Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

Installation Documentation
Mazda 6

Validity

Manufacturer	Model	Type	EG BE No. / ABE	VIN
Mazda	6	GJ	e1 * 2007 / 46 *1001 * 00 - 01	JMZGJ******100000 - 120399
Mazda	6	GH	e1 * 2001 / 116 *0448* 14 - 21	JMZGJ******120400 - 299999
Mazda	6	GH	e1 * 2001 / 116 *0448* 22 - 26	JMZGJ******300001 - 499999
Mazda	6	GH	e1 * 2001 / 116 *0448* 27 -	JMZGL******500001 -

Motorisation	Fuel	Emission standard	Transmission type	Output in kW	Displacement in cm³	Engine code
2.2 D	Diesel		6-speed SG	110	2191	SH
2.2 D	Diesel		6-speed AG	110	2191	SH
2.2 D	Diesel		6-speed SG	129	2191	SH
2.2 D	Diesel		6-speed AG	129	2191	SH

SG = manual transmission
AG = Automatic transmission

From model year 2013
Left-hand drive vehicle

Verified equipment variants: Manual air-conditioning
Automatic air-conditioning
Front fog lights
Xenon with headlight washer system
LED headlights
2WD / 4WD
i-Stop (Start-Stop)
Factory-installed alarm system
Regenerative braking system (i-ELOOP)
Daytime running lights fitted in headlight ex-works/ retrofitted in bumper

Exclusion: Retrofitted alarm system (passenger compartment monitoring can lead to faults)

Total installation time: approx. 8.5 hours

Table of Contents

Necessary Components

Description	**Order No.:**
Basic delivery scope of Thermo Top Evo	**4100-78-774A**
Installation kit Mazda 6 2013 Diesel	**4100-78-718B**
In case of Telestart, heater control, as well as indicator lamp in consultation with end customer	MAZDA ACCESSORY BASE

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.

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	TT-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.

Information on Validity

This installation documentation applies to Mazda 6 Diesel vehicles - for validity, see page 1 - from model year 2013 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 torques values of 5x13 heater stud bolts and heater 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.
- Any additionally indicated tightening torques have been specified by the vehicle manufacturer!

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:

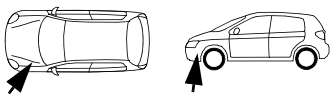
Specific risk of damage to components.

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.

Spray components with anti-corrosion wax corresponding to the vehicle-specific documentation or Tectyl 100K

Preliminary Work

Before installing the heater

The incorrect execution of electrical connections can cause fire!

1. **Warning**:
   The Mazda 6 uses a special battery for the i-Stop system (STOP&START)!
   Check the battery **before** installing the heater. Battery status according to the MESI workshop manual ‘Check battery’ (acid level check for each battery cell). If the battery acid level lies below the specification, replace the battery with an original battery.

2. Reprogram the PCM for VIN < 300000 using the Mazda Modular Diagnostic System (M-MDS) and the latest software version IDS 102.05 or later. For VIN > 300001, PCM programming is not required.

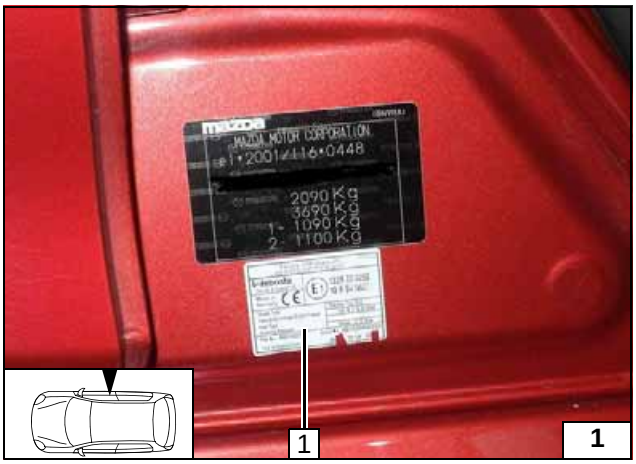
   Note:
   - Always perform an update of the IDS software first, then follow the on-screen instructions to download the calibration file which is required to reprogram the PCM.
   - Follow the ‘Service Instructions for Reprogramming’ in the workshop manual **(MESI)**.

Vehicle

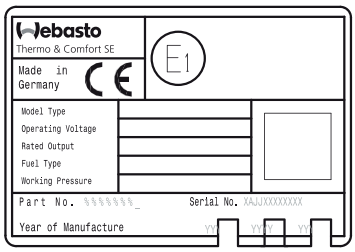
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.

- Depressurise the cooling system.
  See MESI ‘CHECKING THE COOLANT LEVEL’.
- Disconnect and completely remove the battery together with the carrier.
  See MESI ‘REMOVING/INSTALLING THE BATTERY’.
- Remove the lower engine cover.
  See MESI ‘REMOVING/INSTALLING THE FRONT UNDERBODY NO.2’.
- Remove the left underbody trim (2 parts).
  See MESI ‘REMOVING/INSTALLING THE UNDERBODY’.
- Remove the wheel well trim on the right-hand side.
  See MESI ‘REMOVING/INSTALLING THE SPLASH GUARD’.
- Remove the front bumper.
  See MESI ‘REMOVING/INSTALLING THE FRONT BUMPER’.
- Remove the headlight on the right.
  See MESI ‘REMOVING/INSTALLING THE COMBINATION HEADLIGHTS’.
- Detach and fold back the left rear bench seat.
  See MESI ‘REMOVING/INSTALLING THE REAR SEAT UPHOLSTERY’.
- Open the left tank-fitting service lid.
  See MESI ‘REMOVING/INSTALLING THE FUEL TANK SENSOR’.
- Remove the front entrance strip on the driver's side.
  See MESI ‘REMOVING/INSTALLING THE FRONT DOOR SILL STRIP’.
- Remove the front left footwell trim.
  See MESI ‘REMOVING/INSTALLING THE FOOTWELL SIDE TRIM’.
- Detach the instrument panel trim under the steering wheel.
  See MESI ‘REMOVING/INSTALLING THE LOWER INSTRUMENT PANEL TRIM’.
- Remove the trim under the glove box.
  See MESI ‘REMOVING/INSTALLING THE LOWER INSTRUMENT COVER’.
- Remove the glove box.
  See MESI ‘REMOVING/INSTALLING THE GLOVE BOX’.
- Remove the front left loudspeaker cover.
  See MESI ‘REMOVING/INSTALLING THE LOUDSPEAKER COVER’.

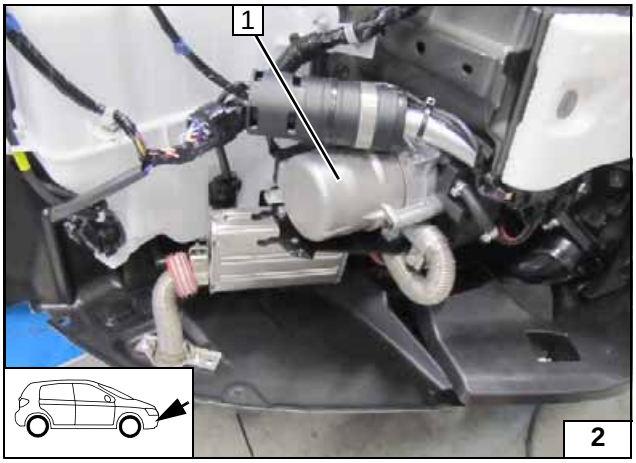
Heater



Remove years that do not apply from the type and duplicate label.
Stick duplicate label **1** on the B-pillar as shown.



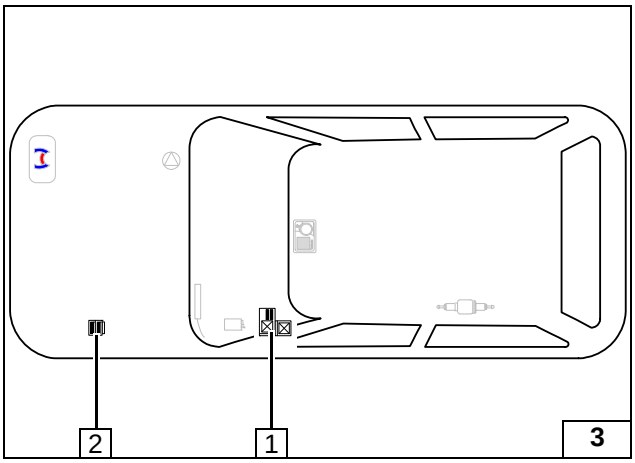
Affixing duplicate label



Heater Installation Location

1 Heater

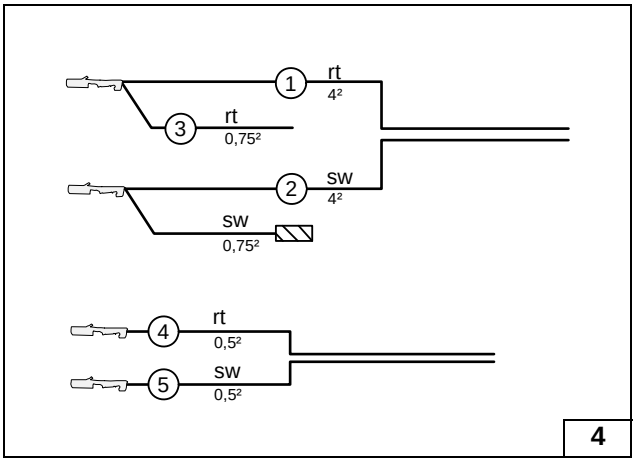
Installation location



Preparation of the Electrical System

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

Installation overview

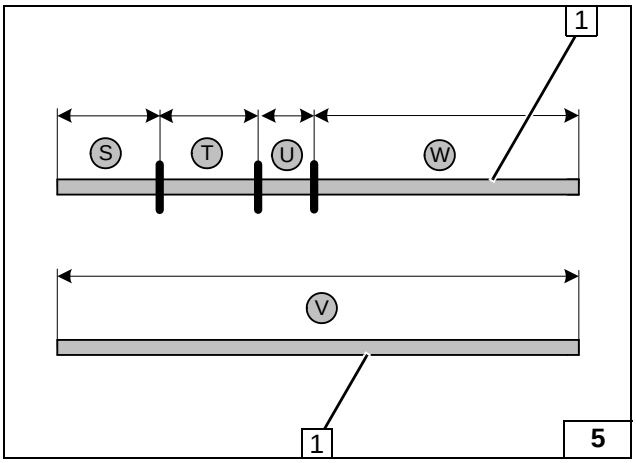


Wire sections retain their numbering in the entire document.

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

① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness
③ Red (rt) wire of fan wiring harness
④ Red (rt) wire from wiring harness of PWM control
⑤ Black (sw) wire from wiring harness of PWM control

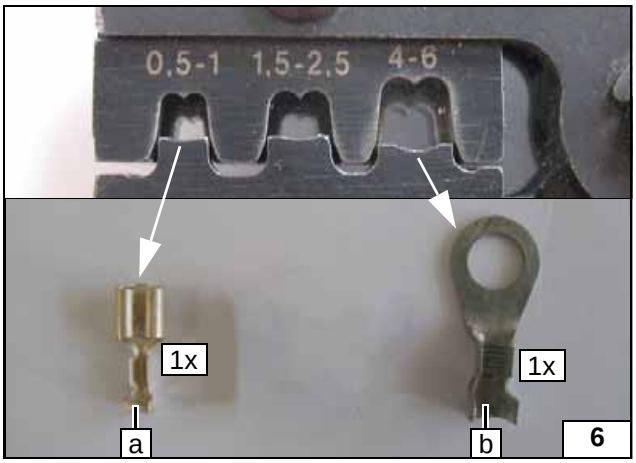
Assigning wires



1 10 mm dia. corrugated tube [2x]

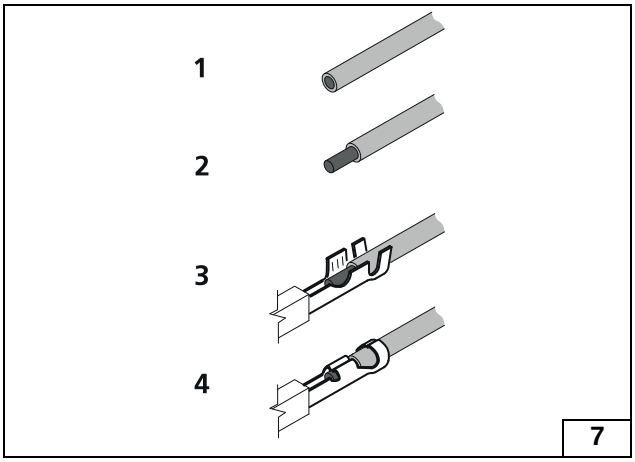
S = 400
T = 400
U = 250
V = 2100
W = 1050

Cutting corrugated tube to length

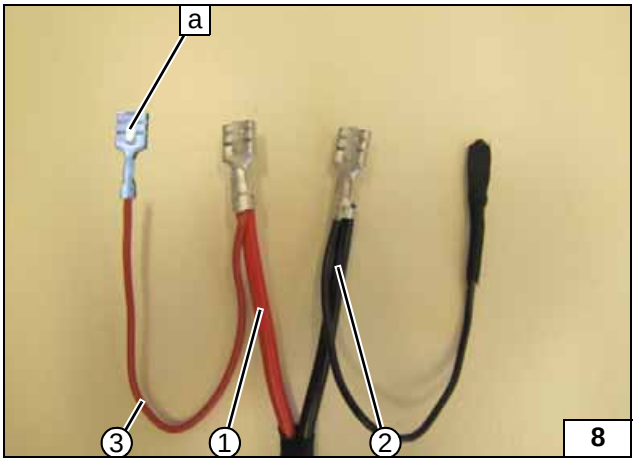


a 6.3 contact for 0.5 - 1 mm² wire cross-section
b 8mm dia. cable lug for 4.0 - 6.0 mm²

Contact overview



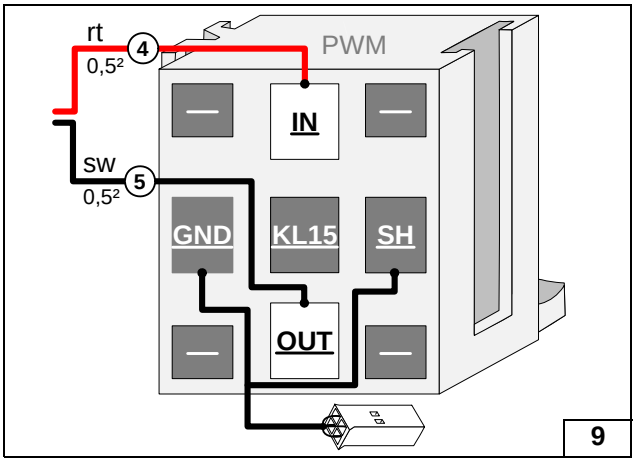
Instructions for connecting the contacts



Install blade receptacle **a.**

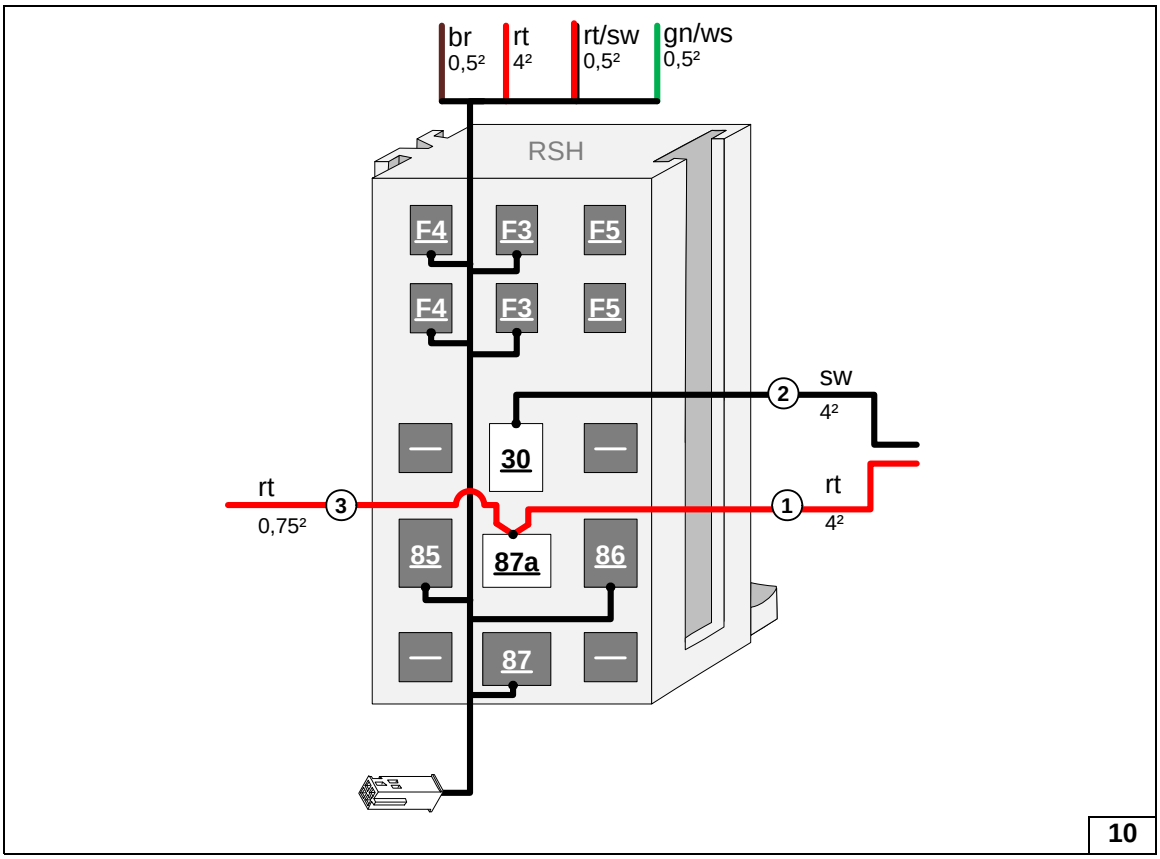
① 4mm² red (rt) wire from fan wiring harness for K1/87a
② 4mm² black (sw) wire from fan wiring harness for K1/30
③ 0,75² red (rt) wire from fan wiring harness for PWM GW/KL15

Preparing fan wiring harness



④ Red (rt) wire from wiring harness of PWM control
⑤ Black (sw) wire from wiring harness of PWM control

Connecting wires to PWM GW socket



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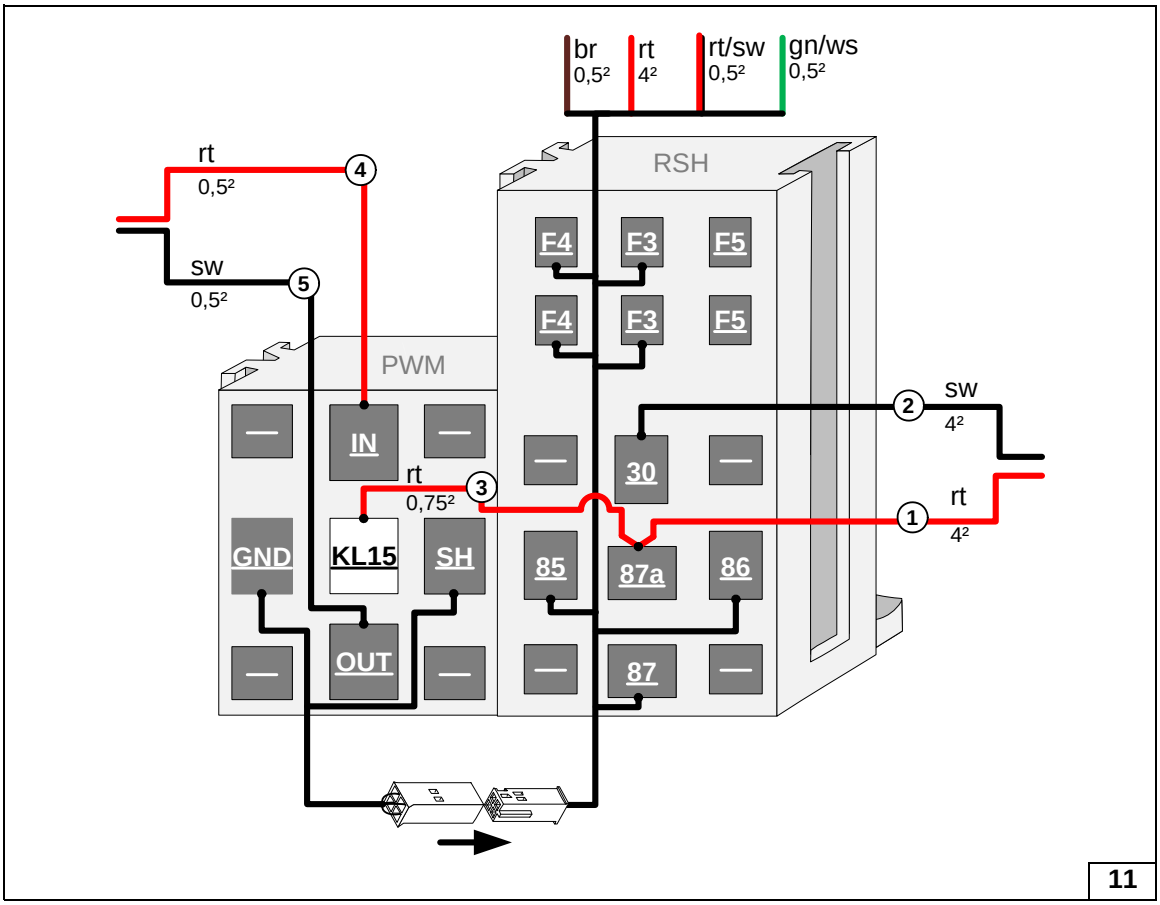
Connecting wires to passenger compartment relay and fuse holder



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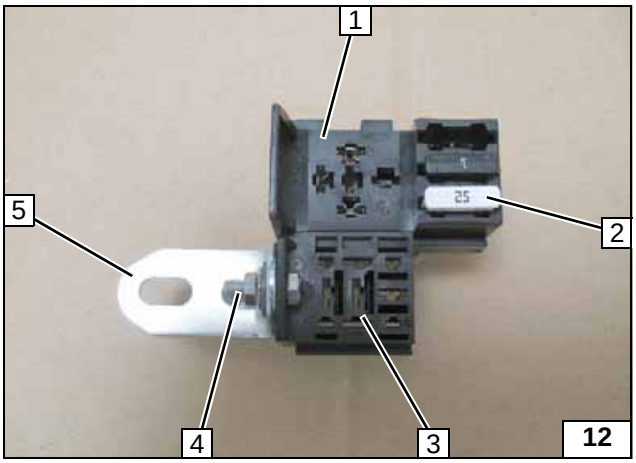
Interlocking PWM GW and passenger compartment relay and fuse holder sockets, connecting bushing with connector, connecting wire

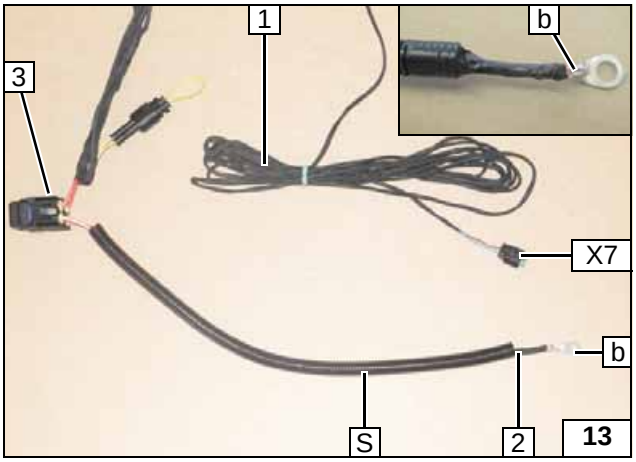
Preparing passenger compartment relay and fuse holder and PWM GW socket



PWM GW and relay K1 are mounted after the passenger compartment relay and fuse holder installation.

1 Passenger compartment relay and fuse holder
2 25A fuse F4
3 PWM GW socket
4 M5x16 bolt, large diameter washer, nut (5-6Nm)
5 Angle bracket

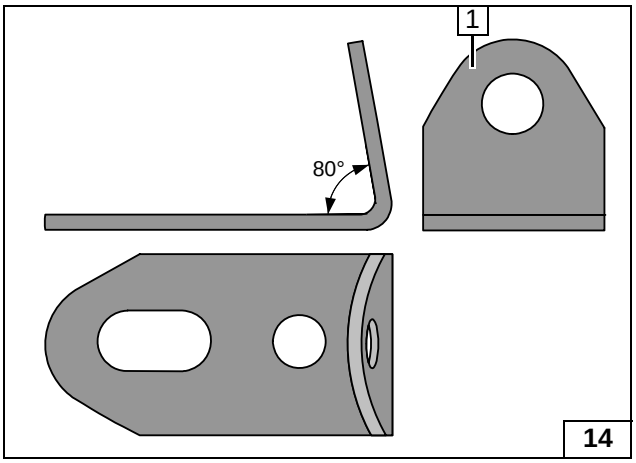
Preparing wiring harness



Insert red (rt) wire from B+ in 10mm dia. corrugated tube **S**. Mount cable lug **b** onto red (rt) wire from B+ **2**.

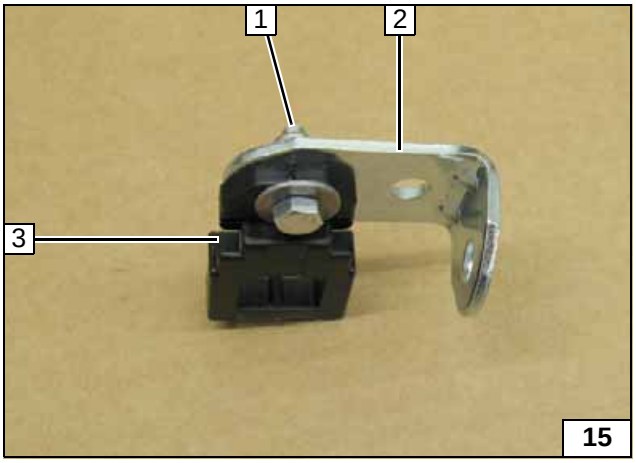
1 Wiring harness of metering pump
2 Red (rt) wire from B+
3 Engine compartment fuse holder
X7 Connector of metering pump wiring harness

Bending angle bracket



1 Angle bracket

Premounting retaining plate of engine compartment fuses



1 M5x12 bolt, large diameter washer [2x], nut (8-10Nm)
2 Angle bracket
3 Retaining plate of fuses

Preparation of the PWM GW (Pulse Width Modulator)

The PWM GW is preprogrammed for **VIN > 300001** and approx. fan level 3. However, the vehicle fan speed can deviate for technical reasons.
In case of too high / too low fan power, the PWM GW can be reprogrammed using the Webasto Diagnosis. See section 'Final Work'.

For **VIN < 300000**, the PWM GW must be reprogrammed prior to installation!

View of PWM GW

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VIN > 300001

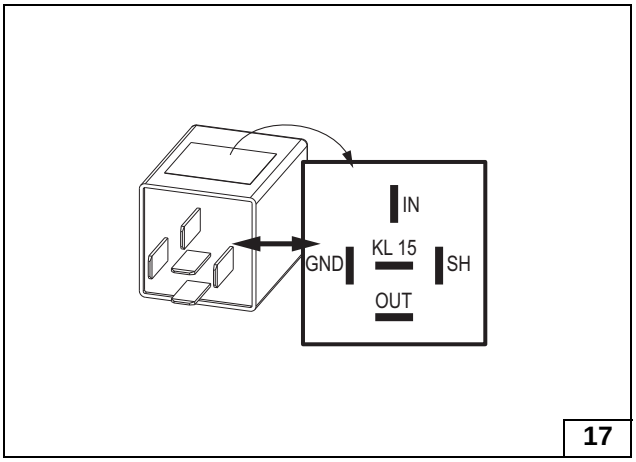
This preprogrammed version is included in the kit.

Settings:

Duty cycle: 65%
Frequency: 500Hz
Voltage: not relevant
Function: Low side

Check the settings and adjust if necessary under the 'Final Work' section!

View of PWM GW



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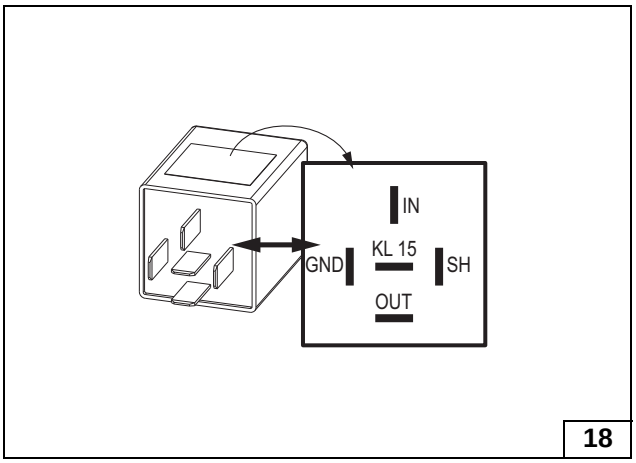
VIN < 300000 (adjustment required!)

The settings for the PWM GW must be adjusted to the following values using the Webasto Thermo Test Diagnosis, Mazda order No.: 4100-77-725, software version V3.1 or later, see next figure:

Settings:

Duty cycle: 37%
Frequency: 500 Hz
Voltage: not relevant
Function: Low side

Adapting PWM GW



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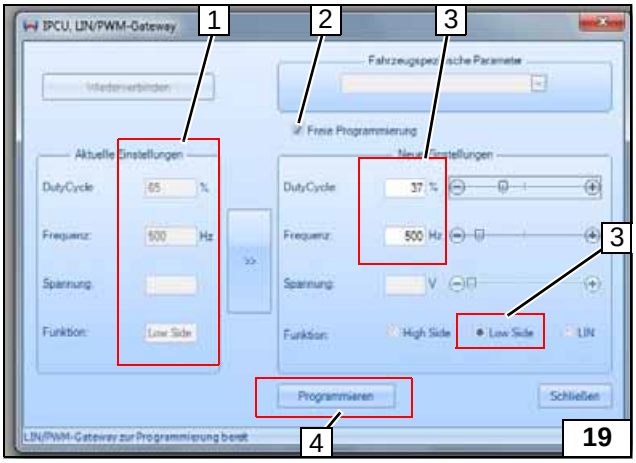
For further details, see the 'Final Work' section and/ or the 'Programming Manual' on the Mazda accessories portal!

1. Current settings
2. Enable 'Free Programming'
3. Enter the new values
4. After entry is complete, click on the 'Program' button

Check the settings and adjust if necessary under the 'Final Work' section!

Adjusting PWM GW with WTT Diagnosis



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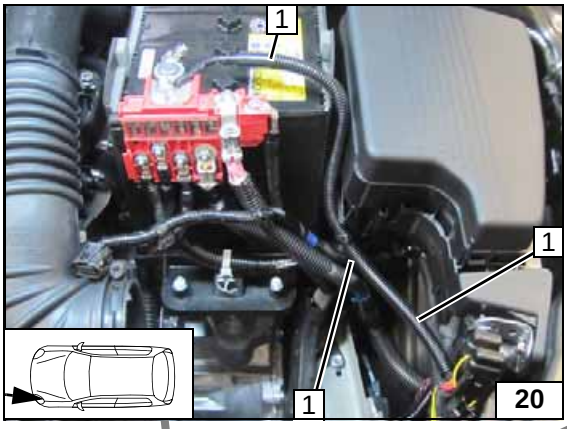
Electrical System

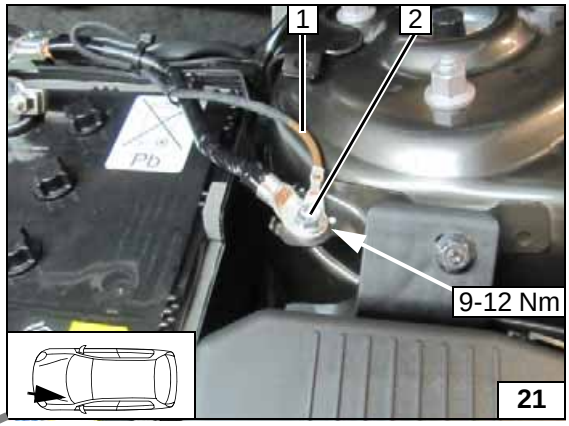
Positive wire

1 Route red (rt) wire from B+ in 10mm dia. corrugated tube S to positive battery terminal. (For connection to positive battery terminal, see ‘Final Work’ section)

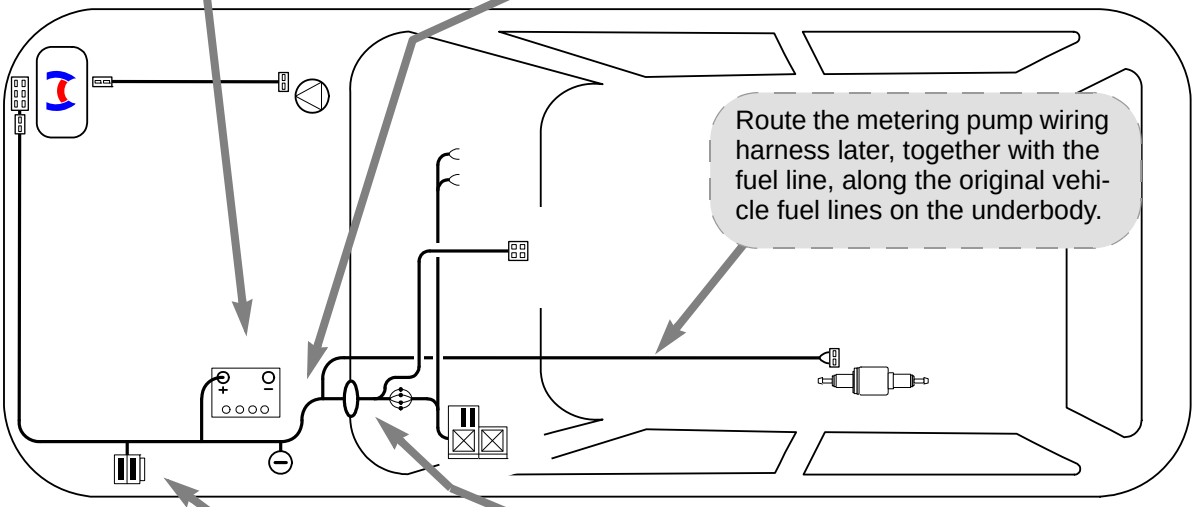


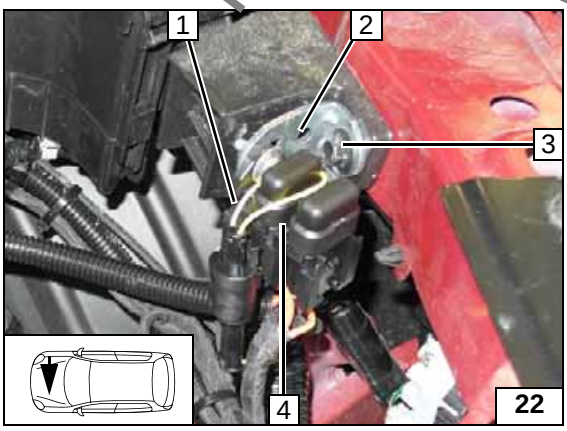
Earth wire

1 Earth wire on earth support point
2 Original vehicle earth support point



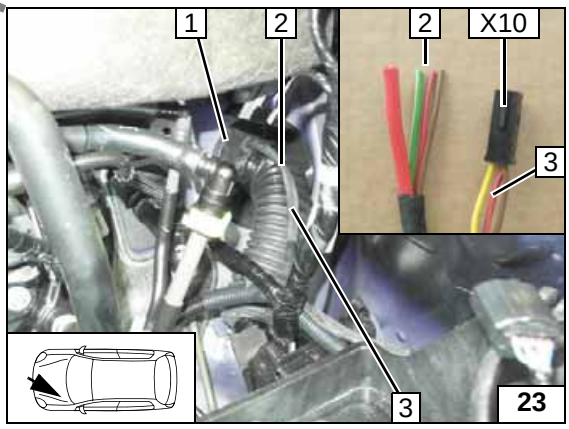
Wiring harness routing diagram





Engine compartment fuse holder

1 Retaining plate, fuse holder
2 Angle bracket
3 Original vehicle bolt (8-10Nm)
4 Fuses F1-2

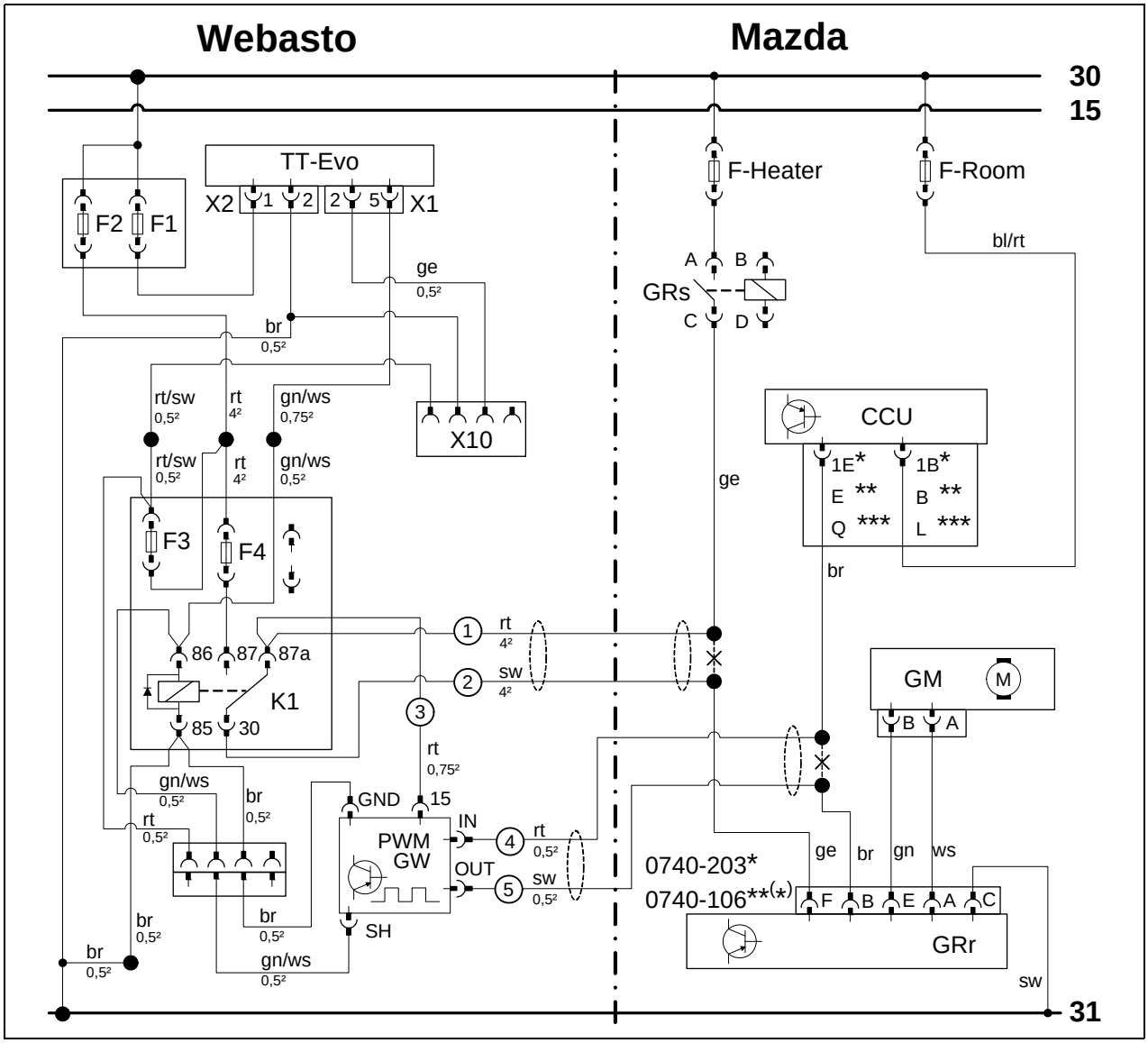


Wiring harness pass through

1 Protective rubber plug
2 Wiring harness for fan controller
3 Wiring harness for heater control

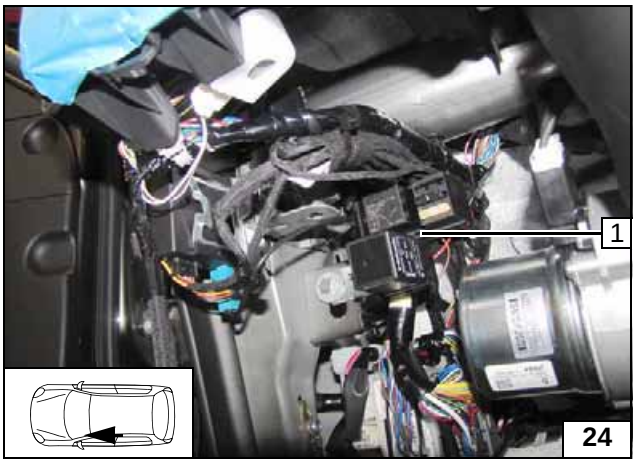
Fan Controller

Wiring diagram



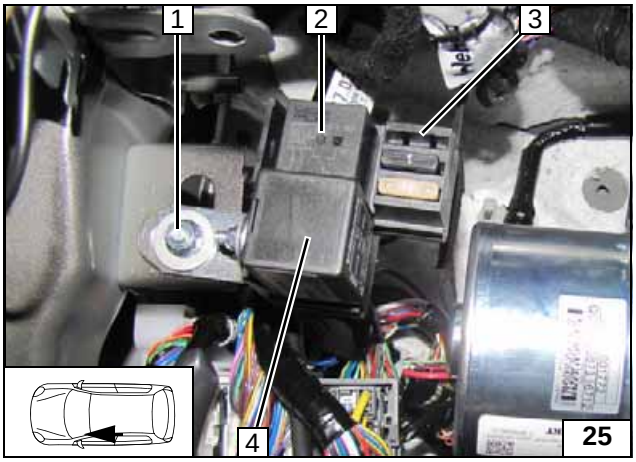
Webasto components		Vehicle components		Colours and symbols	
TT-Evo	TT-Evo heater	F-Heater	40A fuse	rt	red
X1	6-pin heater connector	F- Room	15A fuse	sw	black
X2	2-pin heater connector	GRs	Fan relay	ge	yellow
F1	20A fuse	CCU	A/C control unit	gn	green
F2	30A fuse	GM	Fan motor	br	brown
X10	4-pin connector of heater control	GRr	Fan controller	ws	white
		0740-203	6-pin connector of GRr AAC (2 zones)	bl	blue
F3	1A fuse				
F4	25A fuse	0740-106	6-pin connector of GRr		
K1	Fan relay		AC (7 levels)		
PWM GW	PWM Gateway			*	Automatic air-conditioning (ACC)
VIN < 300000		**VIN > 300001**		**	Manual air-conditioning (AC), VIN < 300000
PWM GW settings:		**PWM GW settings:**			
Duty cycle:	37%	Duty cycle:	65%	***	Manual air-conditioning (AC), VIN > 300001
Frequency:	500Hz	Frequency:	500Hz		
Voltage:	not relevant	Voltage:	not relevant	X	Cutting point
Function:	Low side	Function:	Low side	Wiring colours may vary.	

Legend



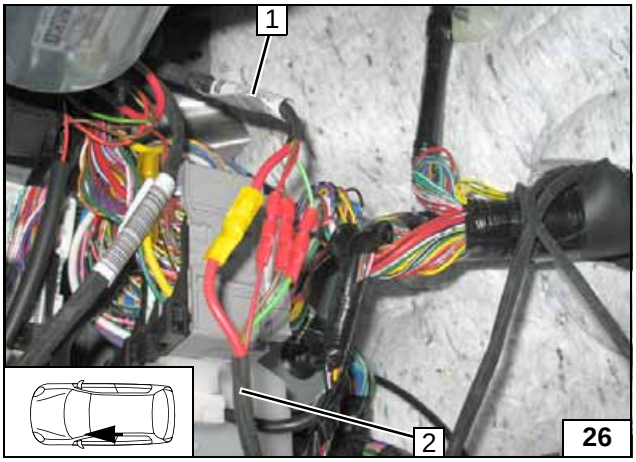
1 Passenger compartment relay and fuse holder

Installation location of passenger compartment relay and fuse holder



1 M6x20 bolt, large diameter washer [2x] (8-10Nm)
2 Install relay K1
3 Passenger compartment relay and fuse holder
4 Install PWM GW

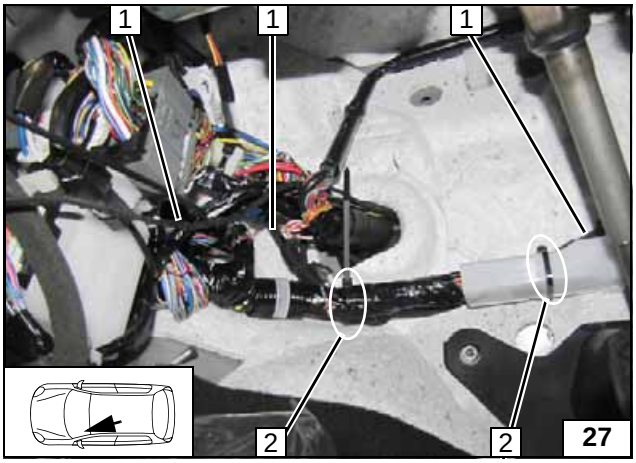
Installing passenger compartment relay and fuse holder



Red (rt) wire (4.0mm²) with red (rt) wire (4.0mm²)
Red/black (rt/sw) wire (0.5mm²) with red/black (rt/sw) wire (0.5mm²)
Green/white (gn/ws) wire (0.75mm²) with green/white (gn/ws) wire (0.5mm²)
Brown (br) wire (0.5mm²) with brown (br) wire (0.5mm²)

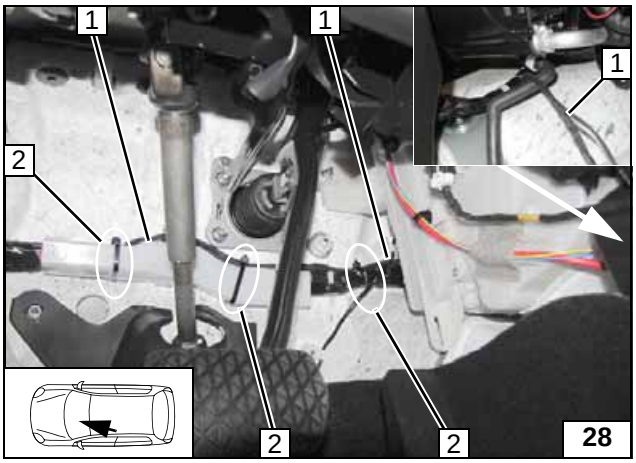
1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses



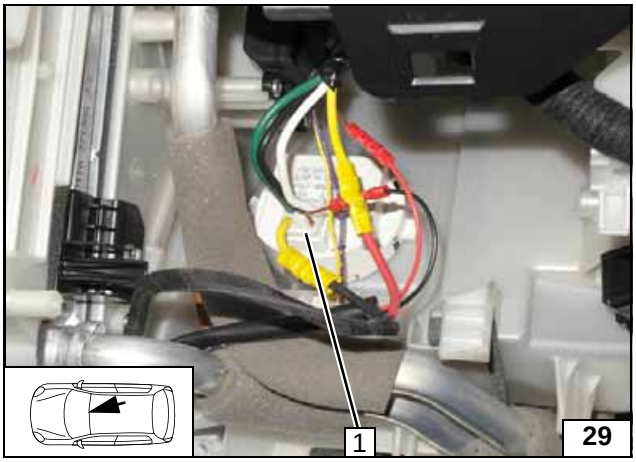
1 Fan wiring harness with wires ① and ② as well as wiring harness of PWM control with wires ④ and ⑤
2 Cable tie [2x]

Routing wiring harnesses to front passenger's side



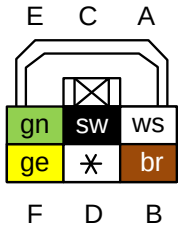
1 Fan wiring harness with wires ① and ② as well as wiring harness of PWM control with wires ④ and ⑤
2 Cable tie [3x]

Routing wiring harnesses to front passenger's side

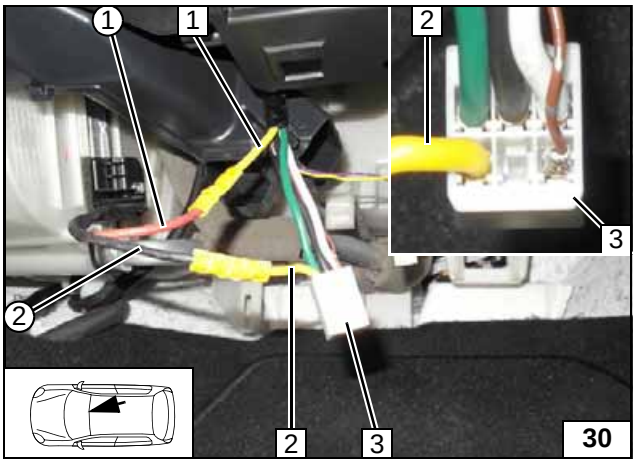


Air duct was removed for improved view.

1 6-pin connector of fan controller - 0740-203 (2 zone ACC) - 0740-106 (7 level AC)

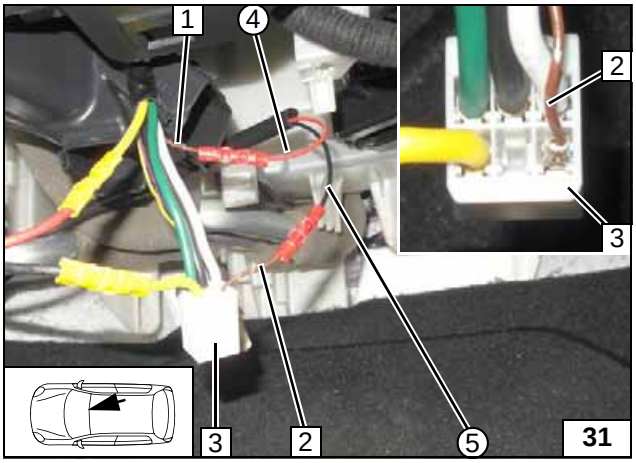


Fan controller connector



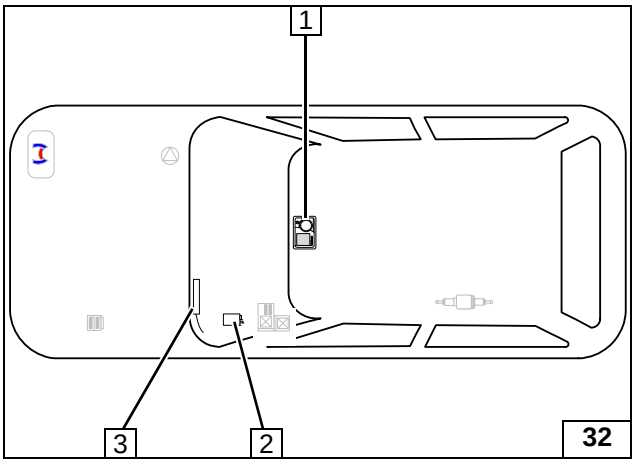
1 Yellow (ge) wire of fan relay, pin C
2 Yellow (ge) wire of 6-pin connector from fan controller/ pin F
3 6-pin fan controller connector
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connection to fan controller



1 Brown (br) wire of A/C control panel pin 1E (AAC) or E (AC, VIN < 300000) or Q (AC, VIN > 300001)
2 Brown (br) wire from fan controller, pin B
3 6-pin fan controller connector
④ Red (rt) wire of PWM GW/IN from PWM control wiring harness
⑤ Black (sw) wire of PWM GW/OUT from PWM control wiring harness

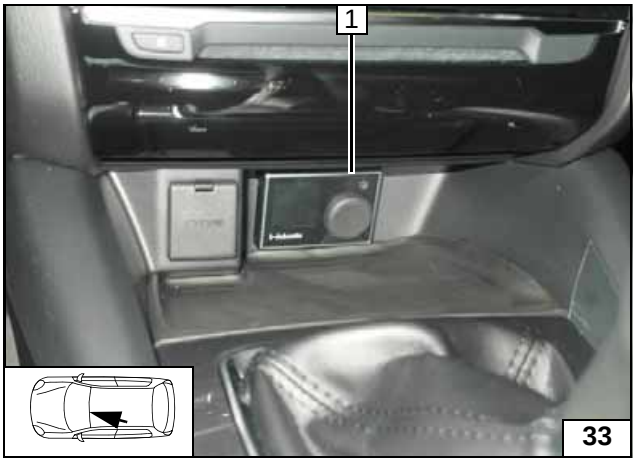
Connection to fan controller



Heater Control Installation

1 MultiControl CAR / digital timer
2 Telestart / ThermoCall receiver
3 Telestart / ThermoCall aerial

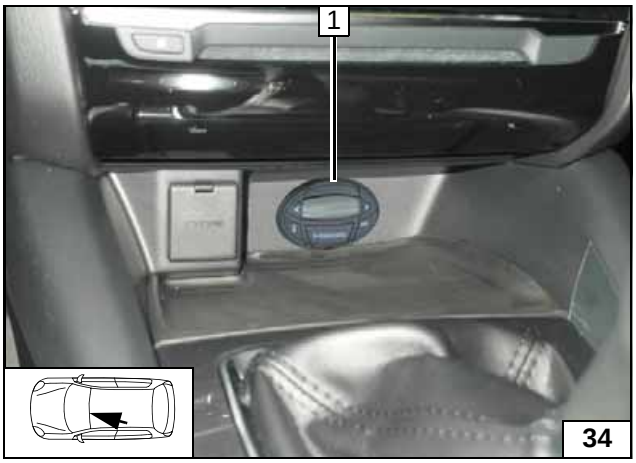
Installation overview



MultiControl CAR Option

1 MultiControl CAR

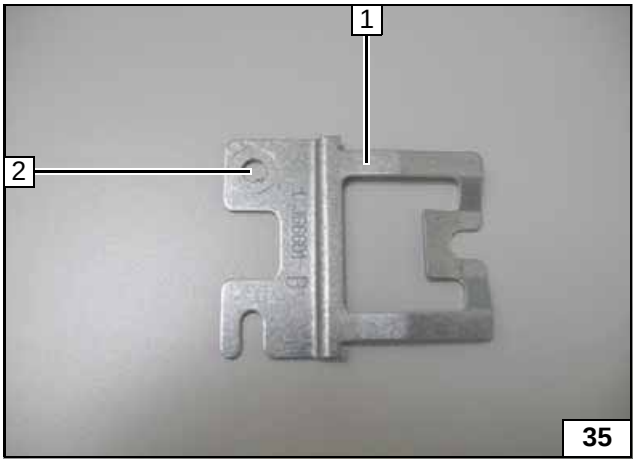
Installing MultiControl CAR



Digital Timer Option

1 Digital timer

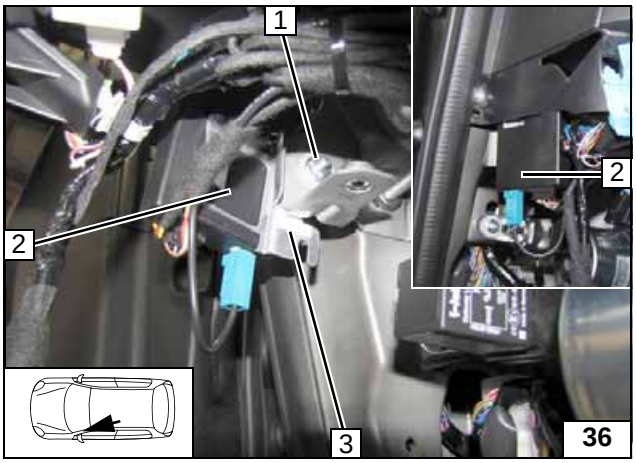
Installing digital timer



Remote Option (Telestart)

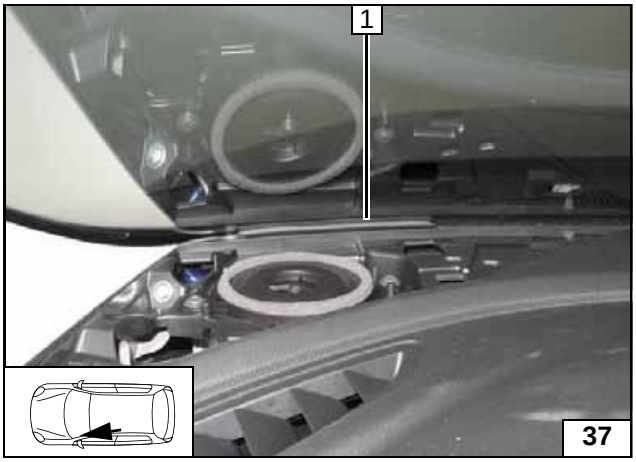
1 Receiver bracket
2 6.5 mm dia. hole

Preparing bracket



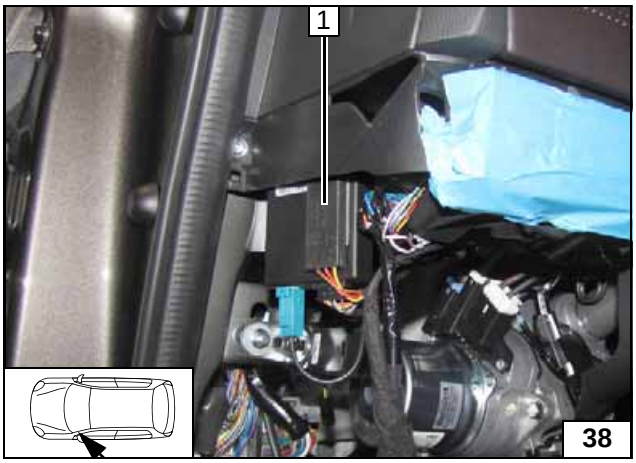
1 M6x20 bolt, washer, flanged nut
2 Receiver
3 Bracket

Installing receiver



1 Aerial

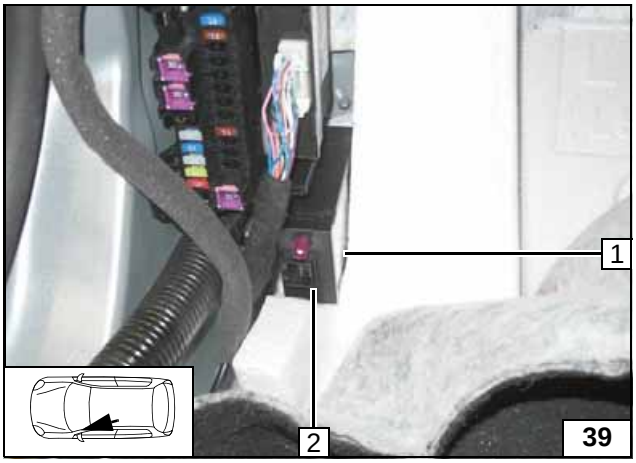
Installing aerial



Temperature sensor T100 HTM

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

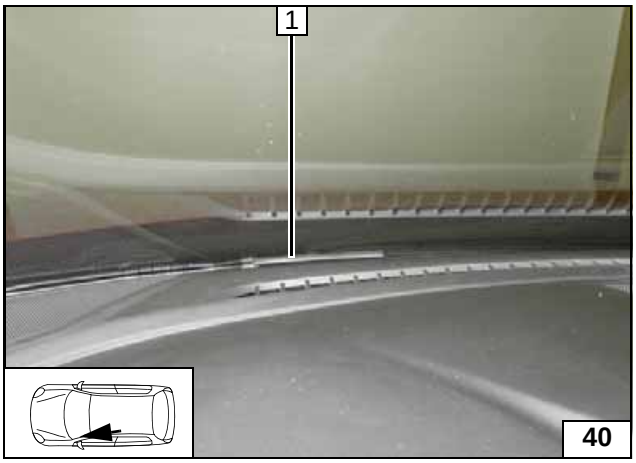
Installing temperature sensor



ThermoCall Option

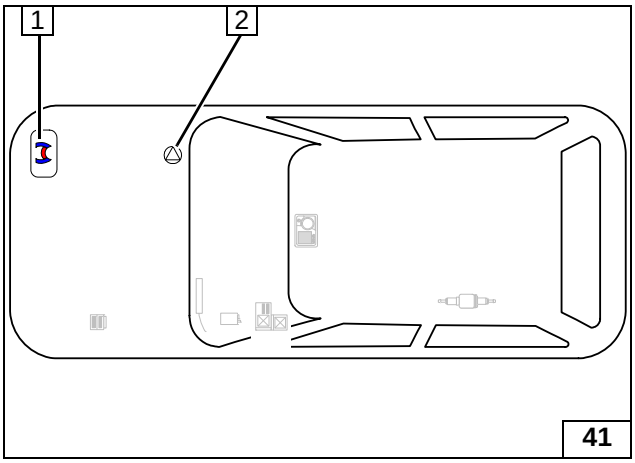
Fasten receiver **2** with double-sided adhesive tape **1**.

Installing receiver



1 Aerial

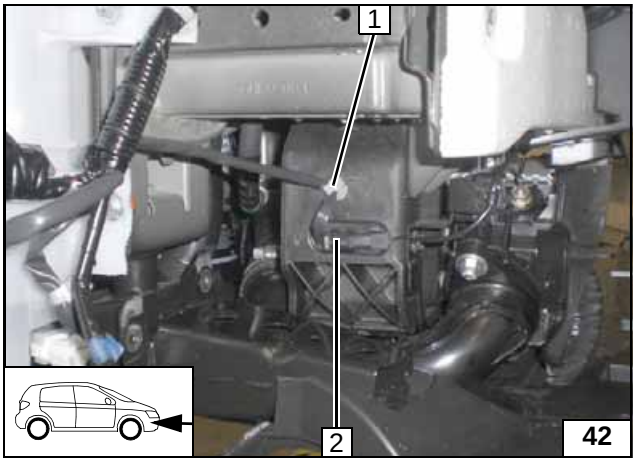
Installing aerial



Preparation of the Installation Location

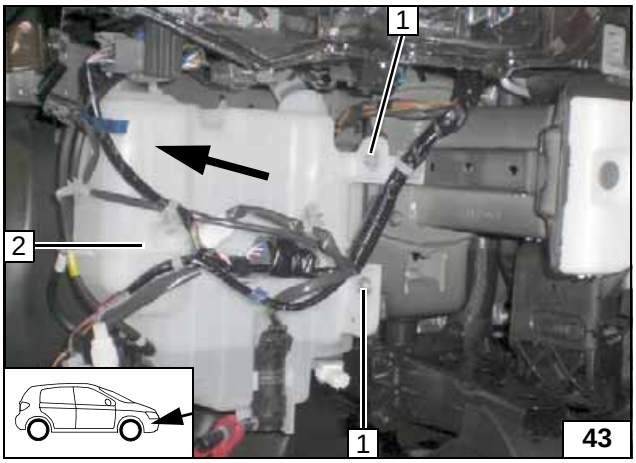
1 Heater
2 Circulating pump

Installation overview



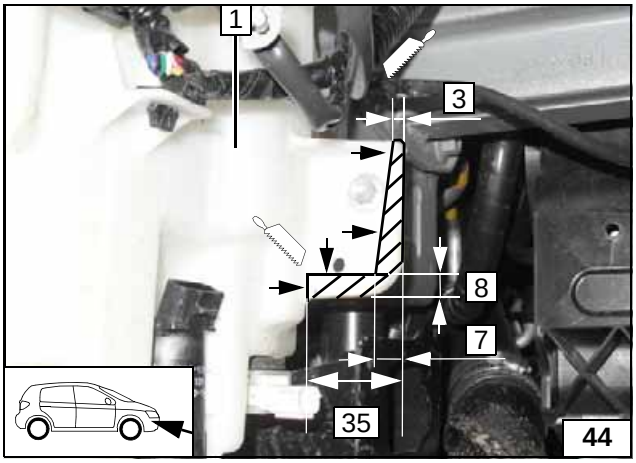
Detach eyelet cable tie **1** and original vehicle connector **2**. Will be fastened again later at a different location.

Detaching connector



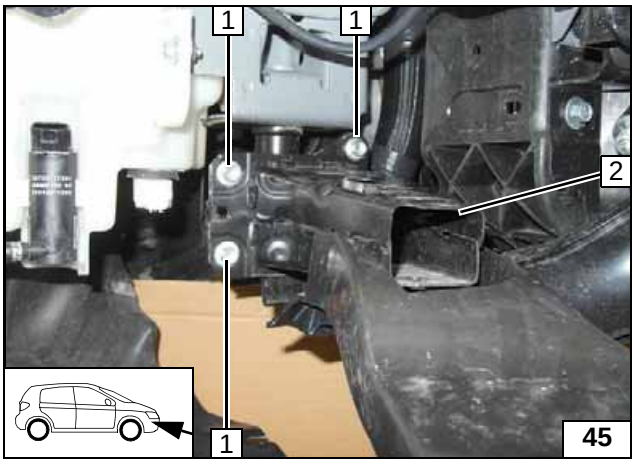
Detach bolts **1** [2x], push back washer reservoir **2** and tighten the bolts again.

Repositioning washer reservoir



Remove marked area on washer reservoir **1**.

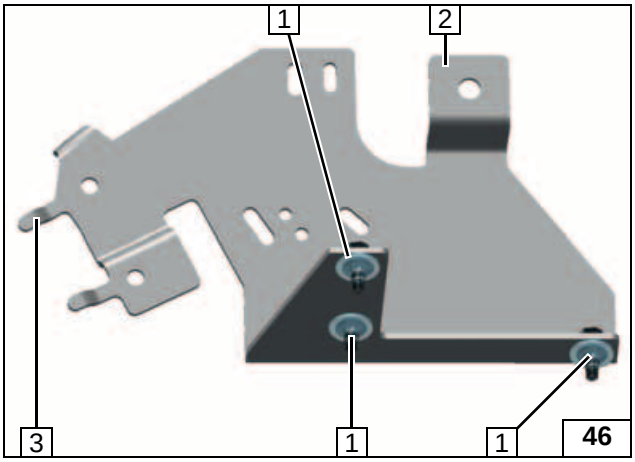
Preparing washer reservoir



Remove original vehicle bolts at position **1** [3x], will be reused.

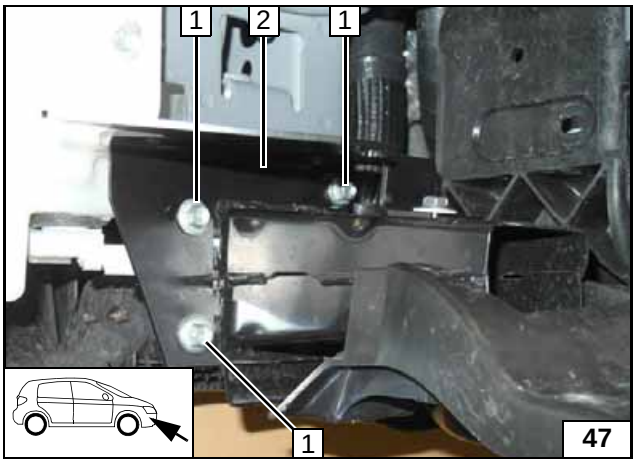
2 Bumper mounting bracket carrier

Removing bolts



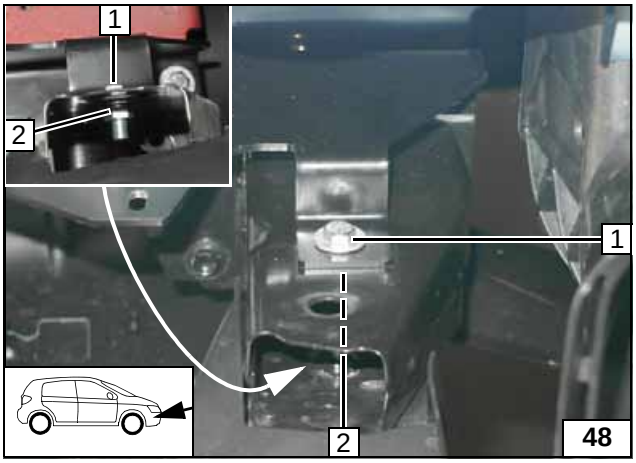
1 Original vehicle bolt, large diameter washer, pin lock [3x each]
2 Bracket
3 Locking tab for exhaust silencer

Premount-ing bracket



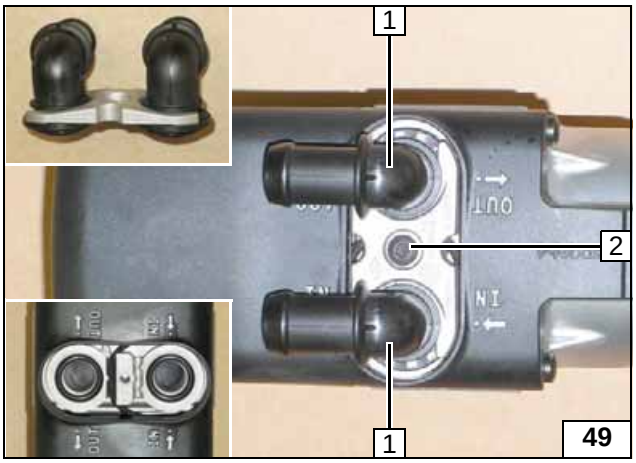
1 Premounted bolt, existing threaded hole [3x each] (8-10Nm)
2 Bracket

Installing bracket



1 M6x20 bolt, spring lockwasher, large diameter washer
2 Flanged nut (8-10Nm)

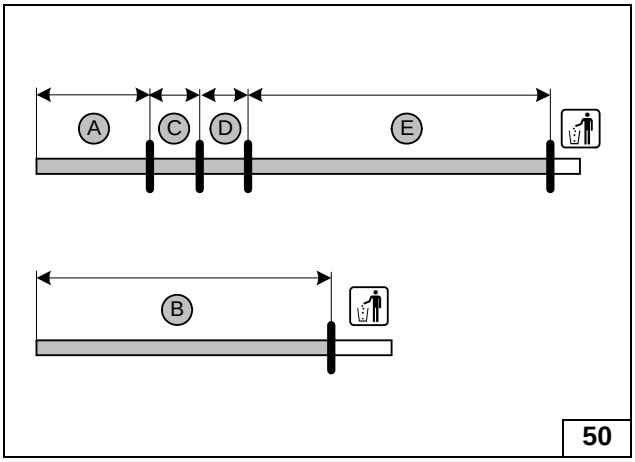
Installing bracket



Preparation of the Heater

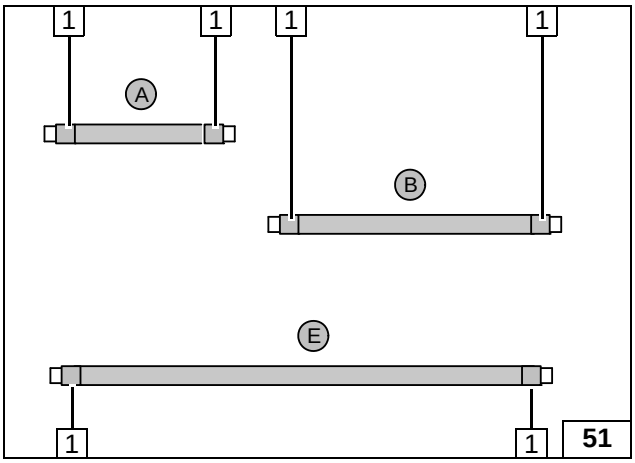
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece (7Nm)

Installing water connection piece



A = 300
B = 900
C = 110
D = 110
E = 1160

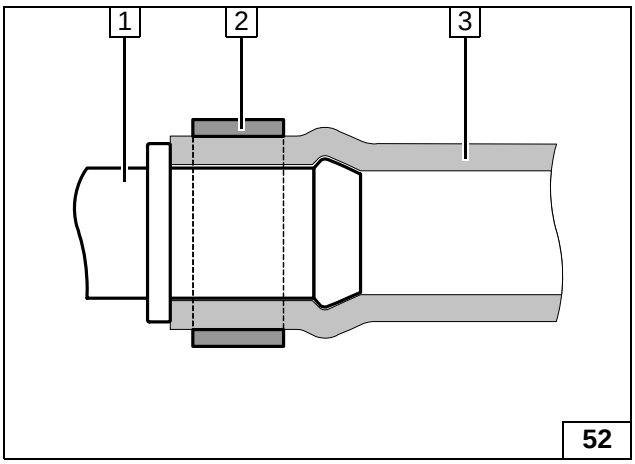
Cutting hoses to length



Push braided protection hoses onto hoses **A** and **B** and cut to length.
Slide braided protection hose onto **E**. Cut heat shrink plastic tubing to length.

1 40 mm long heat shrink plastic tubing [6x]

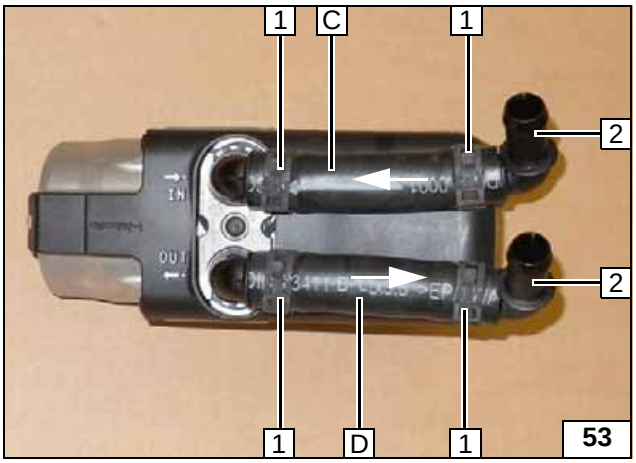
Preparing hoses



General assembly of connecting pipe, hose and spring clip.

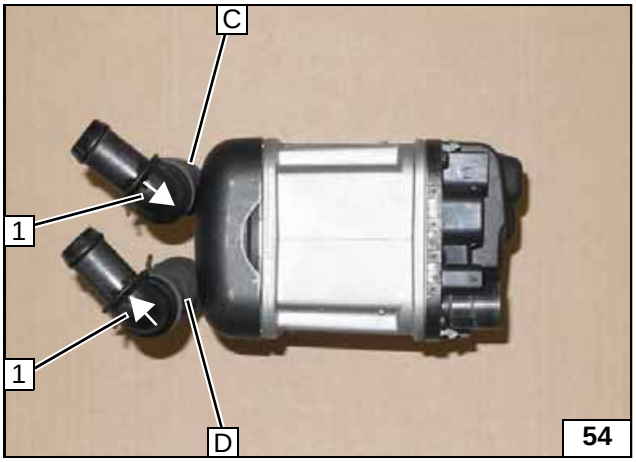
1 Connecting pipe
2 Spring clip
3 Hose

Note on hoses installation



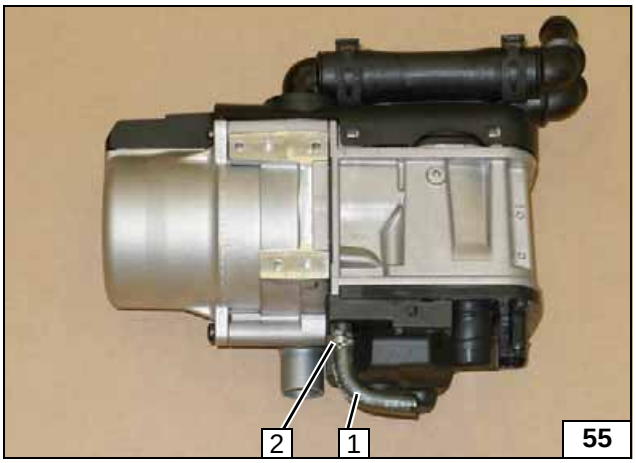
1 25 mm dia. spring clip [4x]
2 Align 90°, 18x18 dia. connecting pipe [2x] as shown in next figure.

Premounting hoses



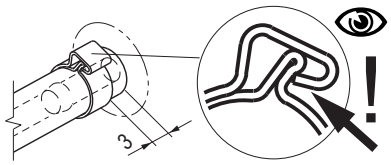
Mark 90° connecting pipe **1** as shown with directional arrows [2x]!

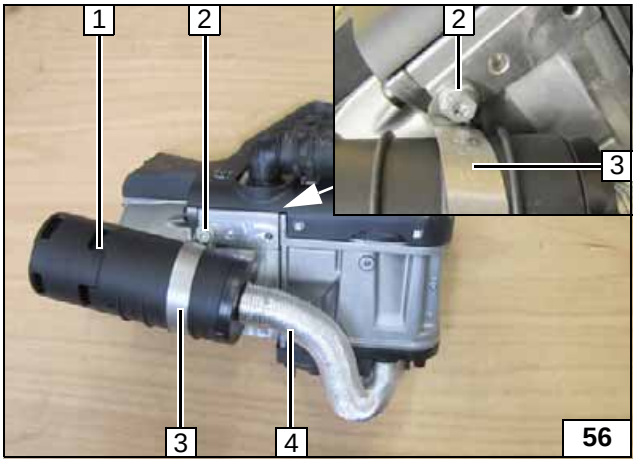
Aligning and marking connecting pipes



1 90° moulded hose
2 10mm dia. clamp

Installing moulded hose



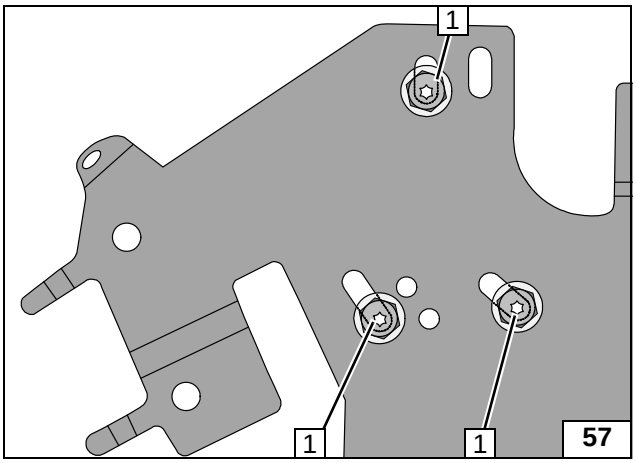


1 Silencer
2 5x13 self-tapping bolt (8Nm)
3 51mm dia. clamp
4 Combustion air pipe

Installing combustion air pipe and silencer

Installation of the Heater

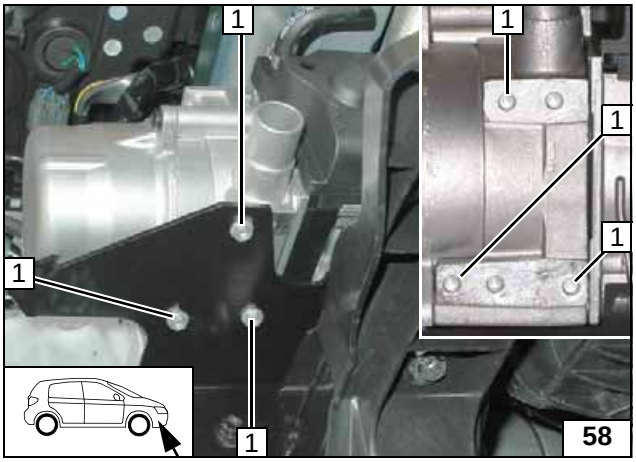
1 5x13 self-tapping bolt [3x]



View of the heater bolts on the bracket

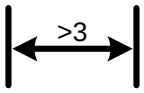
Align heater as shown in the next figures.

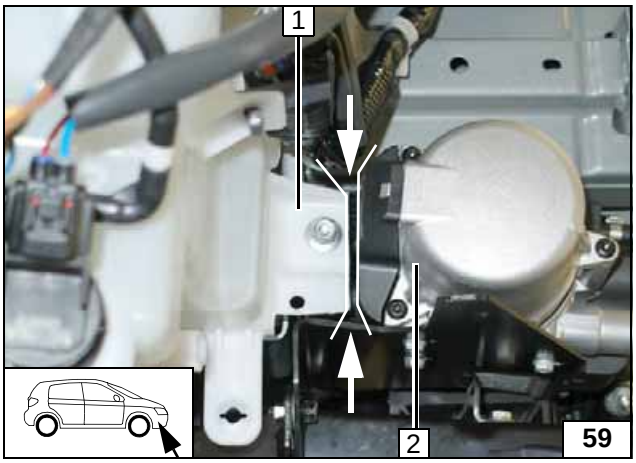
1 5x13 self-tapping bolt [3x] (8Nm)



Installing heater

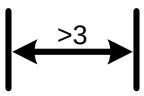
1 Washer reservoir
2 Heater

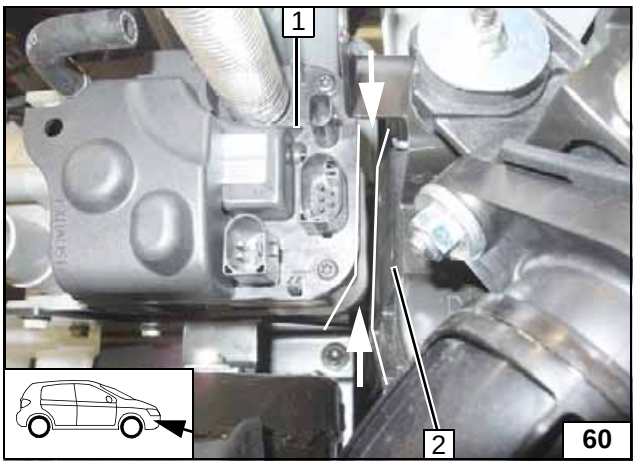




Installing heater

1 Heater
2 Radiator housing



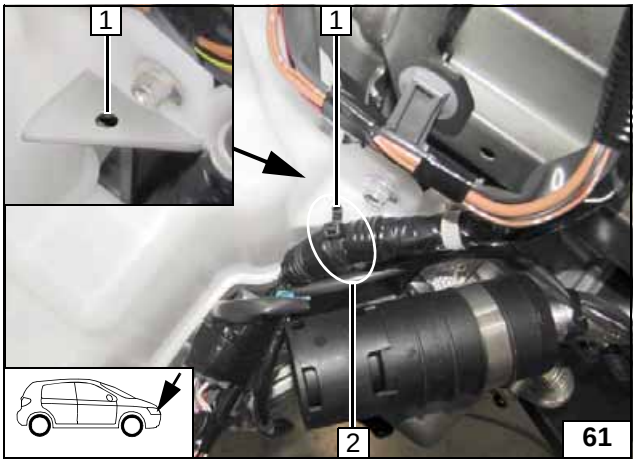


Installing heater

Reconnection of the Wiring Harnesses

Note

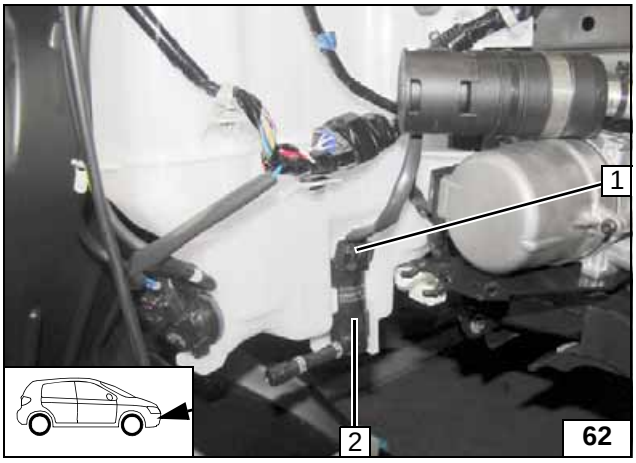
The following work steps in the washer reservoir area were documented for a vehicle in model year 2017.
For different or older variants, route the wiring harnesses accordingly and fasten using cable ties!
Minimum distance of at least 15mm from exhaust system parts.



Fixing original vehicle wiring harness again

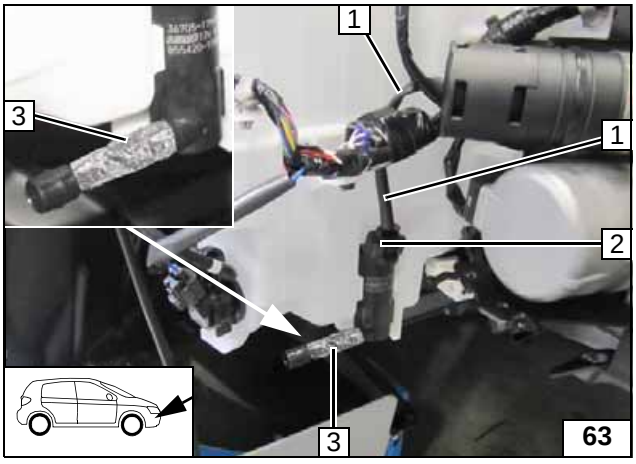
1 Drill a 5.5mm dia. hole in the washer reservoir reinforcement
2 Cable tie

Vehicles with headlight washer system



Pulling out windscreen washer pump connector

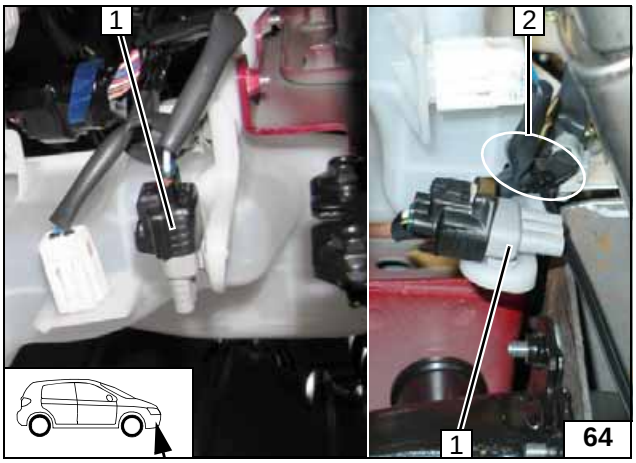
1 Connector of windscreen washer pump
2 Windscreen washer pump



Insulating hose

Reroute windscreen washer pump wiring harness **1** as shown!

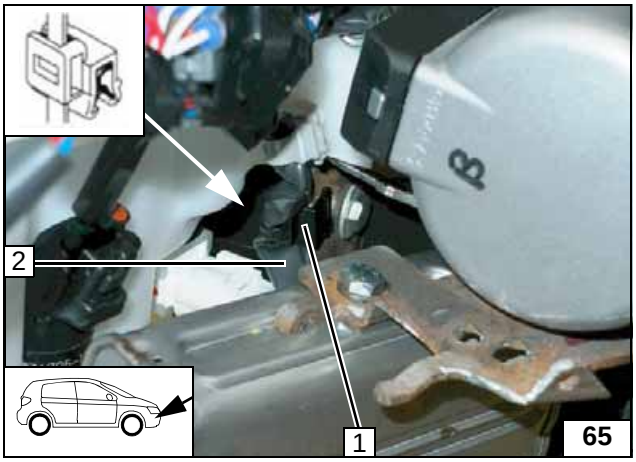
2 Connector of windscreen washer pump
3 Self-adhesive insulating film



Vehicles without headlight washer system

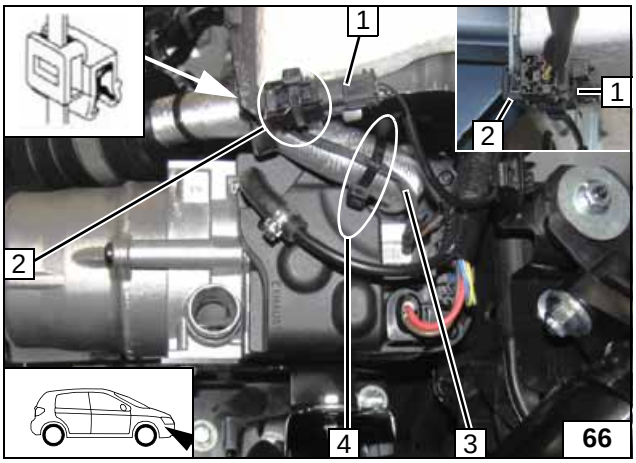
Turn and install connector **1** (photo of old position on left, photo of new position on right) as shown and fasten the wiring harness using cable tie **2**.

Reinstalling connector



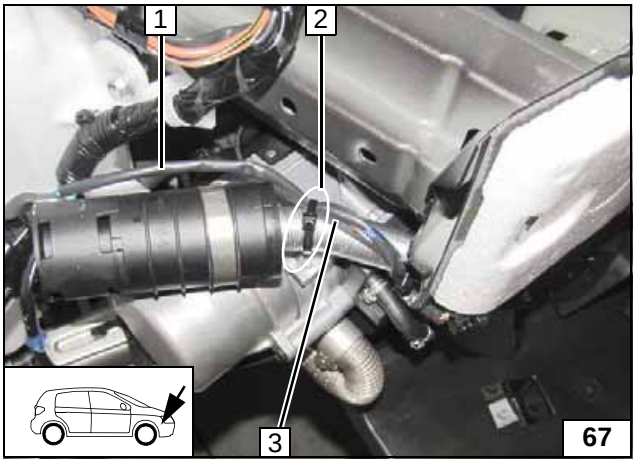
1 Clip-type cable tie on heater bracket
2 Washer reservoir gauge wiring harness

Fastening wiring harness



1 Connector of original vehicle temperature sensor wiring harness
2 Clip-type cable tie
3 Circulating pump wiring harness
4 Cable tie

Securing wiring harnesses



1 Original vehicle temperature sensor wiring harness
2 Cable tie
3 Circulating pump wiring harness

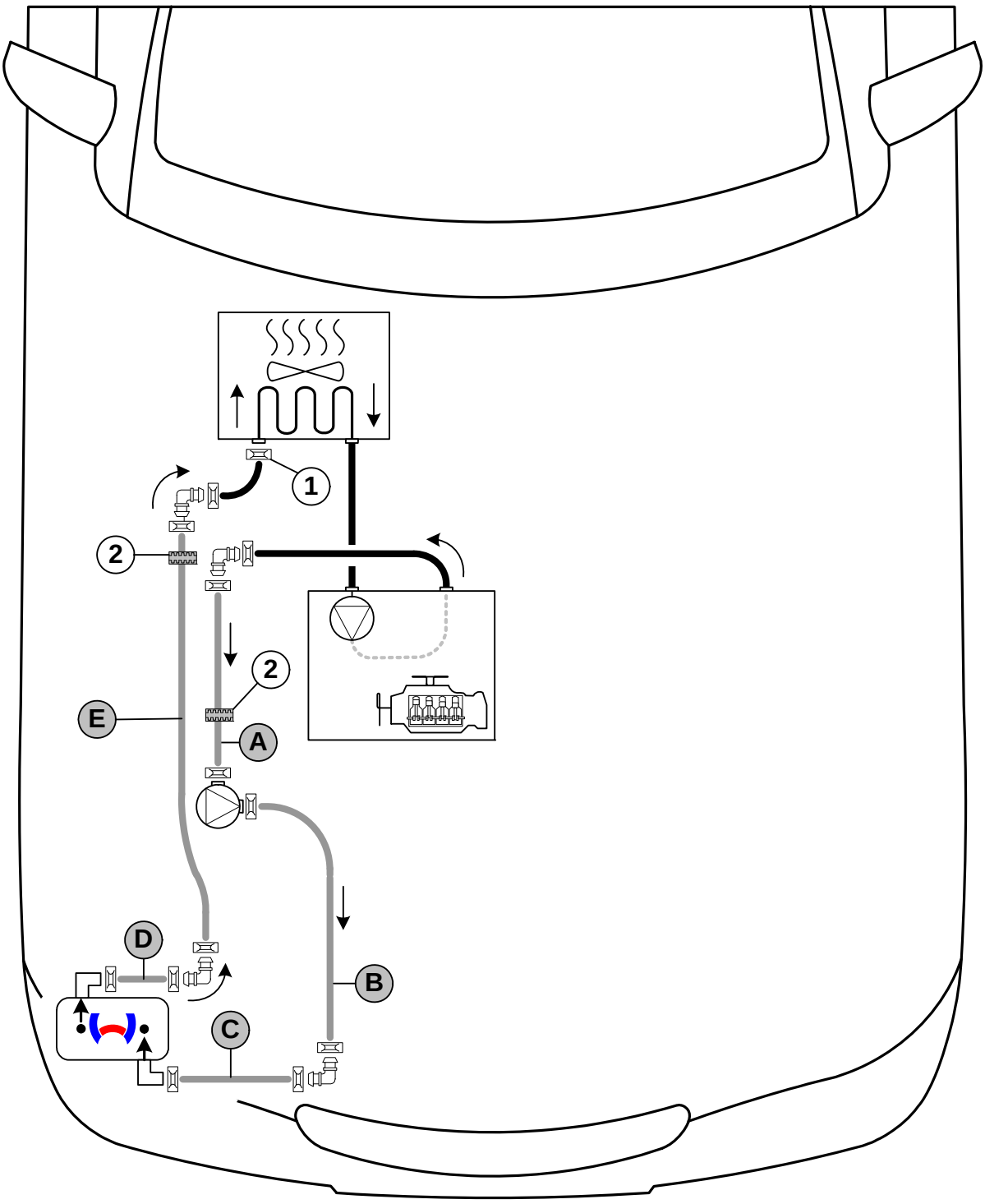
Securing wiring harnesses

Coolant Circuit

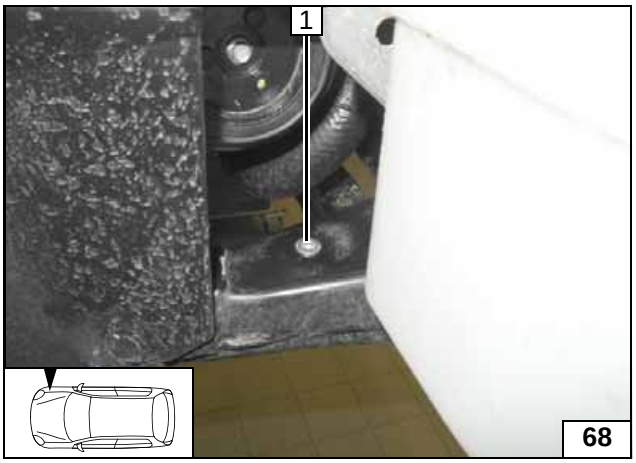
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram

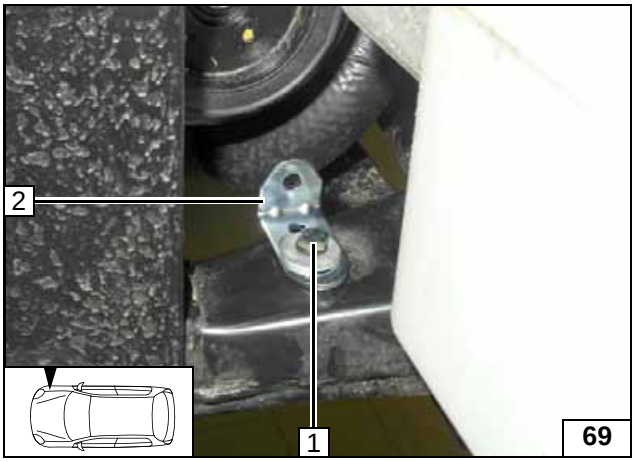


All spring clips = 25 mm dia.
1 = Original vehicle spring clip. **2** = Black rubber isolator.
All connecting pipes and = 18x18 mm dia.



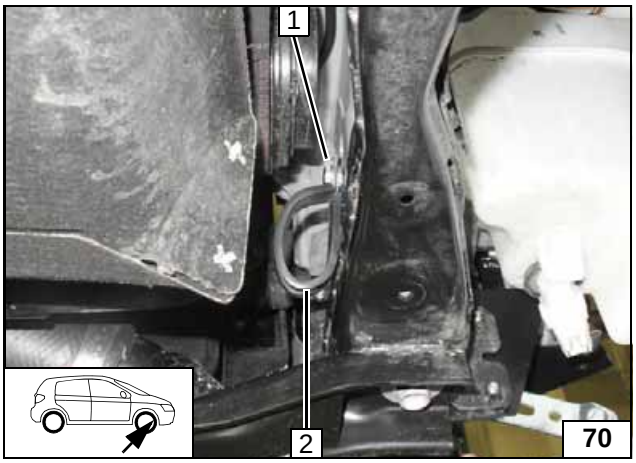
1 Rivet nut, existing hole

Installing rivet nut



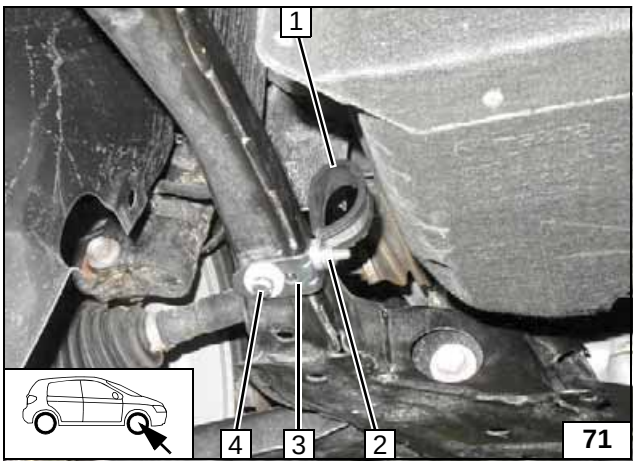
1 M6x20 bolt, large diameter washer, spring lockwasher (8-10Nm)
2 Angle bracket

Installing angle bracket



1 M6x20 bolt, flanged nut (8-10Nm)
2 38 mm dia. rubber-coated p-clamp

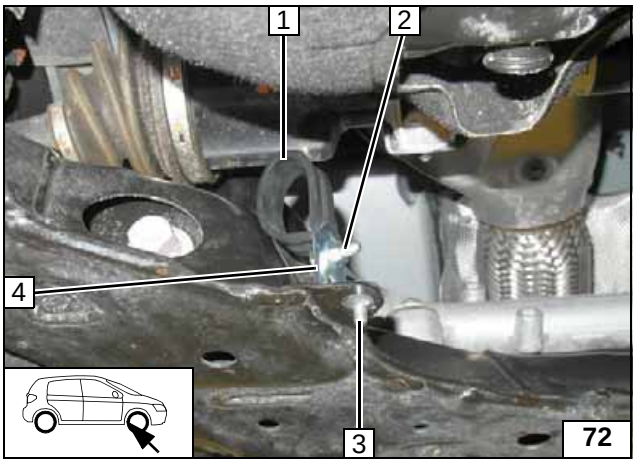
Mounting p-clamp



Insert M6 rivet nut into existing hole at position **4** . Install bolt **4** loosely, will be tightened later together with the underride protection.

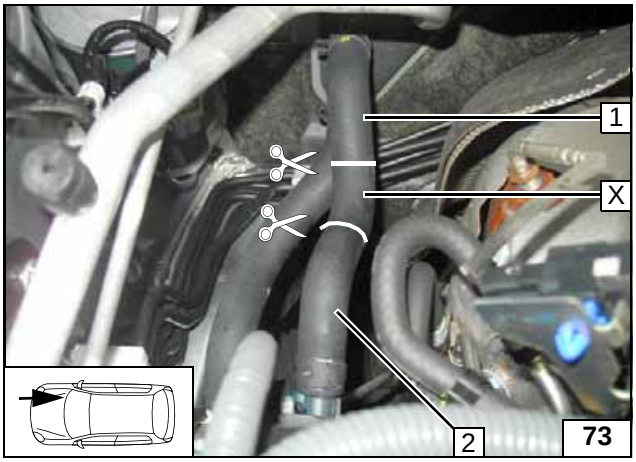
1 38 mm dia. rubber-coated p-clamp
2 M6x20 bolt, flanged nut (8-10Nm)
3 Angle bracket
4 M6x20 bolt, spring lockwasher, large diameter washer

Mounting p-clamp



1 38 mm dia. rubber-coated p-clamp
2 M6x20 bolt, flanged nut (8-10Nm)
3 M6x16 bolt, pin lock, existing hole
4 Angle bracket

Mounting p-clamp

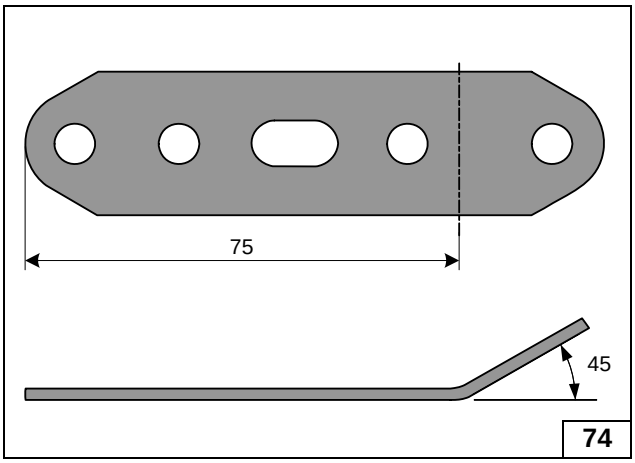


Cut off hose of engine outlet / heat exchanger inlet at the markings.

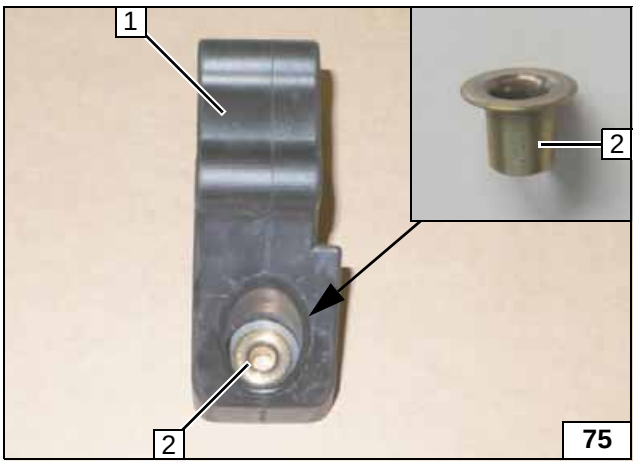
1 Hose section of heat exchanger inlet
2 Hose section of engine outlet

X = 90° elbow

Cutting point

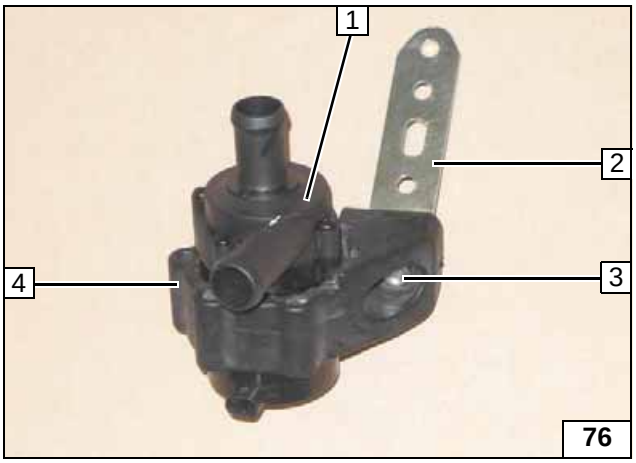


Angling down perforated bracket



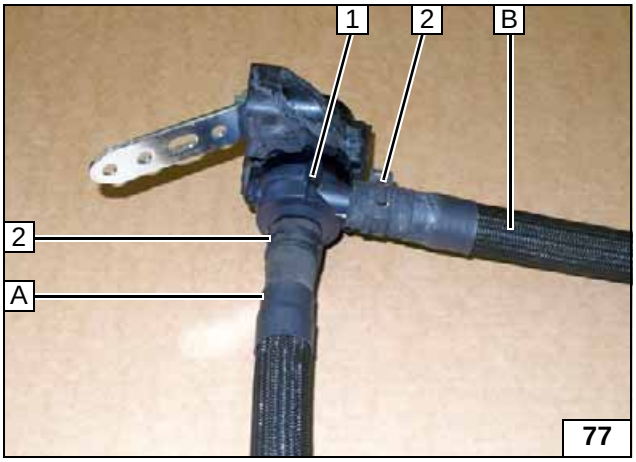
1 Circulating pump bracket
2 Support sleeve

Installing support sleeves



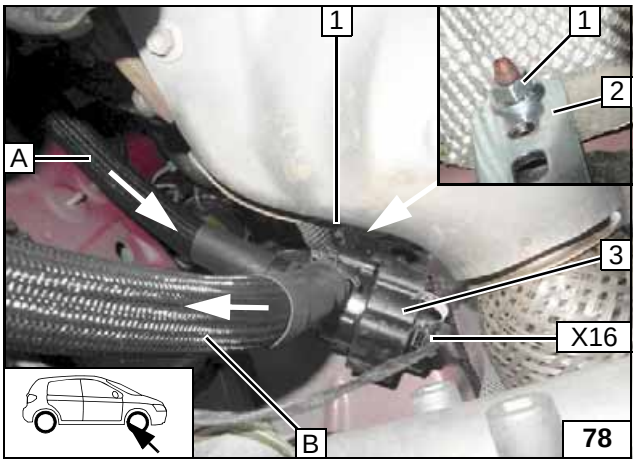
1 Circulating pump
2 Perforated bracket
3 M6x25 bolt, flanged nut (8-10Nm)
4 Circulating pump mount

Premounting circulating pump



1 Circulating pump
2 25 mm dia. spring clip [2x]

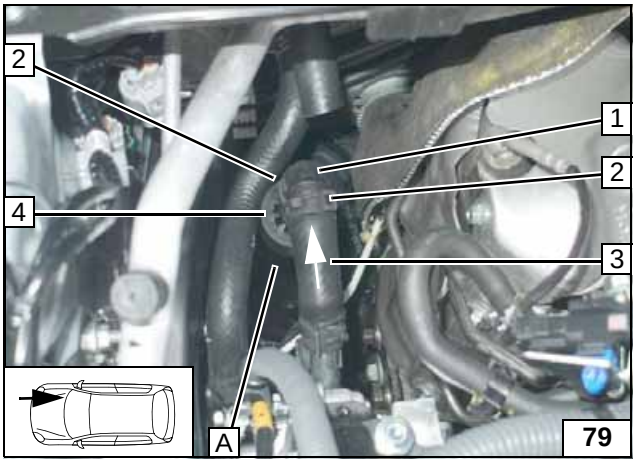
Premounting circulating pump



Original vehicle flanged nut as spacer between perforated bracket **2** and heat shield plate. Route hose **A** to the heat exchanger.

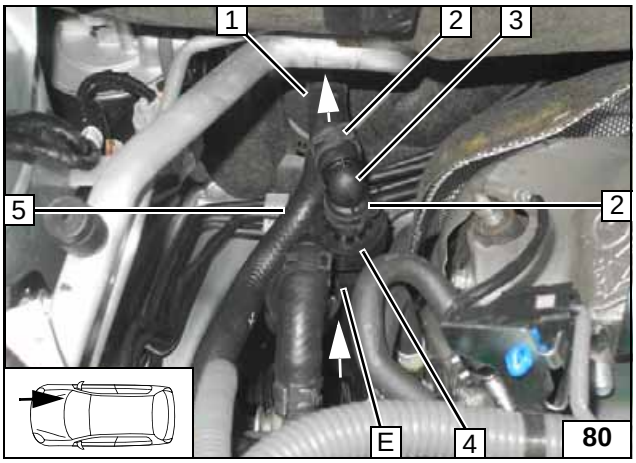
1 Original vehicle stud bolt, M6 flanged nut (8-10Nm)
2 Perforated bracket
3 Circulating pump
X16 Connector of circulating pump wiring harness

Installing circulating pump



1 18x18mm dia., 90° connecting pipe
2 25 mm dia. spring clip [2x]
3 Hose section of engine outlet
4 Black rubber isolator

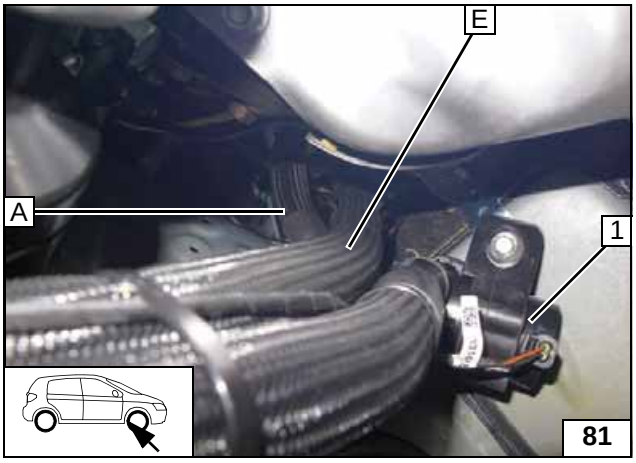
Connecting engine outlet



Route hose **E** to heater.
Align black (sw) rubber isolator **4** with hose of heat exchanger outlet **5**.

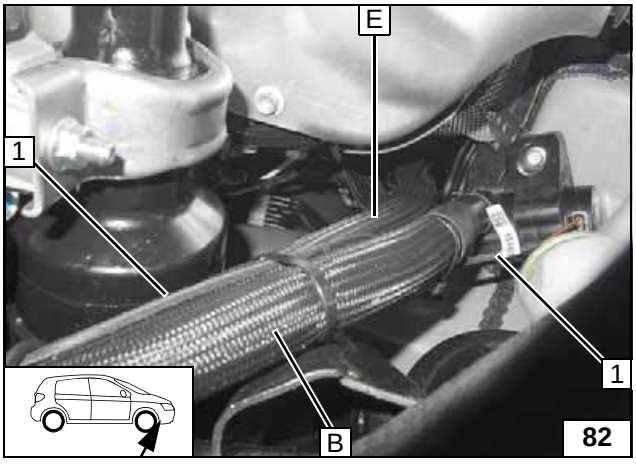
1 Hose section of heat exchanger inlet
2 25 mm dia. spring clip [2x]
3 18x18 mm dia., 90° connecting pipe

Connecting heat exchanger inlet



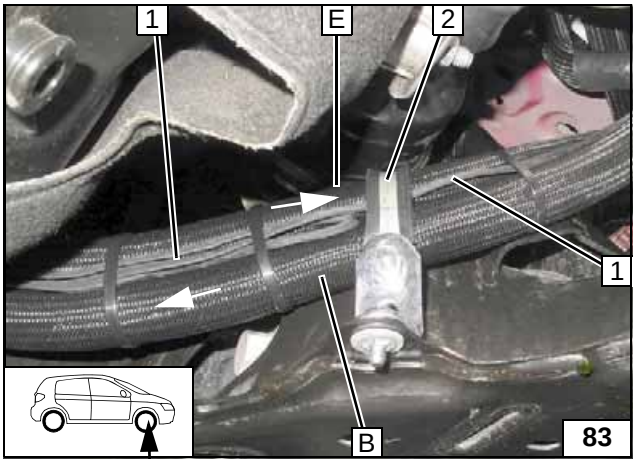
1 Circulating pump

Routing in engine compartment



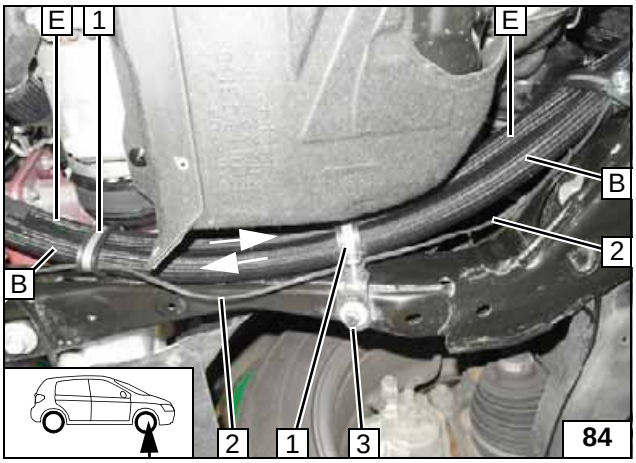
1 Circulating pump wiring harness

Aligning hoses



1 Circulating pump wiring harness
2 38 mm dia. rubber-coated p-clamp [2x]

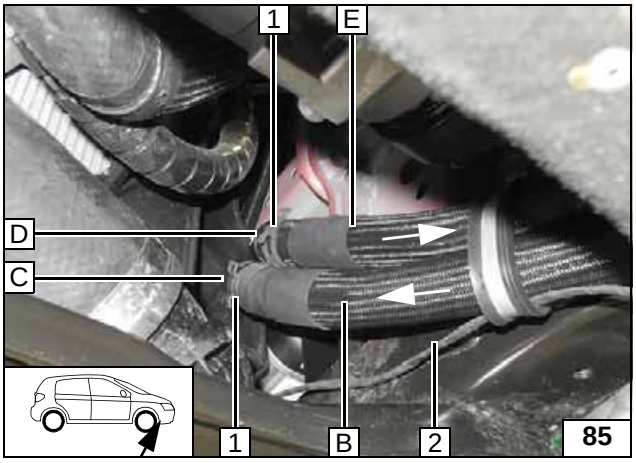
Routing in engine compartment



Remove bolt at position **3**, will be reinstalled later together with the engine trim.

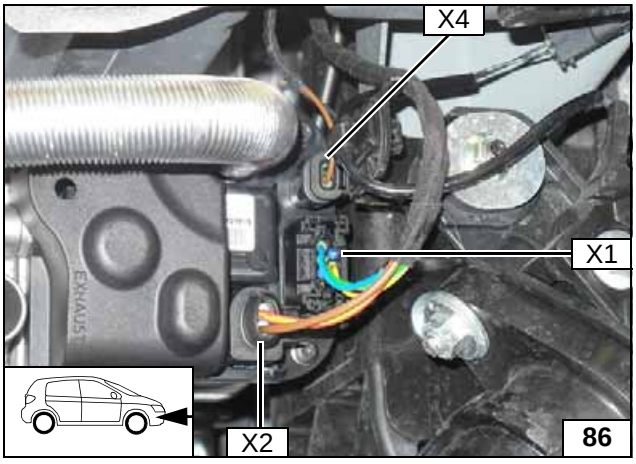
1 38 mm dia. rubber-coated p-clamp [2x]
2 Circulating pump wiring harness

Routing in engine compartment



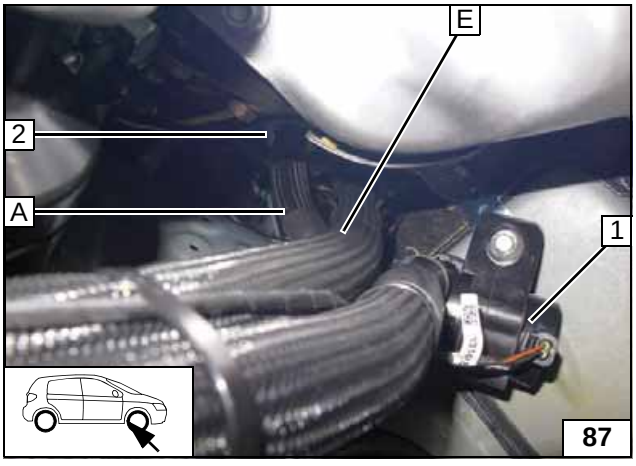
1 25mm dia. spring clip [2x]
2 Circulating pump wiring harness

Routing in engine compartment



X1 6-pin connector of heater wiring harness
X2 2-pin connector of heater wiring harness
X4 Connector of circulating pump wiring harness

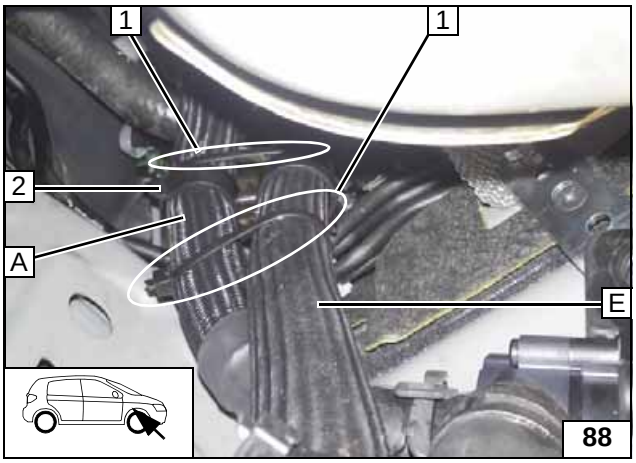
Installing wiring harnesses



Align black (sw) rubber isolator **2** with vehicle body.

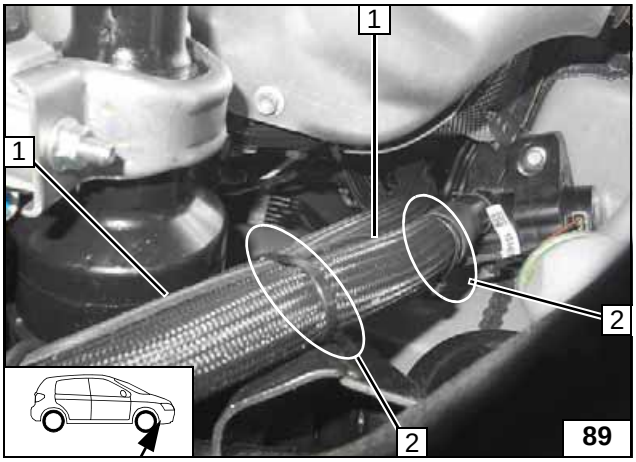
1 Circulating pump

Routing in engine compartment



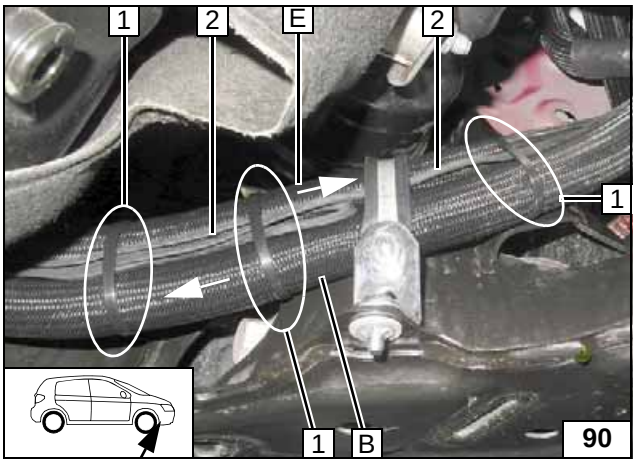
1 Cable tie [2x]
2 25-27mm dia. hose bracket between hoses **A** and **E**

Routing in engine compart-ment



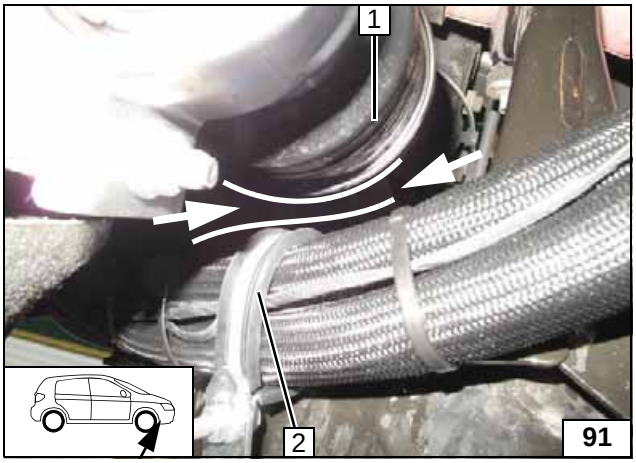
1 Circulating pump wiring harness
2 Cable tie [2x]

Aligning hoses

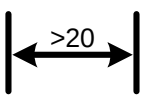


1 Cable tie [3x]
2 Circulating pump wiring harness

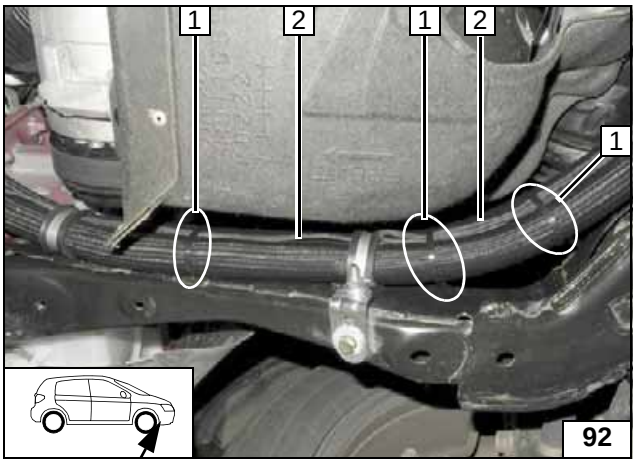
Aligning hoses



1 Drive shaft
2 Rubber-coated p-clamp

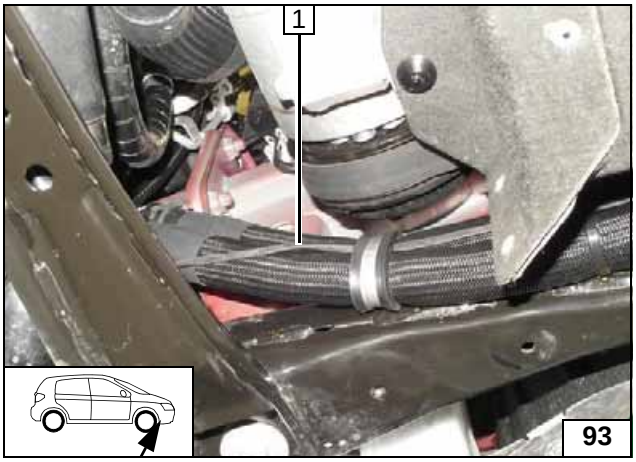


Aligning hoses



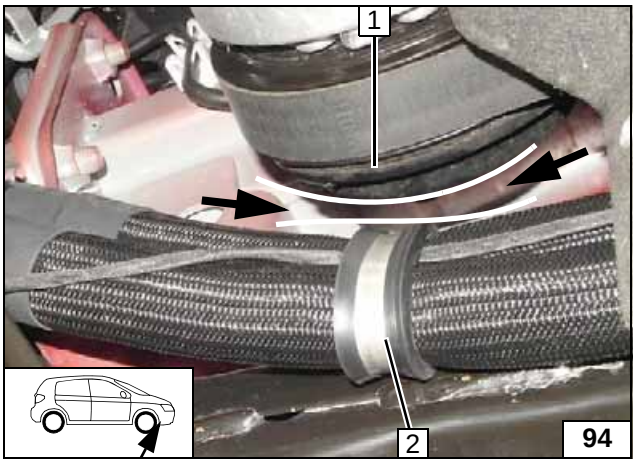
1 Cable tie [3x]
2 Circulating pump wiring harness

Aligning hoses

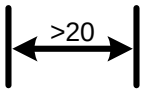


1 Circulating pump wiring harness

Aligning hoses



1 A/C compressor
2 Rubber-coated p-clamp



Aligning hoses

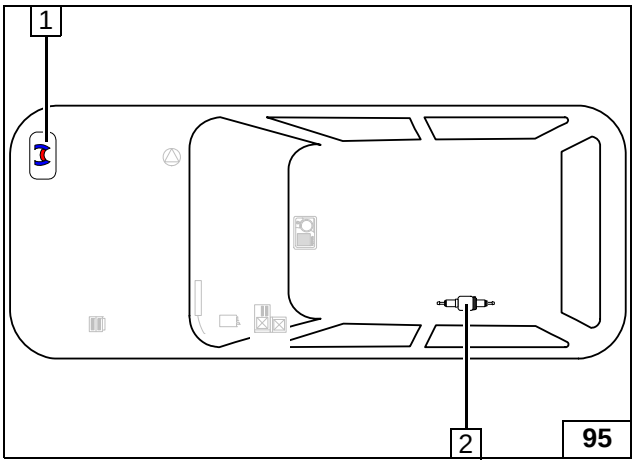
Fuel

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.

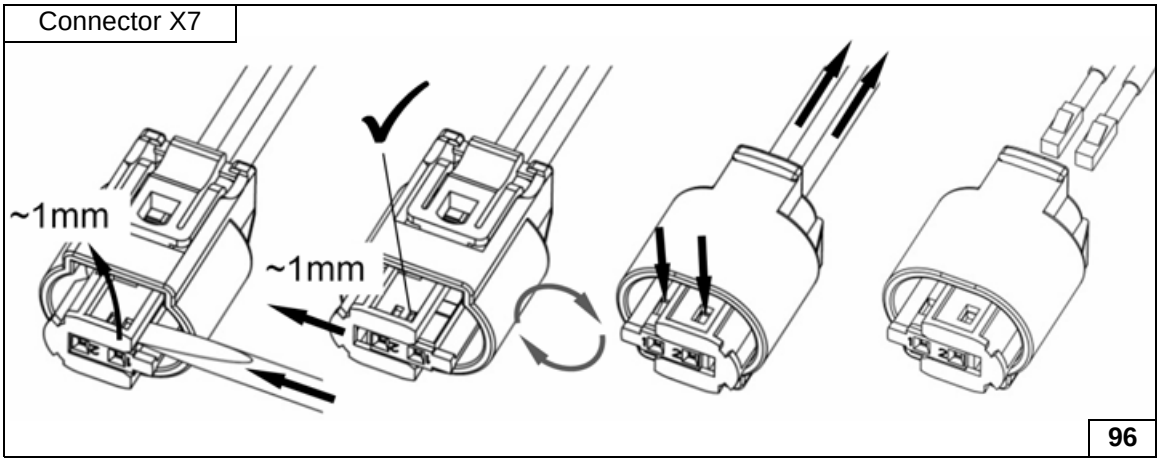
Route fuel line and metering pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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

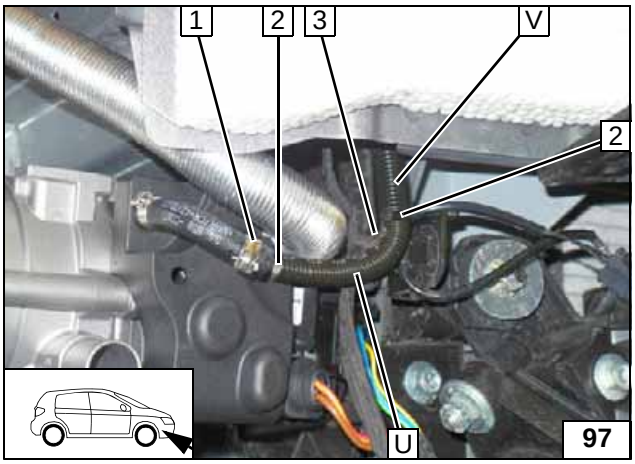


1 Heater
2 Metering pump

Installation overview

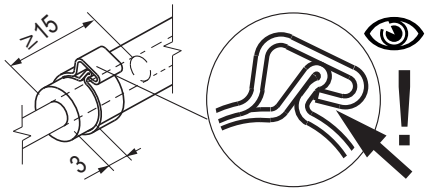


Dismantling metering pump connector

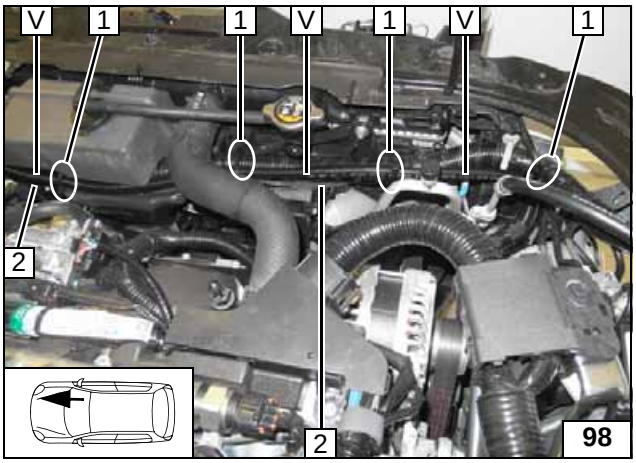


Insert fuel line **2** in 10mm corrugated tube **U**. Pull fuel line **2** and wiring harness of metering pump **3** into 10mm dia. corrugated tube **V** and route in the engine compartment.

1 10mm dia. clamp



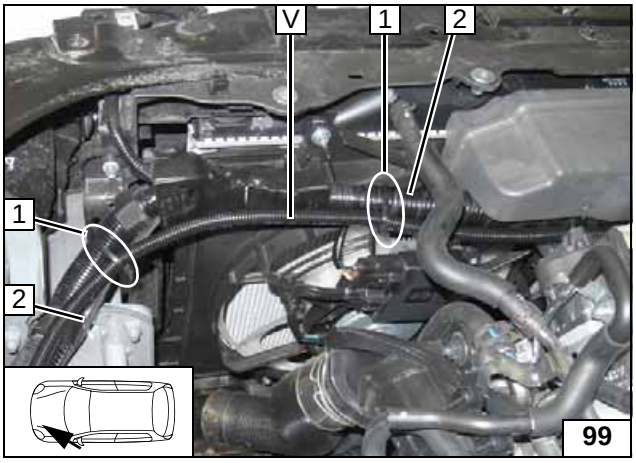
Connecting heater



Route 10mm dia. corrugated tube **V** along heater wiring harness **2** and the original vehicle wiring harness to the left side of the vehicle.

1 Cable tie [4x]

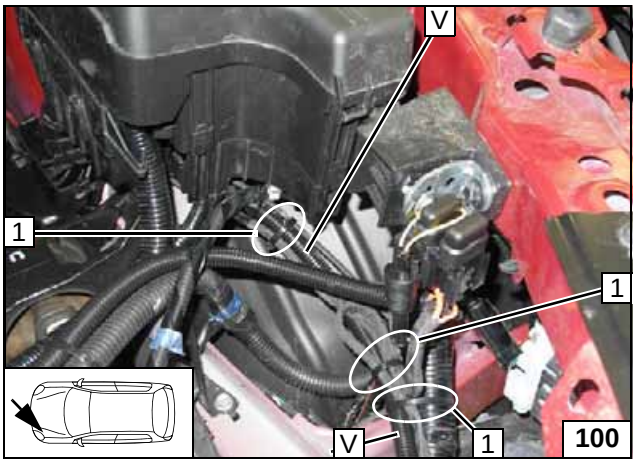
Routing lines



Route 10mm dia. corrugated tube **V** along heater wiring harness **2** and the original vehicle wiring harness on the frame side member to the firewall.

1 Cable tie [2x]

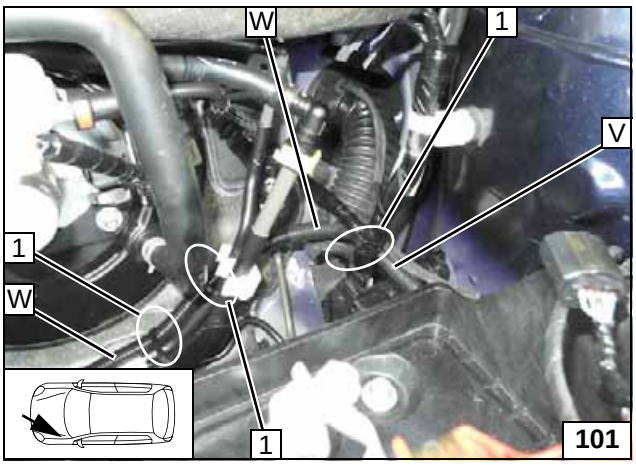
Routing lines



Route 10mm dia. corrugated tube **V** along the heater wiring harness and original vehicle wiring harness to the firewall.

1 Cable tie [3x]

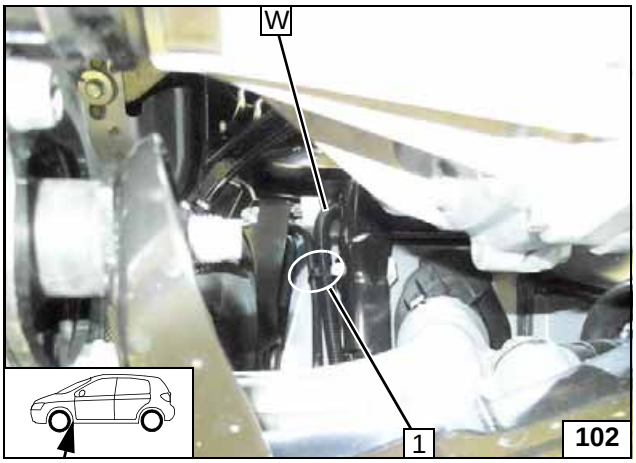
Routing lines



Pull fuel line and metering pump wiring harness into 10mm dia. corrugated tube **W** and route along the firewall to the underbody.

1 Cable tie [3x]

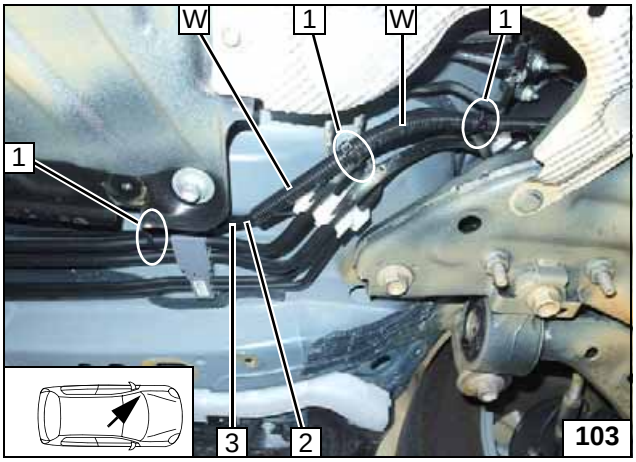
Routing lines



Route 10mm dia. corrugated tube **W** along original vehicle wiring harness and original vehicle fuel line to the underbody.

1 Cable tie [3x]

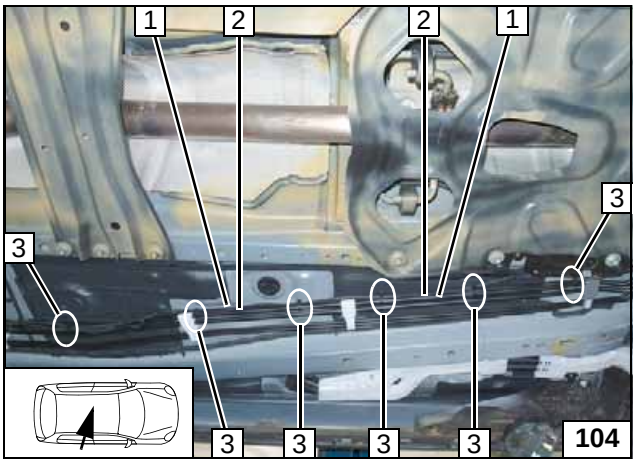
Routing lines



Route fuel line **2** and metering pump wiring harness **3** along original vehicle fuel lines.

1 Cable tie [3x]

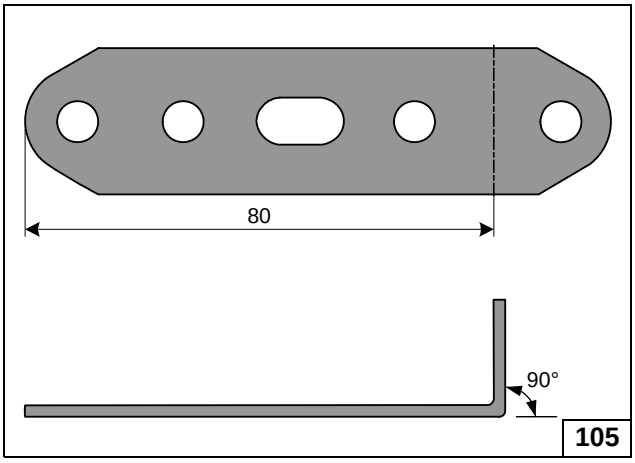
Routing lines



Route fuel line **1** and metering pump wiring harness **2** along original vehicle fuel lines to the installation location of the metering pump.

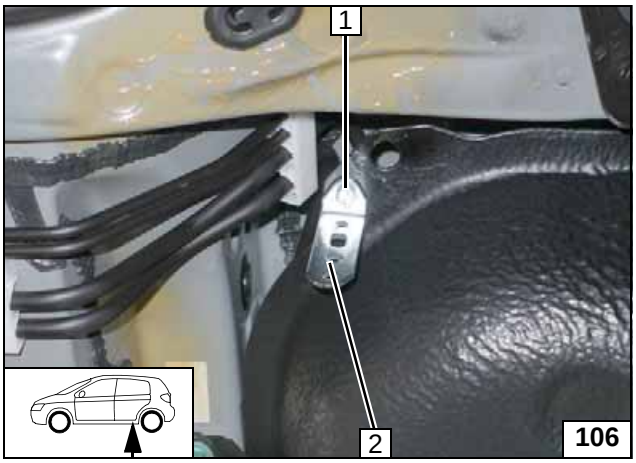
3 Cable tie [6x]

Routing lines



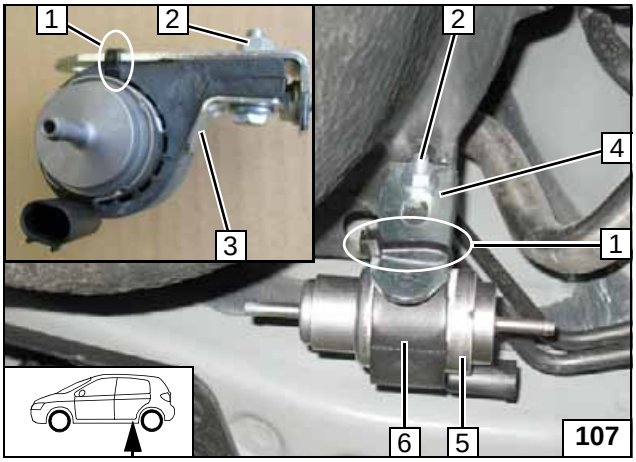
Angling down perforated bracket

Installing perforated bracket



1 M6x20 bolt, large diameter washer, flanged nut, existing hole (8-10Nm)
2 Perforated bracket

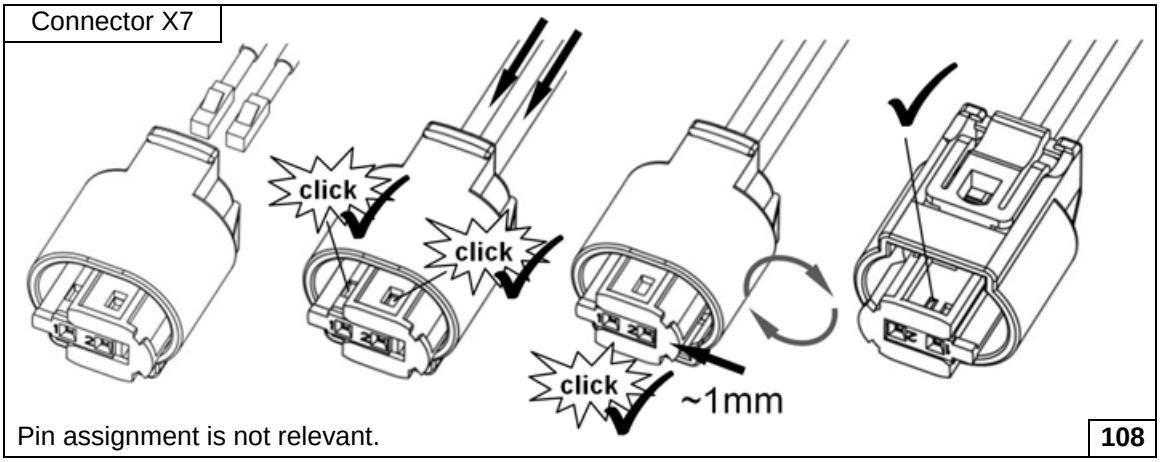
Installing metering pump



1 Cable tie
2 M6x25 bolt, flanged nut (8-10Nm)
3 Support angle bracket
4 Perforated bracket
5 Metering pump
6 Metering pump mount

Completing metering pump connector

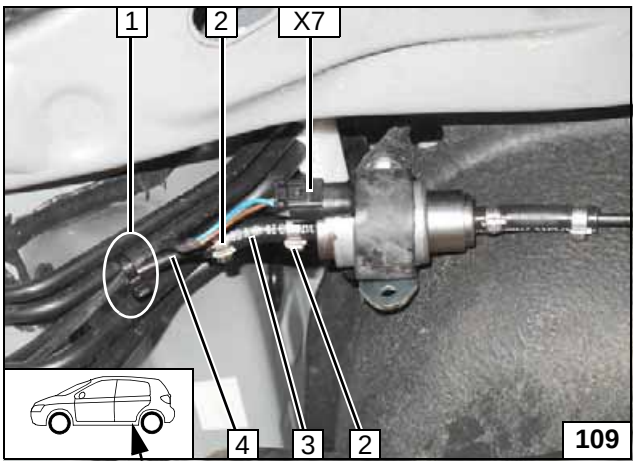
Connector X7



Pin assignment is not relevant.

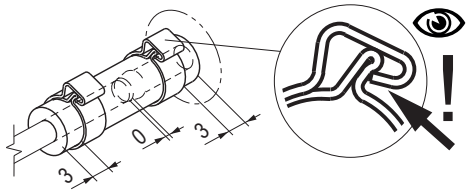
108

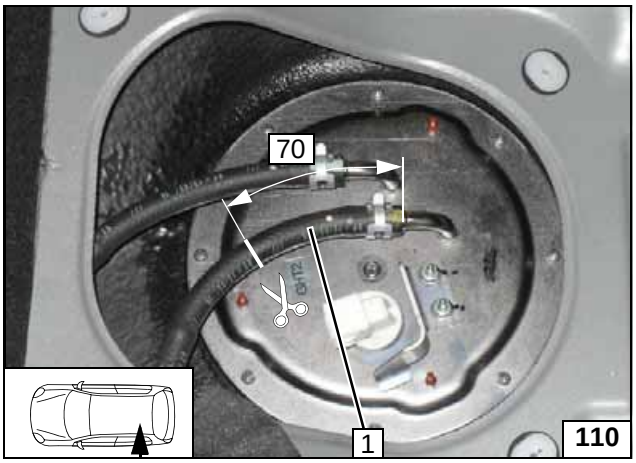
Connecting metering pump



Cut heater fuel line to length.

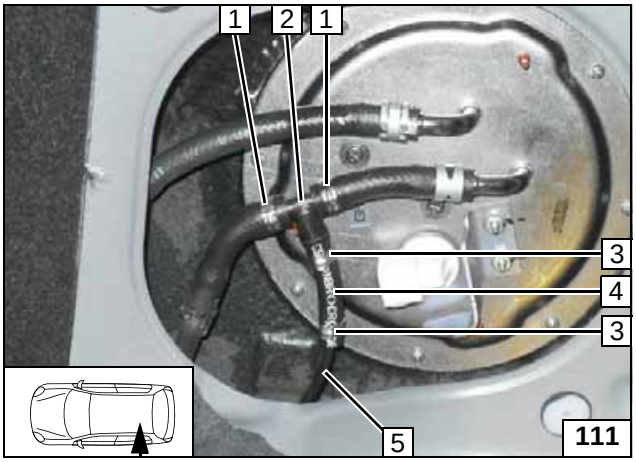
1 Cable tie
2 10 mm dia. clamp [2x]
3 Hose section
4 Fuel line of heater
X7 Metering pump wiring harness, connector X7 mounted





Cut fuel supply line **1** as shown.

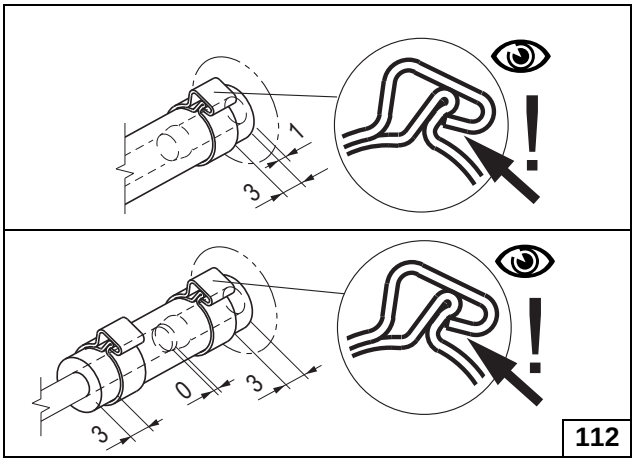
Fuel extraction



For the installation of the fuel line and clamps, see next figure.

1 13.5mm dia. clamp [2x]
2 8x5x8 fuel standpipe (T-piece)
3 10 mm dia. clamp [2x]
4 Hose section
5 Fuel line

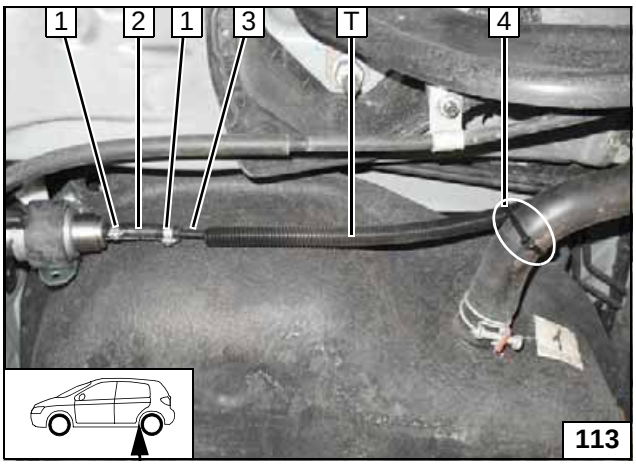
Connecting fuel line



13.5mm dia. clamp

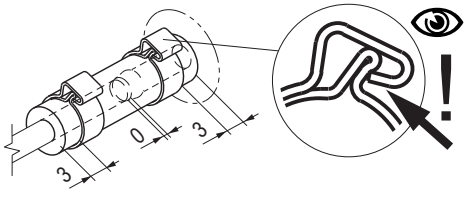
10Mm dia. clamp

Connecting fuel line and hose section

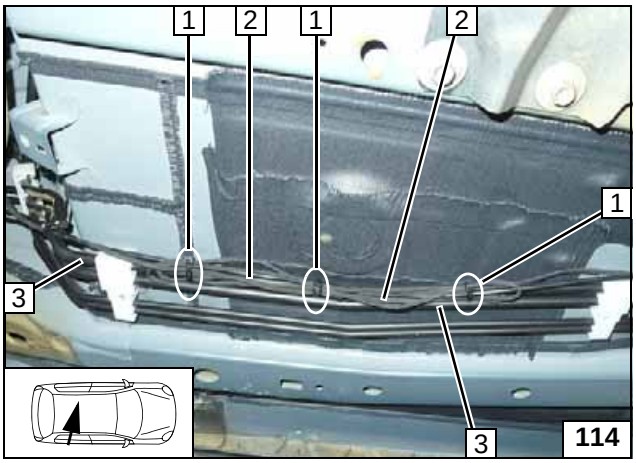


Insert fuel line **3** into 10mm dia. corrugated tube **T**. Ensure sufficient distance from neighbouring components, correct if necessary.

1 10 mm dia. clamp [2x]
2 Hose section
4 Cable tie

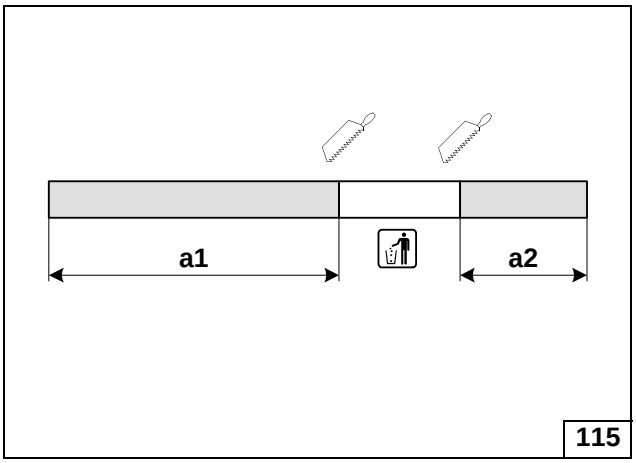


Connecting metering pump



Attach excess length **2** to original vehicle fuel lines **3**.

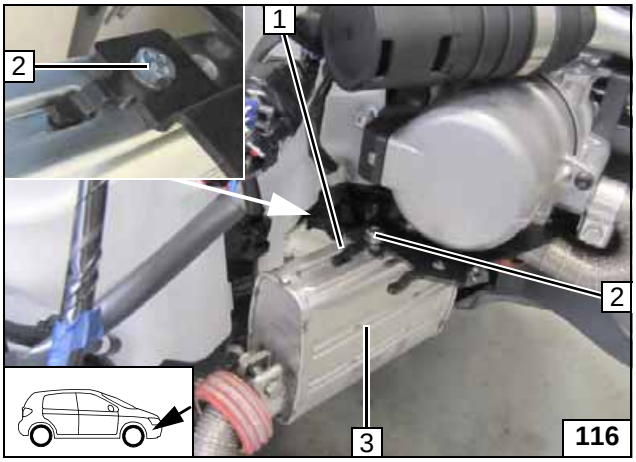
1 Cable tie [3x]



Exhaust Gas

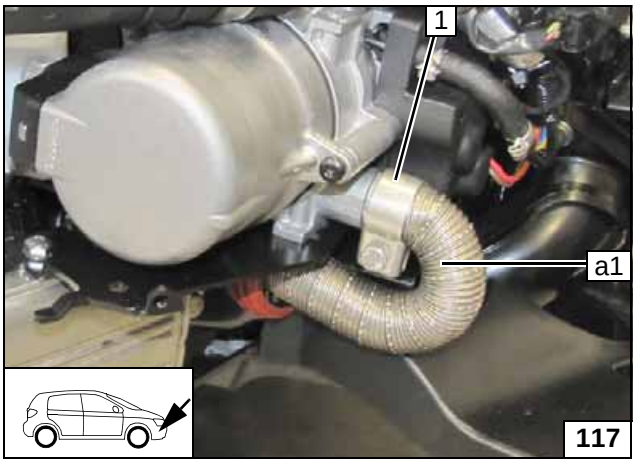
a1 = 200
a2 = 140

Preparing exhaust pipe



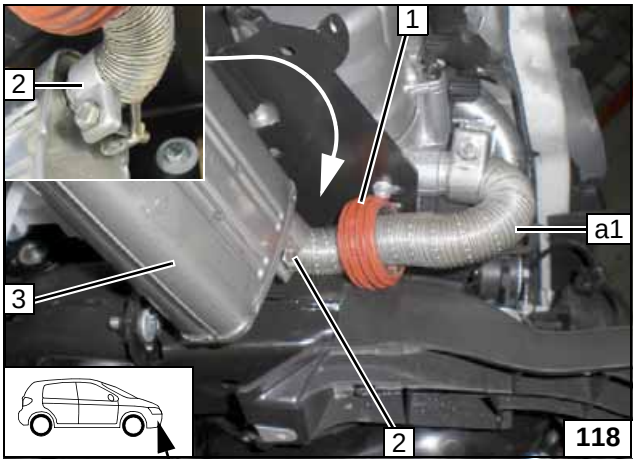
1 Locking tab of bracket
2 M6x16 bolt, spring lockwasher (8-10Nm), hole in heater bracket
3 Silencer

Installing exhaust silencer



1 Hose clamp

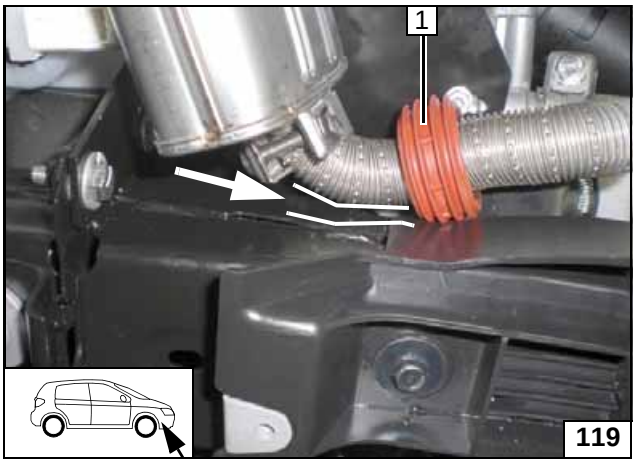
Installing exhaust pipe a1



Bend exhaust pipe **a1** as shown to produce a short radius.

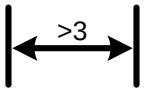
1 Slide on spacer bracket
2 Hose clamp
3 Silencer

Installing exhaust pipe a1

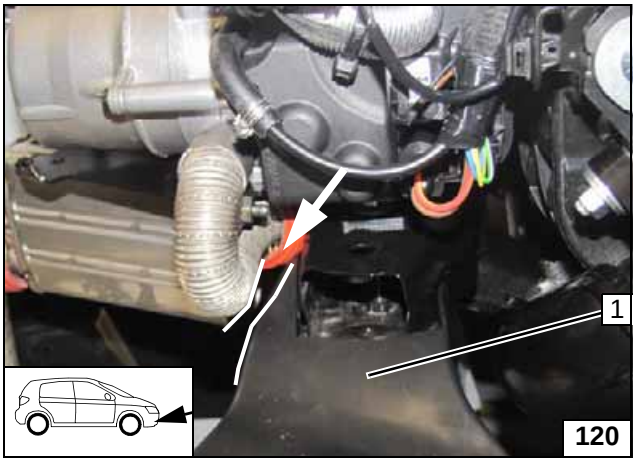


Ensure sufficient distance to neighbouring components, correct if necessary.

1 Align spacer bracket

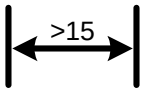


Aligning exhaust pipe a1

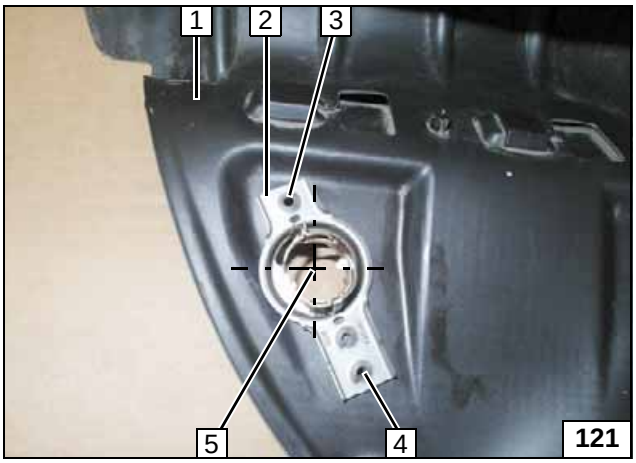


Ensure sufficient distance to neighbouring components, correct if necessary.

1 Trim

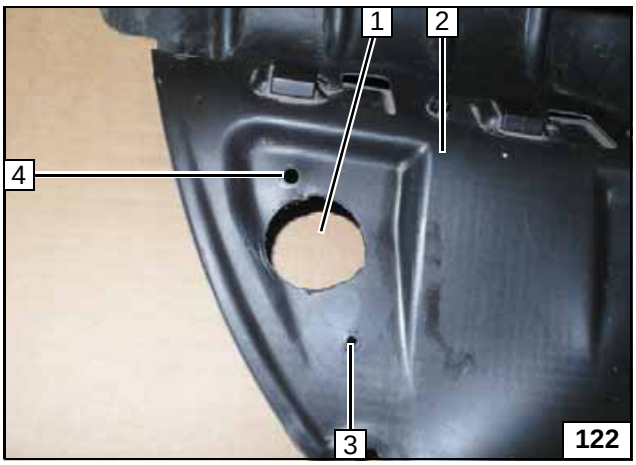


Aligning exhaust pipe



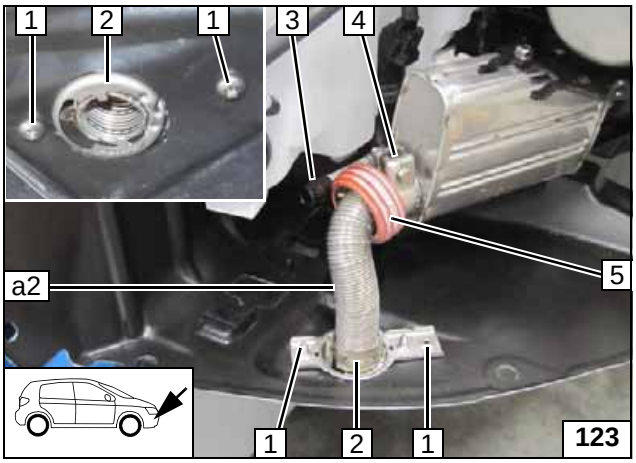
1 Wheel well trim on the right side
2 Align exhaust end fastener with existing hole **3** as shown
3 Existing hole
4 Copy 6mm dia. hole pattern
5 Copy 43mm dia. hole pattern

Copying hole pattern



1 43 mm dia. hole
2 Wheel well trim on the right side
3 6 mm dia. hole
4 Existing hole

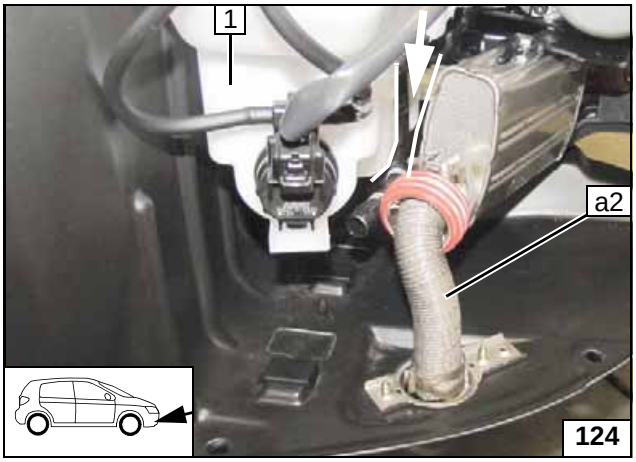
Hole in wheel well trim



Align spacer bracket **5** with window washer system hose section **3**.

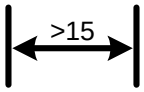
1 5x13 self-tapping bolt [2x] (3Nm)
2 Exhaust end fastener
4 Hose clamp
5 Slide on spacer bracket

Installing exhaust pipe a2



Ensure sufficient distance to neighbouring components, correct if necessary.

1 Washer reservoir



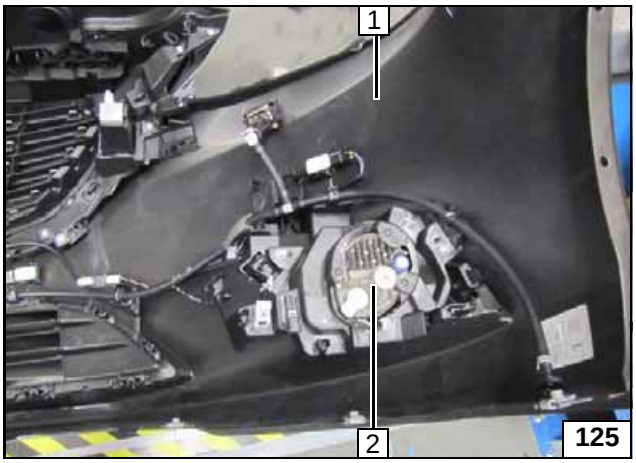
Aligning exhaust pipe a2

Wiring Harnesses Rerouting

Note

The following work steps in the bumper area **1** were documented for a vehicle in model year 2017.
For different or older variants, route the wiring harnesses accordingly and fasten using cable ties!
Minimum distance of at least 15mm from exhaust system parts.

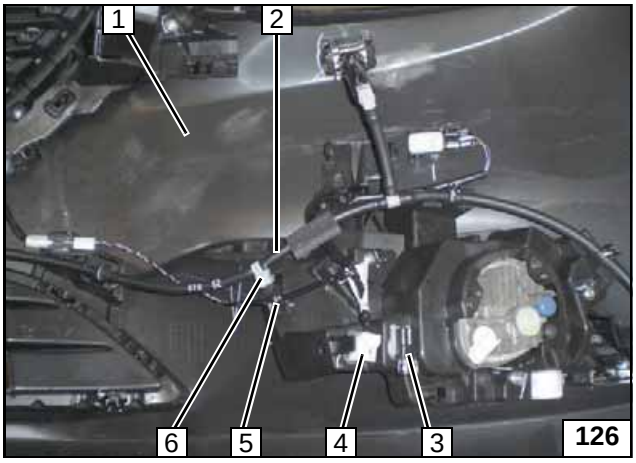
2 Front fog light on the right side



Overview of bumper components

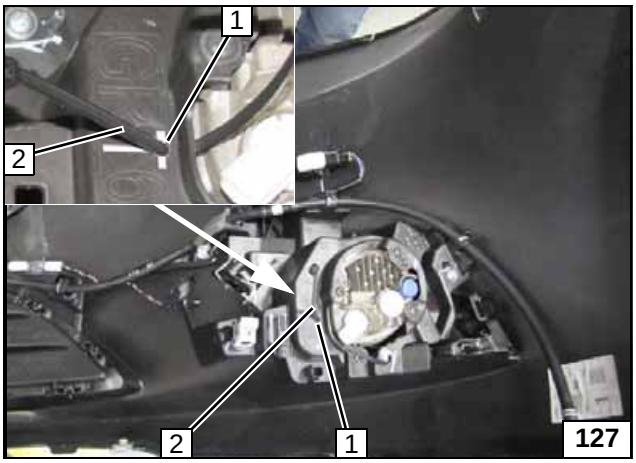
The following components are (if present) in a new position on the bumper **1** as follows:

- **2** Headlight washer system hose
- **3** Dummy plug
- **4** Connector of parking assistance
- **5** Wiring harness retaining clip of parking assistance
- **6** Hose retaining clip of headlight washer system



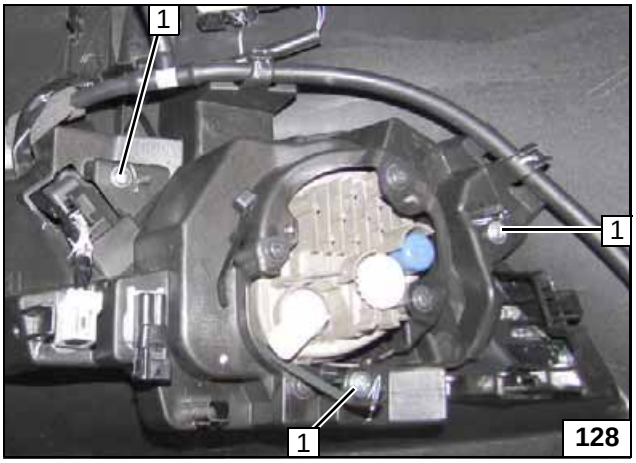
Premounting cable tie

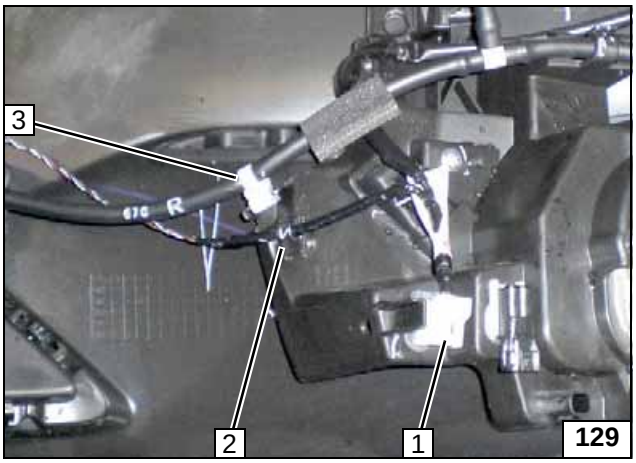
- **1** Carefully drill 5.5mm dia. hole in marked area
- **2** Insert cable tie, but do not close



Detaching bolts

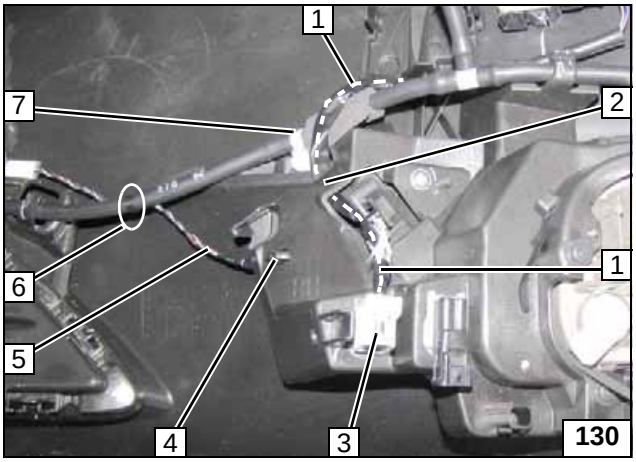
- **1** Detach original vehicle bolts [3x]





1 Connector
2 Wiring harness retaining clip of parking assistance
3 Hose retaining clip of headlight washer system

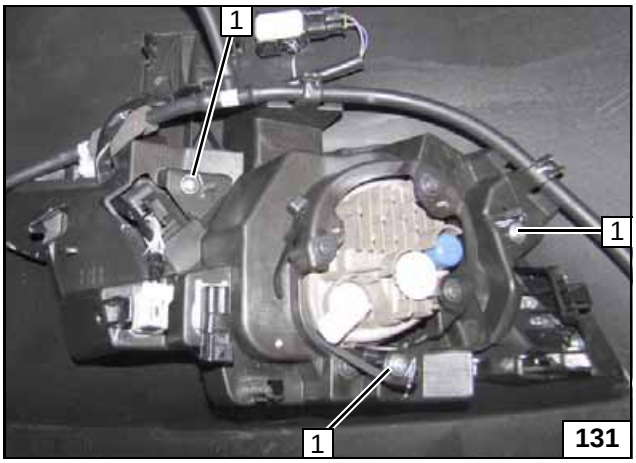
Detaching connector and clips



Shift clip **7** on the headlight washer system hose and attach at a new position.
Reroute parking sensors wiring harness **1** over headlight washer system hose and under cover **2** and mount connector **3** at the old position.
Route parking sensors wiring harness **5** under the cover and reinstall clip **4** from behind in the old position.

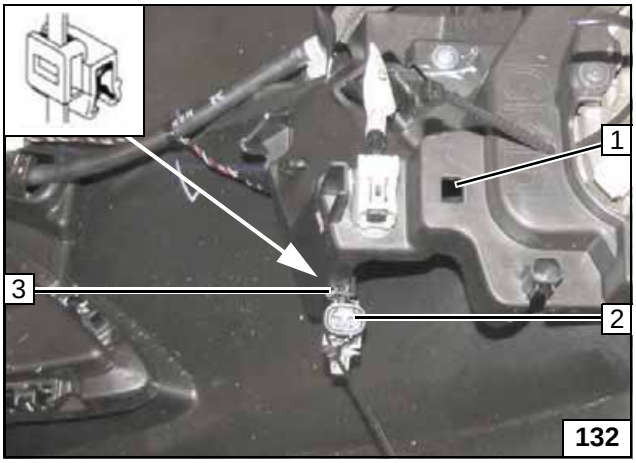
6 Cable tie

Rerouting Wiring Harnesses



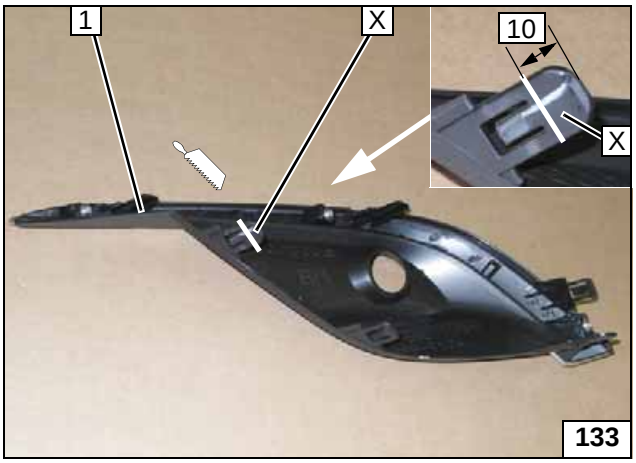
1 Original vehicle bolts [3x]

Tightening bolts



Detach dummy plug **2** from position **1** and fasten using clip-type cable tie **3** as shown.

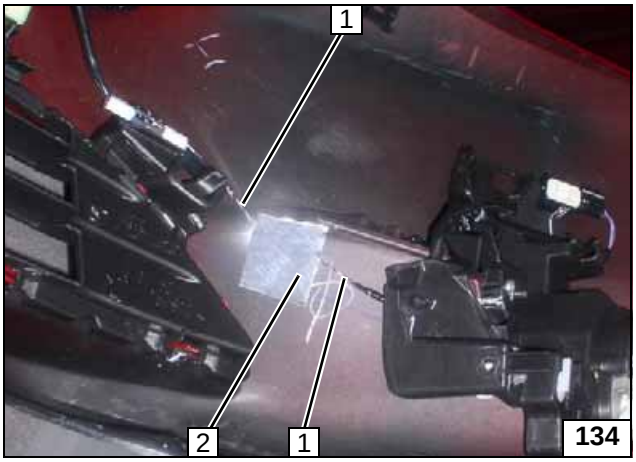
Reinstalling connector



1 Front fog light trim piece, LED version

X =

Adapting front fog light trim piece

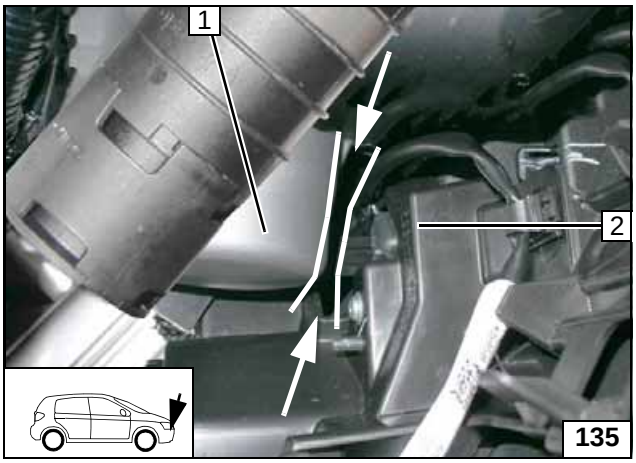


Vehicle without headlight washer system

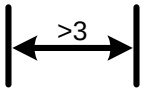
Attach parking sensors wiring harness **1** using self-adhesive film **2** to the rear panel of the bumper.

Securing wiring harnesses

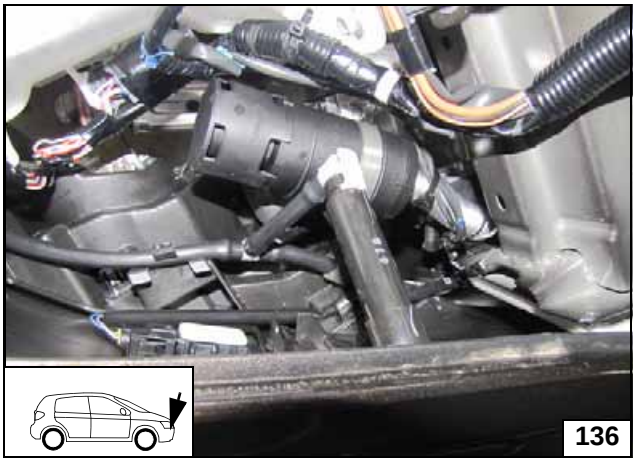
Bumper Trial Fitting



1 Heater
2 Front fog lights

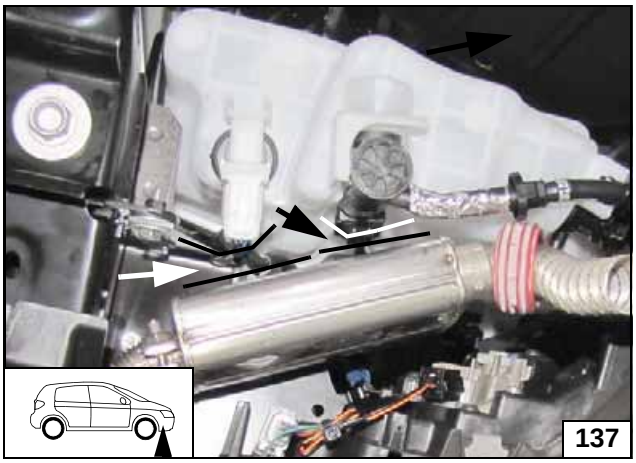


Checking distance

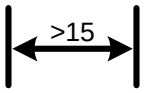


Ensure sufficient distance to neighbouring components, correct if necessary.

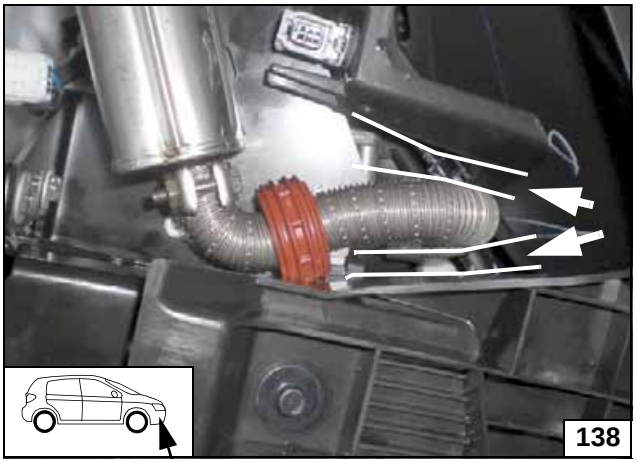
Aligning combustion air silencer



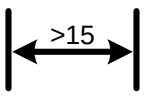
Ensure sufficient distance to neighbouring components, correct if necessary.



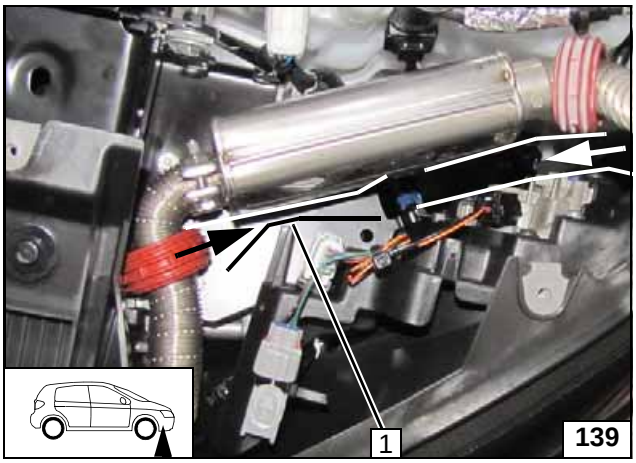
Checking distances



Ensure sufficient distance to neighbouring components, correct if necessary.

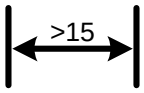


Aligning exhaust pipe a1

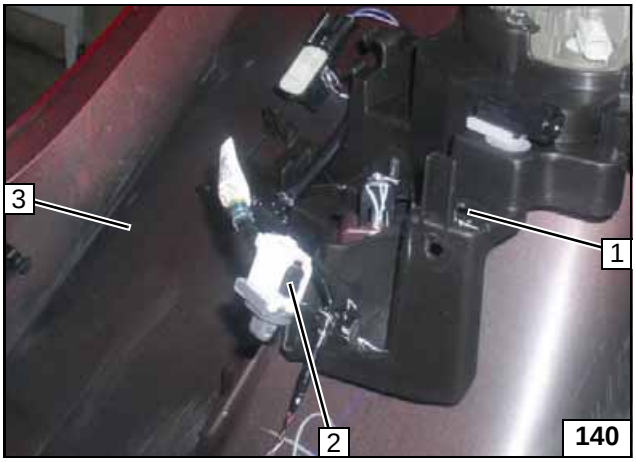


Ensure sufficient distance to neighbouring components, correct if necessary.

If it is not necessary to maintain sufficient distance at position **1**, adapt the bumper according to the figures below!



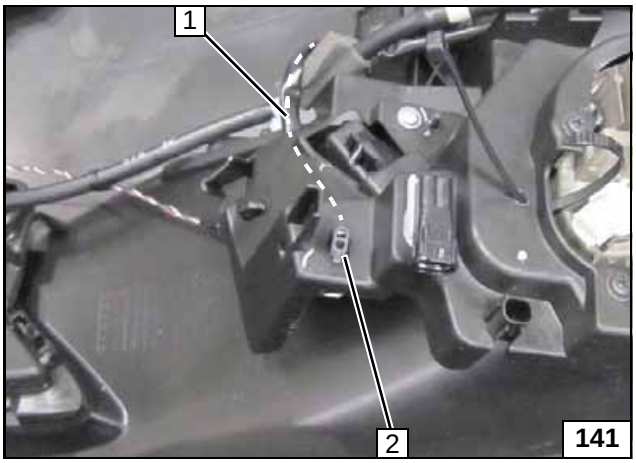
Checking distances



Detach parking sensors wiring harness connector **2** at position **1**.

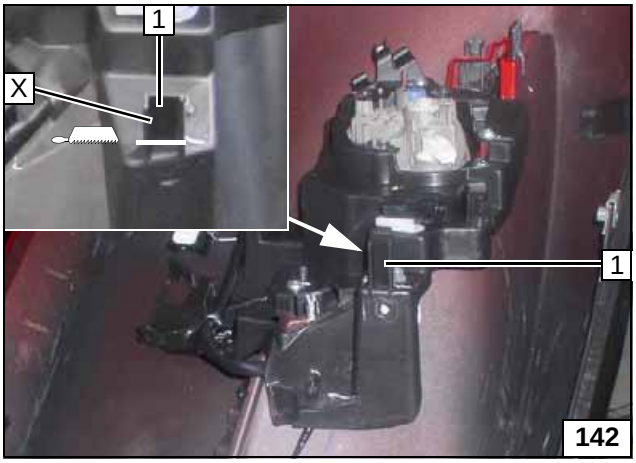
3 Bumper

Adapting connector



Route parking sensors wiring harness **1** under the cover and insert the connector at position **2** from below.

Adapting connector



Shorten raised part **1** as shown.

X =

Shortening raised part

Final Work

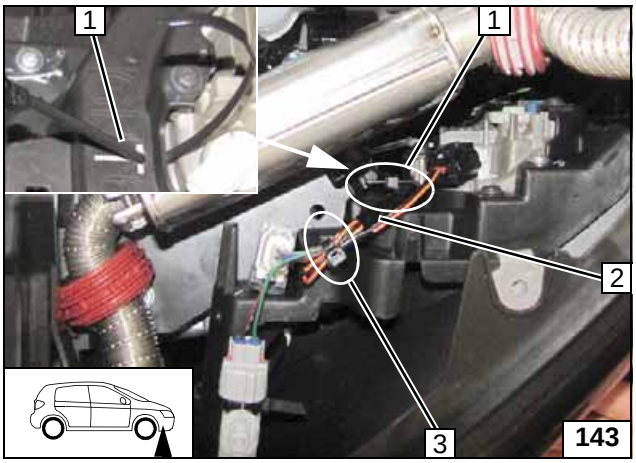
Mount headlight.
Mount bumper.

Route original vehicle wiring harness **2** as shown, mount connector.

Ensure sufficient distance to neighbouring components, correct if necessary.

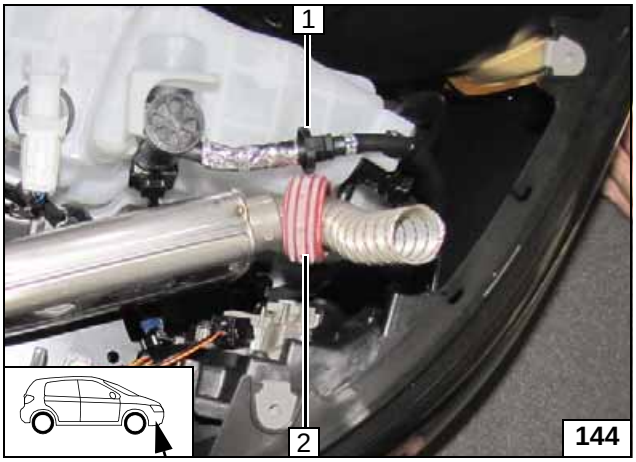
1 Cable tie, premounted
3 Cable tie

Routing wiring harness / connecting connector



Align headlight washer system coupling **1** with spacer bracket **2**.

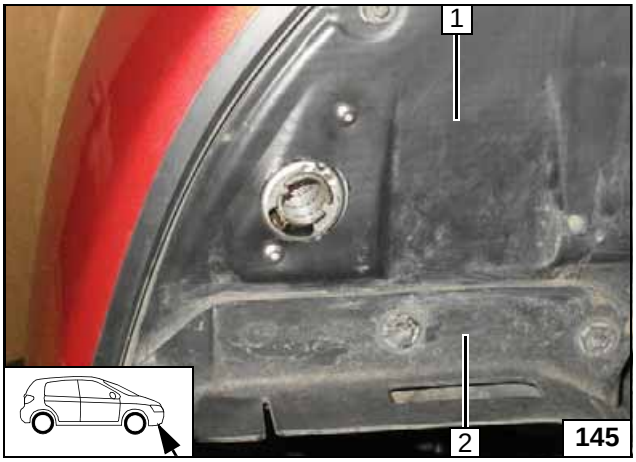
Aligning spacer bracket



Install wheel well trim **1** on the right side.

2 Mount cowl

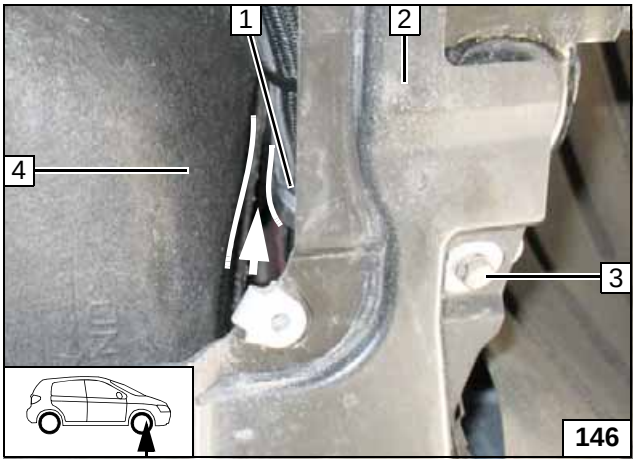
Installing wheel well trim

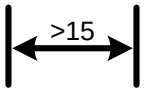


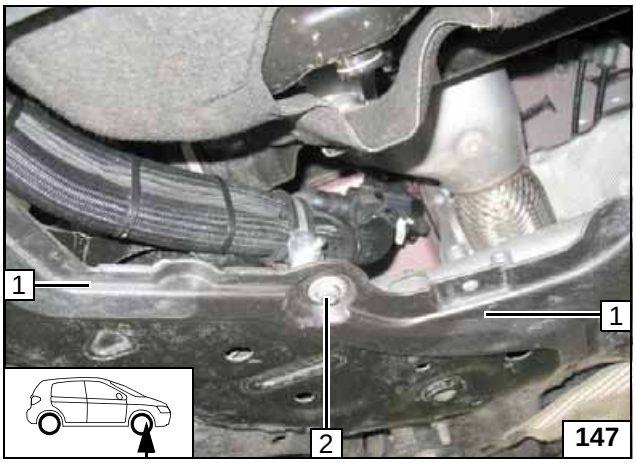
Mount underride protection **2**. Align angle bracket (premounted rubber-coated p-clamp) **1** to the right and mount M6x20 bolt, spring lockwasher and large diameter washer at position **3** (8-10Nm).

1 Rubber-coated p-clamp
4 Engine trim

Mounting underride protection



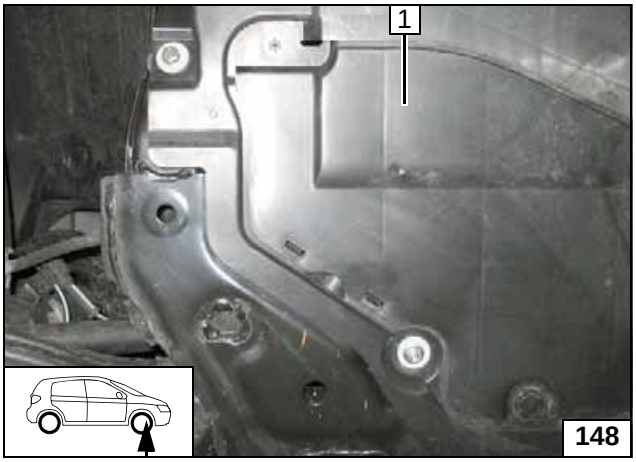




Mount M6 flanged nut and large diameter washer on M6 bolt at position **2** (8-10Nm)!

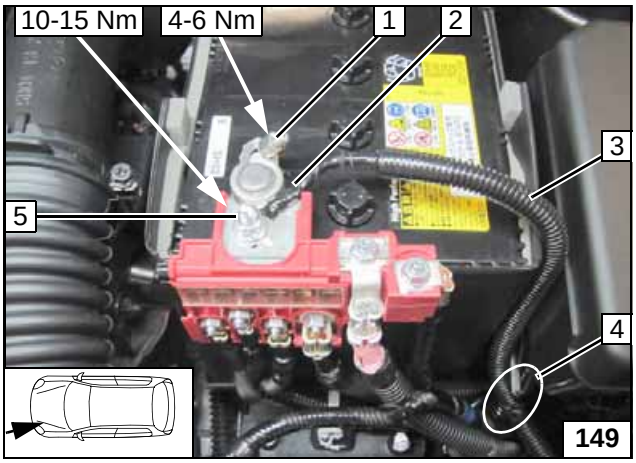
1 Underride protection

Mounting underride protection



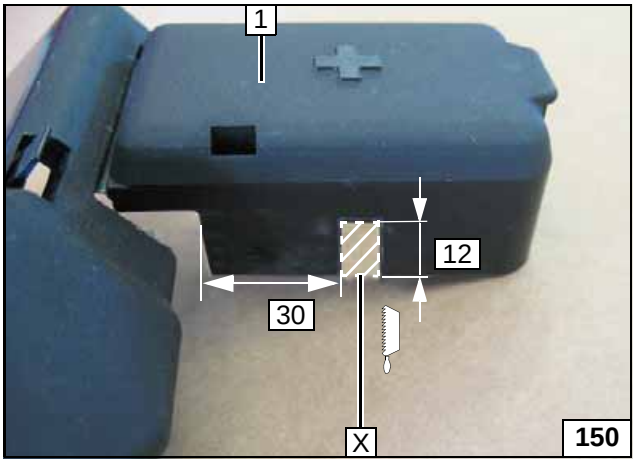
Install service lid **1**.

Installing service lid.



1 Original vehicle bolt, positive battery terminal
2 Connect red (rt) wire to positive battery terminal, insulate
3 Plus wire in 10 mm dia. corrugated tube
4 Cable tie
5 Original vehicle flanged nut

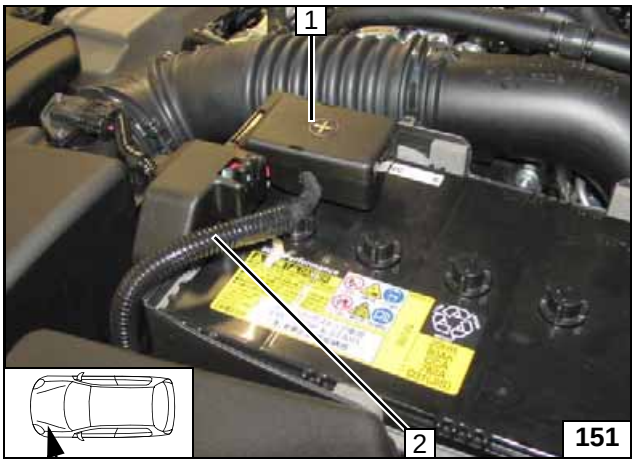
Connection to positive battery terminal



1 Cover of positive battery terminal

X =

Adapting cover



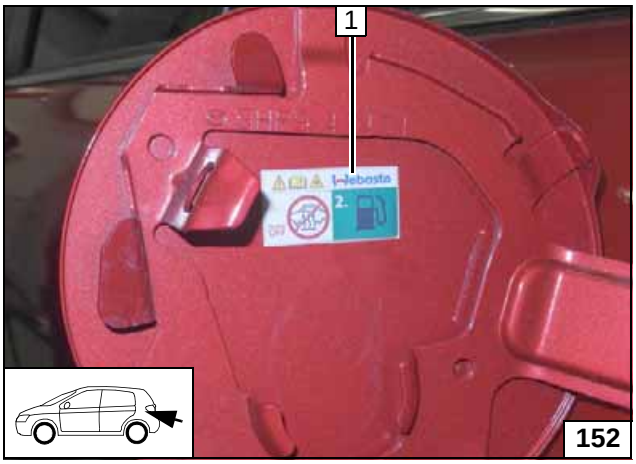
1 Cover of positive battery terminal
2 Plus wire in 10 mm dia. corrugated tube

Installing cover

WARNING!
Reassemble the removed components in reverse order according to the manufacturer's instructions (MESI). Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose lines and tie back.
Only use manufacturer-approved coolant.

Spray the heater components with anti-corrosion wax (Mazda underbody wax)

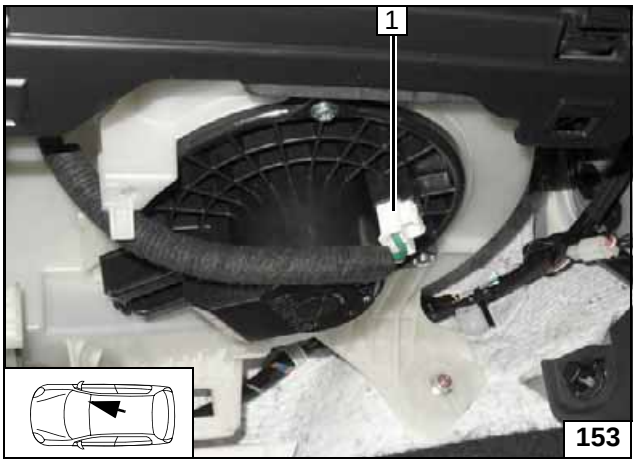
- **Only install the instrument panel trim after inspecting the PWM GW!**
- **Connect the battery by performing/following the specified actions as per MESI 'REMOVING/INSTALLING THE BATTERY [SKYACTIV - D2.2]'!**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications**
- **Program MultiControl CAR or digital timer, teach Telestart transmitter.**
- **Make settings on the A/C control panel according to the 'operating instructions'.**



Apply the 'Switch off parking heater before refuelling' sticker **1** in the area of the filler neck.

Applying sticker

- **See installation instructions for initial start-up and function check.**
- **Check voltage in parking heating mode (see settings for end customers) at fan motor. Target value 4.8 - 5.6V (in driving mode, corresponds to approx. level 3)! See the description below:**

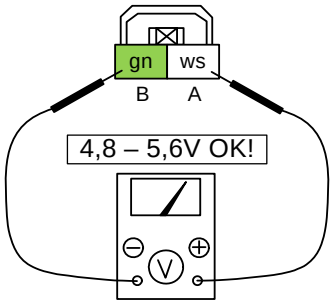


Measuring the voltage at the fan motor

Measure the voltage between the two pins!

1 2-pin connector of fan motor

Voltage measure-ment

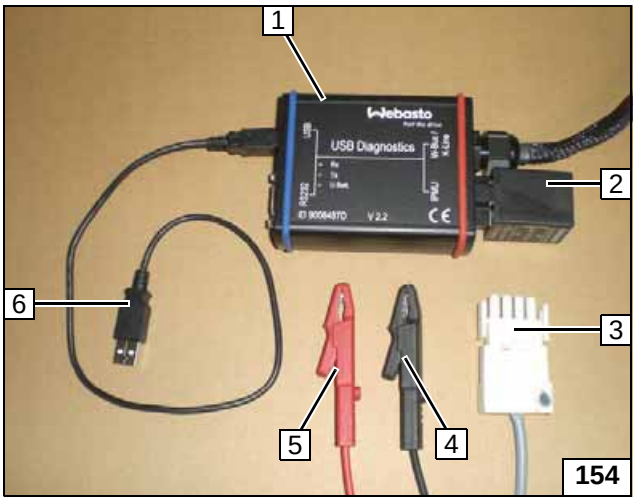


- **Only for deviations from the target value: Adjust the PWM GW value for the duty cycle via the Webasto diagnosis in increments of 2% (see the following section 'Adjusting the Fan Speed')!**

Adjustment of the Fan Speed VIN < 300000

Thermo Test Diagnosis,
Mazda order no.: 4100-77-725A
(software version V3.1 and later);
free update via: www.dealers.webasto.com;
support via Hotline:
technikcenter@webasto.com

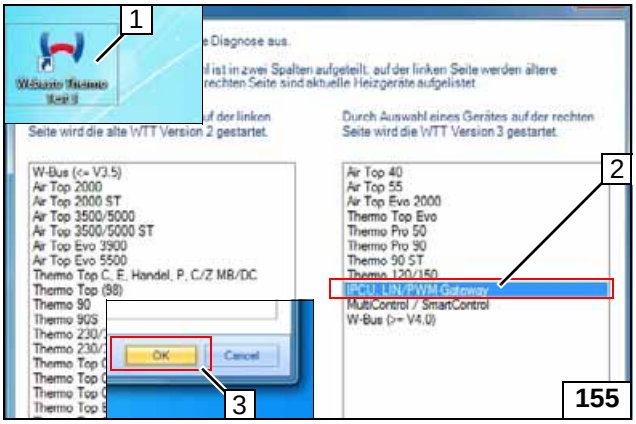
Thermo Test Diagnosis



1 Diagnosis Box
2 PWM GW
3 White (ws) connector not required
4 Connection of positive battery terminal
5 Connection of negative battery terminal
6 USB PC connection

Produce all connections.
Start Webasto Thermo Test **1**

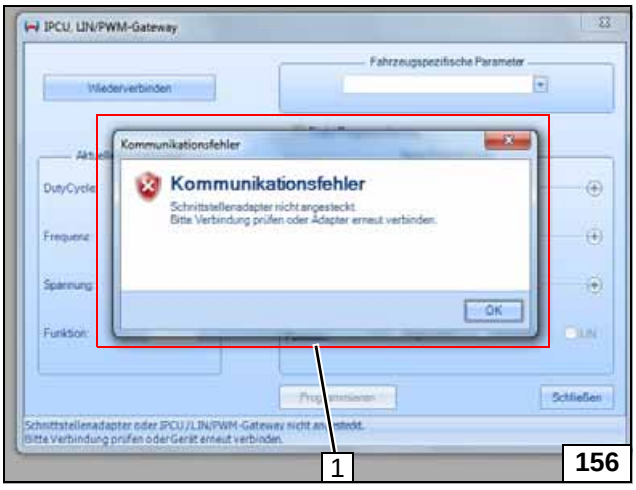
Selecting PWM GW



2 'IPCU LIN/PWM Gateway' selection
3 Confirm with 'OK'

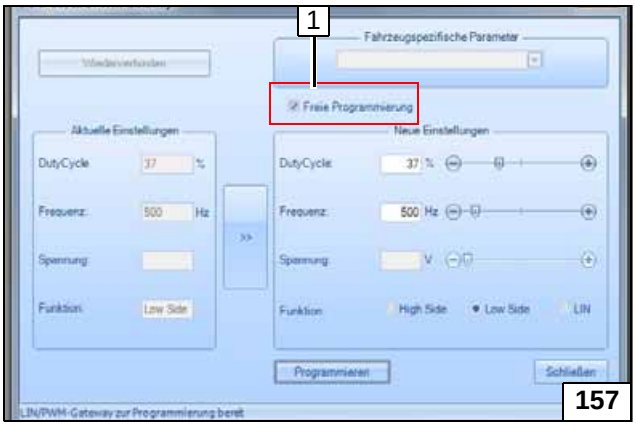
In the case of error message 'Communication error' **1**, briefly interrupt the power supply to the diagnosis adapter and restart programming of the PWM GW!

Error message

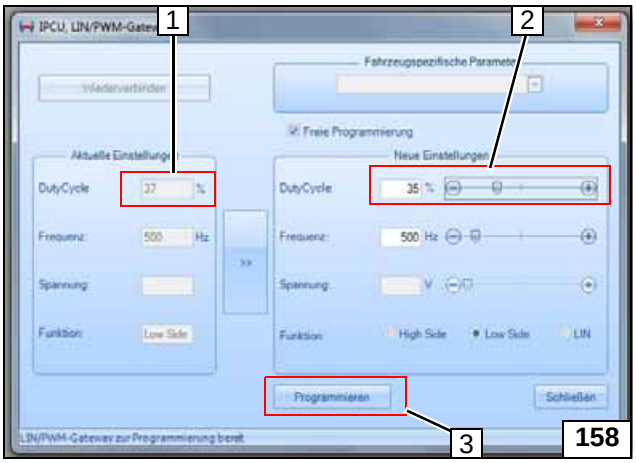


1. Enable 'Free Programming'

Selecting 'Free Programming'



Selecting duty cycle



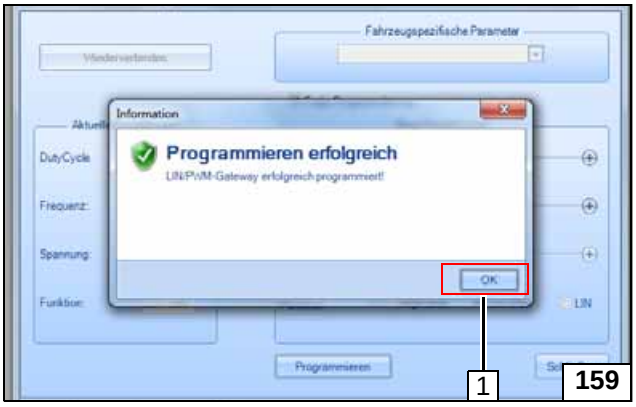
Factory settings are shown on the left.
Adjust duty cycle in 2% increments. Enter a new value for the duty cycle on the right:

- for a speed increase **-** 2%
- for a speed reduction **+** 2%.

Do not change the presettings for frequency and function!

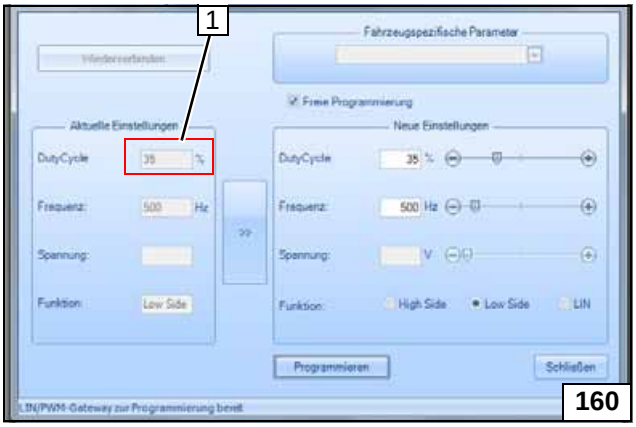
1. Duty cycle 37% preset
2. Duty cycle 35% selected
3. Confirm 'Program'

Programming PWM GW



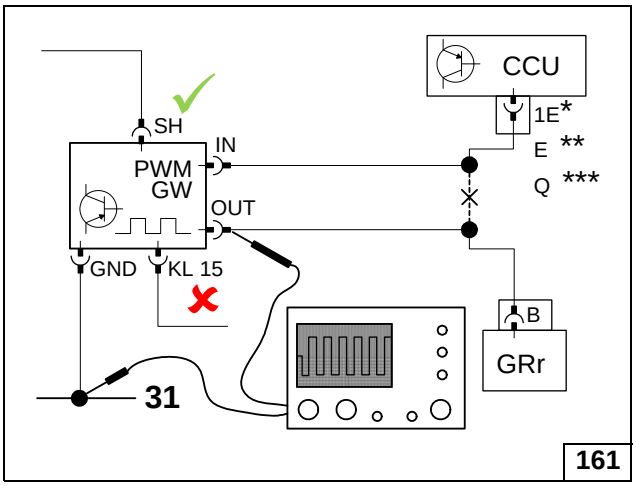
1 Confirm with 'OK'

Checking settings

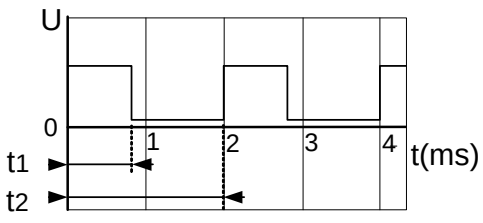


Reselect the PWM GW diagnosis.
The new settings are displayed on the left.
Install the PWM GW and recheck the voltage (target values 4.8 - 5.6V) via the fan motor connector.
If values are different, perform further adjustments!

Performing a function check with the oscilloscope



Status:
- Heating: **ON**
- Coolant temperature: **> 55 °C**
- Ignition: **OFF**

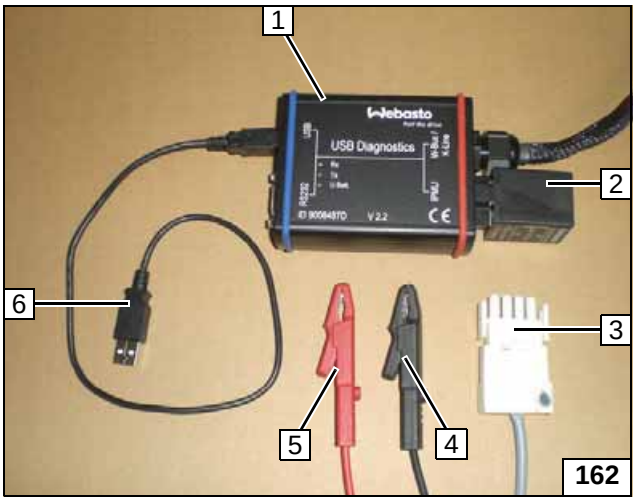


Duty Cycle = t1 / t2 x 100 = 37% (or adjusted value)
Frequency = 1 / t2 = 500 Hz

Adjustment of the Fan Speed VIN > 300001

Thermo Test Diagnosis,
Mazda order no.: 4100-77-725A
(software version V3.1 and later);
free update via: www.dealers.webasto.com;
support via Hotline:
technikcenter@webasto.com

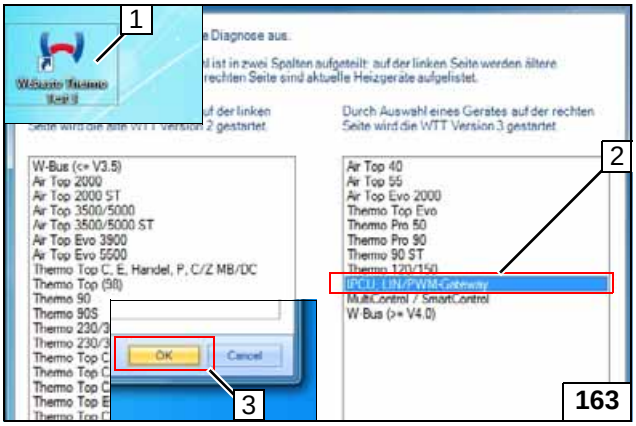
Thermo Test Diagnosis



1 Diagnosis Box
2 PWM GW
3 White (ws) connector not required
4 Connection of positive battery terminal
5 Connection of negative battery terminal
6 USB PC connection

Produce all connections.
Start Webasto Thermo Test **1**

Selecting PWM GW



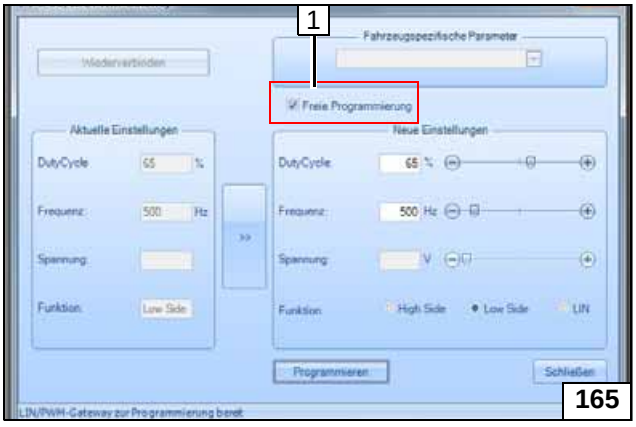
2 ‘IPCU LIN/PWM Gateway’ selection
3 Confirm with ‘OK’

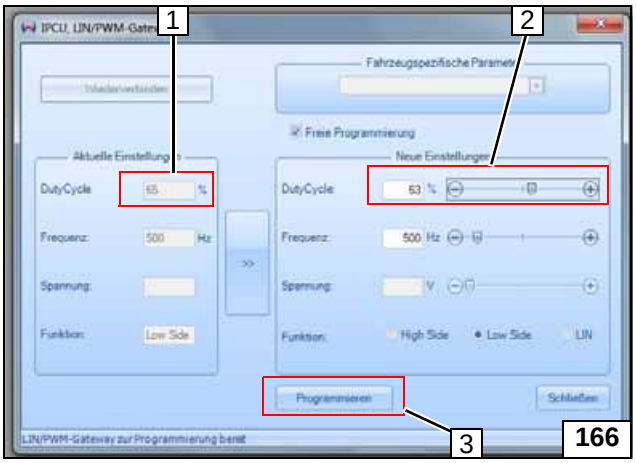
In the case of error message ‘Communication error’ **1**, briefly interrupt the power supply to the diagnosis adapter and restart programming of the PWM GW!

Error message

1. Enable ‘Free Programming’

Selecting ‘Free Programming’





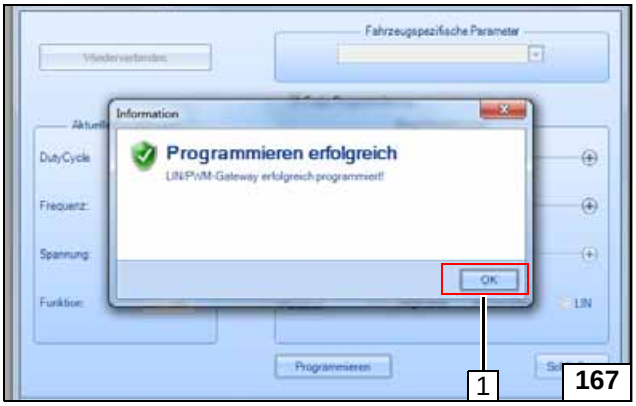
Factory settings are shown on the left.
Adjust duty cycle in 2% increments. Enter a new value for the duty cycle on the right:

- for a speed increase **-** 2%
- for a speed reduction **+** 2%.

Do not change the presettings for frequency and function!

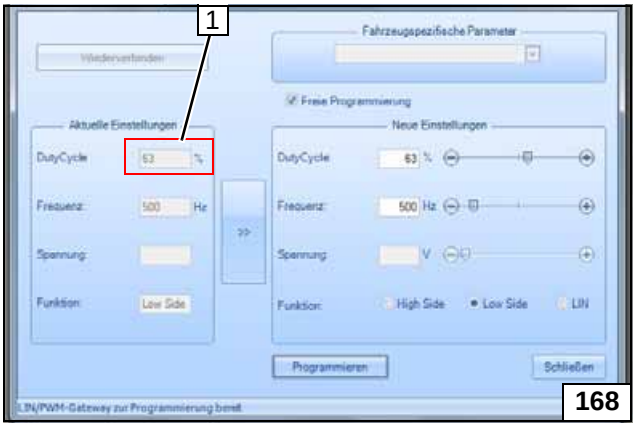
1. Duty cycle 65% preset
2. Duty cycle 63% selected
3. Confirm 'Program'

Selecting duty cycle



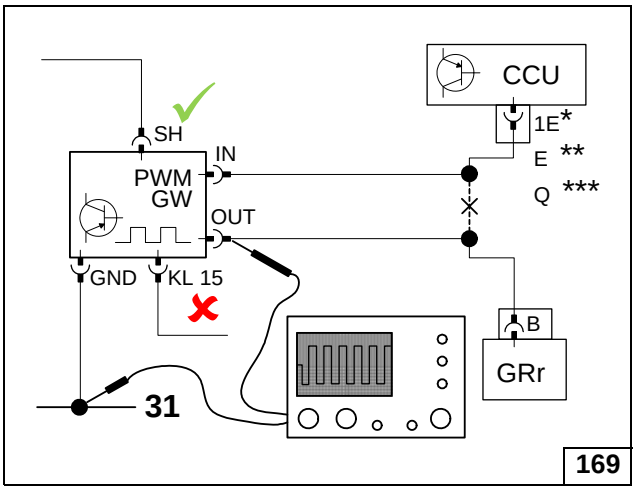
1 Confirm with 'OK'

Program-ming PWM GW

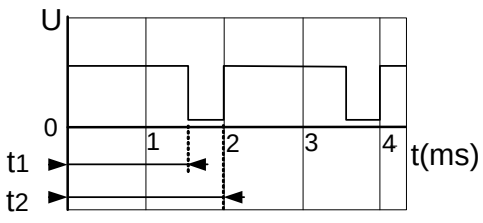


Reselect the PWM GW diagnosis.
The new settings are displayed on the left.
Install the PWM GW and recheck the voltage (target values 4.8 - 5.6V) via the fan motor connector.
If values are different, perform further adjustments!

Checking settings



Status:
- Heating: **ON**
- Coolant temperature: **> 55 °C**
- Ignition: **OFF**



Duty Cycle = t1 / t2 x 100 = 65% (or adjusted value)
Frequency = 1 / t2 = 500 Hz

Performing a function check with the oscilloscope

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

Operating Instructions for Manual A/C

Please remove page and add to the vehicle operating instructions.

The heater works independently of the engine in conjunction with the original vehicle heating and ventilation system and can be operated with the vehicle either parked or in driving mode.
The heater is supplied with fuel from the fuel tank. As a result, the maximum range displayed by the combi instrument cluster may be different before and after operation of the heater.
To protect the vehicle battery, we recommend that the heater is not operated several times in succession without the battery having the opportunity to recharge during driving mode.

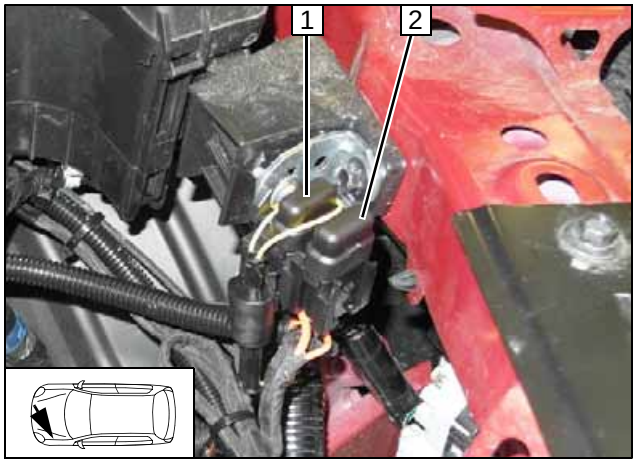
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Information on i-stop:
The i-stop function is disabled if battery power is low. As a result, the time until automatic switch-off of the engine may be longer according to parking heater operation.
This is not a malfunction!
Depending on the vehicle use, it may be necessary to charge the vehicle battery occasionally.

Before parking the vehicle, make the following settings:

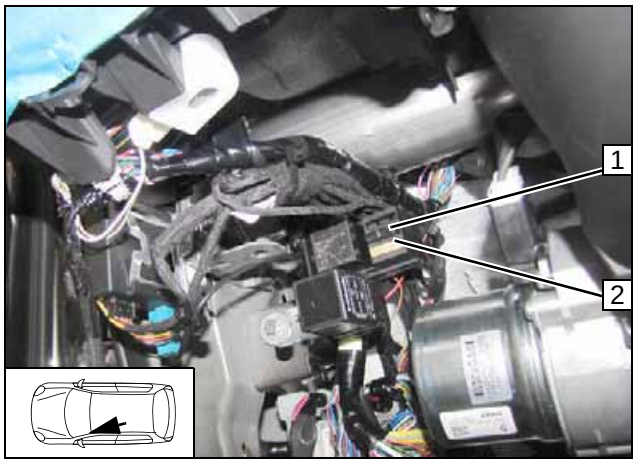
A/C control panel

1 Set temperature on both sides to ‘max.’
2 Air outlet to windscreen



Engine compartment fuses

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



1 1A heater control fuse F3
2 25A fan fuse F4

Passenger compartment fuses

Webasto
Feel the Drive

Operating Instructions for Automatic A/C Version 1

Please remove page and add to the vehicle operating instructions.

The heater works independently of the engine in conjunction with the original vehicle heating and ventilation system and can be operated with the vehicle either parked or in driving mode.
The heater is supplied with fuel from the fuel tank. As a result, the maximum range displayed by the combi instrument cluster may be different before and after operation of the heater.
To protect the vehicle battery, we recommend that the heater is not operated several times in succession without the battery having the opportunity to recharge during driving mode.

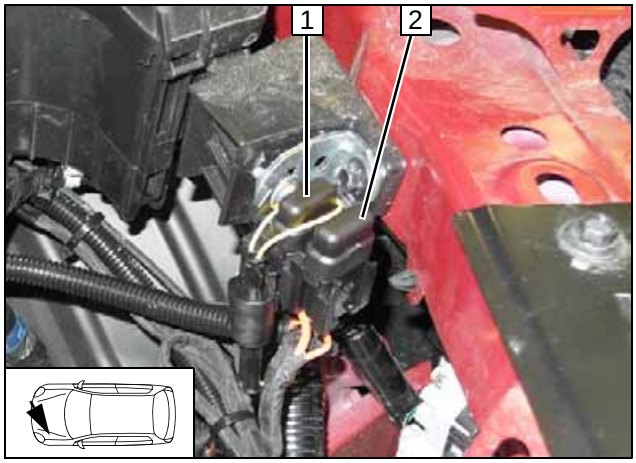
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Information on i-stop:
The i-stop function is disabled if battery power is low. As a result, the time until automatic switch-off of the engine may be longer according to parking heater operation.
This is not a malfunction!
Depending on the vehicle use, it may be necessary to charge the vehicle battery occasionally.

Before parking the vehicle, make the following settings:

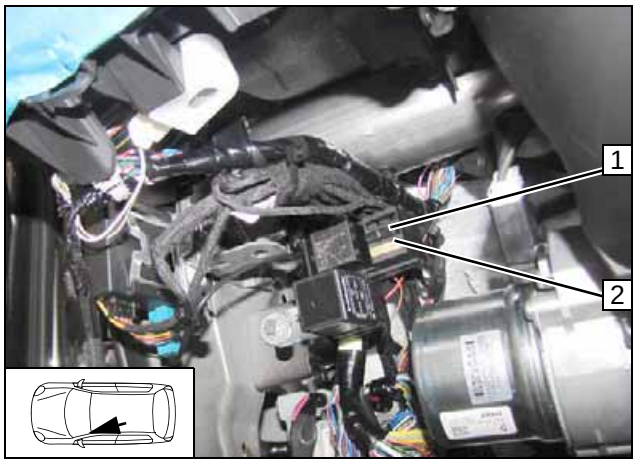
A/C control panel

1 Set temperature on both sides to ‘max.’
2 Air outlet to windscreen



Engine compartment fuses

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



1 1A heater control fuse F3
2 25A fan fuse F4

Passenger compartment fuses

Webasto
Feel the Drive

Operating Instructions for Automatic A/C Version 2

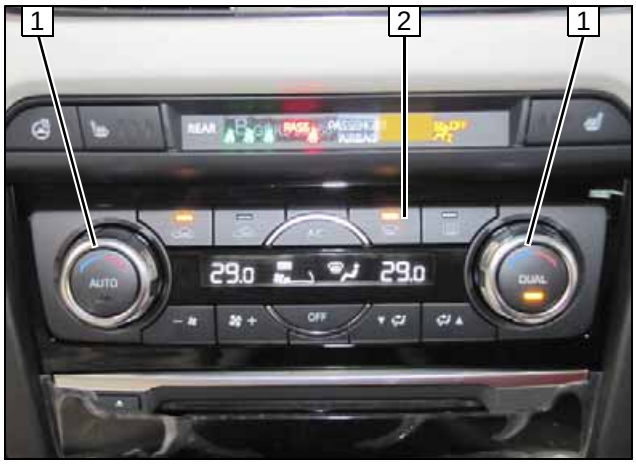
Please remove page and add to the vehicle operating instructions.

The heater works independently of the engine in conjunction with the original vehicle heating and ventilation system and can be operated with the vehicle either parked or in driving mode.
The heater is supplied with fuel from the fuel tank. As a result, the maximum range displayed by the combi instrument cluster may be different before and after operation of the heater.
To protect the vehicle battery, we recommend that the heater is not operated several times in succession without the battery having the opportunity to recharge during driving mode.

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.

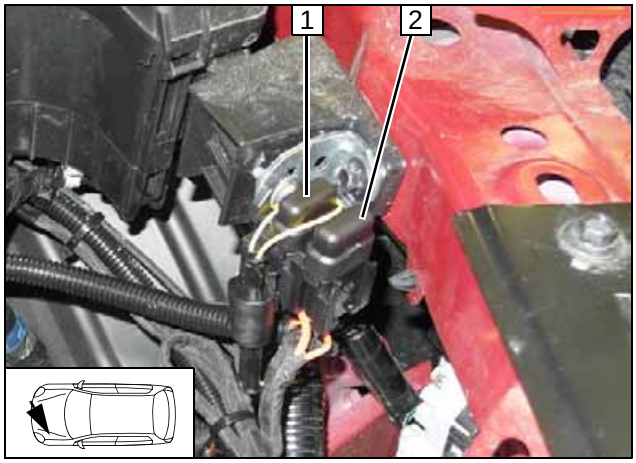
Information on i-stop:
The i-stop function is disabled if battery power is low. As a result, the time until automatic switch-off of the engine may be longer according to parking heater operation.
This is not a malfunction!
Depending on the vehicle use, it may be necessary to charge the vehicle battery occasionally.

Before parking the vehicle, make the following settings:



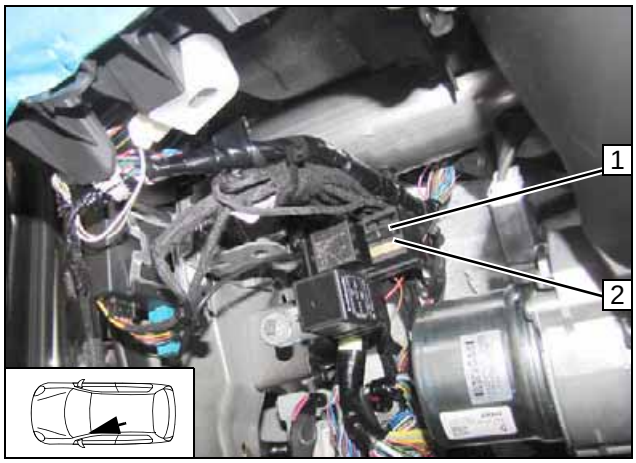
1 Set temperature on both sides to ‘max.’
2 Air outlet to windscreen

A/C control panel



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

Engine compartment fuses



1 1A heater control fuse F3
2 25A fan fuse F4

Passenger compartment fuses