

Water Heater



Thermo Top E Parking Heater


00 0003

Thermo Top C Parking Heater


00 0002

Thermo Top P Parking Heater


00 0104

Installation instructions

Toyota Avensis

Diesel

from Model Year 2009

For left-hand drive vehicles only

Automatic air-conditioning

Gear box

Automatic gears



WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.



Specialist company training, technical documentation, specialised tools and equipment are required to install and repair Webasto heating and cooling systems. Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

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

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

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Validity

Manufacturer	Model	Type	EG-BE No./ABE
Toyota	Avensis	T27	e11 * 2001 / 116 * 0331 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
1AD-FTV	Diesel	93	1998
2AD-FTV	Diesel	110	2231
2AD-FHV	Diesel	110	2231
2AD-FHV	Diesel	130	2231

Vehicle and engine types, equipment variants and national specifications not listed in these installation instructions have not been tested. However, installation according to these installation instructions may be possible.

The installation location of a digital timer and summer/winter switch should be confirmed with the end customer before installation.

Heater/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See price list
1	Installation kit for Toyota Avensis Diesel	1314633B

Heater recommended for the respective vehicle class:

Vehicle	Heater
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C
Full-size car, van, offroader	Thermo Top P

The selection of the heater is based on the passenger compartment size of the vehicle and the level of comfort required by the customer!



Foreword

These installation instructions apply to vehicles Toyota Avensis Diesel - for validity, see page 2 - from model year 2009 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 these installation instructions.

However, the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C/P/E* must always be observed.

The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

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.

Sharp edges should be fitted with edge protectors (split-open plastic hose).

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

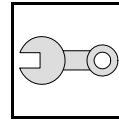
Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit

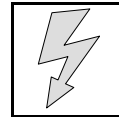
Explanatory Notes on Document

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

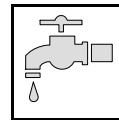
Mechanical system



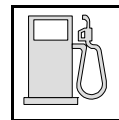
Electrical system



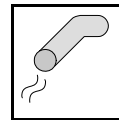
Coolant connection



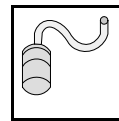
Fuel connection



Exhaust system



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



Specific risk of fire or explosion.



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



Reference to a special technical feature.



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

All dimensions are in mm!

Tightening torque of hose clamps = 2.0 + 0.5 Nm!

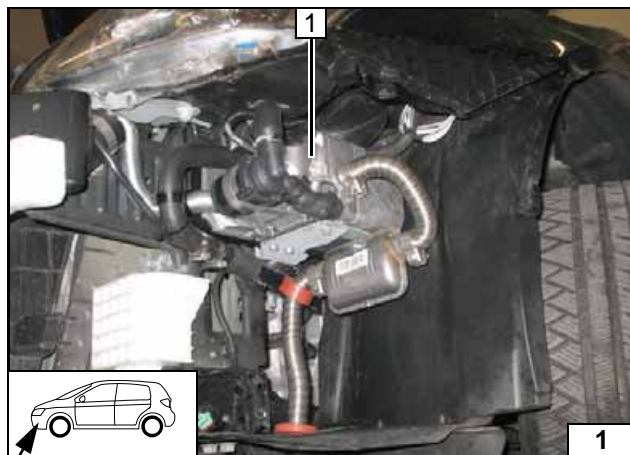
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Depressurize the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Remove the battery completely.
- Remove the air filter together with the intake hose.
- Remove the left-hand side wheel well trim and detach on the right.
- Remove the bumper.
- Remove the underride protection.
- Remove the fuel line cover on the underbody.
- Remove the footwell trim on the driver's side
- Remove the side trim of the centre console in the driver's side footwell.
- Remove the AC booster.
- Remove the loudspeaker cover at the upper left on the instrument panel (only with Telestart).
- Remove the left-hand side cover from the instrument panel (only with Telestart)

Remove page 27 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location



Electrical Connections

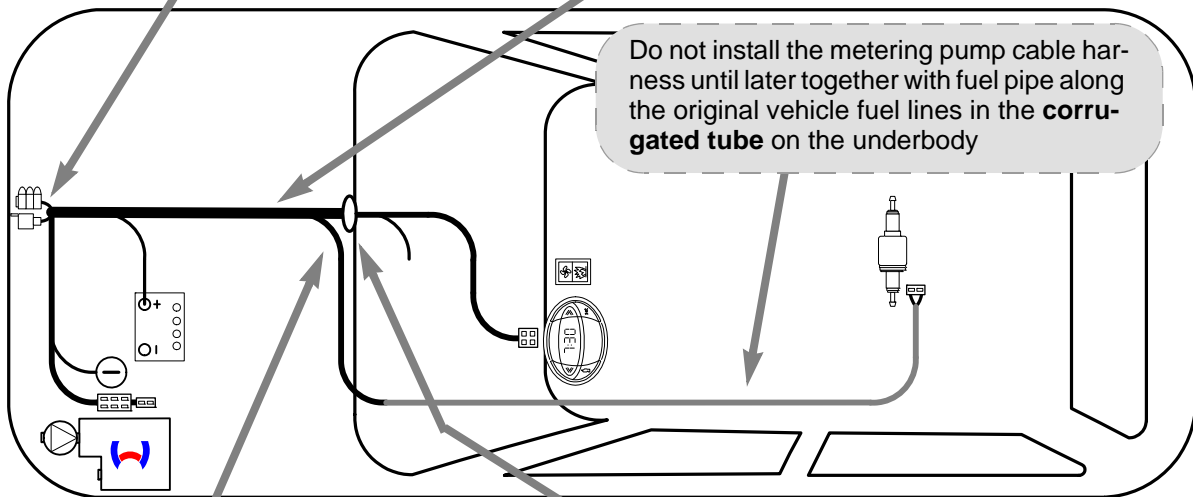
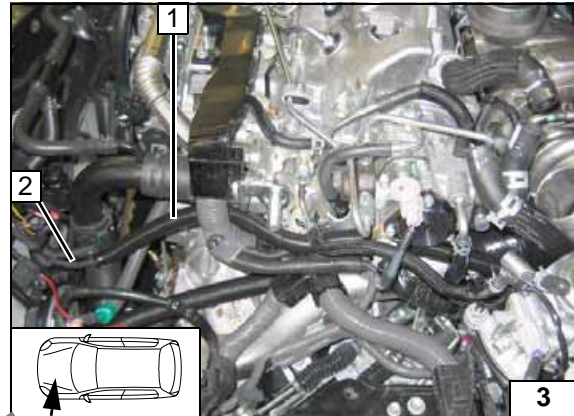
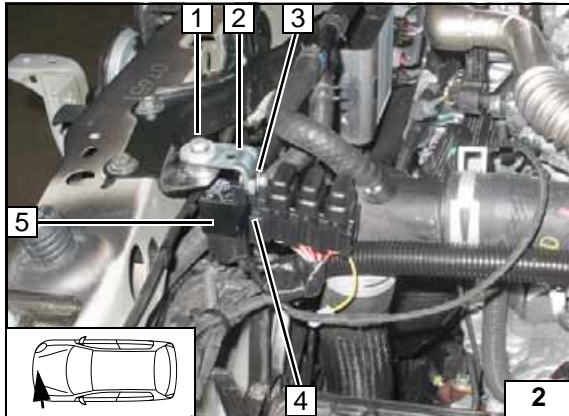
Fuse holder, K3 relay

Replace 25 A fuse F3 with 10 A fuse.

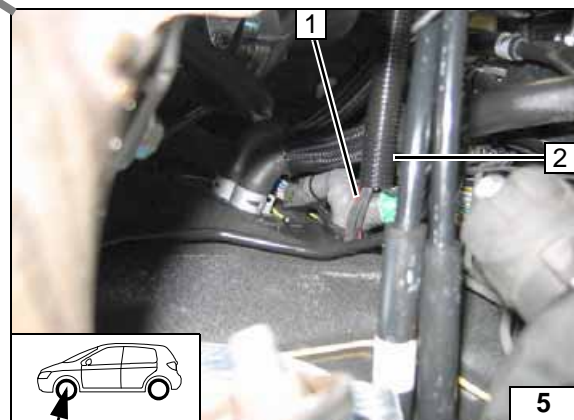
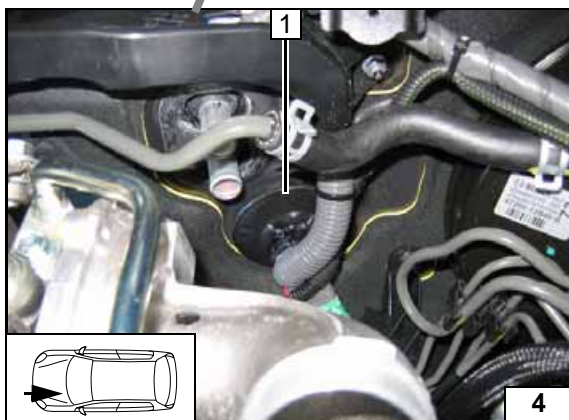
- 1 M6x25 bolt, spring lockwasher, large diameter washer, angle bracket 2, 10 mm shim, existing threaded hole
- 3 M5x16 bolt, large diameter washer, fuse holder 4, angle bracket 2, K3 relay 5, M5 flanged nut

Wiring harness routing

Shorten corrugated tube 1 to 700 mm. Pull wiring harnesses of fan controller and digital timer 2 into corrugated tube 1 and route together to fire-wall as shown.



Wiring harness installation diagram



Wiring harness pass through

- 1 Protective rubber plug

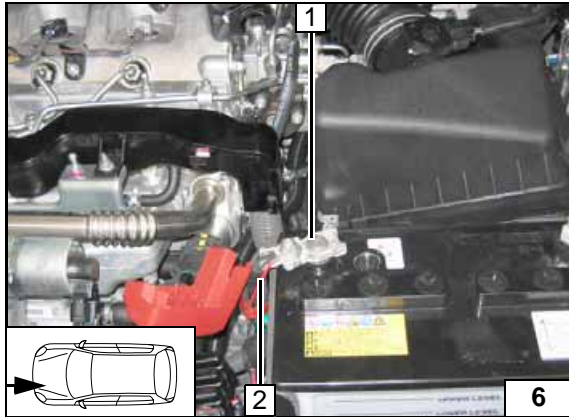
Wiring harness pass through

- 1 Wiring harnesses of digital timer and fan controller
- 2 Corrugated tube



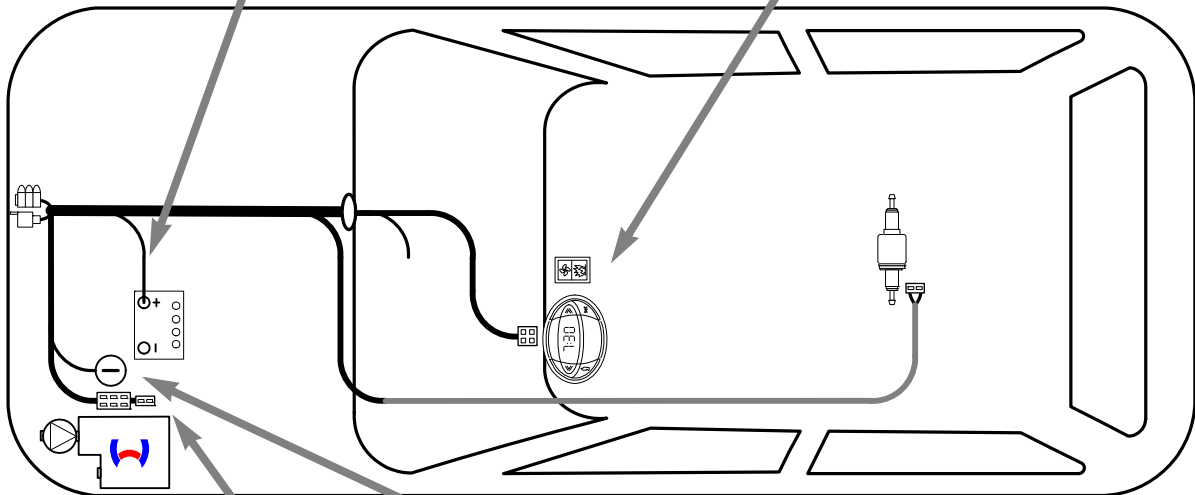
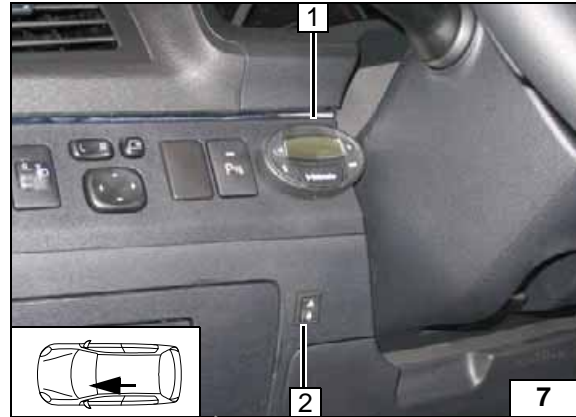
Positive wire

- 1 Positive battery terminal
- 2 Cut positive wire to length, 8 mm dia. cable lug

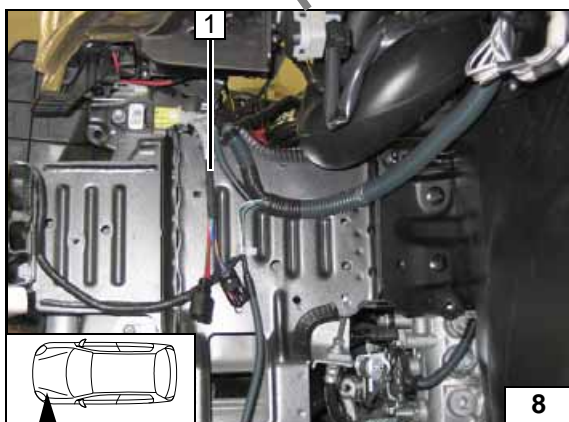


Digital timer and summer/winter switch option

- 1 Digital timer
- 2 Summer/winter switch, drilled hole 12 mm dia.

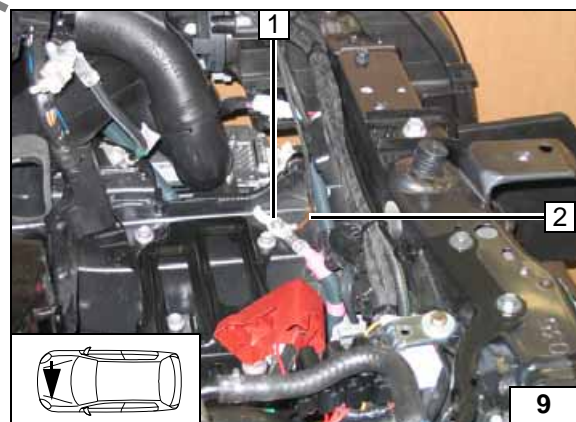


Wiring harness installation diagram



Wiring harness routing

Route wiring harness of heater 1 to installation location.

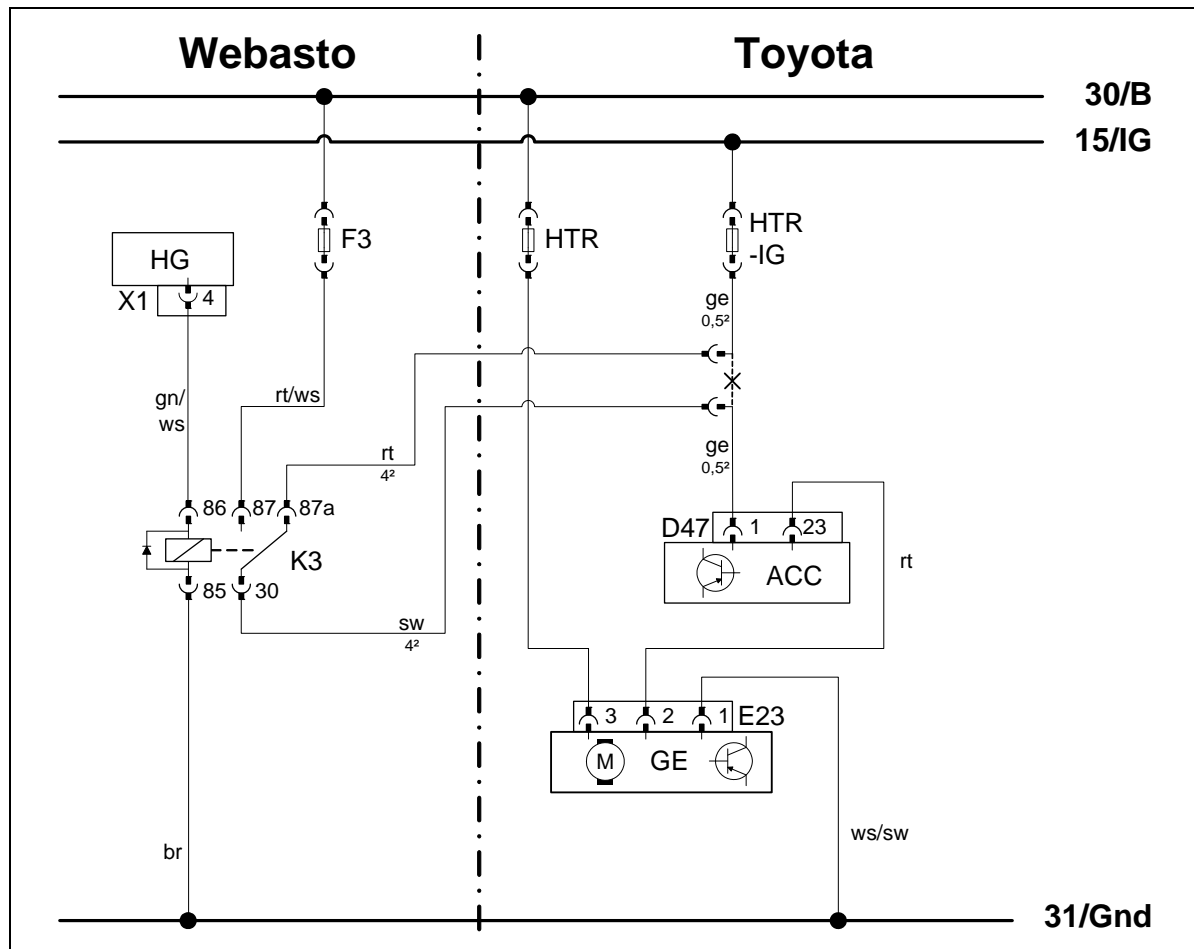


Ground wire

- 1 Original M6 bolt of vehicle
- 2 Ground wire, 6 mm dia. cable lug



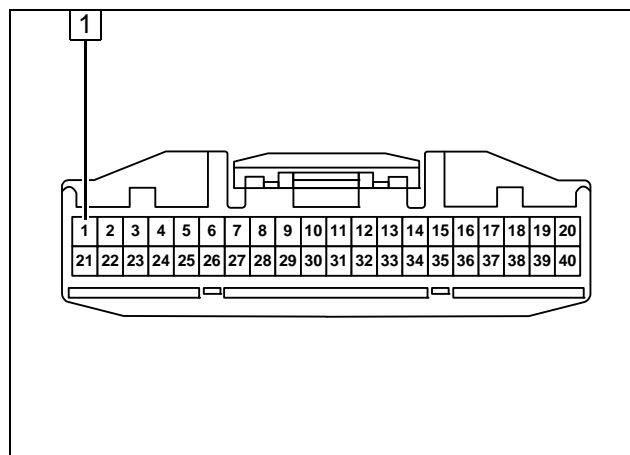
Fan controller



Wiring diagram

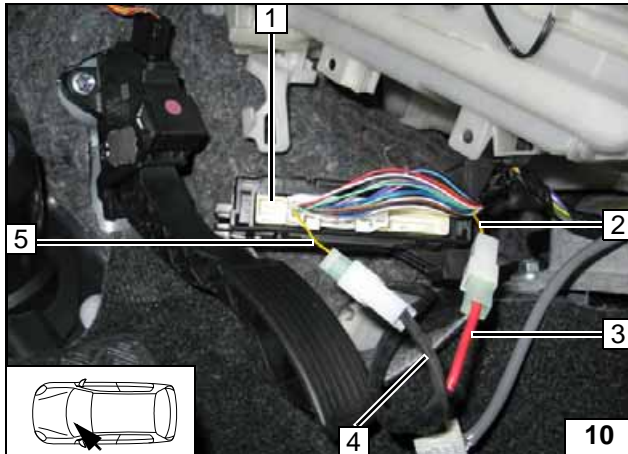
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GE	Fan unit	rt	red
X1	6-pin connector	E23	GE connector	ws	white
F3	Replace 25 A with 10 A fuse.	ACC	AC control	sw	black
K3	Fan relay	D47	40-pin ACC connector	br	brown
		HTR	30A fuse	gn	green
		HTR-IG	10 A fuse	ge	yellow
				X	Cutting point
				Wiring colours may vary.	

Legend



1 Connector D47 on contact side (PIN 1)

Connector D47

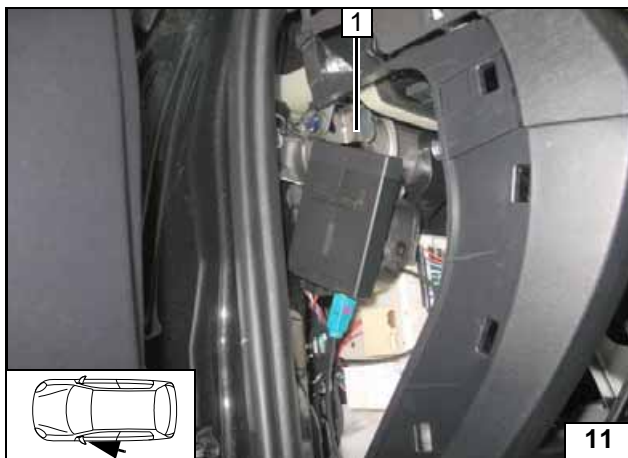


Connection to 40-pin connector 1 from ACC
Produce connections as shown in wiring diagram.

- 2 Yellow (ge) wire HTR/IG
- 3 Red (rt) wire of K3/87a
- 4 Black (sw) wire of K3/30
- 5 Yellow (ge) wire of connector D47/1



Con-
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tion to ACC

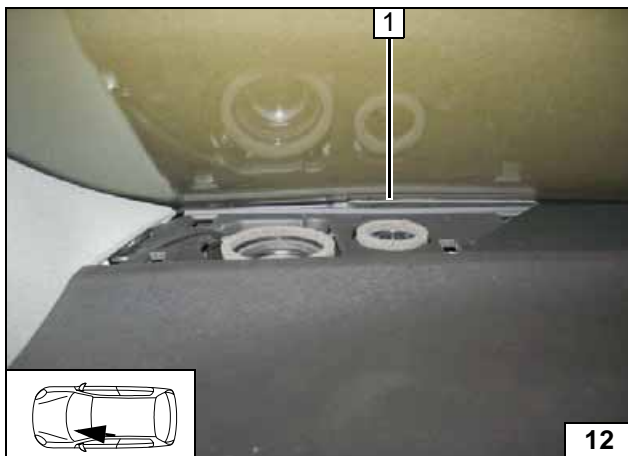


Remote option (Telestart)

Fasten receiver 1 with adhesive tape.



Install-
ing
re-
ceiver



Remove loudspeaker cover.

- 1 Antenna



Install-
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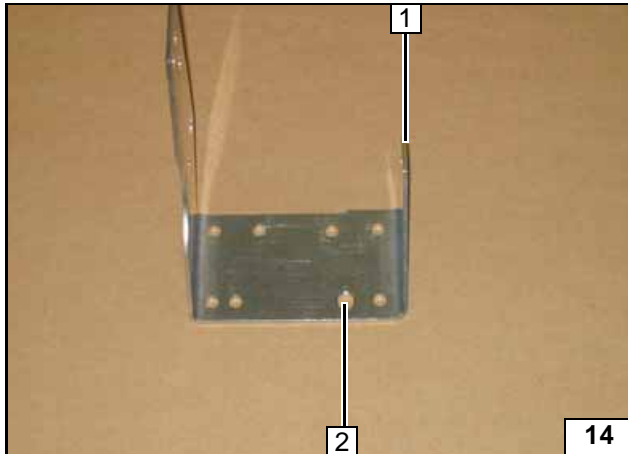
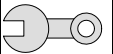


Temperature sensor only with T100

Fasten receiver 1 with adhesive tape.



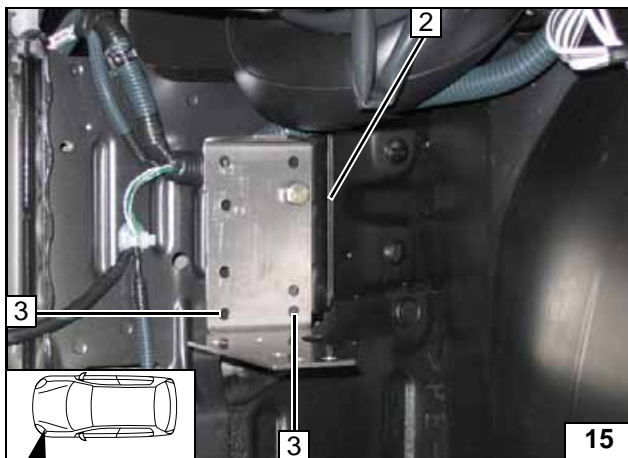
Install-
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Preparing installation location

- 1 Bracket
- 2 Drill out hole to 8.5 mm dia.

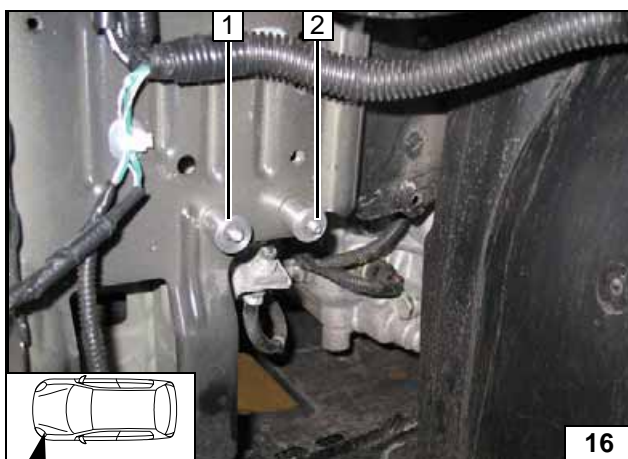
Drilling bracket



When installing bracket, align it parallel to original vehicle edge 2.

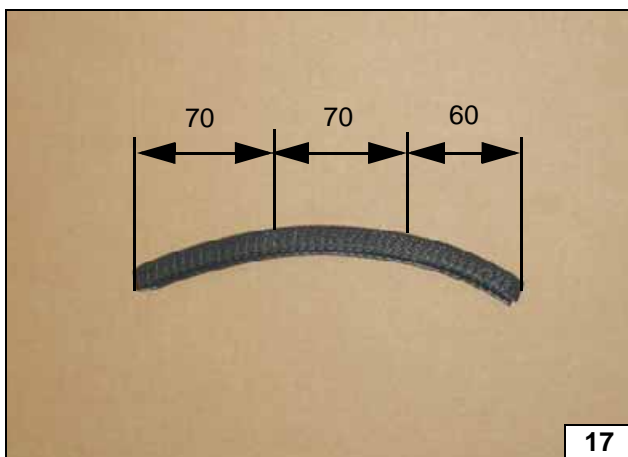
- 1 M8x40 bolt
- 3 Copy hole pattern, 7 mm dia. hole

Copying hole pattern



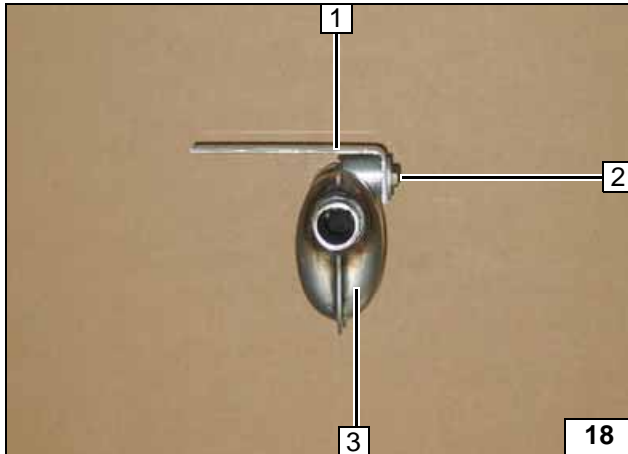
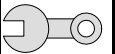
- 1 M6x40 bolt, 20 mm shim, pin lock
- 2 M6x35 bolt, 20 mm shim, pin lock

Cutting edge protection to length



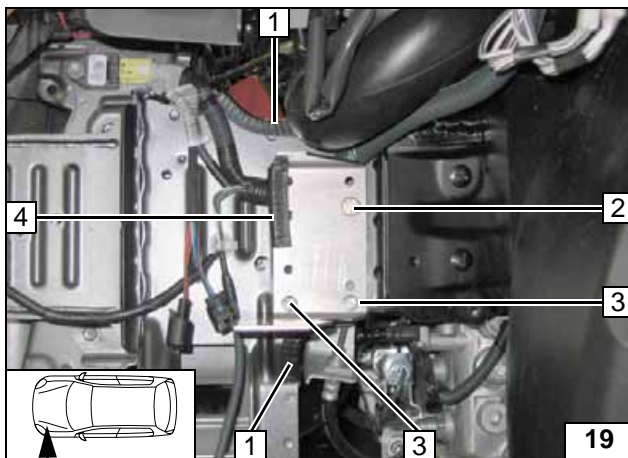
Cut edge protection to length as shown.

Cutting edge protection to length



- 1 Angle bracket
- 2 M6x35 bolt, large diameter washer, 20 mm shim, flanged nut
- 3 Exhaust muffler

**Preassembling ex-
haust
muffler**

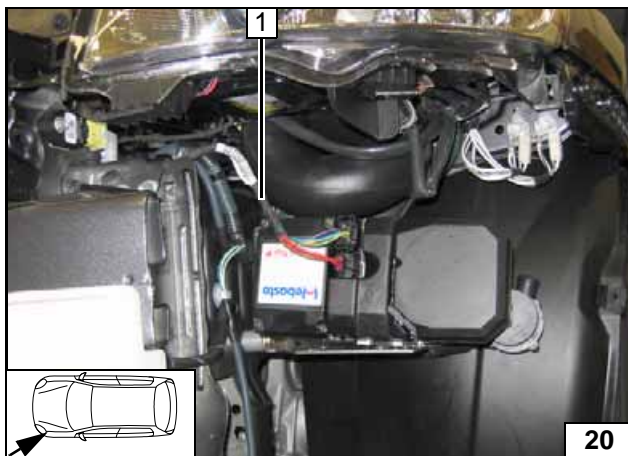


A 20 mm spacer must be positioned between bracket and vehicle at position 2.



- 1 70 mm edge protection [2x]
- 2 M8x40 bolt, spring lockwasher, existing threaded hole
- 3 M6 flanged nut [2x]
- 4 60 mm edge protection

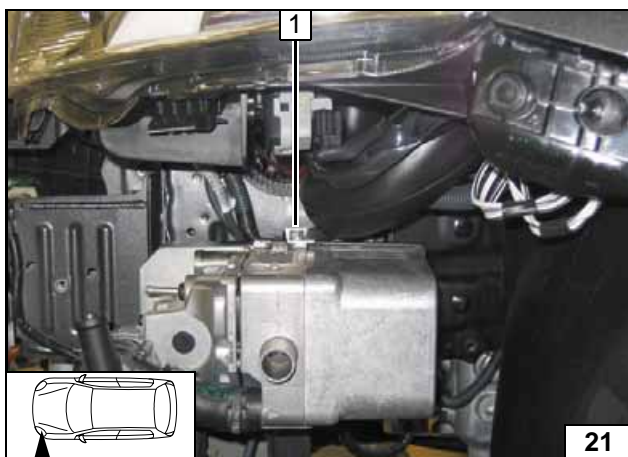
**Installing
bracket**



Installing heater

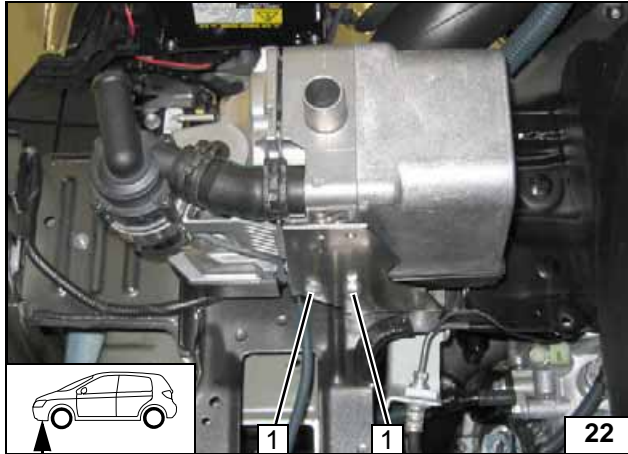
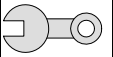
- 1 Wiring harness of heater

**Connect-
ing wiring
harness**



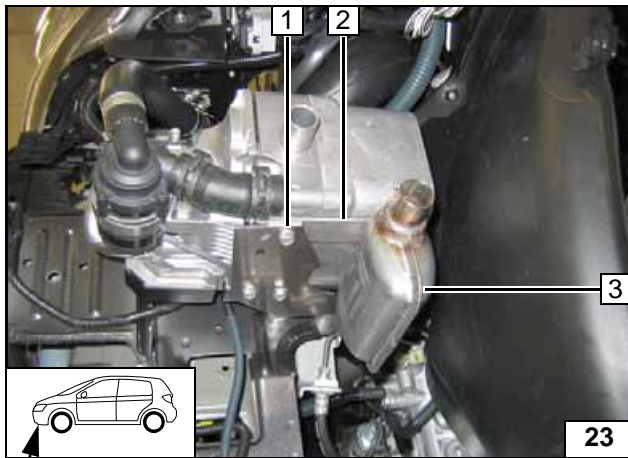
- 1 Loosely mount Eject screw

**Installing
heater**



1 Loosely mount Eject screw [2x]

Installing
heater



Position angle bracket 2 between heater and bracket. Tighten all Eject screws.

- 1 Eject screw
- 3 Preassembled exhaust muffler



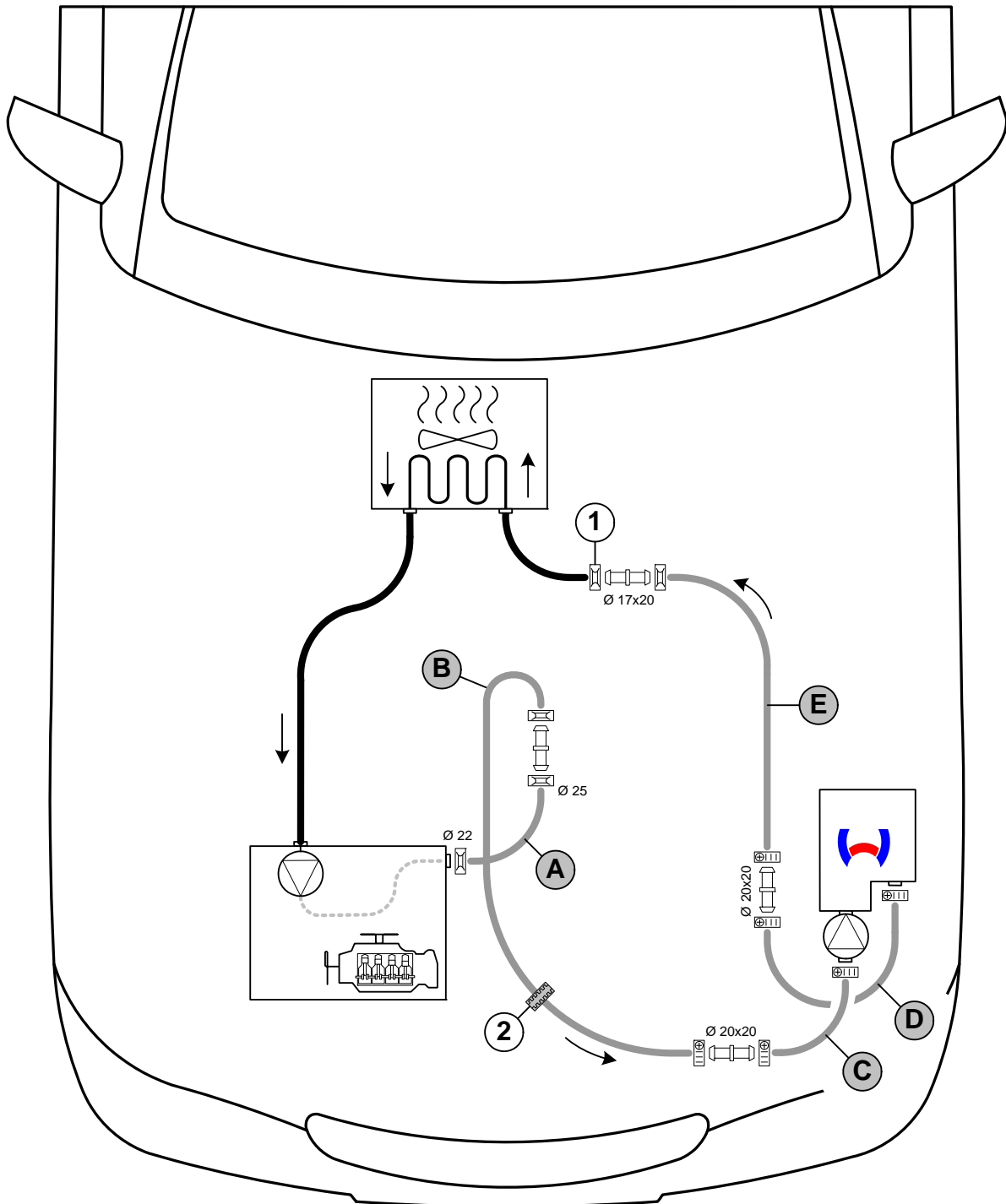
Installing
heater








Coolant circuit of manual transmission

WARNING!

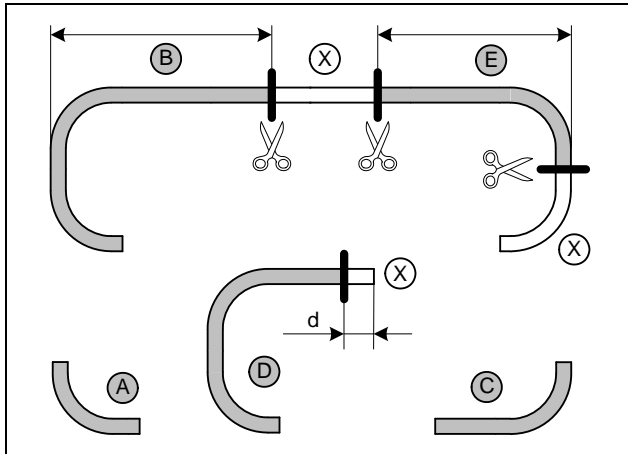
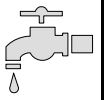
Any coolant running off should be collected using an appropriate container! Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the hoses, the heater must be filled with coolant. The connection should be "inline" based on the following diagram:



Coolant routing diagram

All spring clips without a specific designation  = 27 mm dia. All hose clamps  = 20-27 mm dia. All connecting pipes without a specific designation  = dia. 18x20.
 1 = Original vehicle spring clip  . 2 = Black (sw) rubber isolator .



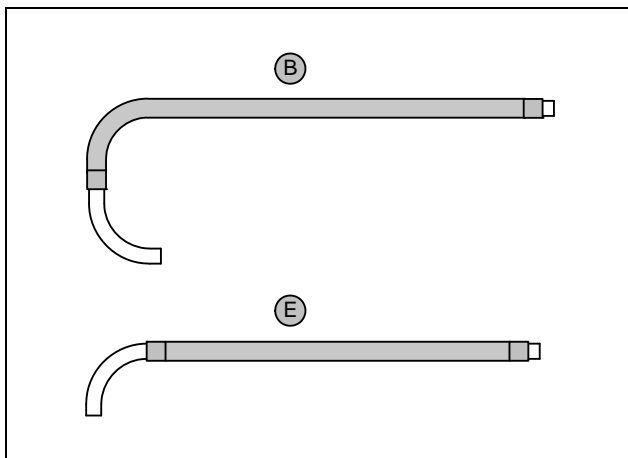


A 15x18 90° molded hose provided
C 20x20 90° molded hose provided
D 20x20 180° molded hose provided
 Discard sections **X**.

b = 900
 d = 40
 e = 560



Cutting coolant hoses to length

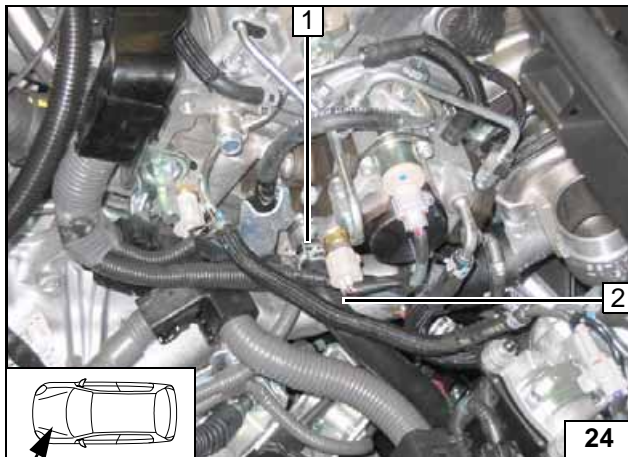


Push braided protection hose onto hose **B** and **E** and cut to length.
 Cut heat shrink plastic tubing to length.

1 25 mm heat shrink plastic tubing [4x]



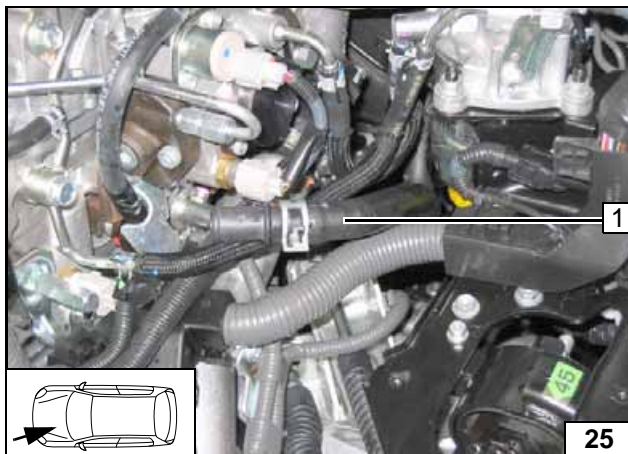
Preparing coolant hoses



Pull off hose section **2** from engine outlet.
 Spring clip **1** will be reused!



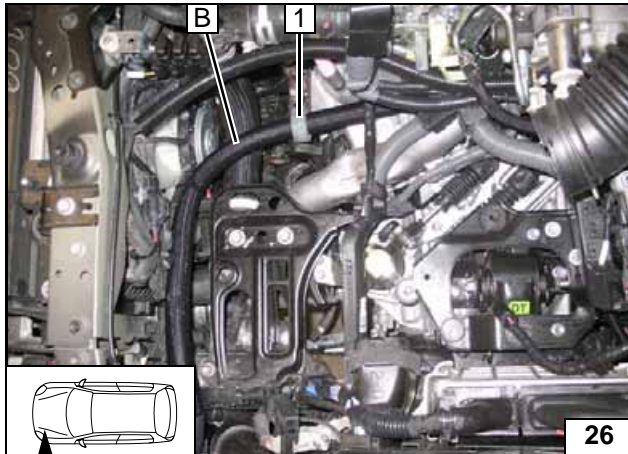
Cutting point



Pre-mount hose section **1** and route as shown.



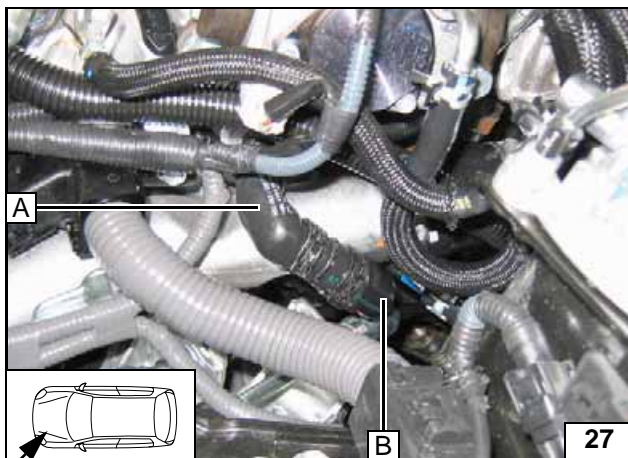
Pre-mounting hose



Slide black (sw) rubber isolator **1** onto hose **B**. Route hose **B** with 180° elbow to engine outlet.



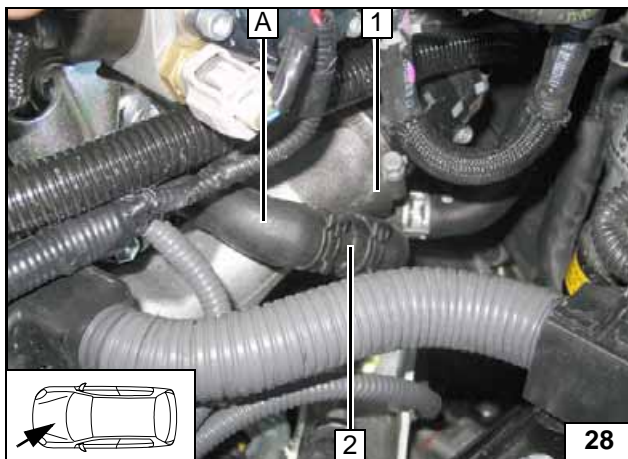
Routing in engine compartment



Connect hose **A** on engine outlet and connect to 180° elbow from hose **B**.



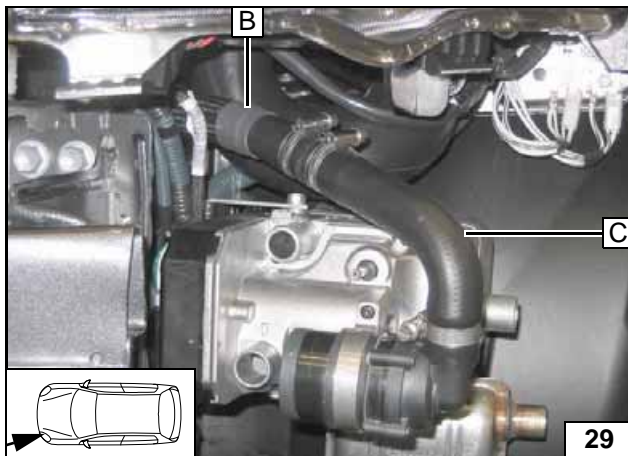
Connecting engine outlet



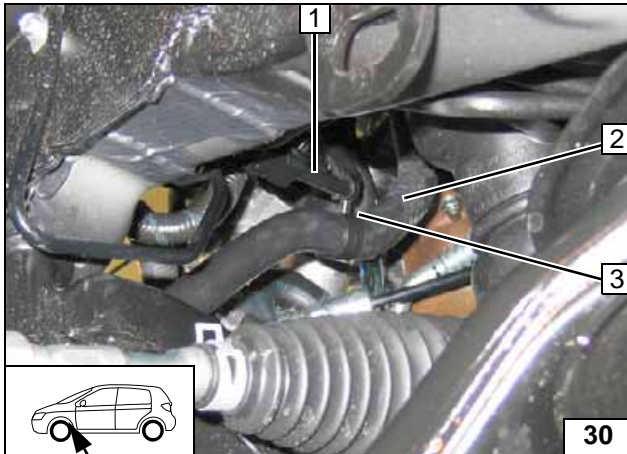
Cut rub protection **1** provided in half. Glue one section onto charge-air tube in area of spring clips **2**.



Gluing rub protection

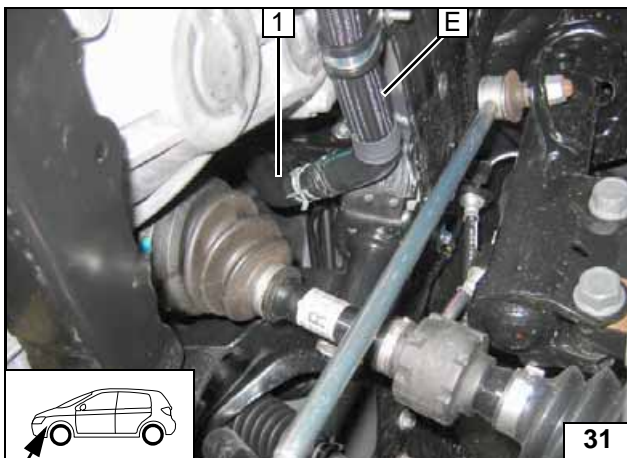


Connecting heater inlet



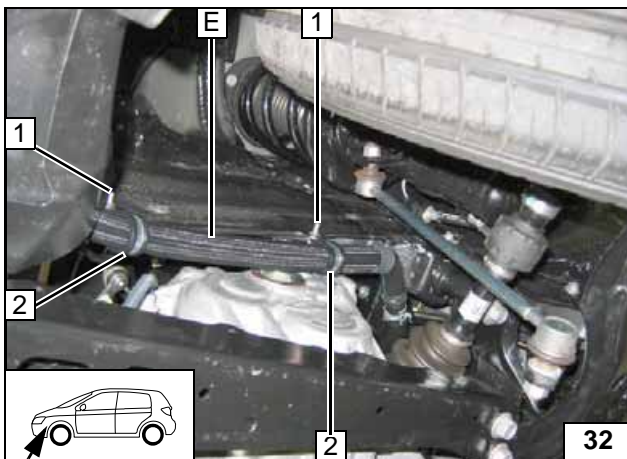
- 1 Original vehicle line
- 2 Hose on heat exchanger inlet
- 3 Spacer bracket

Fastening hose to heat exchanger inlet



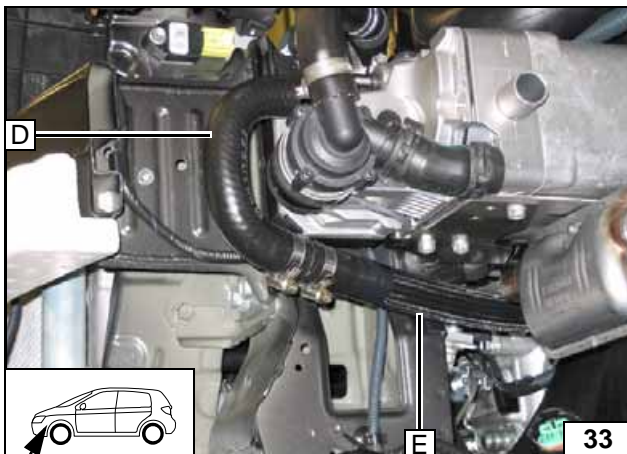
- 1 Hose on heat exchanger inlet

Connecting heat exchanger inlet



- 1 M6x20 bolt, rubber-coated p-clamp 2, pin lock in existing hole [2x each]

Installing hose E



Check the position of the components; adjust if necessary. Check that they have free clearance.



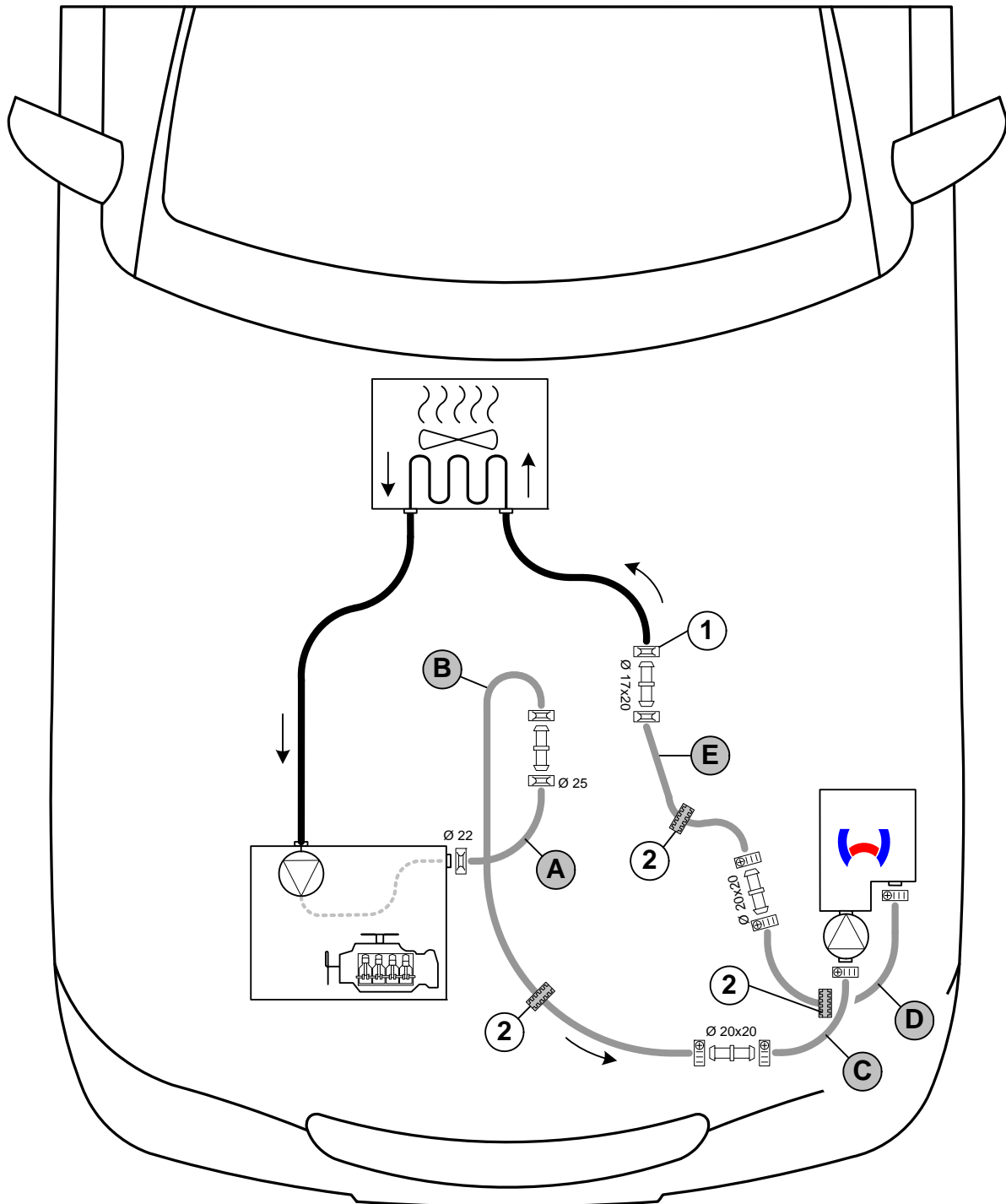
Connecting heater outlet








Coolant circuit of automatic transmission

WARNING!

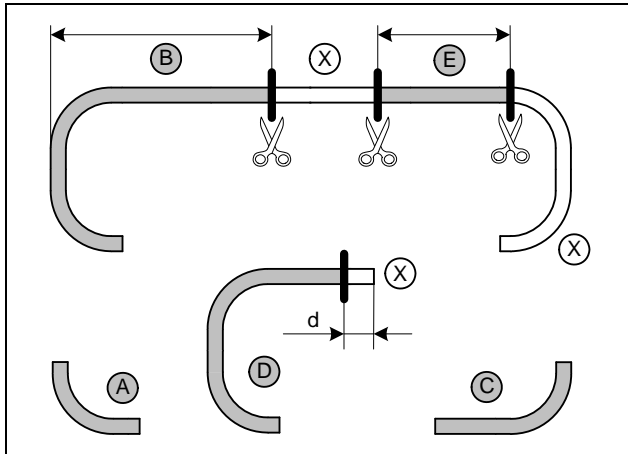
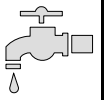
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All spring clips without a specific designation  = 27 mm dia. All hose clamps  = 20-27 mm dia. All connecting pipes without a specific designation  = dia. 18x20.
 1 = Original vehicle spring clip  . 2 = Black (sw) rubber isolator  .



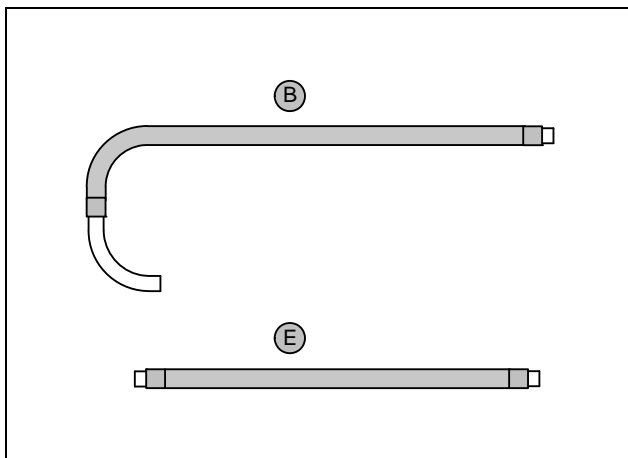


A 15x18 90° molded hose provided
C 20x20 90° molded hose provided
D 20x20 180° molded hose provided
 Discard sections **X**.

b = 900
 d = 40
 e = 640



Cutting coolant hoses to length

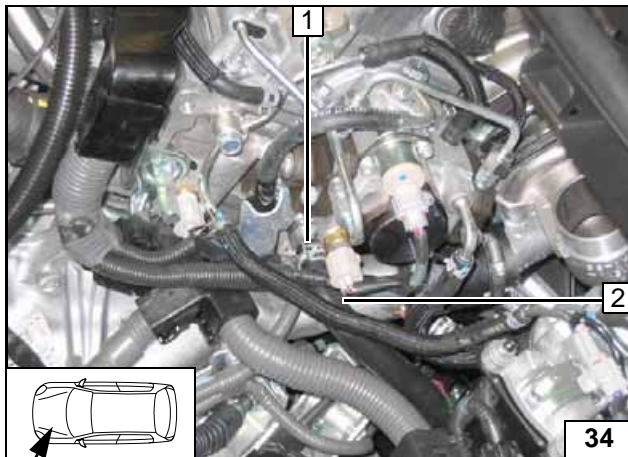


Push braided protection hose onto hose **B** and **E** and cut to length.
 Cut heat shrink plastic tubing to length.

1 25 mm heat shrink plastic tubing [4x]



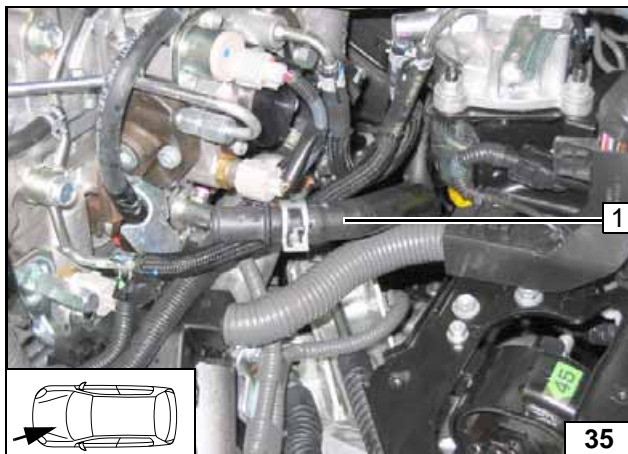
Preparing coolant hoses



Pull off hose section **2** from engine outlet.
 Spring clip **1** will be reused!



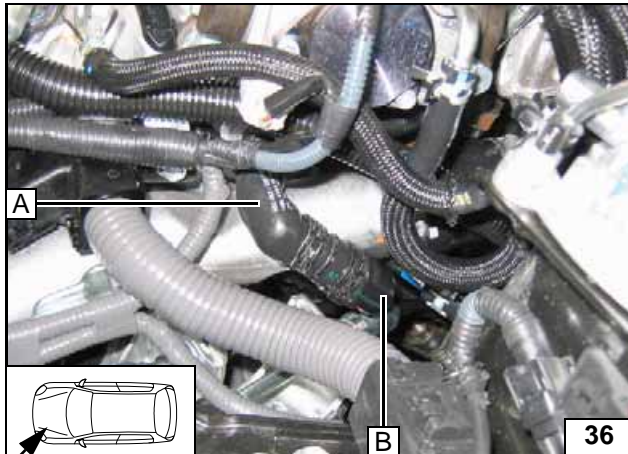
Cutting point



Pre-mount hose section **1** as shown in figure.



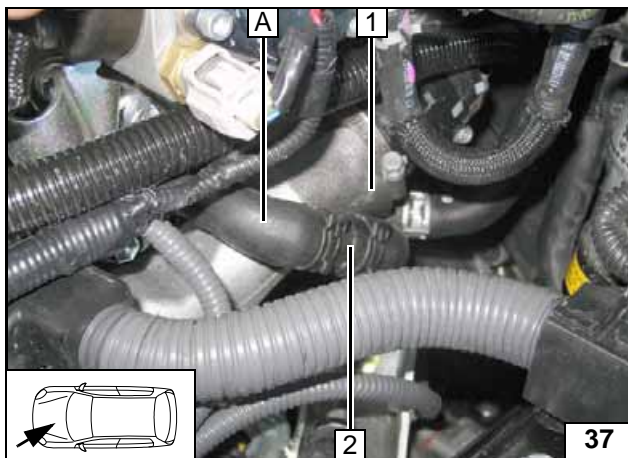
Pre-mounting hose



Connect hose **A** on engine outlet and connect to 180° elbow from hose **B**.



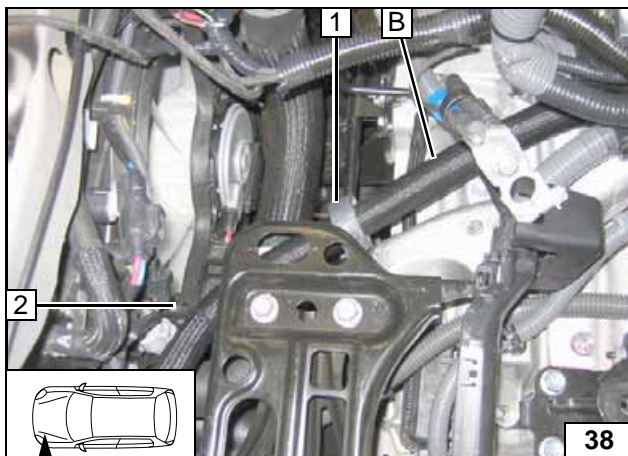
Connect-
ing engine
outlet



Cut rub protection **1** provided in half. Glue one section onto charge-air tube in area of spring clips **2**.

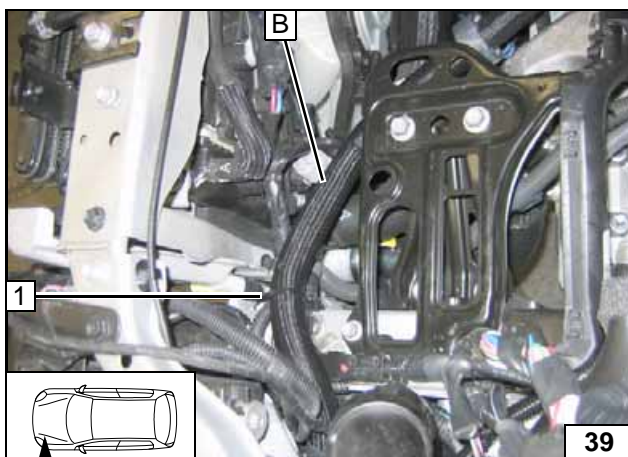


Gluing rub
protection



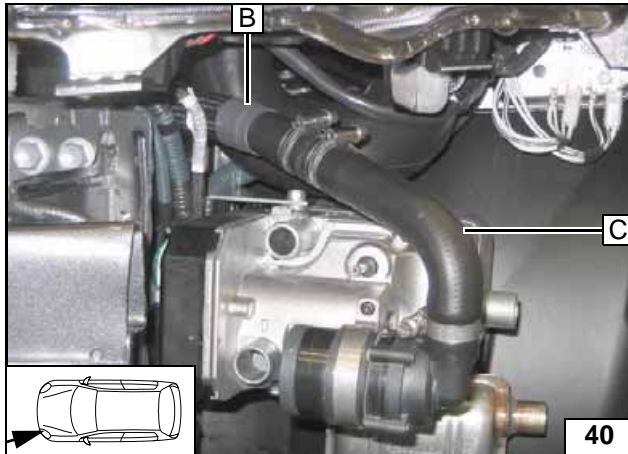
1 Black (sw) rubber isolator
2 Cable tie

Routing in
engine
compart-
ment

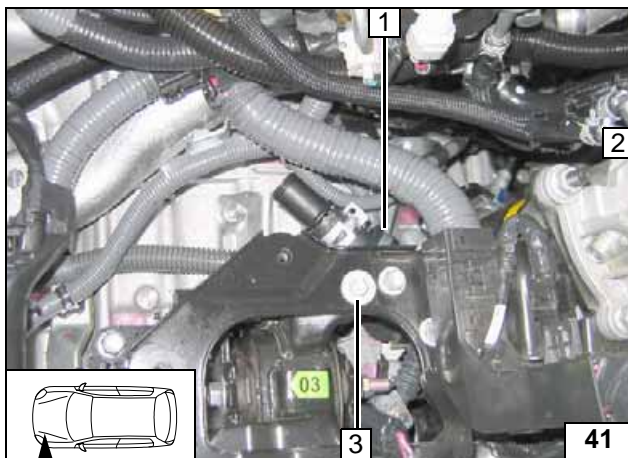


1 Cable tie

Routing in
engine
compart-
ment



Connect-
ing heater
inlet

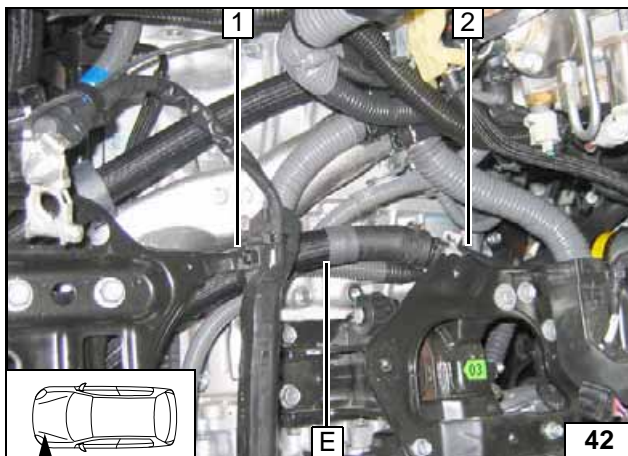


Remove and discard original vehicle bolt at Position 2.



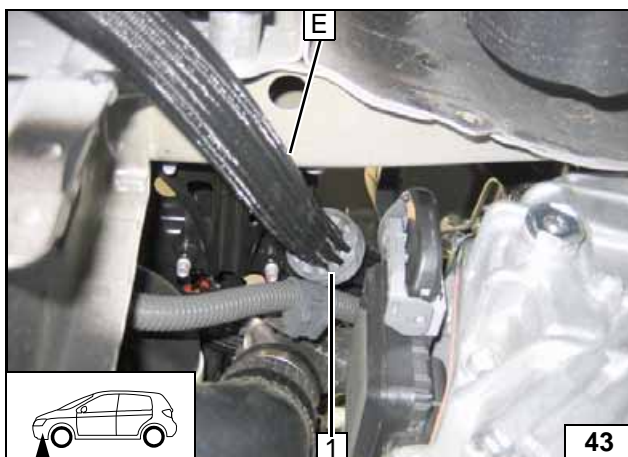
- 1 Rubber-coated p-clamp, M6 flanged nut
- 2 M6x25 bolt, large diameter washer

Fastening
hose to
heat ex-
changer in-
let



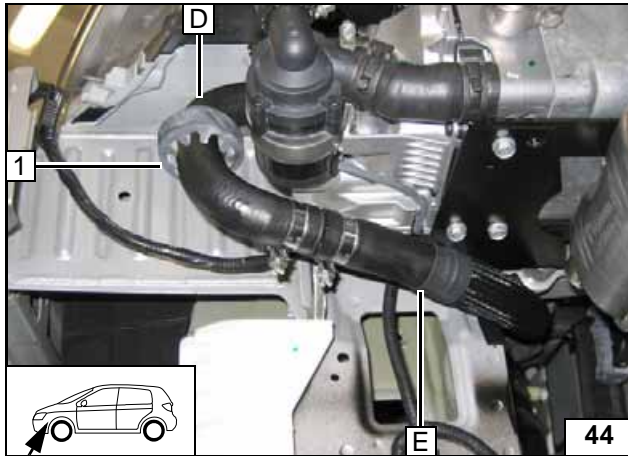
- 1 Cable tie
- 2 Hose on heat exchanger inlet

Connect-
ing heat
exchanger
inlet



- 1 Black (sw) rubber isolator

Installing
hose E

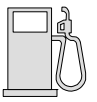


Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Black (sw) rubber isolator



**Connect-
ing heater
outlet**



Fuel

CAUTION!

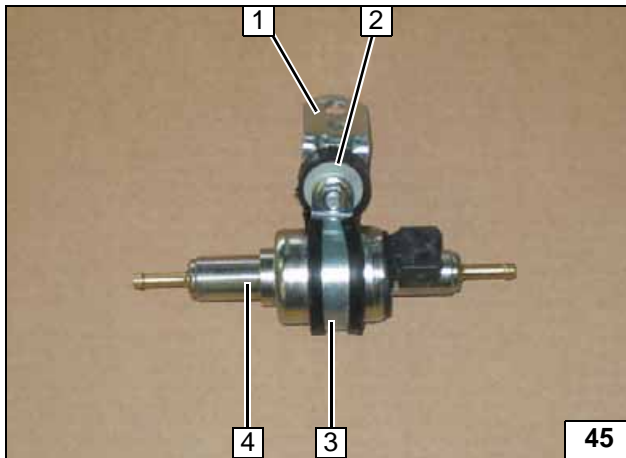
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties. Mount the fuel line and wiring harness with rub protection on sharp edges.

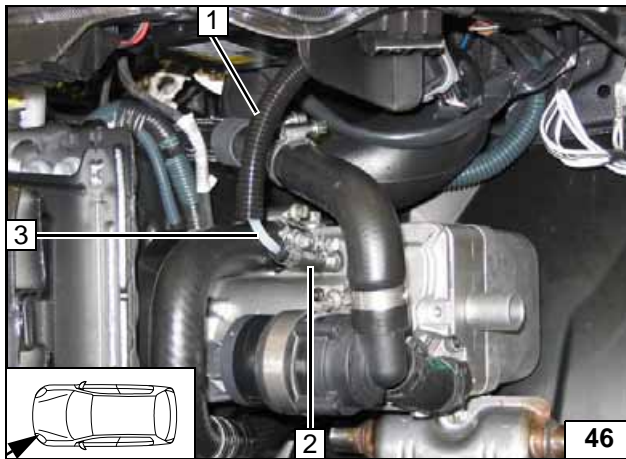
WARNING!

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



- 1 Angle bracket
- 2 Silent block, flanged nut [2x]
- 3 Rubber-coated pipe clamp
- 4 Metering pump

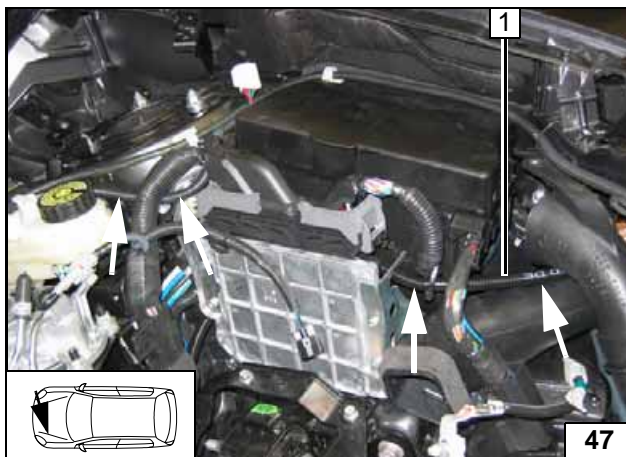
Premounting metering pump



Connect fuel line 3 to heater and pull into 10 mm dia. corrugated tube 1.

- 2 Hose section, 10 mm dia. hose clamps [2x]

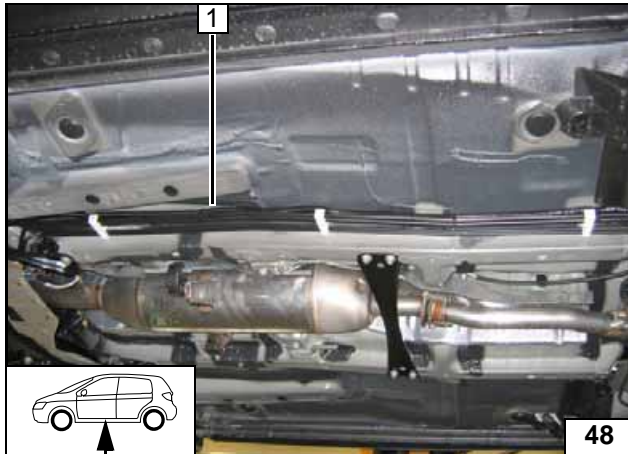
Connecting heater



Route corrugated tube with fuel line 1 to firewall. Route wiring harness of metering pump and fuel line in second section of 10 mm dia. corrugated tube from firewall



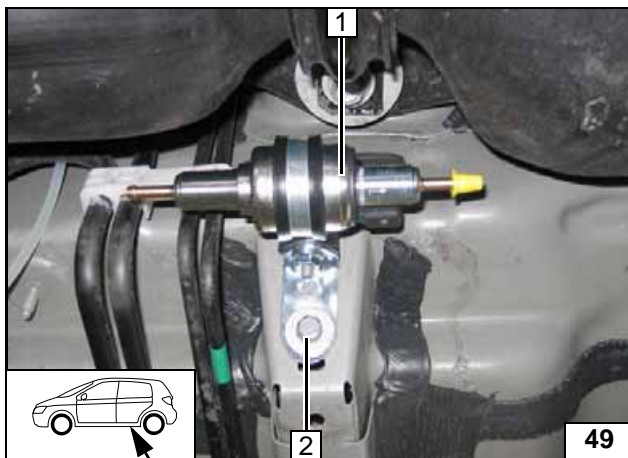
Installing lines



Route wiring harness of metering pump and fuel line in second section of 10 mm dia. corrugated tube **1** along original vehicle fuel lines to installation location of metering pump and fasten with cable tie.



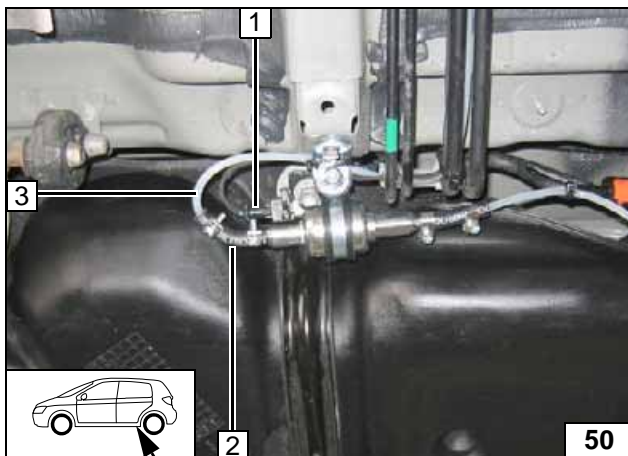
Installing lines



- 1 Metering pump
- 2 M6x20 bolt, spring lockwasher, large diameter washer, original vehicle threaded hole

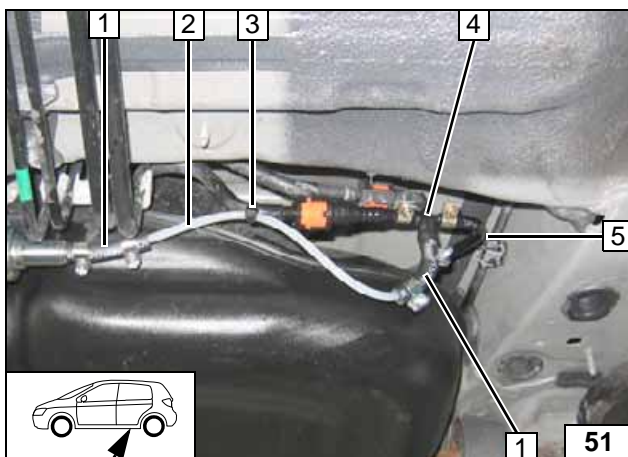


Installing metering pump



- 1 Wiring harness of metering pump, connector mounted
- 2 Hose section, 10 mm dia. hose clamp [2x]
- 3 Fuel line

Connecting metering pump

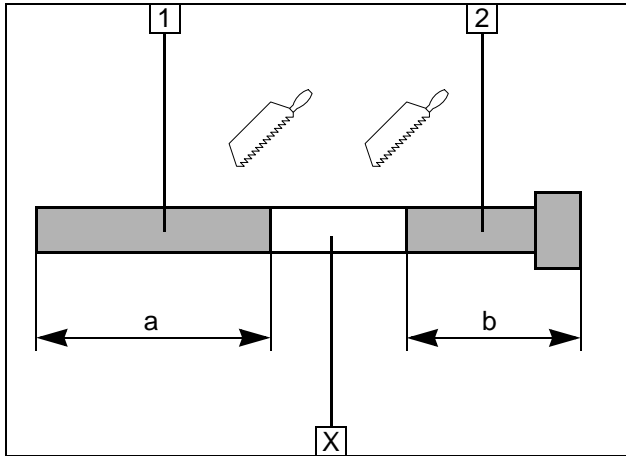
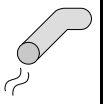


Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Hose section [2x], 10 mm dia. hose clamp [4x]
- 2 Fuel line
- 3 Cable tie
- 4 6x5x6 fuel standpipe, 8 mm dia. hose clamp [2x]
- 5 Original vehicle fuel return line



Mounting fuel standpipe

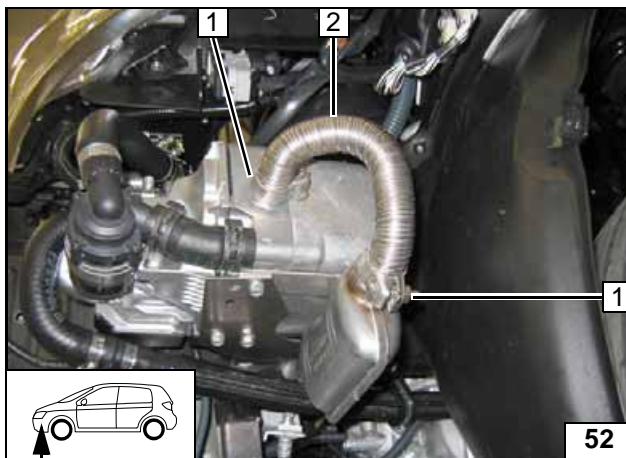


Exhaust system

- 1 Exhaust pipe
a = 180
- 2 Exhaust end section
b = 260

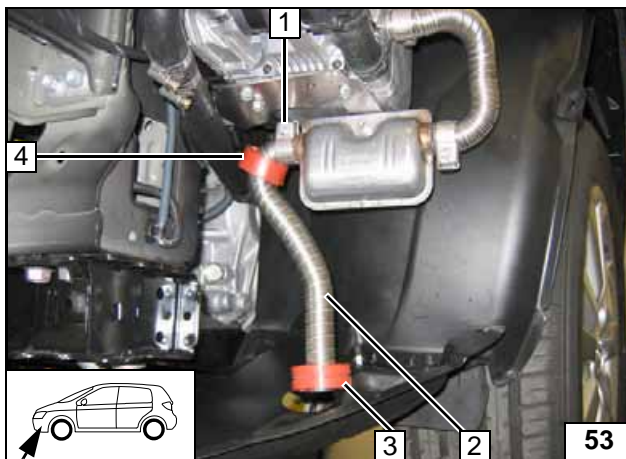
Discard section X

Preparing exhaust pipe



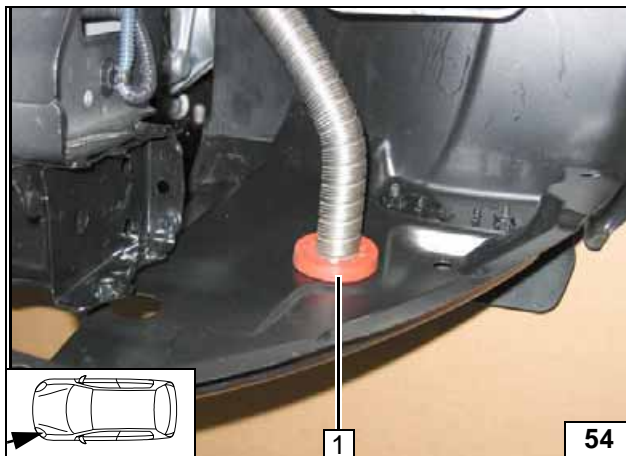
- 1 Hose clamp [2x]
- 2 Exhaust pipe

Installing exhaust pipe



- 1 Hose clamp
- 2 Exhaust end section
- 3 Red (rt) rubber isolator with groove
- 4 Position red (rt) rubber isolator

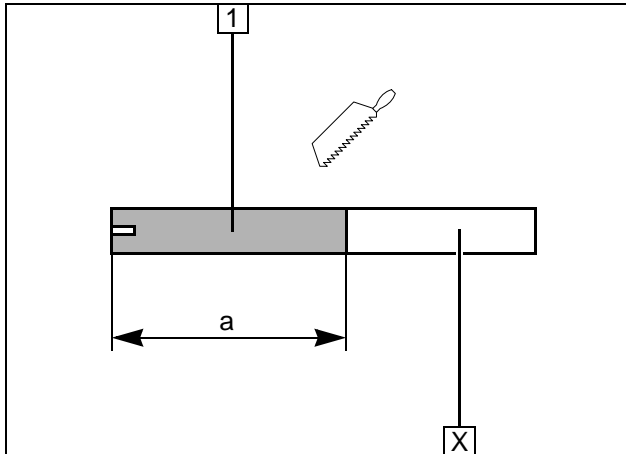
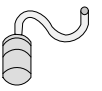
Installing end section



Drill out existing hole to 42 mm dia. 1 and mount exhaust end section with red (rt) rubber isolator with groove.



Installing exhaust end section

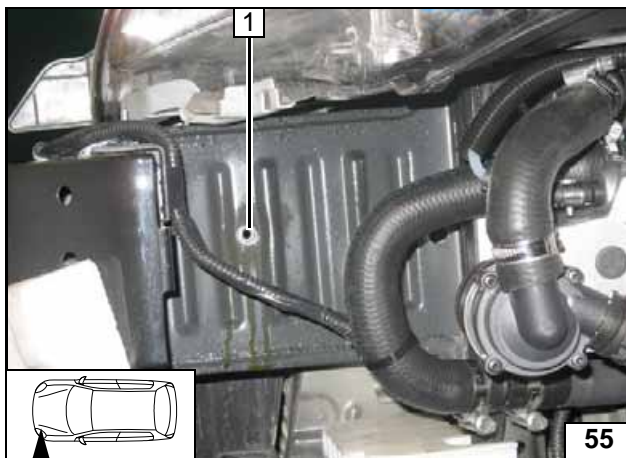


Combustion air

- 1 Combustion air pipe
a = 290

Discard section X

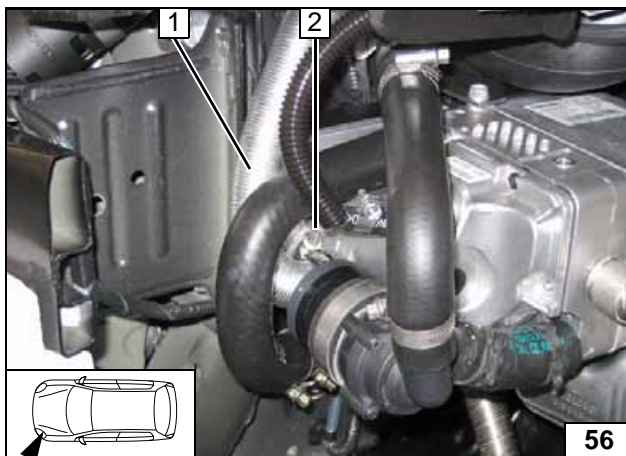
Cutting combustion air pipe to length



Drill out original vehicle hole 1 to 9.1mm dia. and mount M6 rivet nut!

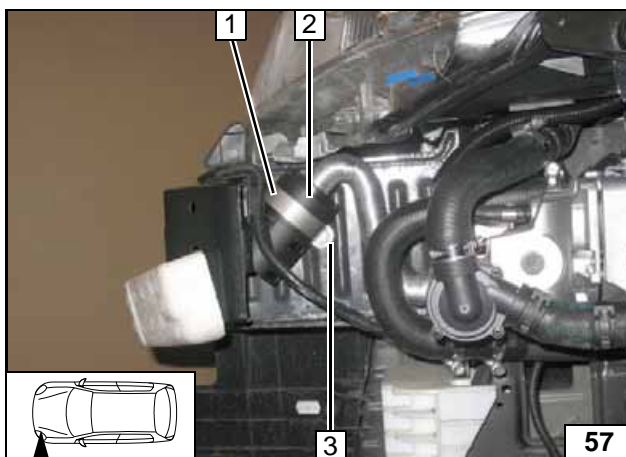


Installing rivet nut



- 1 Combustion-air intake pipe
- 2 27 mm dia. hose clamp

Installing intake pipe



- 1 52 mm dia. p-clamp
- 2 Intake muffler
- 3 5 mm shim, spring lockwasher, M6x25 bolt



Installing intake muffler

Final Work

WARNING!

Reassemble the disassembled components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Secure all loose cables using cable ties. Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

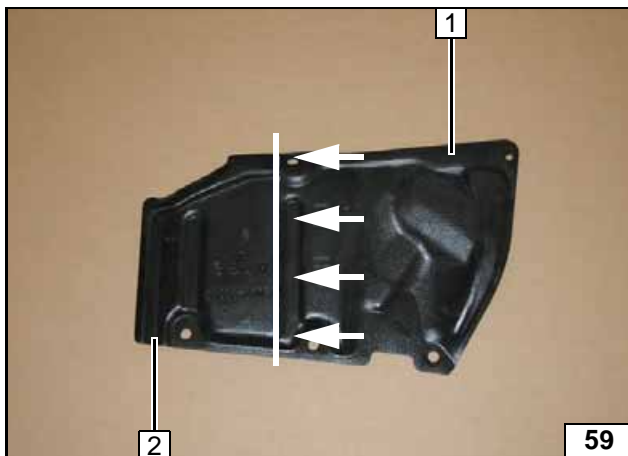
- Connect the battery
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Make the settings for the automatic air-conditioning in accordance with "Operating Instructions for End Customer"
- Check the proper operation of the parking heater, see the operating instructions/installation instructions.
- Mount information label "Switch off parking heater before refueling" in area of filler neck.



Glue second section of rub protection 2 onto air intake pipe 1.



Gluing rub protection

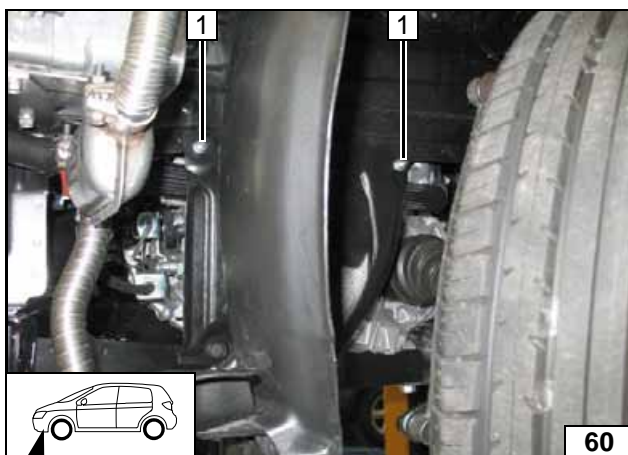


Shorten side wheel well trim 1 according to figure.

2 Discard section



Shortening side wheel well trim



Manual transmission only

1 M6 flanged nut [2x]

Installing side wheel well trim

Operating Instructions for End Customer



Please remove this page and add it to the vehicle operating instructions!

Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

Example:

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

If the summer/winter switch option has been installed, this must be switched in accordance with the time of year. The heater will then only switch on the vehicle fan to ventilate the vehicle interior in the position Winter heat and in the position Summer .

Before parking the vehicle, make the following settings:



No display appears in A/C control panel during heating!



Order of setting:

1. Air outlet at windshield
2. Set fan to level "2"
3. Set temperature to "HI"

Automatic air-conditioning



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