K

Water heater

Thermo Top Evo parking heater ‘Island based circuit’

E1
00 0258

Installation documentation

Mini 3 doors (F56) / 5 doors (F55) / convertible (F57)

Validity

Manufacturer	Model	Type	Model year	EG BE No. / ABE
Mini	3-door	F56	From model year 2016	e1 * 2007 / 46 * 0371*...
Mini	5-door	F55	From model year 2014	e1 * 2007 / 46 * 0371*...
Mini	5-door	F55	From model year 2019	e1 * 2007 / 46 * 1680*...
Mini	Convertible	F57	From model year 2016	e1 * 2007 / 46 * 0371*...
Mini	Convertible	F57	From model year 2018	e1 * 2007 / 46 * 1679*...

Motorisation	Fuel	Emission standard	Transmission type	Output in kW	Displacement in cm^3	Engine code
1.2 P	Petrol	Euro 6	SG	75	1198	B38A12
1.2 P	Petrol	Euro 6	ASG	75	1198	B38A12
1.5 P	Petrol	Euro 6	SG	100	1499	B38A15
1.5 P	Petrol	Euro 6	ASG	100	1499	B38A15
2.0 P	Petrol	Euro 6	SG	141	1998	B48A20
2.0 P	Petrol	Euro 6	ASG	141	1998	B48A20
2.0 P	Petrol	Euro 6d-Temp	DKG	141	1998	B48AC
2.0 P	Petrol	Euro 6;WLTP; DG;...	DKG	141	1998	B48A20A

SG = manual transmission
ASG = semi-automatic Steptronic transmission
DKG = Dual clutch transmission

From model year 2014
Left-hand drive vehicle

Verified equipment variants: Manual air-conditioning
2 zone automatic air-conditioning
LED headlight (code 05A2)
LED front fog lights (code 05A1)
LED front fog lights with parking light
Parking light without front fog lights
2WD

Not verified: Halogen front fog lights

Total installation time: approx. 7.5 hours

Mini 3 doors (F56) / 5 doors (F55) / convertible (F57)

Table of contents

Necessary components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit for Mini 3 doors (F56) / 5 doors (F55) / convertible (F57) 2014 petrol: **1324863C**
- Additional ‘Webasto Comfort’ A/C control kit for BMW / Mini : **1324388_**
- Control element in accordance with price list and upon consultation with end customer
- In case of MultiControl CAR installation: Timer cable extension: **1319724_**
- In case of Telestart, indicator lamp in accordance with price list and installation location in consultation with end customer

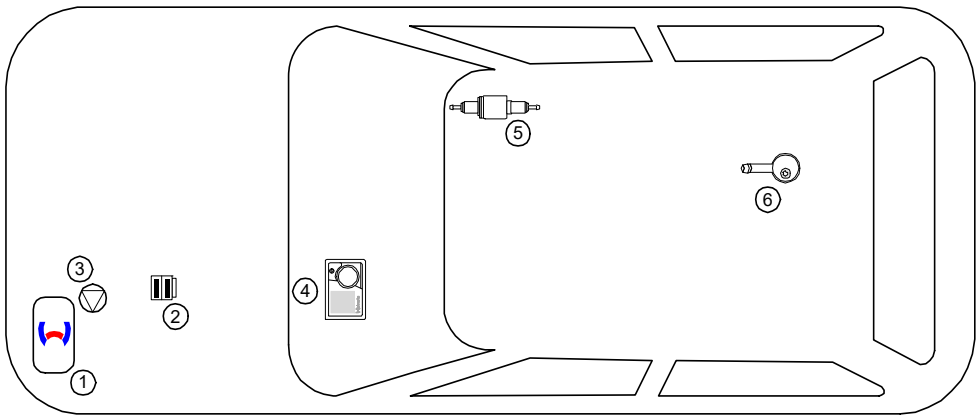
Installation instructions:

- 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.
- The heater will be integrated as an ‘island’ in the coolant circuit and is used to heat up the vehicle interior. The engine is **not** preheated!

Installation overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Coolant pump
4. MultiControl CAR
5. Fuel pump
6. FuelFix



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.

Mini 3 doors (F56) / 5 doors (F55) / convertible (F57)

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 have to audibly click into place during installation.

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

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

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.

Mini 3 doors (F56) / 5 doors (F55) / convertible (F57)

Information on validity

This installation documentation applies to Mini 3 doors (F56) / 5 doors (F55) / convertible (F57) petrol vehicles - for validity, see page 1 - from model year 2014 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
- Hose clamping pliers
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for male connector, 0.14 - 6mm²
- Crimping pliers for cable lug, 0.5 - 10mm²
- Crimping pliers for connector, 0.25 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

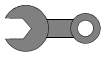
Dimensions
- All dimensions are in mm.

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.

Mechanical system



Electrical system

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.

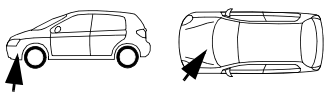
Specific risk of injury or fatal accidents.

Specific risk of fire or explosion.

Reference to the manufacturer's vehicle-specific documents or to the general installation instructions of Webasto components.

Reference to a special technical feature.

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



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

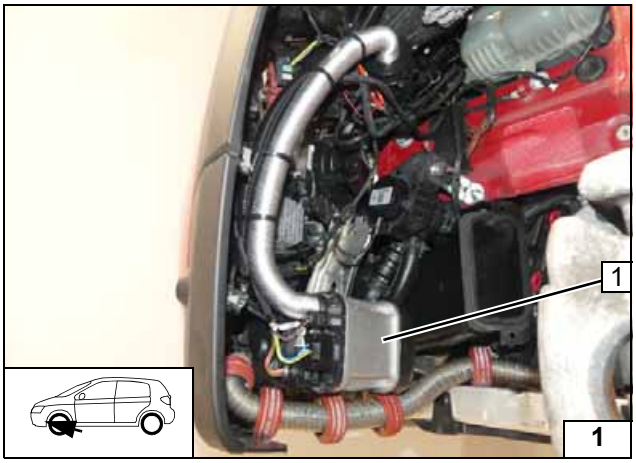
Preliminary work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.
- Remove the windscreen wipers.
- Completely remove the water drain chamber cover.
- Remove the air filter box and the intake hose.
- Remove the intercooler hose.
- Remove the left wheel.
- Remove the left front wheel-well inner panel.
- Remove the left front brake air duct (if available) (or detach in case of 141 kW ASG/DKG).
- Remove the underride protection.
- Remove the underbody trim on the right vehicle side.
- Remove the rear bench seat (fastened with clips).

Heater

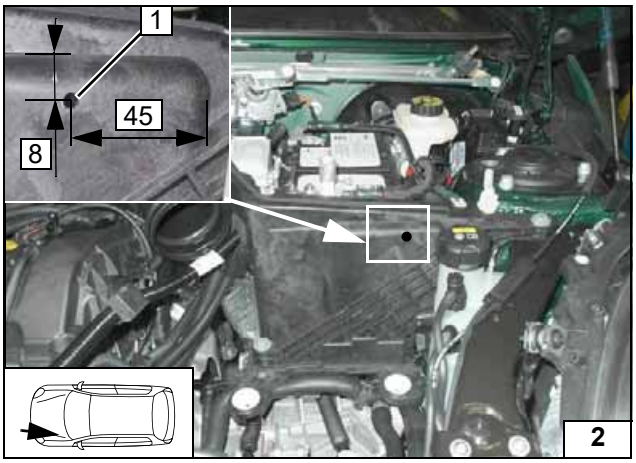
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place in the engine compartment.



Heater installation location

1 Heater

Installation location

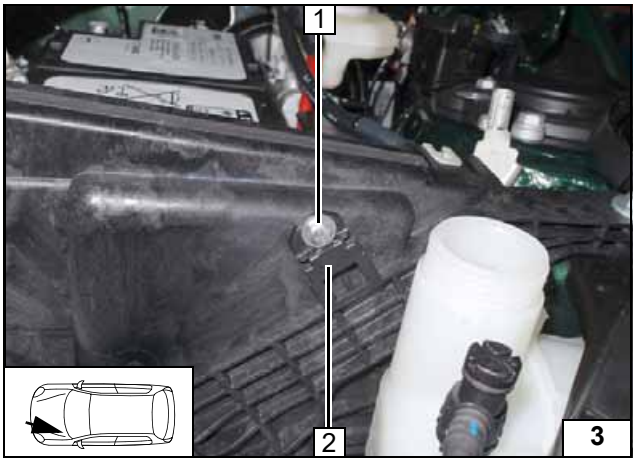


Preparing electrical system

When drilling, watch parts located behind!

1 Copy hole pattern, Ø6 hole

Hole for engine compartment fuse holder



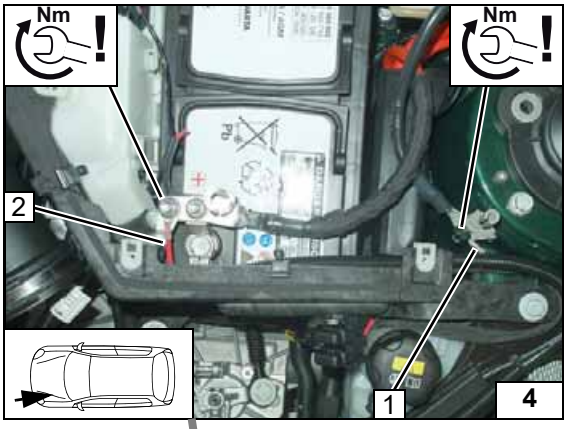
1 M5x16 bolt, large diameter washer [2x], nut
2 Engine compartment fuse holder

Installing fuse holder of engine compartment

Electrical system

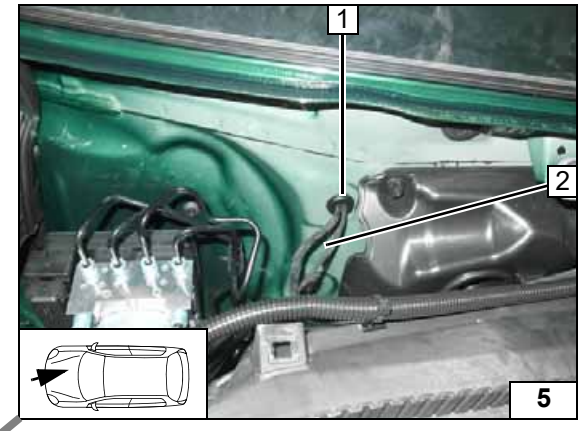
Positive and earth wire

1 Earth wire on original vehicle earth support point
2 Positive wire on positive battery terminal

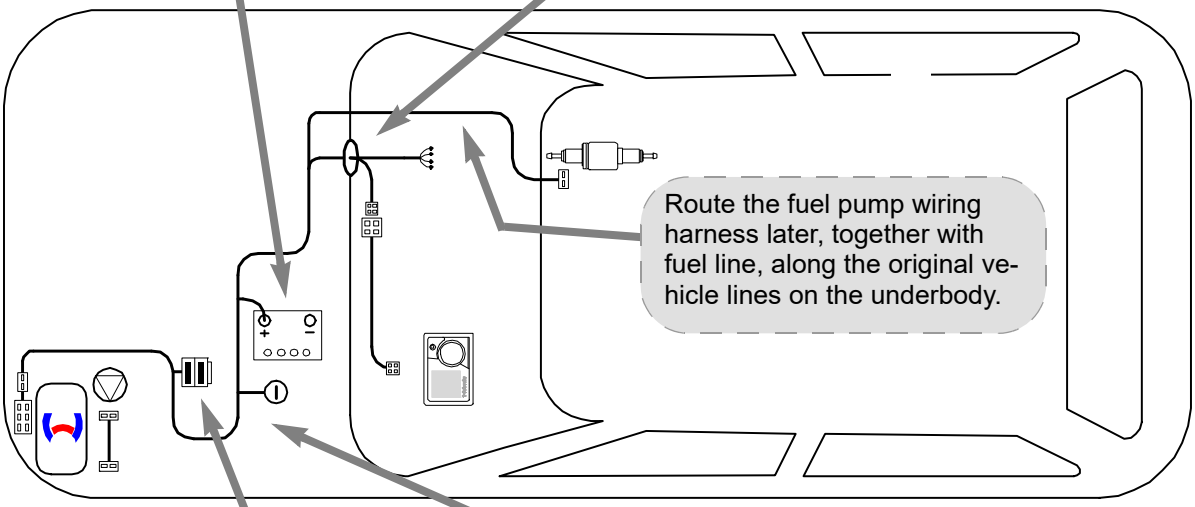


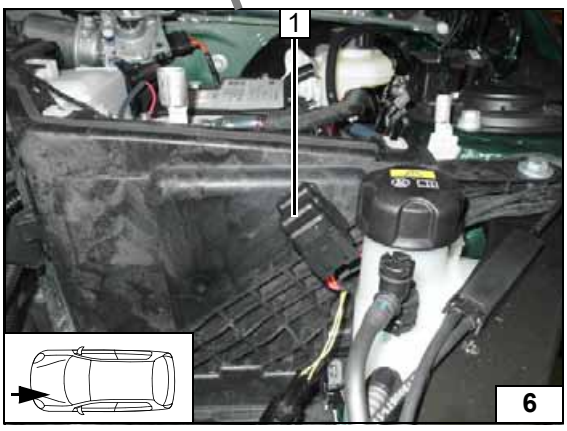
Wiring harness routing

1 Protective rubber plug
2 Heater, control element wiring harnesses



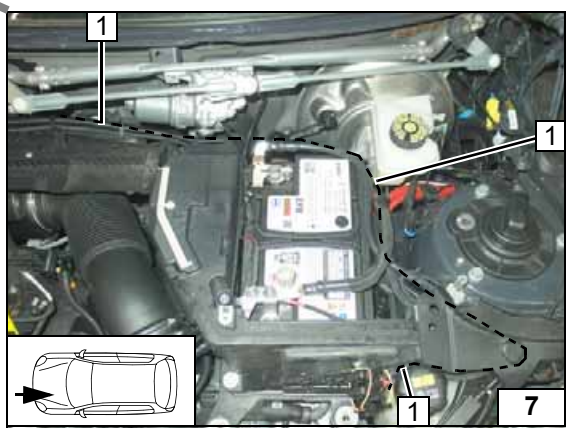
Wiring harness routing diagram





Engine compartment fuse holder

1 Fuses F1-2



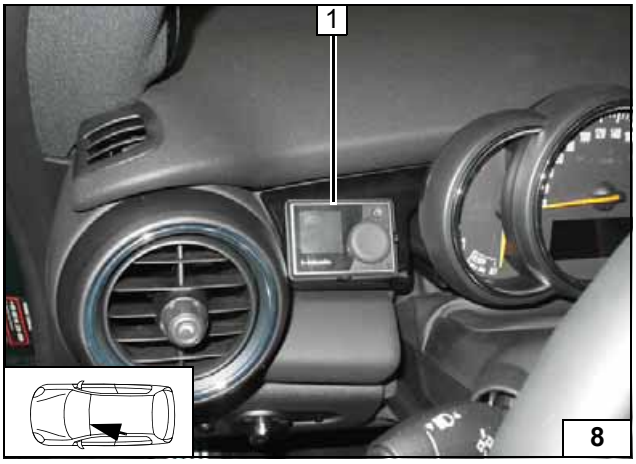
Water drain chamber wiring harness pass through

1 Heater, control element wiring harnesses (will be routed/attached later together with the fuel line)

Air-conditioning control for all vehicles

! Connect the A/C control in accordance with the separate installation documentation:

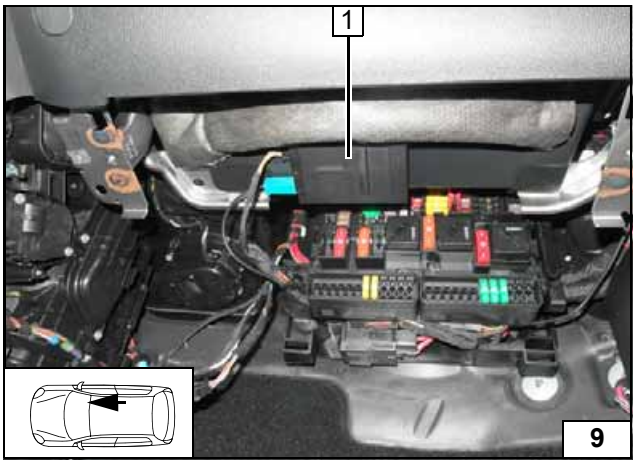
'Webasto Comfort' A/C control installation documentation for Mini



MultiControl CAR option

1 MultiControl CAR with installation frame

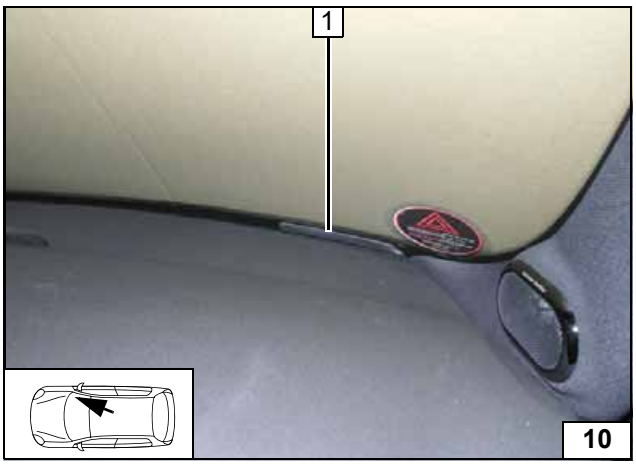
Installing MultiControl CAR



Remote option (Telestart)

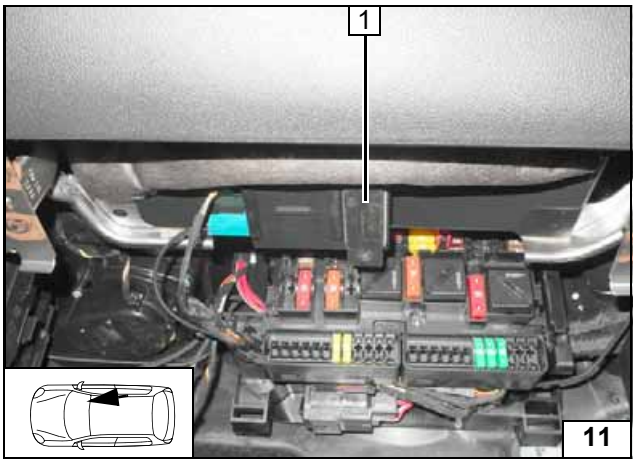
Fasten receiver **1** with double-sided adhesive tape.

Installing receiver



1 Aerial

Installing aerial

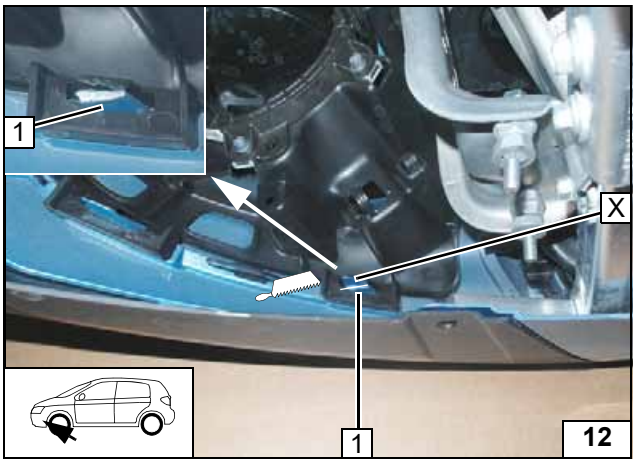


Temperature sensor T100 HTM

Fasten temperature sensor **1** with double-sided adhesive tape.

Installing temperature sensor

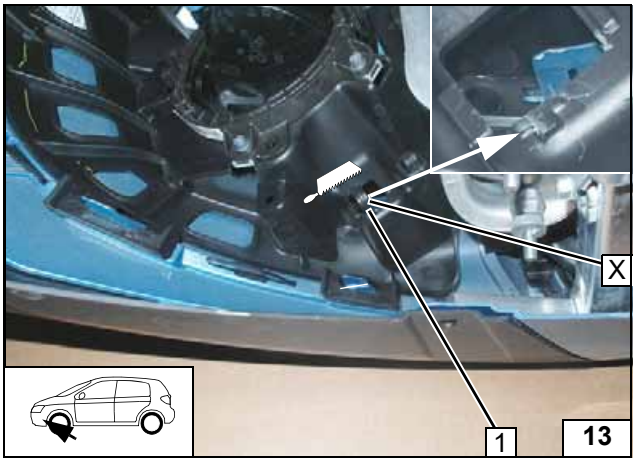
Preparing installation location



1 Cut off tab

X =

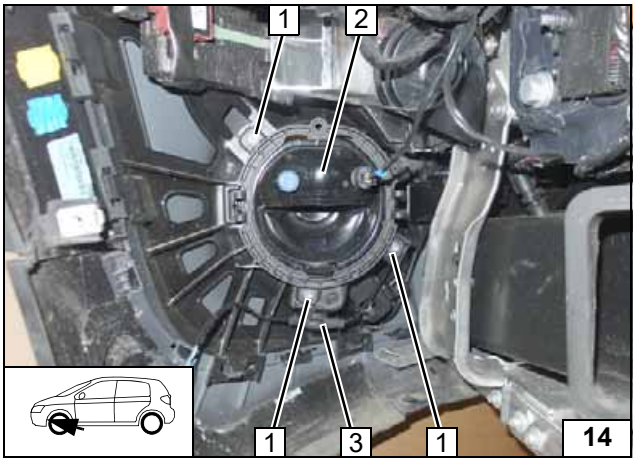
Adapting bumper



1 Cut off tab

X =

Adapting bumper

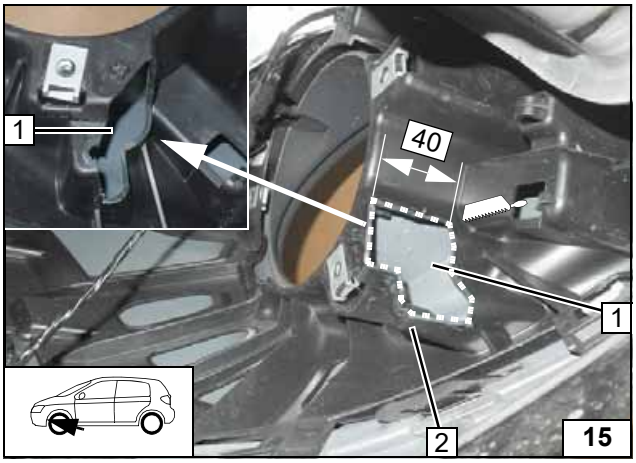


Vehicle with parking light without front fog light

Detach cable holder **3** of the original vehicle wiring harness (if present).

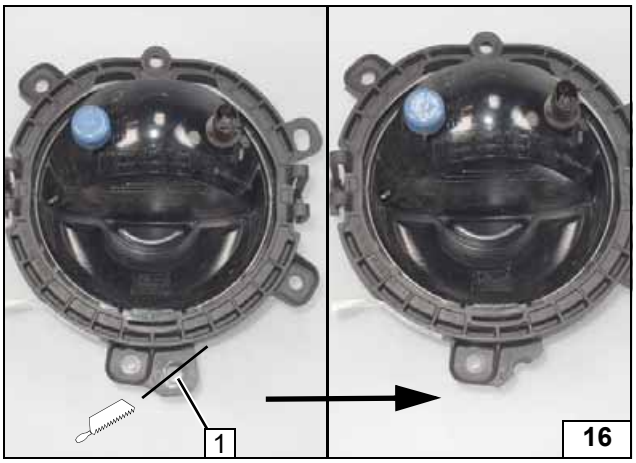
1 Detach bolts
2 Lamp

Detaching lamp



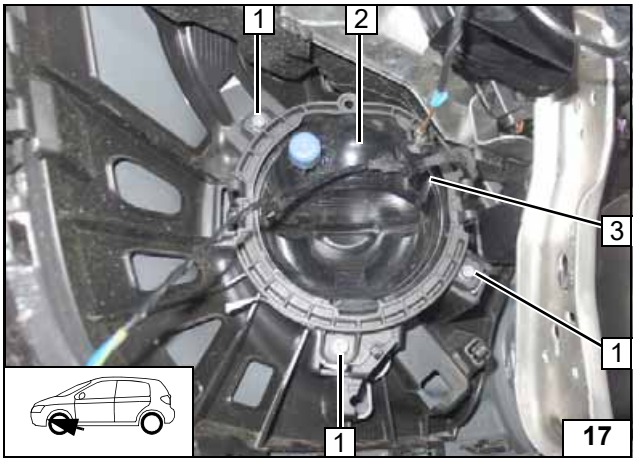
Carefully cut out section **1** of the lamp mount as shown.

Adapting lamp mount



Cut locking tab of lamp housing through the centre of hole **1** as shown.

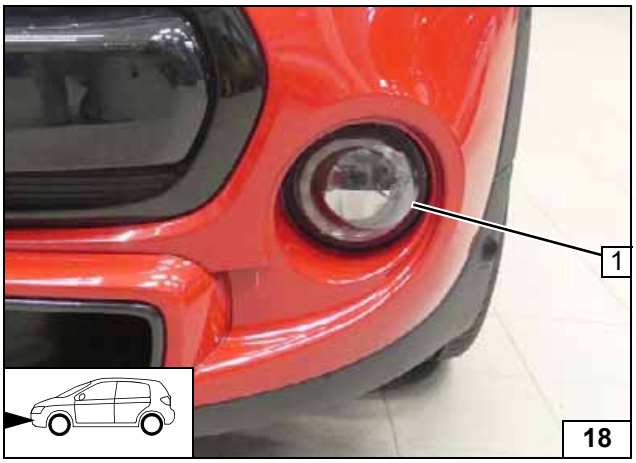
Adapting lamp housing



Fasten original vehicle wiring harness (if present) to original vehicle connector **3** using a cable tie.

1 Original vehicle bolt
2 Lamp

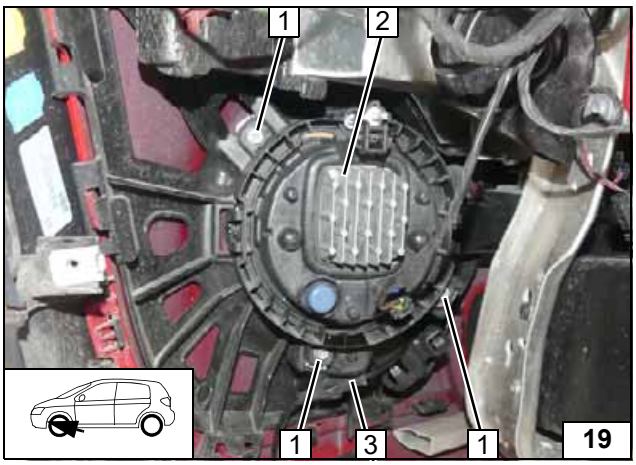
Mounting lamp



Vehicle with parking light and front fog light

1 LED front fog light with LED ring

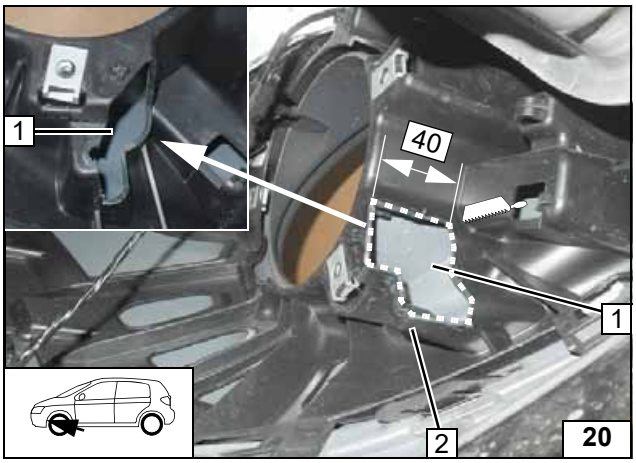
View of front fog light



Detach cable holder **3** of the original vehicle wiring harness (if present).

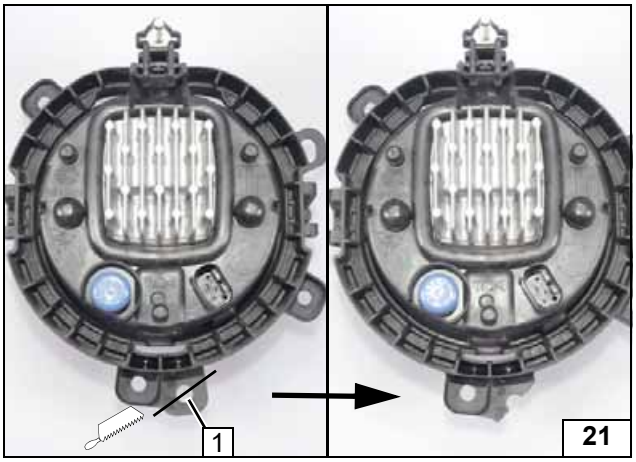
1 Detach bolts
2 Lamp

Detaching lamp



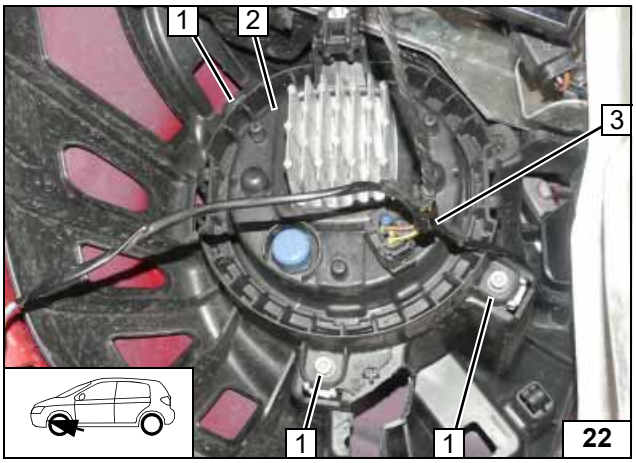
Carefully cut out section **1** of the lamp mount as shown.

Adapting lamp mount



Cut locking tab of lamp housing through the centre of hole **1** as shown.

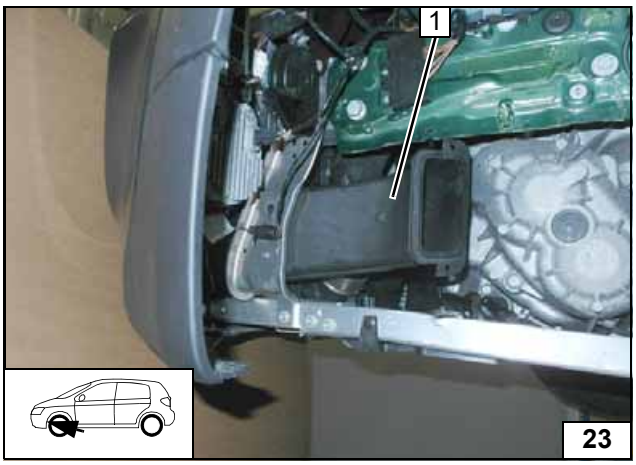
Adapting lamp housing



Fasten original vehicle wiring harness (if present) to original vehicle connector **3** using a cable tie.

1 Original vehicle bolt
2 Lamp

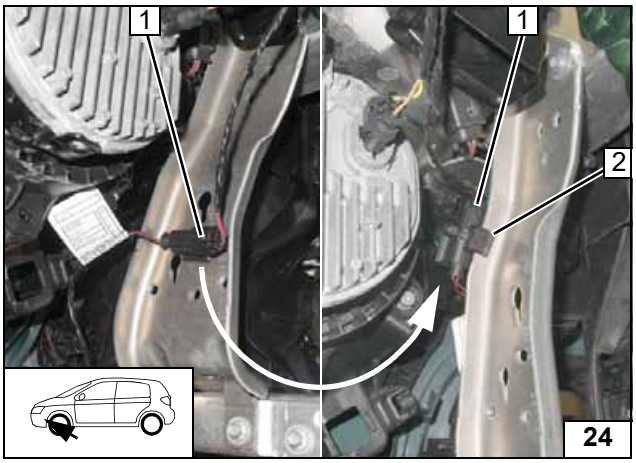
Mounting lamp



All vehicles

1 Brake air duct (if present)

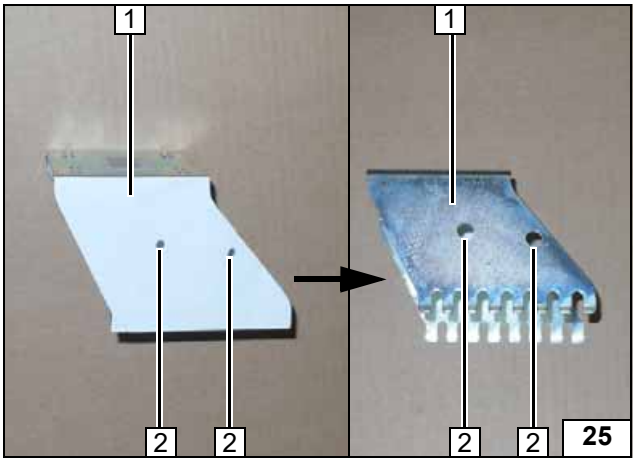
Removing or detaching brake air duct



Detach original vehicle connector at position **1** (if present) and fasten using a edge clip cable tie at position **2**.

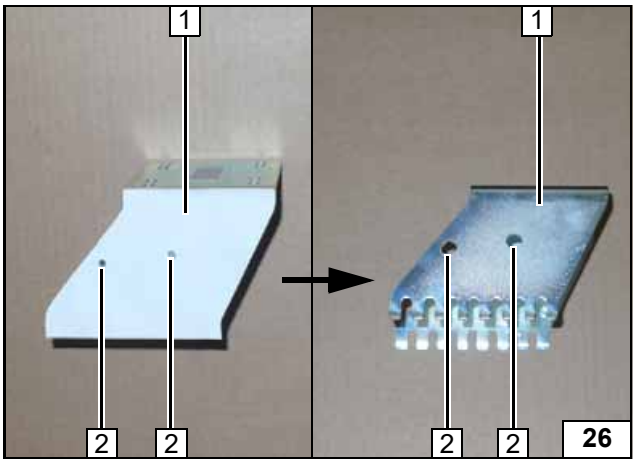
Moving connector

Bracket preparation



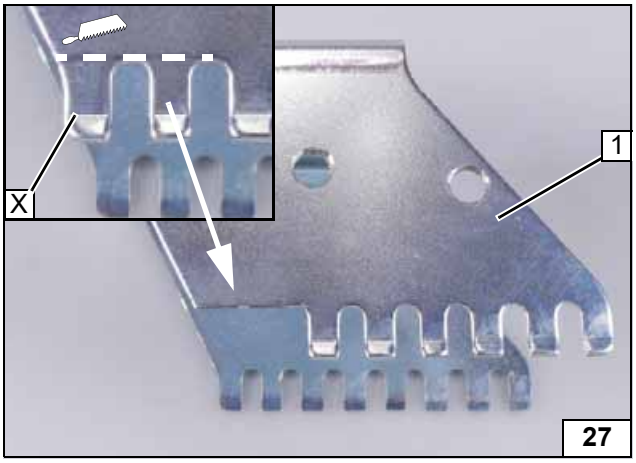
1 Bracket on left side
2 Position template, copy hole pattern [2x], Ø9 hole [2x]

Hole in bracket, left side



1 Bracket on right side
2 Position template, copy hole pattern [2x], Ø9 hole [2x]

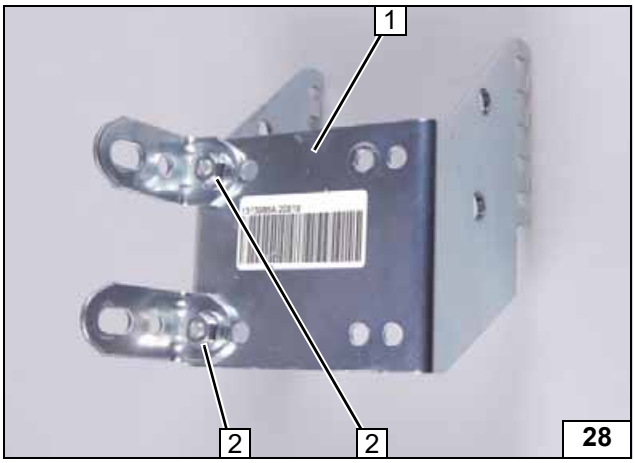
Hole in bracket, right side



Cut two tabs on the left side of bracket **1** as shown.

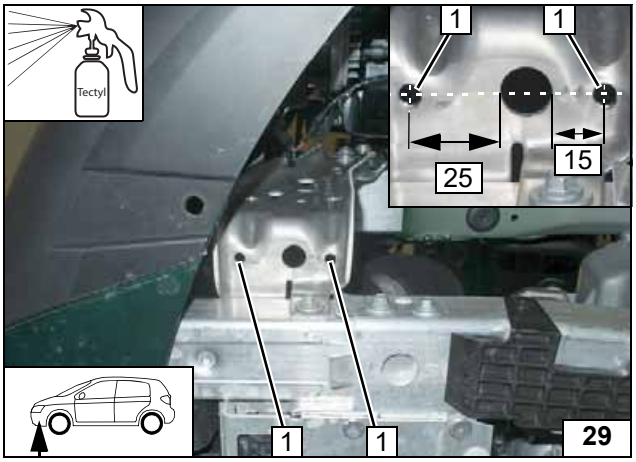
X =

Cutting tabs



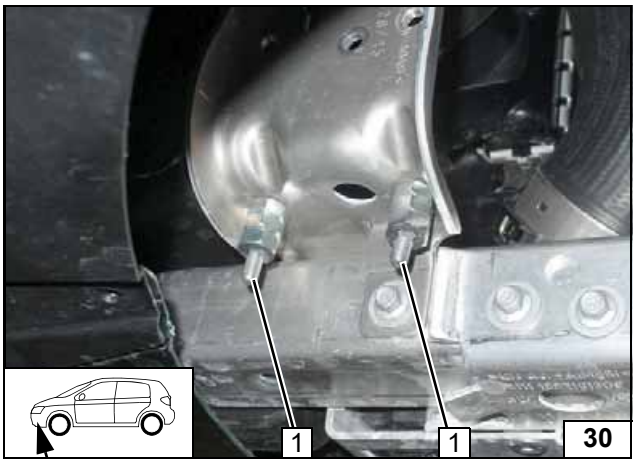
1 Bracket
2 M6x12 bolt, angle bracket, flanged nut [2x each]

Premounting angle bracket



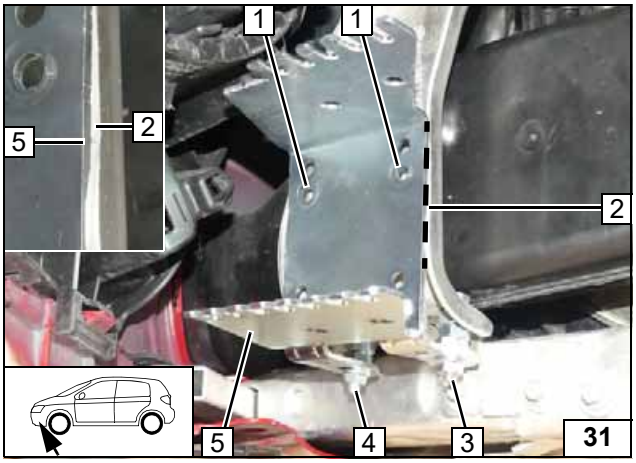
1 Copy hole pattern, Ø7 hole [2x each]

Drilling holes



1 M6x35 bolt, M8 nut [3x], lock washer [2x each]

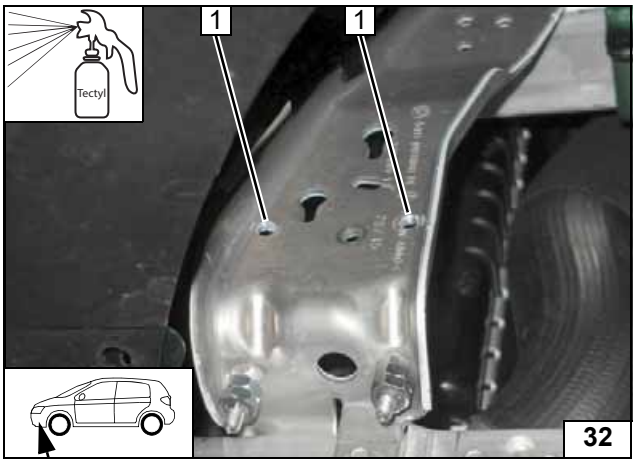
Premounting bolts



Position bracket **5** at the frame side member edge as shown and mount loosely. Align bracket flush and parallel with outside edge of frame side member **2**.

1 Copy hole pattern [2x]
3 Install M6 flanged nut loosely
4 Bolt premounted

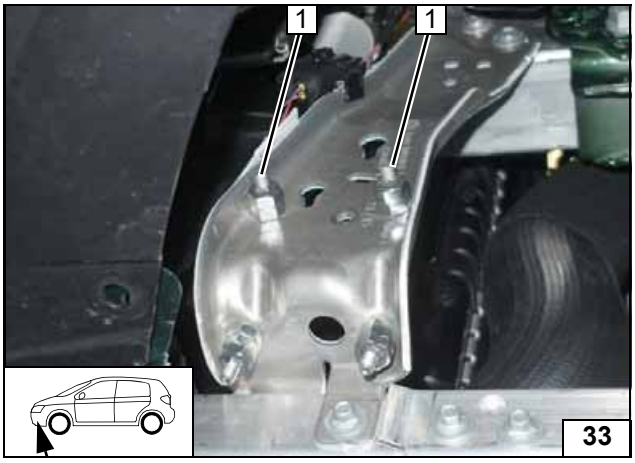
Copying hole pattern



Remove bracket again!

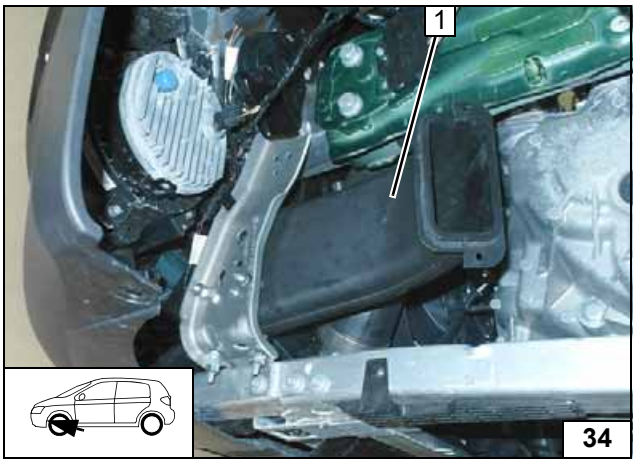
1 Ø7 hole [2x]

Drilling holes



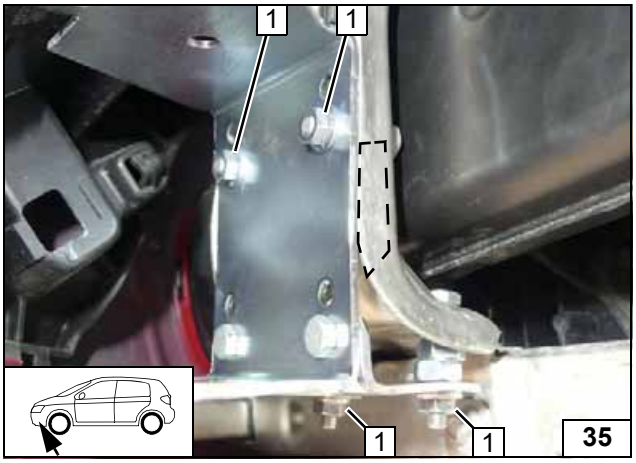
1 M6x25 bolt, M8 nut [2x], lock washer [2x each]

Premounting bolts



1 Brake air duct (if present)

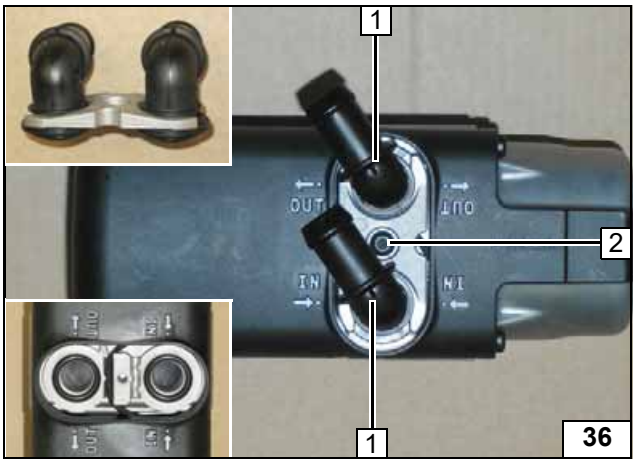
Installing brake air duct



Realign the frame side member and heater bracket in the marked zone if necessary.

1 M6 flanged nut on premounted bolt [4x]

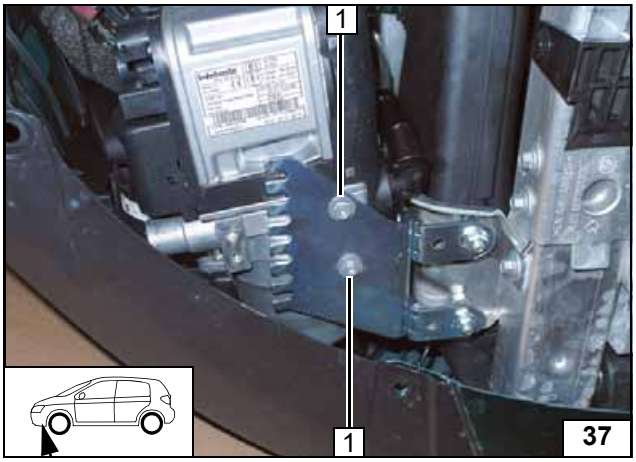
Installing bracket



Heater preparation

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

Installing water connection piece

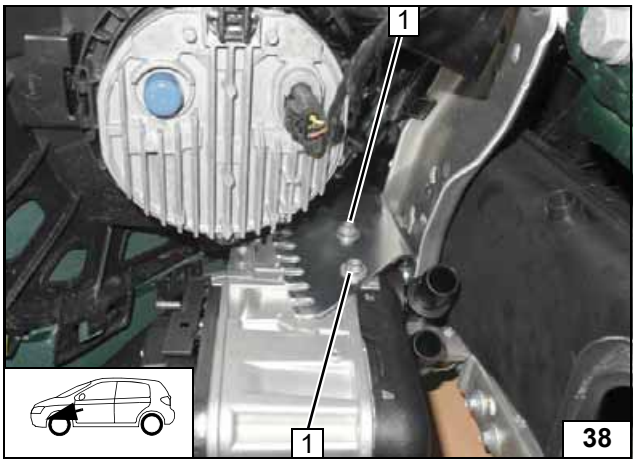


Heater installation

Do not yet tighten bolts **1**!

1 5x13 self-tapping bolt, large diameter washer [2x]

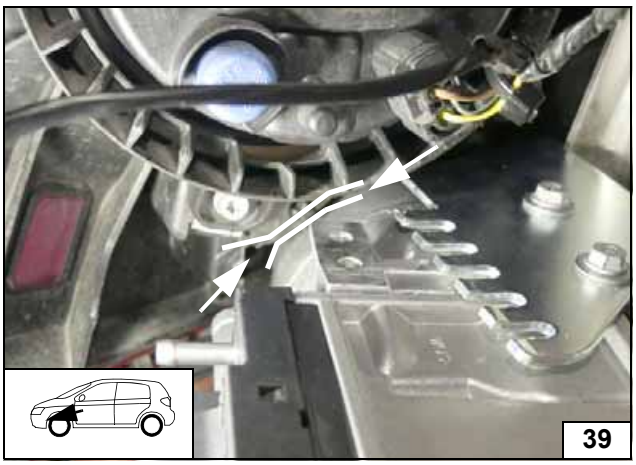
Loosely installing heater



Do not yet tighten bolts **1**!

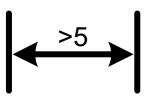
1 5x13 self-tapping bolt, large diameter washer [2x]

Loosely installing heater



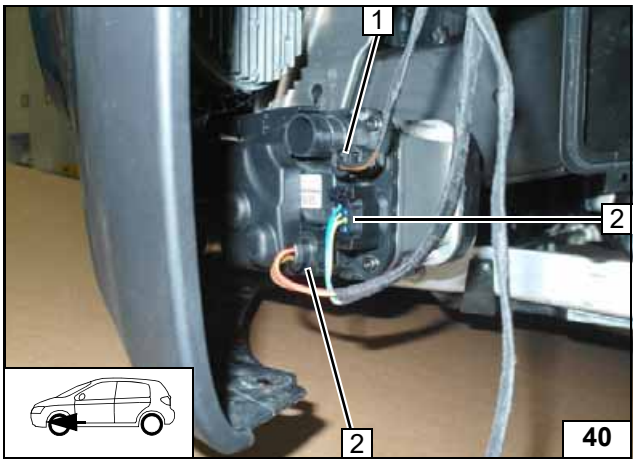
Ensure sufficient distance from neighbouring components, correct if necessary.

Shown on a Mini with MY 2019.



Tighten heater bolts on both sides [4x].

Aligning, installing heater



1 Connector of coolant pump wiring harness
2 Heater wiring harness connector [2x]

Installing wiring harnesses

Fuel

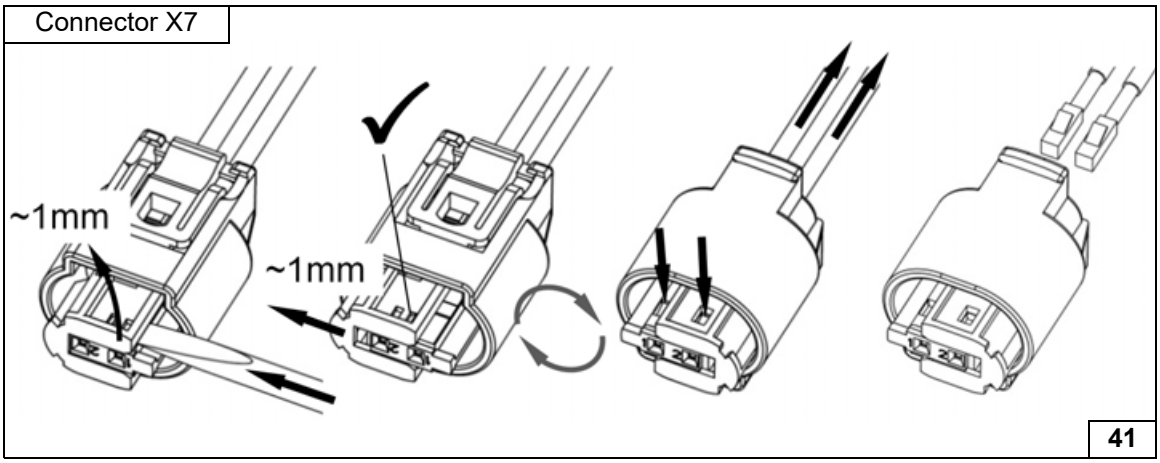
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in an appropriate container.

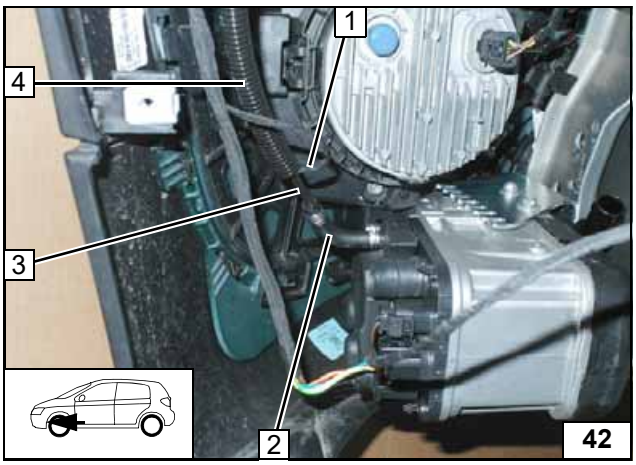
Route fuel line and fuel pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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

Dismantling fuel pump connector



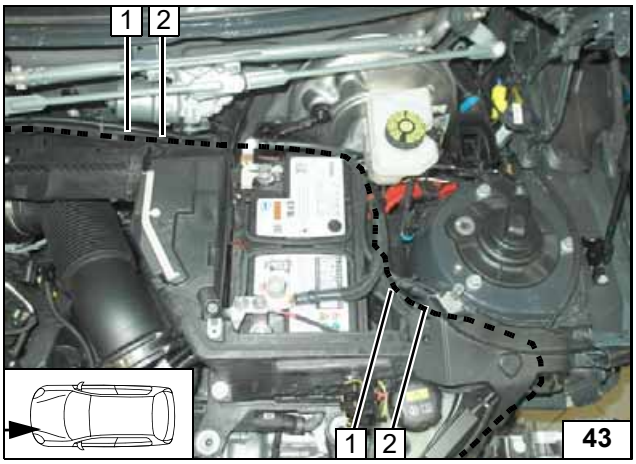
Connecting heater



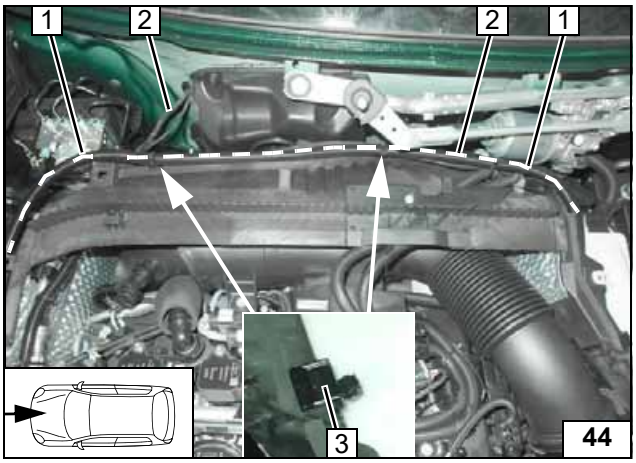
Draw fuel pump wiring harness **1** and fuel line **3** together into corrugated tube **4** and route in the engine compartment.

2 90° moulded hose, Ø10 clamp [2x]

Routing lines



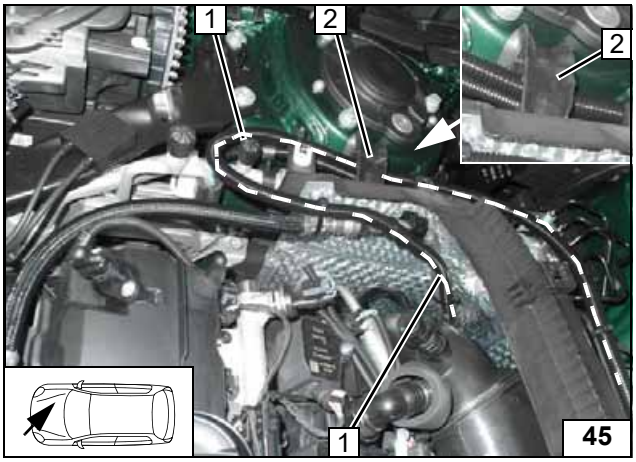
Route corrugated tube **1** with fuel line and fuel pump wiring harness as well as heater and control element wiring harness **2** in the water drain chamber and fasten with cable ties.



Route corrugated tube **1** with fuel line and fuel pump wiring harness as well as heater and control element wiring harness **2** to the right side and attach using edge clip cable tie **3**.

3 Edge clip cable tie [2x]

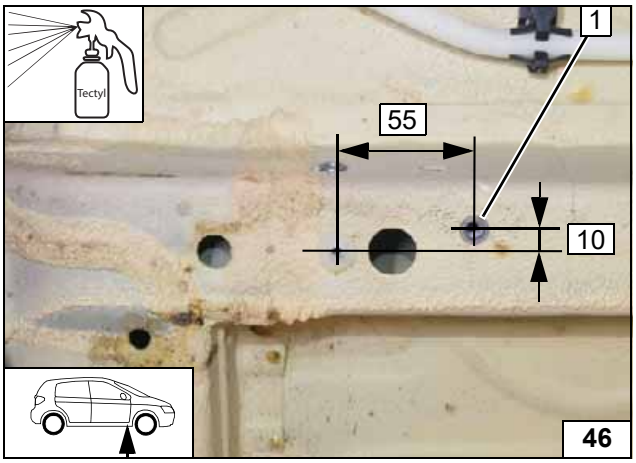
Routing lines



Route corrugated tube **1** with fuel line and fuel pump wiring harness to the underbody and attach in an appropriate manner.

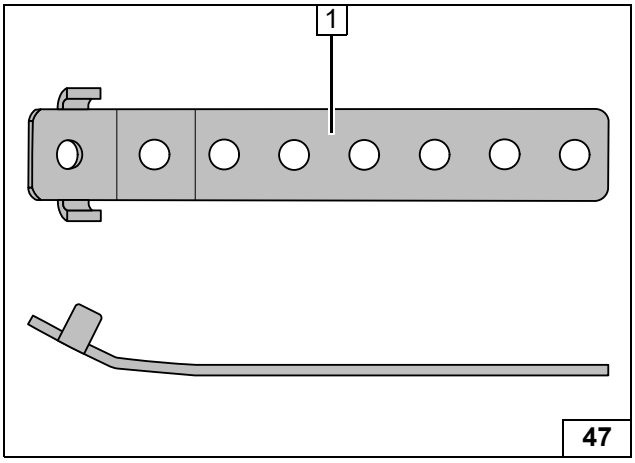
2 Water drain chamber / engine compartment cable pass through

Routing lines



1 Hole, rivet nut

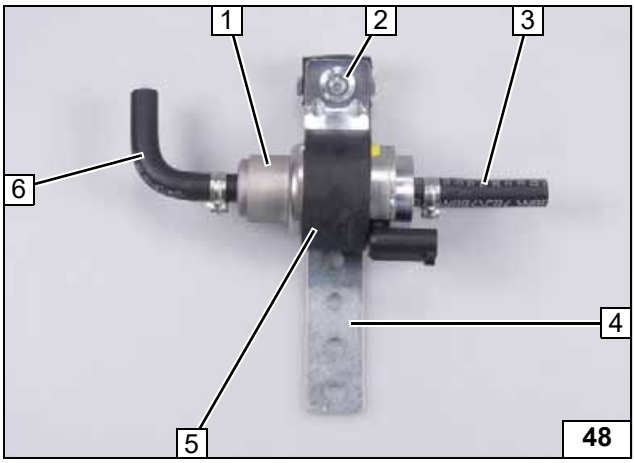
Installing rivet nut



1 Perforated bracket

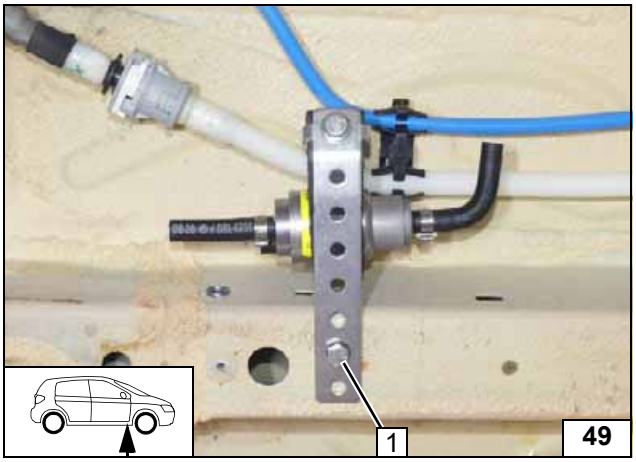
View of perforated bracket for fuel pump preinstallation

Premounting fuel pump



1 Fuel pump
2 M6x25 bolt, support angle bracket, flanged nut
3 Hose section, Ø10 clamp
4 Perforated bracket
5 Fuel pump mount
6 90° moulded hose, Ø10 clamp

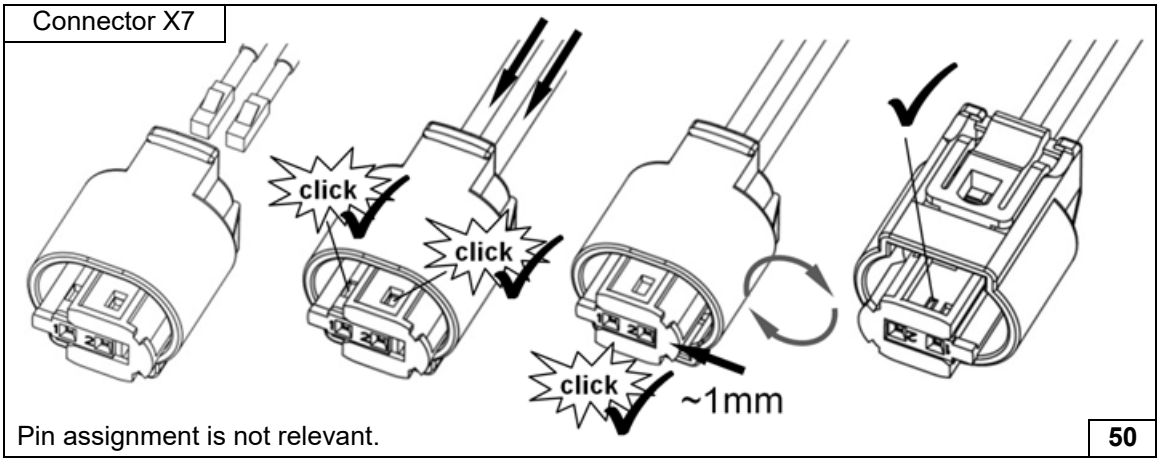
Mounting fuel pump



1 M6x20 bolt, spring lock washer, fuel pump perforated bracket, rivet nut

Completing fuel pump connector

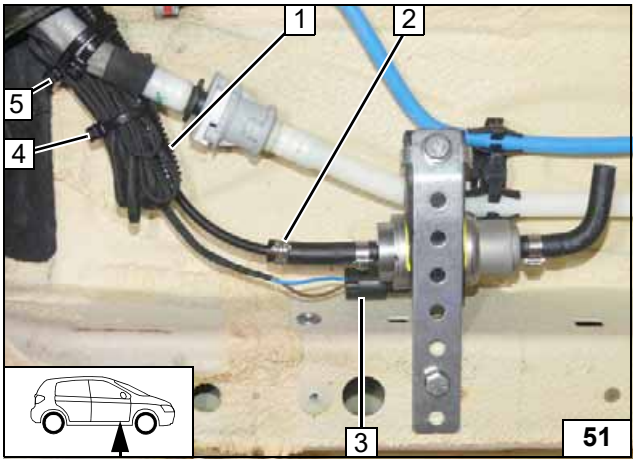
Connector X7



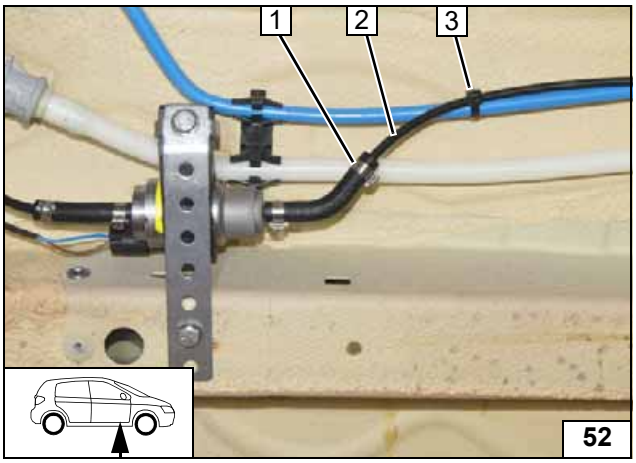
Pin assignment is not relevant.

50

Fuel pump connection



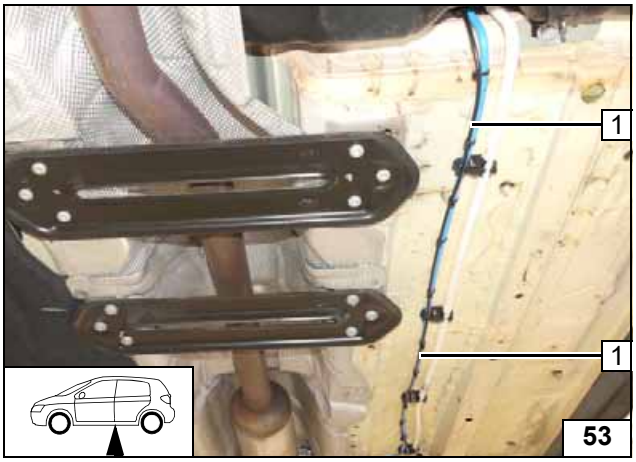
1 Fuel line of heater in corrugated tube
2 Ø10 clamp
3 Fuel pump wiring harness, connector X7 mounted
4 Attach the rest of the fuel pump wiring harness with a cable tie to the corrugated tube
5 Cable tie around corrugated tube, fuel pump wiring harness and original vehicle wire



Ensure sufficient distance from neighbouring components, correct if necessary.

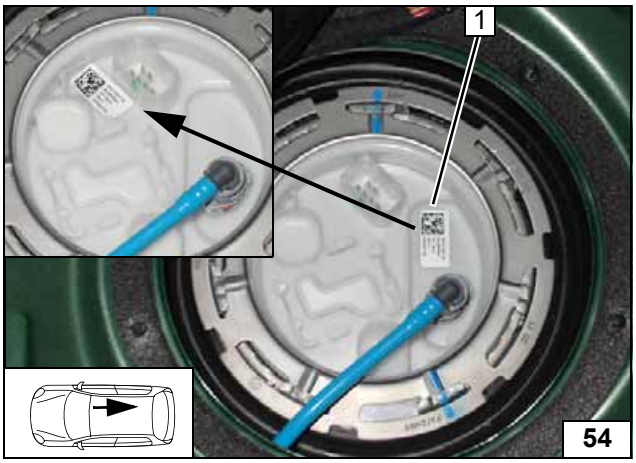
1 Ø10 clamp
2 Fuel line of FuelFix
3 Cable tie

Fuel pump connection



Route fuel line of FuelFix **1** along original vehicle fuel lines to the tank fitting and attach in an appropriate manner.

Routing lines

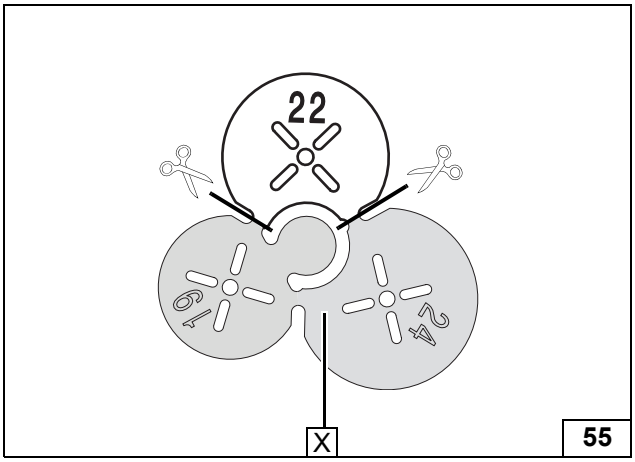


FuelFix installation

Work step F1.

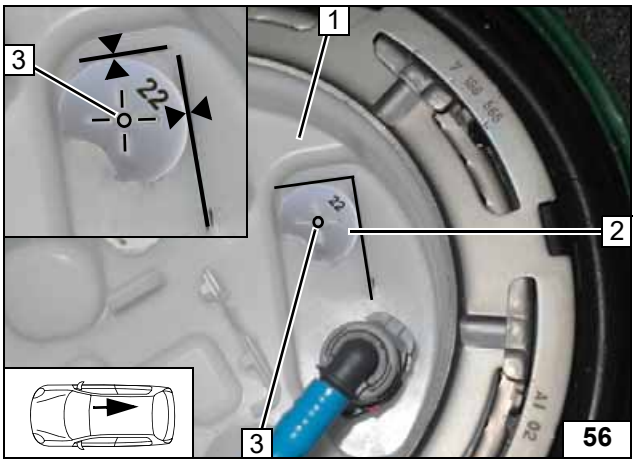
Move sticker **1** as shown.

Moving sticker



X =

Preparing drilling template

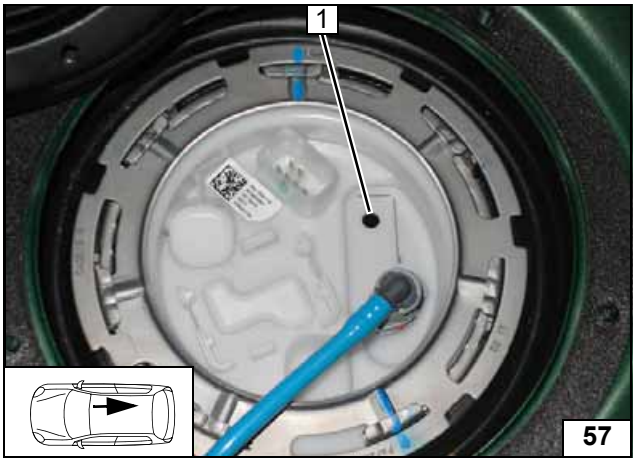


Work step F2.

Position drilling template at the raised part of tank fitting **1** as shown.

2 Ø22 drilling template
3 Hole pattern

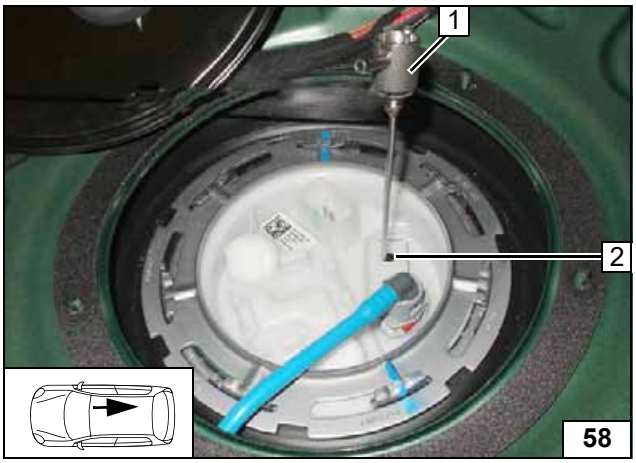
Copying hole pattern



Work step F3.

1 Hole made with provided drill

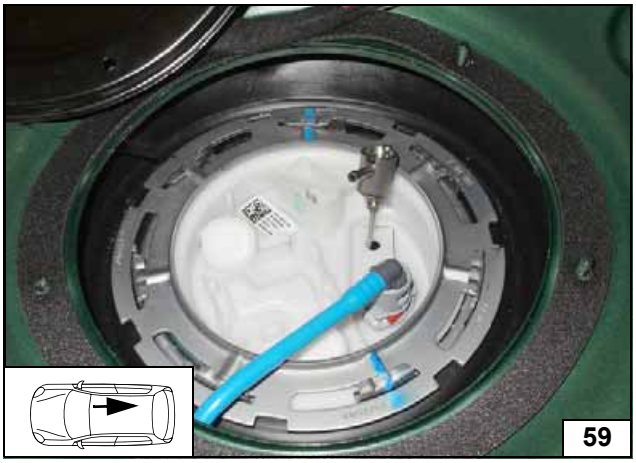
Hole for FuelFix



Work steps F4 and F5.

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

Inserting FuelFix

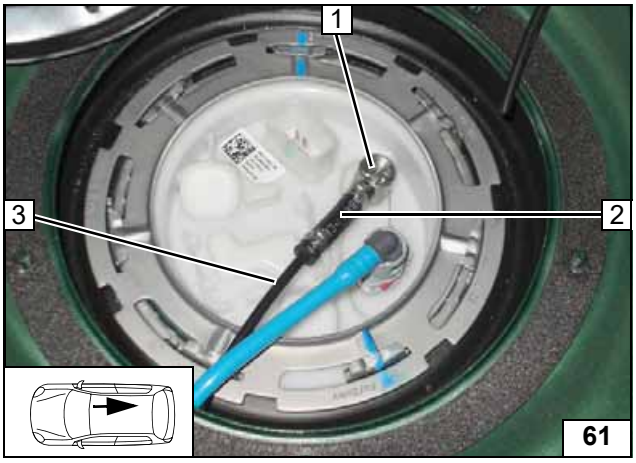


Inserting FuelFix

Work steps F5.3 and F5.4.

Align FuelFix as shown.

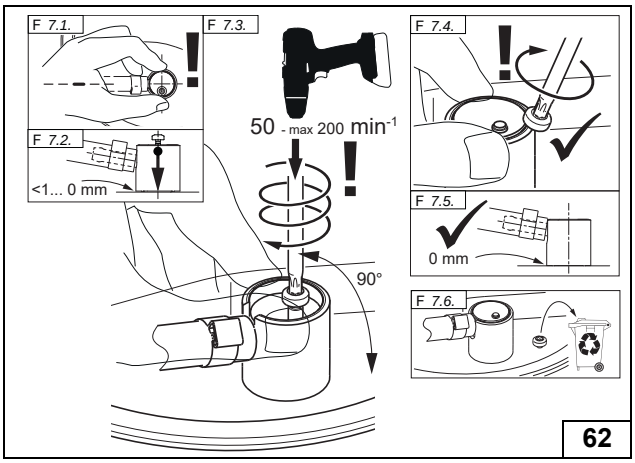
Aligning FuelFix



Work step F6.

1 FuelFix
2 Hose section, Ø10 clamp [2x]
3 Fuel line

Connecting fuel line

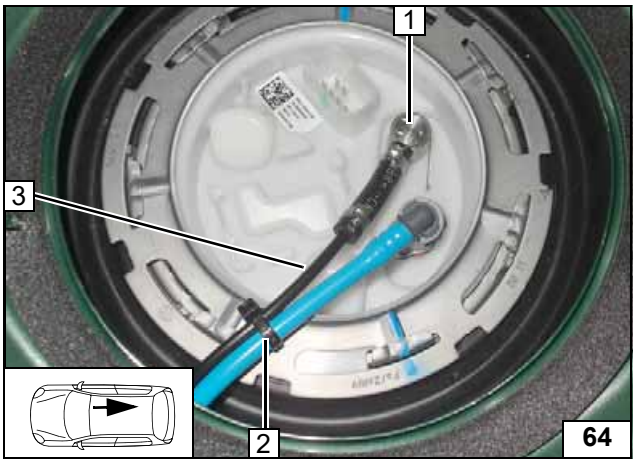


Work step F7.

Installing FuelFix

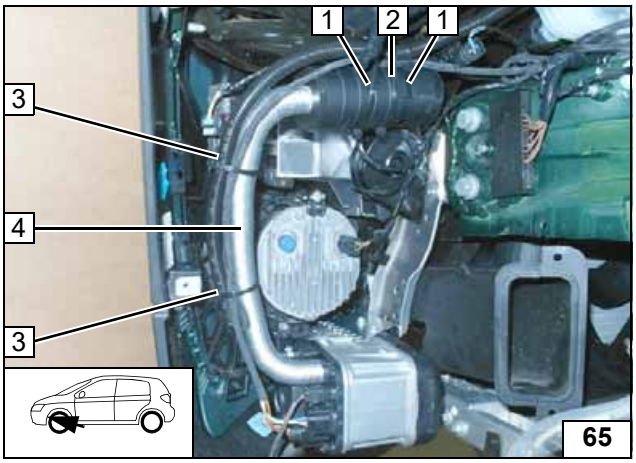
Work step F8.

Checking firm seating of FuelFix



1 FuelFix installed
2 Cable tie as tension relief
3 Fuel line of FuelFix

Securing fuel line



Combustion air

Ensure sufficient distance from neighbouring components, correct if necessary.

1 Cable tie [2x]
2 Combustion air intake silencer on bulb socket
3 Corrugated tube with fuel line and fuel pump wiring harness as well as heater wiring harness, cable tie [2x]
4 Combustion air intake pipe

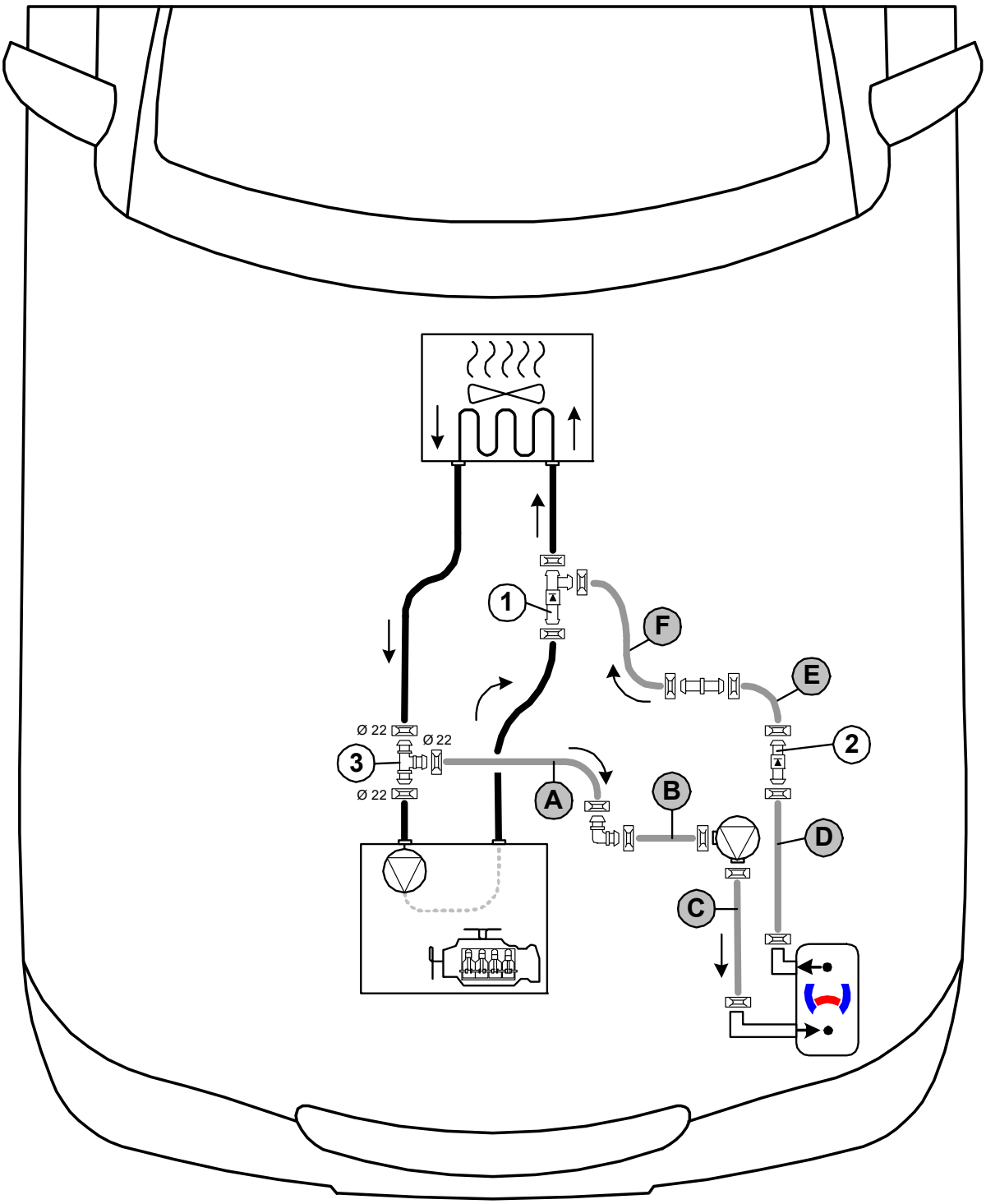
Mounting combustion air intake silencer

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.

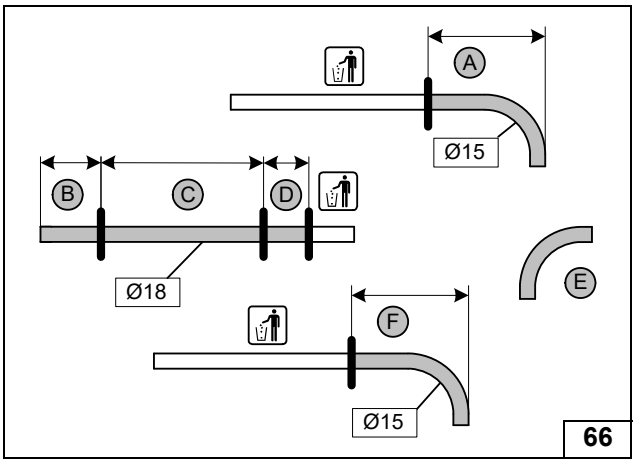
The connection should be modelled on an ‘island’ circuit and based on the following diagram:

Hose routing diagram



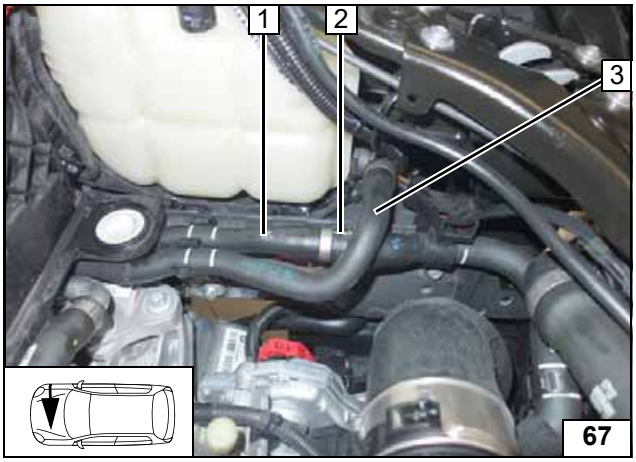
All spring clips without a specific designation = Ø25. All connecting pipes and = Ø18x18.

1 = Non-return valve . **2** = Non-return valve . **3** = T-piece .



A = 180
B = 70
C = 170
D = 60
E = 90° Ø18
F = 170

Cutting hoses to length

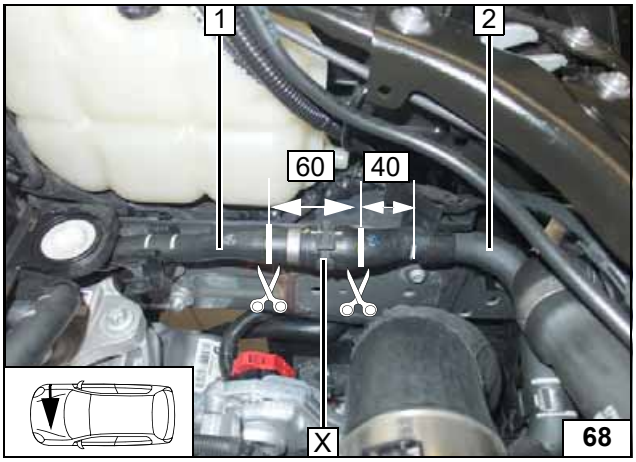


Vehicle with connecting pipe 2 in engine outlet / heat exchanger inlet hose

Next figures show a vehicle with DKG!

1 Heat exchanger inlet hose
3 Hose of engine inlet

View of hoses

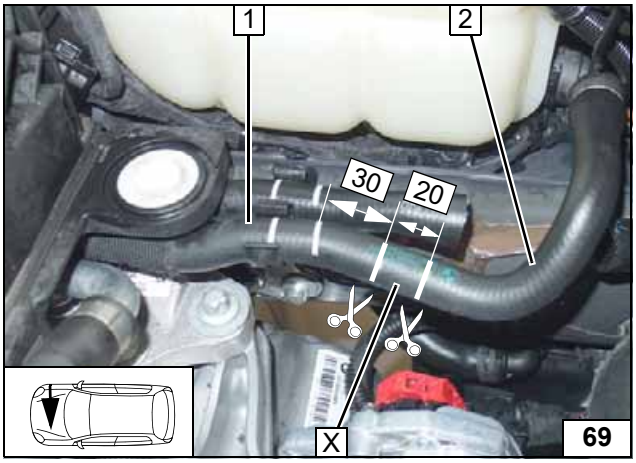


Cut hose of engine outlet / heat exchanger inlet **1** at the markings.
The heat exchanger outlet / engine inlet hose was removed here for demonstration purposes.

1 Heat exchanger inlet hose section
2 Engine outlet hose section

X =

Cutting point 1

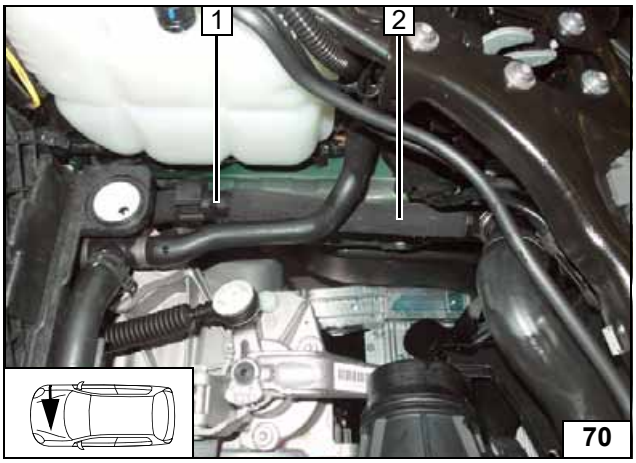


Cut hose of heat exchanger outlet / engine inlet **1** at the markings.

1 Heat exchanger outlet hose section
2 Engine inlet hose section

X =

Cutting point 2

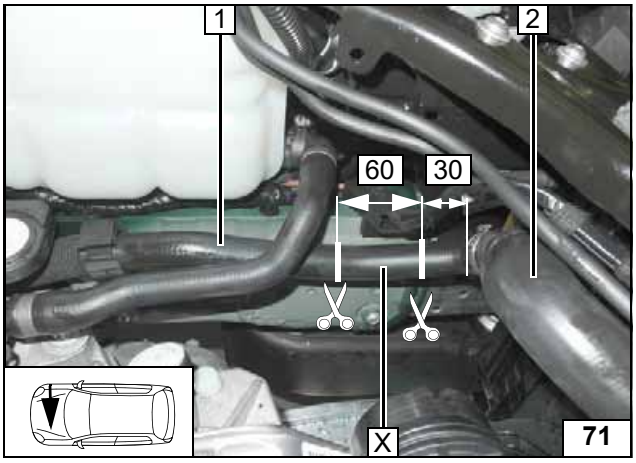


Vehicle without connecting pipe in engine outlet / heat exchanger inlet hose 1

Next figures show a vehicle with SG but apply also to vehicles with ASG!

Remove braided protection **2** from hose of engine outlet / heat exchanger inlet **1** and discard.

Preparing cutting point

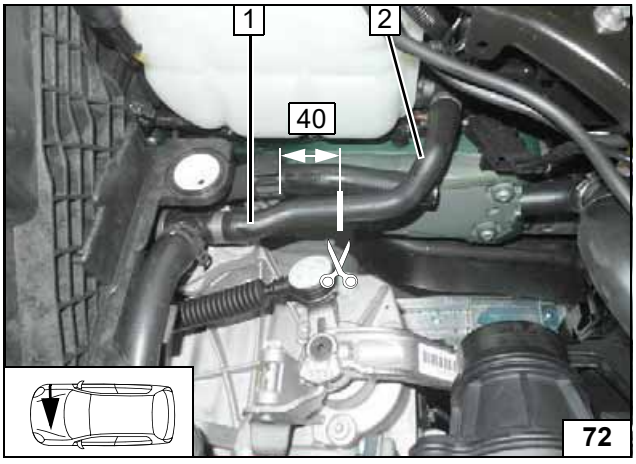


Cut hose of engine outlet / heat exchanger inlet **1** at the markings.

1 Heat exchanger inlet hose section
2 Engine outlet hose section

X = 

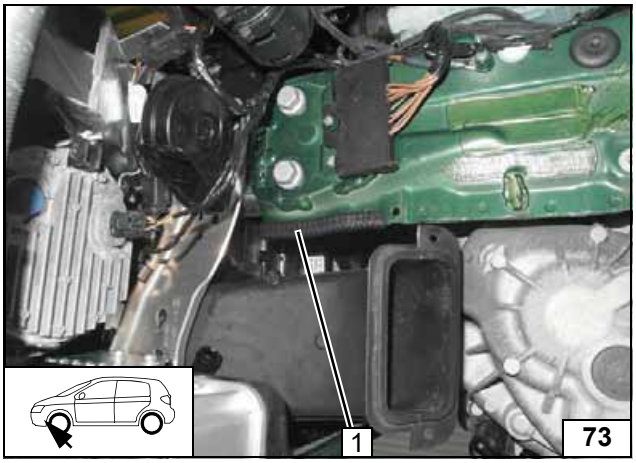
Cutting point 1



Cut hose of heat exchanger outlet / engine inlet **1** at the marking.

1 Heat exchanger outlet hose section
2 Engine inlet hose section

Cutting point 2

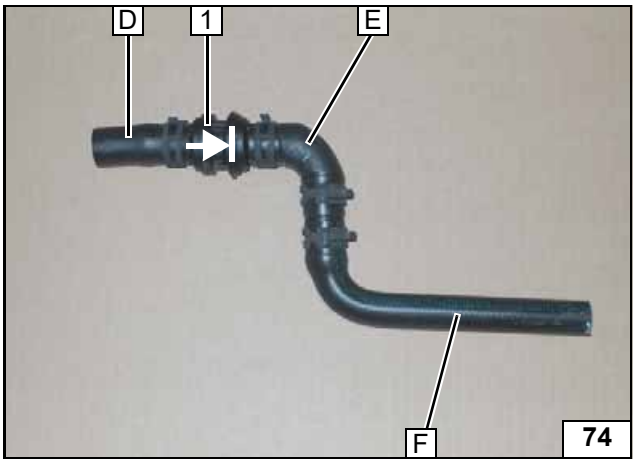


All vehicles

Next figures show a vehicle with SG but apply also to vehicles with ASG and DKG!

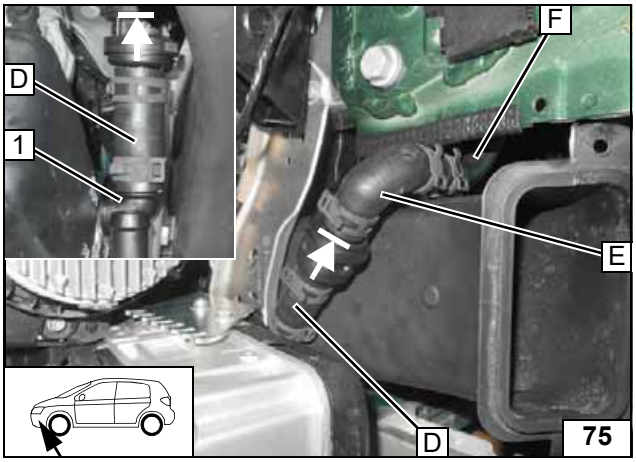
1 Edge protection (100)

Installing edge protection



1 Non-return valve

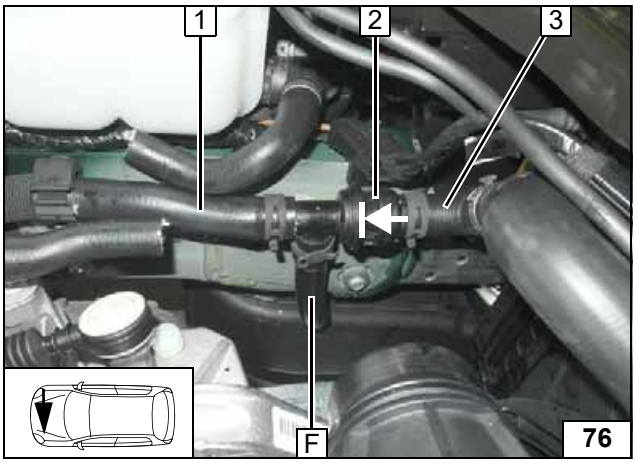
Premounting hoses



Route hose **F** in the engine compartment.

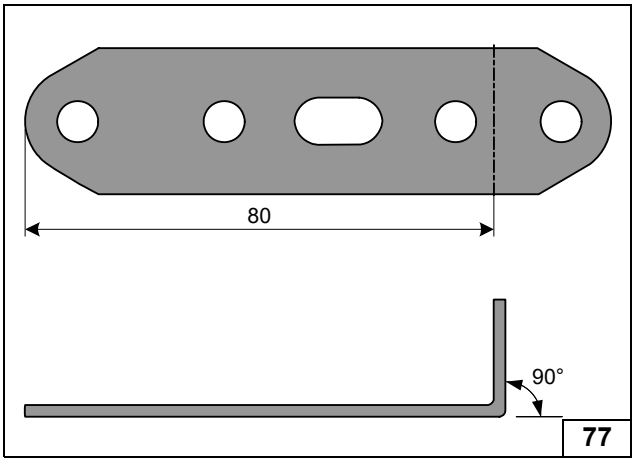
1 Connection piece of heater outlet

Connecting heater outlet

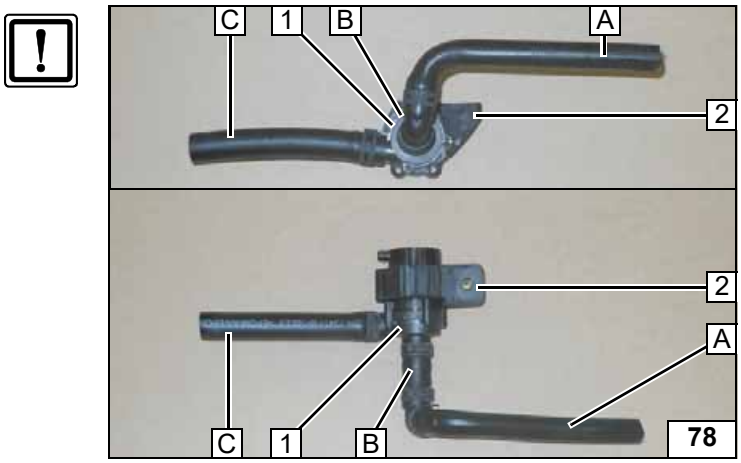


1 Heat exchanger inlet hose section
2 Non-return valve (pay attention to the direction of flow)
3 Engine outlet hose section

Connecting engine outlet / heat exchanger inlet

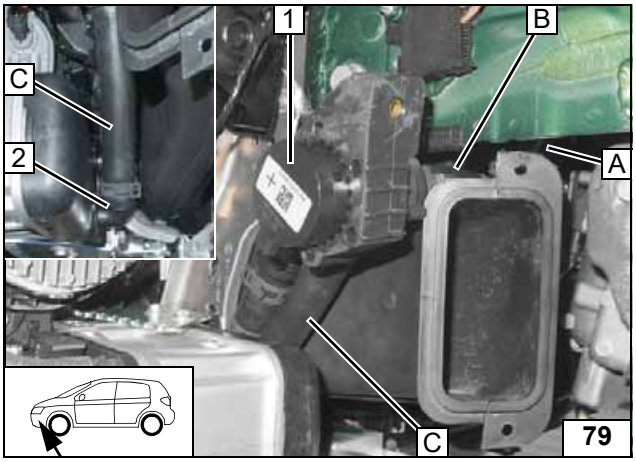


Bending perforated bracket



1 Coolant pump
2 Coolant pump mount

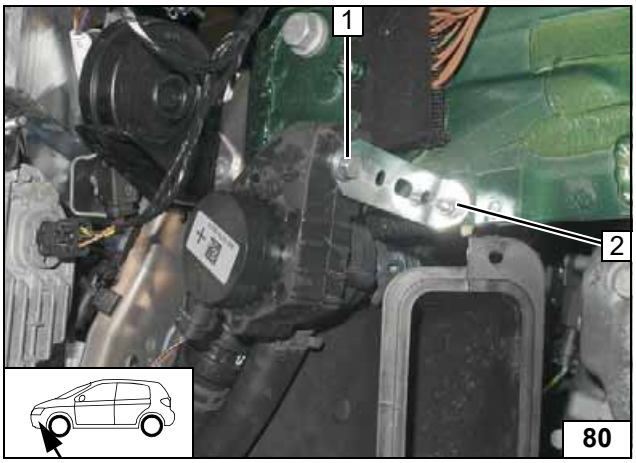
Premounting coolant pump



Route hose **A** in the engine compartment.

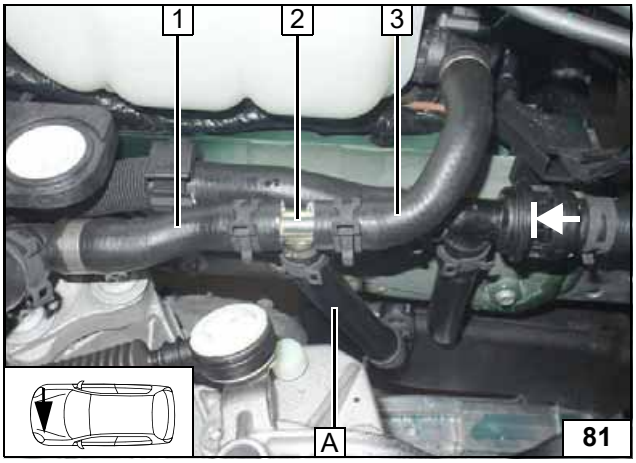
1 Coolant pump
2 Connection piece of heater inlet

Connecting heater inlet



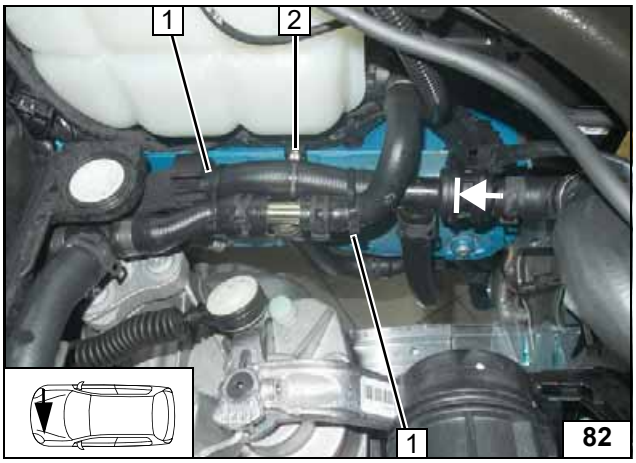
1 M6x25 bolt, perforated bracket, coolant pump mount, flanged nut
2 M5x16 bolt, existing hole, large diameter washer, flanged nut

Mounting coolant pump



1 Heat exchanger outlet hose section
2 15x15x15 T-piece
3 Engine inlet hose section

Connecting engine inlet / heat exchanger outlet

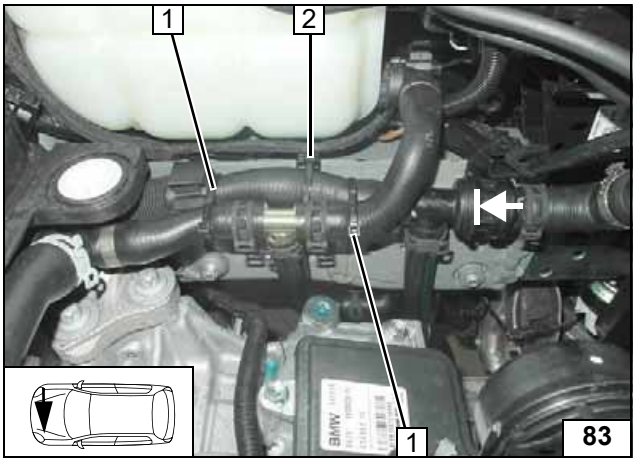


Vehicles with SG

Ensure sufficient distance from neighbouring components, correct if necessary.

1 Cable tie [2x]
2 Edge clip cable tie

Fastening hoses

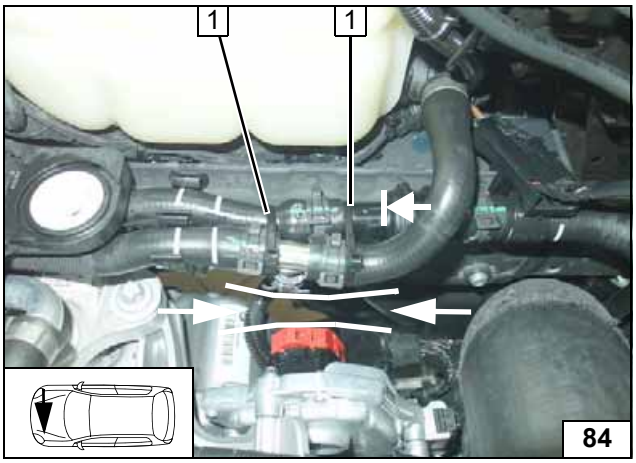


Vehicles with ASG

Ensure sufficient distance from neighbouring components, correct if necessary.

1 Cable tie [2x]
2 Edge clip cable tie

Fastening hoses

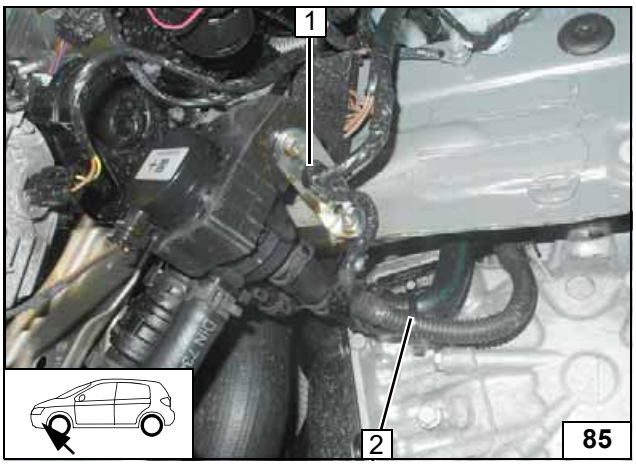


Vehicles with DKG

Ensure sufficient distance from neighbouring components, correct if necessary.

1 Cable tie [2x]

Fastening hoses



All vehicles

Ensure sufficient distance from neighbouring components, correct if necessary.

1 Original vehicle eyelet cable tie in perforated bracket
2 Cable tie

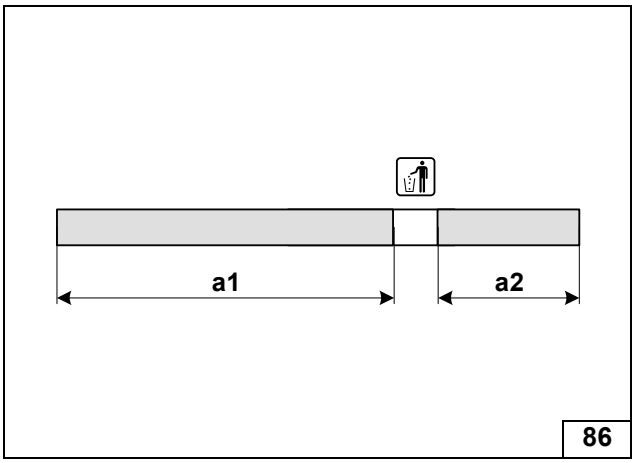
Securing lines

Exhaust gas for SG and ASG

Warning: this paragraph applies only to vehicles with SG and ASG and not to vehicles with DKG.

Preparing exhaust pipes

	SG	ASG
a1	560	660
a2	200	300



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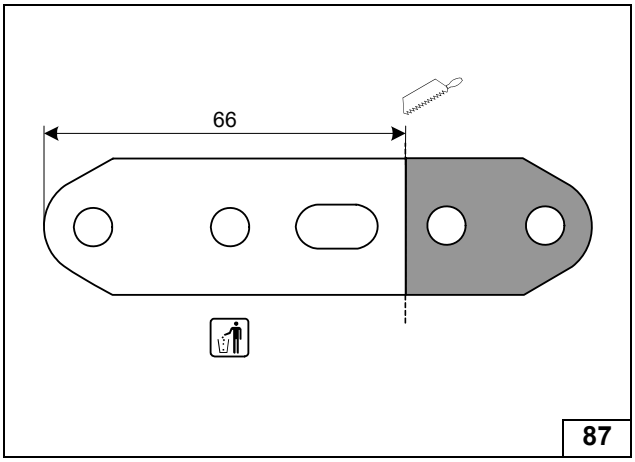
Vehicles with SG

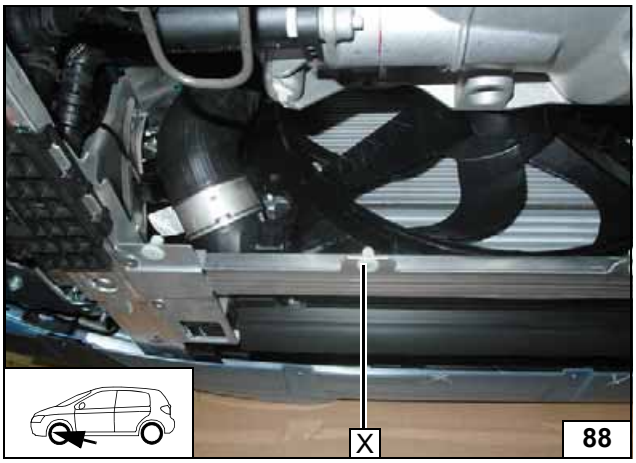
Shortening perforated bracket



87

Removing plastic plug

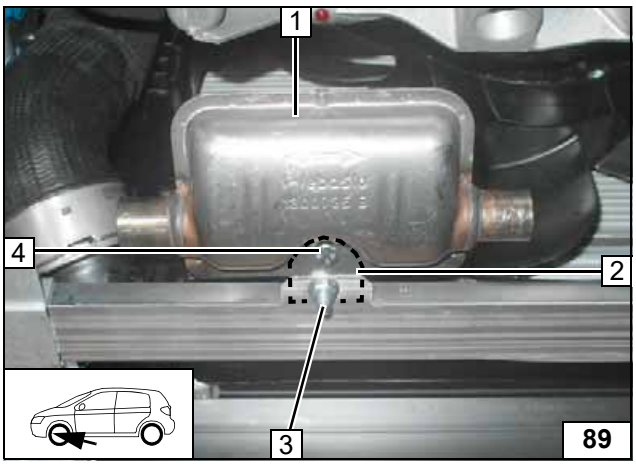
X =



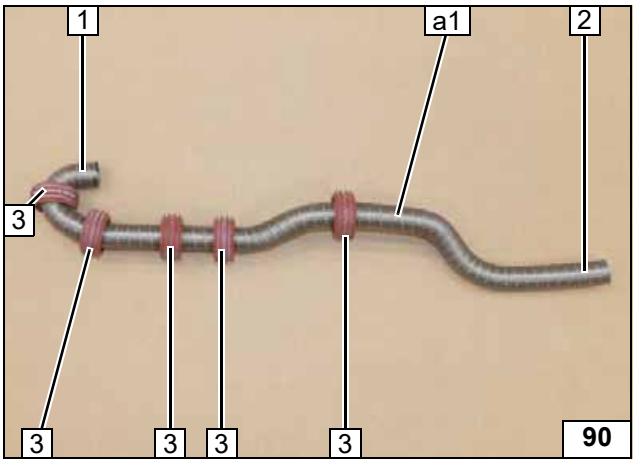
88

Installing exhaust silencer

1 Exhaust silencer
2 Shortened perforated bracket
3 M6x20 bolt, flanged nut
4 M6x16 bolt, flanged nut

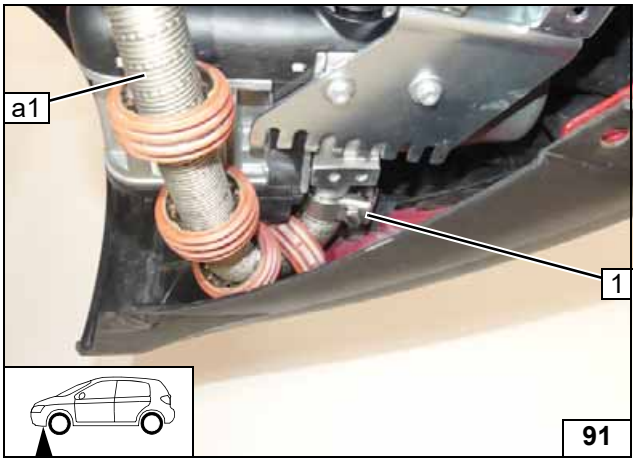


89



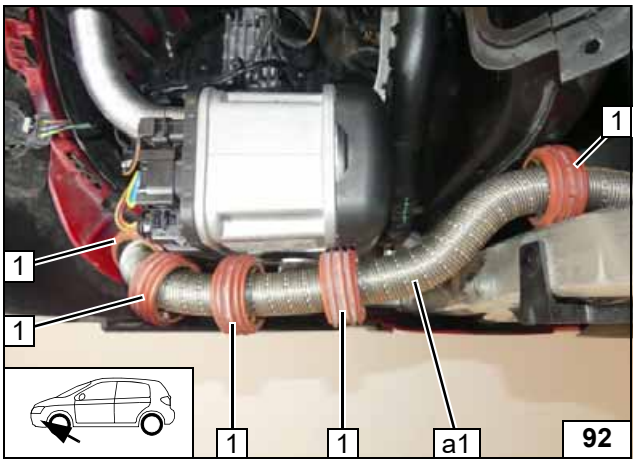
1 Mounting side for the heater
2 Mounting side for the exhaust silencer
3 Spacer bracket [5x]

Preparing exhaust pipe a1



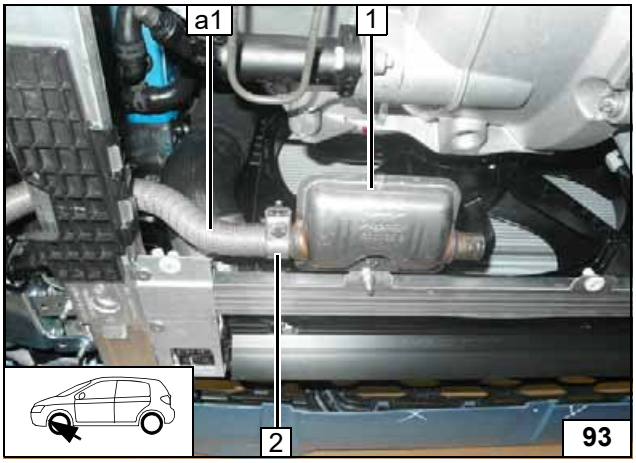
1 Hose clamp

Installing exhaust pipe a1



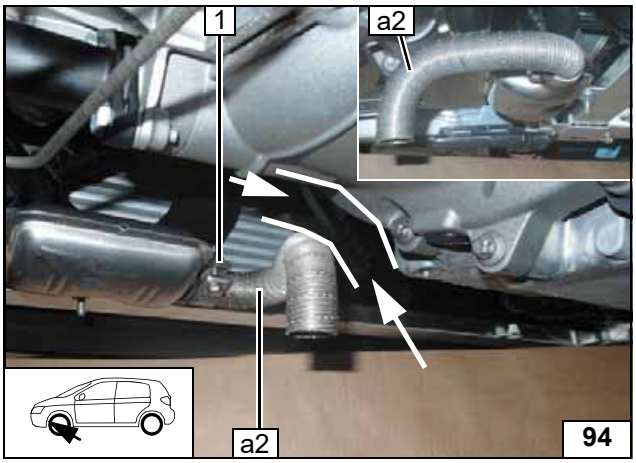
1 Spacer bracket [5x]

Aligning spacer bracket

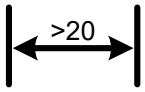


1 Exhaust silencer
2 Hose clamp

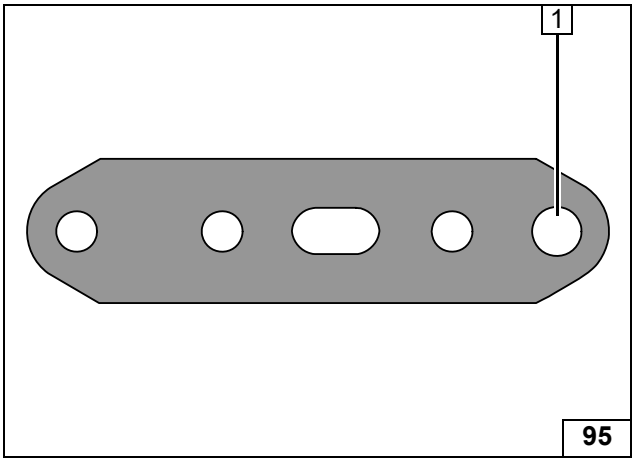
Installing exhaust pipe a1



1 Hose clamp



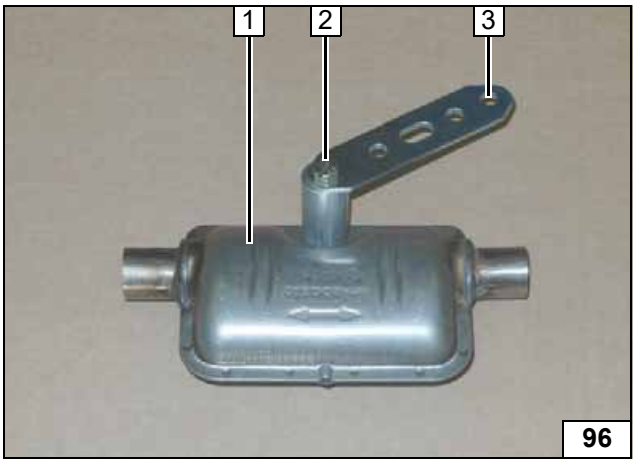
Installing exhaust pipe a1



Vehicles with ASG

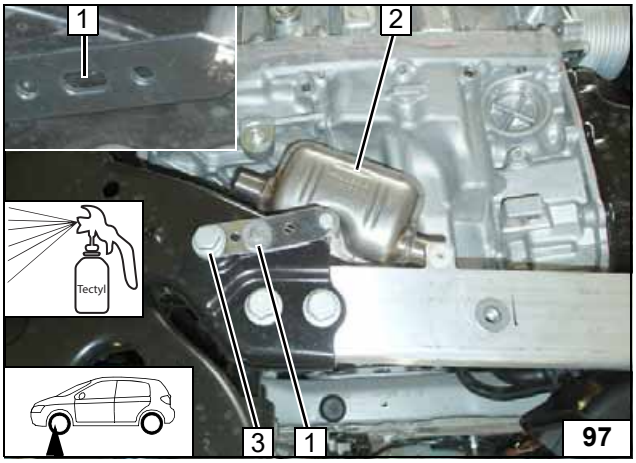
1 Enlarge hole to Ø8.5

Preparing perforated bracket



1 Exhaust silencer
2 Install M6x50 bolt, perforated bracket, distance washer (40), flanged nut loosely
3 Ø8.5 hole

Premounting exhaust silencer

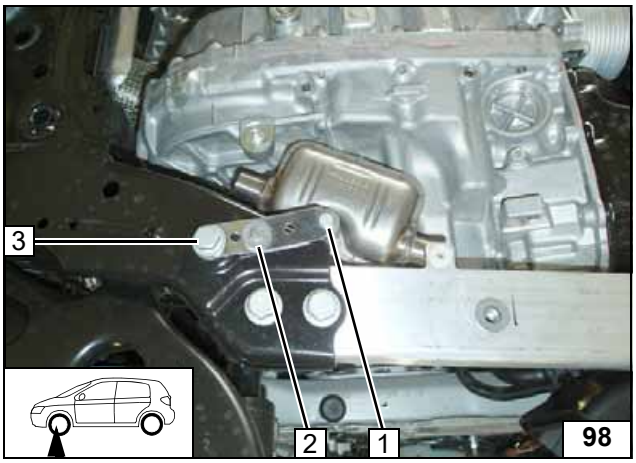


Variant 1

Align exhaust silencer **2** with transmission while keeping a distance of at least 20mm. Copy hole pattern **1**.

1 Ø7 hole
3 Mount original vehicle bolt, premounted perforated bracket loosely in available threaded hole

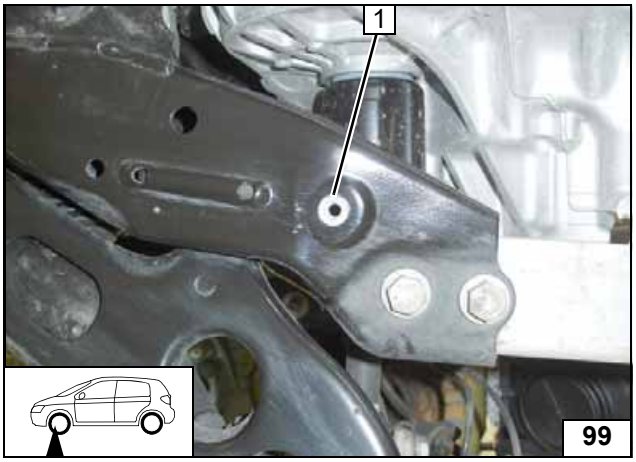
Installing exhaust silencer



Tighten bolt **1**.

2 M6x20 bolt, large diameter washer, flanged nut
3 Remove original vehicle bolt, it will be needed again when mounting the underride protection

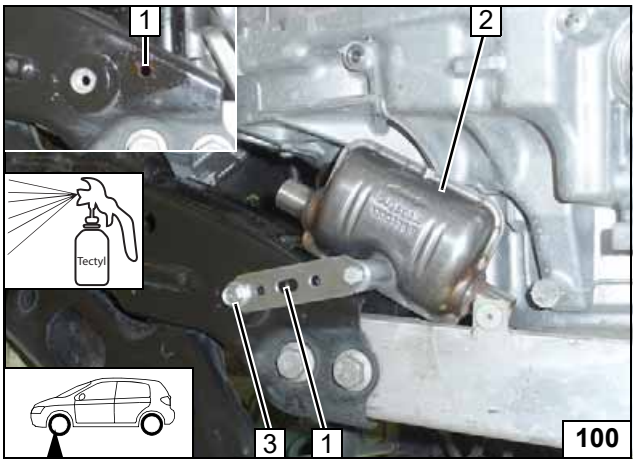
Installing exhaust silencer



Variant 2

1 Original vehicle hole, M8 rivet nut

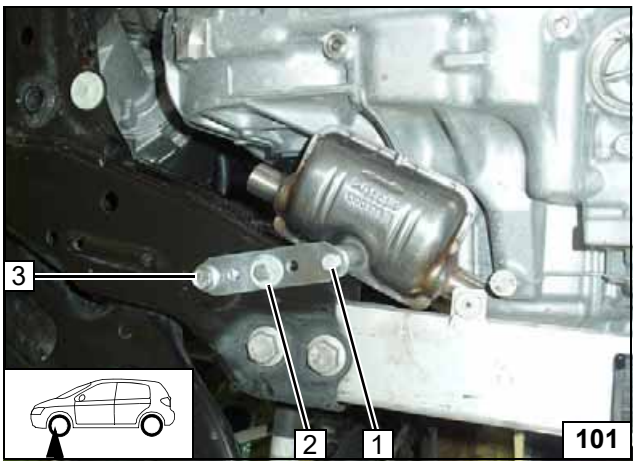
Installing rivet nut



Align exhaust silencer **2** with transmission while keeping a distance of at least 20mm. Copy hole pattern **1**.

1 Ø7 hole
3 Mount M8x20 bolt, premounted perforated bracket, loosely

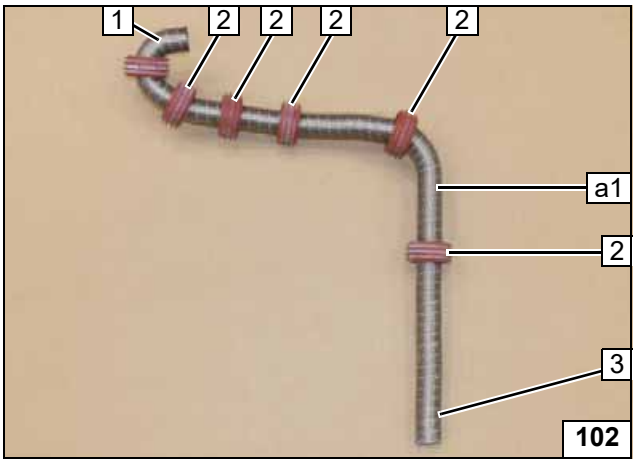
Installing exhaust silencer



Tighten bolt **1**.

2 M6x20 bolt, large diameter washer, flanged nut
3 M8x20 bolt, spring lock washer

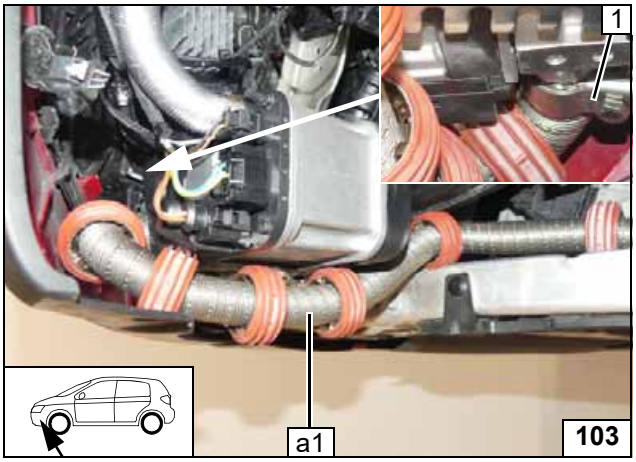
Installing exhaust silencer



All variants with ASG

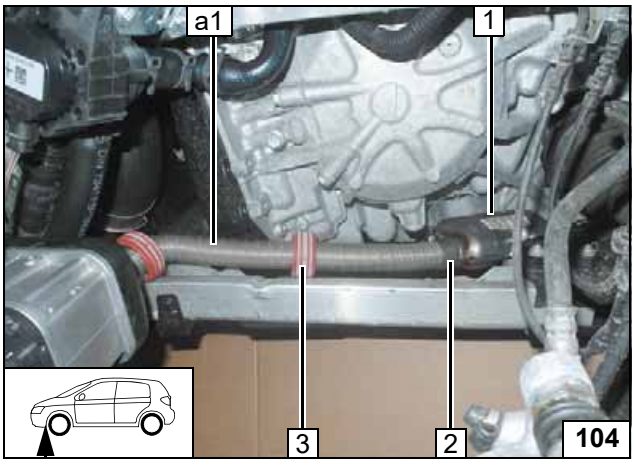
1 Mounting side for the heater
2 Spacer bracket [6x]
3 Mounting side for the exhaust silencer

Preparing exhaust pipe a1



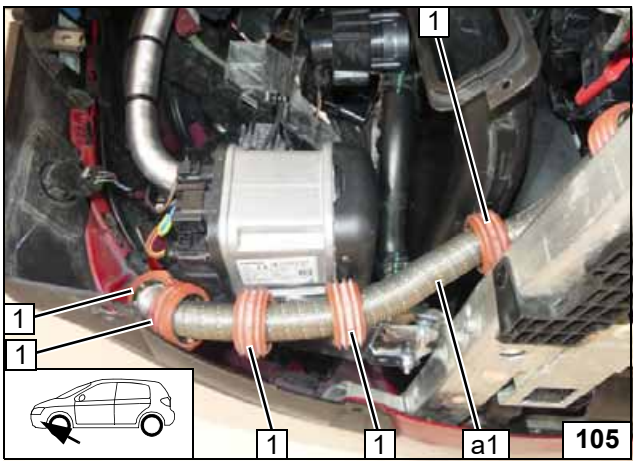
1 Hose clamp

Installing exhaust pipe a1



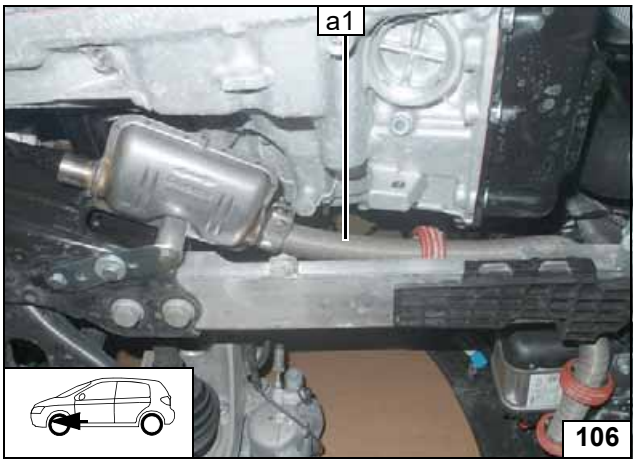
1 Exhaust silencer
2 Hose clamp
3 Align spacer bracket

Installing exhaust pipe a1



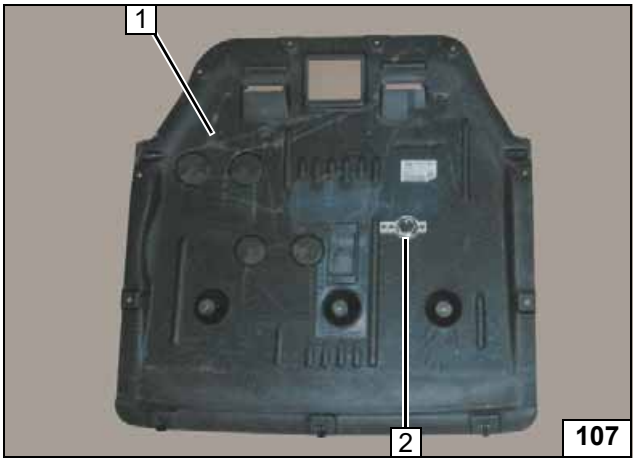
1 Spacer bracket [5x]

Aligning spacer bracket



Ensure sufficient distance from neighbouring components, correct if necessary.

Checking distance

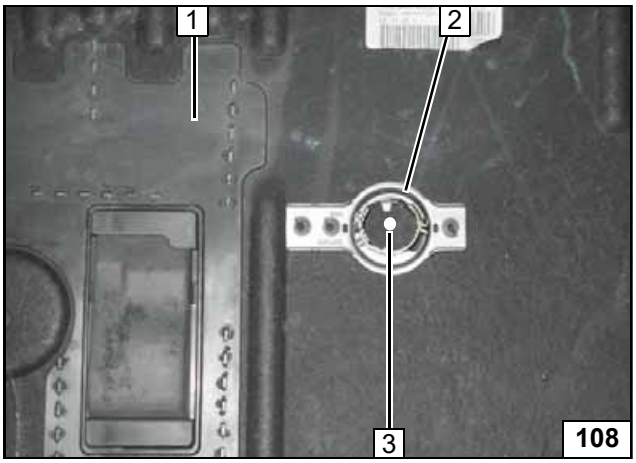


Exhaust end fastener installation in case of SG and ASG

Vehicles with SG

1 Lower engine cover
2 Exhaust end fastener

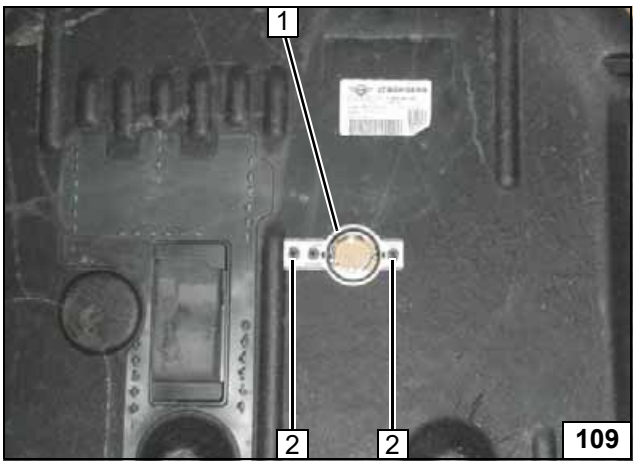
View of exhaust end fastener installation position



Align exhaust end fastener **2** with lower engine cover **1** as shown.

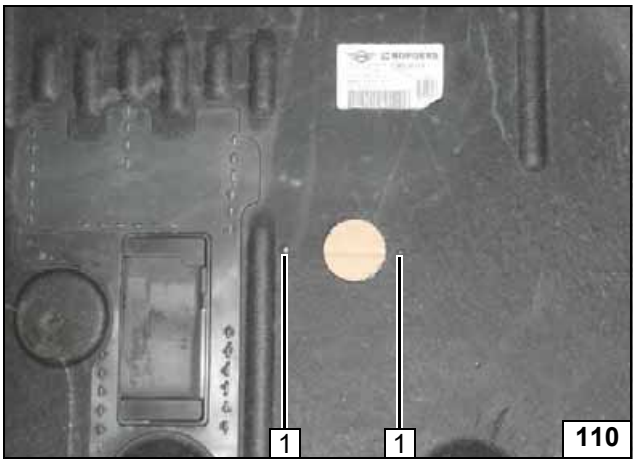
3 Hole pattern, hole in accordance with work step 1 of the installation instructions

Hole in lower engine cover



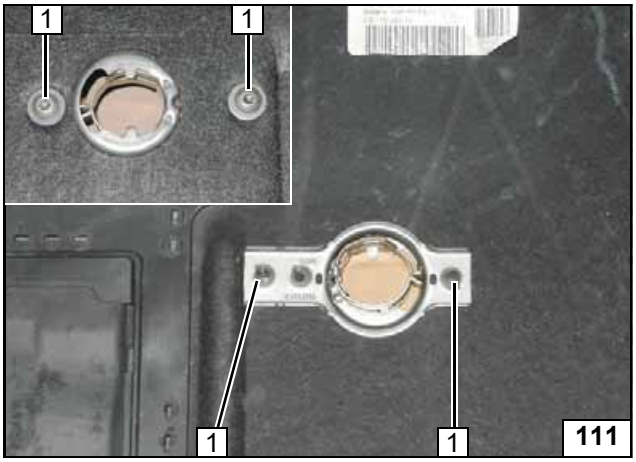
Position exhaust end fastener **1** in accordance with work step 3 of the installation instructions and copy hole pattern **2** [2x].

Copying hole pattern



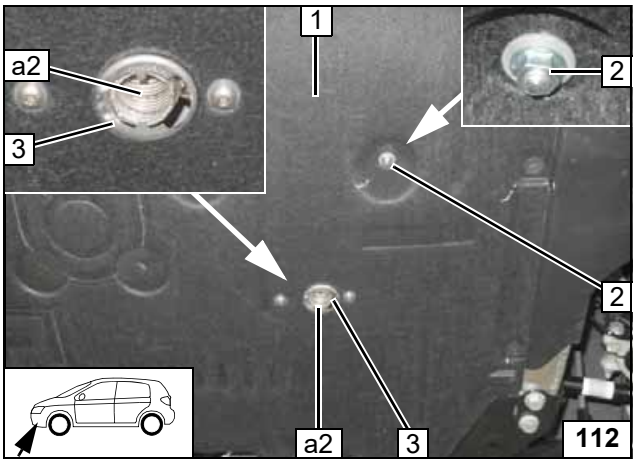
Hole **1** [2x] in accordance with work step 4 of the installation instructions.

Holes in lower engine cover



1 5x13 self-tapping screw [2x] in accordance with work step 5 of the installation instructions

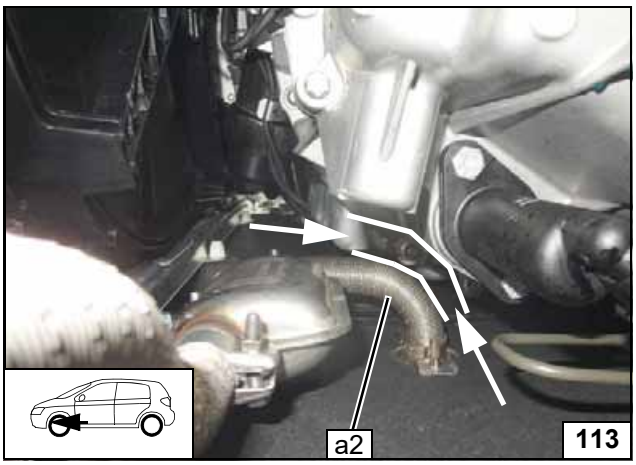
Installing exhaust end fastener



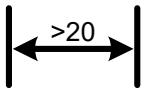
Install lower engine cover **1**.
Install exhaust pipe **a2** in accordance with work steps 6 - 8 of the installation instructions.

2 Large diameter washer, flanged nut on exhaust silencer fastening screw
3 Exhaust end fastener

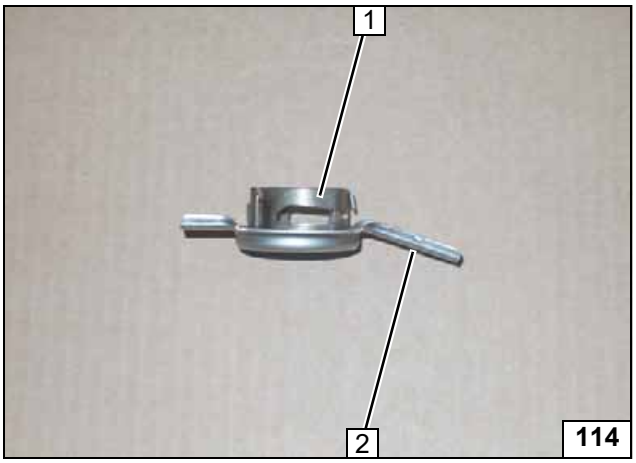
Installing exhaust pipe a2



Ensure sufficient distance from neighbouring components, correct if necessary.



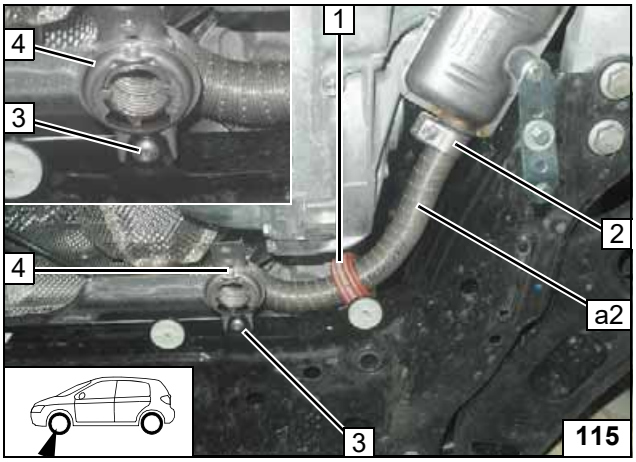
Checking distance



Vehicles with ASG and plastic underride protection

1 Exhaust end fastener
2 Bend wing by 20°

Preparing exhaust end fastener



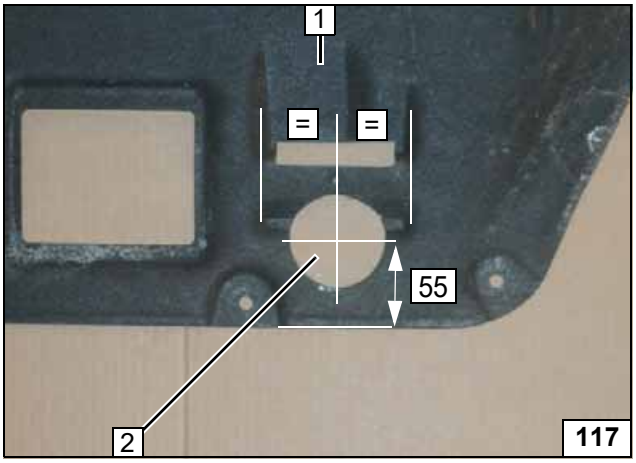
Install exhaust pipe **a2** in accordance with work steps 6-8 of the installation instructions in exhaust end fastener **4**.

1 Align spacer bracket with transmission and plastic plug
2 Hose clamp
3 5x13 self-tapping screw in accordance with work step 5 of the installation instructions, existing hole

Installing exhaust end fastener

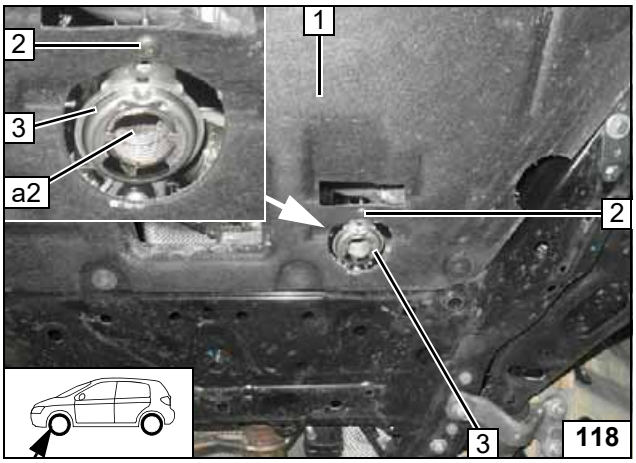
1 Lower engine cover (inside)
2 Hole for exhaust end fastener

View of hole for exhaust outlet



1 Lower engine cover (outside)
2 Ø60 hole

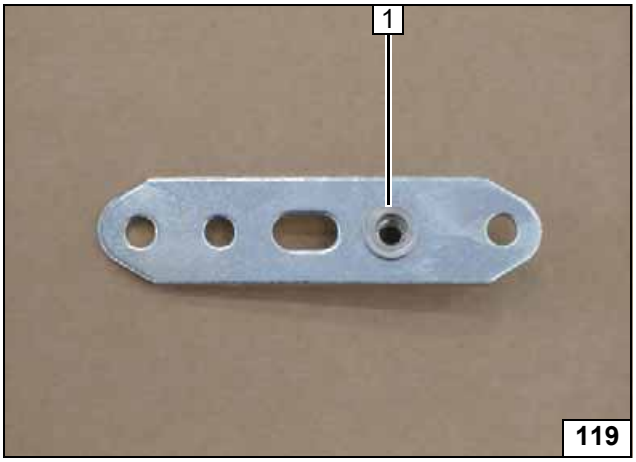
Hole for exhaust outlet



Install lower engine cover **1**.
5x13 self-tapping screw **2** through lower engine cover in accordance with work step 5 of the installation instructions.

3 Exhaust end fastener

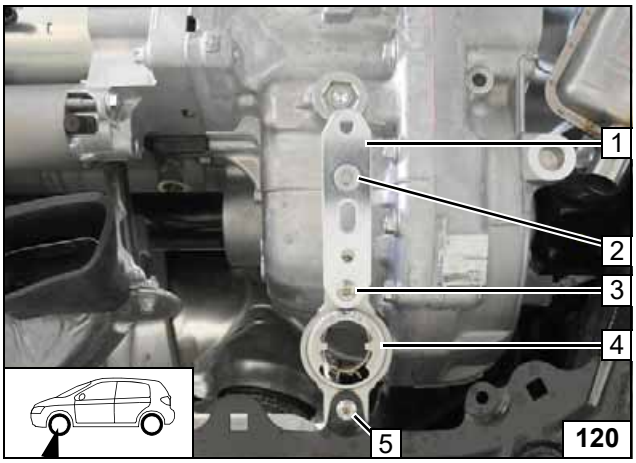
Installing exhaust end fastener



Vehicles with ASG and aluminium underride protection

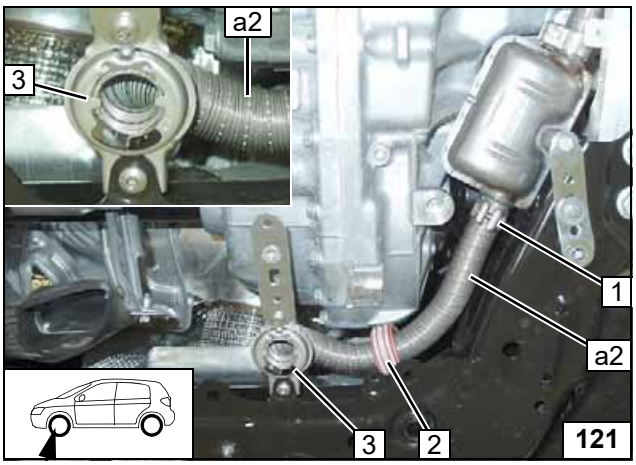
1 Enlarge hole to Ø9, insert rivet nut

Preparing perforated bracket for exhaust end fastener



1 Perforated bracket
2 Rivet nut
3 5x13 self-tapping screw in accordance with work step 5 of the installation instructions
4 Exhaust end fastener
5 5x13 self-tapping screw in accordance with work step 5 of the installation instructions, existing hole

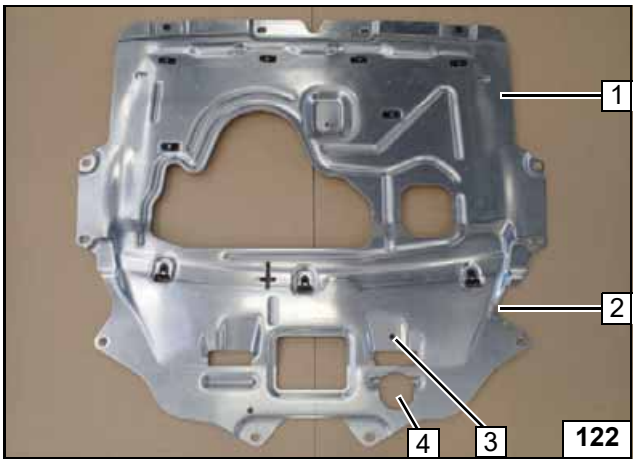
Installing exhaust end fastener



Install exhaust pipe **a2** in accordance with work steps 6-8 of the installation instructions in exhaust end fastener **3**.

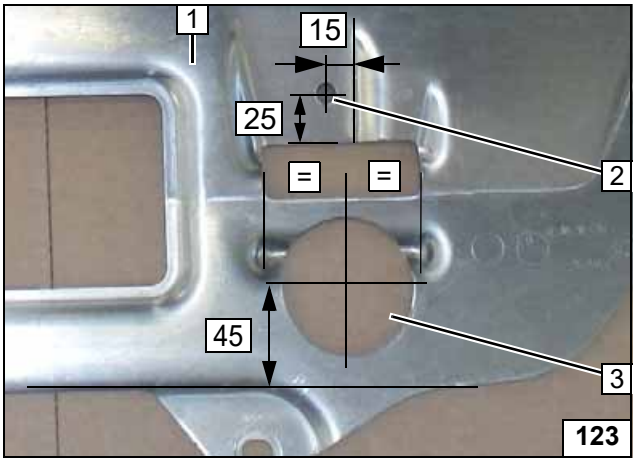
1 Hose clamp, position the clamp as shown
2 Align spacer bracket with transmission

Installing exhaust end fastener



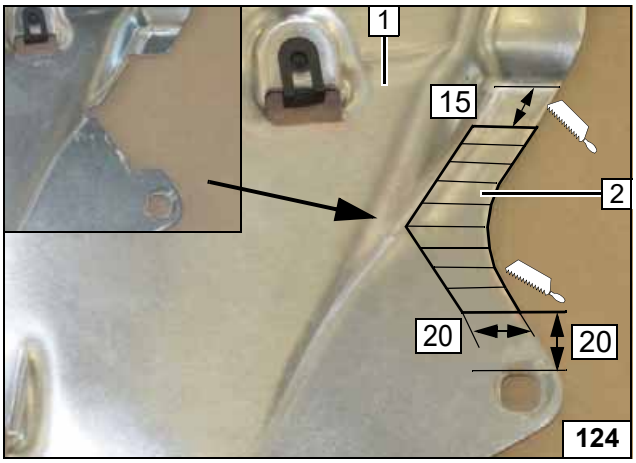
1 Underride protection (outside)
2 Required cutout
3 Hole for 5x13 self-tapping screw of exhaust end fastener
4 Hole for exhaust end fastener

View of prepared underride protection



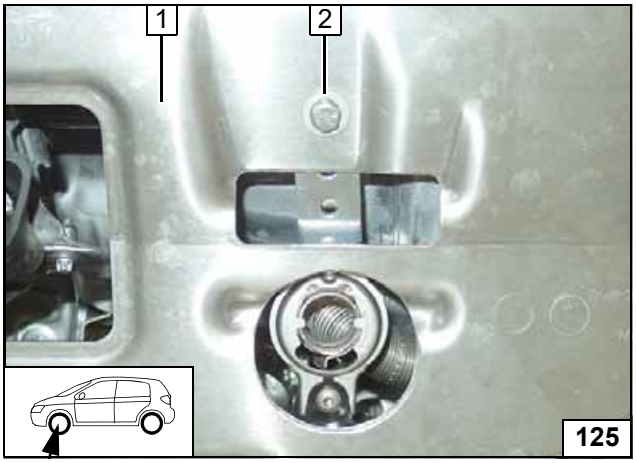
1 Underride protection (outside)
2 Ø10 hole
3 Ø60 hole

Hole for exhaust outlet



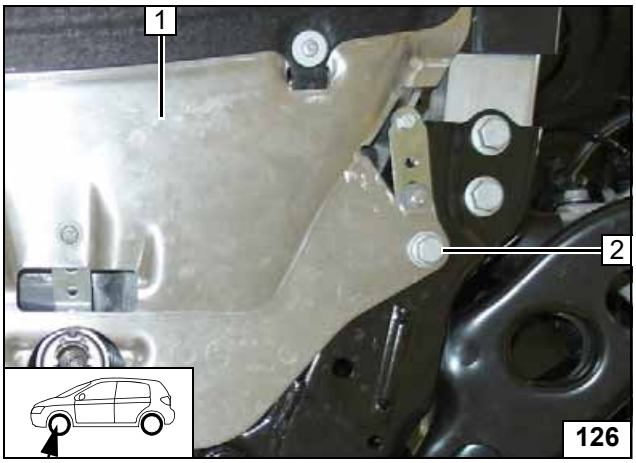
1 Underride protection (outside)
2 Remove the shaded area as shown

Adapting underride protection



1 Underride protection
2 M6x20 bolt, spring lock washer, large diameter washer, rivet nut, perforated bracket of exhaust end fastener

Installing underride protection



1 Underride protection
2 Original vehicle bolt

Installing underride protection

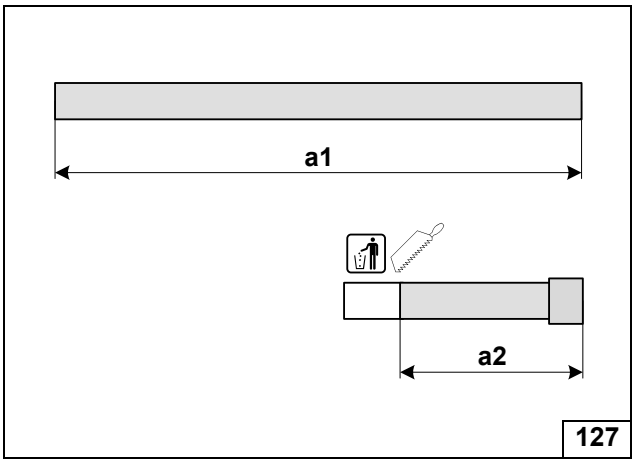
Exhaust gas for DKG

Vehicles with aluminium underride protection

Warning: this paragraph applies only to vehicles with DKG and not to vehicles with SG and ASG.

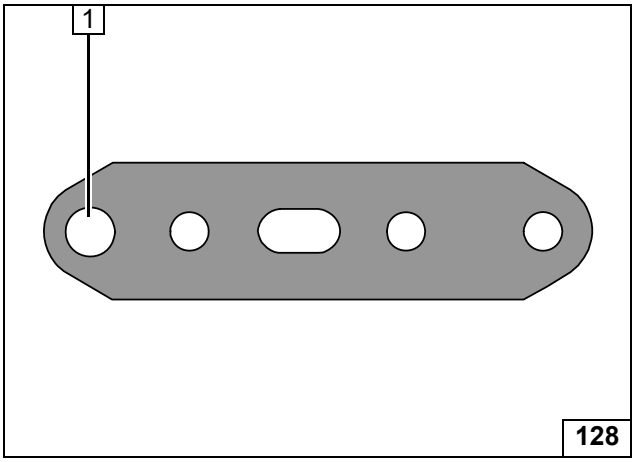
Preparing exhaust pipes

a1	1000
a2	320

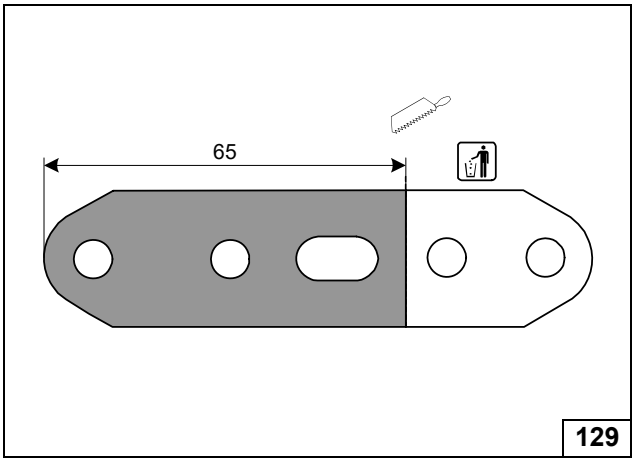


1 Enlarge hole to Ø8.5

Preparing perforated bracket 1

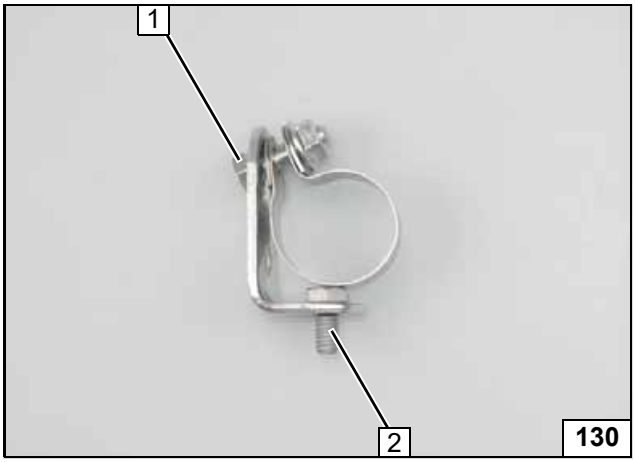


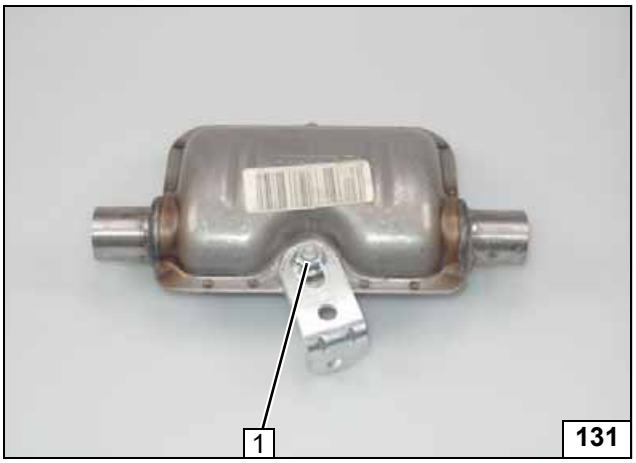
Preparing perforated bracket 2



1 Mount M6x16 bolt, angle bracket, Ø25 p-clamp, flanged nut loosely
2 Mount M6x12 bolt loosely

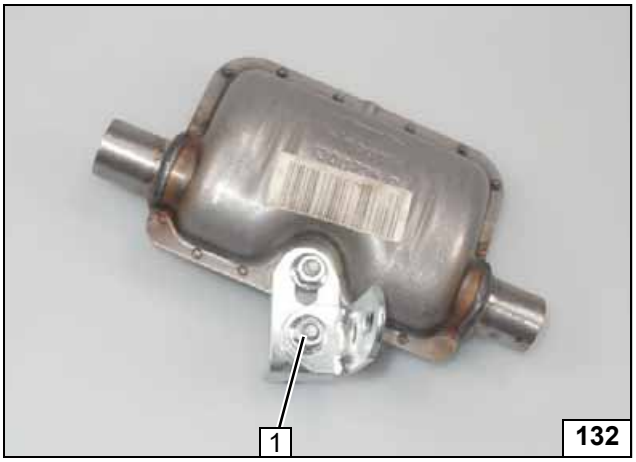
Premounting angle bracket





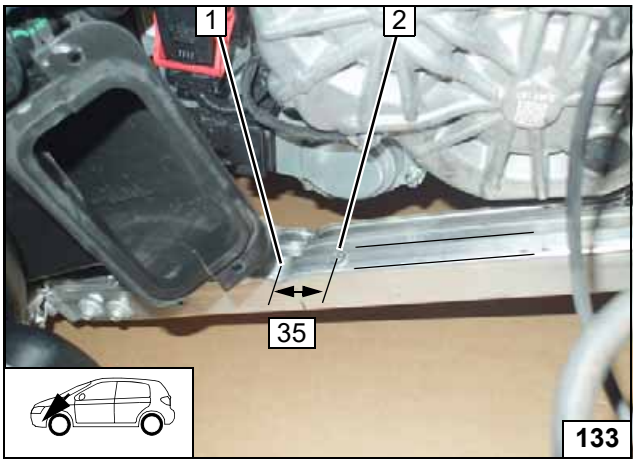
1 M6x12 bolt, exhaust silencer, angle bracket, flanged nut

Premounting exhaust silencer



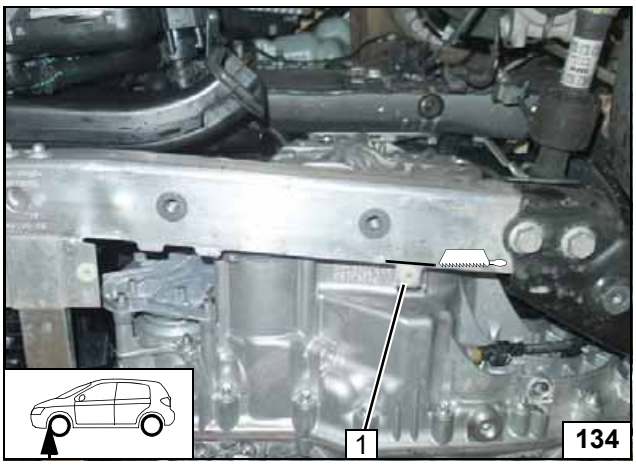
1 M6x12 bolt, angle bracket, flanged nut

Premounting exhaust silencer



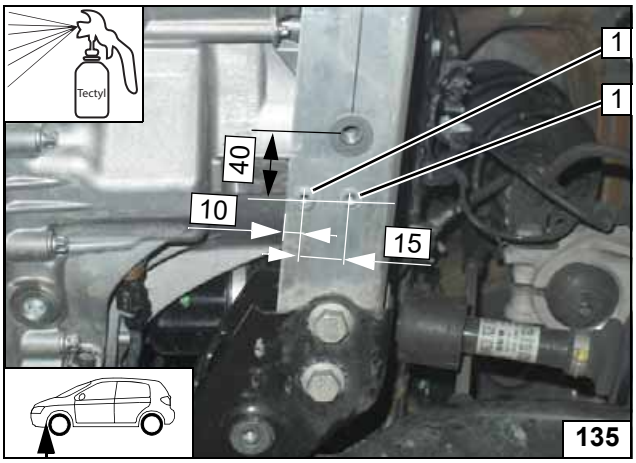
1 Measurement point, middle of the indentation in the frame
2 Ø9 hole in the centre of the frame side, M6 rivet nut

Installing rivet nut



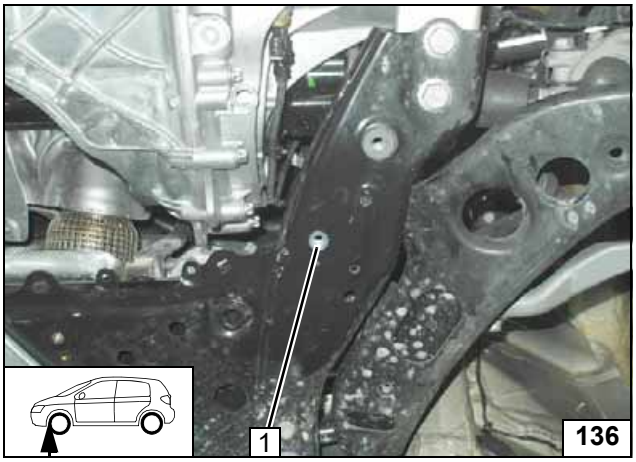
Cut off lug **1** from frame as shown and discard.

Installing rivet nut



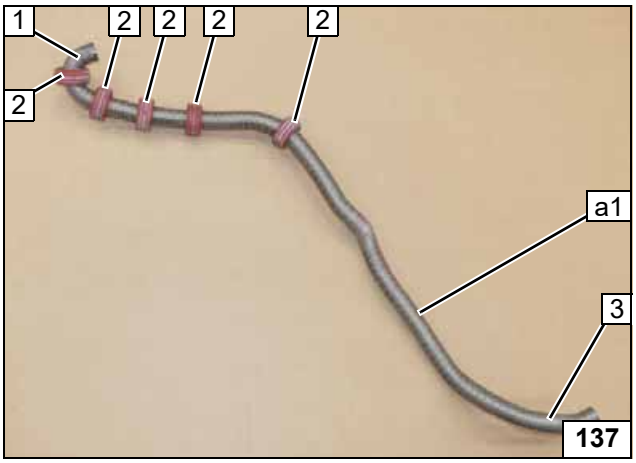
1 Ø9 hole, M6 rivet nut

Installing rivet nuts



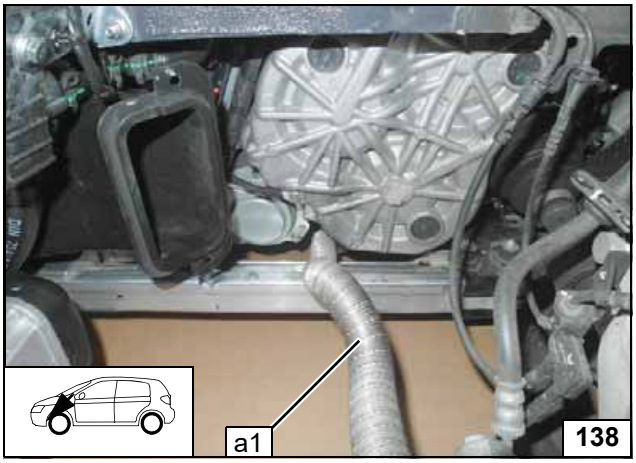
Insert M8 rivet nut **1** in original vehicle hole.

Installing rivet nut



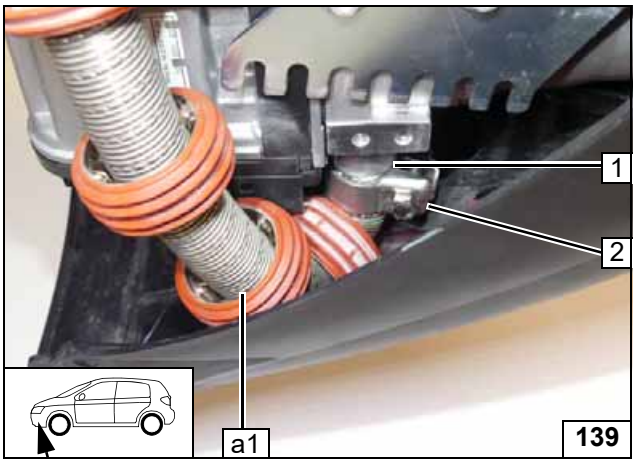
1 Mounting side for the heater
2 Spacer bracket [5x]
3 Mounting side for the exhaust silencer

Preparing exhaust pipe a1



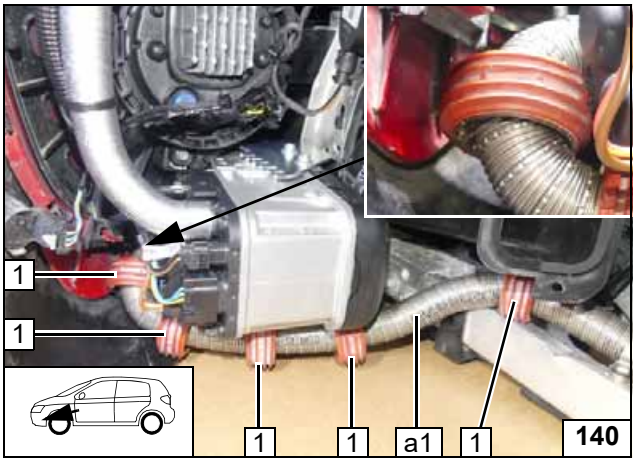
Insert exhaust pipe **a1** with mounting side for the exhaust silencer between transmission and frame as shown.

Repositioning exhaust pipe a1



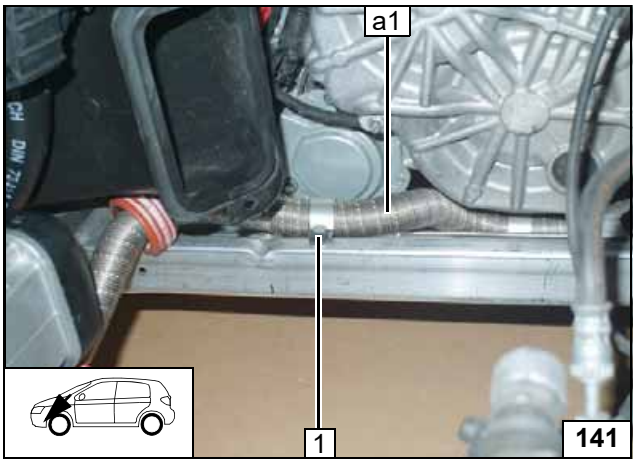
1 Heater exhaust connection piece
2 Hose clamp

Installing exhaust pipe a1



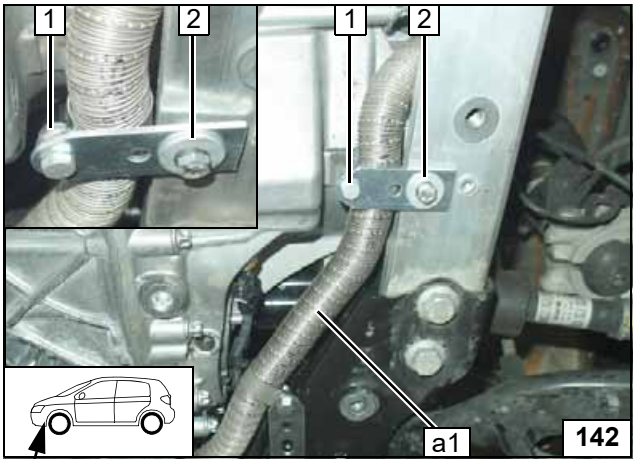
Position spacer bracket **1** as shown.

Aligning exhaust pipe a1



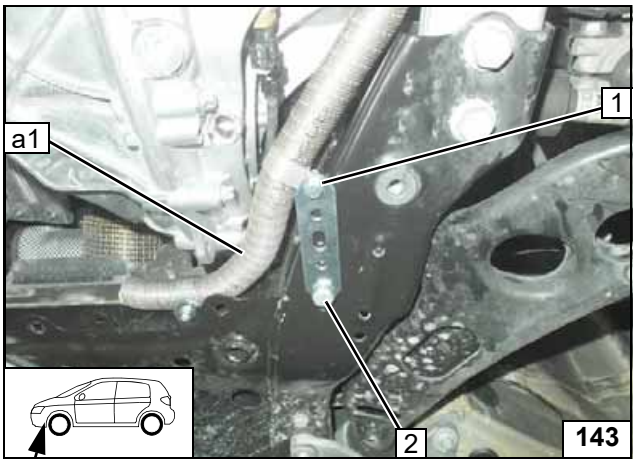
1 M6x20 bolt, spring lock washer, Ø25 p-clamp, premounted rivet nut

Installing exhaust pipe a1



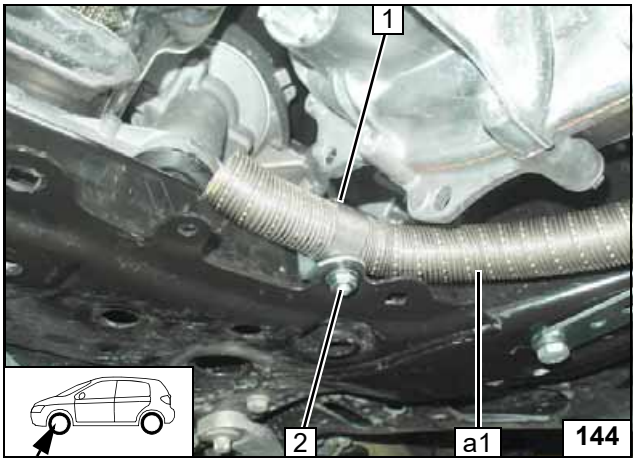
1 M6x12 bolt, perforated bracket 2, Ø25 p-clamp, flanged nut
2 M6x16 bolt, spring lock washer, large diameter washer, perforated bracket 2, premounted rivet nut

Installing exhaust pipe a1



1 M6x20 bolt, perforated bracket 1, Ø25 p-clamp, flanged nut
2 M8x20 bolt, spring lock washer, perforated bracket 1, premounted rivet nut

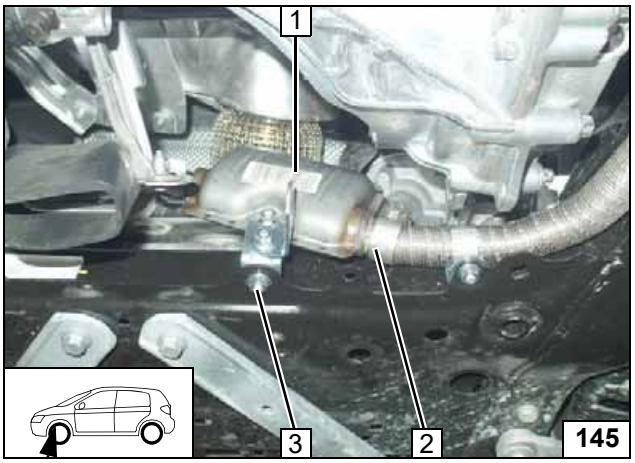
Installing exhaust pipe a1



Slide premounted angle bracket with pipe clamp over exhaust pipe **a1** and tighten premounted M6x16 bolt **1** (covered).

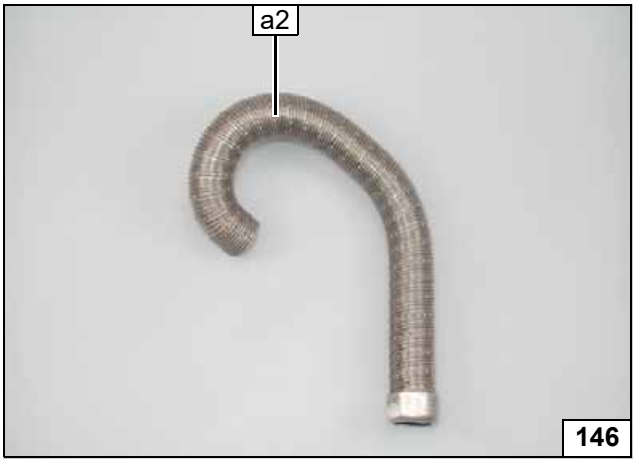
2 Premounted M6x12 bolt , angle bracket, original vehicle hole in carrier, flanged nut

Installing exhaust pipe a1

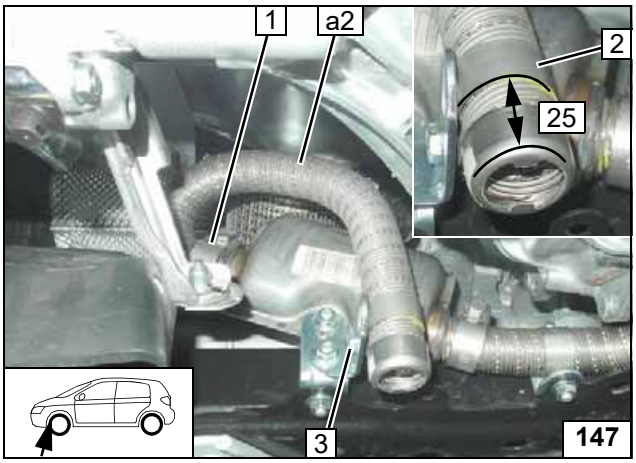


1 Exhaust silencer
2 Hose clamp
3 M6x12 bolt, premounted angle bracket, original vehicle hole in frame, flanged nut

Installing exhaust silencer

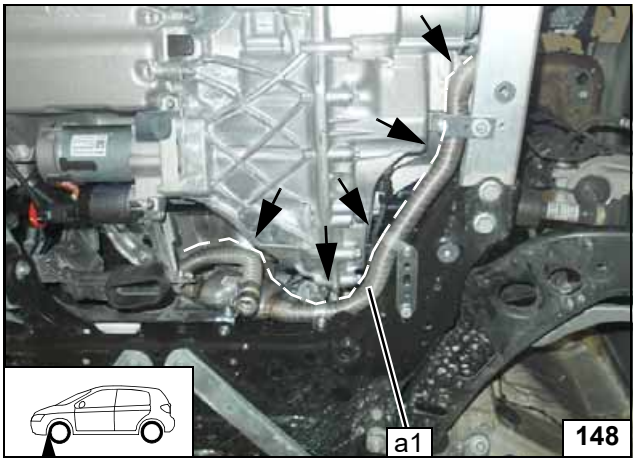


Preparing exhaust pipe a2



1 Hose clamp
2 Ø25 p-clamp
3 M6x16 bolt, premounted angle bracket, Ø25 p-clamp **2**, flanged nut

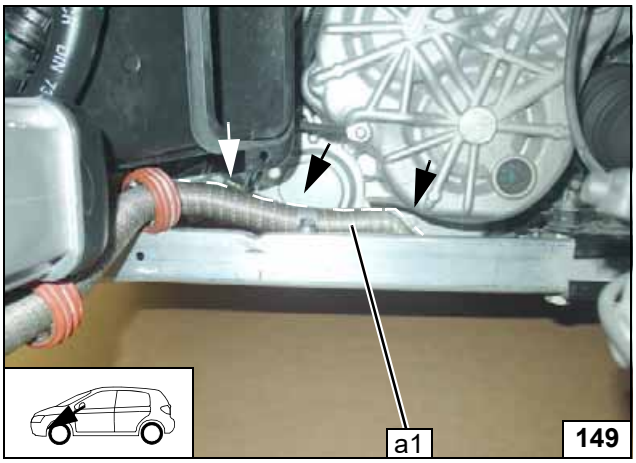
Installing exhaust pipe a2



Ensure sufficient distance between exhaust pipes **a1** as well as **a2** and transmission, correct if necessary!

≥ 10 mm

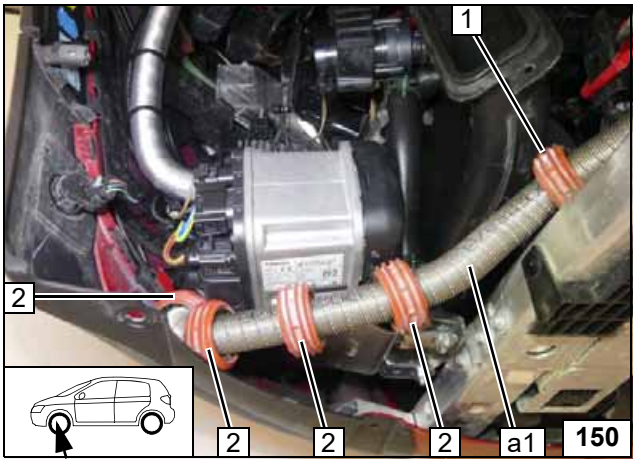
Checking distance



Ensure sufficient distance between exhaust pipe **a1** and transmission, correct if necessary!

≥ 10 mm

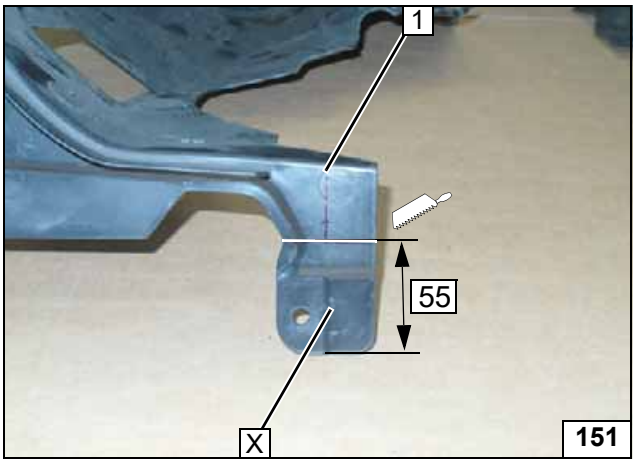
Checking distance



Ensure sufficient distance from neighbouring components, correct if necessary.

Align spacer bracket **1** between frame and ventilation shaft.
Align spacer bracket **2** with heater.

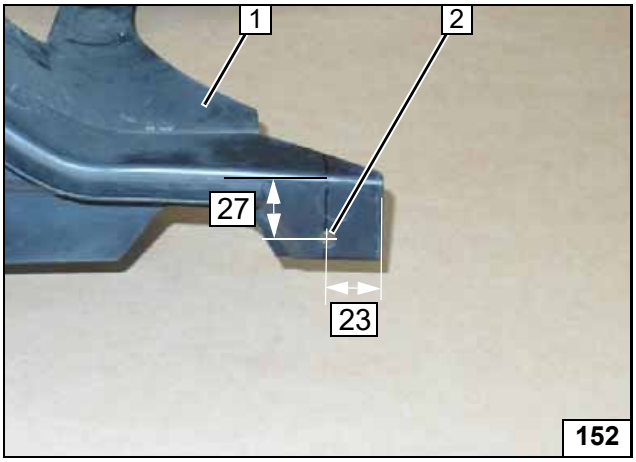
Aligning exhaust pipe a1



1 Wheel well trim

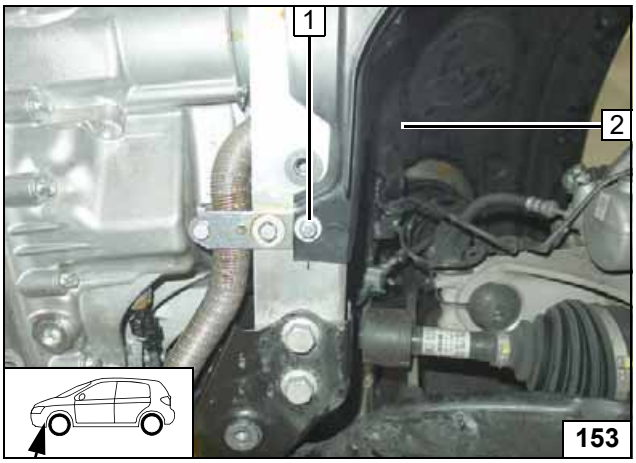
X =

Adapting wheel well trim on driver's side



1 Wheel well trim
2 Ø7 hole

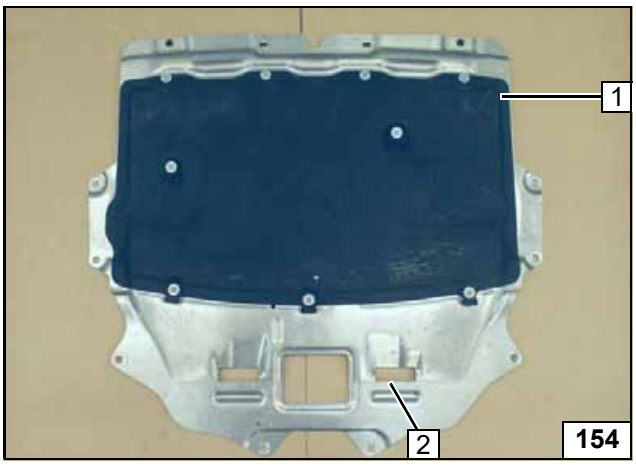
Adapting wheel well trim on driver's side



Mount **2** wheel well trim.

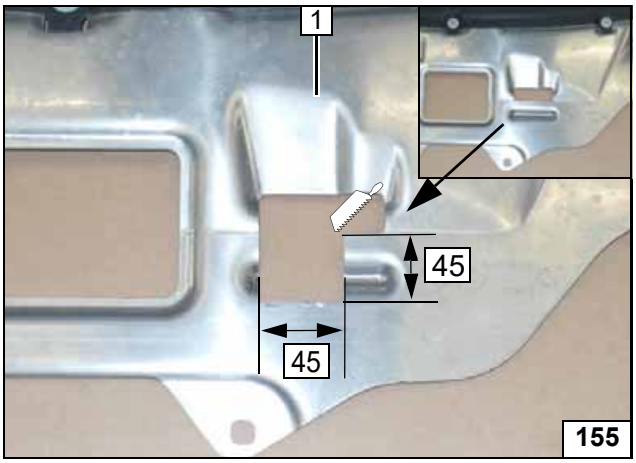
1 M6x20 bolt, spring lock washer, large diameter washer, hole drilled in wheel-well inner panel, premounted rivet nut

Mounting wheel well trim



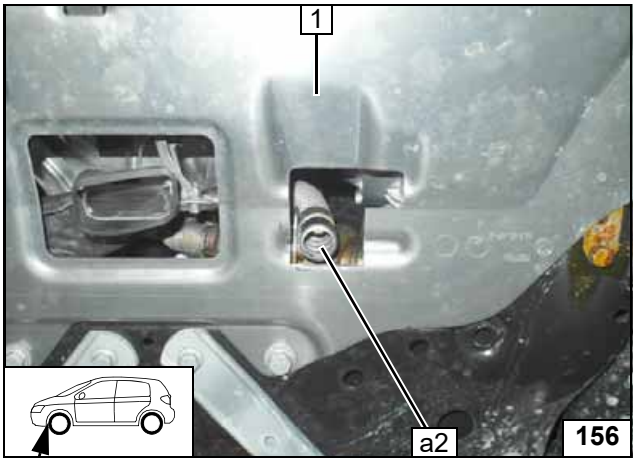
1 Underride protection (outside)
2 Location for cutout

View of underride protection



1 Underride protection (outside)

Adapting underride protection



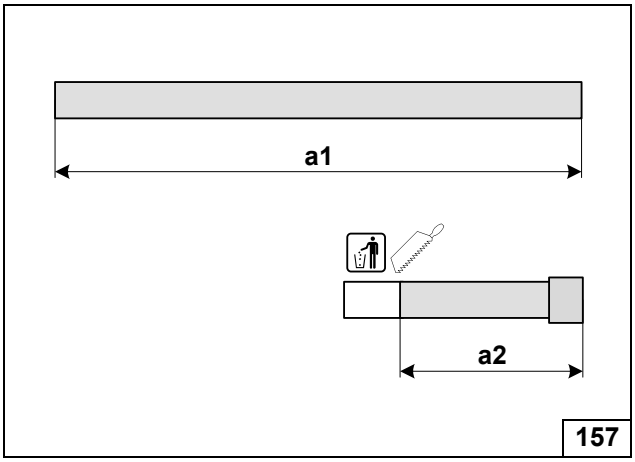
Install underride protection **1**.

Ensure sufficient distance between exhaust pipe **a2** and underride protection, correct if necessary!

Checking distance

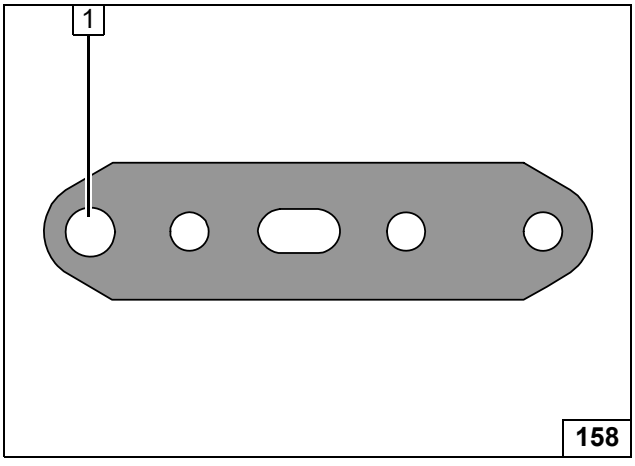
Vehicles with felt underride protection

Warning: this paragraph applies only to vehicles with DKG and not to vehicles with SG and ASG.



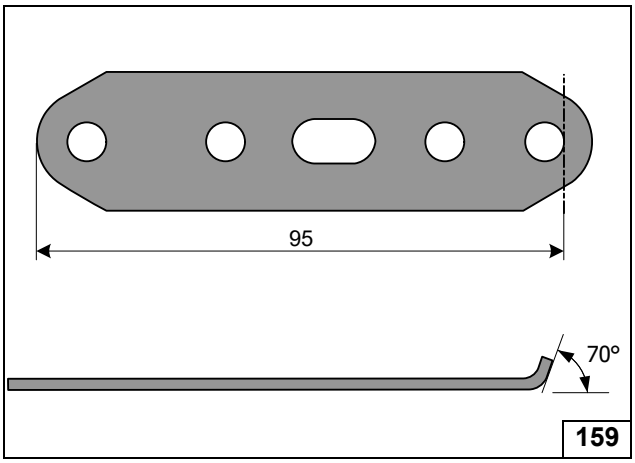
a1	1000
a2	320

Preparing exhaust pipes

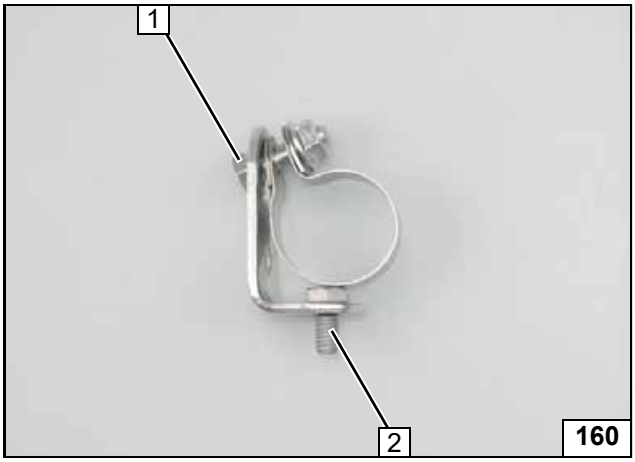


1 Enlarge hole to Ø8.5

Preparing perforated bracket 1

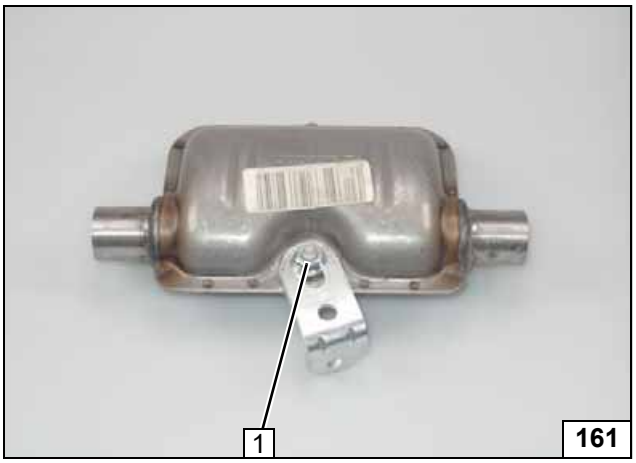


Preparing perforated bracket 2



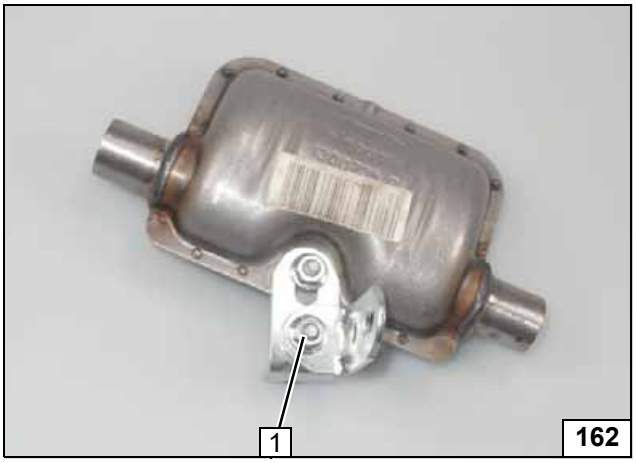
1 Mount M6x16 bolt, angle bracket, Ø25 p-clamp, flanged nut loosely
2 Mount M6x12 bolt loosely

Premounting angle bracket



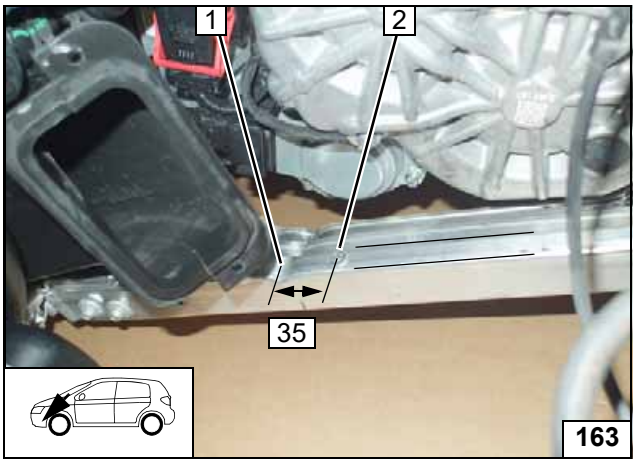
1 M6x12 bolt, exhaust silencer, angle bracket, flanged nut

Premounting exhaust silencer



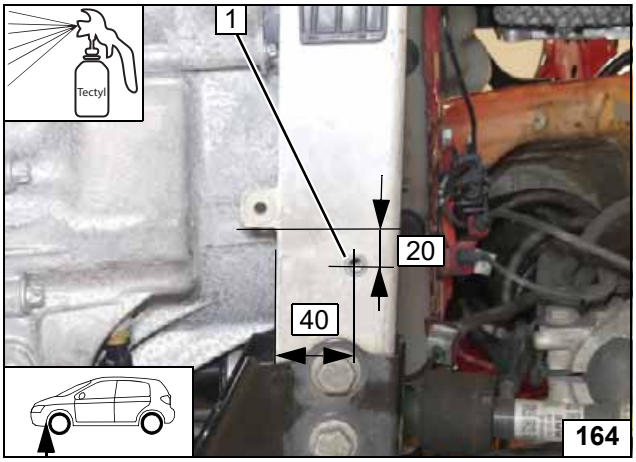
1 M6x12 bolt, angle bracket, flanged nut

Premounting exhaust silencer



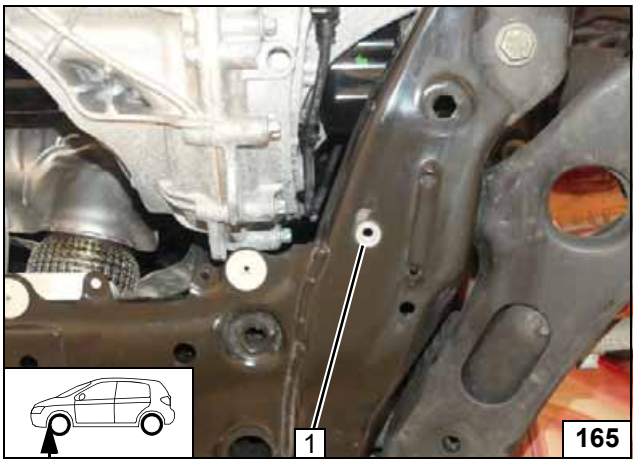
1 Measurement point, middle of the indentation in the frame
2 Ø9 hole in the centre of the frame side, M6 rivet nut

Installing rivet nut



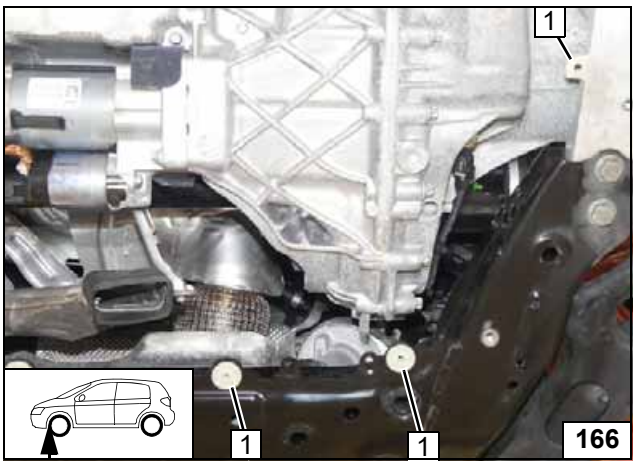
1 Ø9 hole, M6 rivet nut

Installing rivet nut



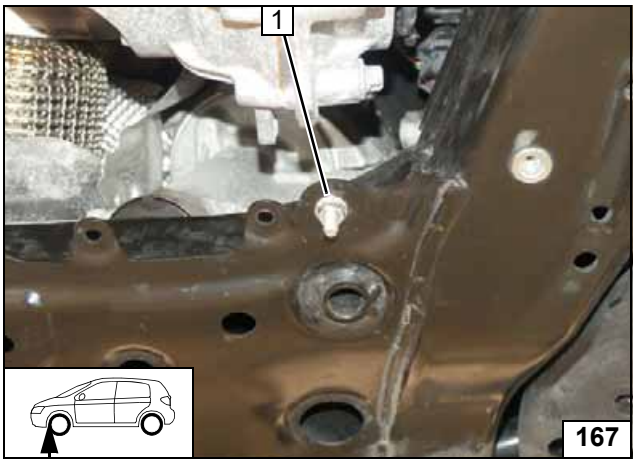
Insert M8 rivet nut **1** in original vehicle hole.

Installing rivet nut



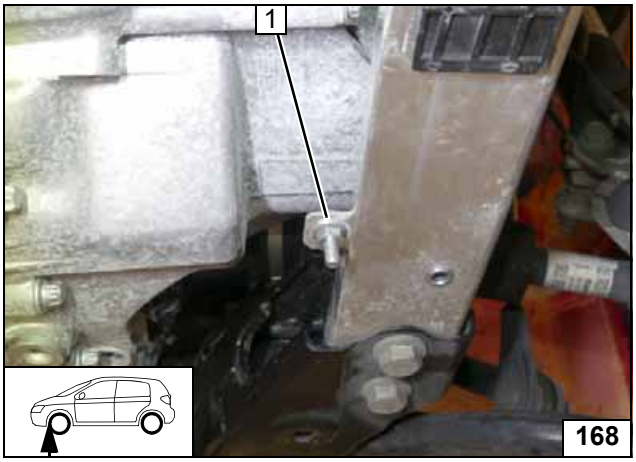
1 Plastic plug [3x]

Removing and discarding plastic plug



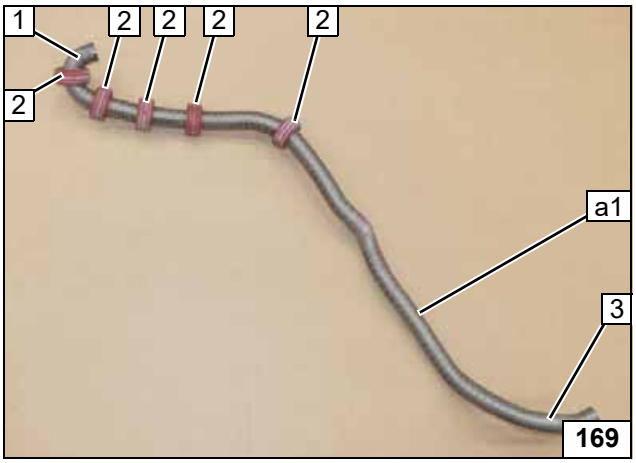
1 M6x20 bolt, large diameter washer, original vehicle hole, flanged nut

Mounting bolt



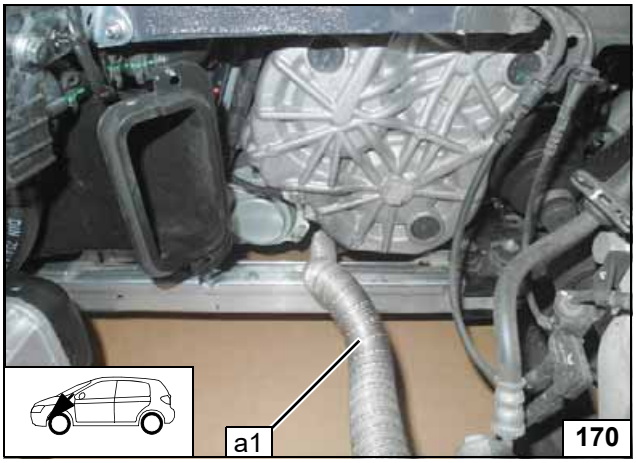
1 M6x20 bolt, large diameter washer, original vehicle hole, flanged nut

Mounting bolt



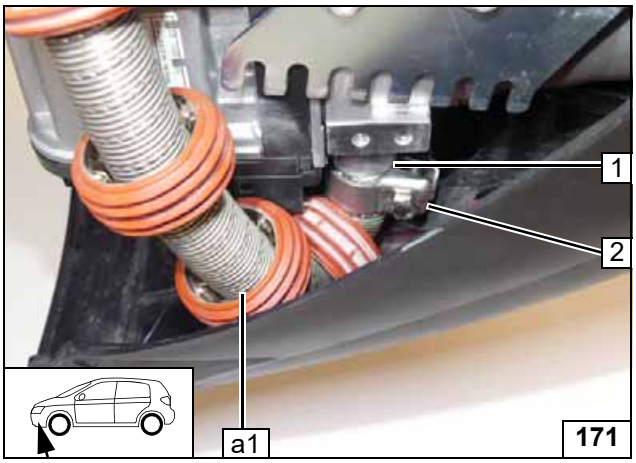
1 Mounting side for the heater
2 Spacer bracket [5x]
3 Mounting side for the exhaust silencer

Preparing exhaust pipe a1



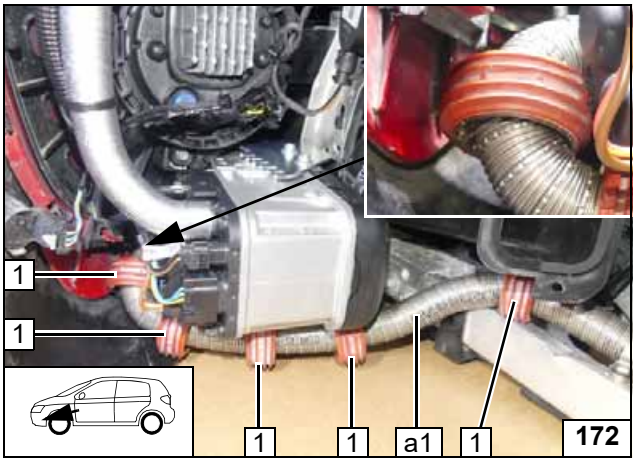
Insert exhaust pipe **a1** with mounting side for the exhaust silencer between transmission and frame as shown.

Repositioning exhaust pipe a1



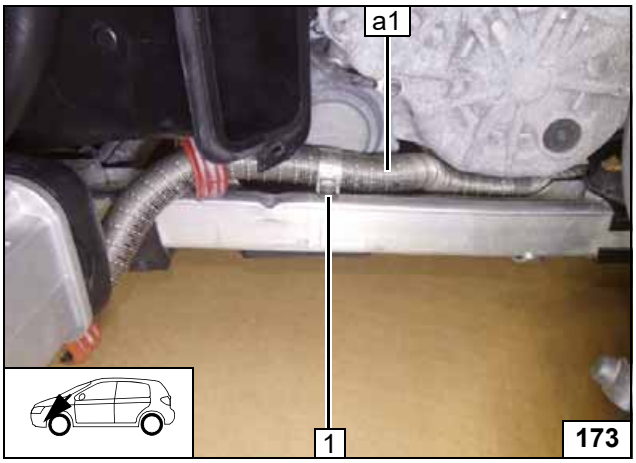
1 Heater exhaust connection piece
2 Hose clamp

Installing exhaust pipe a1



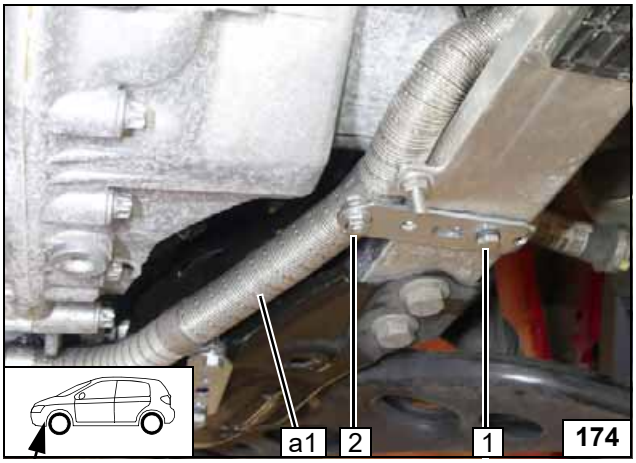
Position spacer bracket **1** as shown.

Aligning exhaust pipe a1



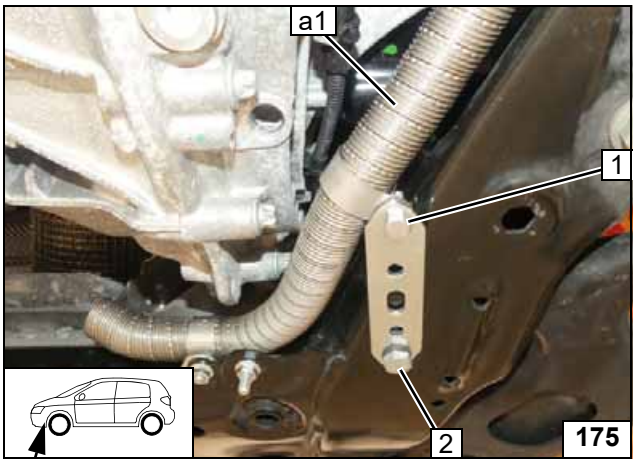
1 M6x20 bolt, spring lock washer, Ø25 p-clamp, premounted rivet nut

Installing exhaust pipe a1



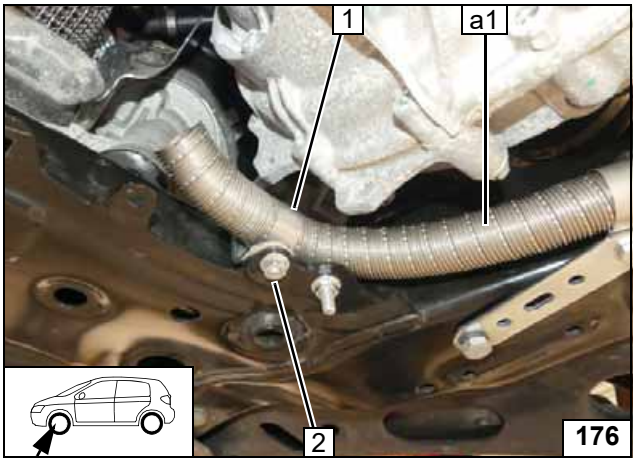
1 M6x20 bolt, spring lock washer, perforated bracket 2, premounted rivet nut
2 M6x12 bolt, Ø25 p-clamp, perforated bracket 2, flanged nut

Installing exhaust pipe a1



1 M6x20 bolt, perforated bracket 1, Ø25 p-clamp, flanged nut
2 M8x20 bolt, spring lock washer, perforated bracket 1, premounted rivet nut

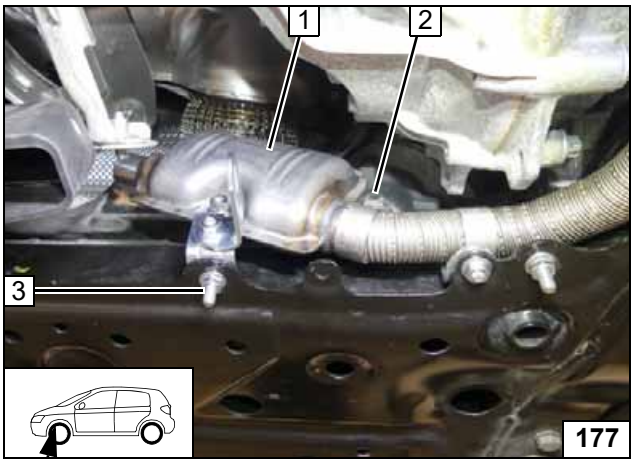
Installing exhaust pipe a1



Slide premounted angle bracket with pipe clamp over exhaust pipe **a1** and tighten premounted M6x16 bolt **1** (covered).

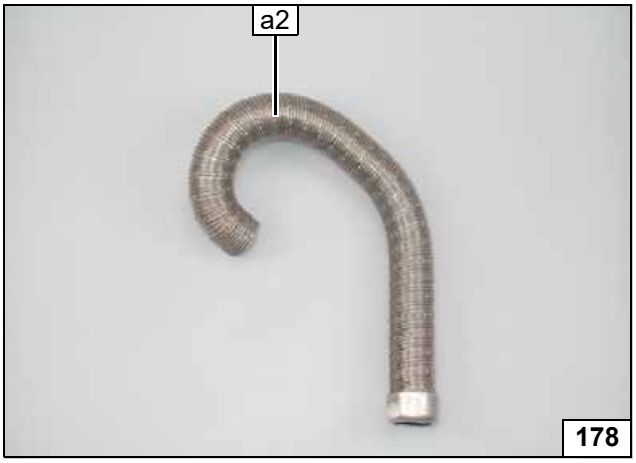
2 Premounted M6x12 bolt , angle bracket, original vehicle hole in carrier, flanged nut

Installing exhaust pipe a1

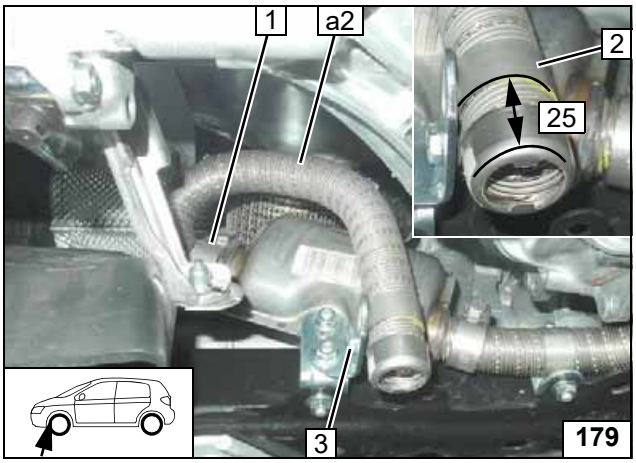


1 Premounted exhaust silencer
2 Hose clamp
3 M6x20 bolt, angle bracket, original vehicle hole in frame, flanged nut

Installing exhaust silencer

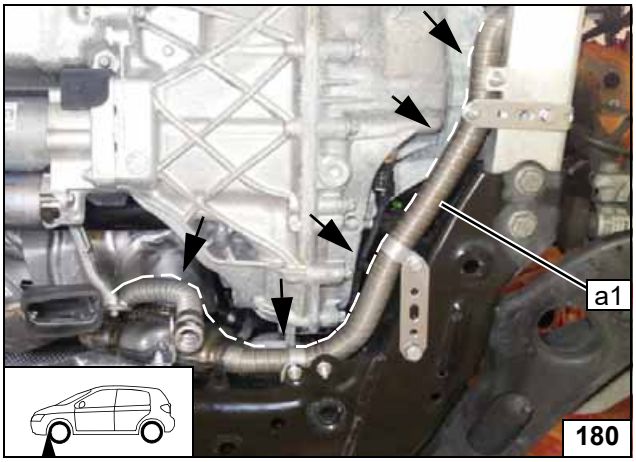


Preparing exhaust pipe a2



1 Hose clamp
2 Ø25 p-clamp
3 M6x16 bolt, premounted angle bracket, Ø25 p-clamp **2**, flanged nut

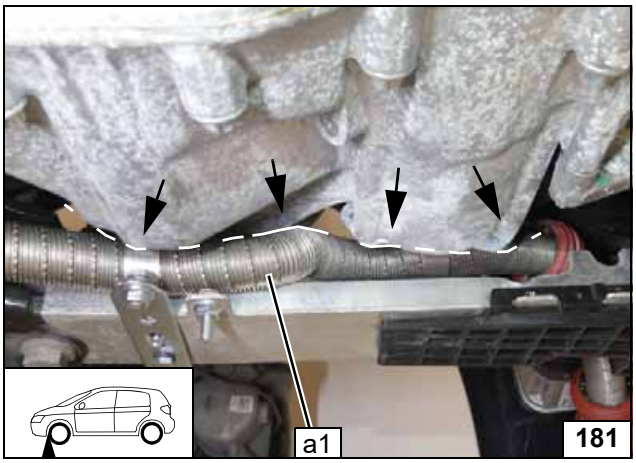
Installing exhaust pipe a2



Ensure sufficient distance between exhaust pipes **a1** as well as **a2** and transmission, correct if necessary!

≥ 10 mm

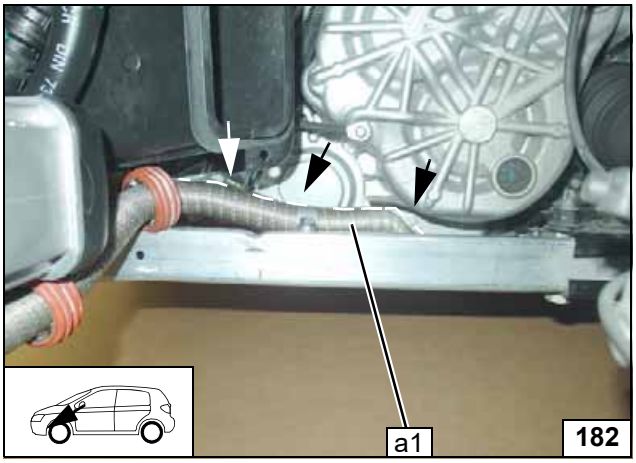
Checking distance



Ensure sufficient distance between exhaust pipe **a1** and transmission, correct if necessary!

≥ 10 mm

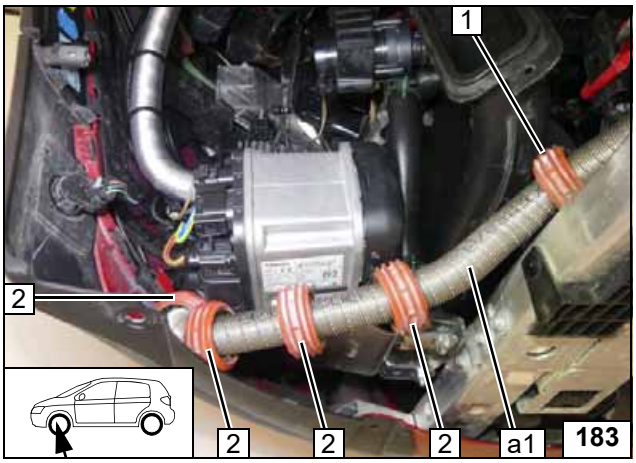
Checking distance



Ensure sufficient distance between exhaust pipe **a1** and transmission, correct if necessary!

≥ 10 mm

Checking distance



Ensure sufficient distance from neighbouring components, correct if necessary.

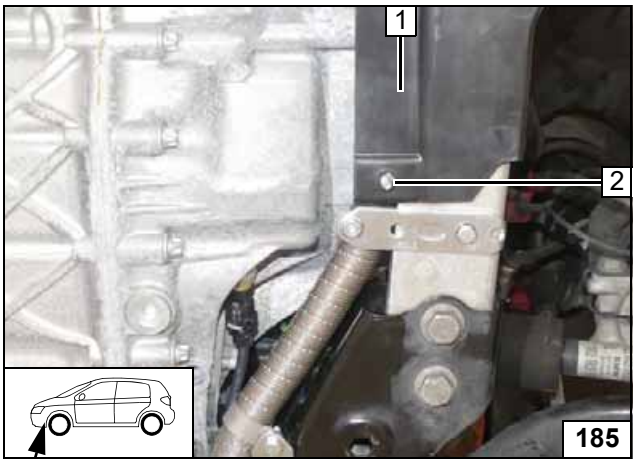
Align spacer bracket **1** between frame and ventilation shaft.
Align spacer bracket **2** with heater.

Aligning exhaust pipe a1

1 Wheel well trim

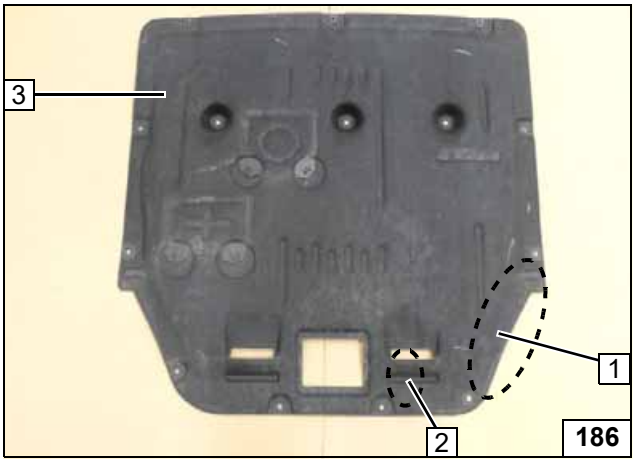
X =

Adapting wheel well trim on driver's side



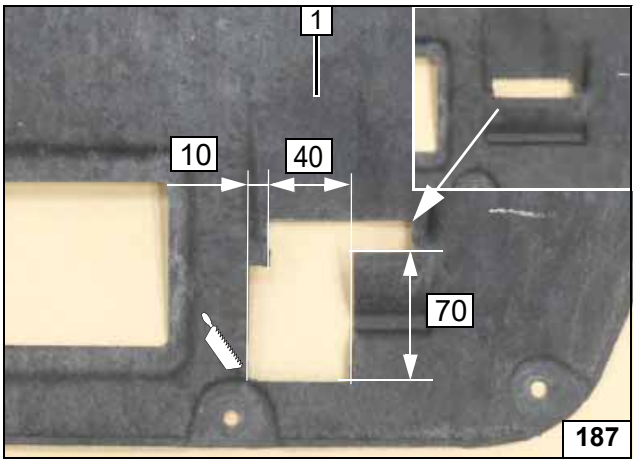
Position wheel well trim **1** over premounted bolt **2**.

Positioning wheel well trim



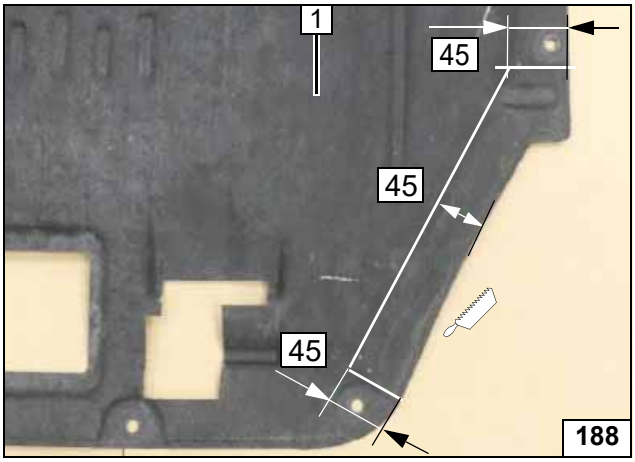
1 Location **1** for cutout
2 Location **2** for cutout
3 Underride protection (outside)

View of underride protection



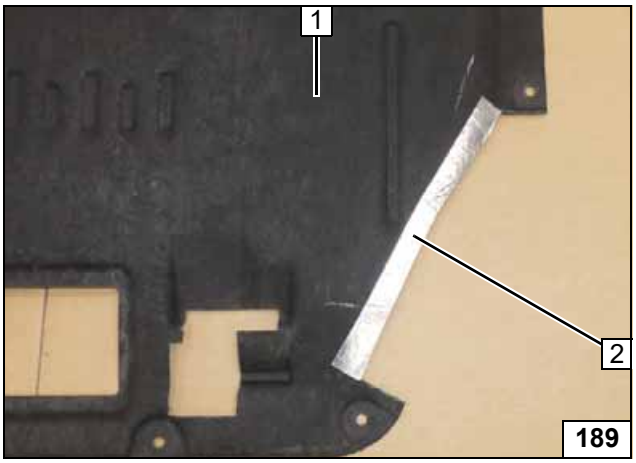
1 Underride protection (outside)

Adapting underride protection / location 2



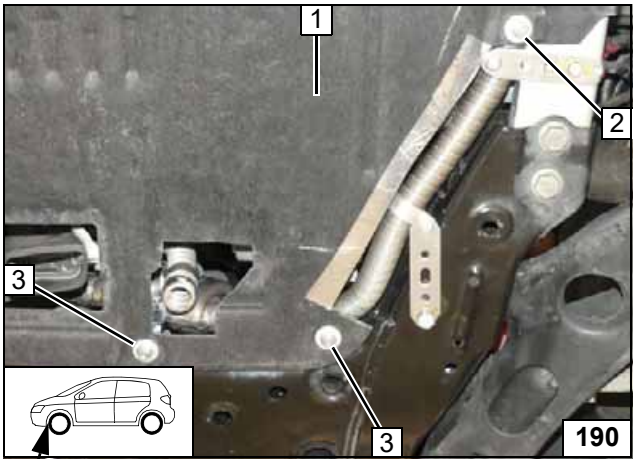
1 Underride protection (outside)

Adapting underride protection / location 1



Glue heat protection film **2** over the cutting edge of underride protection **1**.

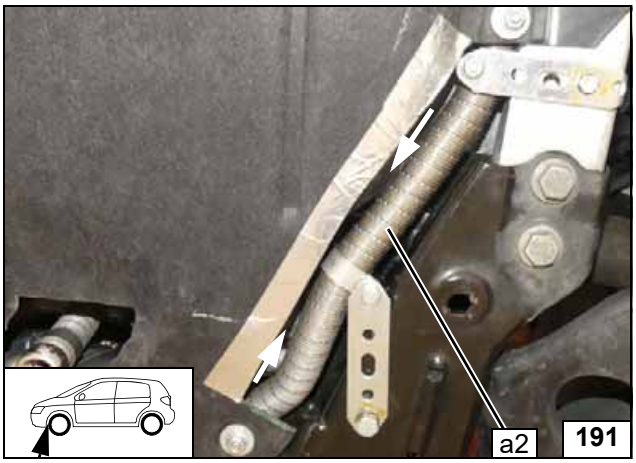
Gluing heat protection film



Install underride protection **1**.

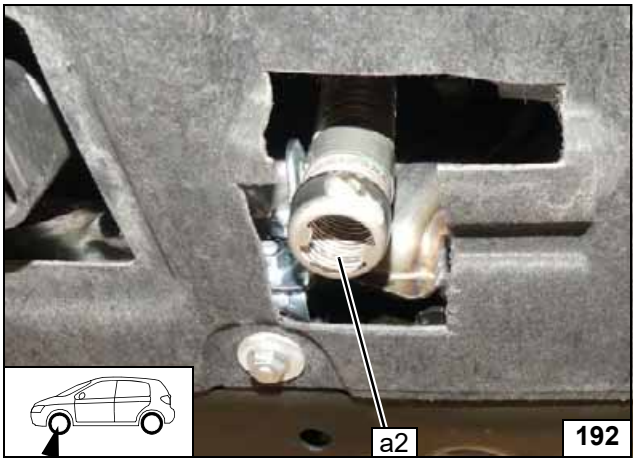
2 Premounted M6x20 bolt, wheel well trim, underride protection, flanged nut
3 Premounted M6x20 bolt, underride protection, large diameter washer, flanged nut

Installing underride protection



Ensure sufficient distance between exhaust pipe **a2** and underride protection, correct if necessary!

Checking distance



Ensure sufficient distance between exhaust pipe **a2** and underride protection, correct if necessary!

Checking distance

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).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **For initial start-up and function check, please see installation instructions.**
- **See the installation documentation in the additional 'Webasto Comfort' A/C control kit, section 'Final work', for the A/C control panel settings.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler point.**

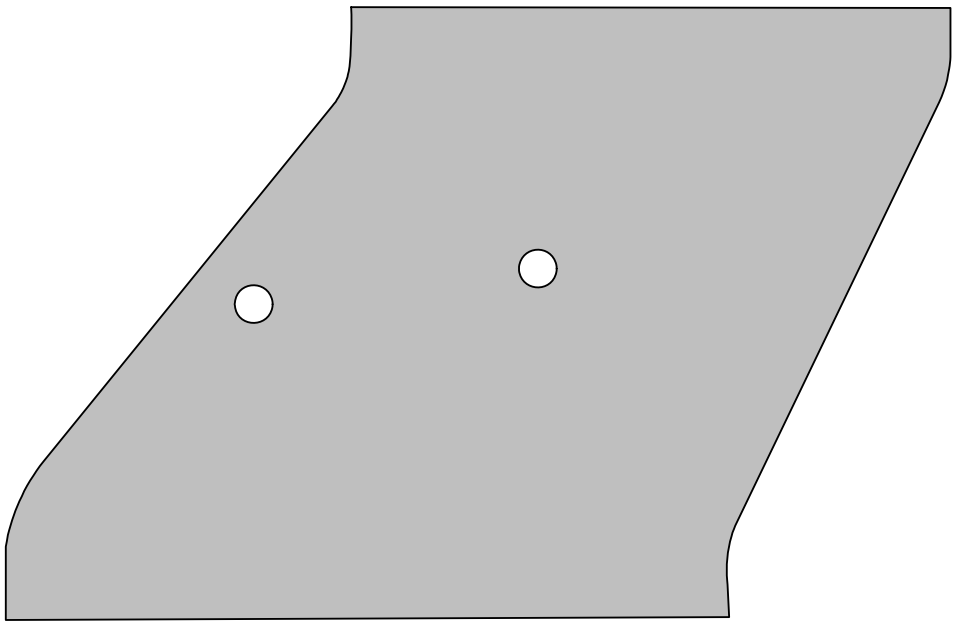
Vehicle event log after parking heating mode

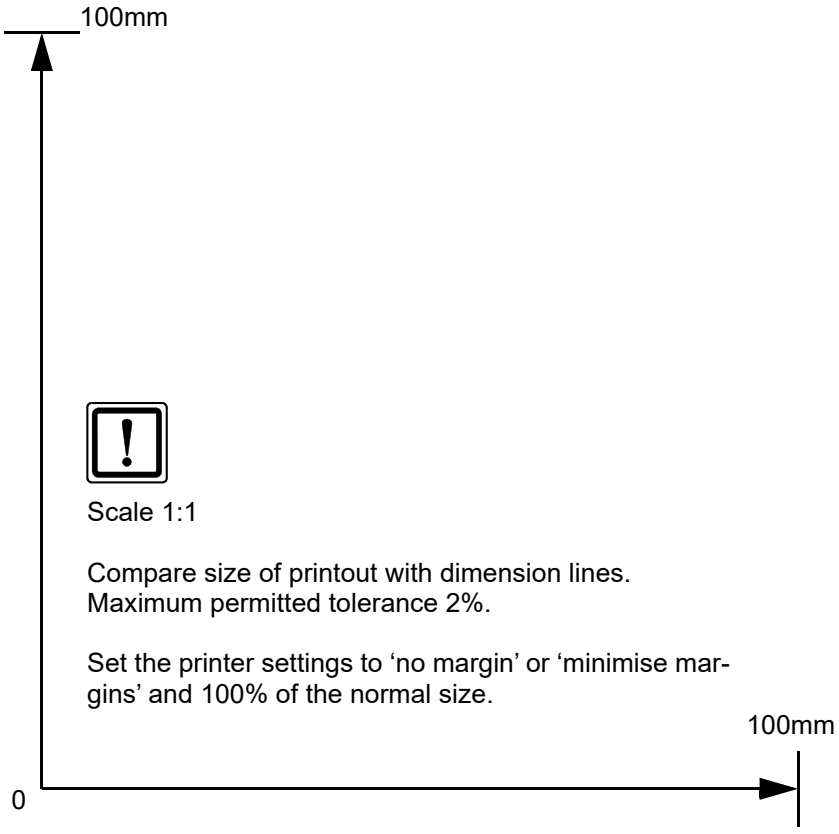
Components of the original vehicle air conditioning system are activated during parking heating mode.
Other vehicle components remain inactive, which in some circumstances may be interpreted as an error
and can be filed as such in the event log. An
increased power consumption (quiescent current) may also be registered for some vehicles.

- If an incorrect installation can be excluded, these entries are exclusively related to the parking heating mode situation and have no effect on the vehicle functions in driving mode.

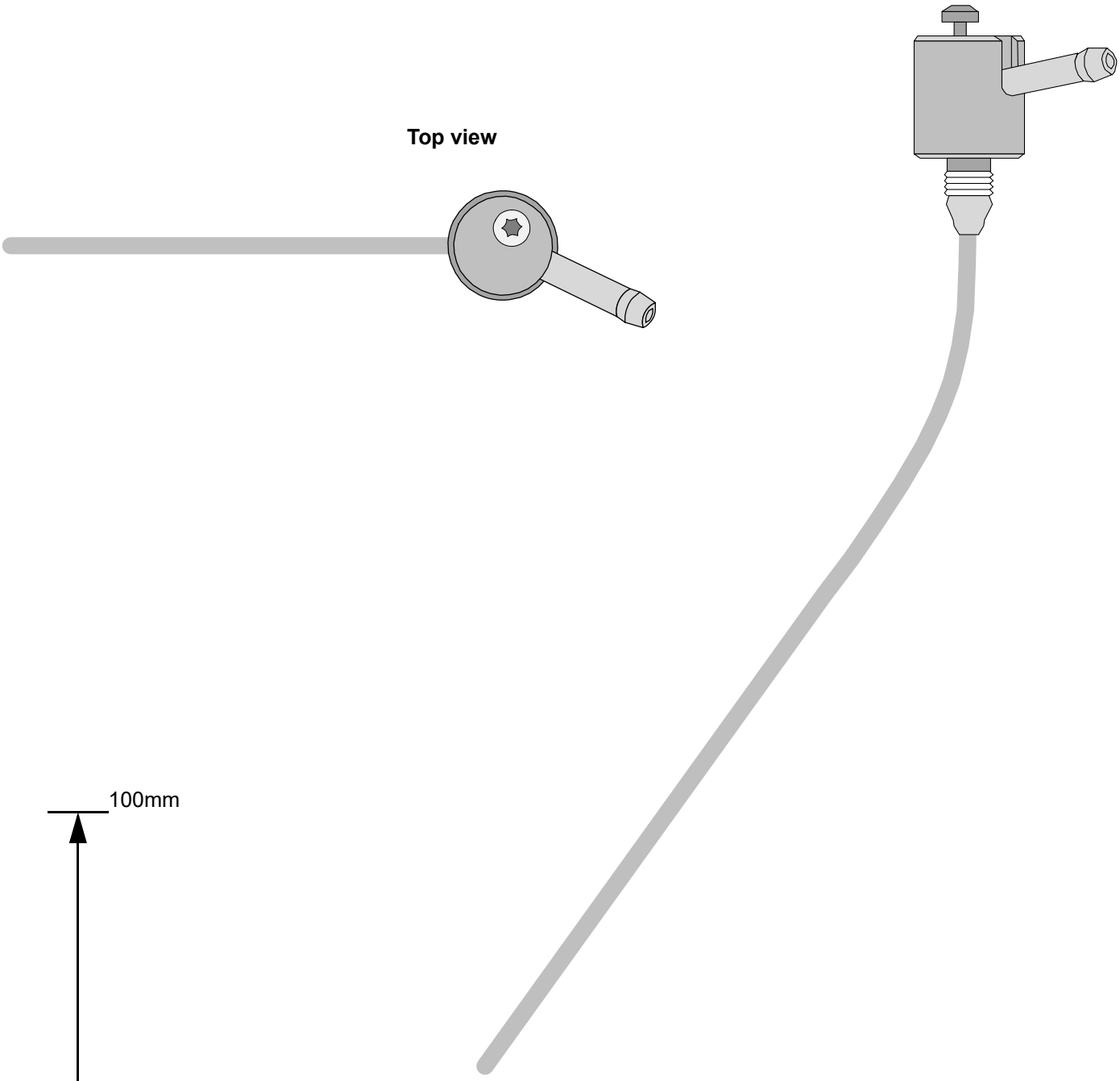
Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

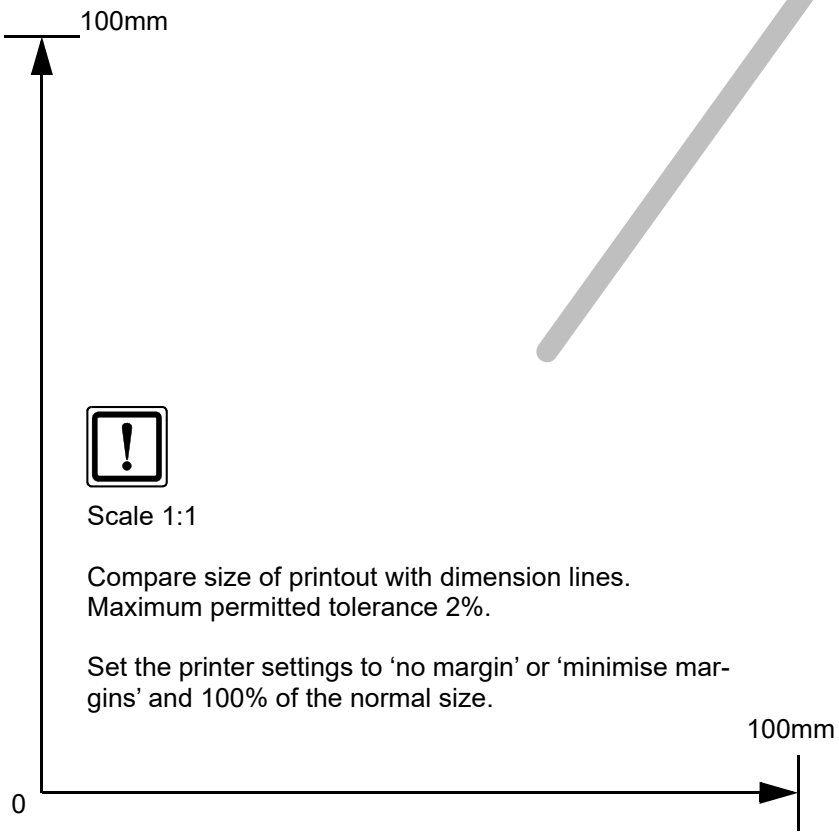
Right and left bracket template





FuelFix template





Scale 1:1

Compare size of printout with dimension lines.
Maximum permitted tolerance 2%.

Set the printer settings to ‘no margin’ or ‘minimise margins’ and 100% of the normal size.

