC II – D 5 SC IN THE FORD RANGER MY2016

THIS INSTALLATION RECOMMENDATION APPLIES TO VEHICLES FROM MODEL YEAR 2016 UP TO THE CURRENTLY AVAILABLE VEHICLE MODEL WITH THE FOLLOWING MOTORISATION:

2.2 l cubic capacity / 4 cylinder in-line engine TDCi

3.2 l cubic capacity / 5 cylinder in-line engine TDCi

A WORLD OF COMFORT

Eberspächer

CONTENTS

This installation recommendation documents the installation of heater Hydronic II Comfort in vehicles from model year 2016 up to the currently available vehicle model with the following equipment:

- **with air-con or**
- **with automatic air-conditioning**
- **with manual gearbox or**
- **with automatic gearbox**

PLEASE NOTE!

This installation recommendation is valid for the above mentioned vehicle to the exclusion of all liability claims. Deviating model years and/or deviating equipment may result in modifications to this installation recommendation. It is therefore mandatory to check the feasibility of installing the heater in the vehicle before starting work. All liability claims resulting from modifications to the vehicle are excluded.

Installation time: approx. 5.5 hours

1 INTRODUCTION

SPECIAL TEXT FORMATS, PRESENTATIONS AND PICTURE SYMBOLS

In this installation recommendation, special text formats and picture symbols are used to emphasise different contents. Please refer to the following examples for their meanings and appropriate action.

SPECIAL TEXT FORMATS AND PRESENTATIONS

- This dot (▪) denotes a list, which is started by a heading.
  - If an indented dash (–) follows a “dot”, this list is a sub-section of the black dot.

PICTURE SYMBOLS

DANGER!

This information points out a potential serious or fatal danger. Ignoring this information can result in severe injuries.

➔ This arrow indicates the appropriate precaution to take to avert the danger.

CAUTION!

This information points out a dangerous situation for a person and / or the product. Ignoring this information can result in injuries to people and / or damage to equipment.

➔ This arrow indicates the appropriate precaution to take to avert the danger.

PLEASE NOTE!

These remarks contain recommendations for use and useful tips for the operation, installation and repair of the heater.

SAFETY INSTRUCTIONS FOR INSTALLATION AND REPAIR

DANGER!

Improper installation or repair of Eberspächer heaters can cause a fire or result toxic exhaust entering the inside of the vehicle.
This can cause serious and even fatal risks.

➔ Only authorised and trained persons may install the heater according to the specifications in the technical documents or repair it using original spare parts.

➔ Installation and repairs by unauthorised and untrained persons, repairs using non-original spare parts and without the technical documents required for installation and repair are dangerous and therefore are not permitted.

➔ Installation according to this installation recommendation may only be carried out in conjunction with the respective unit-related technical description, installation instructions, operating instructions and maintenance instructions.
This document must be carefully read through before / during installation and repair and followed throughout. Particular attention is to be paid to the official regulations, the safety instructions and the general information.

PLEASE NOTE!

- The relevant rules of sound engineering practice and any information provided by the vehicle manufacturer are to be observed during the installation and repair.
- When carrying out electric welding on the vehicle, the positive cable at the battery should be disconnected and earthed to protect the control box.

LIABILITY CLAIM / WARRANTY

Eberspächer does not accept any liability for defects and damage, which are due to installation or repair by unauthorised and untrained persons.
Compliance with the official regulations and the safety instructions is prerequisite for liability claims.
Failure to comply with the official regulations and safety instructions leads to exclusion of any liability of the heater manufacturer.

ACCIDENT PREVENTION

General accident prevention regulations / health and safety regulations and the corresponding workshop, company and operating safety instructions are to be observed.

1 INTRODUCTION

ADDITIONAL INFORMATION ON THE VALIDITY OF THE INSTALLATION RECOMMENDATION

The installation recommendation is valid for the vehicle with the engine and gearbox options listed in the following.

ENGINE AND GEARBOX OPTIONS

Cubic capacity	kW / HP	Gearbox
2.2 l	110 / 150	6 S
3.2 l	146 / 200	6 S
2.2 l	110 / 150	6 AT
3.2 l	146 / 200	6 AT

6 S = 6 gear manual gearbox

6 AT = 6-gear automatic gearbox

PLEASE NOTE!

- The installation recommendation is not valid for right-hand drive vehicles.
- Vehicle models, engine types and feature options not listed in this installation recommendation, have not been tested.
  Installation according to this installation recommendation can still be possible.

INITIAL STARTUP OF THE HEATER OR FUNCTIONAL TEST

- After installation or carrying out a repair on the heater, the coolant circuit and the whole fuel supply system must be carefully vented. Comply with the instructions issued by the vehicle manufacturer.
- Open all heating circuits before the trial run (set the temperature controller to “hot”).
- During the heater trial run, all water and fuel connections must be checked for leaks and secure, tight fit.
- If faults occur while the heater is running, use a diagnostic unit to correct the cause of the fault.

PARTS REQUIRED FOR INSTALLATION

QUANTITY	DESIGNATION	ORDER NO.
1	Hydronic D5SC, EasyStart Remote+, vehicle-specific installation kit	25 2678 05 00 00
		A66SX 18D561 DE

The following must also be ordered for vehicles with automatic air-con:

1	AirCon kit	24 8800 09 00 13
		A66SX 18D561 FC

SPECIAL TOOLS REQUIRED

- Necessary torque wrench
- Anti-corrosion agent
- Pliers for spring band clamps
- Crimping tool

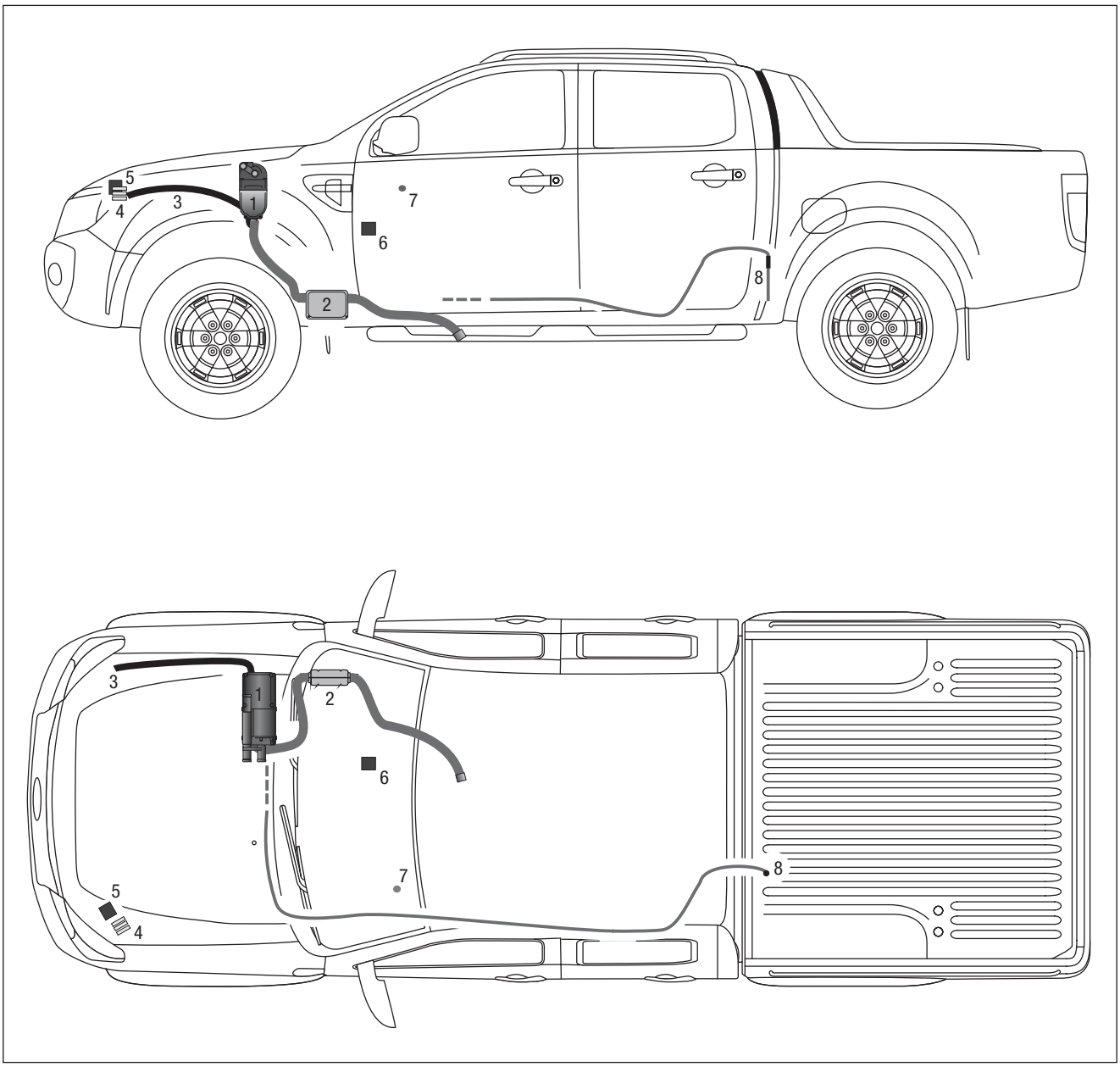
TIGHTENING TORQUES

If no tightening torques are specified, tighten the screw connections (hexagon screw and hexagon nut) according to the following table:

Part name	Tightening torques
Hex screw M6	10 $^{+1}$ Nm
Hex screw M8	20 $^{+2}$ Nm
Hex screw M10	45 $^{+2}$ Nm
Torx screw M6 x 14.5	6 $^{+0.5}$ Nm
Screw M4 x 16	3 $^{+0.5}$ Nm
Screw M5 x 10	5 $^{+0.5}$ Nm
Pipe clip for exhaust pipe	7 $^{+1}$ Nm
Hose clip for water hose	3 $^{+0.5}$ Nm
Hose clip for combustion air pipe	3 $^{+0.5}$ Nm
Hose clip for fuel pipe	1 $^{+0.2}$ Nm

1 INTRODUCTION

INSTALLATION DRAWING



1 Heater
2 Exhaust pipe with exhaust silencer
3 Combustion air tube
4 Fuse holder
5 Fan relay
6 IPCU module
7 EasyStart Remote+ button
8 Fuel tank extractor

2 PREPARATION OF THE VEHICLE

PREPARATORY WORK ON THE VEHICLE

- Disconnect the battery
- Remove glove compartment
- Remove air-con control unit
- Remove top engine cover
- Remove top radiator cover
- Remove air filter box
- Remove cooling water storage tank
- Drain coolant into a clean container
- Lower tank (depending on type)

Remove the air filter box according to the manufacturer's instructions.

Protect the air intake hose to keep out any dirt particles.

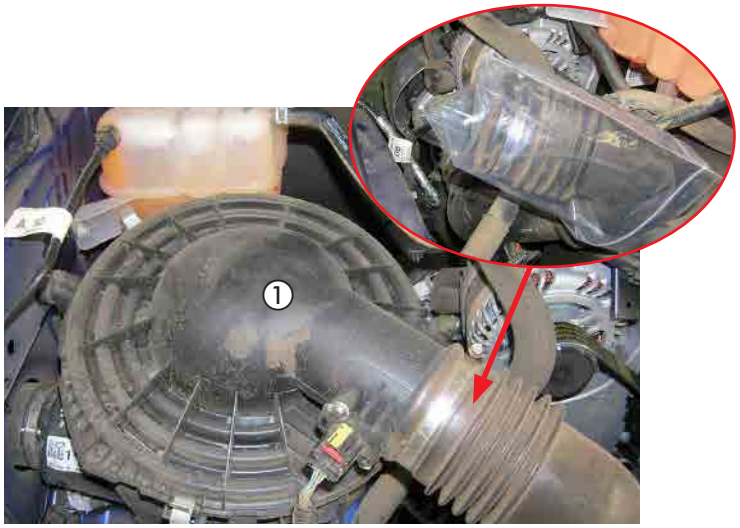


Fig. 1
① Air filter box

Remove the cooling water storage tank according to the manufacturer's instructions.

Fig. 2
① Cooling water storage tank

3 PRELIMINARY ASSEMBLY

PREPARE FUEL PIPE, 4 X 1 MM Ø
(see photo 3)

Use a hot air blower to heat and straighten the 4 x 1 mm Ø fuel pipe over a length of approx. 300 mm.
Push the 3.5 mm Ø socket of the 7.5/3.5 mm Ø adapter onto the 4 x 1 mm Ø fuel pipe.
Push the quick-acting coupling onto the 4 x 1 mm Ø fuel pipe and connect up with the 7.5/3.5 mm Ø adapter.
Position the quick-acting coupling with the dimensions as shown and fasten the 7.5/3.5 mm Ø adapter to the quick-acting coupling and the 4 x 1 mm Ø fuel pipe using a clip in each case.
Bevel the end of the fuel pipe by 45°.
Cover the 4 x 1 mm Ø fuel pipe with sponge rubber hose as shown.
Push a 3.5 x 3 mm Ø fuel hose, 50 mm long, onto the other end of the fuel pipe and fasten with a 9 mm Ø clip ($1^{+0.2}$ Nm).

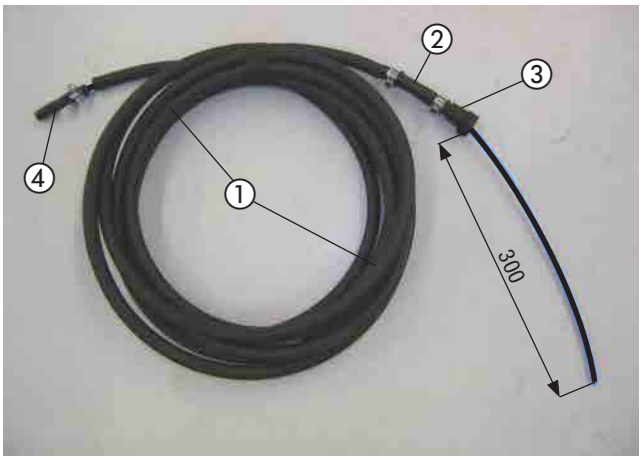


Fig. 3
① 4 x 1 mm Ø fuel pipe covered with sponge rubber hose
② 7.5 / 3.5 mm Ø adapter
③ Quick-acting coupling
④ Fuel hose, 3.5 x 3 mm Ø

PREASSEMBLE HEATER
(see photo 4)

Remove the duplicate nameplate from the heater.
Attach the duplicate nameplate in a suitable, clearly visible position in the engine compartment.

Fasten the M6 x 14.5 Torx screw in the existing threaded hole of the heater with $6^{+0.5}$ Nm as shown.

Connect the combustion air pipe to the heater using a 16 - 25 mm Ø hose clip ($3^{+0.5}$ Nm).

Connect the 4 x 1 mm Ø fuel pipe with 3.5 x 3 mm Ø fuel hose, 50 mm long, to the fuel connection of the heater using a 9 mm Ø clip ($1^{+0.2}$ Nm).

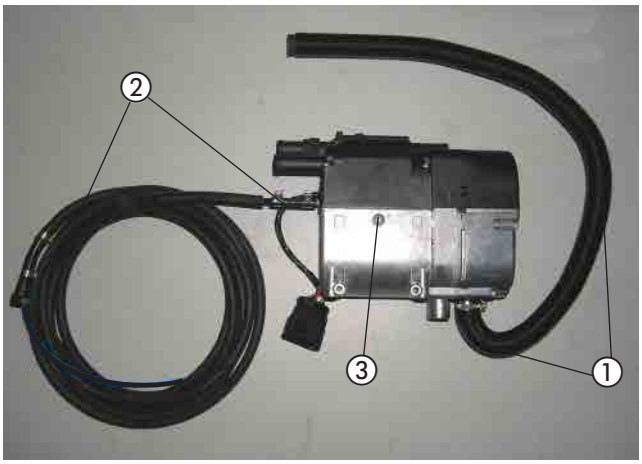


Fig. 4
① Combustion air tube
② Fuel pipe, Ø 4 x 1 mm, connected
③ M6 x 14.5 Torx screw with $6^{+0.5}$ Nm

3 PRELIMINARY ASSEMBLY

PREMOUNT WATER HOSES WITH NON-RETURN VALVE
(see photos 5 and 6)

Connect water hose 1 heat exchanger return - heater input as shown to the vertical socket piece, 20 mm Ø, on the outlet side of the non-return valve using a 20 - 32 mm Ø clip ($3^{+0,5}$ Nm).

PLEASE NOTE!
The arrow on the non-return valve marks the direction of flow and points towards the water hose to the heater.

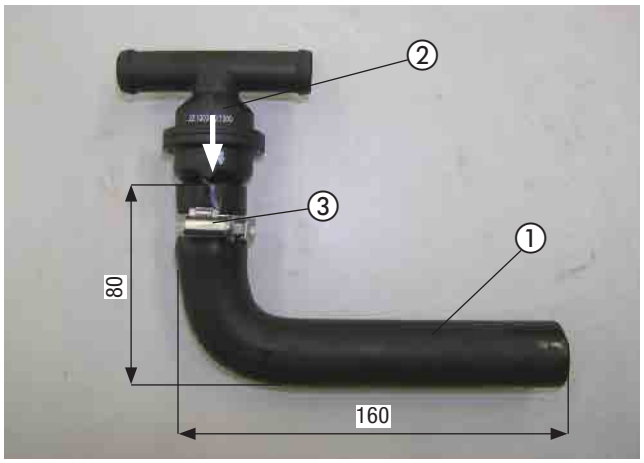


Fig. 5
① Water hose 1 heat exchanger return - heater input
② Non-return valve
③ Clip, 20 - 32 mm Ø

Connect water hose 2 heater output - heat exchanger input to the 180° water hose bend with a 20 mm Ø connection pipe using two 20 - 32 mm Ø clips ($3^{+0.5}$ Nm), as shown.

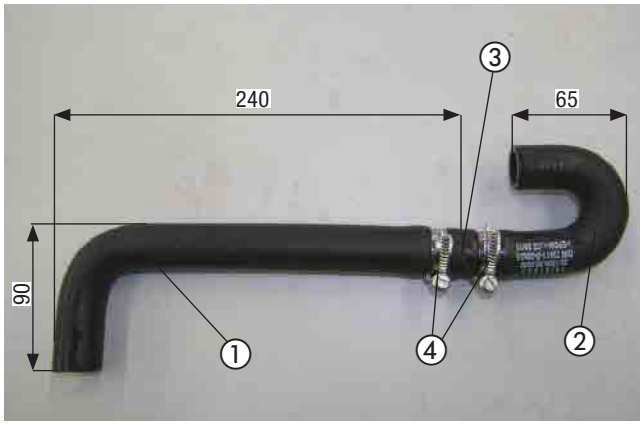


Fig. 6
① Water hose 2 heater output - heat exchanger input
② 180° water hose elbow
③ Connection pipe, 20 mm Ø
④ 2x clip, 20 - 32 mm Ø

PREPARE EXHAUST SYSTEM
(see photos 7 to 9)

Fasten the holder for the exhaust silencer to the exhaust silencer using an M6 x 12 screw (10^{+1} Nm) as shown.

Heed the arrow on the exhaust silencer.

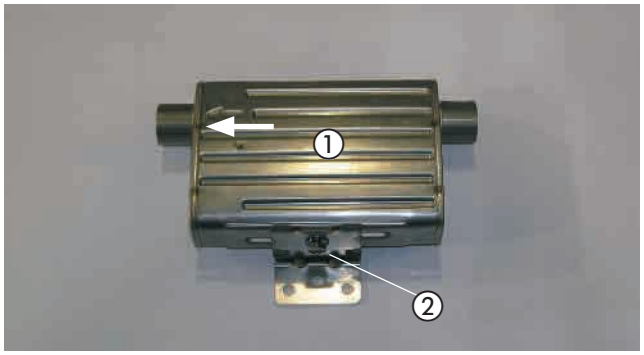


Fig. 7
① Exhaust silencer
② Holder / exhaust silencer

3 PRELIMINARY ASSEMBLY

Push a rubber spacer and a exhaust insulation onto the exhaust pipe as shown.
Also push a 28 mm Ø clip onto the exhaust pipe and fasten the Z-bracket (20.1533.88.0007) to the clip as shown using an M6 x 16 screw and M6 nut (10^{+1} Nm).

Shape the exhaust pipe as shown.

Fit a pipe clip to the connection ends of the exhaust pipe.

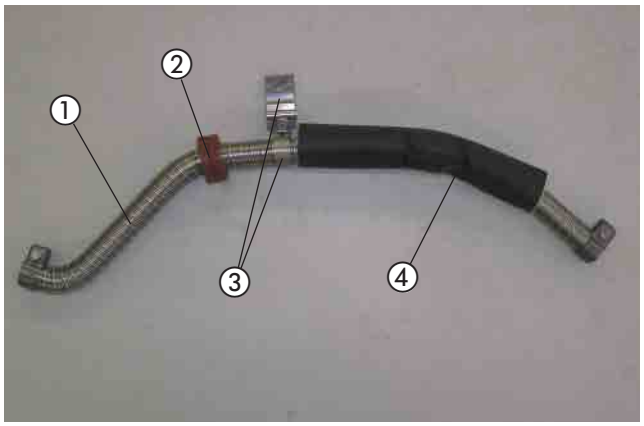


Fig. 8
① Exhaust pipe with 28 mm Ø clip
② Rubber spacer
③ 28 mm Ø clip with Z-bracket
④ Exhaust insulation

Push a rubber spacer onto the exhaust pipe end as shown.
Also push a 28 mm Ø clip onto the exhaust pipe end and fasten the holder (22.9000.50.8802) to the clip as shown using an M6 x 16 screw and M6 nut (10^{+1} Nm).

Shape the exhaust pipe as shown.

Fit a pipe clip to the connection end of the exhaust pipe end.

Fig. 9
① Exhaust pipe end with 28 mm Ø clip
② Rubber spacer
③ 28 mm Ø clip with holder

3 PRELIMINARY ASSEMBLY

PREMOUNT FUSE AND RELAY BLOCK
(see photos 10 and 11)

Mount the fastening clip (8650169) for the diagnostic connector to the bracket for the fuse and relay block as shown.
Fasten the fuse holder with two M4x12 screws and two M4 nuts, and the relay block of the fan relay with an M5x10 screws and M5 nut, to the bracket for the fuse and relay block (22.9000.52.0021).
Fit the diagnostic connector to the fastening clip.

Slot the cable 4 mm² rt/ws from the relay block into the still free slot of the fuse block.

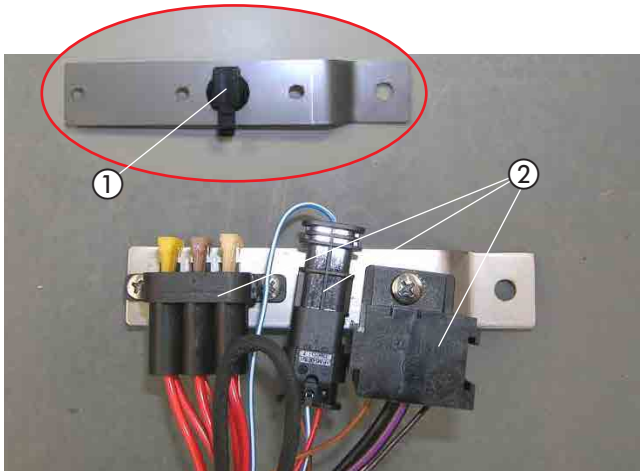


Fig. 10
① Mount fastening clip
② Mount fuse and relay block on bracket

Slot the 0.5 mm² sw/rt cable of the main cable harness into terminal 1 (86) of the relay block and the 0.5 mm² cable to terminal 2 (85) as shown in the diagram.

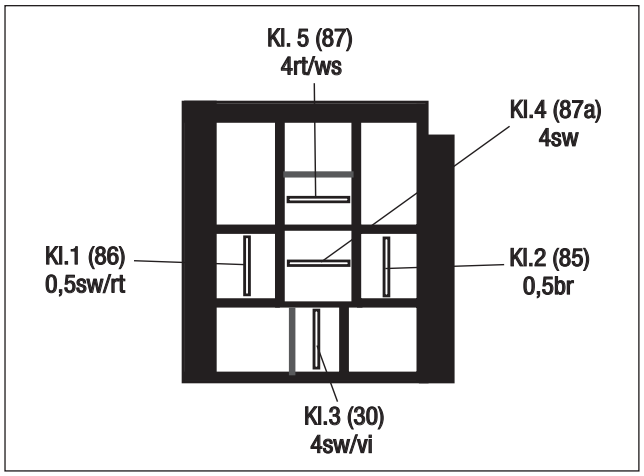


Fig. 11
View of the relay block from the cable inlet side

PREPARE STATIONARY PART OF THE EASYSTART REMOTE+
(see photo 12)

Insert one cable tape in each of the side fastening points of the stationary part of the EasyStart Remote+ as shown.

Fig. 12
① Stationary part of the EasyStart Remote+ prepared

4 INSTALLATION

PREPARE THE INSTALLATION POSITION
(see photos 13 to 16)

On the right side of the engine partition above the grommet, loosen the plastic nut from the stud bolt.
Next to the grommet, cut into the insulation matting as shown.
Fold the insulation matting up to the left.

The plastic nut will be needed again later!

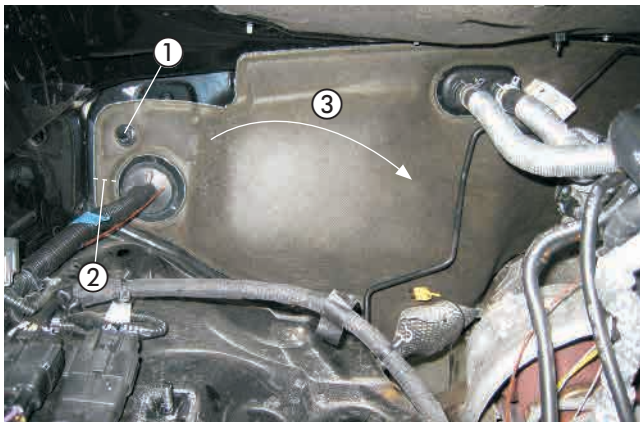


Fig. 13
① Loosen plastic nut
② Cut into insulation matting
③ Fold insulation matting up

Make three markings on the exposed, embossed surface with the dimensions as shown (and according to the hole pattern of the unit bracket).

PLEASE NOTE!
Deburr all finished holes and treat with anti-corrosion agent.

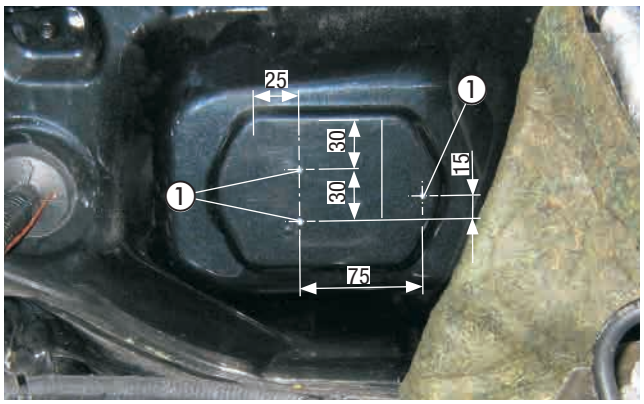


Fig. 14
① Markings

Drill a 10 mm Ø hole at each of the markings.
Insert an M6 blind rivet nut in each of the drilled holes.

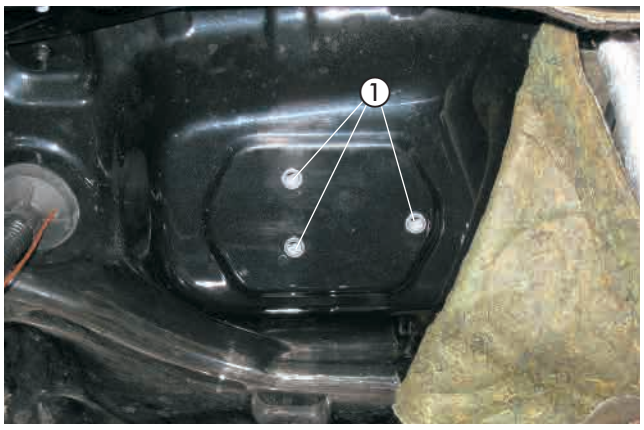


Fig. 15
① 10 mm Ø holes drilled and M6 blind rivet nuts inserted

4 INSTALLATION

Put the insulation matting back in position.
Make a notch in the insulation matting over the drilled holes.
Fasten the insulation matting to the stud bolt again using the plastic nut.

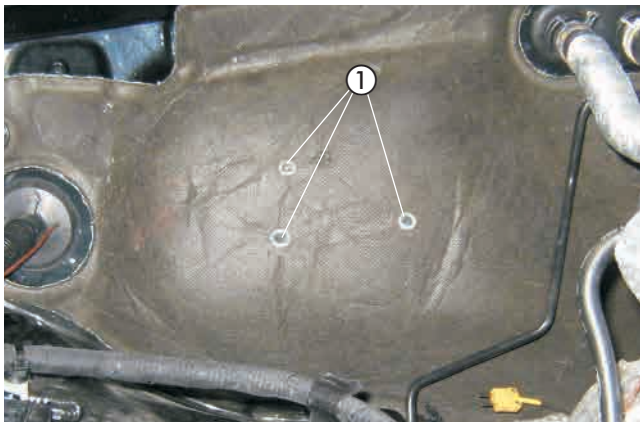


Fig. 16
① Notches in the insulation matting

MOUNT THE HEATER AND LAY THE COMBUSTION AIR PIPE
(see photos 17 to 20)

Fit the unit bracket to the prepared fastening points with three M6 x 16 screws (10+1 Nm) as shown.

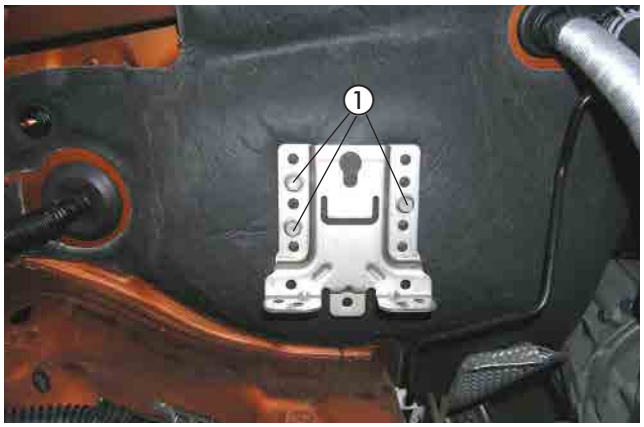


Fig. 17
① Unit bracket, installed

Insert the pre-mounted heater in the unit bracket and screw tight with two M6 x 12 screws with micro-encapsulation (6^{+2} Nm).

Fig. 18
① Install heater

4 INSTALLATION

Lay the combustion air pipe upwards in the curve into the protected area along the splash wall on the right towards the headlight.

Use cable ties to fix the combustion air pipe in suitable places.

⚠ CAUTION!
Lay the combustion air pipe so that only clean, dry combustion air can be drawn in through the heater.

Fig. 19
① Lay combustion air pipe

Lay the 4 x 1 mm Ø fuel pipe from the heater along the engine partition to the right-hand side of the vehicle and fix in the two plastic holders of the brake line.

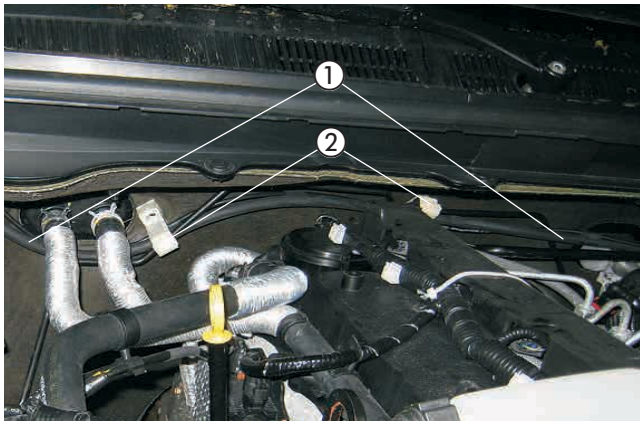


Fig. 20
① Fuel pipe
② Plastic holders of the brake line

4 INSTALLATION

DISCONNECT THE WATER FLOW HOSE AND WATER RETURN HOSE
(see photo 21)

Disconnect the water flow hose from the heat exchanger (the left water hose at the heat exchanger) at the connection socket by loosening the clamp.
Cut the water return hose from the heat exchanger to the engine (the right-hand water hose at the heat exchanger) according to the dimensions shown.

The disconnected piece of the water return hose is no longer needed and can be discarded.

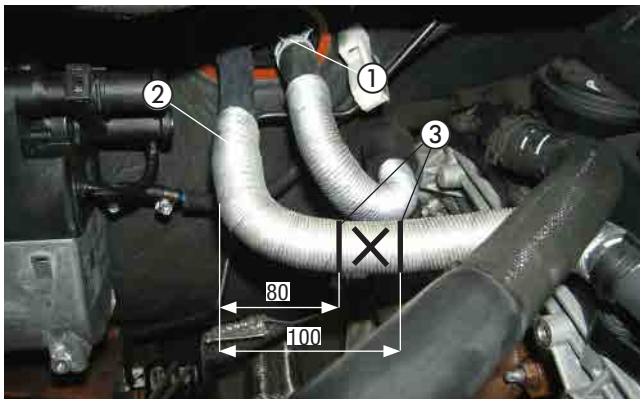
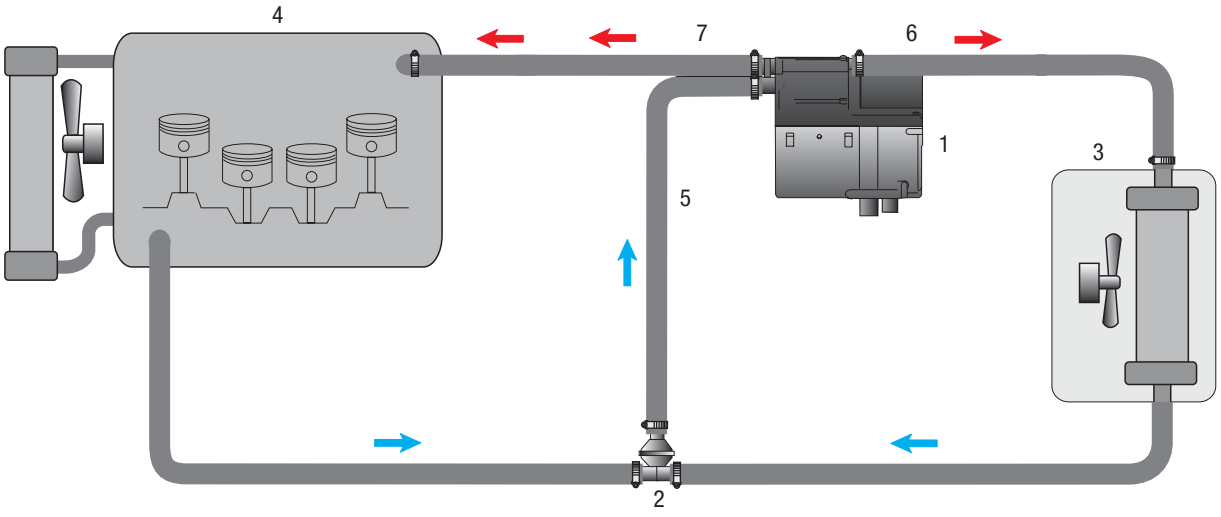


Fig. 21
① Water flow hose
② Water return hose
③ Water return hose cutting points

LAY AND CONNECT WATER HOSES
(see photos 22 to 25)

PLEASE NOTE!
The water hoses are connected “inline” to the water circuit , refer to the Technical Description, in the chapter on “Installation” and here the section on “Connection to the Cooling Water Circuit”.



1 - Heater Hydronic II Comfort
2 - Water return valve, T-piece 20/20/20 mm Ø
3 - Vehicle heat exchanger
4 - Engine
5 - Water hose 1
6 - Water hose 2
7 - Water hose 3
- Hose clip, 20 - 32 mm Ø

Fig. 22

4 INSTALLATION

Fasten water hose 1 heat exchanger return - heater input to the heater water inlet fitting with a 20 - 32 mm Ø clip ($3^{+0,5}$ Nm) ; insert the non-return valve in the cut water return hose from the heat exchanger and fasten with two 16 - 25 mm Ø clips ($3^{-0.5}$ Nm).

Connect water hose 3 motor - heat exchanger input to the heater water outlet fitting with a 20 - 32 mm Ø clip ($3^{+0.5}$ Nm) .

Connect water hose 2 heater output - heat exchanger output to the heater water output fitting and the heat exchanger input fitting using two 20 - 32 mm Ø clips ($3^{-0.5}$ Nm) .

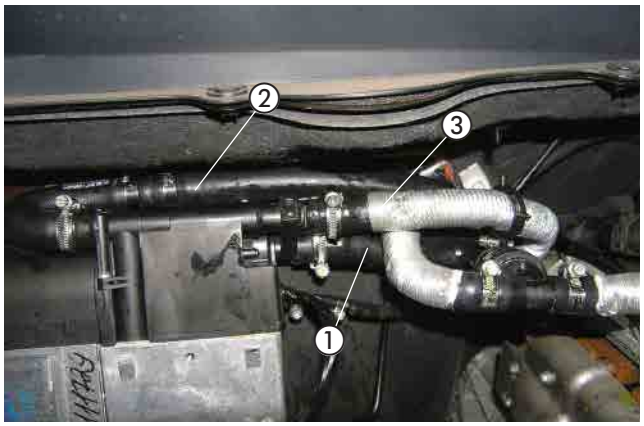


Fig. 23
① Water hose 1 heat exchanger return - heater input
② Water hose 2 heater output - heat exchanger
③ Water hose 3 motor - heat exchanger input

Break out the inner webs at the two supplied rotatable hose holders as shown.

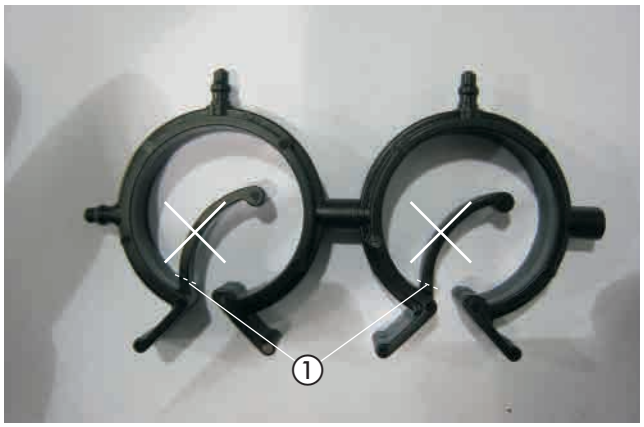


Fig. 24
① 2 webs broken out

Fix water hoses 1 and 3 to each other using the prepared hose holders as shown.

⚠ CAUTION!
Secure all hose connections with hose clips.
Protect the water hoses against chafing and use cable ties to secure in suitable positions.

Fig. 25
① 2 rotatable hose holders

4 INSTALLATION

INSTALL EXHAUST SILENCER AND CONNECT EXHAUST PIPES
(see photos 26 to 31)

On the outside of the front right chassis beam behind the front wheel, remove the middle clip of the rubber trim and fold the trim forwards. Drill the existing exposed hole open to 9 mm Ø and insert an M6 blind rivet nut.

Fold the rubber cover back again and fasten.

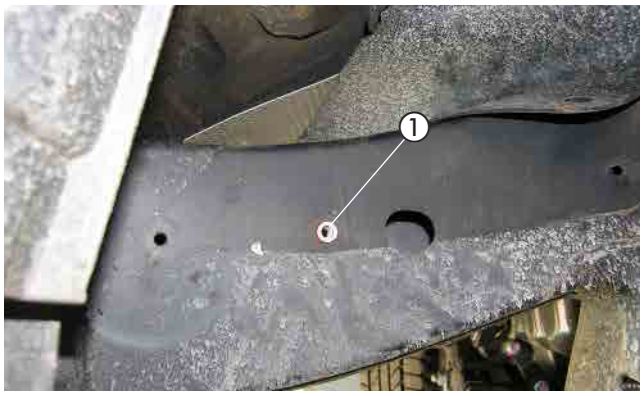


Fig. 26
① 9 mm Ø hole drilled open and M6 blind rivet nut inserted

Fit the premounted exhaust silencer with the holder to the prepared fastening point using an M6 x 16 screw (10^{+1} Nm).
In the middle fastening point, mark a 7 mm Ø drilling point on the exhaust silencer bracket and drill a 3.5 mm Ø hole on the left front chassis beam.
Fit a M6x19 tapping screw in the drilled hole.
The arrow on the exhaust silencer marks the direction of flow and points to the rear.
Lay the premounted exhaust pipe from the exhaust silencer forwards and then up to the heater.
Use the pipe clip (7^{+1} Nm) to connect the exhaust pipe to the inlet connection of the exhaust silencer.

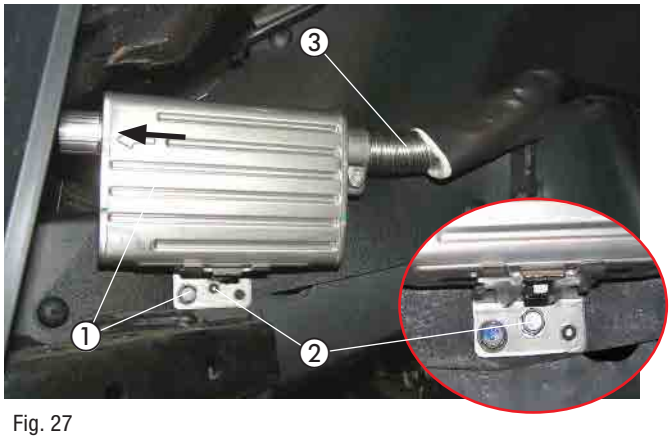


Fig. 27
① Mount the exhaust silencer
② Mount M6x19 tapping screw
③ Mount the exhaust pipe

Fasten the exhaust pipe with the Z-bracket (20.1533.88.0007) as shown to the existing 6.5 mm Ø hole on the level of the wing panel, using an M6 x 16 screw (10^{+1} Nm), an M6 nut and a B6 body washer.

Use a pipe clip (7^{+1} Nm) to connect the exhaust pipe to the exhaust connection of the heater.

Position the rubber spacer as shown.

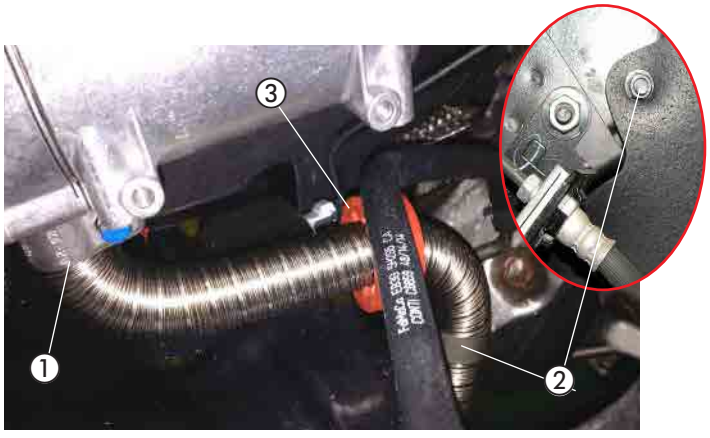


Fig. 28
① Connect the exhaust pipe
② Exhaust pipe fastened with 28 mm Ø clip and Z-bracket
③ Position rubber spacer

PLEASE NOTE!
Deburr all finished holes and treat with anti-corrosion agent.

4 INSTALLATION

Use the pipe clip (7^{+1} Nm) to connect the exhaust pipe end to the exhaust outlet connection of the exhaust silencer.

Route the exhaust pipe end to the middle of the vehicle above the brake line and the vehicle's exhaust system.

Fig. 29
① Connect exhaust pipe end

Fasten the exhaust pipe end to the fastening screw of the heat shield plate using the 28 mm Ø clip and the holder (22.9000.50.8802).

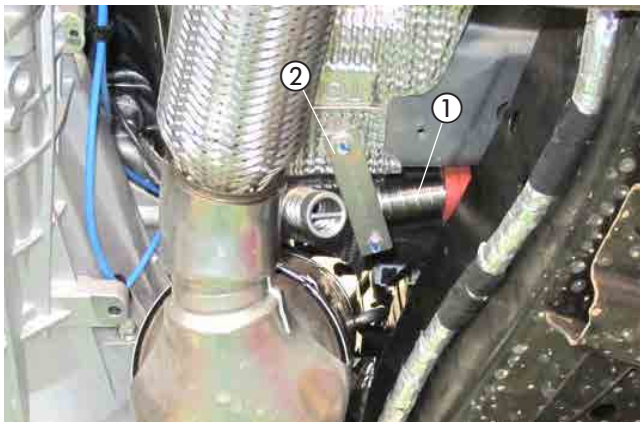


Fig. 30
① Exhaust pipe end
② Mount the holder

Position the rubber spacer at the left chassis beam as shown.

⚠ CAUTION!
When laying the exhaust pipes, ensure they are at a sufficient distance from adjacent body components.

Fig. 31
① Exhaust pipe end
② Position rubber spacer

4 INSTALLATION

ROUTE FUEL LINE AND MAKE TANK CONNECTION
(see photos 32 to 37)

Route the 4 x 1 mm Ø fuel pipe from the heater on to the left vehicle underbody as shown.

Use two rotatable line holders to secure the 4 x 1 mm Ø fuel pipe to the vehicle's cable loom.

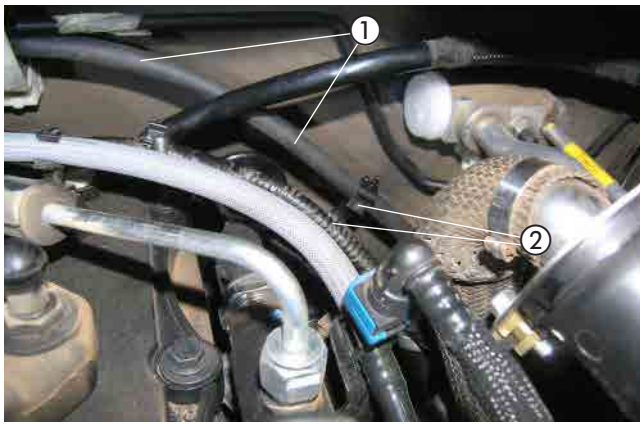


Fig. 32
① Route 4 x 1 mm Ø fuel pipe
② 2 x rotatable line holders

Use six rotatable line holders to secure the 4 x 1 mm Ø fuel pipe to the vehicle's cable loom and to the vehicle's hose.

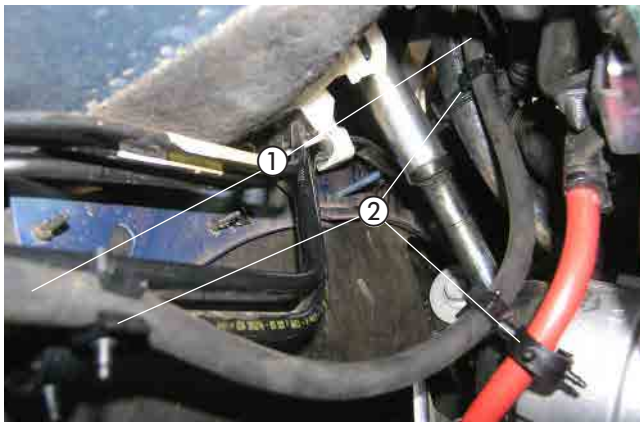


Fig. 33
① Route 4 x 1 mm Ø fuel pipe
② 6 x rotatable line holders

Use four rotatable line holders to secure the 4 x 1 mm Ø fuel pipe to the vehicle's fuel line.

⚠ CAUTION!
When laying fuel lines, always ensure they are at an adequate distance from hot vehicle and heater parts.

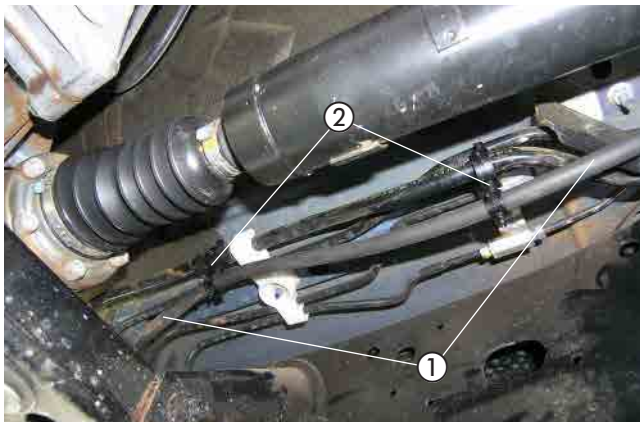


Fig. 34
① Route 4 x 1 mm Ø fuel pipe
② 4 x rotatable line holders

4 INSTALLATION

Use four rotatable line holders to secure the 4 x 1 mm Ø fuel pipe to the vehicle's fuel line and to the vehicle's line holder.
Route 4 x 1 mm Ø fuel pipe on to the tank fitting

⚠ CAUTION!
When laying fuel lines, always ensure they are at an adequate distance from hot vehicle and heater parts.

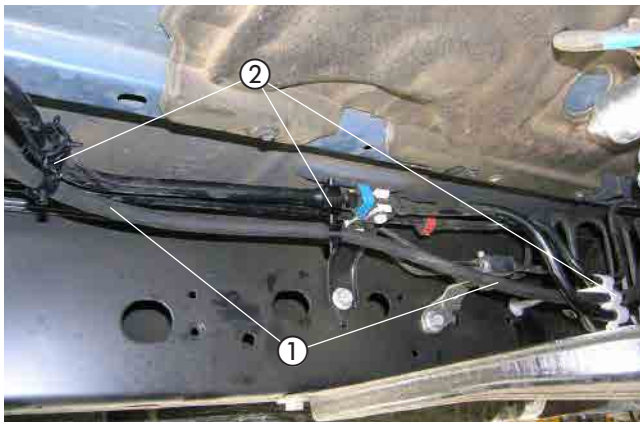


Fig. 35
① Route 4 x 1 mm Ø fuel pipe
② 4 x line holders, rotatable and vehicle's line holder

Cut approx. 3 mm off the slanted connection of the tank fitting.

⚠ CAUTION!
When opening the connection socket, ensure that no dirt gets into the tank or the supply lines.

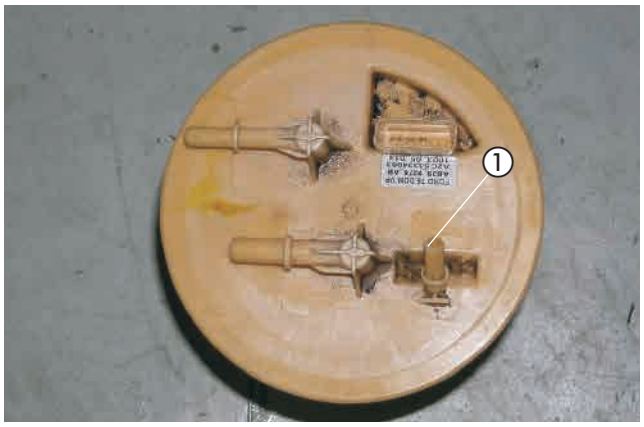


Fig. 36
① Open pipe connection socket

Lay the 4 x 1 mm Ø premounted fuel pipe as shown through the pipe connection socket into the tank and slot the quick-acting coupling into the pipe connection socket.

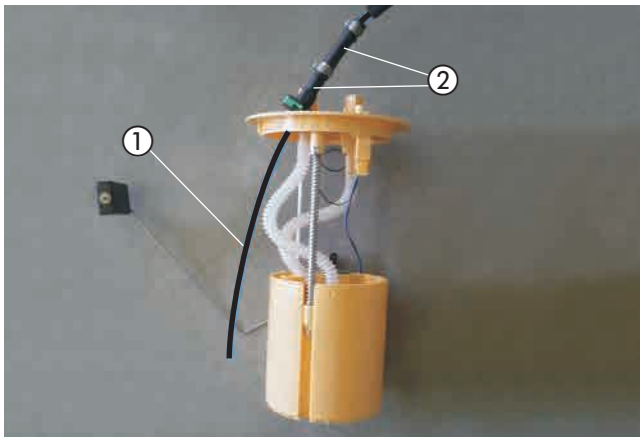


Fig. 37
① Fuel pipe, 4 x 1 mm Ø
② Quick-acting coupling with 7.5 x 3.5 mm Ø reducer

4 INSTALLATION

MOUNT FUSE AND RELAY BLOCK
(see photos 38 to 40)

To fasten the fuse and relay block, drill a 9 mm Ø hole at the headlamp holder on the left in front of the battery in the dimensions shown.

PLEASE NOTE!
Deburr all finished holes and treat with anti-corrosion agent.

Fig. 38
① Fastening point for fuse and relay block

Insert an M6 blind rivet nut into the drilled 9 mm Ø hole.

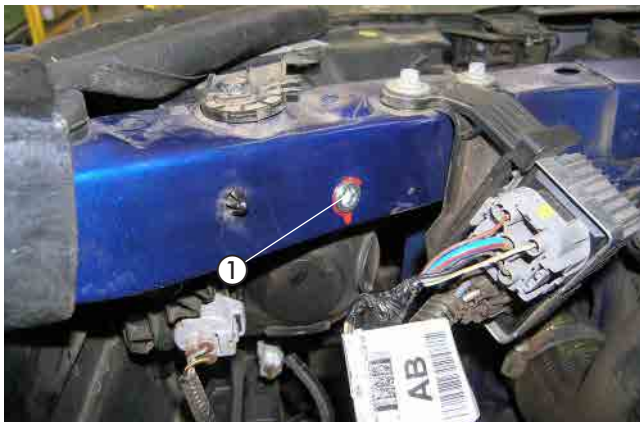


Fig. 39
① Insert M6 blind rivet nut

Mount the prepared bracket with the fuse and relay block to the fastening point as shown using an M6x16 screw (10^{+1} Nm).

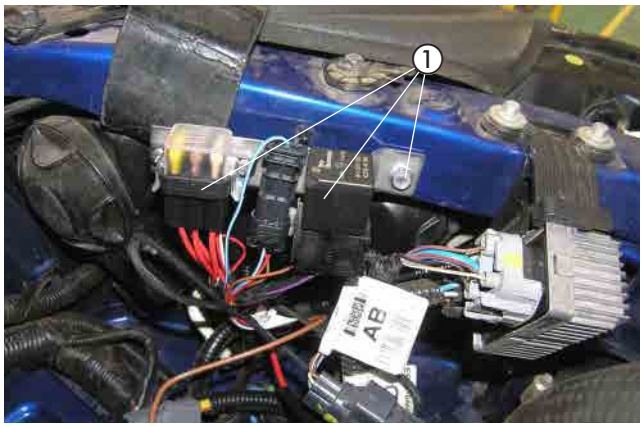


Fig. 40
① Fuse and relay block, mount with holder

4 INSTALLATION

CABLE LAYING
(see photos 41 to 43)

Connect the 10 pin connector of the main cable harness with the 10 pin tab connector housing of the heater's cable loom.

Lay the “fan control” and “control unit” cable looms from the heater cable loom to the right, along the radiator support to the vehicle's grommet, on the right at the engine partition.

Fig. 41
① Fuse and relay block, mount with holder

On the right side of the engine partition at the vehicle's grommet, open the additional grommet by cutting off the dummy socket.

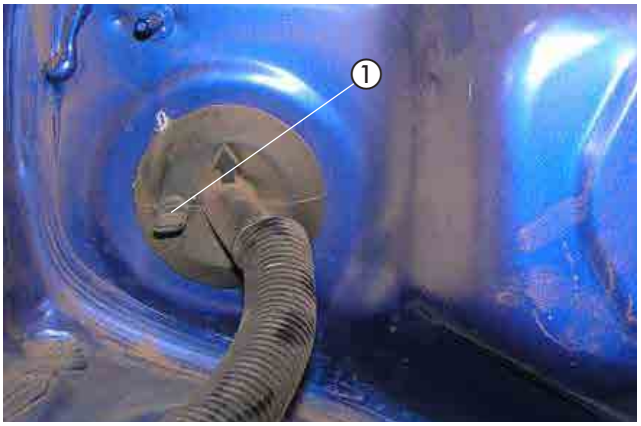


Fig. 42
① Vehicle’s cable grommet: cut dummy socket off

Route the “fan control” and “control unit” cable looms into the inside of the vehicle through the opened cable grommet.

⚠ CAUTION!
When laying the cable looms, ensure they are at an adequate distance from hot vehicle and heater parts. Use cable ties to fix the cable looms in suitable places.

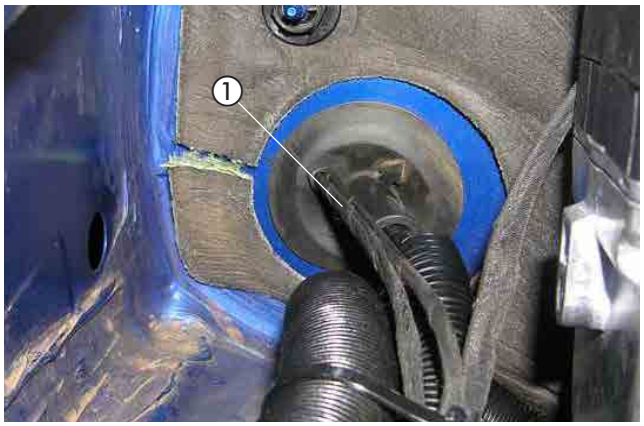


Fig. 43
① Vehicle's cable grommet: lay cable looms

4 INSTALLATION

FAN CONTROL
(see photos 44 to 51)

Mount the connector block of the IPCU module and isolating relay at the strut on the right side behind the instrument panel toward the centre console, to the front 6.5 mm Ø hole with an M6x12 screw and an M6 nut (10^{+1} Nm).
Also fasten the 1 mm² br earth cable of the IPCU module block.

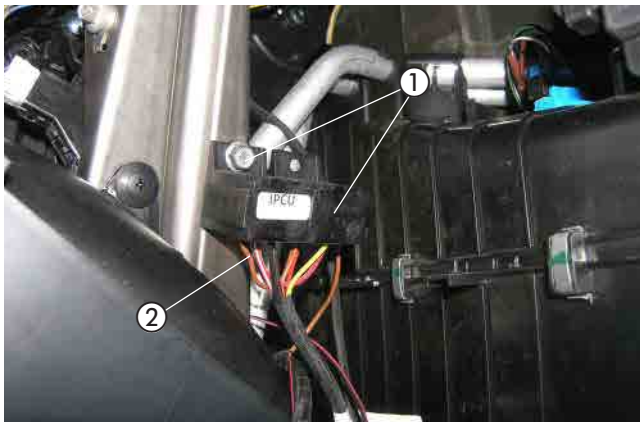


Fig. 44
① Mount connector block of IPCU and isolating relay
② Earth cable 1 mm2 br of the IPCU block, connected

Insert the IPCU module and the isolating relay in the connector block.

Fig. 45
① Mount IPCU module and isolating relay

CAUTION!
When laying the cable looms, ensure they are at an adequate distance from hot vehicle and heater parts. Use cable ties to fix the cable looms in suitable places.

At the 2-pin white connector of the fan motor, disconnect the 4 mm² ge/gn cable and integrate the 4 mm² sw and 4 mm² sw/vi cables from the fan relay with two butt-type connectors, ge, as shown in the circuit diagram.

PLEASE NOTE!
The cable colours may vary.

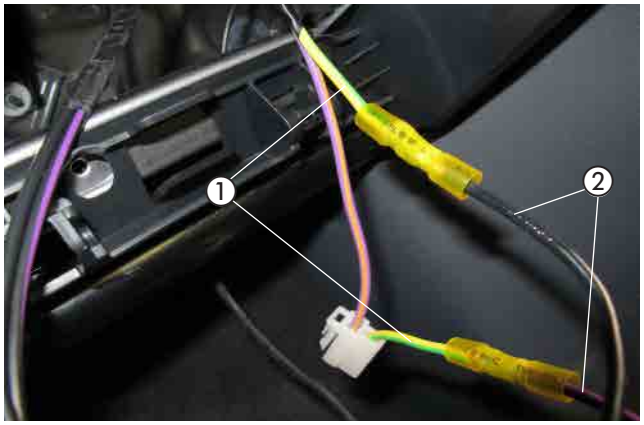


Fig. 46
① Disconnect 4 mm² ge/gn cable
② Integrate 4 mm² sw and 4 mm² sw/vi cables

4 INSTALLATION

At the blue 4-pin connector of the fan controller (to the left of the fan motor), disconnect the 0.35 mm² ws/vi cable, pin 3, and integrate the 1 mm² sw and 1 mm² sw/ws cables together with the IPCU cable loom as shown in the circuit diagram using butt-type connectors, rt.

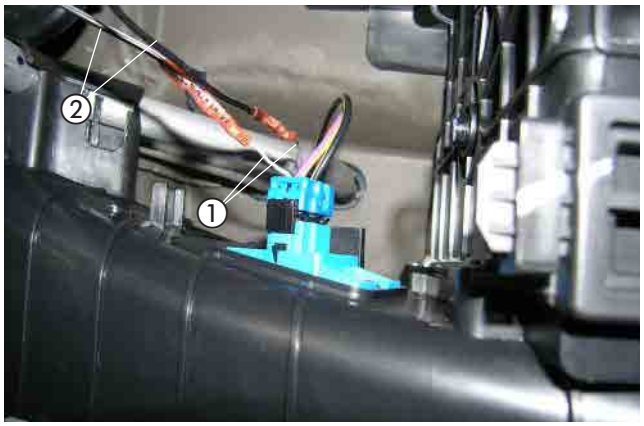


Fig. 47
① Disconnect 0.35 mm² ws/vi cable, pin 3
② Integrate 1 mm² sw and 1mm² sw/ws cables

At the black 26-pin connector of the air-con control unit, disconnect the 0.35 mm² bl cable, pin 20, and integrate the 1 mm² ge and 1 mm² rt cables of the isolating relay cable loom as shown in the circuit diagram using butt-type connectors, rt.

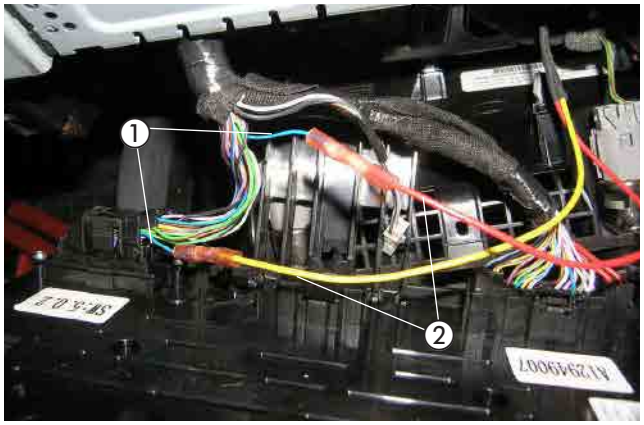


Fig. 48
① Disconnect 0.35 mm² bl cable, pin 20
② Integrate 1 mm² ge and 1mm² rt cables

Lay the 1 mm² sw/rt cable from the connector block of the IPCU module to the left to the A-pillar of the driver's footwell.
Disconnect the 1.5 mm² sw cable, chamber 14, at the white connector and integrate the 1 mm² rt/ws cable with a butt-type connector, bl.

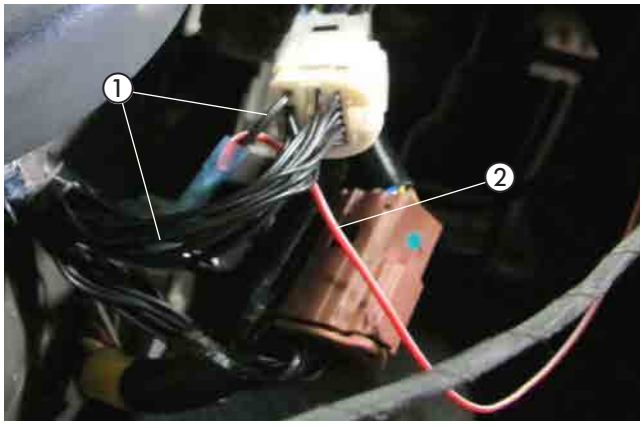


Fig. 49
① Disconnect 1.5 mm² sw cable, chamber 14
② Integrate 1 mm² rt/ws cable

4 INSTALLATION

Connect the 0.5 mm² sw/rt cable of the “control unit” cable loom and the 1 mm² sw/rt cable from the IPCU module socket using a butt-type connector, rt.

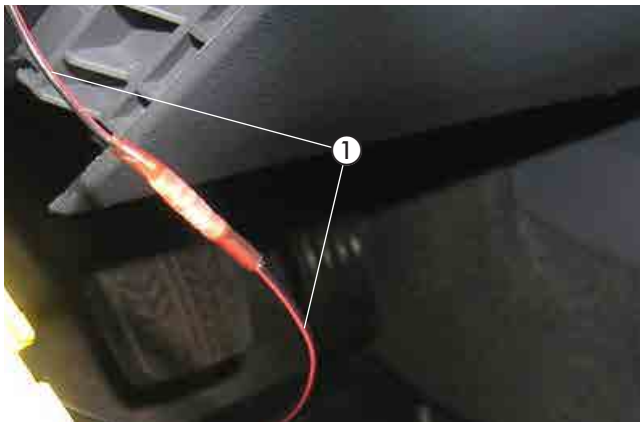


Fig. 50
① 1 mm² sw/rt and 0.5 mm² sw/rt cable, integrated

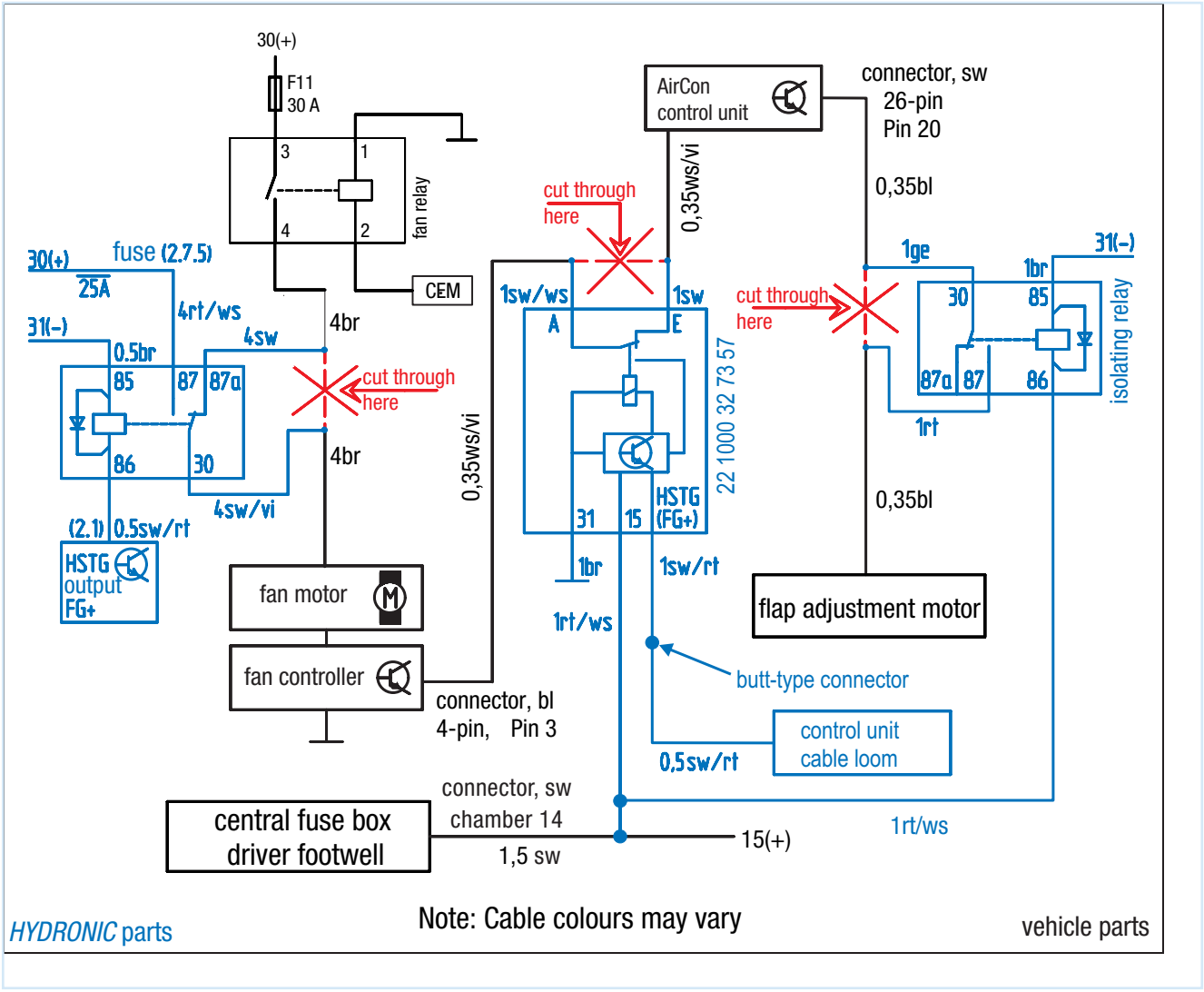


Fig. 51

4 INSTALLATION

POWER SUPPLY
(see photos 52 to 54)

Lay the 4 mm² rt positive cable to the vehicle battery and connect with the A8 cable lug to the positive terminal as shown.

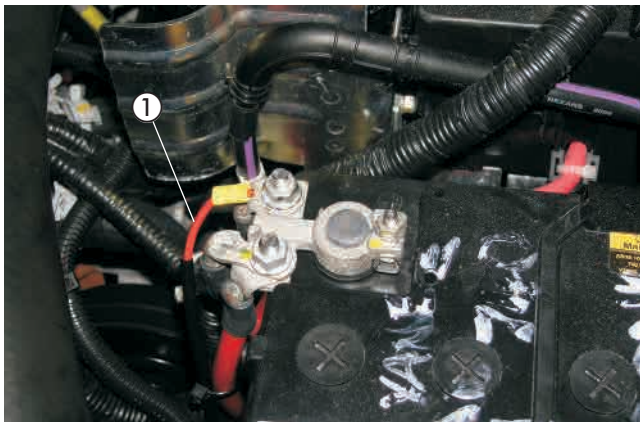


Fig. 52
① Positive cable

FOR VEHICLES WITHOUT BATTERY MONITOR:

Lay the 2.5 mm² br earth cable to the vehicle battery and connect with the A6 cable lug to the negative terminal as shown.

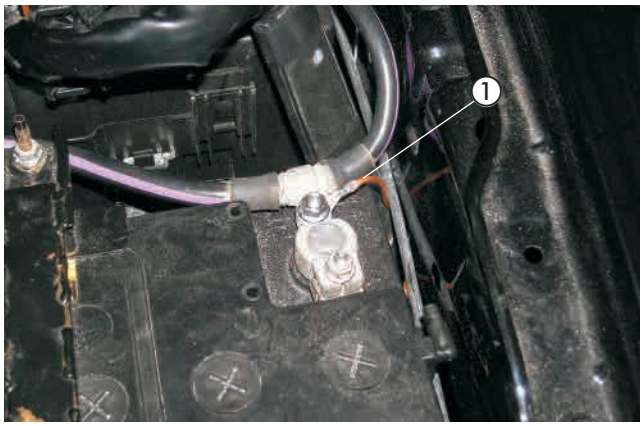


Fig. 53
① Earth cable

FOR VEHICLES WITH BATTERY MONITOR:

Fit an A8 cable lug to the 2.5 mm² br earth cable.
Lay the 2.5 mm² br earth cable to the earth point at the splash wall on the left next to the vehicle battery and connect with the A8 cable lug as shown.

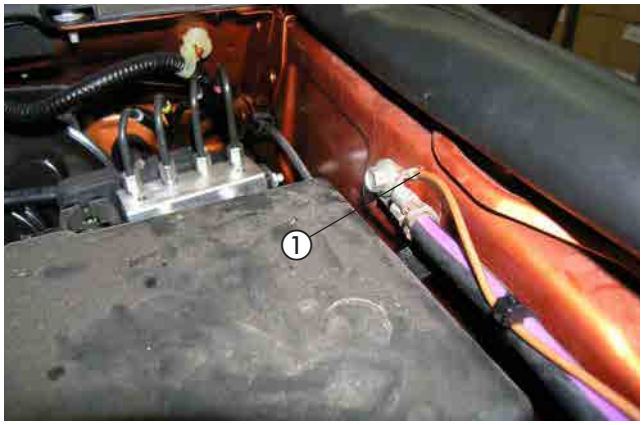


Fig. 54
① Earth cable

4 INSTALLATION

INSTALL EASYSTART REMOTE+ RADIO REMOTE CONTROL
(Alternative suggestion - consult with the customer)
(see photos 55 to 57)

The EasyStart Remote+ is installed according to the Technical Description for the EasyStart Remote+ Radio Remote Control; see the “Installation Instructions” section.

Mount the button of the EasyStart Remote+ to the trim on the left next to the steering wheel.
To do so, drill an 10 mm Ø hole and insert the button in the hole.

Fig. 55
① Mount the EasyStart Remote+ button

Fit the EasyStart Remote+ temperature sensor to the cowl in the footwell on the driver's side.

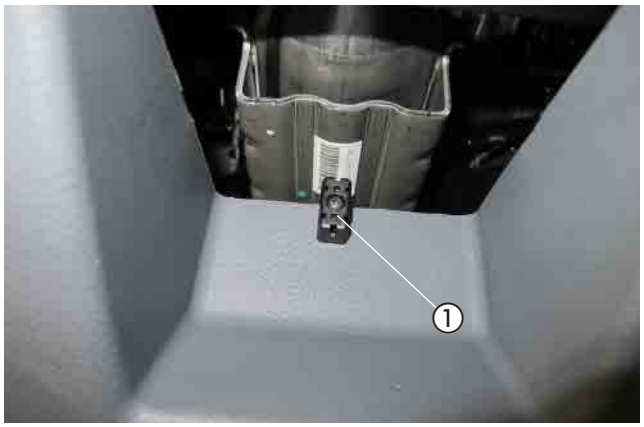


Fig. 56
① Mount the temperature sensor of the EasyStart Remote+

Mount the stationary part of the EasyStart Remote+ between the vehicle's two cable looms behind the A-pillar cover in the footwell on the driver's side using the two cable ties as shown.

Connect the antenna cable of the EasyStart Remote+ to the stationary part, take it to the left and lay it in the rubber door seal on the driver's side.

Lay the cables from the installed button and temperature sensor together with the “Control unit” cable loom to the installed position of the stationary part and connect to the stationary part.

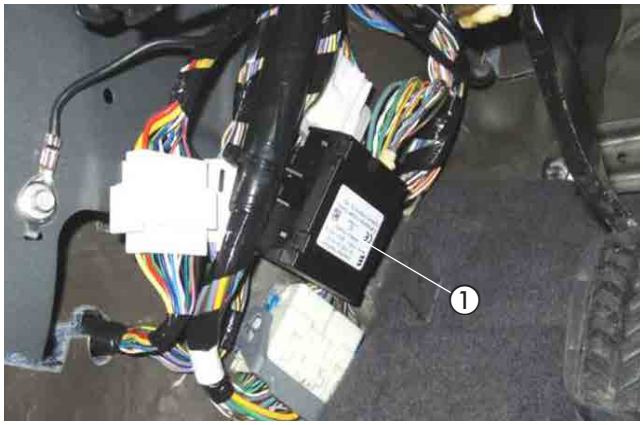


Fig. 57
① Mount the stationary part of the EasyStart Remote+

⚠ CAUTION!
Use cable ties to fix any excessive length of antenna cable underneath the instrument panel.

5 AFTER INSTALLATION

POSITION LABEL
(see photos 58 and 59)

Adhere the “Refuel” label to the left B-pillar as shown.

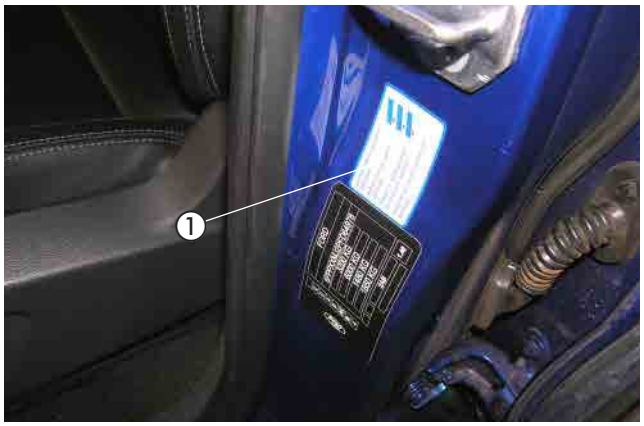


Fig. 58
① “Refuel” label

FOR PICK-UP TRUCKS:

Adhere the “Refuel” label at the entrance edge.

Fig. 59
① “Refuel” label

COMPLETE THE VEHICLE

- Install all removed parts in the reverse order.
- Reconnect the battery.
- Check that the hoses, hose clips and pipe clamps as well as all electrical connections are fitted securely.
- Use cable ties to secure all loose cables, lines, etc.
- Restore all the vehicle's programmed settings (radio, window lift, etc.).
- Fill the cooling system, start the engine, vent the cooling system and check for leaks, top up any missing coolant liquid up to the marking (arrow).
- Adhere the “Refuel” label to the B-pillar.
- Please also note and follow the vehicle manufacturer's information on filling and venting the cooling system.
- Read and observe all official regulations and safety instructions in the Technical Description.
- Program the control unit and place the operating instructions in the glove compartment.

⚠ CAUTION!
Fill the cooling system only with the coolant liquid specified by the vehicle manufacturer.

STARTING UP THE HEATER

- Switch on the heater at the control.
  See Operating Instructions - Control.

6 PARTS OVERVIEW

Fig. 60

7 LEAFLET FOR THE CUSTOMER

BEFORE SWITCHING ON
in vehicles with manual air-con
(see photo 1)

- Before switching on or pre-programming the heating mode with the ignition switched on, set the vehicle's temperature controller ① to “Hot” (maximum setting).

Fig. 1
① Temperature controller

BEFORE SWITCHING ON
in vehicles with automatic air-con
(see photo 2)

- Before switching on or pre-programming the heating mode with the ignition switched on, set the vehicle's temperature controllers ① to “HI” (maximum setting).
- Set the button for the air flow ② to air flow upwards.
- The fan speed does not need to be pre-selected.

Fig. 2
① Heating controller
② Button for air flow upwards

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