



Water Heater

Thermo Top Evo Parking Heater



Installation Documentation Hyundai Ioniq Hybrid

Validity

Manufacturer	Model	Type	Model year	EG BE No. / ABE
Hyundai	Ioniq Hybrid	AE	From model year 2017	e4 * 2007 / 46 * 1157 * ...

Motorisation	Fuel	Emission standard	Transmission type	Output in kW	Displacement in cm ³	Engine code
1.6 P	Petrol	Euro 6	AG	105	1580	G4LE

AG = automatic transmission

Left-hand drive vehicle

Verified equipment variants: 2 zone automatic air-conditioning
Xenon main headlights
Start button with keycard
LED daytime running lights

Not verified: Halogen main headlights
Alarm system

Total installation time: approx. 9 hours

Note:

Only experts in high-voltage systems for vehicles should be authorised to carry out independent work on hybrid vehicles!
High-voltage systems must be taken out of operation, secured and reactivated according to the manufacturer's instructions.

Hyundai Ioniq Hybrid

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Necessary Components

Description	Order No.:
Basic delivery scope of Thermo Top Evo	In accordance with price list
Installation kit for Kia Niro / Hyundai Ioniq Hybrid TT-Evo 2017	1325365B
In case of Telestart, heater control, as well as indicator lamp in consultation with end customer	In accordance with price list
In case of MultiControl CAR installation - MultiControl installation frame	9030077_

Webasto Individual Option

Description	Order No.:
Webasto Individual Auxiliary Heating additional kit	1320077_
Webasto Individual Quick additional kit	9030826_
Webasto Individual Select additional kit	9030828_

Installation Instructions

Arrange for the vehicle to be delivered with the tank only about ¼ full.

The installation location of the push button in case of Telestart or ThermoCall should be confirmed with the end customer.

Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

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.

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair



The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.



To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.



Installation and repair may **ONLY** be carried out by persons trained and certified in a Webasto training course. **NEVER** try to install or repair Webasto heating or cooling systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

1.2 Operation

To ensure safe operation, we recommend having the heater checked every two years by an authorised Webasto dealer, especially when used over a long period and/or under extreme environmental conditions.

Do not operate the heater in closed rooms due to the danger of poisoning and suffocation.

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel diesel (DIN EN 590) or petrol (DIN EN 228).

The heater may not be cleaned with a high-pressure cleaner.

1.3 Please note

ALWAYS follow all Webasto installation and operating instructions and observe all warnings.

To become familiar with and understand all functions and properties of the heater, the operating instructions must be read carefully and observed at all times.

For proper, safe installation and repair work, the installation instructions with all warnings and safety information must be carefully read and observed at all times. Please always contact a workshop authorised by Webasto for all installation and repair work.

Important

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, 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.

Sharp edges should be fitted with rub protection. 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 startup 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.

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

Note

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.

Important

Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general **homologation of the vehicle**.

Note

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

2.1 Excerpt from ECE regulation 122 (heating system) paragraph 5 for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

1.7.1. A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off.

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

2.1.1. Subject to paragraph 2.1.2, combustion heaters shall be installed according to the requirements of this Annex.

2.1.2. Vehicles of category O having liquid fuel heaters are deemed to comply with the requirements of this Annex.

2.2. Positioning of heater

2.2.1. Body sections and any other components in the vicinity of the heater must be protected from excessive heat and the possibility of fuel or oil contamination.

2.2.2. The combustion heater shall not constitute a risk of fire, even in the case of overheating. This requirement shall be deemed to be fulfilled if the installation ensures an adequate distance to all parts and suitable ventilation, by the use of fire resistant materials or by the use of heat shields.

2.2.3. In the case of M2 and M3 vehicles, the heater must not be positioned in the passenger compartment. However, an installation in an effectively sealed envelope which also complies with the conditions in paragraph 2.2.2 may be used.

2.2.4. The label referred to in paragraph 1.4 or a duplicate, must be positioned so that it can be easily read when the heater is installed in the vehicle.

2.2.5. Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. Fuel supply

2.3.1. The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage.

2.3.2. In the case of liquid fuel heaters, where a supply separate to that of the vehicle is provided, the type of fuel and its filler point must be clearly labelled.

2.3.3. A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. In addition a suitable instruction must be included in the manufacturer's operating manual.

2.4. Exhaust system

2.4.1. The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

2.5.1. The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. Heating air inlet

2.6.1. The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

2.6.2. The inlet duct must be protected by mesh or other suitable means.

2.7. Heating air outlet

2.7.1. Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

2.7.2. The air outlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

End of excerpt.

In multilingual versions the German language is binding.

Hyundai Ioniq Hybrid

Information on Validity

This installation documentation applies to Hyundai Ioniq Hybrid Petrol vehicles - for validity, see page 1 - from model year 2017 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this 'installation documentation'.

Vehicle and engine types, equipment variants and other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

Technical Information

Special Tools

- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

Dimensions

- All dimensions are in mm.

Tightening torque values

- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque value of 5x15 water connection piece retaining plate bolt = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art technology.

Explanatory Notes on Document

You will find an identification mark on the outside top right corner of the page in question to provide you with a quick overview of the individual working steps.

Mechanics



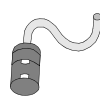
Electrics



Coolant Circuit



Combustion Air



Fuel



Exhaust Gas



Software



Special features are highlighted using the following symbols:

Specific risk of damage to components.



Specific risk due to electrical voltage.



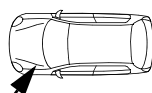
Specific risk of fire or explosion.



Reference to a special technical feature.



The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.



Reference to the manufacturer's vehicle-specific documents.



Reference to specific installation instructions of Webasto components (demonstrated with the example of the FuelFix).



Reference to general installation instructions of Webasto components.



Tightening torque according to the manufacturer's vehicle-specific documents.



Hyundai Ioniq Hybrid

Preliminary Work

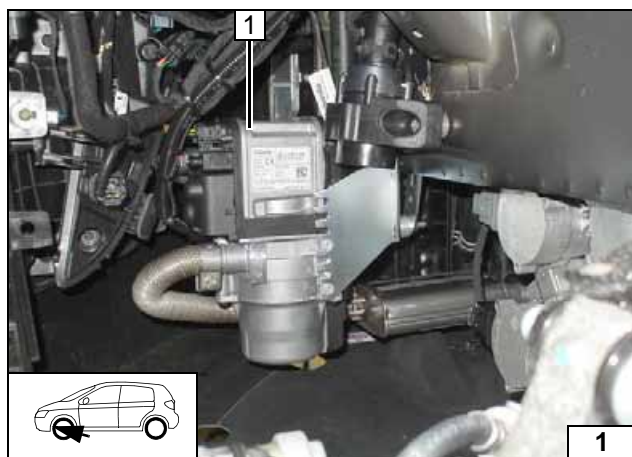
Vehicle



- Deactivate the hybrid system according to the vehicle manufacturer's workshop manual.
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.
- Remove the engine cover.
- Remove the engine control unit and the transmission control unit in the engine compartment.
- Remove the left front wheel.
- Remove the left wheel well trim.
- Remove the underbody trim on the left.
- Disassemble the engine underdrive protection.
- Remove the rear bench seat and right backrest.
- Open the tank-fitting service lid.
- Remove the glove box.
- Remove the lower instrument panel trim on the right.
- Remove the A-pillar trim on the right (only in case of Telestart).
- Remove the lateral centre tunnel trim on the right.
- Remove the A/C control unit.

Heater

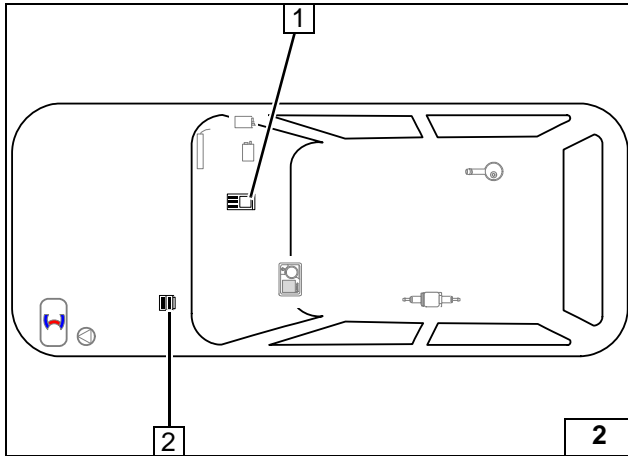
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place in the engine compartment.



Heater Installation Location

- 1 Heater

Installation location

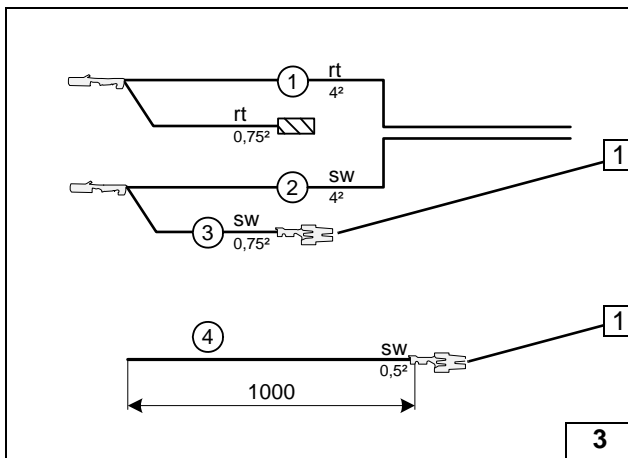


Preparing Electrical System

- 1 Passenger compartment relay and fuse holder
- 2 Engine compartment fuse holder



Installation overview



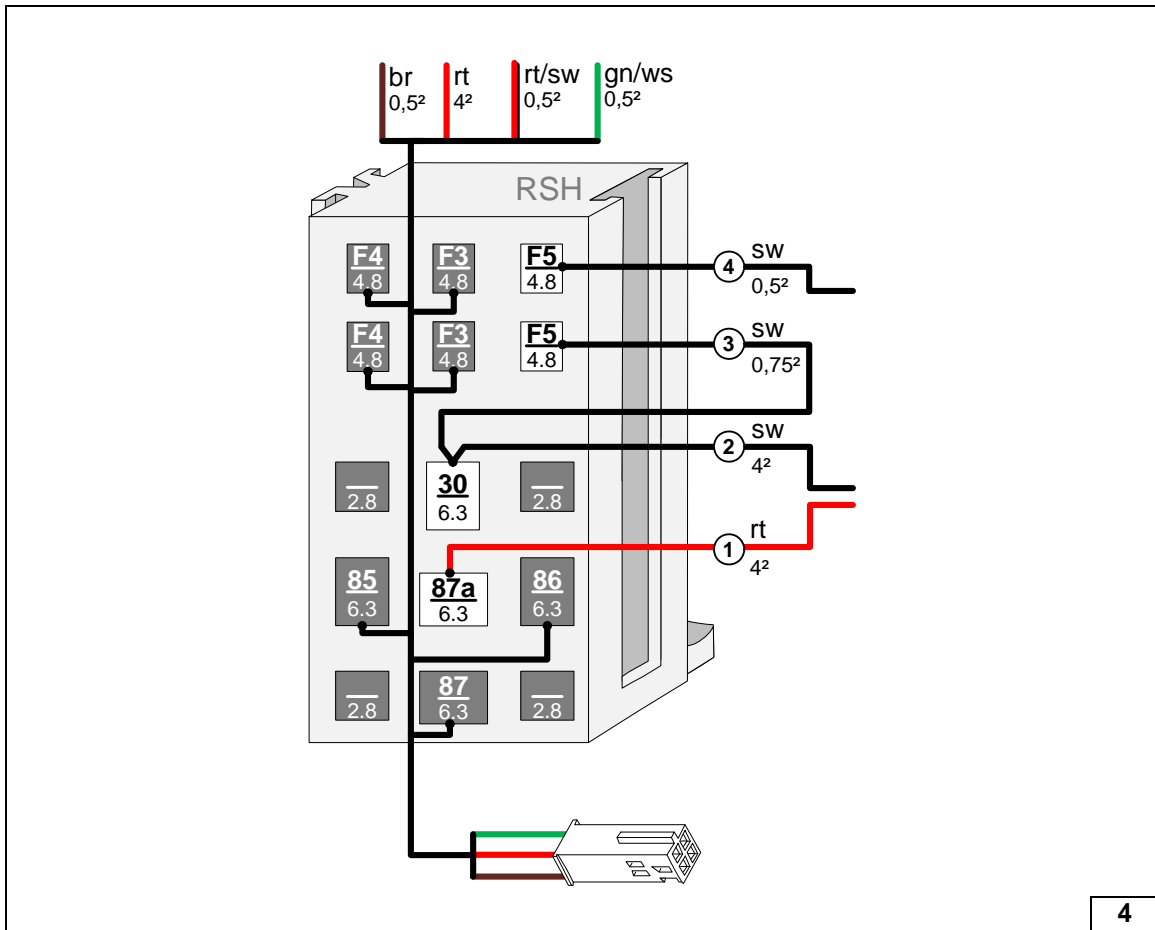
Wire sections retain their numbering in the entire document.

Pull wire ④ into provided protective sleeving.

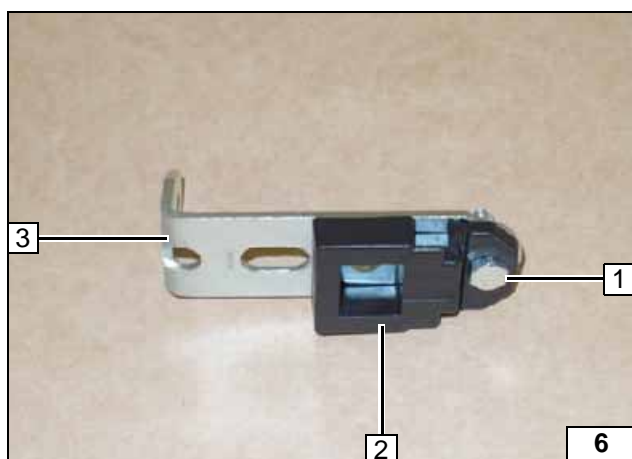
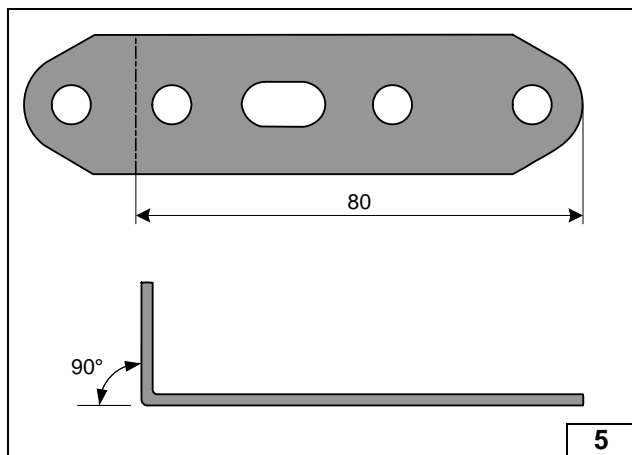
- 1 Power timer
- ① Red (rt) wire of fan wiring harness
- ② Black (sw) wire of fan wiring harness



Cutting to length / assigning wires



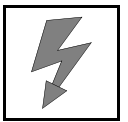
Connecting wires to passenger compartment relay and fuse holder



- 1 M5x16 bolt, large diameter washer [2x], nut
- 2 Engine compartment fuse holder retaining plate
- 3 Perforated bracket

Bending perforated bracket

Preparing engine compartment retaining plate of fuse holder

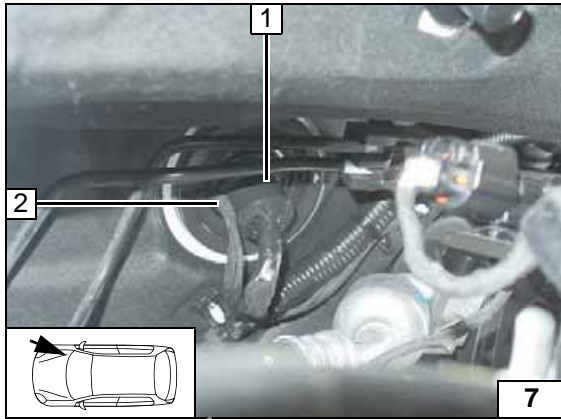


Electrical System



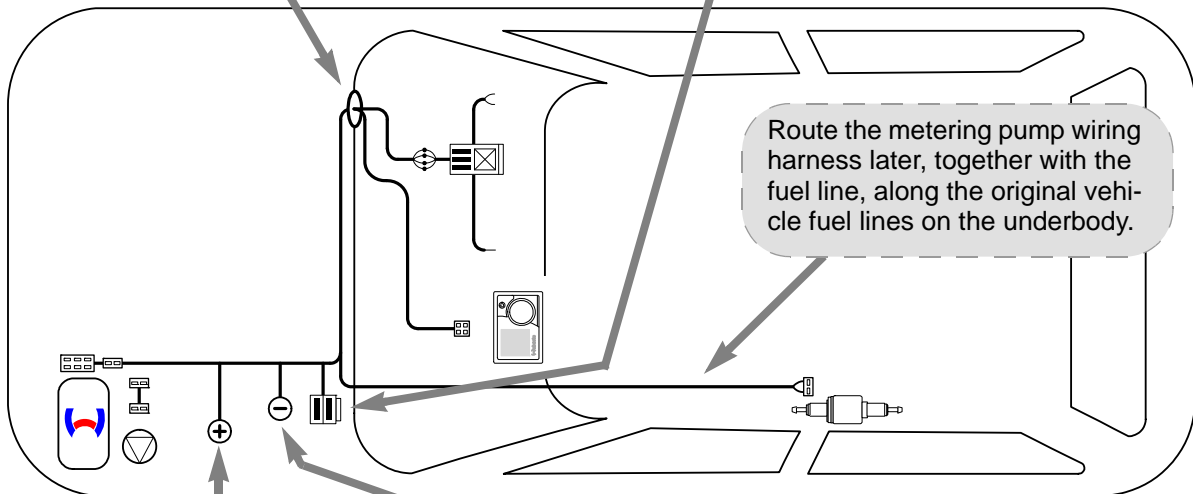
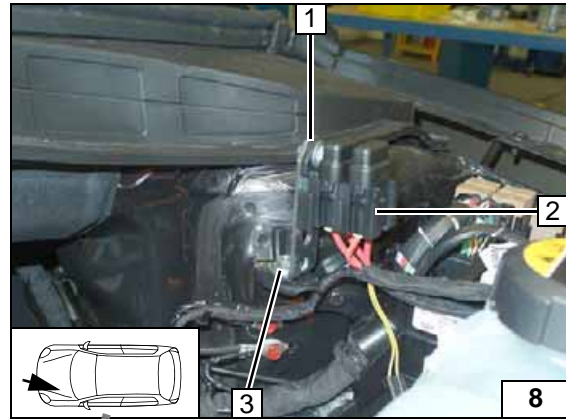
Wiring harness pass through

- 1 Protective rubber plug
- 2 Heater wiring harnesses, heater control

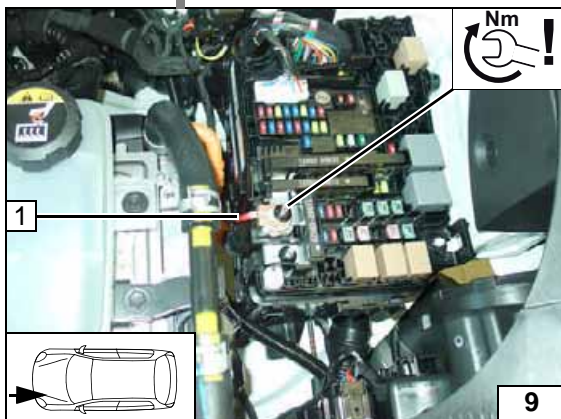


Engine compartment fuse holder

- 1 Perforated bracket with retaining plate
- 2 Fuse holder with fuses F1-2
- 2 Insert and hand-tighten original vehicle bolt (will be mounted later together with the engine control unit)

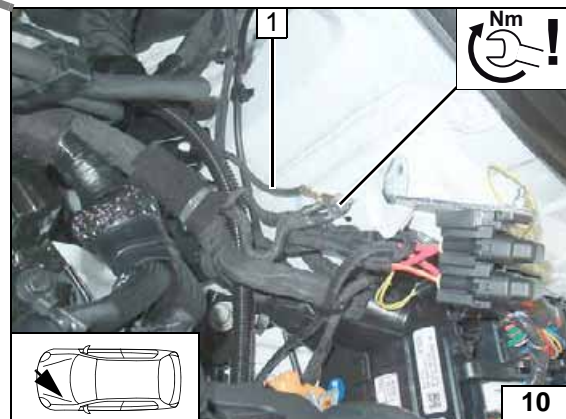


Wiring harness routing diagram



Positive wire

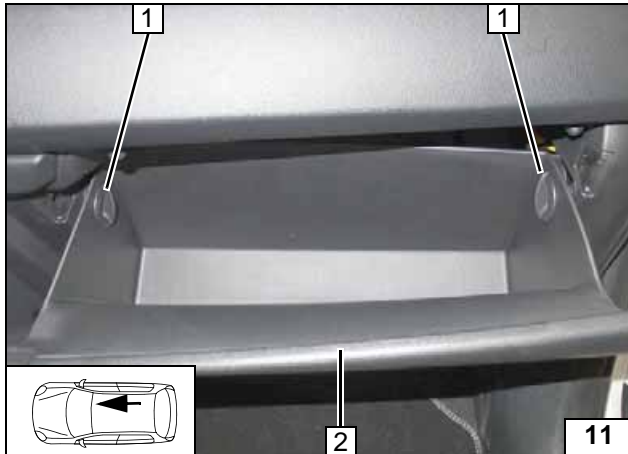
- 1 Positive wire on original vehicle positive support point



Earth wire

- 1 Earth wire on original vehicle earth support point





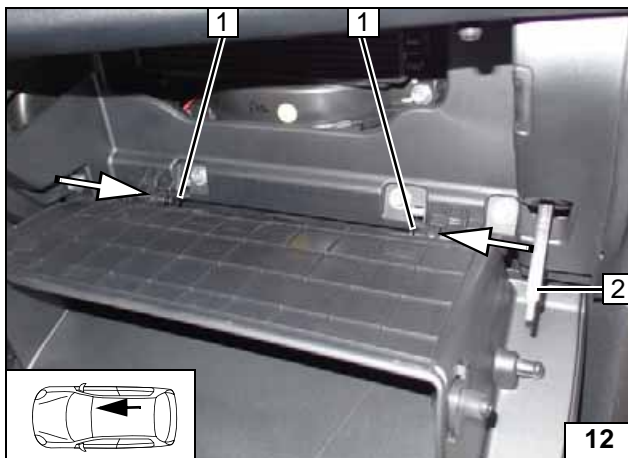
Glove Box Dismantling

Unscrew stopper 1 [2x] to remove it.

- 2 Glove box



Removing stopper



- 1 Remove the plastic hinge pin in the direction of the arrow [2x]
- 2 Remove silencer

Removing glove box

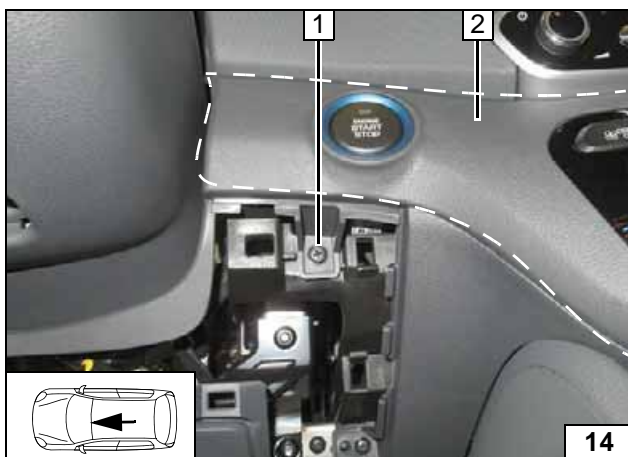


A/C Control Unit Dismantling

- 1 Instrument panel trim
- 2 Original vehicle bolt
- 3 Dismantle lateral instrument panel trim



Removing original vehicle bolt

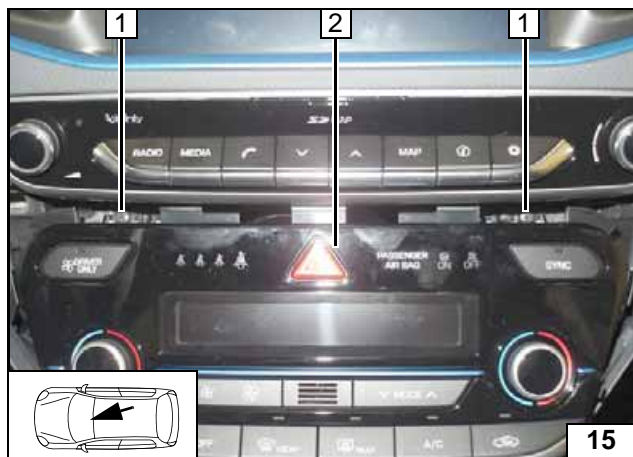


- 1 Original vehicle bolt

Remove instrument panel trim 2 in one piece by pulling it forward.

Removing original vehicle bolt





- 1 Remove original vehicle bolt [2x]
- 2 A/C control unit

Removing the A/C control unit

Cold Start System Installation

! Integrate the cold start system as per the separate installation documentation:

Cold start system installation documentation for Hyundai Ioniq Hybrid

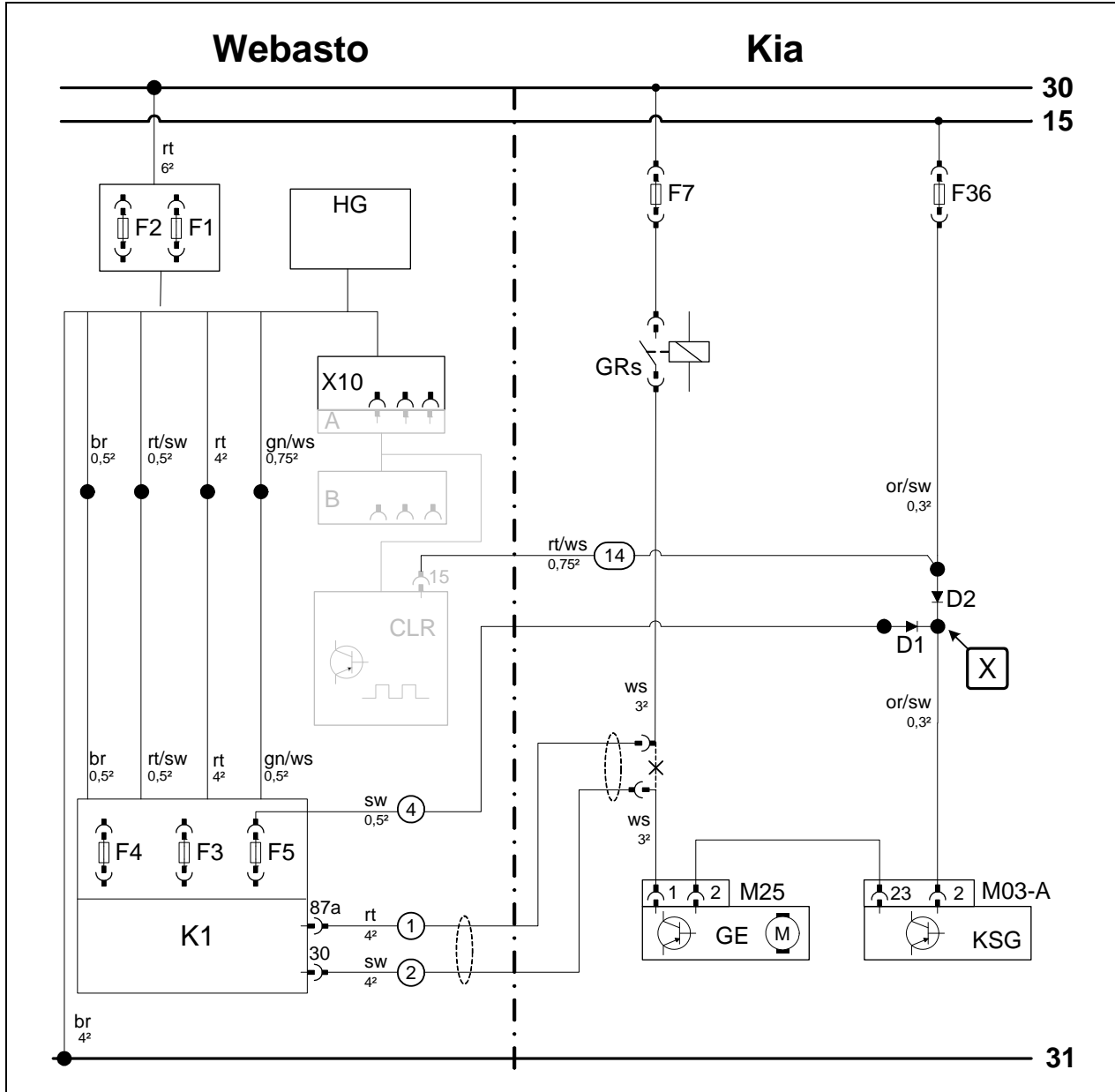




Fan Controller

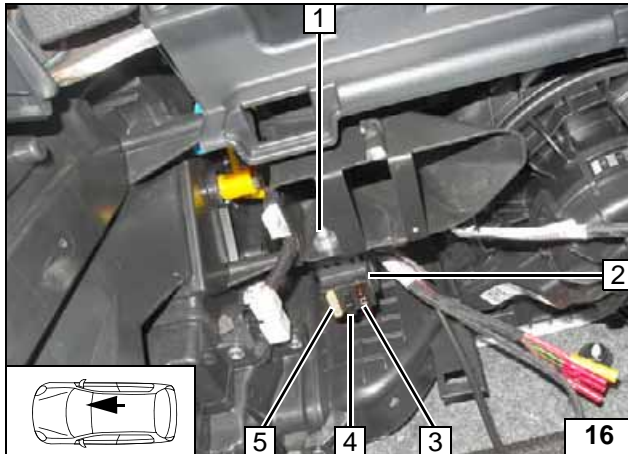
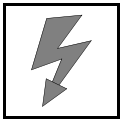


System wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F36	7.5A fuse	rt	red
F1	20A fuse	F7	40A fuse	sw	black
F2	30A fuse	GRs	Fan relay	gn	green
X10	4-pin socket of heater control	KSG	A/C control unit	ws	white
A	Connector of CLR module wiring harness	M03-A	40-pin connector of KSG	br	brown
B	Socket of CLR module wiring harness	GE	Fan unit	or	orange
CLR	CLR Module	M25	4-pin GE connector		
D1	3A blocking diode				
D2	3A blocking diode				
F3	1A fuse				
F4	25A fuse				
F5	7.5A fuse			X	Cutting point
K1	Fan relay				Wiring colours may vary.

Legend

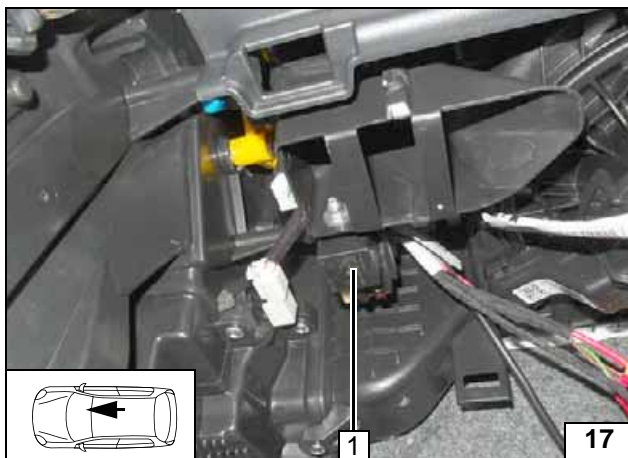


Drill 6mm dia. hole at position 1.

- 1 M5x16 bolt, large diameter washer [2x], nut
- 2 Passenger compartment relay and fuse holder
- 3 7.5A fuse F5
- 4 1A fuse F3
- 5 25A fuse F4

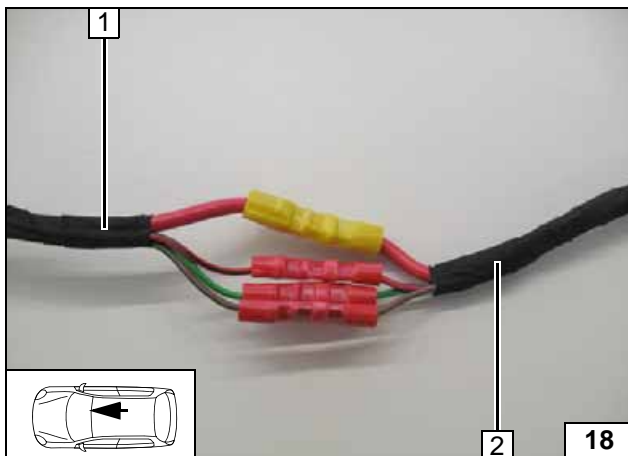


Installing passenger compartment relay and fuse holder



- 1 Relay K1

Installing relay K1

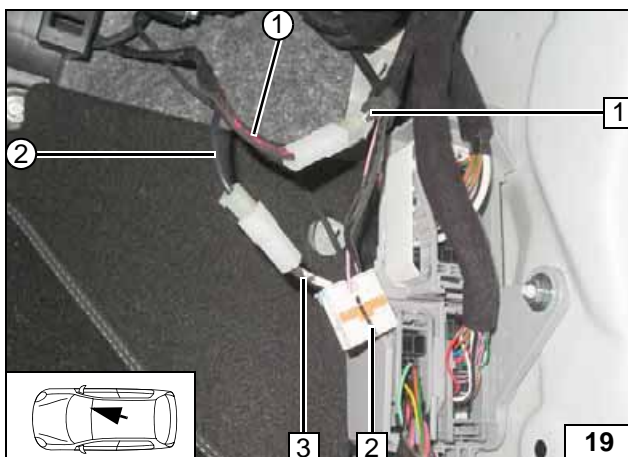


Produce following electrical connections as shown in the wiring diagram.

- 1 Passenger compartment relay and fuse holder wiring harness
- 2 Heater wiring harness



Connecting same colour wires of wiring harnesses

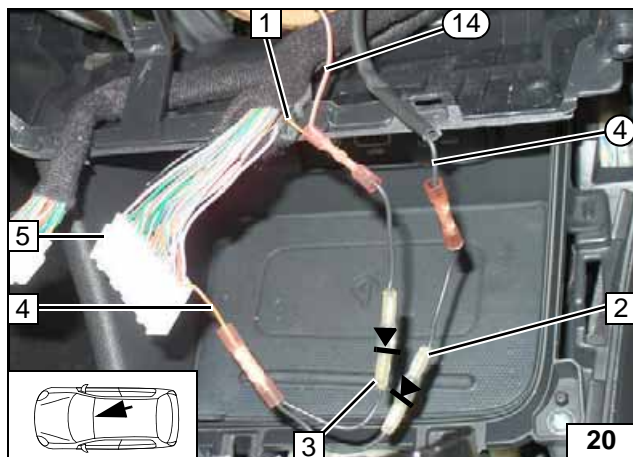


Connection to 4-pin connector M 25 2 from fan unit.

- 1 White (ws) wire of GRs
- 3 White (ws) wire of M25 pin 1
- ① Red (rt) wire from K1/87a of fan wiring harness
- ② Black (sw) wire from K1/30 of fan wiring harness



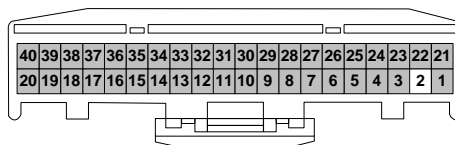
Connecting fan unit



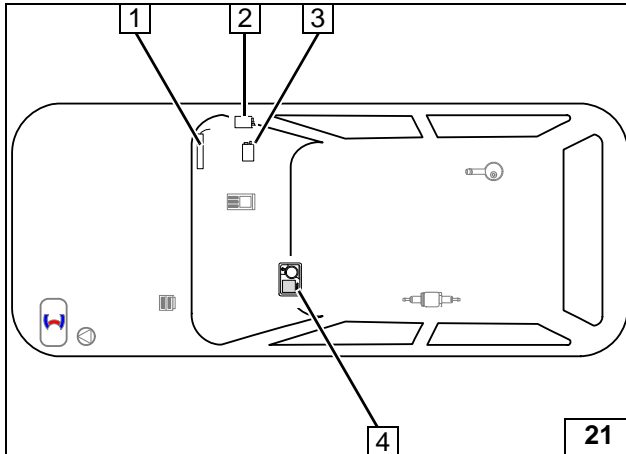
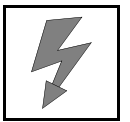
Connection to 40-pin connector M03 5 from A/C control unit.

- 1 Orange/black (or/sw) wire of fuse F36
- 2 3A diode D1
- 3 3A diode D2
- 4 Orange/black (or/sw) wire of connector M03, pin 2
- ④ Black (sw) wire of 7.5A fuse F5
- ⑭ Red/white (rt/ws) wire of CLR/15

View of connector on wiring side



**Connect-
ing A/C
control unit**

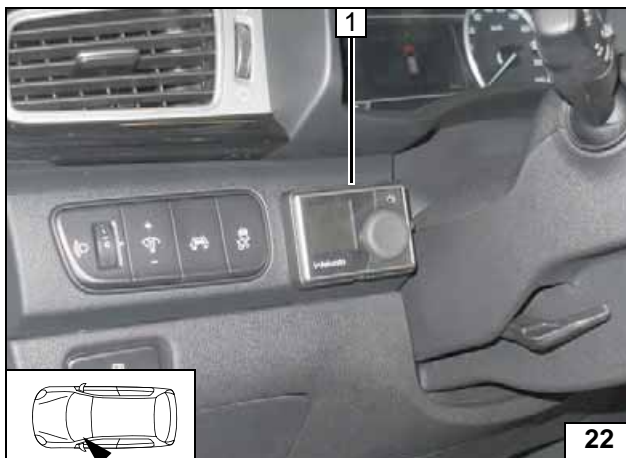


Heater Control Installation

- 1 Telestart / ThermoCall aerial
- 2 Telestart receiver
- 3 ThermoCall receiver
- 4 MultiControl CAR



Installation overview

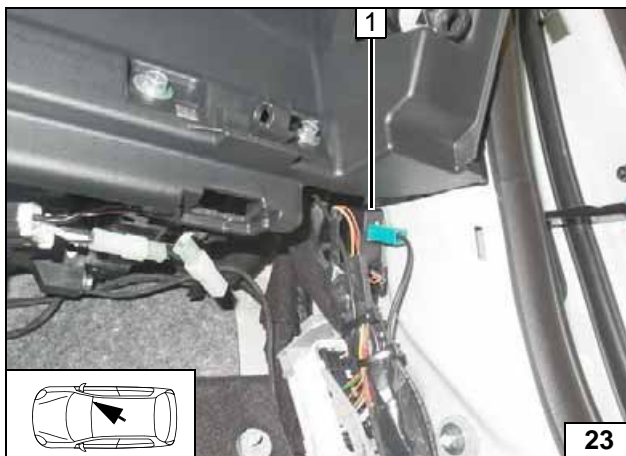


MultiControl CAR Option

- 1 Installation frame



Installing MultiControl CAR

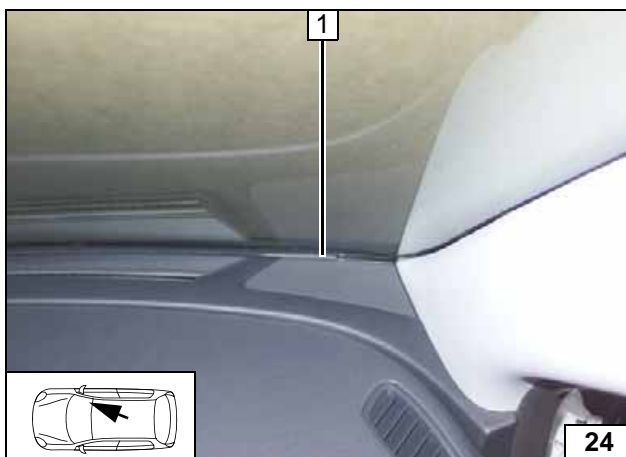


Remote Option (Telestart)

Fasten receiver 1 with double-sided adhesive tape.

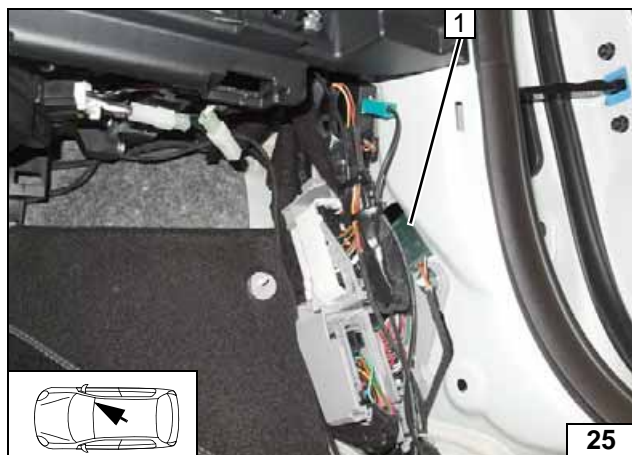


Installing receiver



- 1 Aerial

Installing aerial

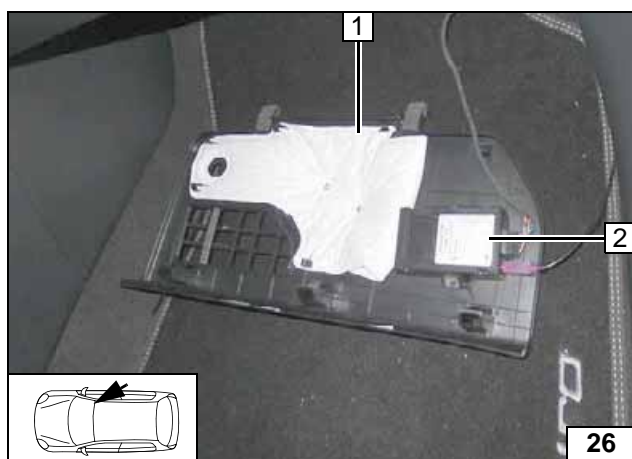


Temperature sensor T100 HTM

Fasten temperature sensor 1 using double-sided adhesive tape.



Installing temperature sensor



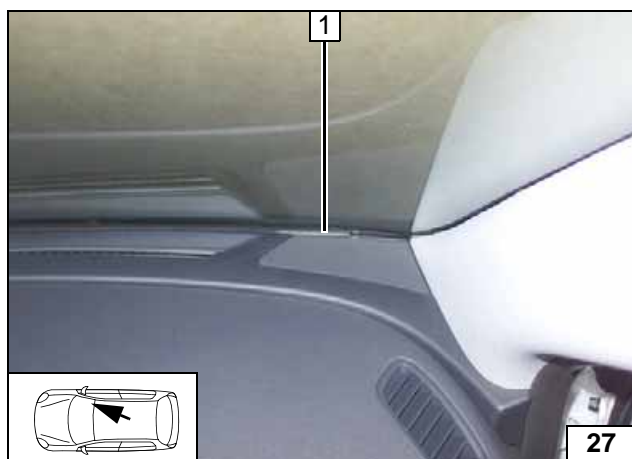
ThermoCall Option

Fasten receiver 2 with double-sided adhesive tape.

- 1 Lower instrument panel trim

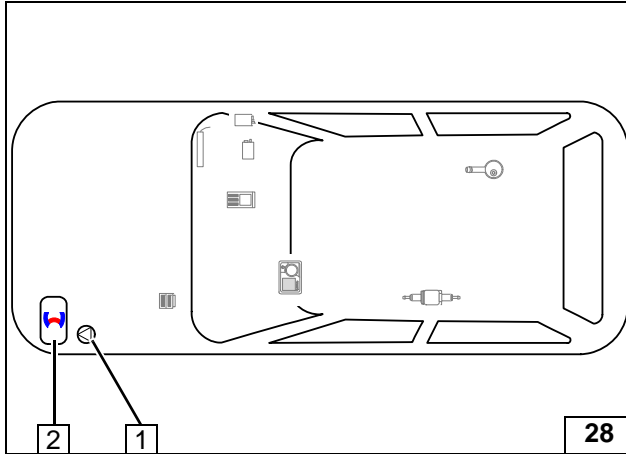
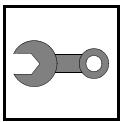


Installing receiver



- 1 Aerial (optional)

Installing aerial

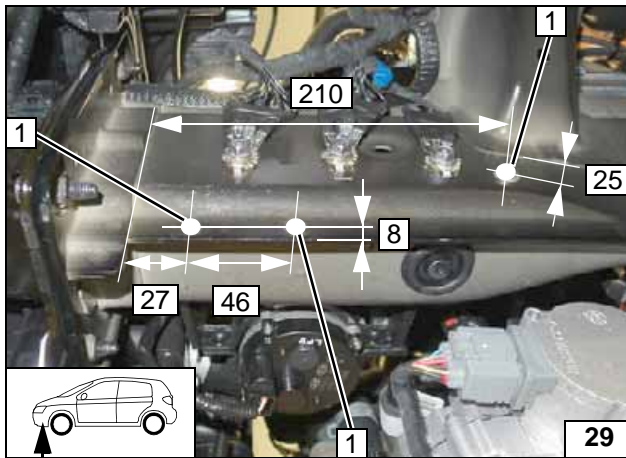


Preparing Installation Location

- 1 Circulating pump
- 2 Heater

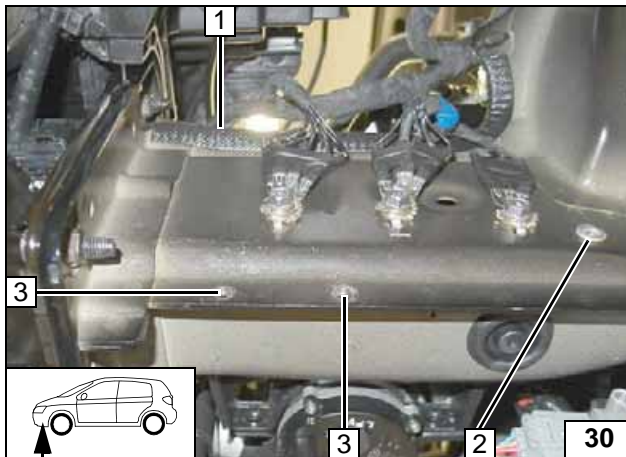


Installation overview



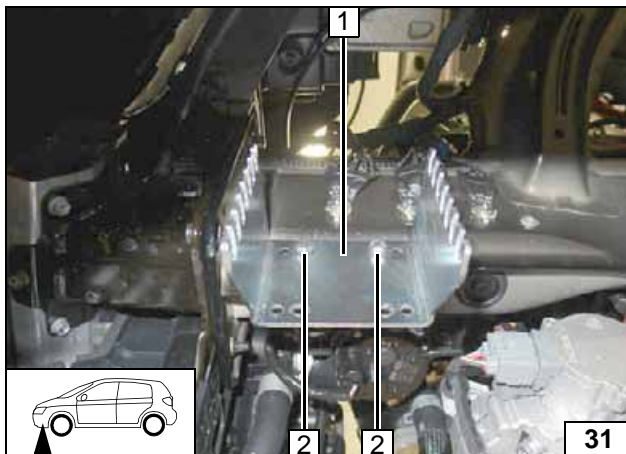
- 1 Hole pattern [3x]

Copying hole pattern



- 1 200mm long edge protection
- 2 9mm dia. hole, rivet nut
- 3 7 mm dia. hole [2x]

Installing rivet nut

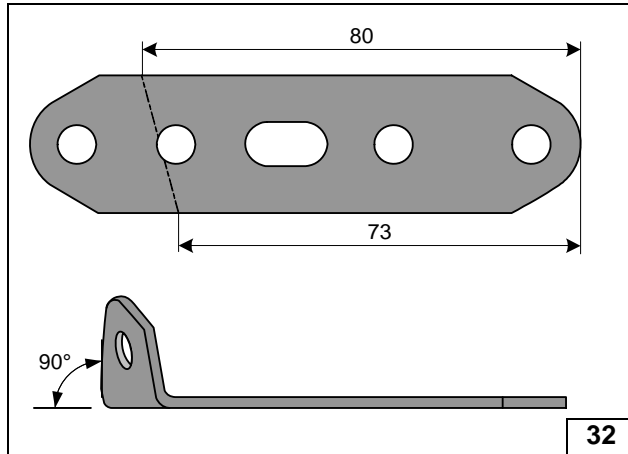
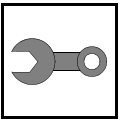


Install a 5mm spacer [2x] between bracket and frame side member at position 2.

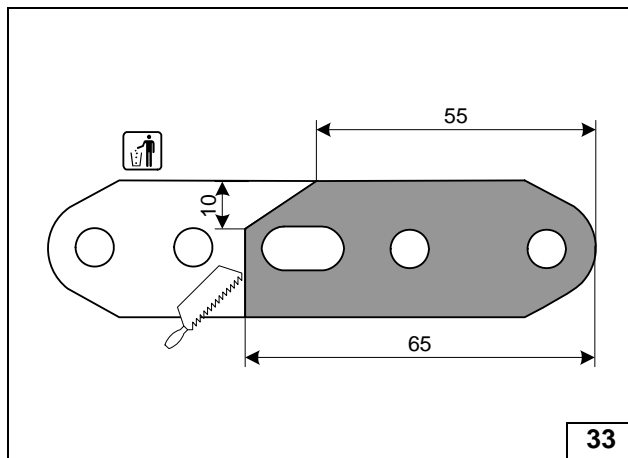
- 1 Bracket
- 2 M6x20 bolt, flanged nut [2x]



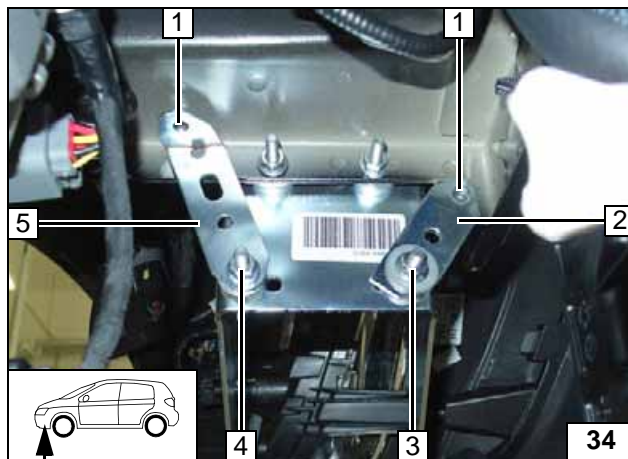
Installing bracket



Bending perforated bracket A



Shortening perforated bracket B

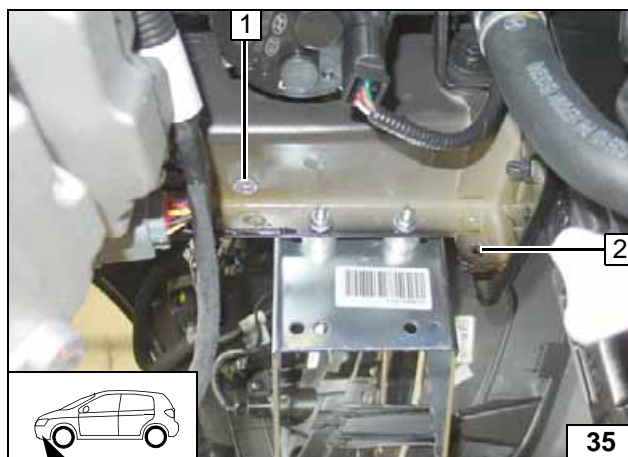


Install one 10mm spacer each at positions **3** and **4** between bracket and perforated bracket.



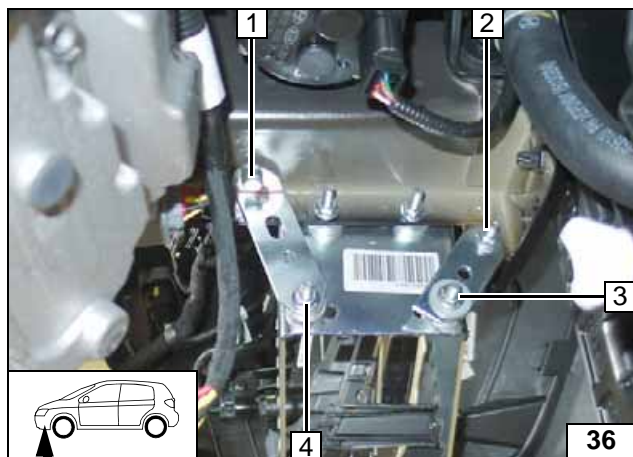
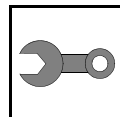
- 1 Copy hole pattern [2x]
- 2 Perforated bracket B
- 3 M6x25 bolt, large diameter washer, 10mm spacer, flanged nut
- 4 M6x25 bolt, 10mm spacer, flanged nut
- 5 Perforated bracket A

Copying hole pattern



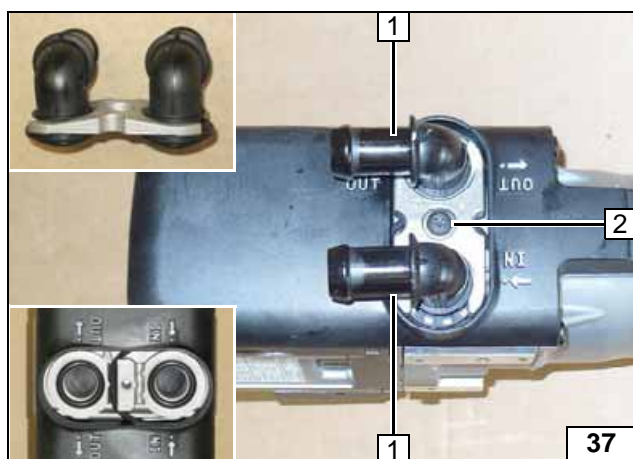
- 1 9mm dia. hole, rivet nut
- 2 7 mm dia. hole

Installing rivet nut



- 1 M6x20 bolt, spring lockwasher
- 2 M6x20 bolt, flanged nut
- 3 M6x25 bolt, large diameter washer, 10mm spacer, flanged nut
- 4 M6x25 bolt, 10mm spacer, flanged nut

Installing bracket

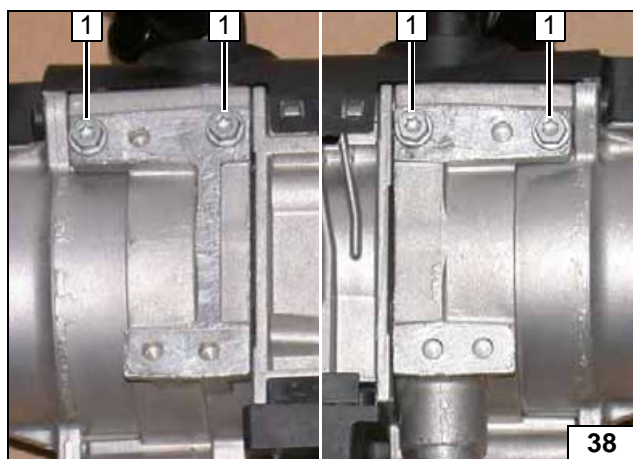


Preparing Heater

- 1 Water connection piece, sealing ring [2x each]
- 2 5x15 self-tapping bolt, retaining plate of water connection piece



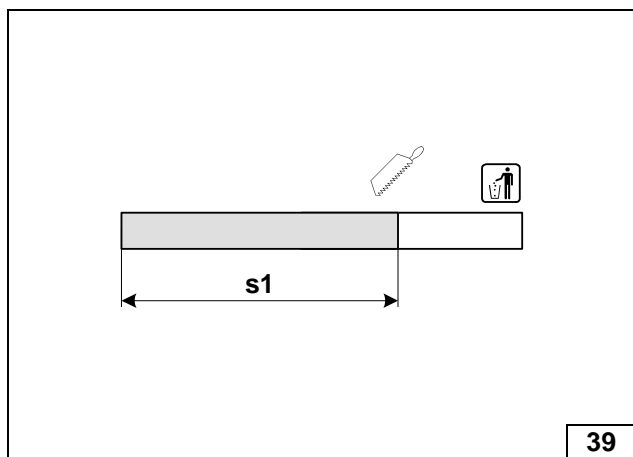
Premounting fuel line and combustion air pipe



Screw 5x13 self-tapping bolts 1 [4x] into existing holes by a maximum of 3 thread turns.

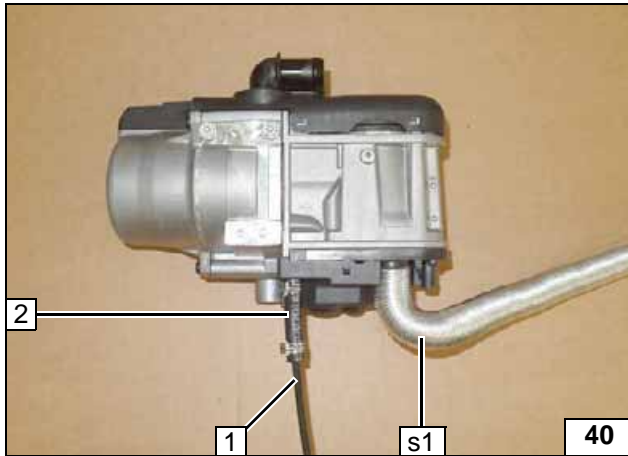
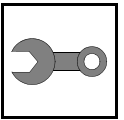


Premounting bolts loosely



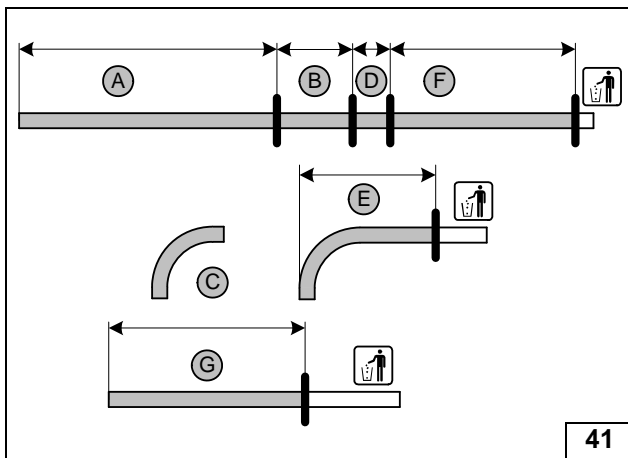
s1 = 250

Cutting combustion air pipe to length



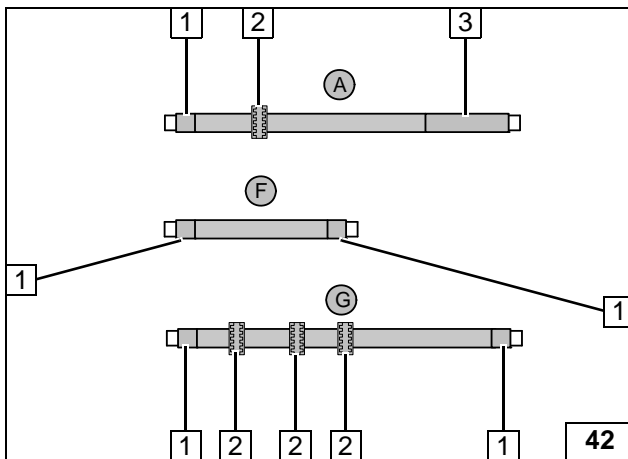
- 1 Fuel line
- 2 Hose section, 10mm dia. clamp [2x]

Premounting fuel line and combustion air pipe s1



- A = 1060
- B = 150
- C = 90°, 18mm dia.
- D = 80
- E = 260
- F = 375
- G = 760

Cutting hoses to length

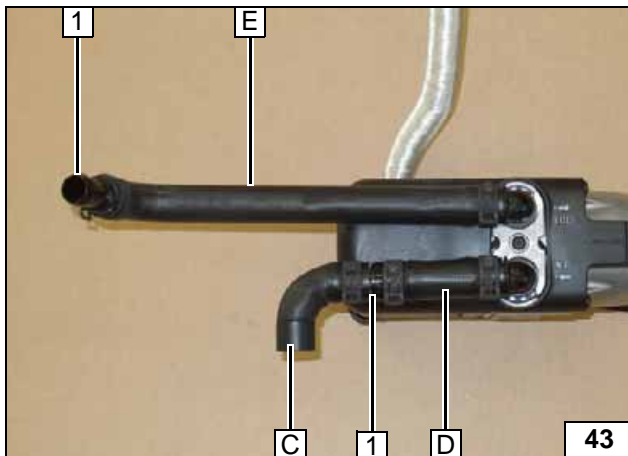


Slide braided protection hoses onto hoses A, F and G and cut to length. Cut heat shrink plastic tubing to size.



- 1 50 mm long heat shrink plastic tubing [5x]
- 2 Black (sw) rubber isolator [4x]
- 3 250mm long heat shrink plastic tubing

Preparing hoses

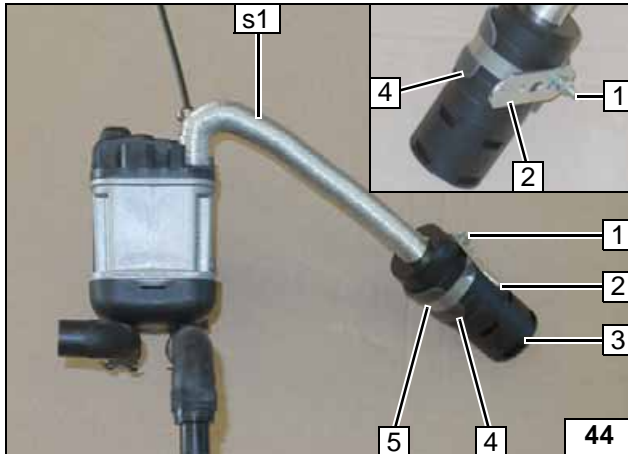
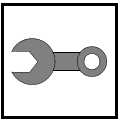


All spring clips 25mm dia.

- 1 18mm dia. connecting pipe



Premounting hoses



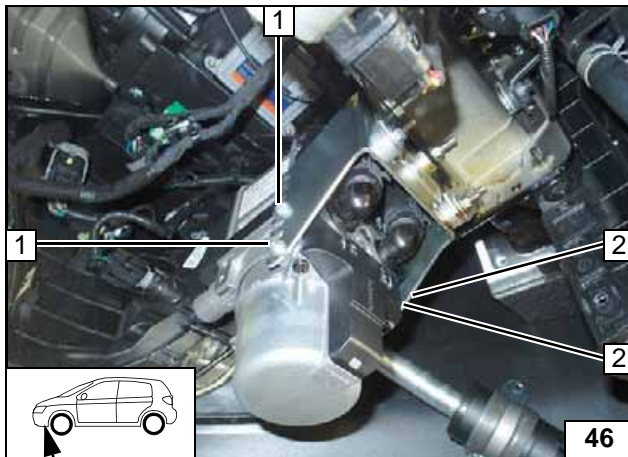
- 1 M5x16 bolt, flanged nut
- 2 Perforated bracket
- 3 Silencer
- 4 Self-adhesive foam
- 5 51mm dia. clamp

Premounting combustion air silencer



- 1 Connector of circulating pump wiring harness

Installing circulating pump wiring harness

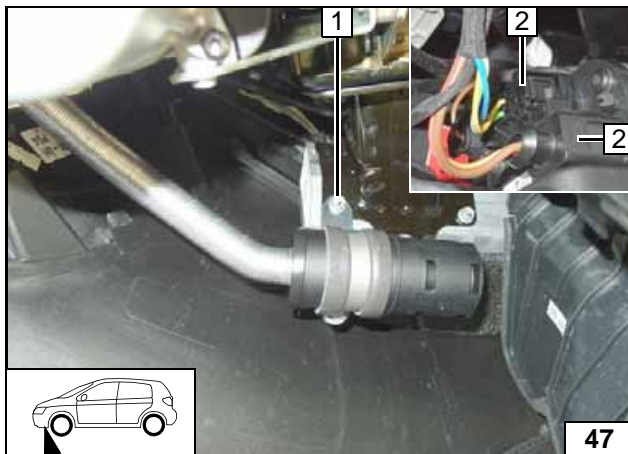


Installing Heater

- 1 5x13 self-tapping bolt [2x]
- 2 5x13 self-tapping bolt [2x covered]

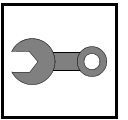


Installing heater



- 1 Original vehicle bolt
- 2 Heater wiring harness connector [2x]

Installing combustion air silencer



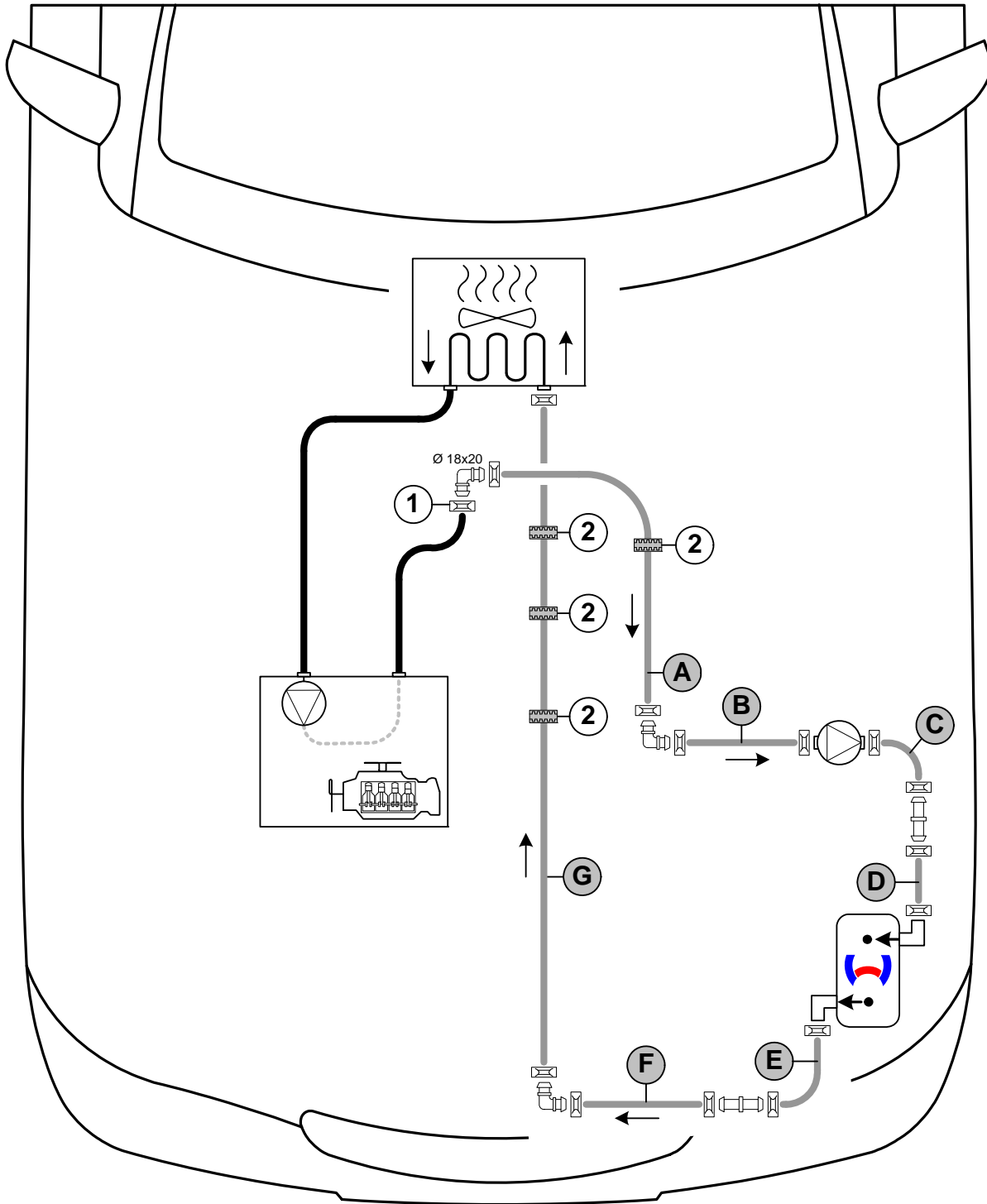
Coolant Circuit



Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.



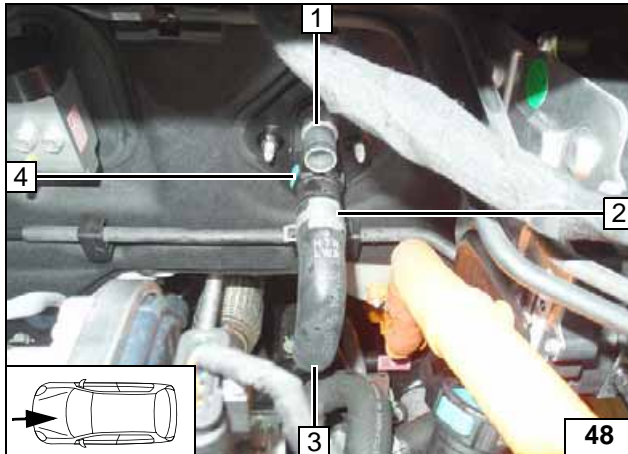
The connection should be modelled on an 'inline' circuit and based on the following diagram:



Hose routing diagram

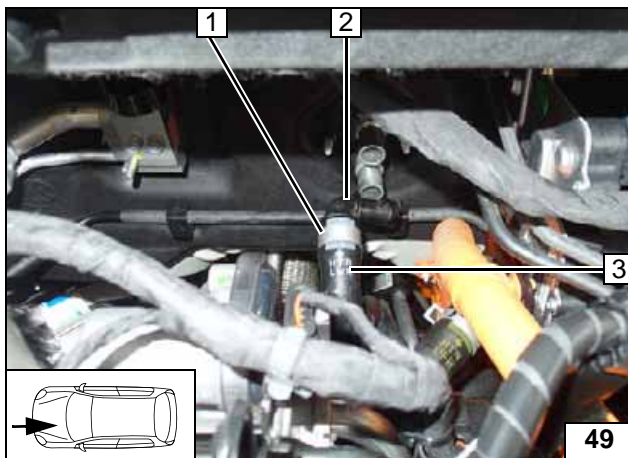
All spring clips without a specific designation = 25 mm dia. All connecting pipes and = 18x18 mm dia. 1 = Original vehicle spring clip . 2 = Black (sw) rubber isolator .





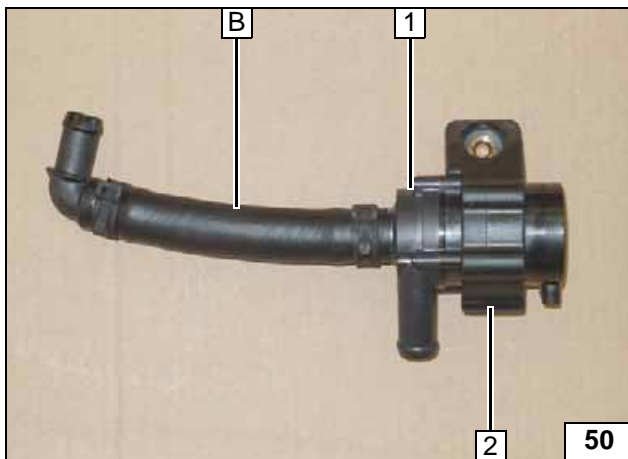
Heat exchanger outlet / engine inlet hose was removed for better display at position 1. Disconnect engine outlet / heat exchanger inlet hose 3 from coupling 4. Spring clip 2 will be reused.

Cutting point



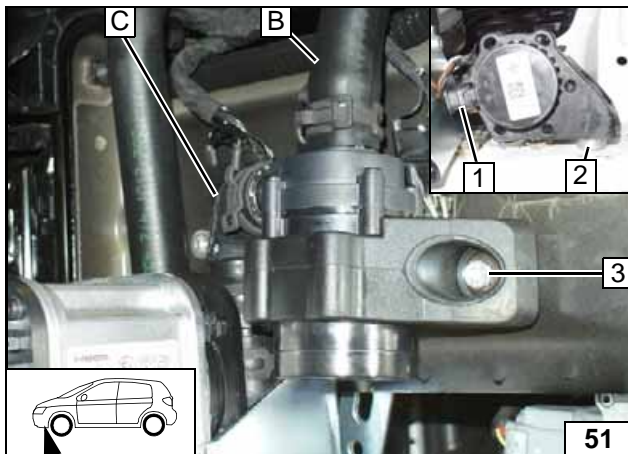
- 1 Original vehicle spring clip
- 2 90°, 18x20mm dia. connecting pipe
- 3 Hose on engine outlet / heat exchanger inlet

Installing connecting pipe



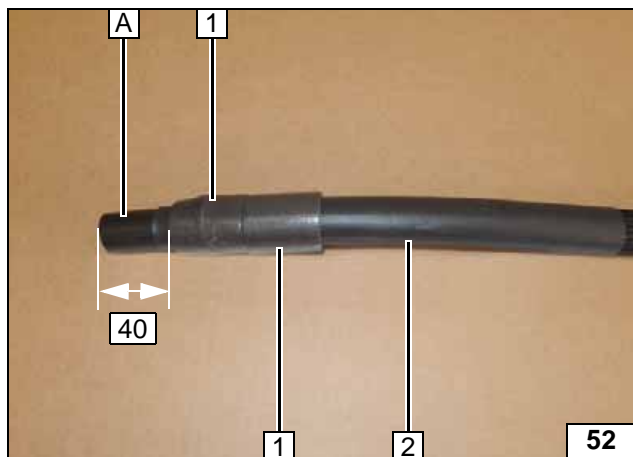
- 1 Circulating pump
- 2 Circulating pump mount

Preparing circulating pump



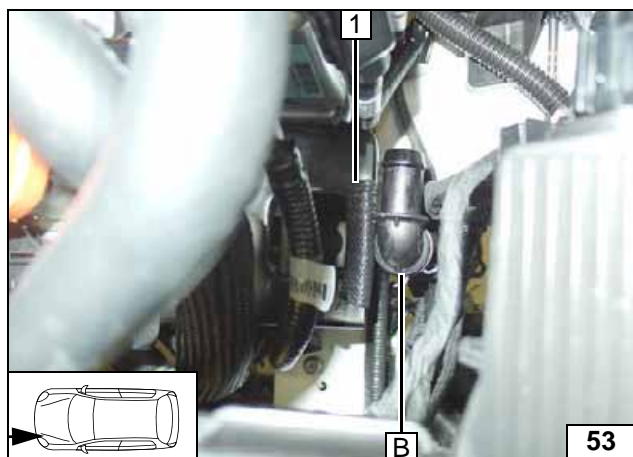
- 1 Connector of circulating pump wiring harness
- 2 10mm spacer between vehicle and circulating pump mount
- 3 M6x35 bolt, spring lockwasher

Installing circulating pump



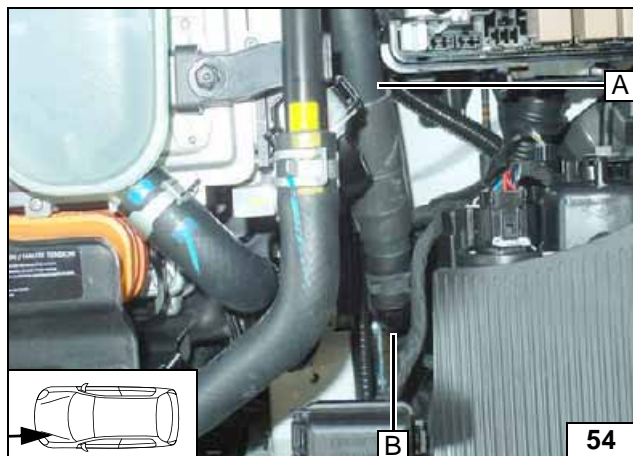
- 1 Self-adhesive foam [2x]
- 2 250mm long heat shrink plastic tubing

Preparing hose A



- 1 50 mm edge protection

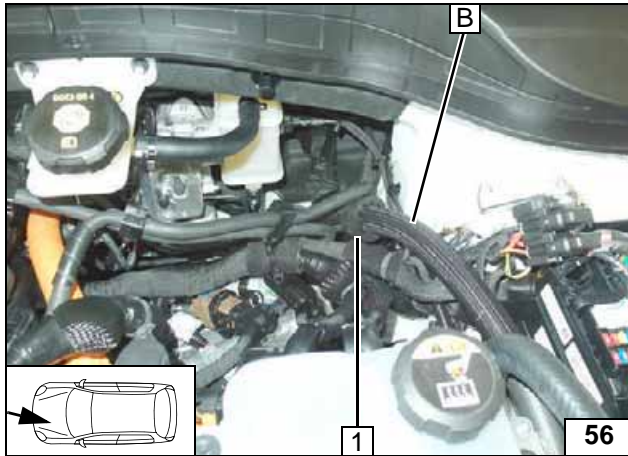
Installing edge protection



Connecting hoses A and B

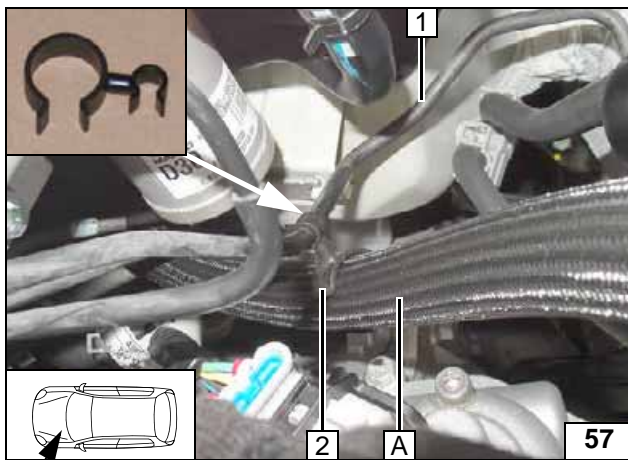


Routing in engine compartment



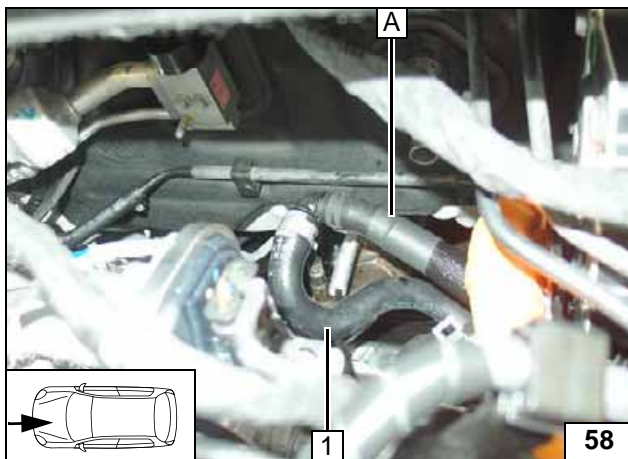
- 1 Align black (sw) rubber isolator

Routing in engine compartment



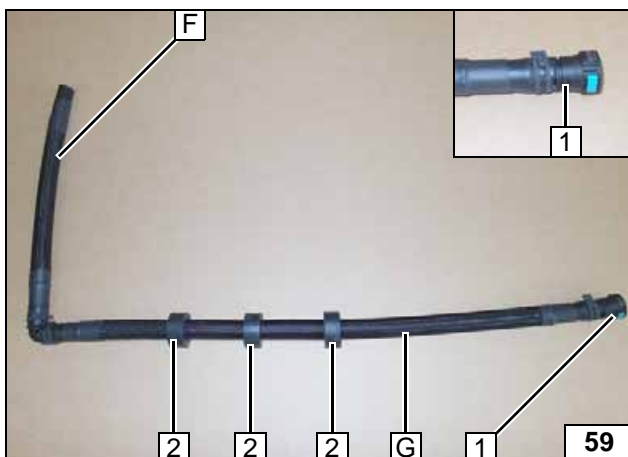
- 1 Original vehicle brake line
- 2 9x22 hose bracket

Routing in engine compartment



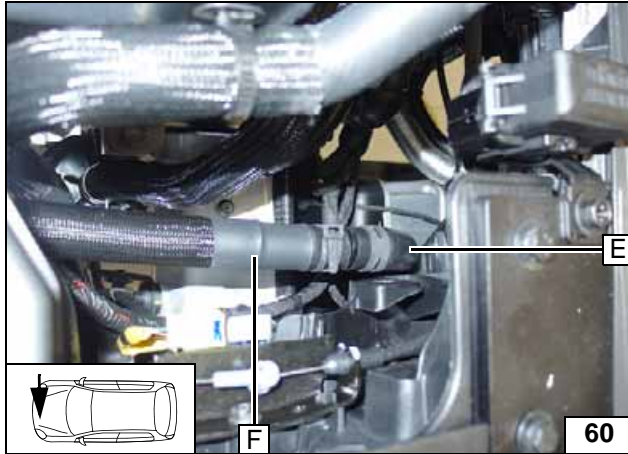
- 1 Hose on engine outlet / heat exchanger inlet

Connecting engine outlet

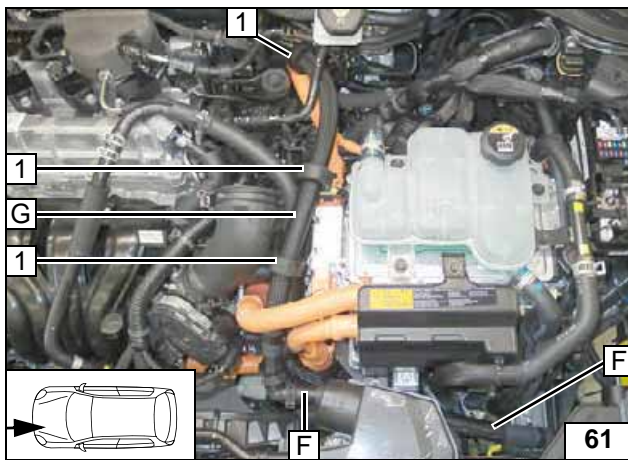


- 1 Coupling on heat exchanger inlet
- 2 Black (sw) rubber isolator [3x]

Preparing hoses F and G

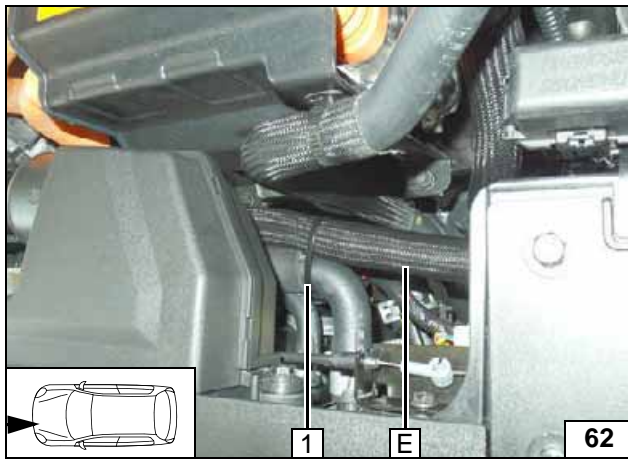


Connect-
ing hoses E
and F



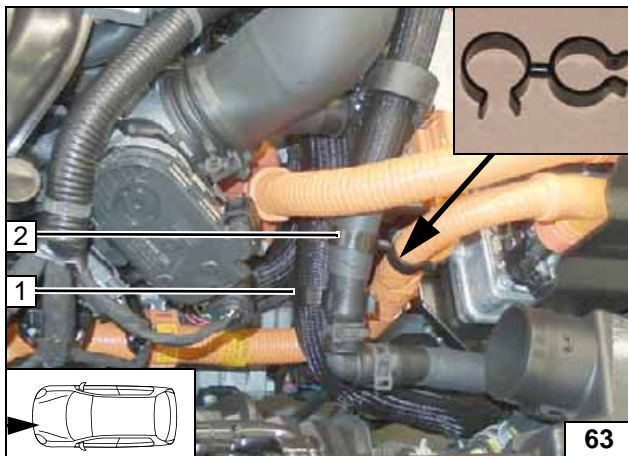
1 Position black (sw) rubber isolator [3x]

Routing in
engine
compartment



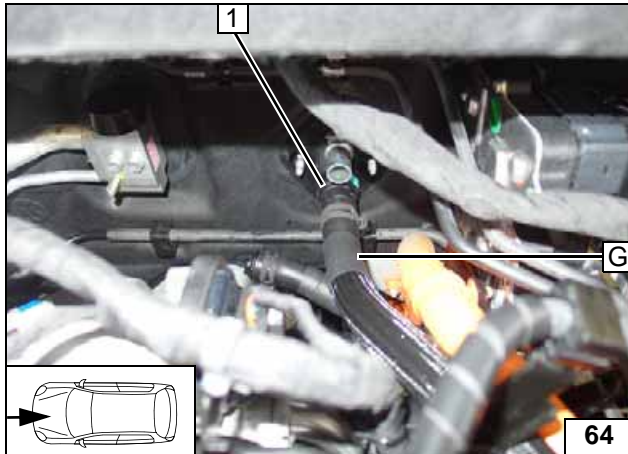
1 Cable tie

Installing
cable tie



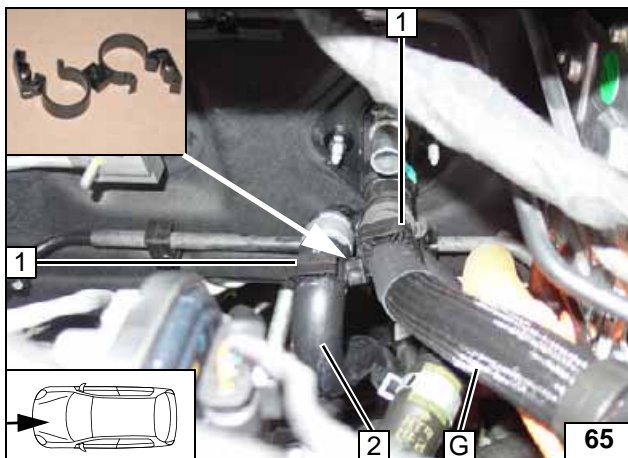
1 37x25mm hose bracket, rotatable
2 25x28mm hose bracket, rotatable

Installing
hose bracket



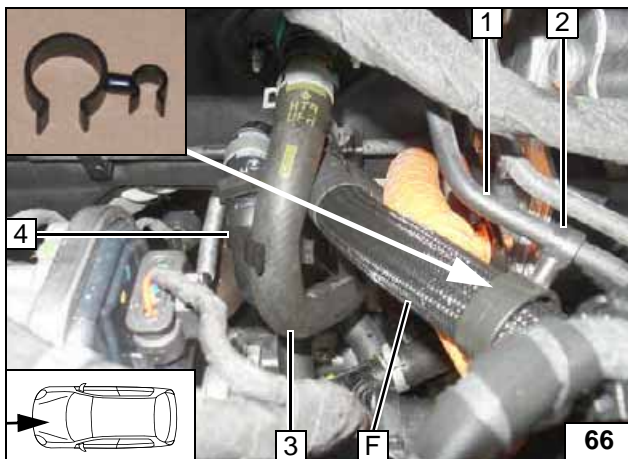
1 Coupling on heat exchanger inlet

Connect-
ing heat ex-
changer
inlet



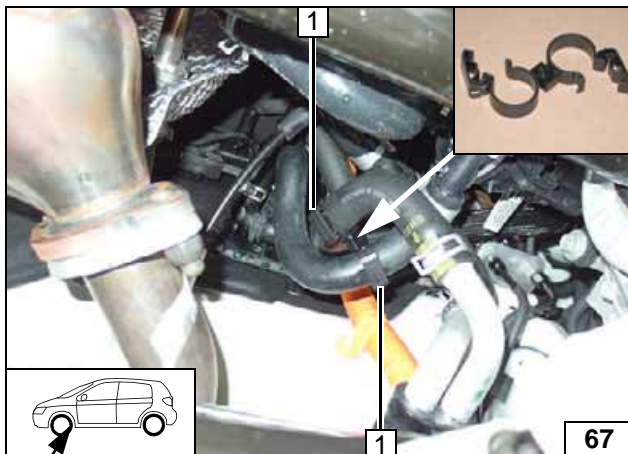
1 25x25mm hose bracket, lockable
2 Hose of engine outlet

Installing
hose brack-
et



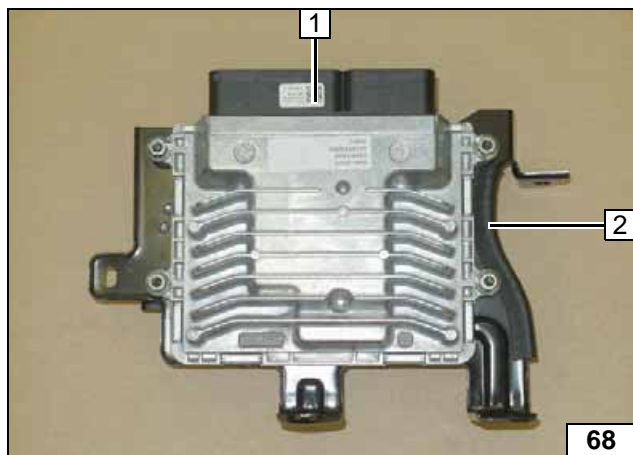
1 Original vehicle brake line
2 9x22 hose bracket
3 Hose of heat exchanger outlet / en-
gine inlet
4 25x28mm hose bracket, rotatable

Installing
hose brack-
et



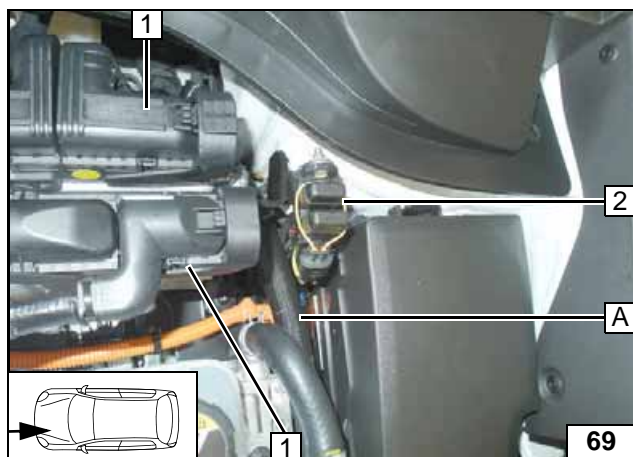
1 25x25mm hose bracket, lockable

Installing
hose brack-
et



- 1 Original vehicle control unit
- 2 120mm long edge protection

Installing edge protection



Align hose A. Ensure sufficient distance from adjacent components, correct if necessary.

- 1 Original vehicle control unit
- 2 Install fuse holder using original vehicle bolt



Installing original vehicle control unit



Fuel



Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

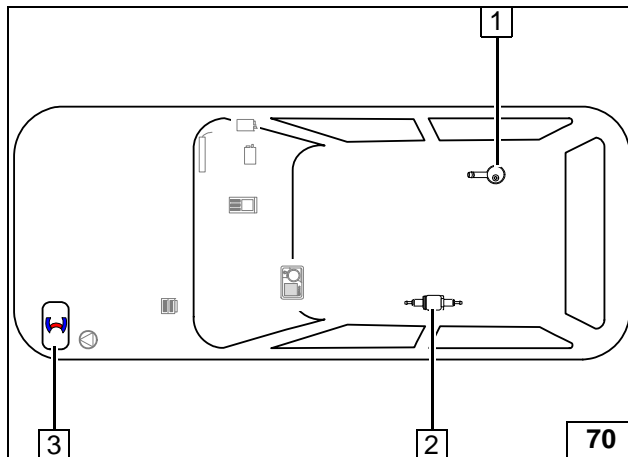
Catch any fuel running off in an appropriate container.



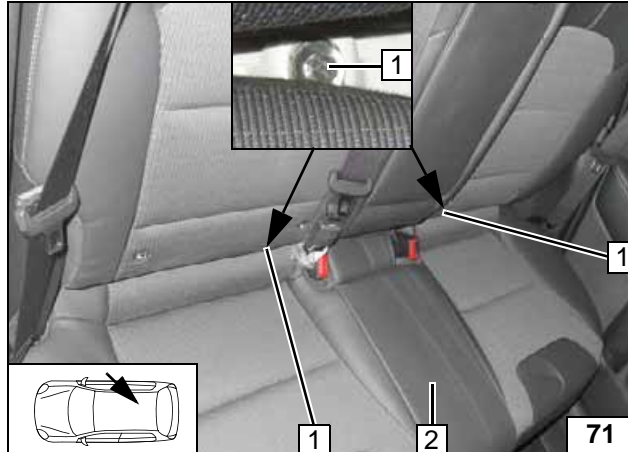
Route fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



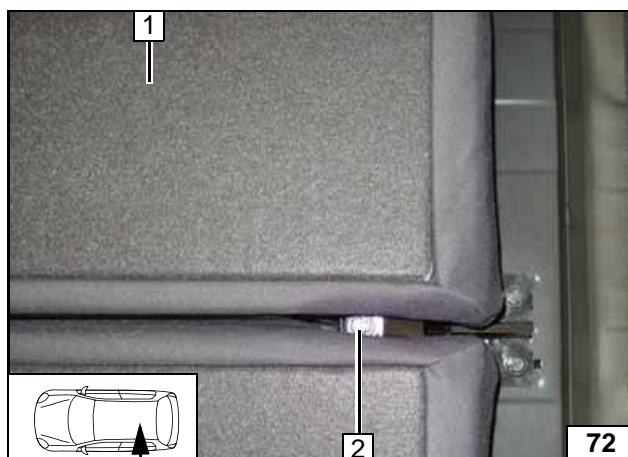
- 1 FuelFix
- 2 Metering pump
- 3 Heater



Rear Bench Seat Dismantling

Remove original vehicle bolt 1 [2x].

- 2 Rear bench seat



Remove original vehicle bolt 2.

- 1 Right backrest



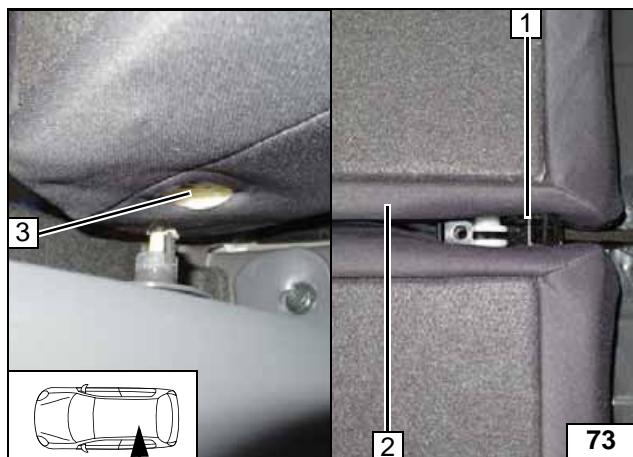
Installation overview



Dismantling rear bench seat

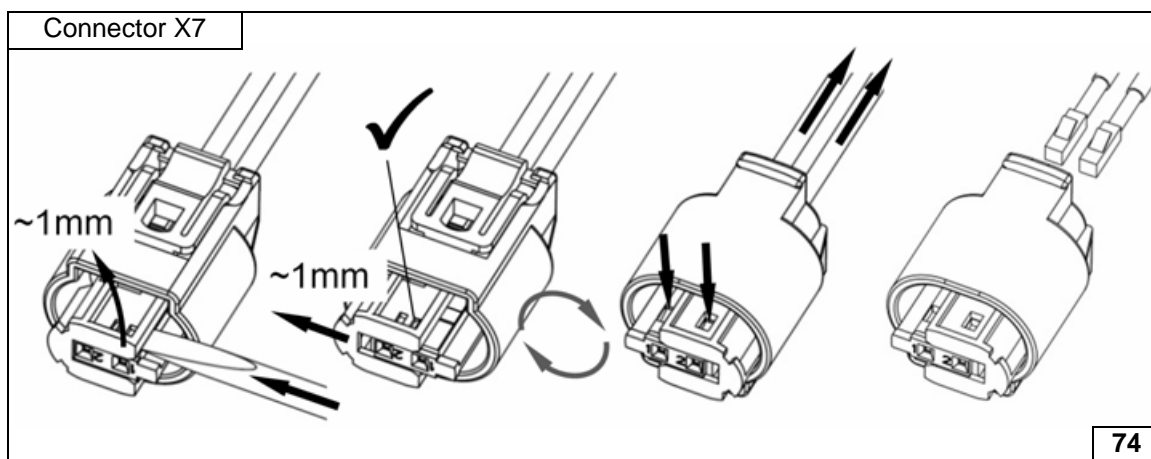


Dismantling backrest

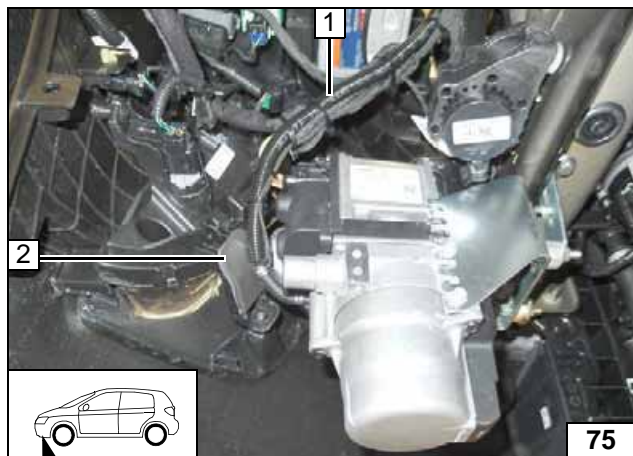


- 1 Press down retaining plate
- 2 Pull the backrest out of the guide, move it to the left vehicle side.
- 3 Right backrest guide

Dismantling backrest



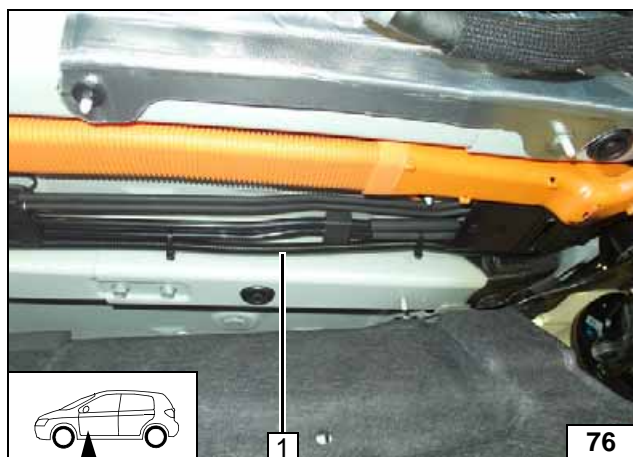
Dismantling metering pump connector



Pull fuel line and metering pump wiring harness into corrugated tube 1 and route in engine compartment. Attach at suitable positions with cable tie.

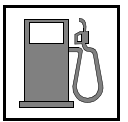
- 2 Self-adhesive foam between fuel line and front fog light

Installing combustion air pipe



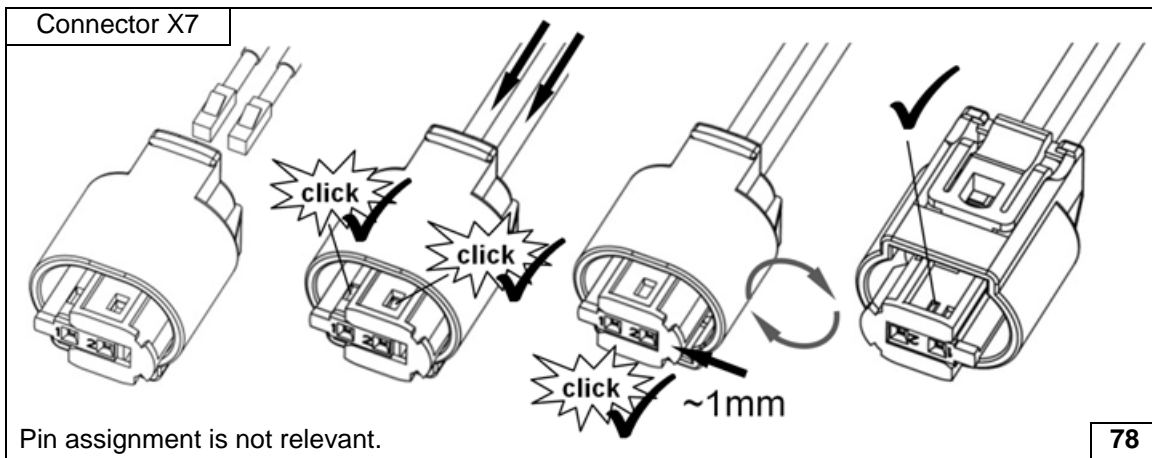
Route fuel line and metering pump wiring harness in corrugated tube 1 along original vehicle fuel line to installation location of metering pump. Attach at suitable positions with cable tie.

Routing lines



77

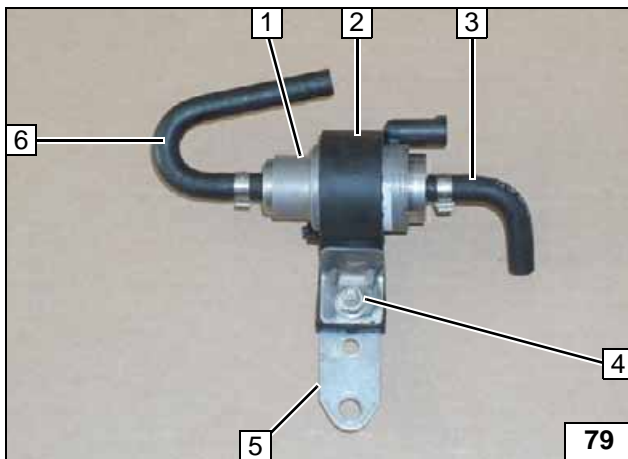
Routing lines



Pin assignment is not relevant.

78

Completing metering pump connector



79

- 1 Metering pump
- 2 Metering pump mount
- 3 90° moulded hose, 10mm dia. clamp
- 4 M6x25 bolt, support angle bracket, flanged nut
- 5 Perforated bracket
- 6 180° moulded hose, 10mm dia. clamp

Premounting metering pump



80

- 1 Rivet nut, original vehicle hole

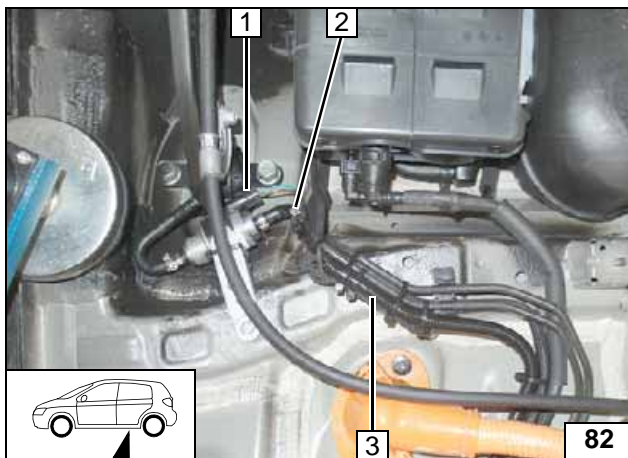
Preparing installation location of metering pump



1 M6x20 bolt, spring lockwasher



Installing metering pump

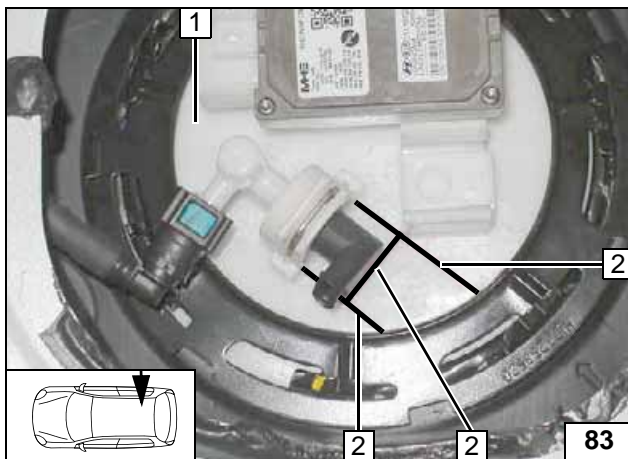


Ensure sufficient distance from adjacent components, correct if necessary.

- 1 Connector of metering pump wiring harness
- 2 10 mm dia. clamp
- 3 Fuel line and wiring harness of metering pump in corrugated tube



Connecting metering pump

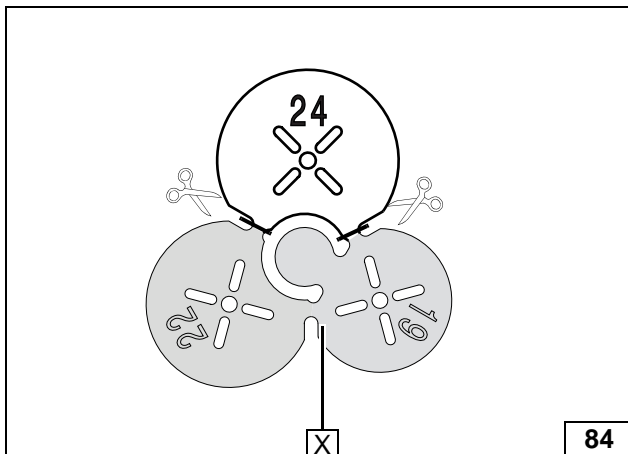


Installing FuelFix

Draw contour lines 2 onto fuel tank sending unit 1 as shown.

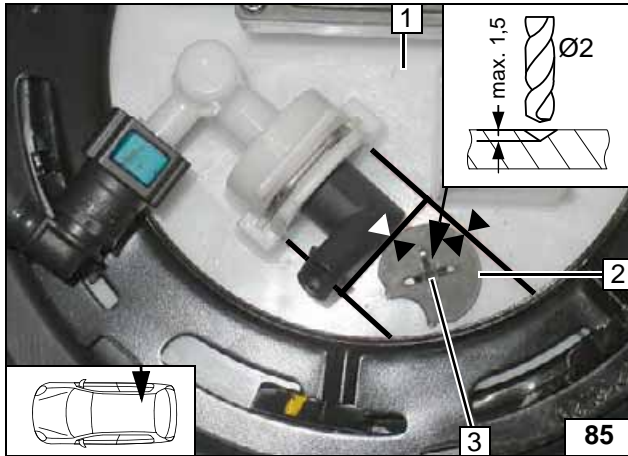
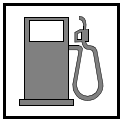


Preparing fuel stand-pipe



X =

Preparing drilling template

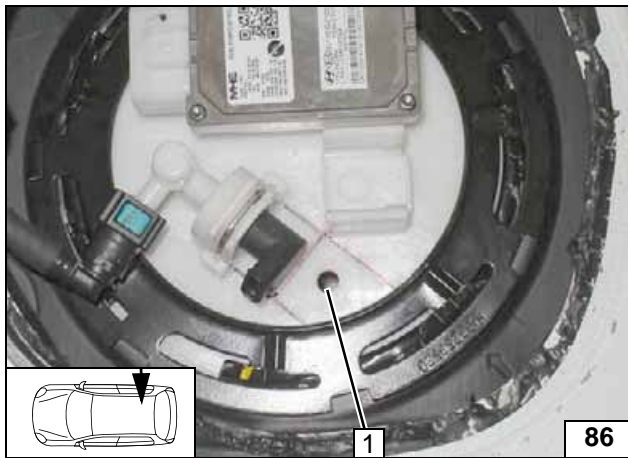


Work steps F1 and F2.

- 1 Fuel tank sending unit
- 2 Position 24mm dia. template against the contour lines
- 3 2mm dia. centring hole



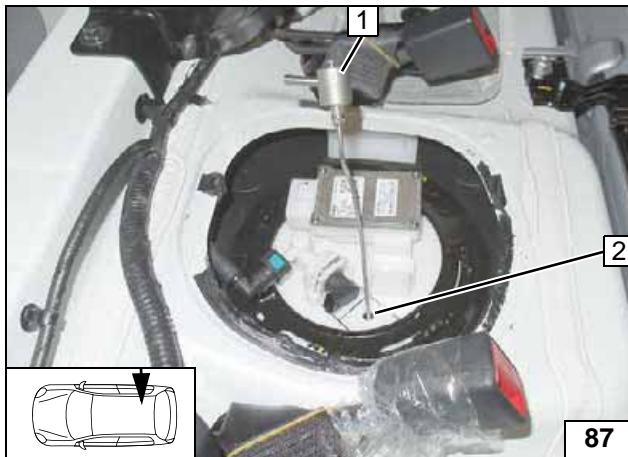
Drilling centre hole



Work step F3.

- 1 Hole made with provided drill

Hole for FuelFix

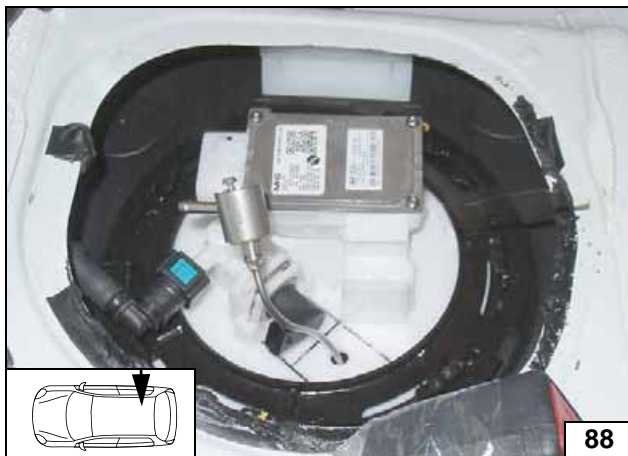


Work steps F4 and F5.

Bend FuelFix 1 according to template and cut to length.
Insert into hole 2.



Inserting FuelFix



Work step F5.

Inserting FuelFix



Inserting FuelFix



Inserting FuelFix



Inserting FuelFix

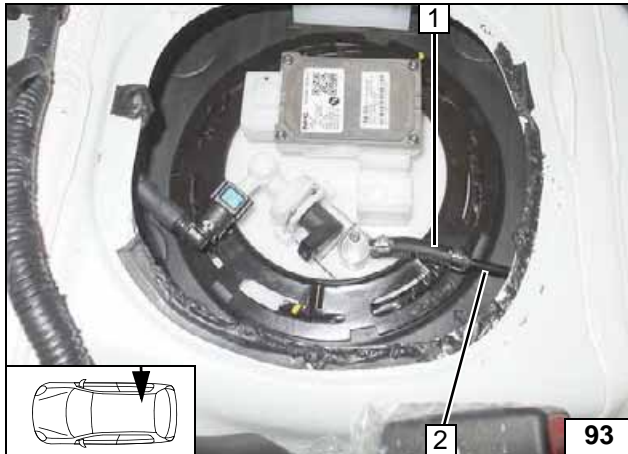


Work steps F5.3 and F5.4.

Align FuelFix 1 as shown.



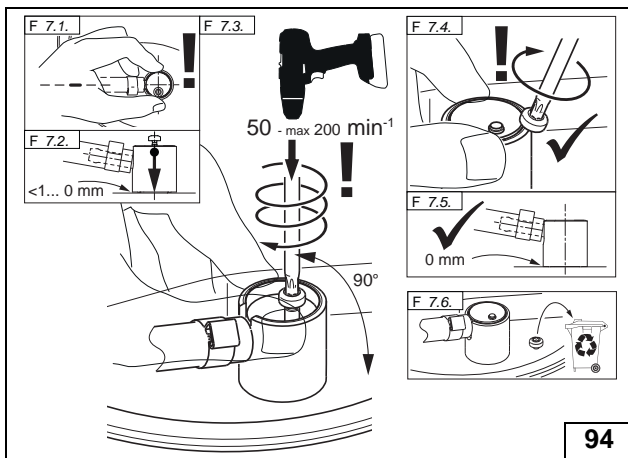
Aligning FuelFix



Work step F6.

- 1 Hose section, 10mm dia. clamp [2x]
- 2 Fuel line

Connect-
ing fuel line



Work step F7.

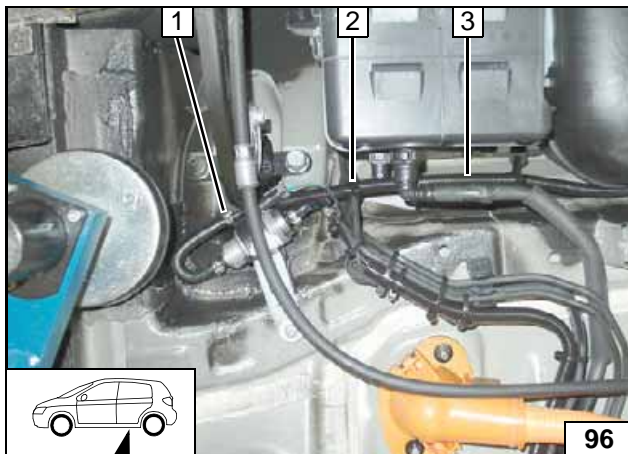


Installing
FuelFix



Work step F8.

Ensuring
firm seating
of FuelFix

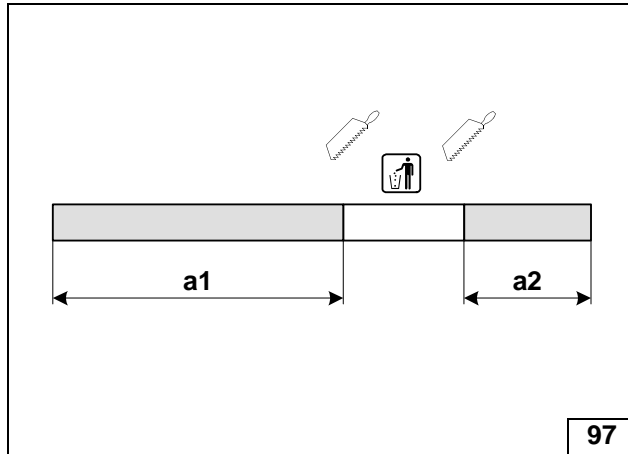
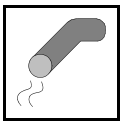


Ensure sufficient distance from adjacent components, correct if necessary.

- 1 10 mm dia. clamp
- 2 Cable tie as tension relief [2x]
- 3 Fuel line of FuelFix in corrugated tube



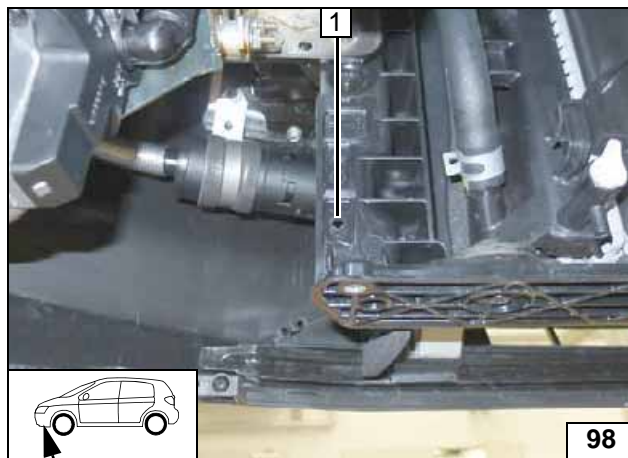
Connect-
ing meter-
ing pump



Exhaust Gas

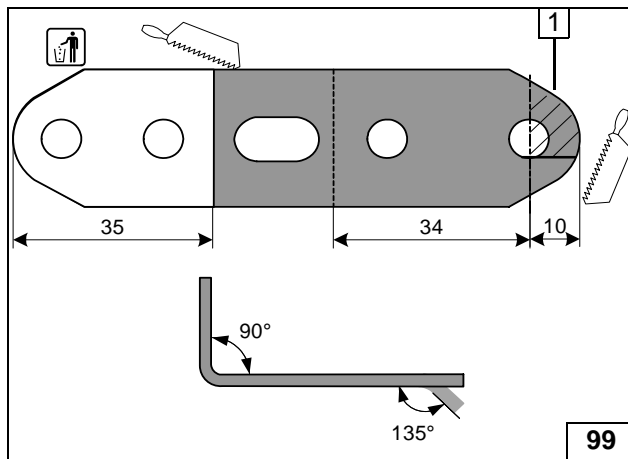
a1 = 340
a2 = 100

Preparing exhaust pipe



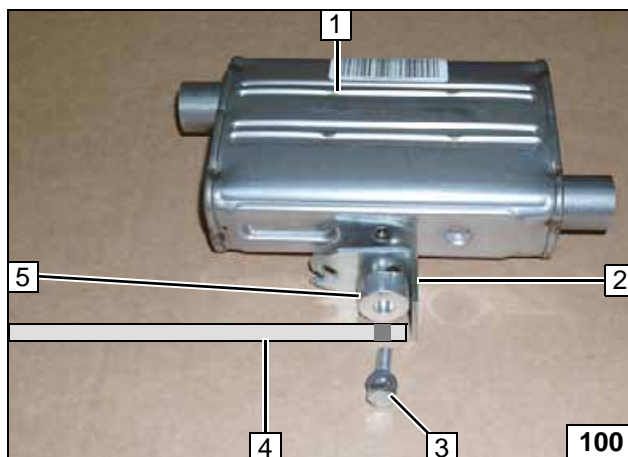
1 6.5mm dia. hole in centre of bead

Drilling hole for silencer



1 Bend tab as shown

Shortening and bending perforated bracket

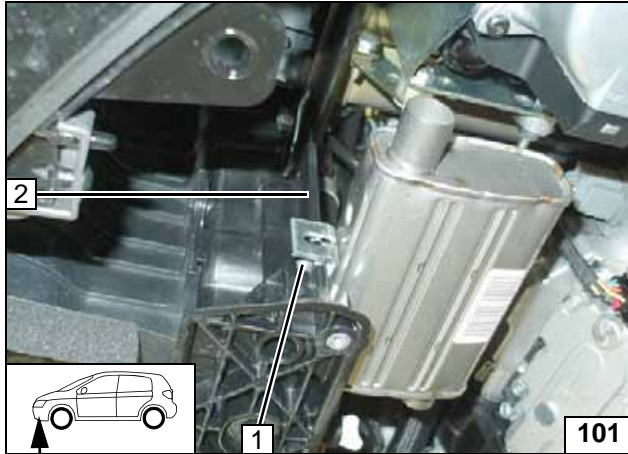
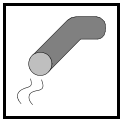


Schematic representation of the next figure.

- 1 Silencer
- 2 Perforated bracket
- 3 M6x20 bolt, spring lockwasher
- 4 Plastic frame of vehicle
- 5 5mm spacer



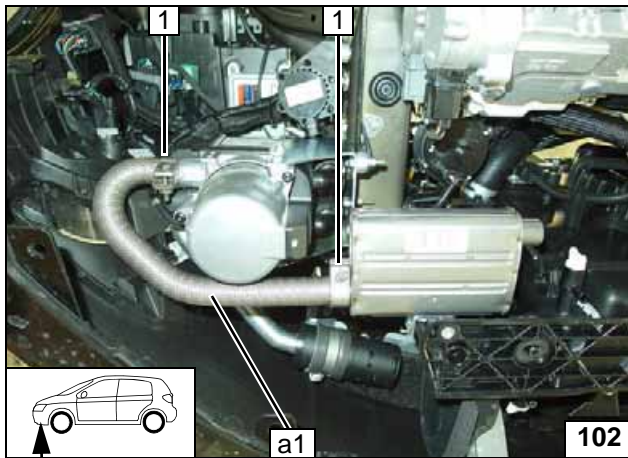
Silencer mounting arrangement



- 1 M6x20 bolt, hole, spring lockwasher, 5mm spacer, perforated bracket
- 2 Original vehicle plastic frame

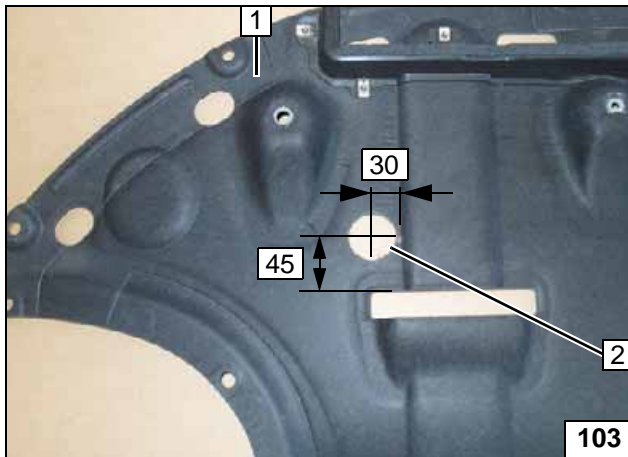


Installing silencer



- 1 Hose clamp [2x]

Installing exhaust pipe a1



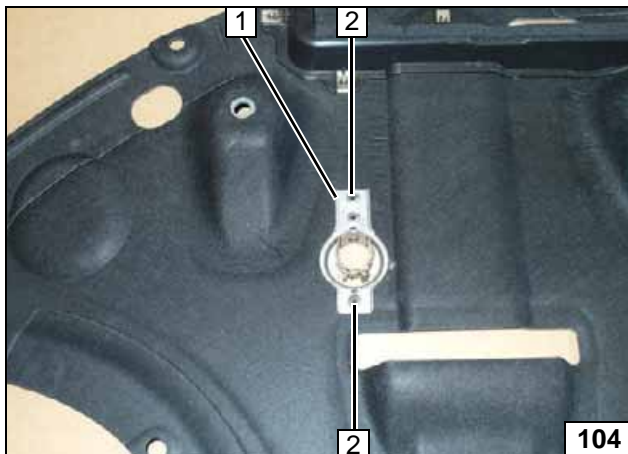
Installing Exhaust End Fastener

Work step E1.

- 1 Underride protection
- 2 Hole



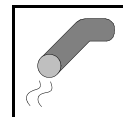
Hole in underbody protection



Work step E3.

- 1 Exhaust end fastener
- 2 Hole pattern [2x]

Copying hole pattern



Work step E4.

- 1 Hole [2x]

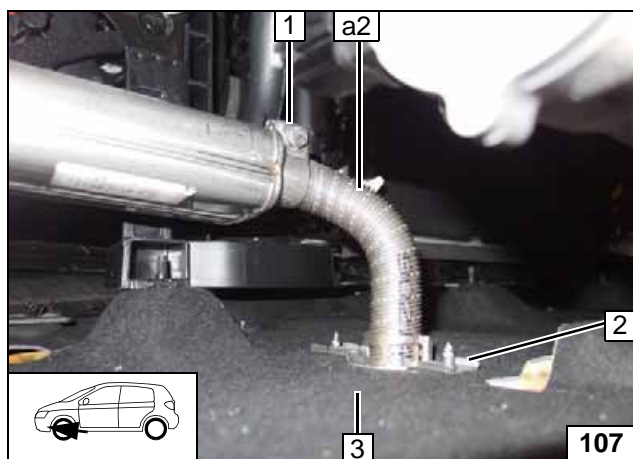
Holes in under-ride protection



Work step E5.

- 1 5x13 self-tapping screw [2x]

Installing exhaust end fastener

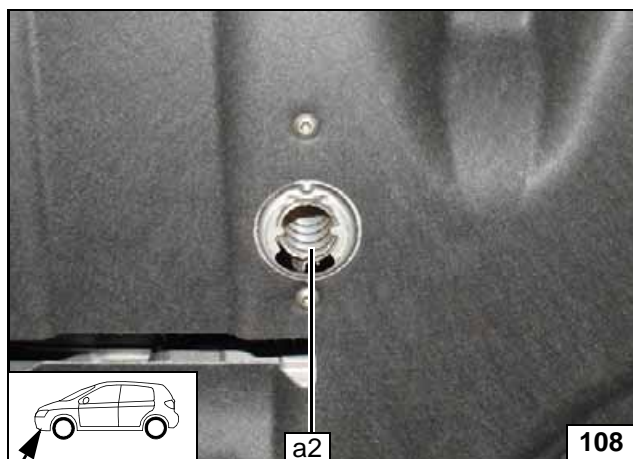


Install under-ride protection 3.

- 1 Hose clamp
- 2 Exhaust end fastener



Installing exhaust pipe a2



Work steps E6 - E8.



Installing exhaust pipe a2



Final Work



Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back loose lines. Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).



Activation of hybrid system

The hybrid system should be re-activated prior to the connection of the 12V vehicle battery!

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Program MultiControl CAR, teach Telearstart transmitter.**
- **For initial startup and function check, please see installation instructions.**
- **Make settings on the A/C control panel according to the 'operating instructions'.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler neck.**



Align hose **G**. Ensure sufficient distance from adjacent components, correct if necessary.

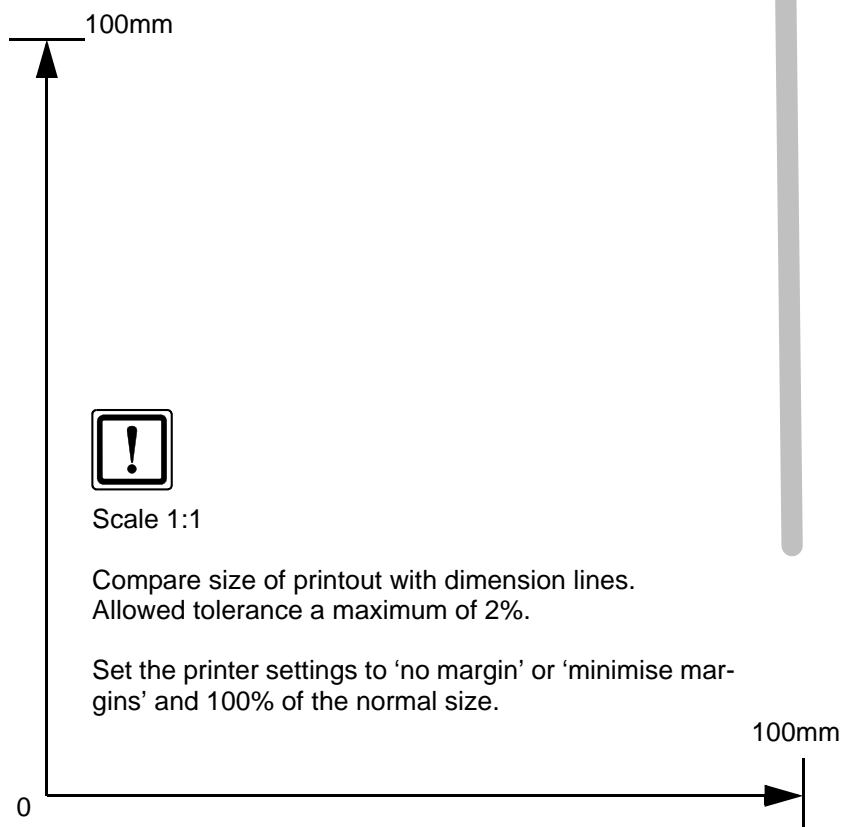
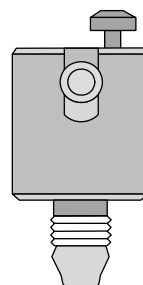
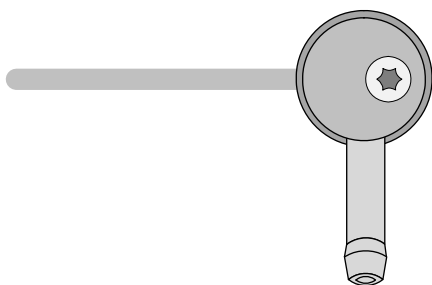


Aligning hose



FuelFix Template

Top view



Operating Instructions

Please remove page and add to the vehicle operating instructions.

Note:

We recommend matching the heating time to the driving time.
Heating time = driving time

Example:

For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

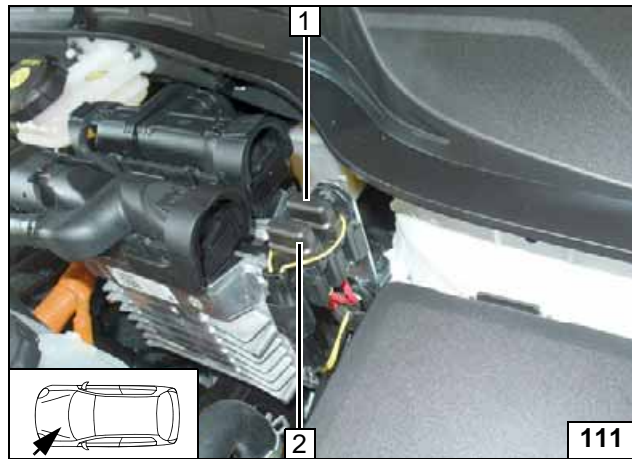
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

For instructions on deactivation, please refer to the operating instructions of the vehicle.

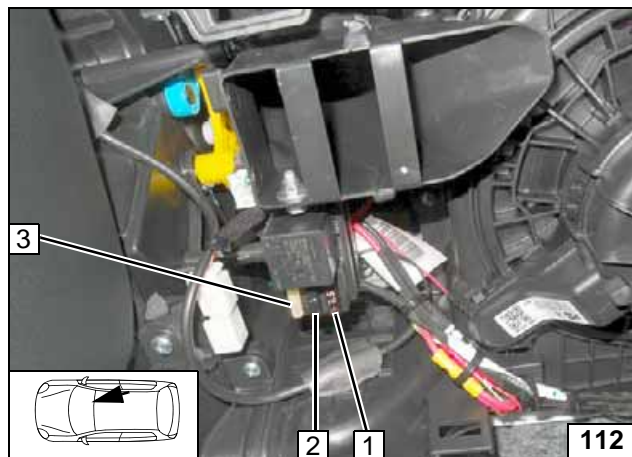
Before parking the vehicle, make the following settings:



- 1 Set temperature on both sides to 'HI'
- 2 Air outlet to windscreen
- 3 Set fan to level '2', or max. '3'



- 1 30A passenger compartment main fuse F2
- 2 20A heater fuse F1



- 1 7.5A fan controller fuse F5
- 2 1A heater control fuse F3
- 3 25A fan fuse F4



A/C control panel

Engine compartment fuses

Passenger compartment fuses

