Water Heater

***Thermo Top Evo* Parking Heater**

E1
00 0258

Installation Documentation
Hyundai ix20

Validity

Manufacturer	Model	Type	EG BE No. / ABE
Hyundai	ix20	JC	e4 * 2007 / 46 * 0207 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.4 CVVT	Petrol	SG	66	1396	G4FA
1.6 CVVT	Petrol	SG	92	1591	G4FC
1.4 CRDI	Diesel	SG	66	1396	D4FC
1.6 CRDI	Diesel	SG	85	1582	D4FB

SG = manual transmission

From model year 2010
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
Front fog lights
Start-Stop ISG
Start button with keycard

Total installation time: approx. 8 hours

Hyundai ix20

Table of Contents

Necessary Components

- Basic delivery scope of *Thermo Top Evo* based on price list
- Installation kit for Hyundai ix20 2010 Petrol: **1316867C**
- Installation kit for Hyundai ix20 2010 Diesel: **1316708B**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

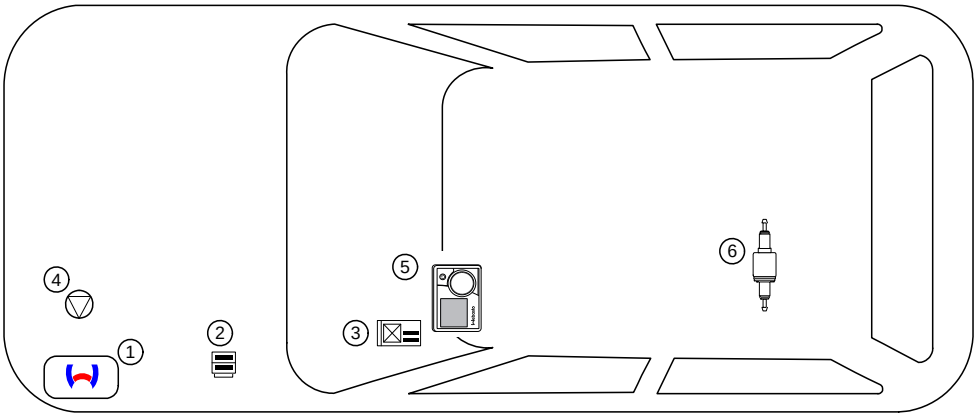
Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about ¼ full.
- The installation location of the push button in case of Telestart or ThermoCall should be confirmed with the end customer.
- Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. Circulating pump
5. MultiControl CAR
6. Metering pump



Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater.
The total installation time may vary for vehicle equipment other than provided.

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair

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

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

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs, installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components must audibly snap into place during assembly.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components!

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

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

2 Statutory regulations governing installation

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

Note

The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

Important

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

Note

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

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

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Information on Validity

This installation documentation applies to Hyundai ix20 Petrol and diesel vehicles - for validity, see page 2 - from model year 2010 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this ‘installation documentation’.

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

Technical Information

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

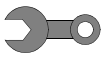
Dimensions
- All dimensions are in mm.

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

Explanatory Notes on Document

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

Mechanical System



Electrical System

Coolant Circuit

Combustion Air

Fuel

Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents.

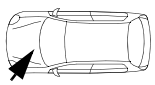
Specific risk of damage to components.

Specific risk of fire and explosion.

Reference to general installation instructions of the 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.



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

Hyundai ix20

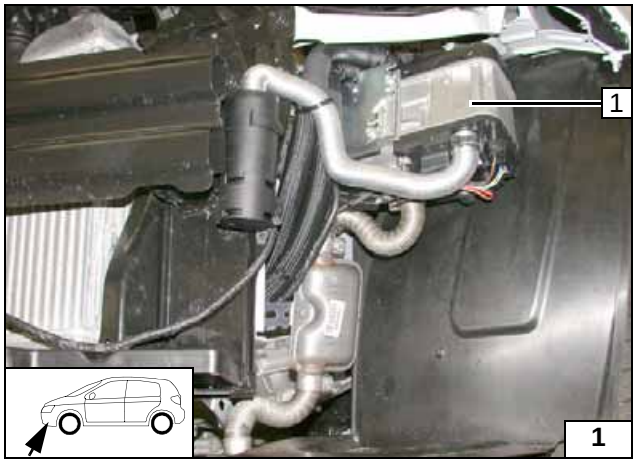
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Release the engine control unit.
- Disconnect and remove the battery.
- Remove the battery carrier (diesel only).
- Remove the intake hose from the air filter.
- Detach the wheel well trim on the left and right.
- Remove the bumper trim.
- Remove the left-hand headlight.
- Remove the front underride protection on the left.
- Remove the instrument panel trim on the driver's side.
- Detach the central electrical box.
- Remove the A/C control panel (only with automatic air-conditioning).

Heater

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



Heater Installation Location

1 Heater

Installation location

Preparing Electrical System

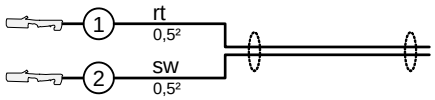
Wire sections retain their numbering in the entire document.

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

Assigning wires

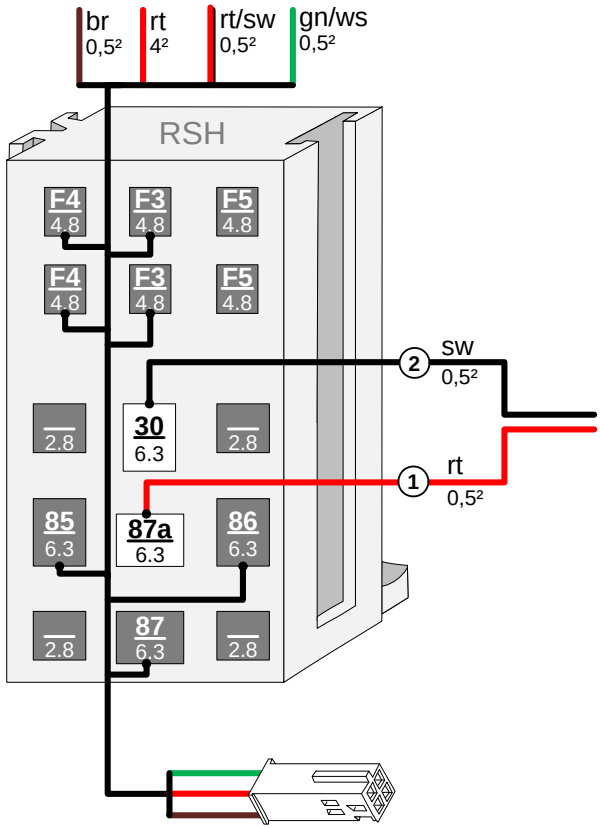
Manual A/C system

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



2

Connecting wires to passenger compartment relay and fuse holder



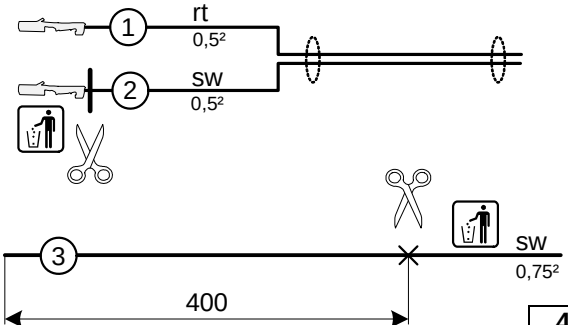
3

Automatic air-conditioning

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

Pull black (sw) additional wire ③ into provided protective sleeving.

Cutting to length / assigning wire



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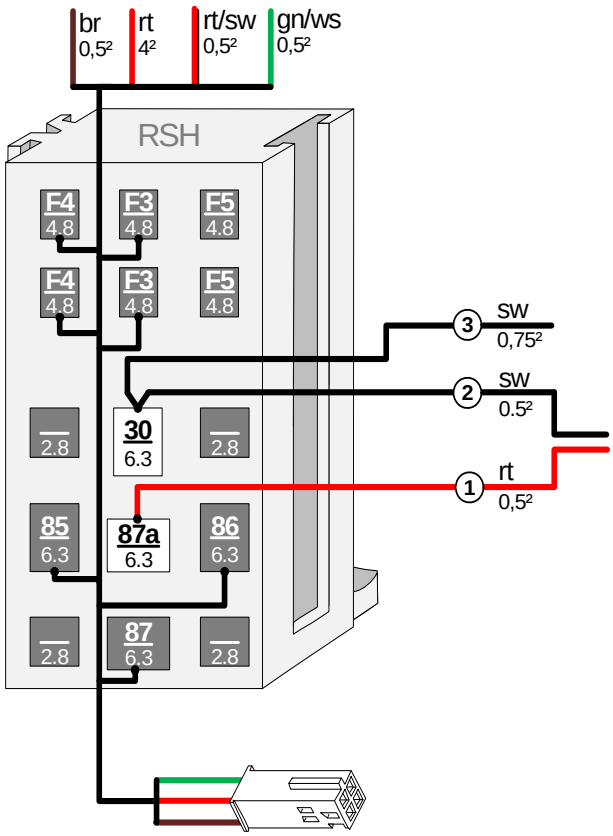
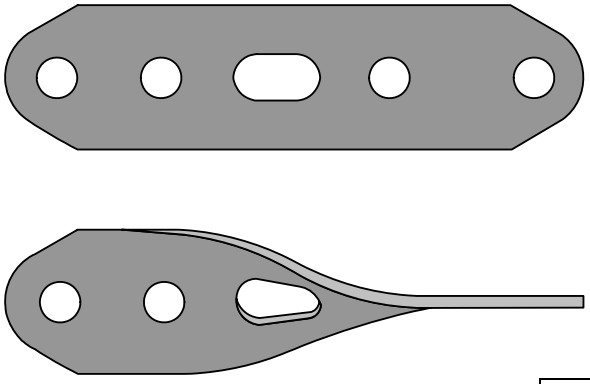


5

Connecting wires to passenger compartment relay and fuse holder

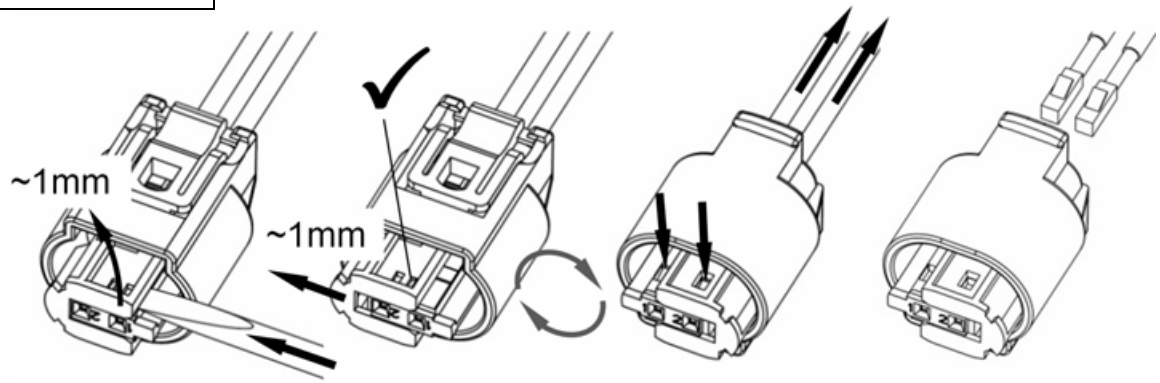
All vehicles



6

Twisting perforated bracket along its longitudinal axis by 90°

Connector X7



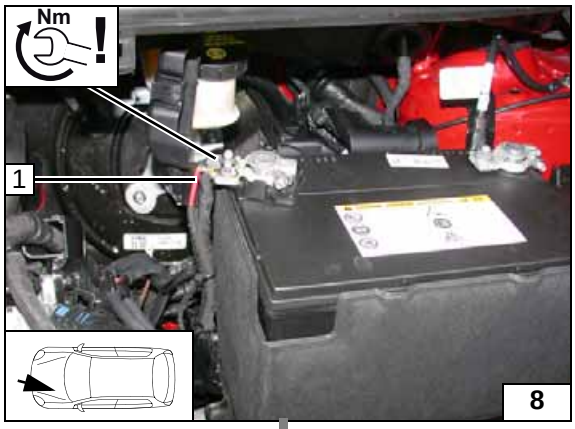
7

Dismantling metering pump connector

Electrical System

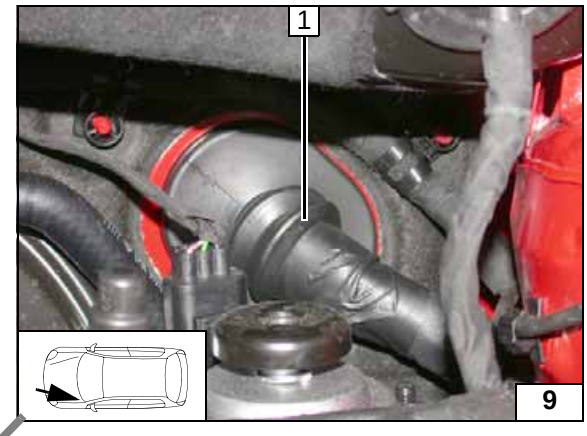
Positive wire

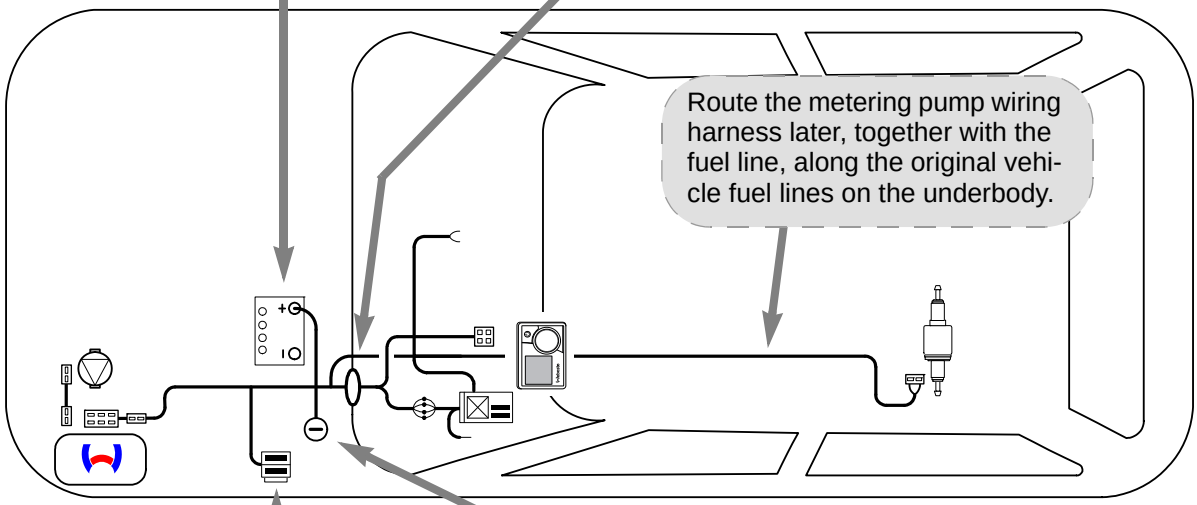
1 Positive wire on positive battery terminal



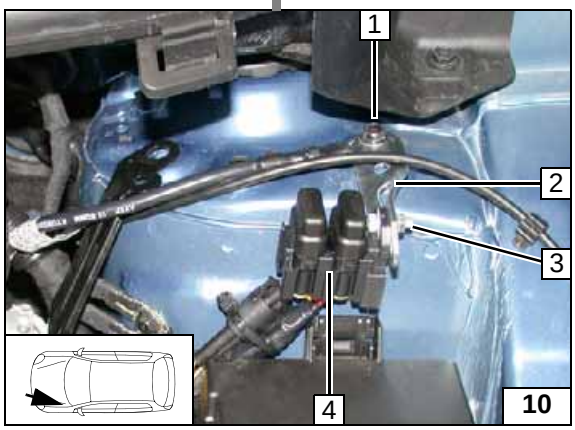
Wiring harness pass through

1 Protective rubber plug



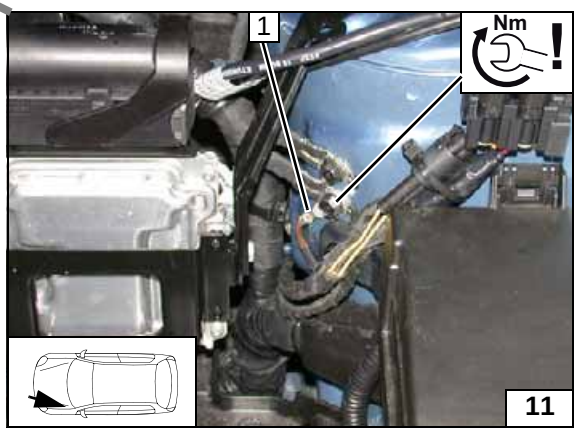


Wiring harness routing diagram



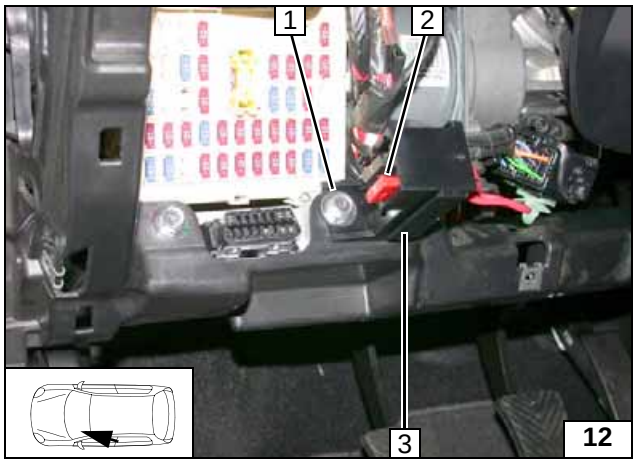
Engine compartment fuse holder,

1 Original vehicle bolt
2 Perforated bracket
3 M5x16 bolt, washer [2x], retaining plate of fuse holder, nut
4 Fuses F1-2 mounted



Earth wire

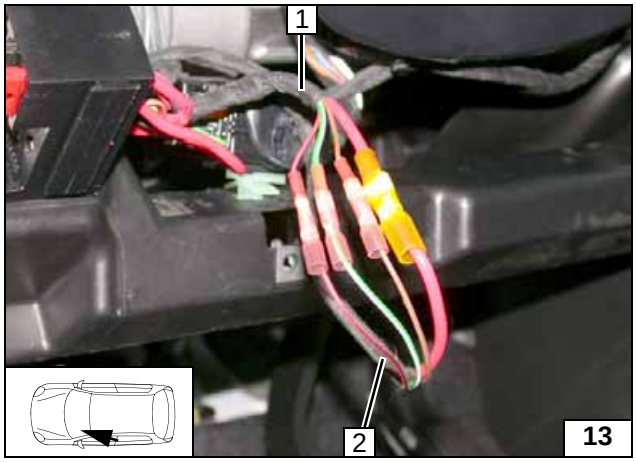
1 Earth wire on original vehicle earth support point



Insert relay K1 after assembly.

1 Original vehicle bolt
2 10A fuse F4
3 Passenger compartment relay and fuse holder

Installing passenger compartment relay and fuse holder

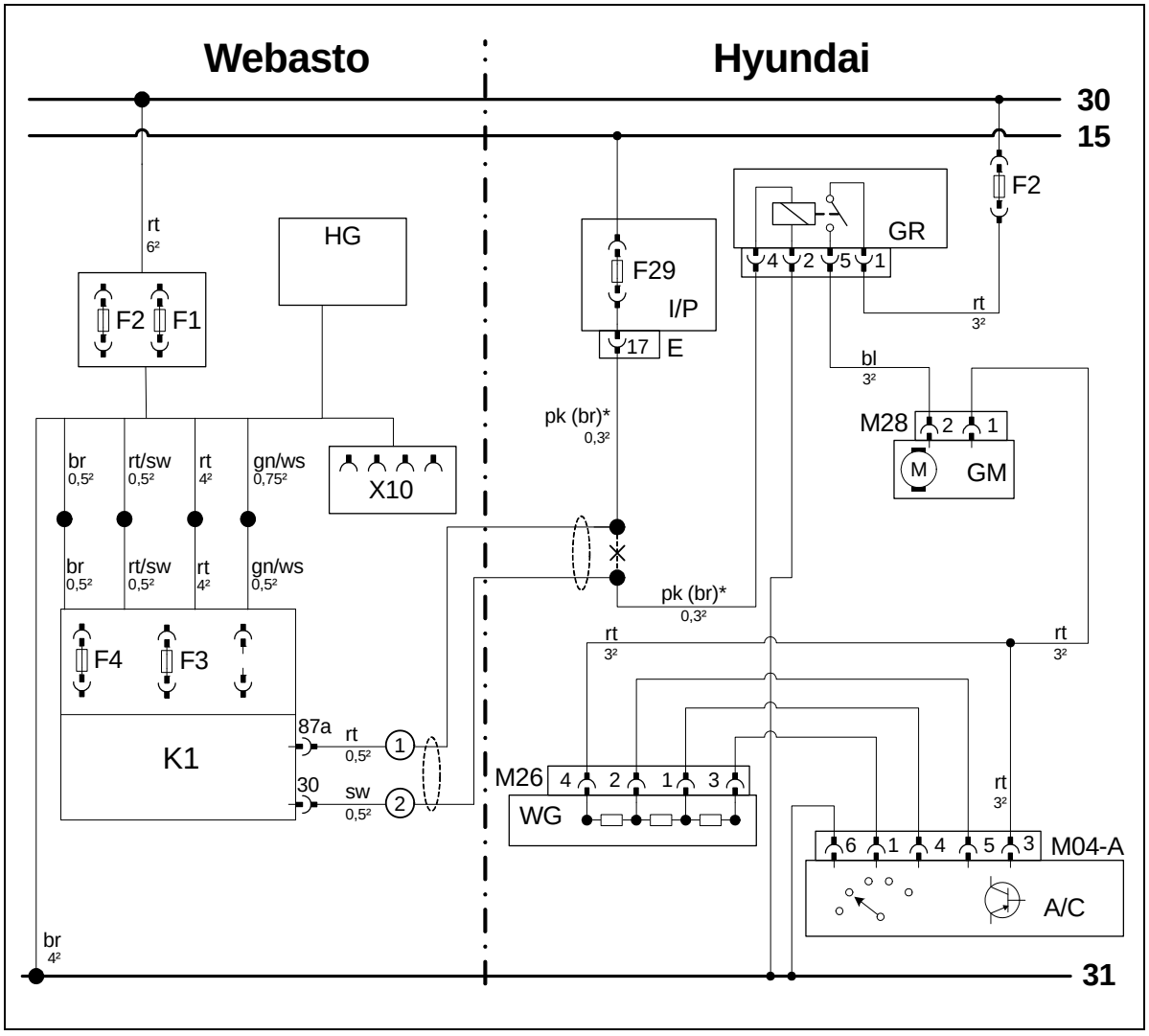


1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses

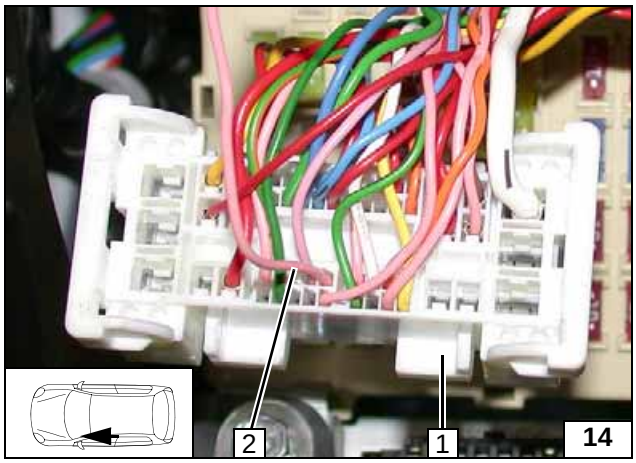
Fan Controller for Manual A/C up to 2013

System wiring diagram



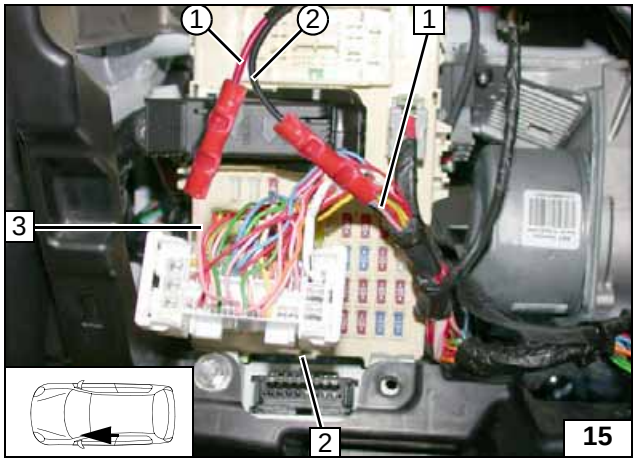
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F2	40A fuse	rt	red
F1	20A fuse	GR	Fan relay	ws	white
F2	30A fuse	F29	10A fuse	sw	black
X10	4-pin connector of heater control	I/P	Fuse box	br	brown
		E	IP connector	gn	green
F3	1A fuse	GM	Fan motor	ge	yellow
F4	10A fuse	M28	Connector of GM	pk	pink
K1	Fan relay	WG	Resistor group	bl	blue
		M26	WG Connector	**X**	Cutting point
		A/C	A/C control module	*	Wiring colours may vary.
		M04-A	A/C connector		

Legend



1 Connector I/P-E central electrical box detached
2 Pink or brown (pk or br) wire of fan relay/connector I/P-E, pin 17

View of connector I/P-E



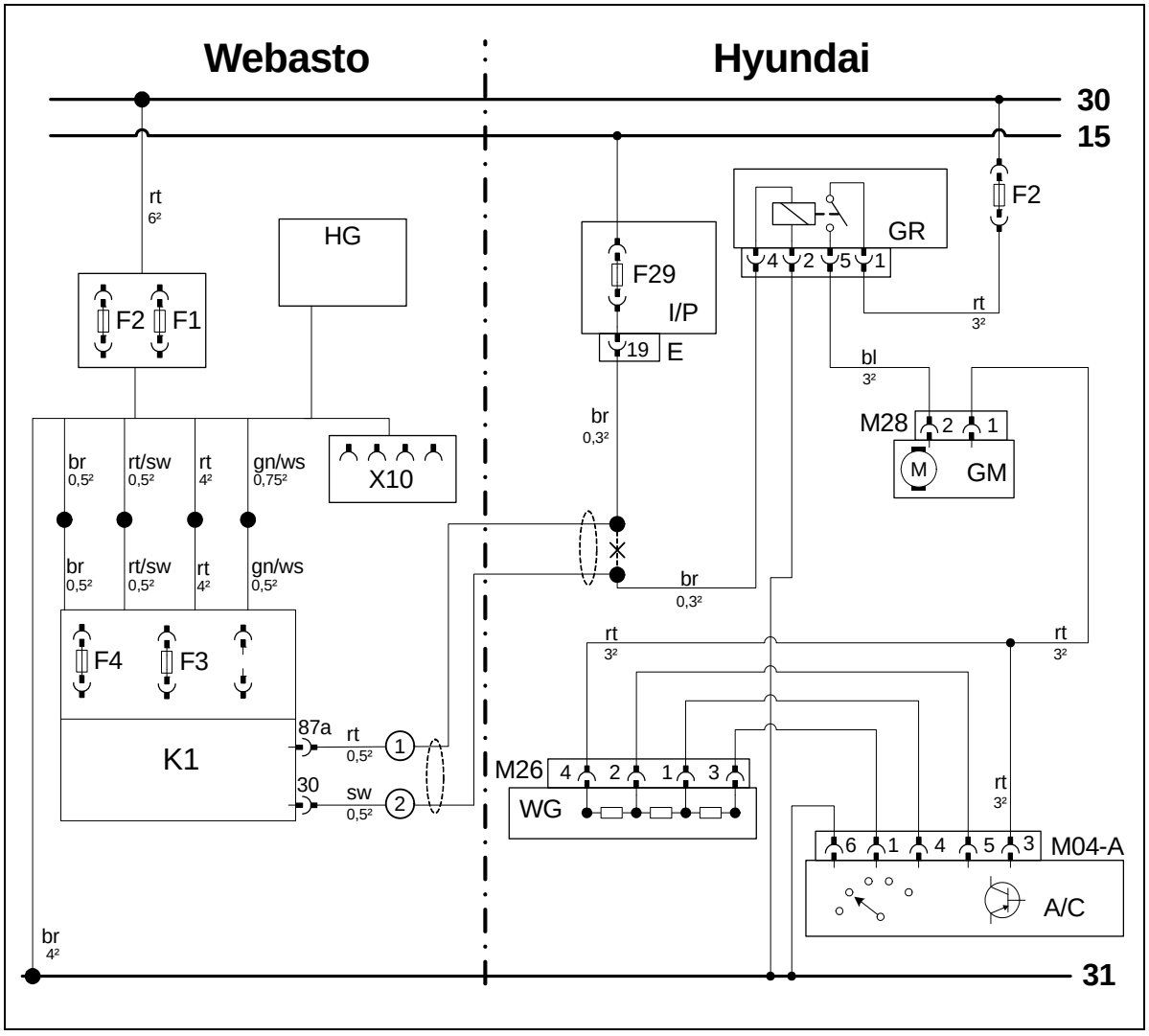
Connection to connector I/P-E **2** at central electrical box.

1 Pink or brown (pk or br) wire of fan relay
3 Pink or brown (pk or br) wire of connector I/P-E, pin 17
① Red (rt) wire from K1/87a of fan wiring harness
② Black (sw) wire from K1/30 of fan wiring harness

Connection of central electrical box for I/P-E

Fan Controller for Manual A/C from 2014

System wiring diagram



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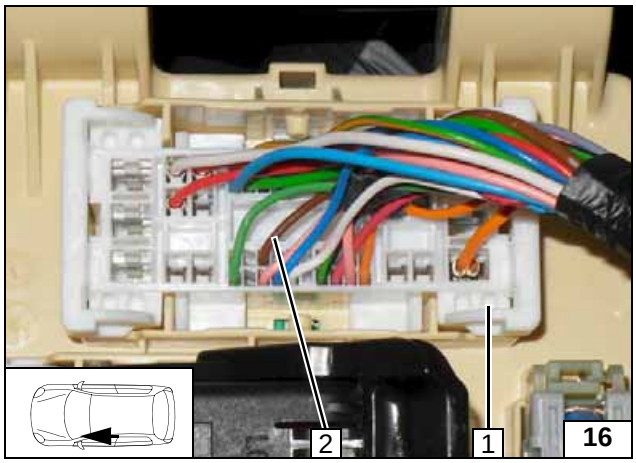
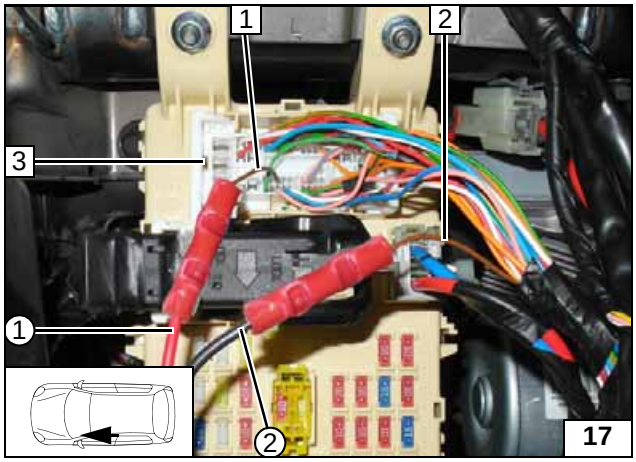
		E	IP connector	gn	green
F3	1A fuse	GM	Fan motor	ge	yellow
F4	10A fuse	M28	Connector of GM	bl	blue
K1	Fan relay	WG	Resistor group		
		M26	WG Connector		
		A/C	A/C control module	**X**	Cutting point
		M04-A	A/C connector	Wiring colours may vary.	

Legend



1 Connector I/P-E central electrical box
2 Brown (br) wire of fan relay/connector I/P-E, pin 19

View of connector I/P-E



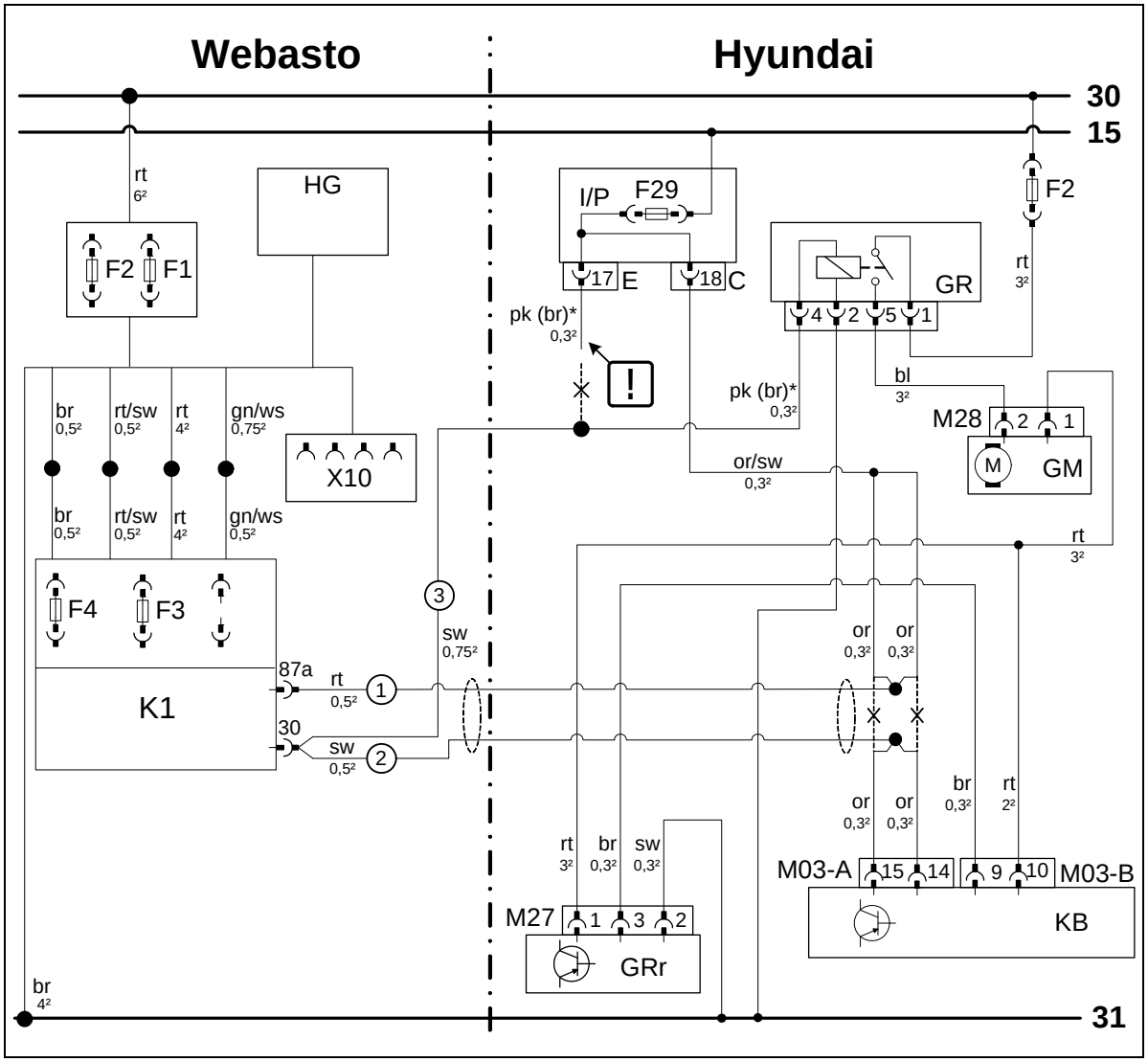
Connection to connector I/P-E **3** at central electrical box.

1 Brown (br) wire of connector I/P-E, pin 19
2 Brown (br) wire of fan relay
① Red (rt) wire from K1/87a of fan wiring harness
② Black (sw) wire from K1/30 of fan wiring harness

Connection of central electrical box for I/P-E

Fan Controller for Automatic A/C (up to 2013)

System wiring diagram



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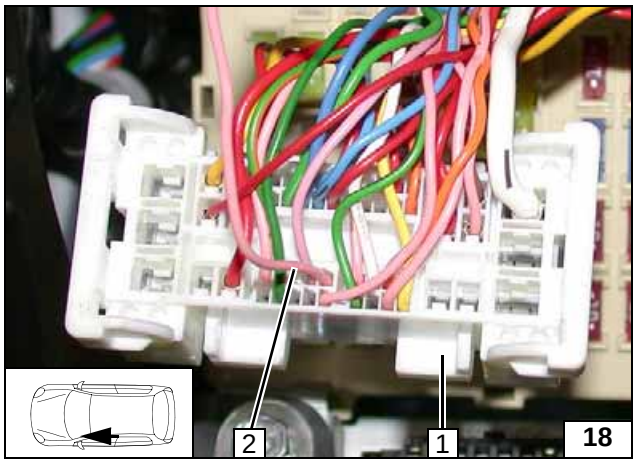
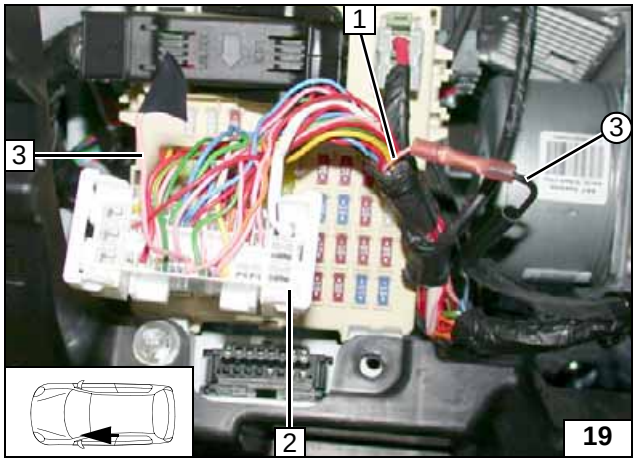
HG	TT-Evo heater	F2	40A fuse	rt	red
F1	20A fuse	F29	10A fuse	ws	white
F2	30A fuse	I/P	Central electrical box	sw	black
X10	4-pin connector of heater control	C	Connector I/P	br	brown
		E	Connector I/P	gn	green
F3	1A fuse	GR	Fan relay	ge	yellow
F4	10A fuse	GM	Fan motor	pk	pink
K1	Fan relay	M28	Connector of GM	bl	blue
		KB	A/C control panel	or	orange
		M03-A	26-pin connector of KB		
		M03-B	Connector of KB	!	Insulate wire end and tie back
		GRr	Fan controller		
		M27	Connector of GRr	X	Cutting point
				*	Wiring colours may vary.

Legend



1 Connector I/P-E central electrical box detached
2 Pink or brown (pk or br) wire of fan relay/connector I/P-E, pin 17

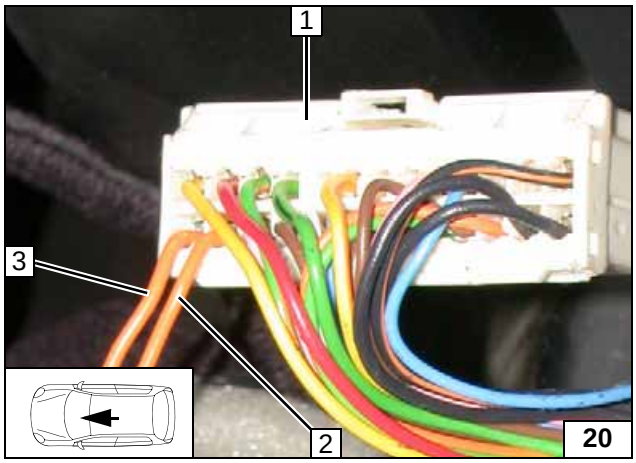
View of connector I/P-E



Insulate and tie back pink (pk) wire **3** of the central electrical box for connector I/P-E, pin 17.

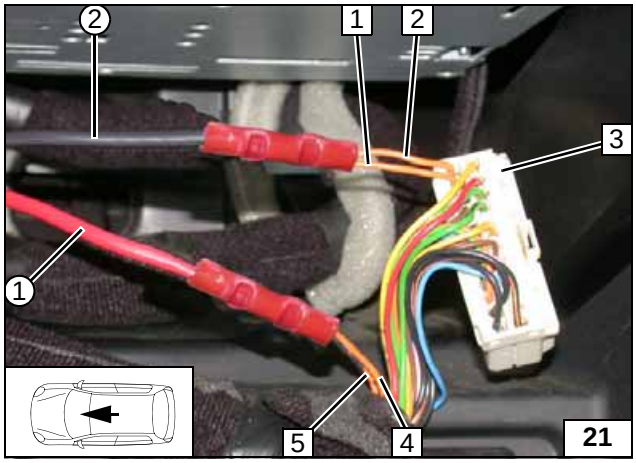
1 Pink or brown (pk or br) wire of fan relay
2 Connector I/P-E central electrical box
③ Black (sw) additional wire of K1/30

Connection of central electrical box for I/P-E



1 Connector M03-A of A/C control panel
2 Orange (or) wire of connector M03-A, pin 14
3 Orange (or) wire of connector M03-A, pin 15

View of connector M03-A

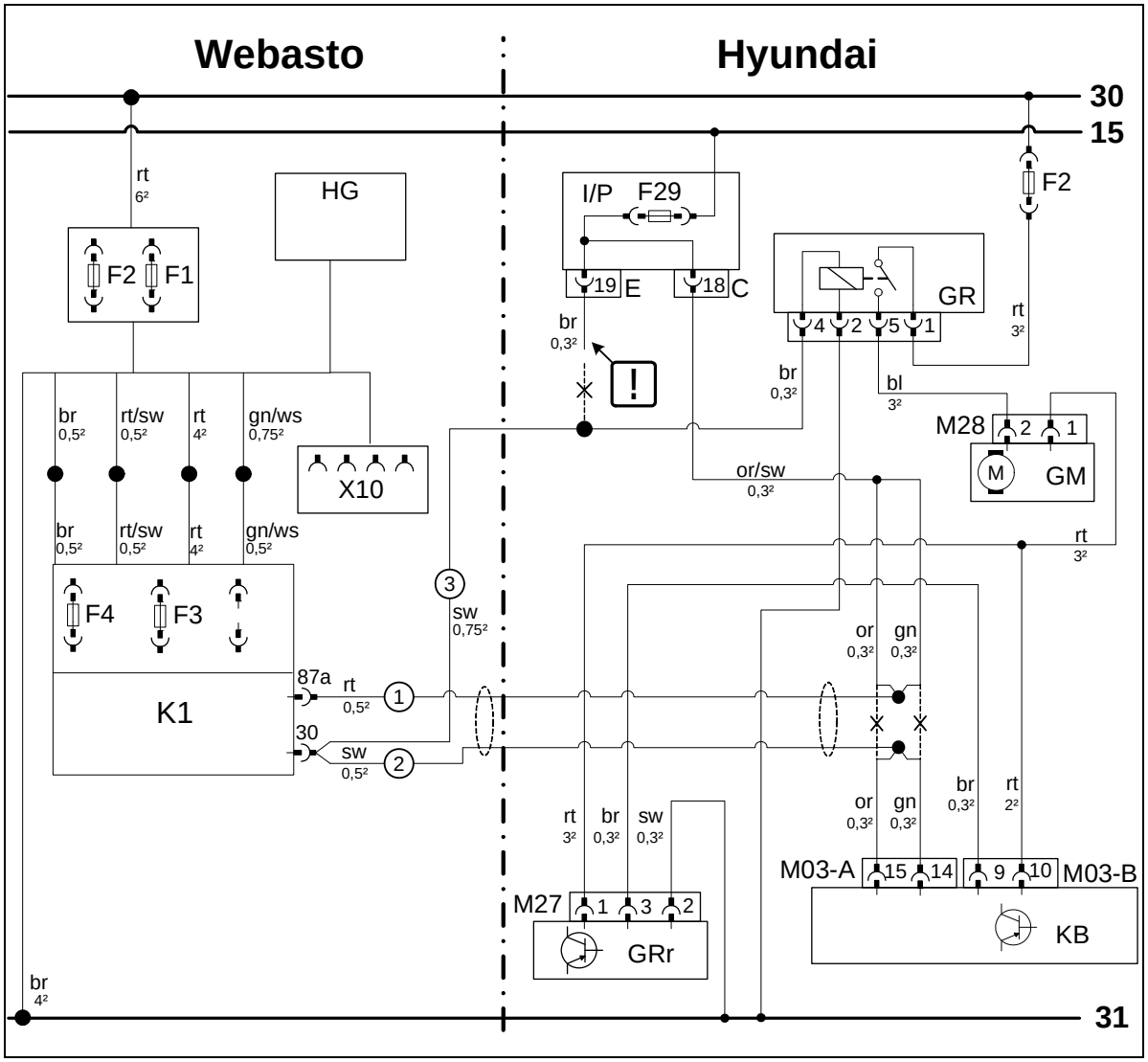


1 Orange (or) wire of connector M03-A, pin 14
2 Orange (or) wire of connector M03-A, pin 15
3 Connector M03-A of A/C control panel
4 Orange (or) wire from central electrical box I/P
5 Orange (or) wire from central electrical box I/P
① Red (rt) wire from K1/87a of fan wiring harness
② Black (sw) wire from K1/30 of fan wiring harness

Connecting A/C control panel

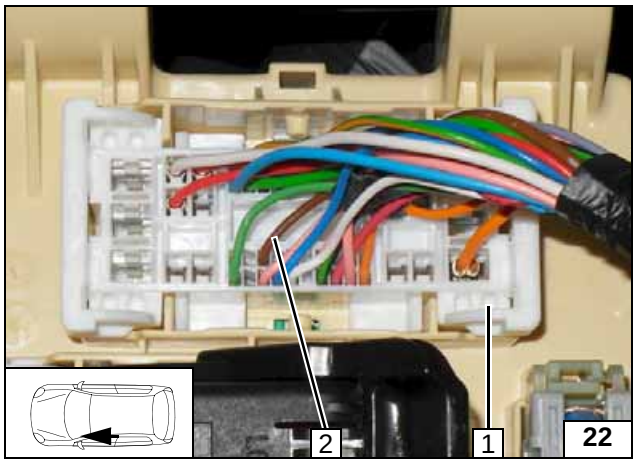
Fan Controller for Automatic A/C 2014

System wiring diagram



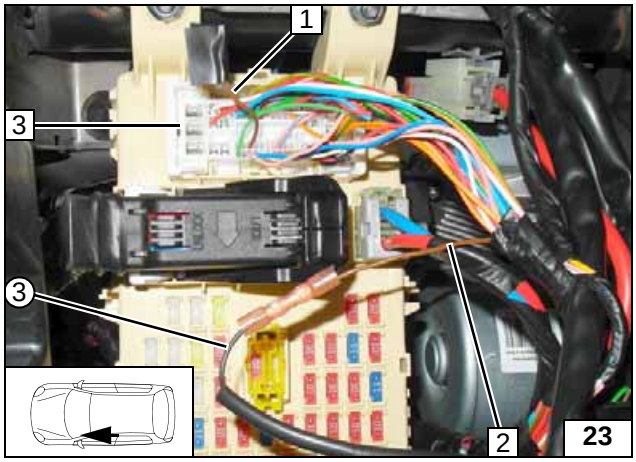
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F2	40A fuse	rt	red
F1	20A fuse	I/P	Central electrical box	ws	white
F2	30A fuse	F29	10A fuse	sw	black
X10	4-pin connector of heater control	C	Connector I/P	br	brown
		E	Connector I/P	gn	green
F3	1A fuse	GR	Fan relay	ge	yellow
F4	10A fuse	GM	Fan motor	pk	pink
K1	Fan relay	M28	Connector of GM	bl	blue
		KB	A/C control panel	or	orange
		M03-A	26-pin connector of KB		
		M03-B	Connector of KB	!	Insulate wire end and tie back
		GRr	Fan controller		
		M27	Connector of GRr	X	Cutting point
				Wiring colours may vary.	

Legend



1 Connector I/P-E central electrical box
2 Brown (br) wire of fan relay/connector I/P-E, pin 19

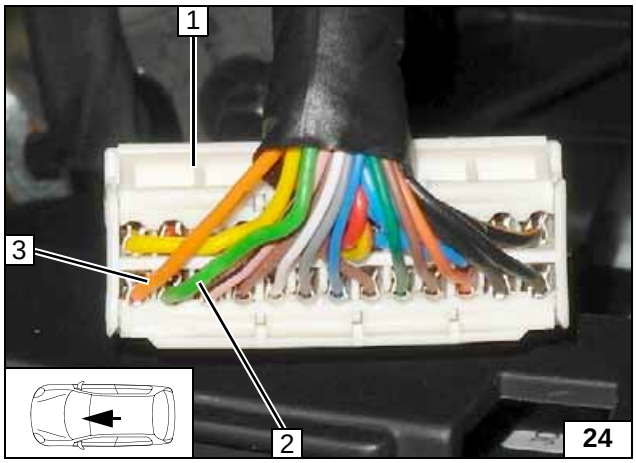
View of connector I/P-E



Insulate and tie back brown (br) wire **1** of the central electrical box for connector I/P-E, pin 19.

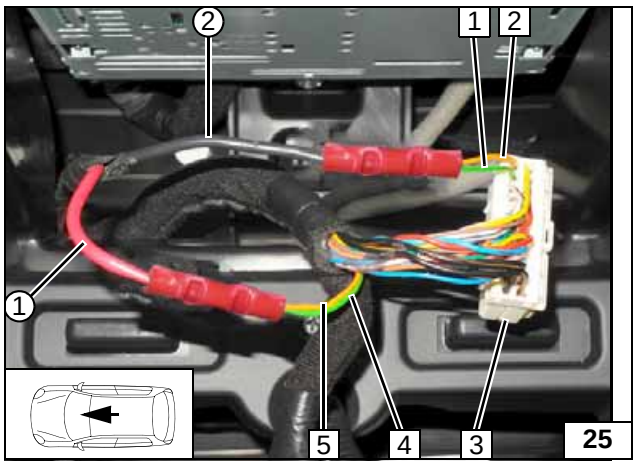
2 Brown (br) wire of fan relay
3 Connector I/P-E central electrical box
③ Black (sw) additional wire of K1/30

Connection of central electrical box for I/P-E



1 Connector M03-A of A/C control panel
2 Green (gn) wire of connector M03-A, pin 14
3 Orange (or) wire of connector M03-A, pin 15

View of connector M03-A

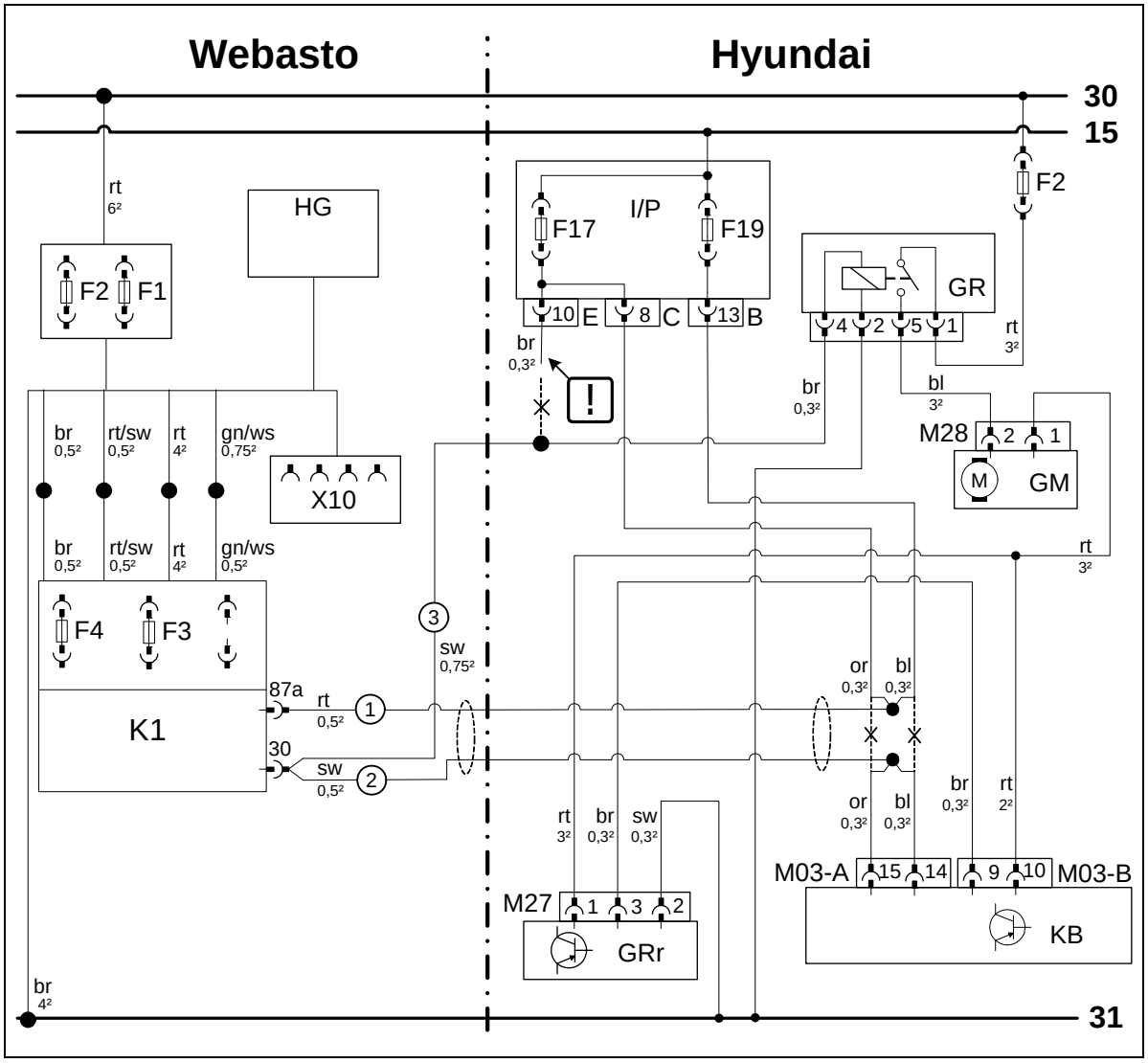


1 Green (gn) wire of connector M03-A, pin 14
2 Orange (or) wire of connector M03-A, pin 15
3 Connector M03-A of A/C control panel
4 Green (gn) wire from central electrical box I/P
5 Orange (or) wire from central electrical box I/P
① Red (rt) wire from K1/87a of fan wiring harness
② Black (sw) wire from K1/30 of fan wiring harness

Connecting A/C control panel

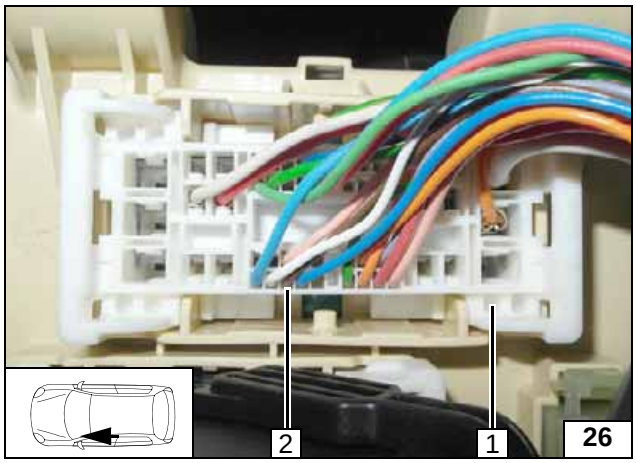
Fan Controller for Automatic A/C from 2015

System wiring diagram



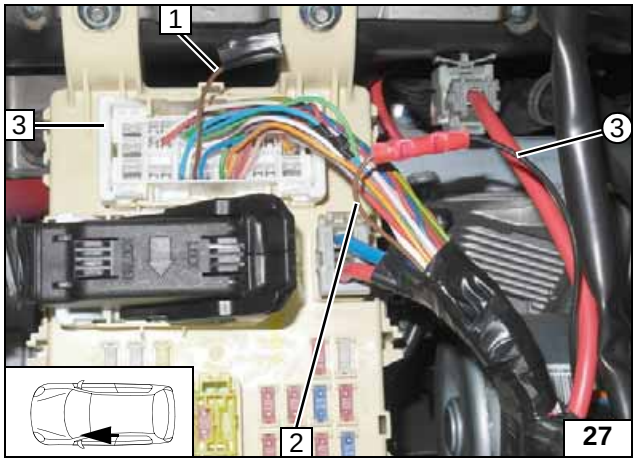
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F2	40A fuse	rt	red
F1	20A fuse	I/P	Central electrical box	ws	white
F2	30A fuse	F17	10A fuse	sw	black
X10	4-pin connector of heater control	F19	10A fuse	br	brown
		E	Connector I/P	gn	green
F3	1A fuse	C	Connector I/P	ge	yellow
F4	10A fuse	B	Connector I/P	bl	blue
K1	Fan relay	GR	Fan relay	or	orange
		GM	Fan motor		
		M28	Connector of GM		
		KB	A/C control panel		
		M03-A	26-pin connector of KB	!	Insulate wire end and tie back
		M03-B	Connector of KB		
		GRr	Fan controller	X	Cutting point
		M27	Connector of GRr	Wiring colours may vary.	

Legend



1 Connector I/P-E central electrical box
2 Brown (br) wire of fan relay/connector I/P-E, pin 10

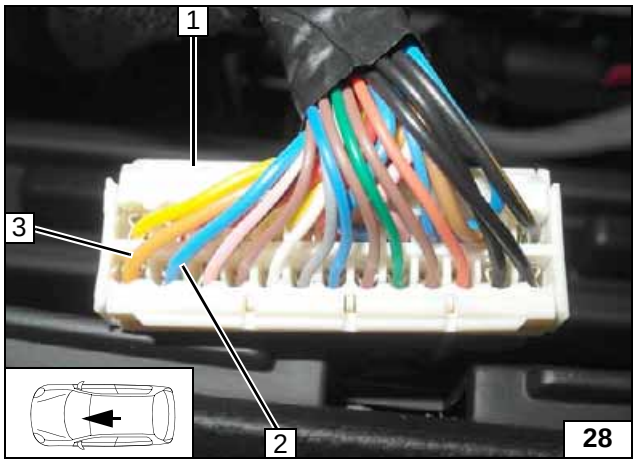
View of connector I/P-E



Insulate and tie back brown (br) wire **1** of the central electrical box for connector I/P-E, pin 10.

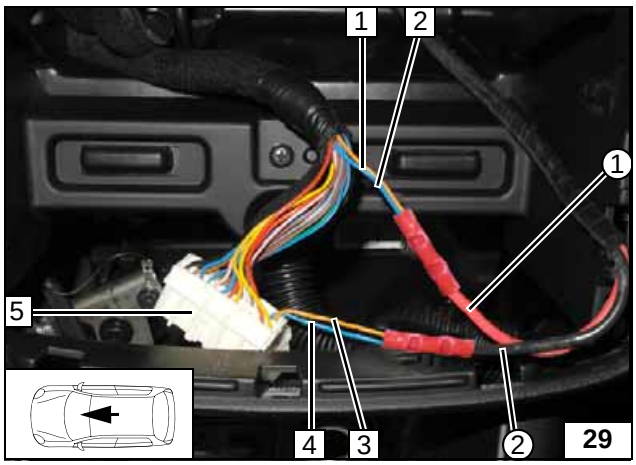
2 Brown (br) wire of fan relay
3 Connector I/P-E central electrical box
③ Black (sw) additional wire of K1/30

Connection of central electrical box for I/P-E



1 Connector M03-A of A/C control panel
2 Blue (bl) wire of connector M03-A, pin 14
3 Orange (or) wire of connector M03-A, pin 15

View of connector M03-A

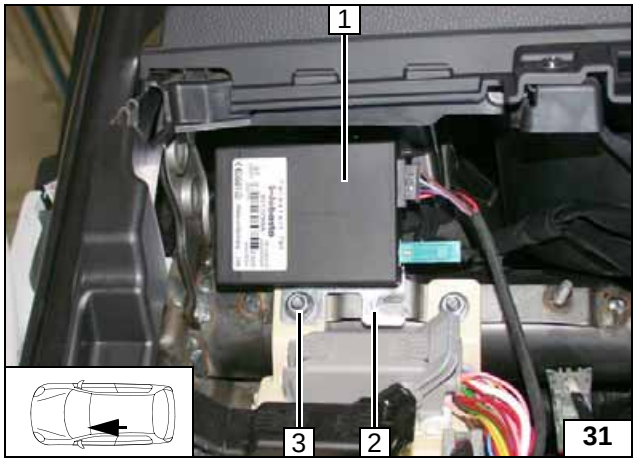


1 Orange (or) wire of central electrical box I/P
2 Blue (bl) wire of central electrical box I/P
3 Orange (or) wire of connector M03-A, pin 15
4 Blue (bl) wire of connector M03-A, pin 14
5 Connector M03-A of A/C control panel
① Red (rt) wire from K1/87a of fan wiring harness
② Black (sw) wire from K1/30 of fan wiring harness

Connecting A/C control panel

MultiControl CAR Option

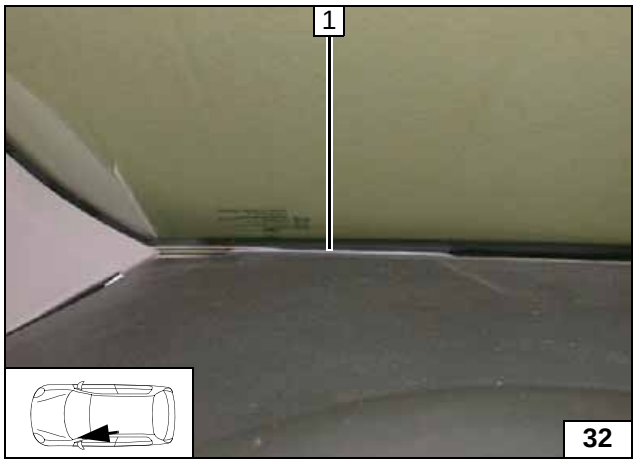
Installing MultiControl CAR



Remote Option (Telestart)

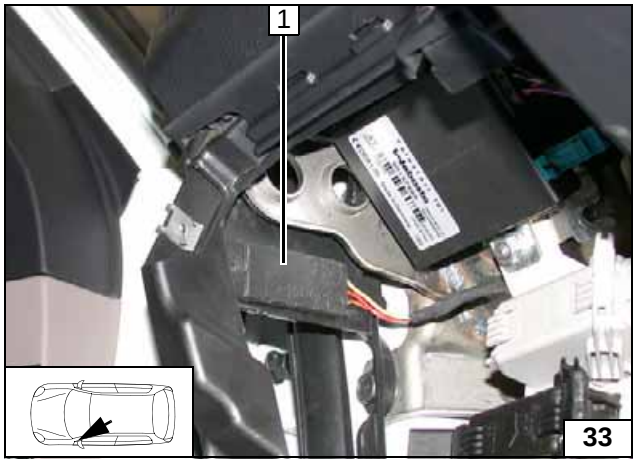
1 Receiver
2 Bracket
3 Original vehicle bolt

Installing receiver



1 Aerial

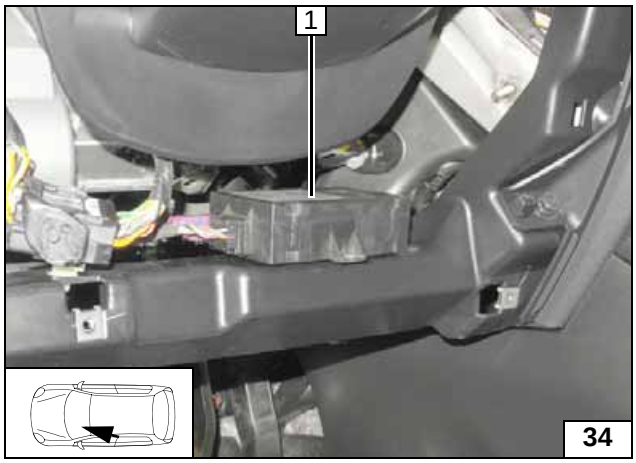
Installing aerial



Temperature sensor T100 HTM

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

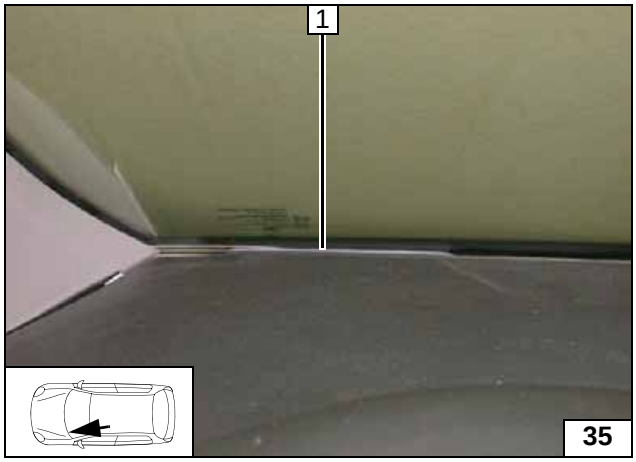
Installing temperature sensor



ThermoCall Option

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

Installing receiver



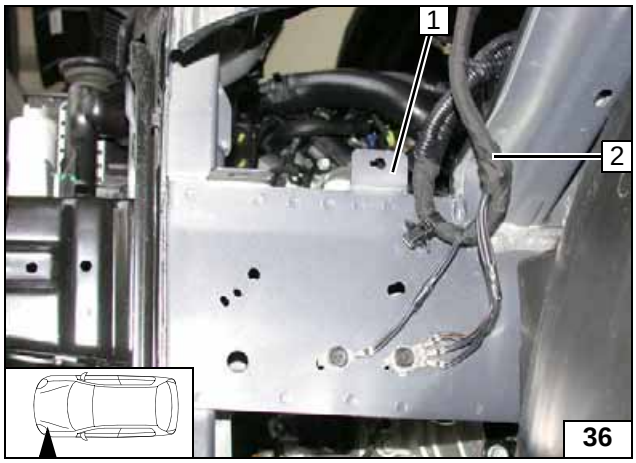
1 Aerial (optional)

Installing aerial

Preparing Installation Location

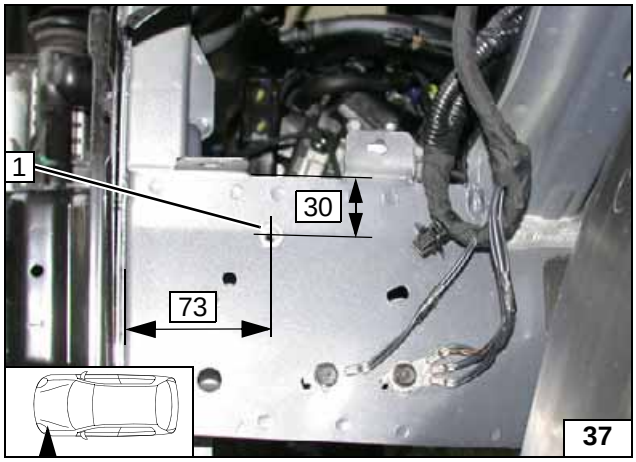
Bend tab **1** by 90° upward. Detach retaining clip [2x] from original vehicle wiring harness **2**.

Bending tab



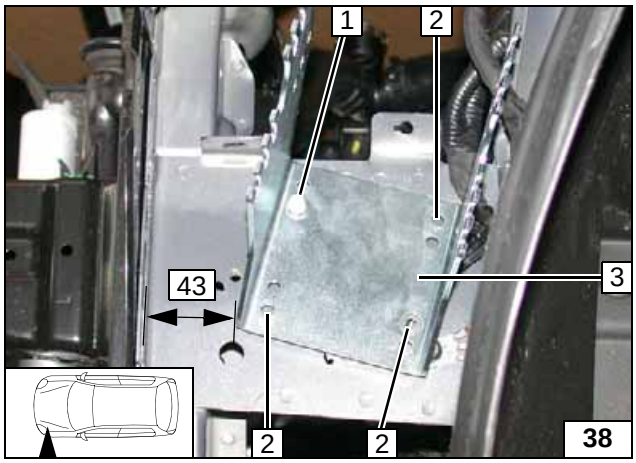
1 9.1mm dia. hole; rivet nut

Installing rivet nut



1 M6x30 bolt
2 Copy hole pattern [3x]
3 Loosely mount, align bracket

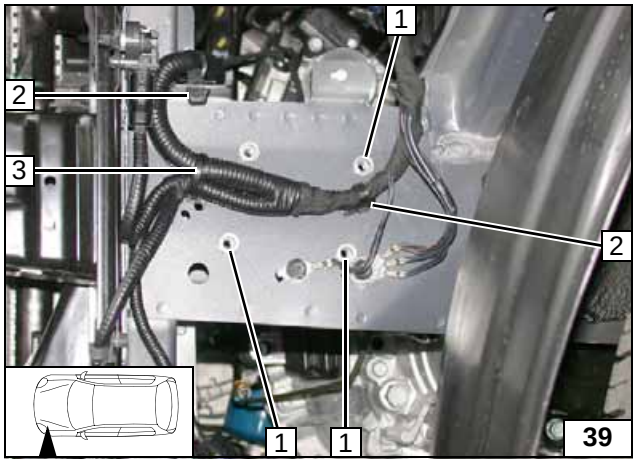
Copying hole pattern

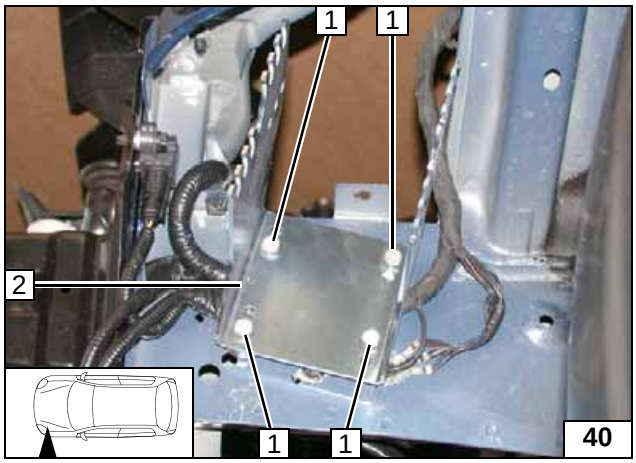


Remove bracket.

1 9.1mm dia. hole; rivet nut [3x each]
2 Retaining clip of original vehicle wiring harness [2x]
3 Cable tie

Installing rivet nut

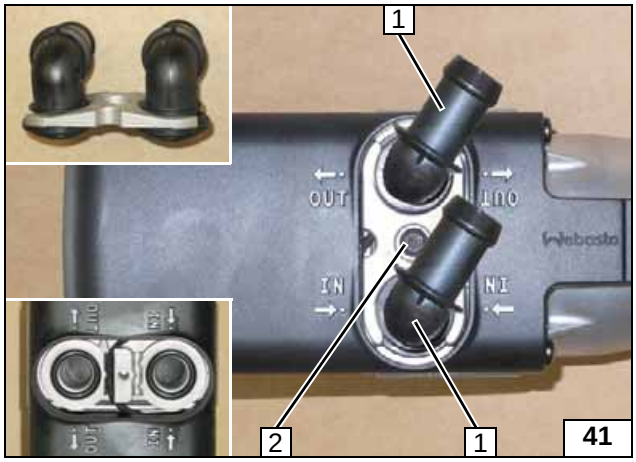




1 M6x30 bolt, spring lockwasher, 10 mm shim (between bracket and frame side member) [4x each]
2 Bracket

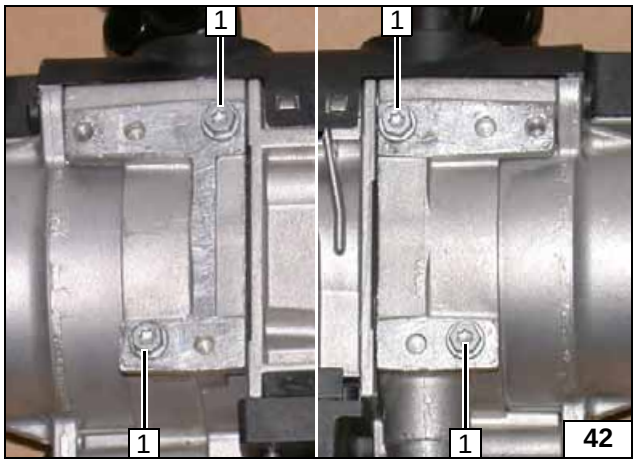
Installing bracket

Preparing Heater



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

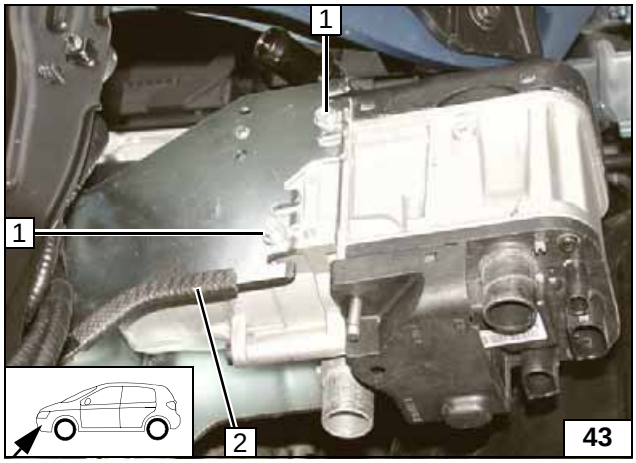
Installing water connection piece



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

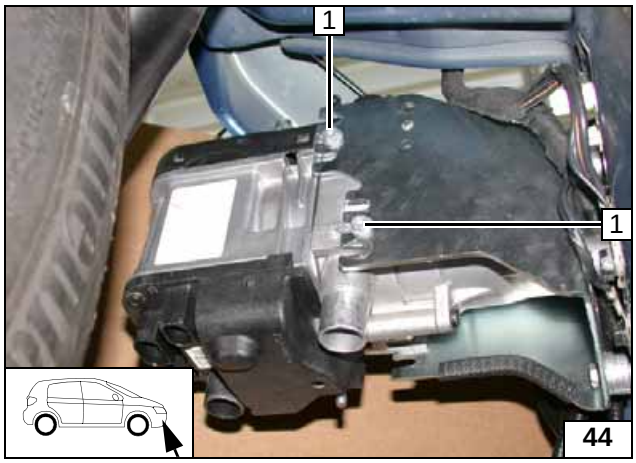
Premounting bolts loosely

Installing Heater



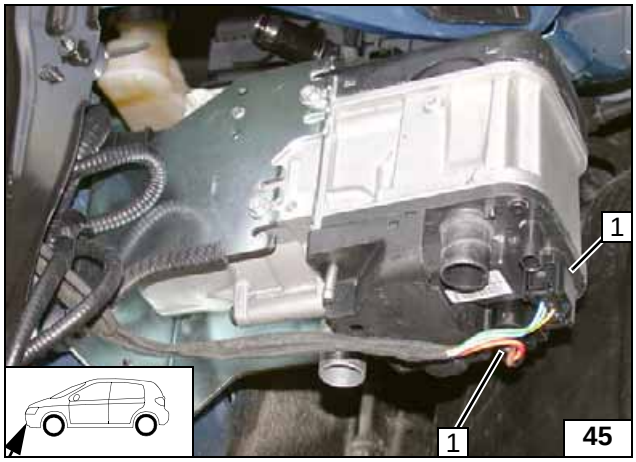
1 Tighten self-tapping bolts 5x13 [2x]
2 100 mm edge protection

Installing heater



1 Tighten self-tapping bolts 5x13 [2x]

Installing heater



1 Heater wiring harness connector [2x]

Attaching wiring harness

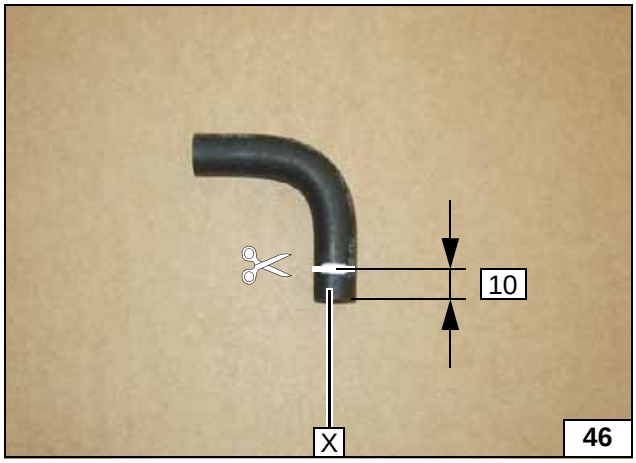
Fuel

CAUTION!
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.

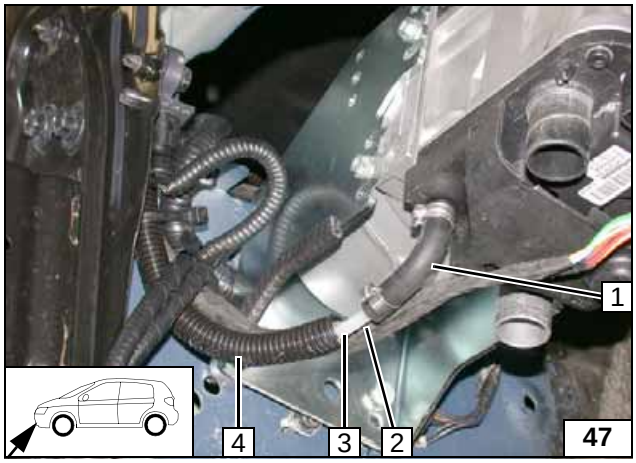
Route fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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



X =

Shortening moulded hose



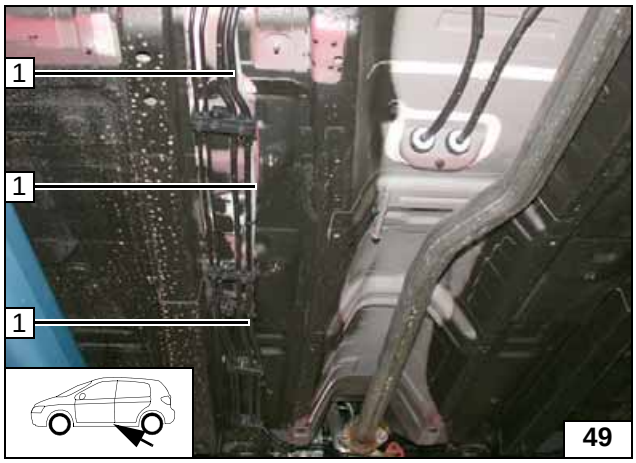
90° moulded hose with the shortened side on the heater.

Connecting heater

1 90° moulded hose, 10mm dia. clamp [2x]
2 Wiring harness of metering pump
3 Fuel line
4 Wiring harness of metering pump, fuel line in 10mm dia., 2100 mm corrugated tube

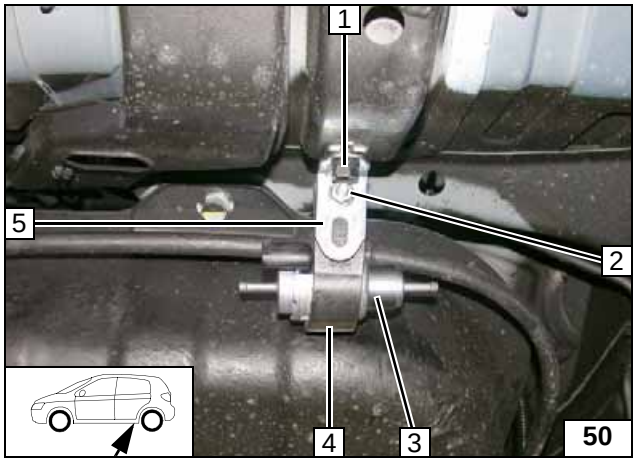
1 Wiring harness of metering pump, fuel line in 10 mm dia. corrugated tube

Routing lines



1 Wiring harness of metering pump, fuel line in 10 mm dia. corrugated tube

Routing lines

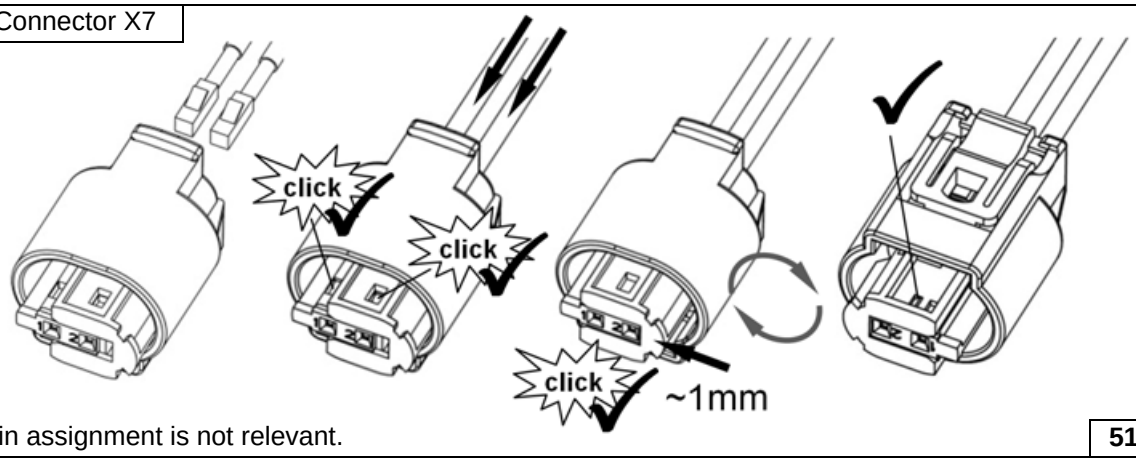


Drill out angle bracket **5** to 8.5 mm dia. at position **1**.

1 Original vehicle bolt
2 M6x25 bolt, support angle bracket, flanged nut
3 Metering pump
4 Metering pump mount

Installing metering pump

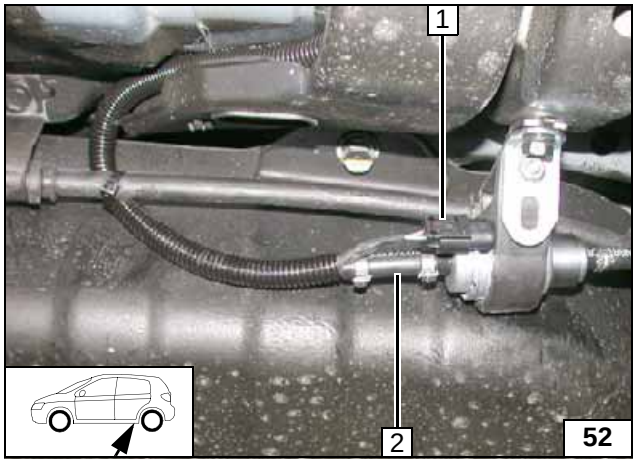
Connector X7



Pin assignment is not relevant.

51

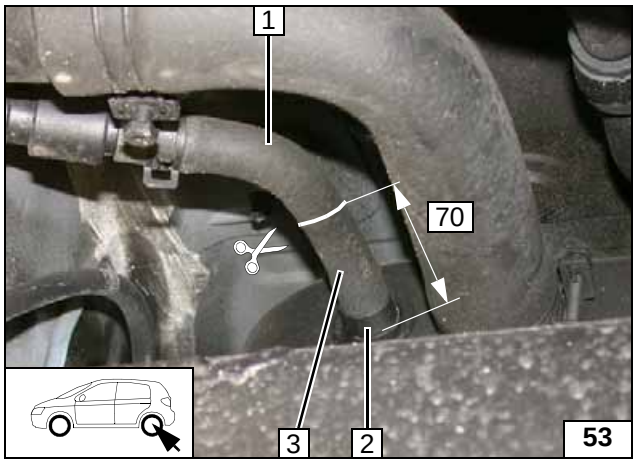
Completing metering pump connector



Check the position of the components; adjust if necessary. Check that they have freedom of movement.

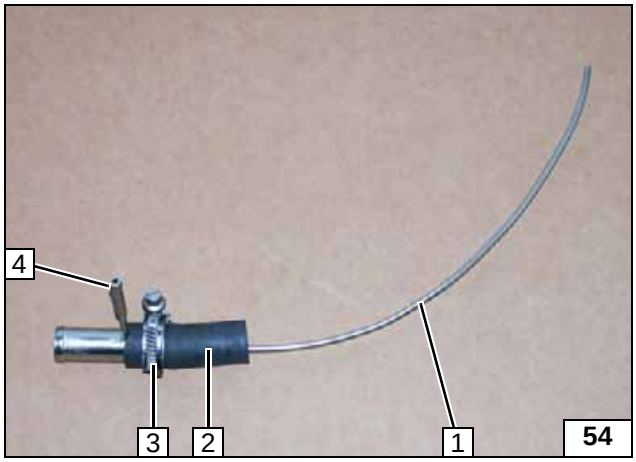
1 Metering pump wiring harness, connector X7 mounted
2 Fuel line, hose section, 10 mm dia. clamp [2x]

Connecting metering pump



1 Disconnect fuel tank vent line
2 Spring clip will be reused
3 Remove hose section

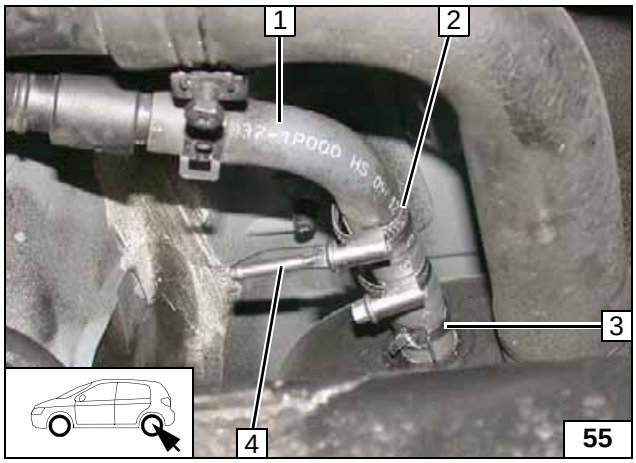
Fuel extraction



Shape fuel standpipe **1** according to template and cut it to length. Check the position of standpipe **4**.

1 Fuel standpipe
2 Original vehicle hose section
3 24 mm dia. clamp

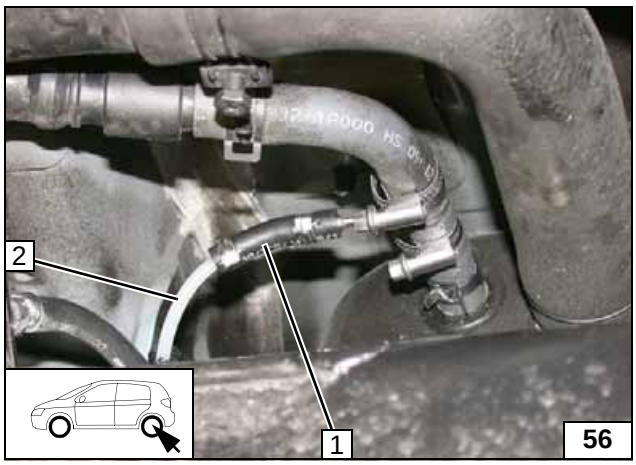
Premounting fuel standpipe



Align standpipe from the fuel standpipe **4** toward the tank floor.

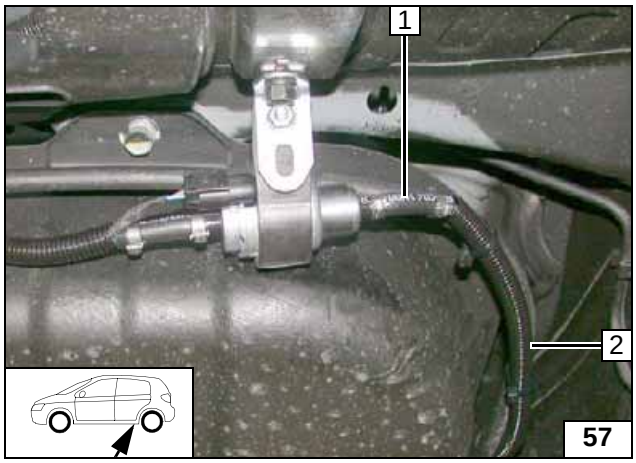
1 Fuel tank vent line
2 24 mm dia. clamp
3 Original vehicle spring clip

Installing fuel standpipe



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

Fuel standpipe connection



Check the position of the components; adjust if necessary. Check that they have freedom of movement.

1 Fuel line, hose section, 10 mm dia. clamp [2x]
2 Fuel line in 10mm dia. corrugated tube

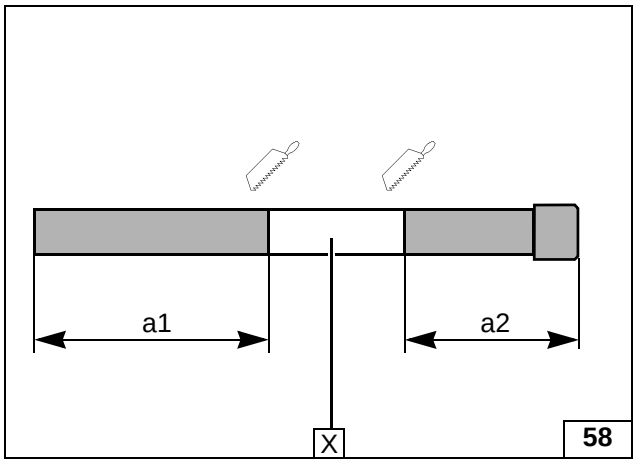
Connecting metering pump

Exhaust Gas

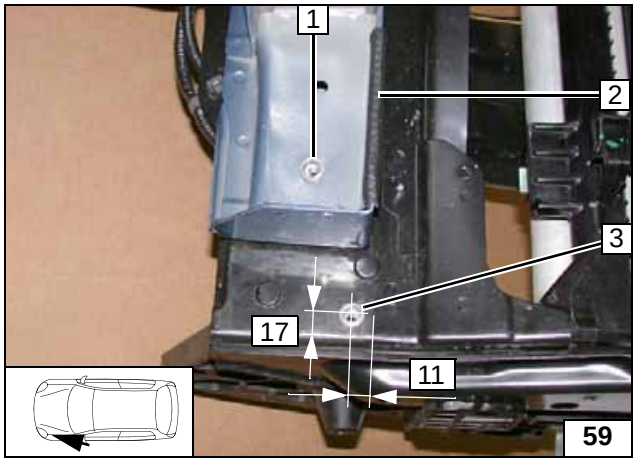
a1 = 210
a2 = 160

X =

Preparing exhaust pipe

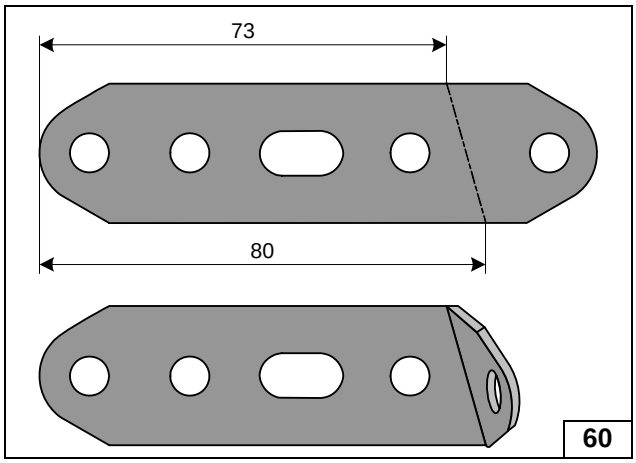


Installing rivet nuts

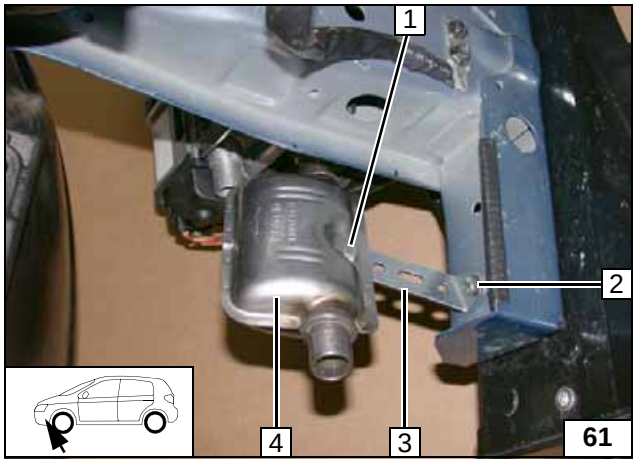


1 Drill 9.1mm dia. hole; rivet nut
2 100 mm edge protection
3 9.1mm dia. hole; rivet nut

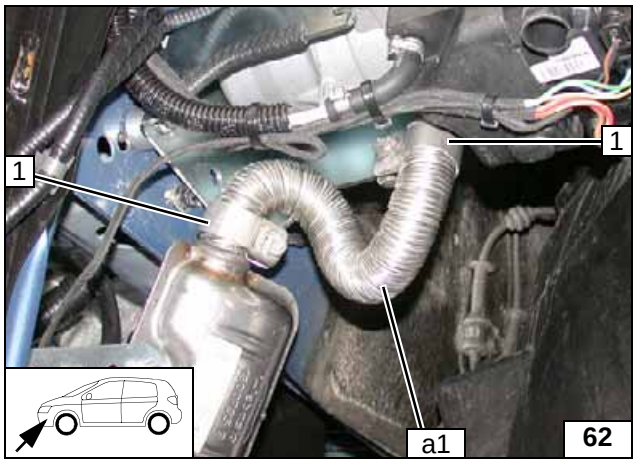
Angling down perforated bracket by 75°



Installing silencer

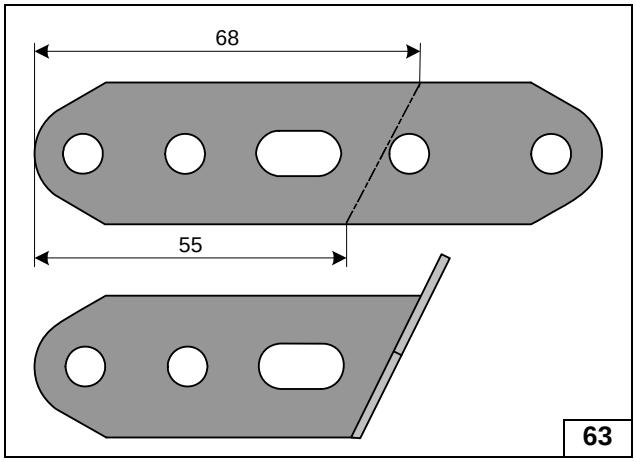


1 M6x20 bolt, flanged nut
2 M6x20 bolt, spring lockwasher
3 Perforated bracket
4 Silencer

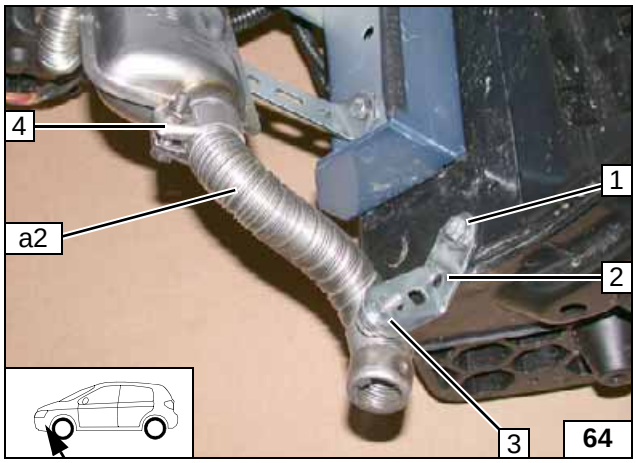


1 Hose clamp [2x]

Installing exhaust pipe a1



Angling down perforated bracket



Ensure sufficient distance from adjacent components, correct if necessary.

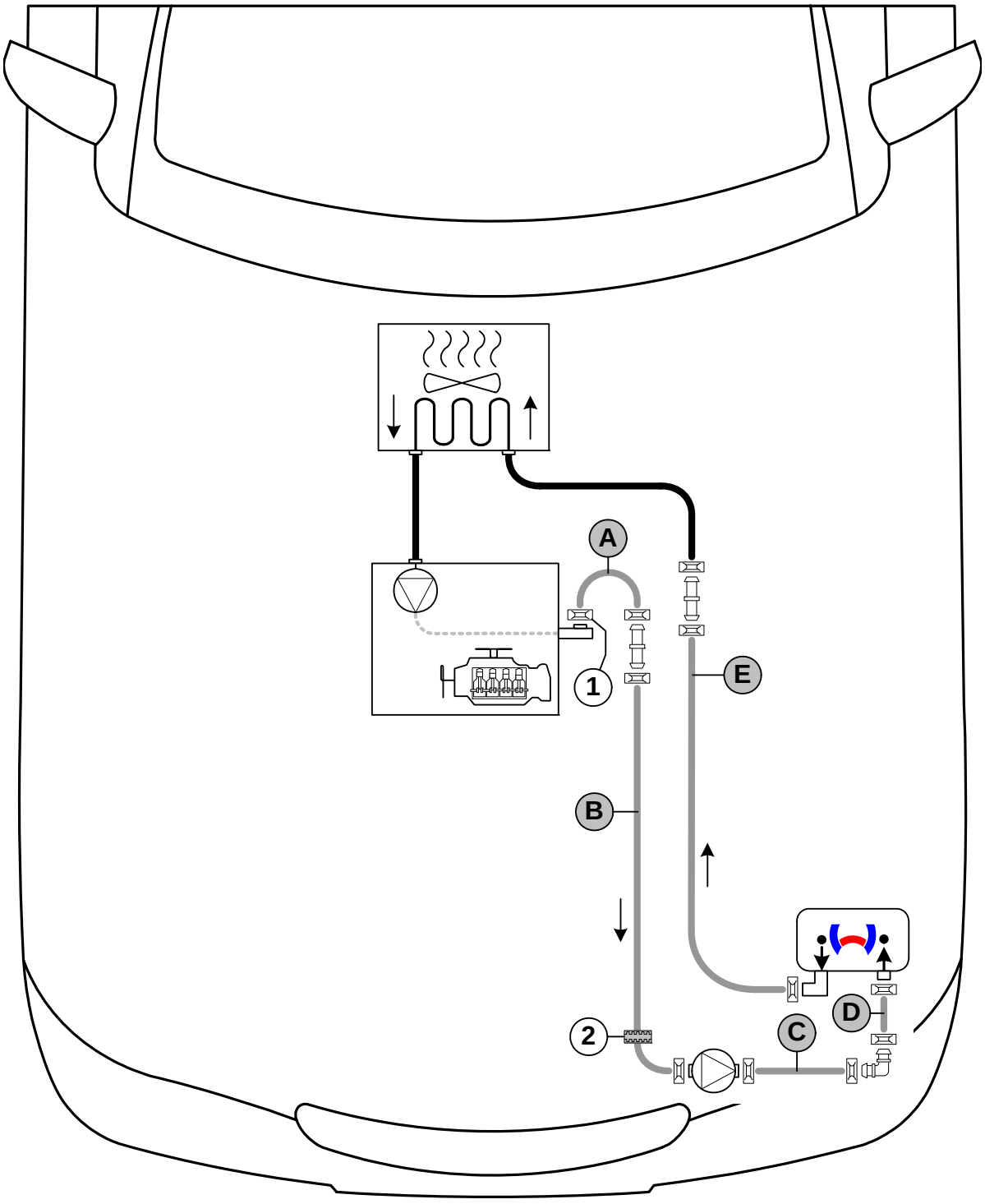
1 M6x20 bolt, spring lockwasher
2 Perforated bracket
3 M6x20 bolt, p-clamp, flanged nut
4 Hose clamp

Installing exhaust pipe a2

Coolant Circuit for Petrol Vehicles up to 2014

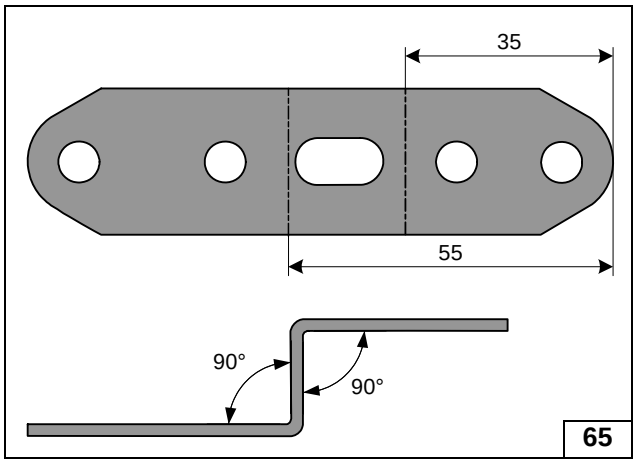
WARNING!
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.
The connection should be modelled on an 'inline' circuit and based on the following diagram:

Hose routing diagram

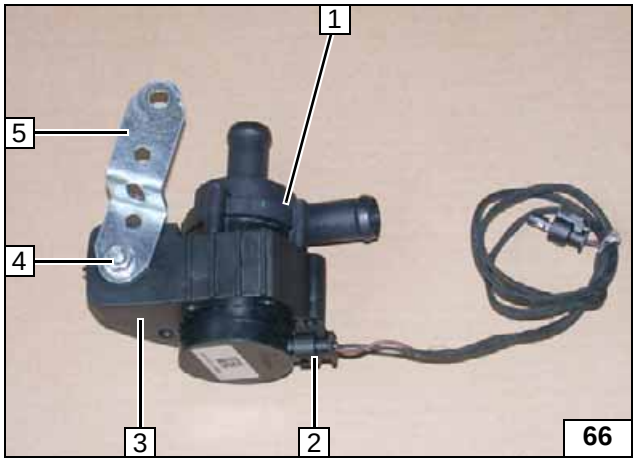


All spring clips = 25mm dia. **1** = Original vehicle spring clip .
2 = Black (sw) rubber isolator . All connecting pipes and = 18x18 mm dia.

Angling down perforated bracket

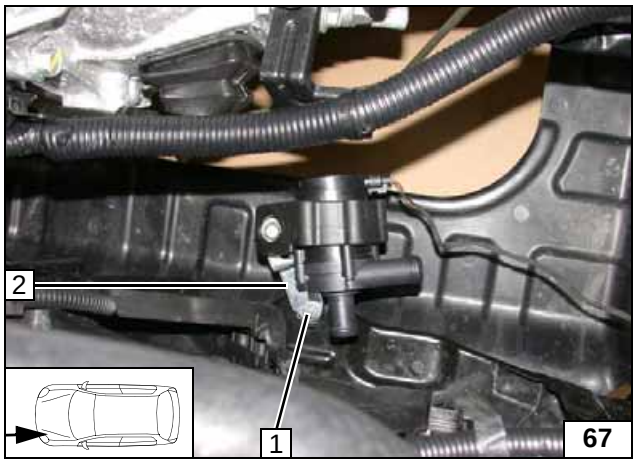


Premounting circulating pump



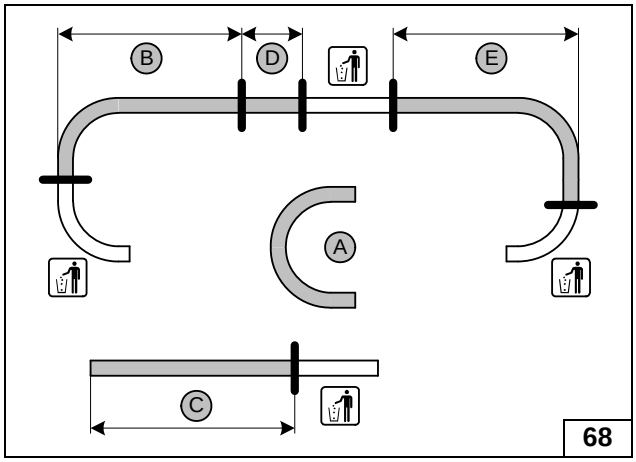
1 Circulating pump
2 Connector of circulating pump wiring harness
3 Circulating pump mount
4 M6x25 bolt, flanged nut
5 Perforated bracket

Installing circulating pump



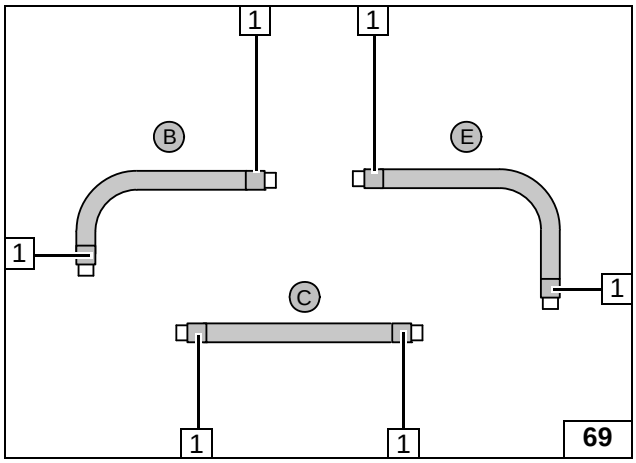
1 M6x20 bolt, large diameter washer, flanged nut, existing hole
2 Perforated bracket

Cutting hoses to length



A = 180°, 18mm dia.
B = 670
C = 535
D = 75
f**E** = 1100

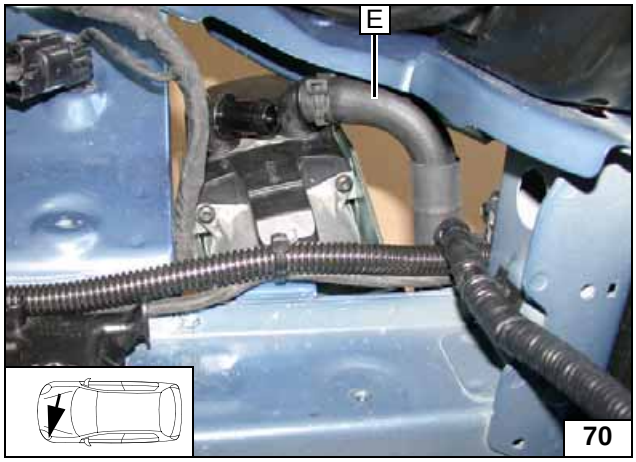
Installing braided protection hoses



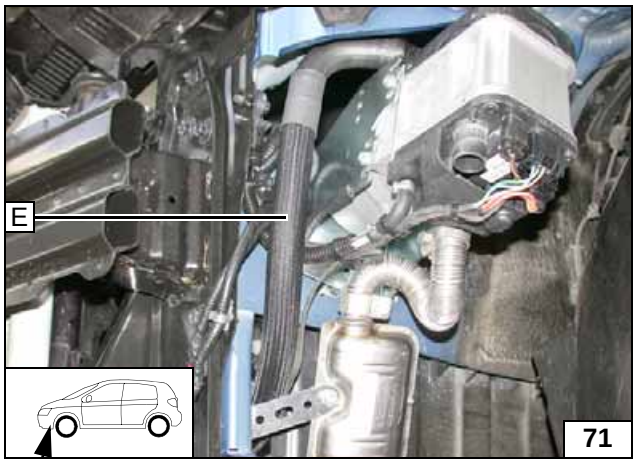
Slide on braided protection hoses and cut to length.

1 Cut heat shrink plastic tubing to size, 50mm long [6x]

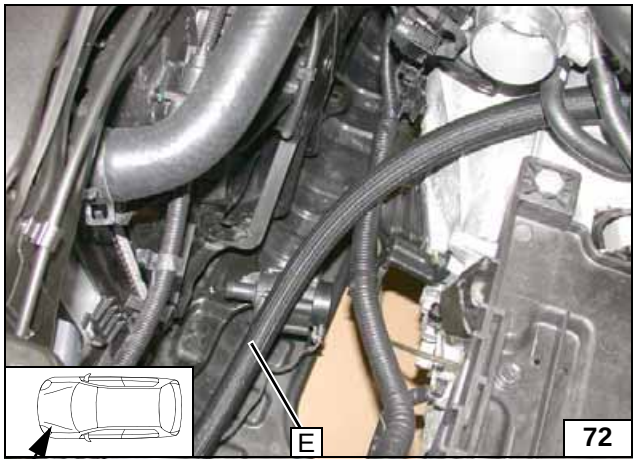
Connecting heater outlet

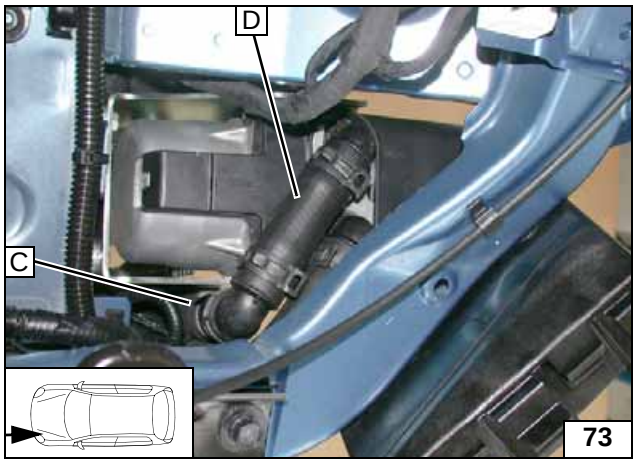


Routing in engine compartment

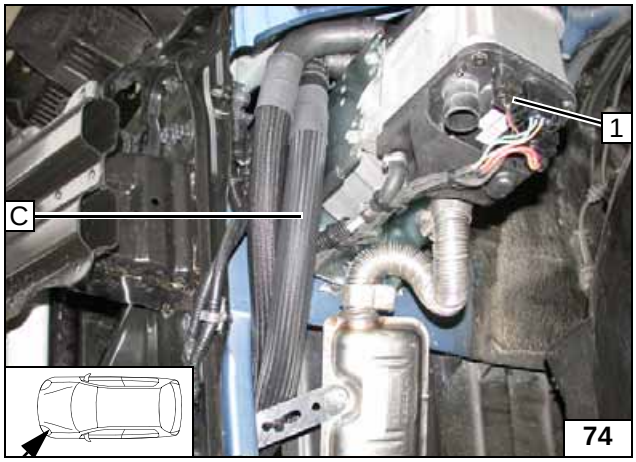


Routing in engine compartment



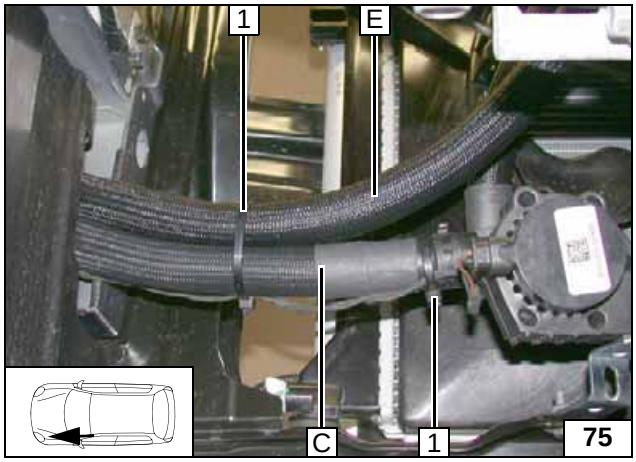


Connecting heater inlet



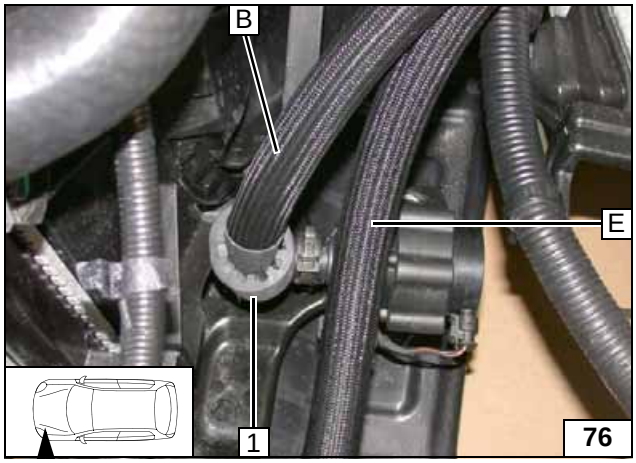
1 Connector of circulating pump wiring harness

Routing in engine compartment



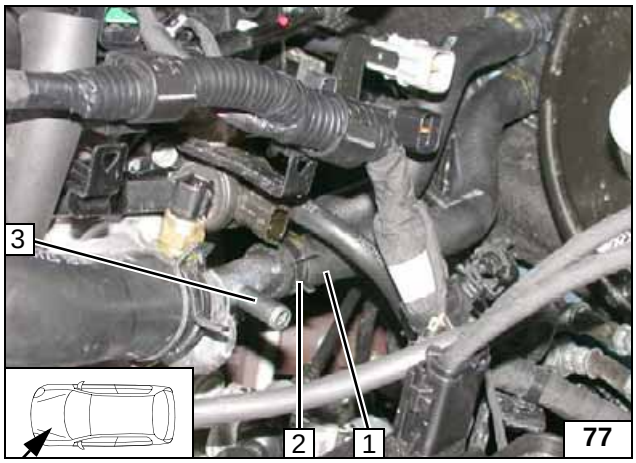
1 Cable tie [2x]

Connecting circulating pump



1 Slide on, align black (sw) rubber isolator

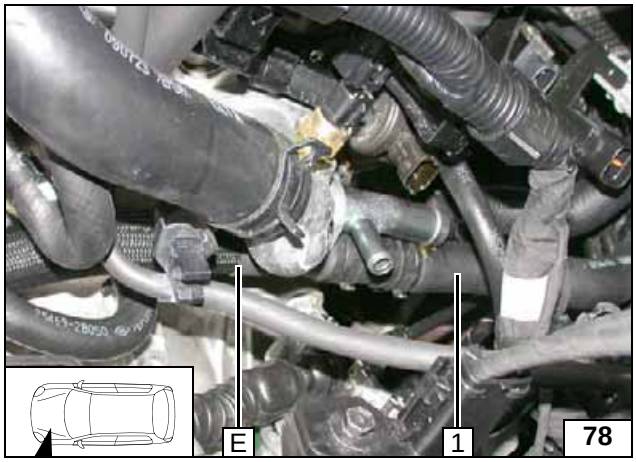
Connecting circulating pump



T-piece of the engine outlet **3** original vehicle hose only pulled off for demonstration purposes.

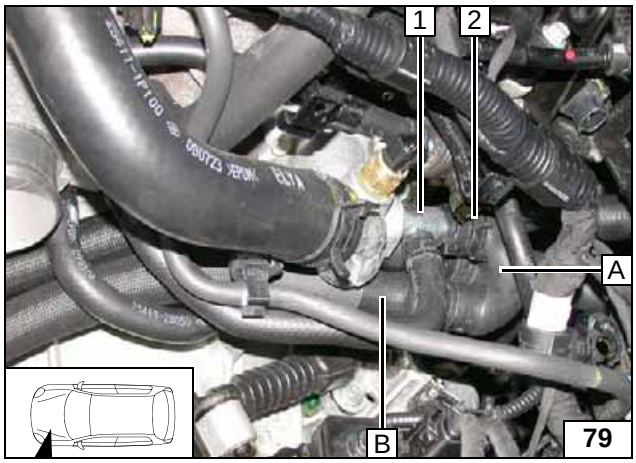
1 Remove hose from engine outlet / heat exchanger inlet
2 Original vehicle spring clip will be reused.

Cutting point



1 Hose of heat exchanger inlet

Connecting heat exchanger inlet



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

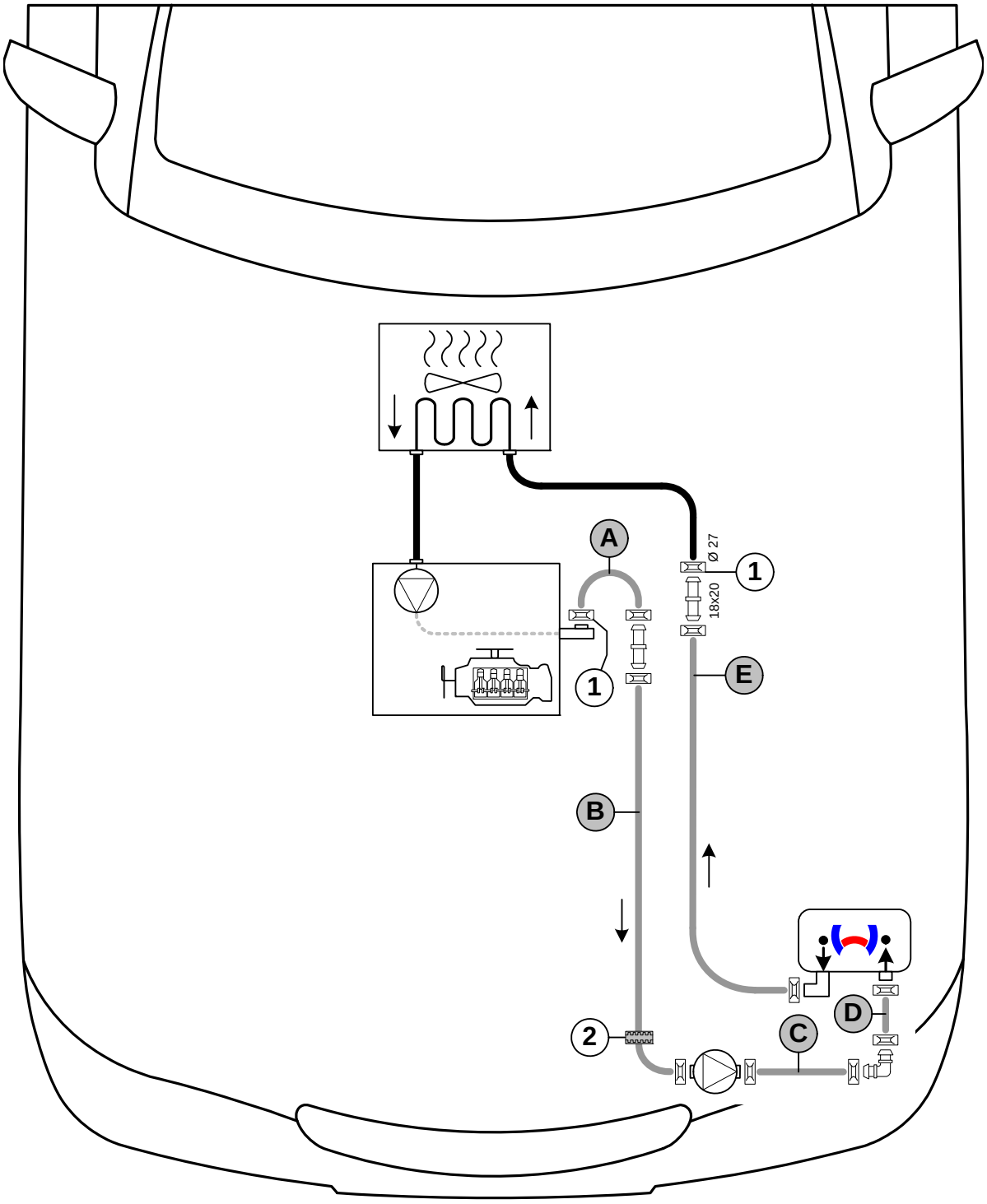
1 Engine outlet connection piece
2 Original vehicle spring clip

Connecting engine outlet

Coolant Circuit for Petrol Vehicles from 2015

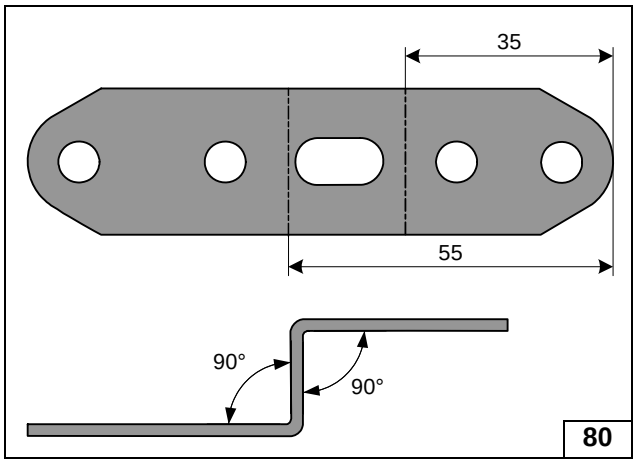
WARNING!
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.
The connection should be modelled on an 'inline' circuit and based on the following diagram:

Hose routing diagram

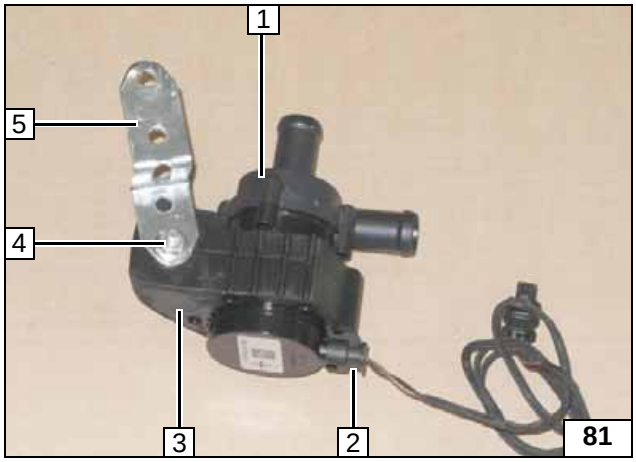


All spring clips = 25mm dia. **1** = Original vehicle spring clip .
2 = Black (sw) rubber isolator . All connecting pipes and = 18x18 mm dia.

Angling down perforated bracket

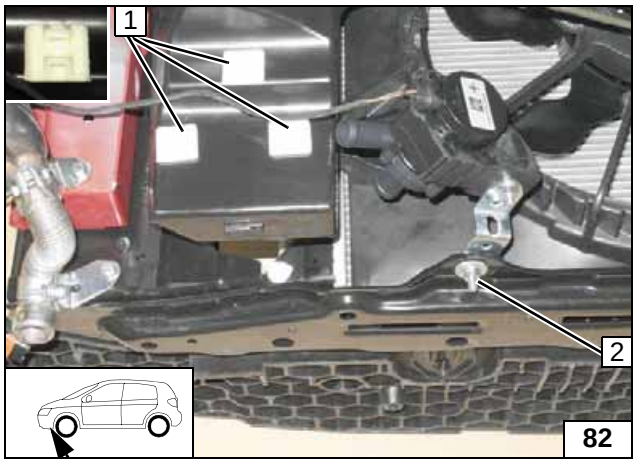


Premounting circulating pump



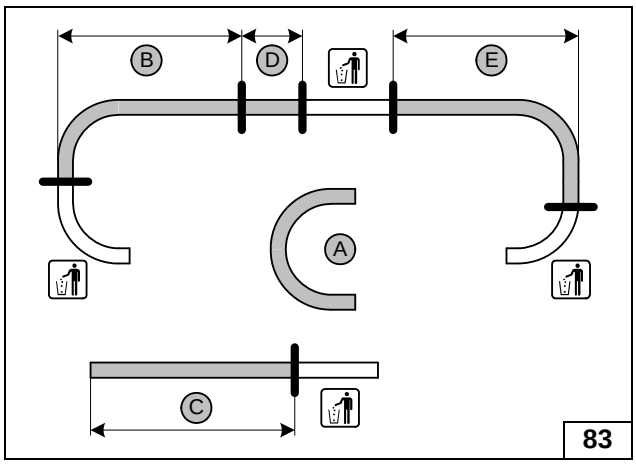
1 Circulating pump
2 Connector of circulating pump wiring harness
3 Circulating pump mount
4 M6x25 bolt, flanged nut
5 Perforated bracket

Installing circulating pump

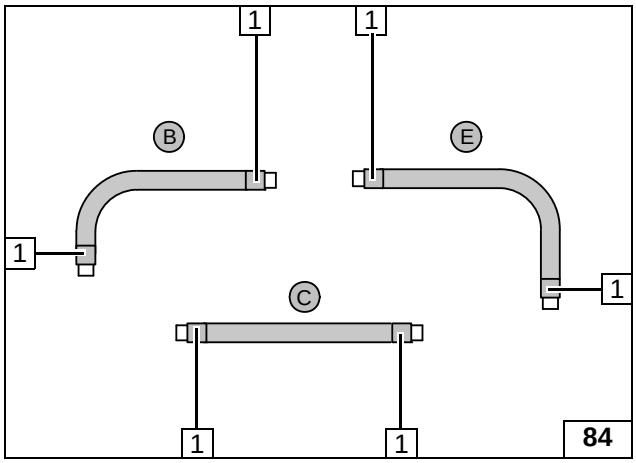


1 Adhesive base for cable ties [3x]
2 M6x20 bolt, large diameter washer, flanged nut, existing hole

Cutting hoses to length



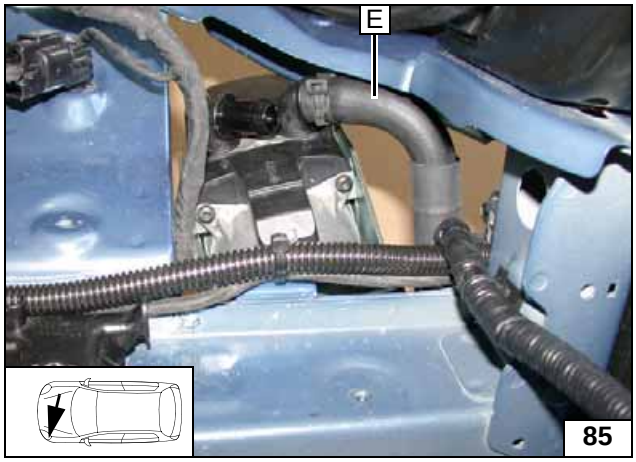
A = 180°, 18mm dia.
B = 670
C = 535
D = 75
f**E** = 1100



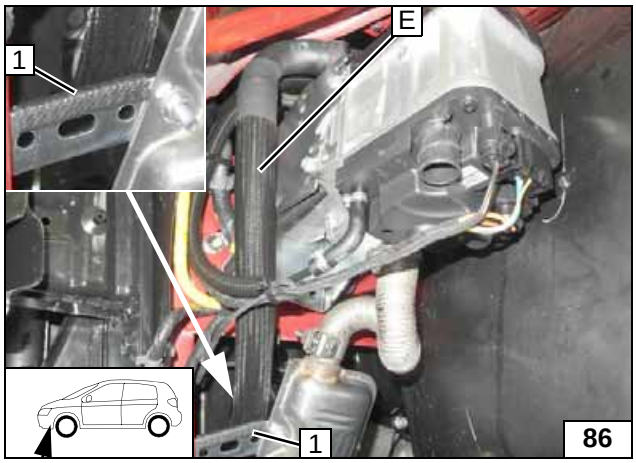
Slide on braided protection hoses and cut to length.

1 Cut heat shrink plastic tubing to size, 50mm long [6x]

Installing braided protection hoses

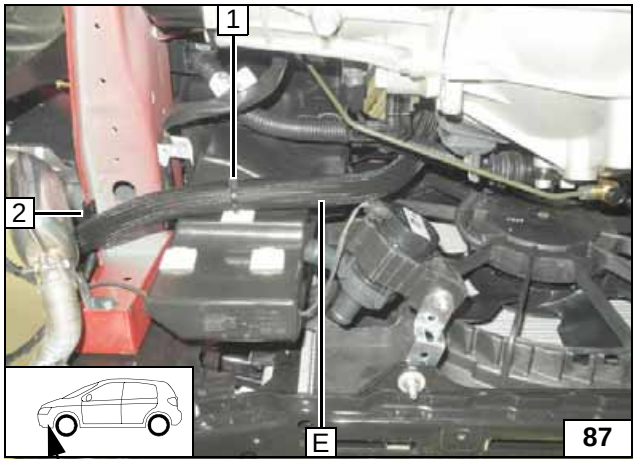


Connecting heater outlet



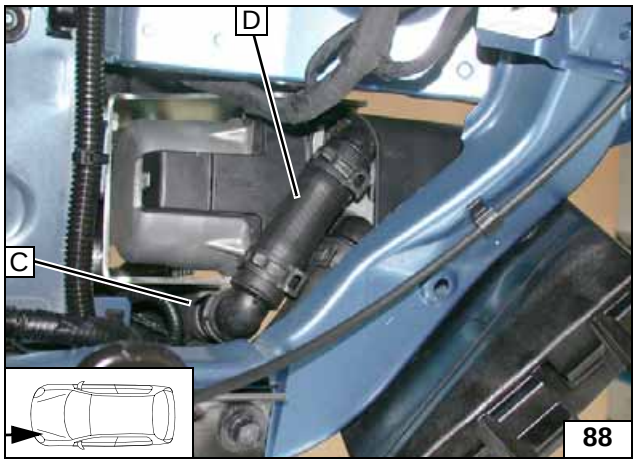
1 Edge protection on perforated bracket

Routing in engine compartment

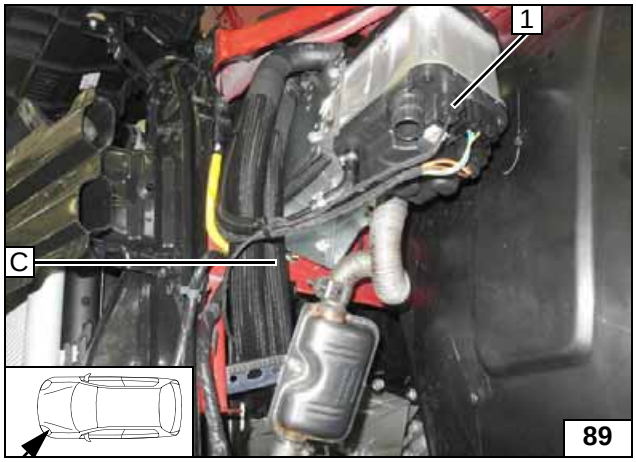


1 Cable tie
2 Edge protection

Routing in engine compartment

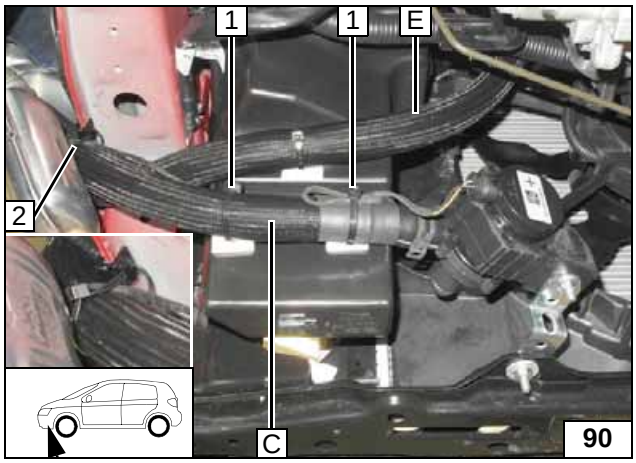


Connecting heater inlet



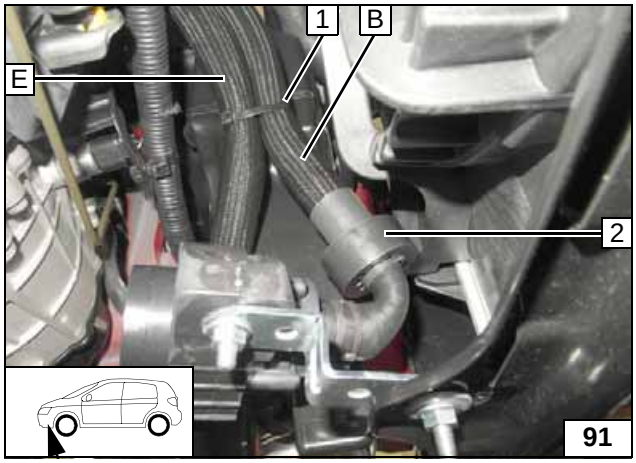
1 Connector of circulating pump wiring harness

Routing in engine compartment



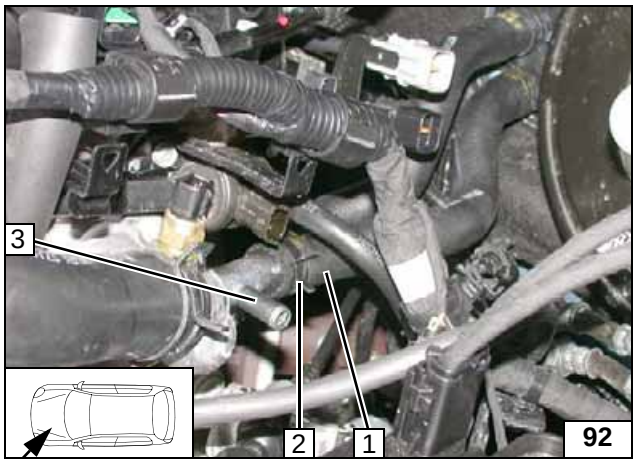
1 Cable tie [2x]
2 Clip-type cable tie

Connecting circulating pump



1 Cable tie
2 Slide on, align black (sw) rubber isolator

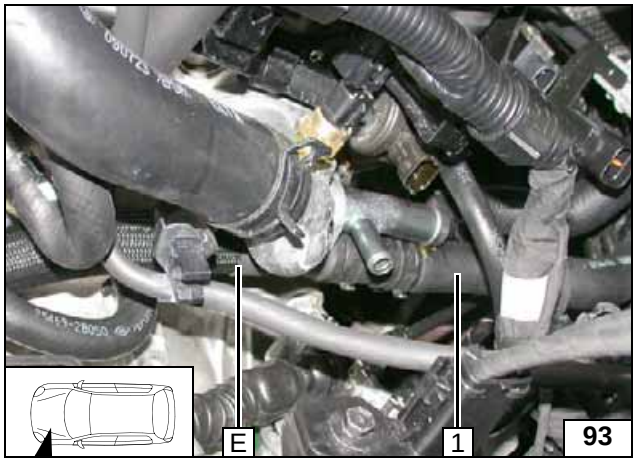
Connecting circulating pump



T-piece of the engine outlet **3** original vehicle hose only pulled off for demonstration purposes.

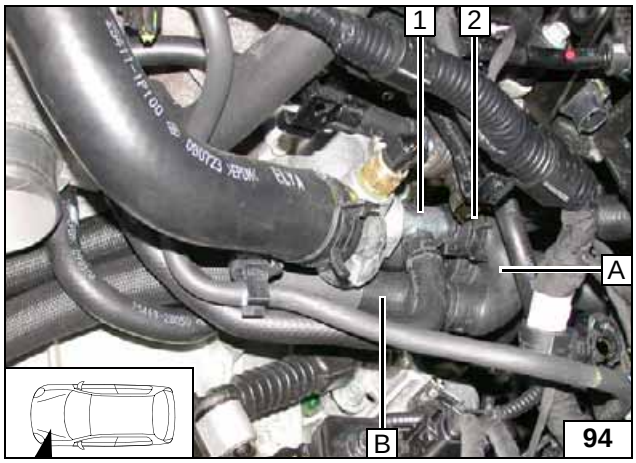
1 Remove hose from engine outlet / heat exchanger inlet
2 Original vehicle spring clip will be reused.

Cutting point



1 Hose of heat exchanger inlet

Connecting heat exchanger inlet



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

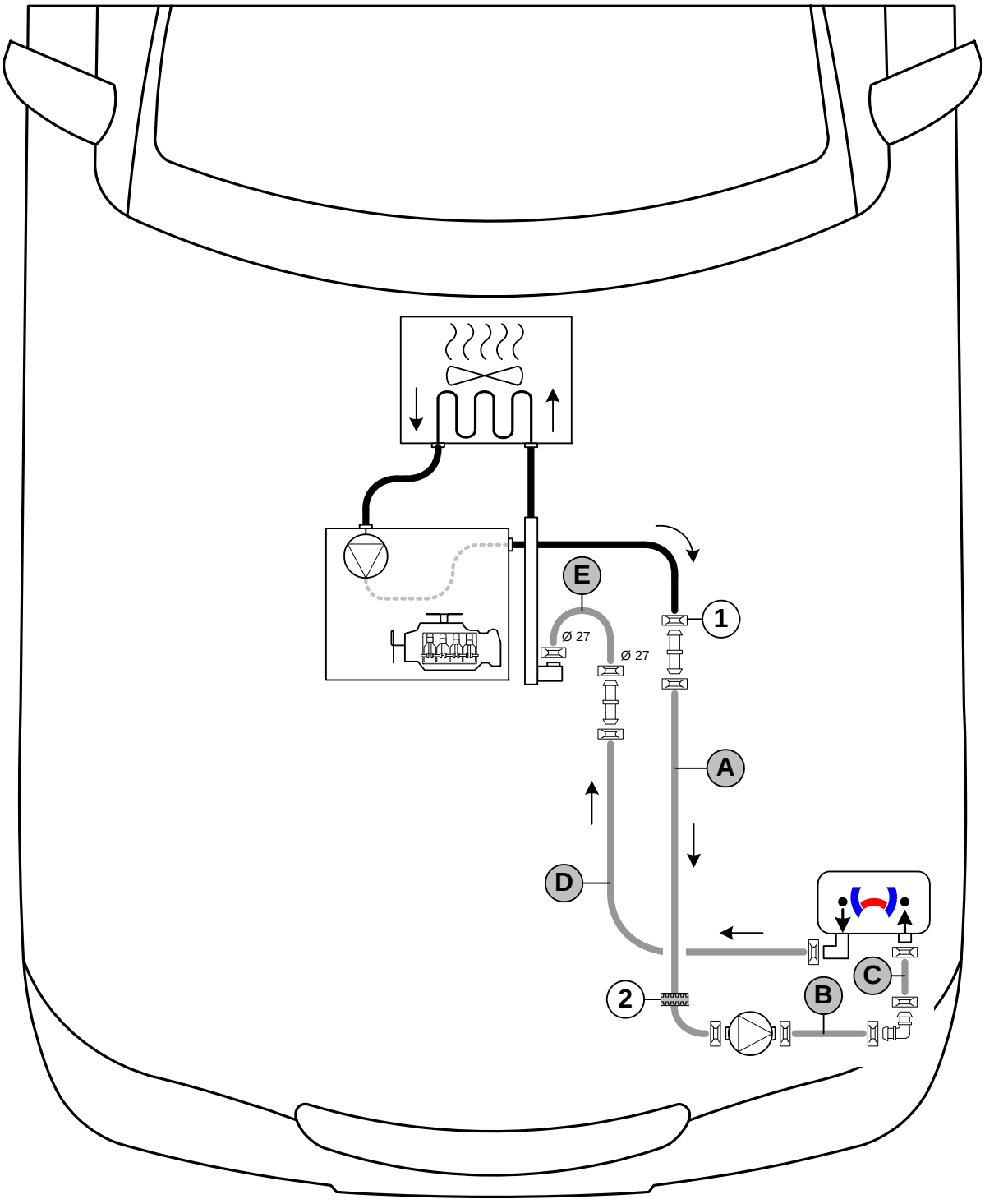
1 Engine outlet connection piece
2 Original vehicle spring clip

Connecting engine outlet

Coolant Circuit for Diesel Vehicles

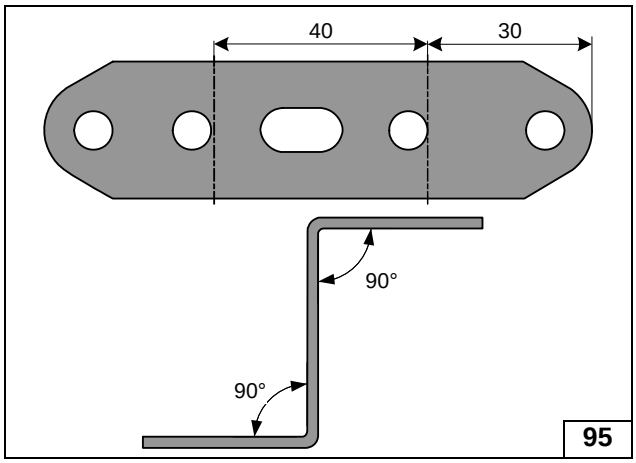
WARNING!
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.
The connection should be modelled on an 'inline' circuit and based on the following diagram:

Hose routing diagram

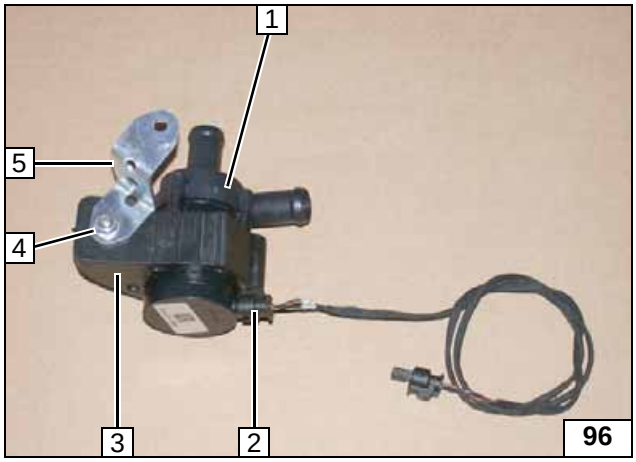


All spring clips without a specific designation = 25 mm dia. **1** = Original vehicle spring clip. **2** = Black (sw) rubber isolator. All connecting pipes = 18x20 mm dia. Connecting pipe = 18x18mm dia.

Angling down perforated bracket

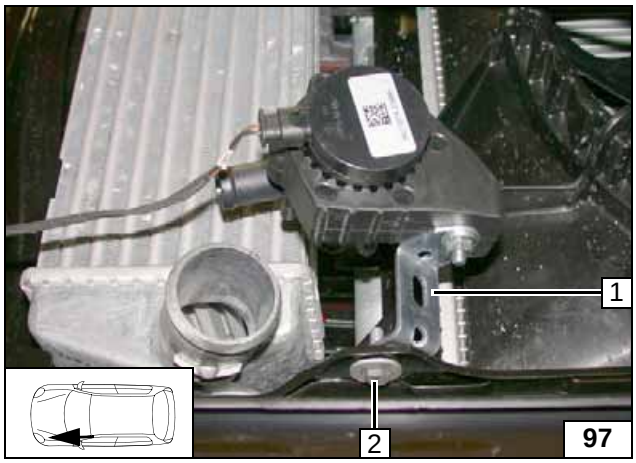


Premounting circulating pump



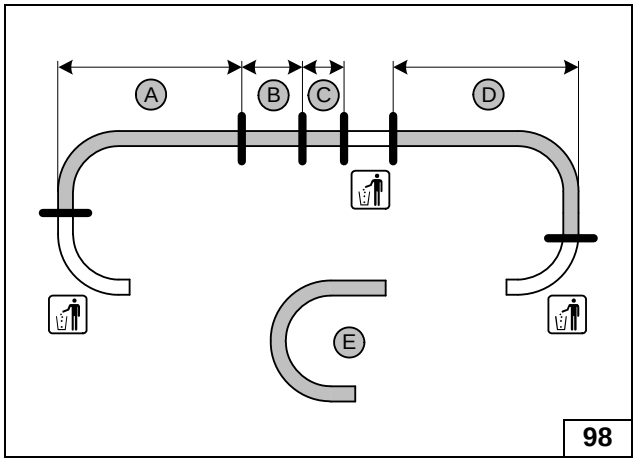
1 Circulating pump
2 Connector of circulating pump wiring harness
3 Circulating pump mount
4 M6x25 bolt, flanged nut
5 Perforated bracket

Installing circulating pump

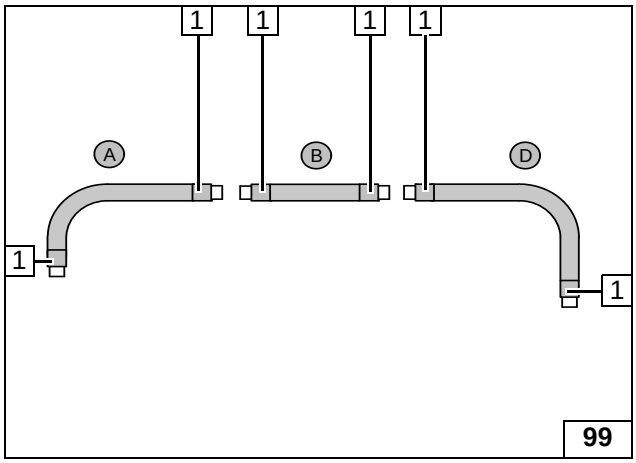


1 Perforated bracket
2 M6x20 bolt, large diameter washer, flanged nut, existing hole

Cutting hoses to length



A = 440
B = 535
C = 75
D = 910
E = 180°, 20mm dia.

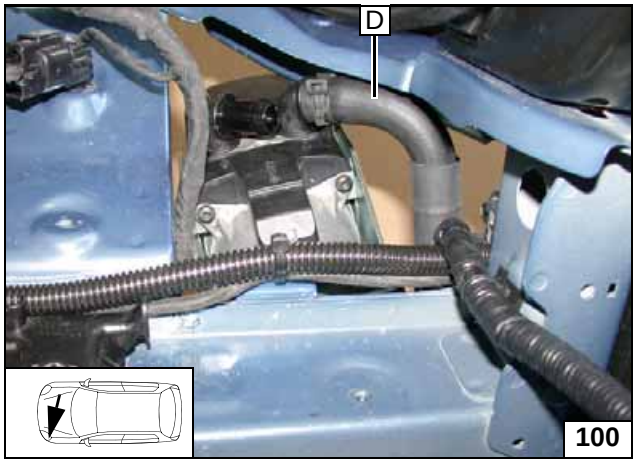


99

Installing braided protection hoses

Slide on braided protection hoses and cut to length.

1 Cut heat shrink plastic tubing to size, 50mm long [6x]

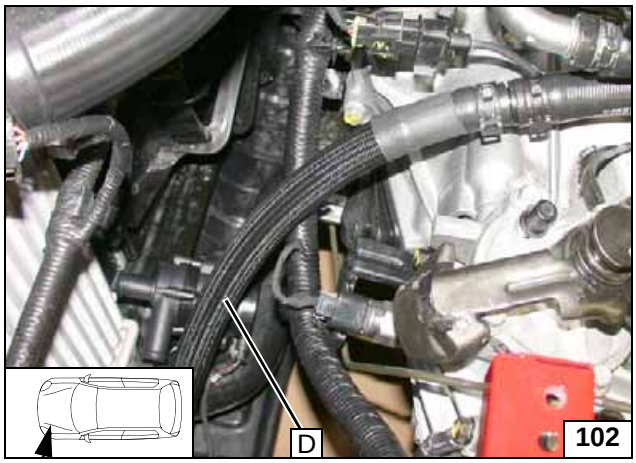


100

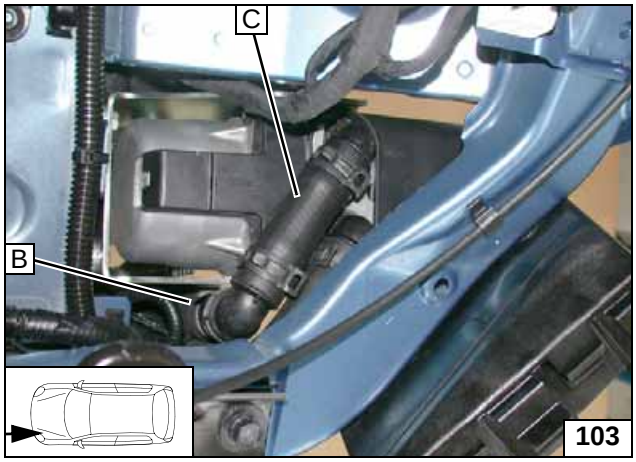
Connecting heater outlet

101

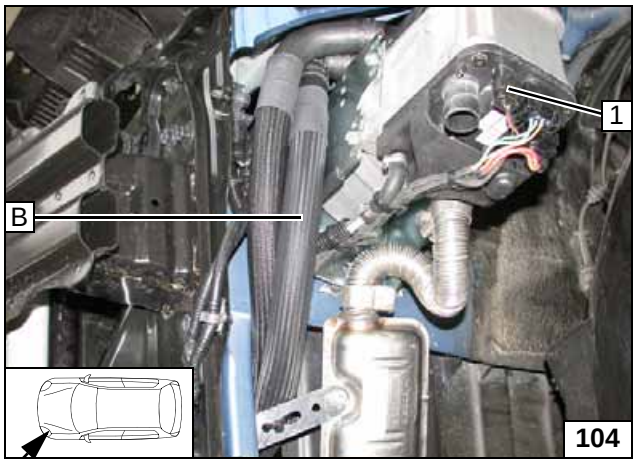
Routing in engine compartment



Routing in engine compartment

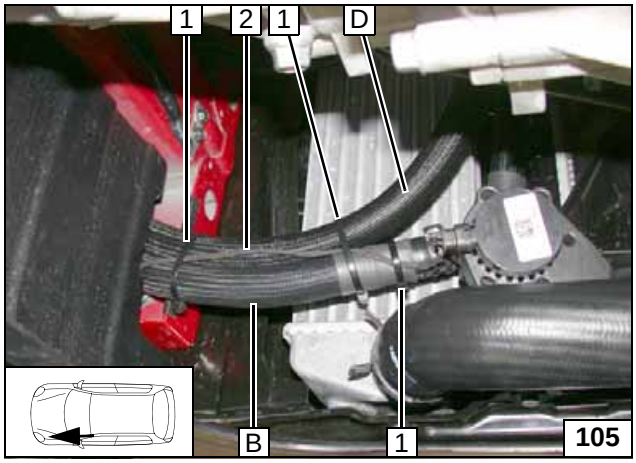


Connecting heater inlet



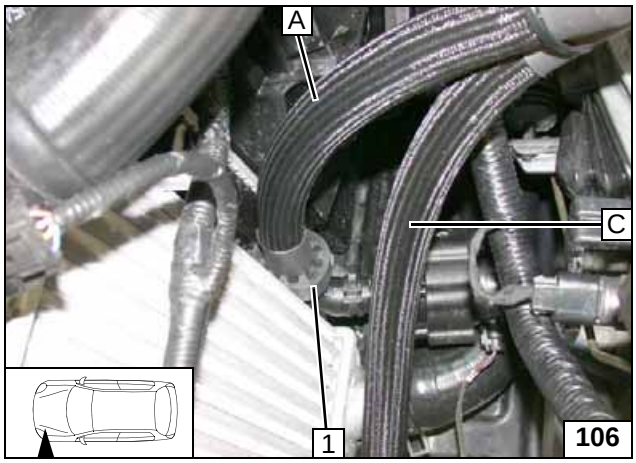
1 Connector of circulating pump wiring harness

Routing in engine compartment



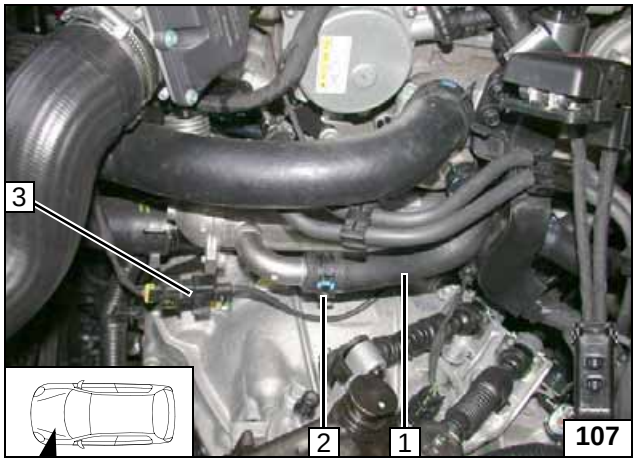
1 Cable tie [3x]
2 Circulating pump wiring harness

Attaching wiring harness



1 Slide on, align black (sw) rubber isolator

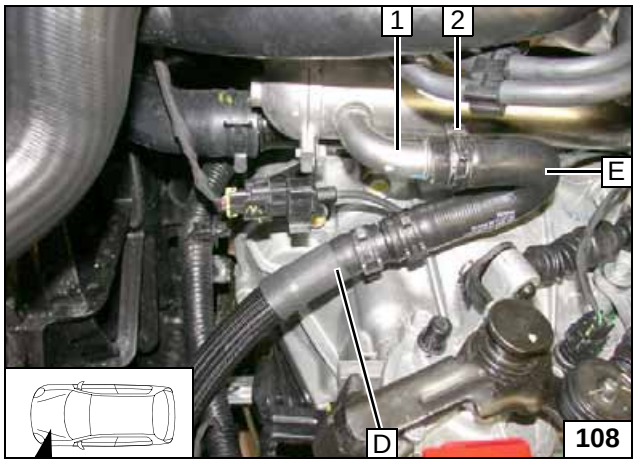
Connecting circulating pump



Turn bracket of connector **3** forward by approx. 180°.

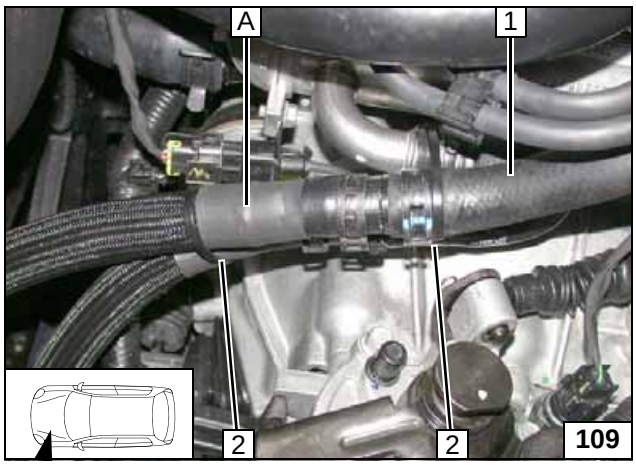
1 Remove hose from engine outlet / heat exchanger inlet
2 Original vehicle spring clip

Cutting point



1 Connection piece of heat exchanger inlet
2 Original vehicle spring clip

Connecting heat exchanger inlet



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

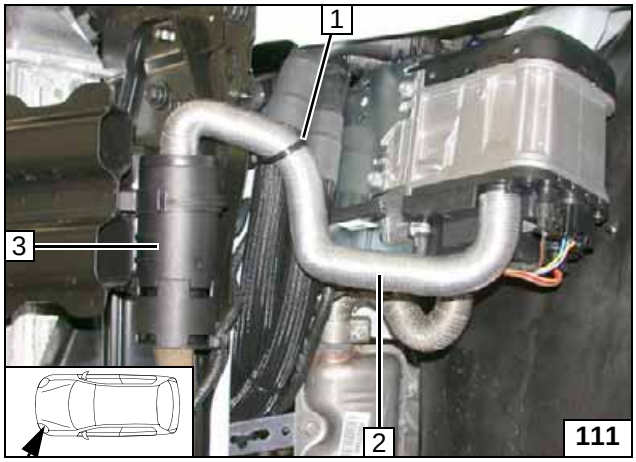
1 Hose of engine outlet
2 Cable tie [2x]

Connecting engine outlet

Combustion Air

1 Retaining clip, existing hole

Assembling retaining clip



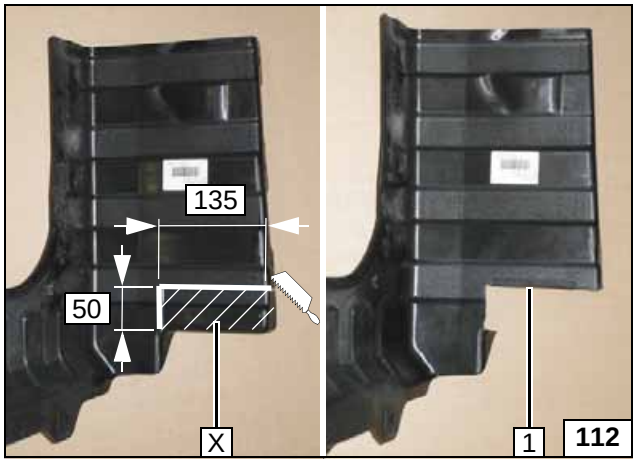
1 Cable tie
2 Combustion air pipe
3 Silencer in retaining clip

Installing silencer

Final Work

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

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



1 Edge protection

X = 

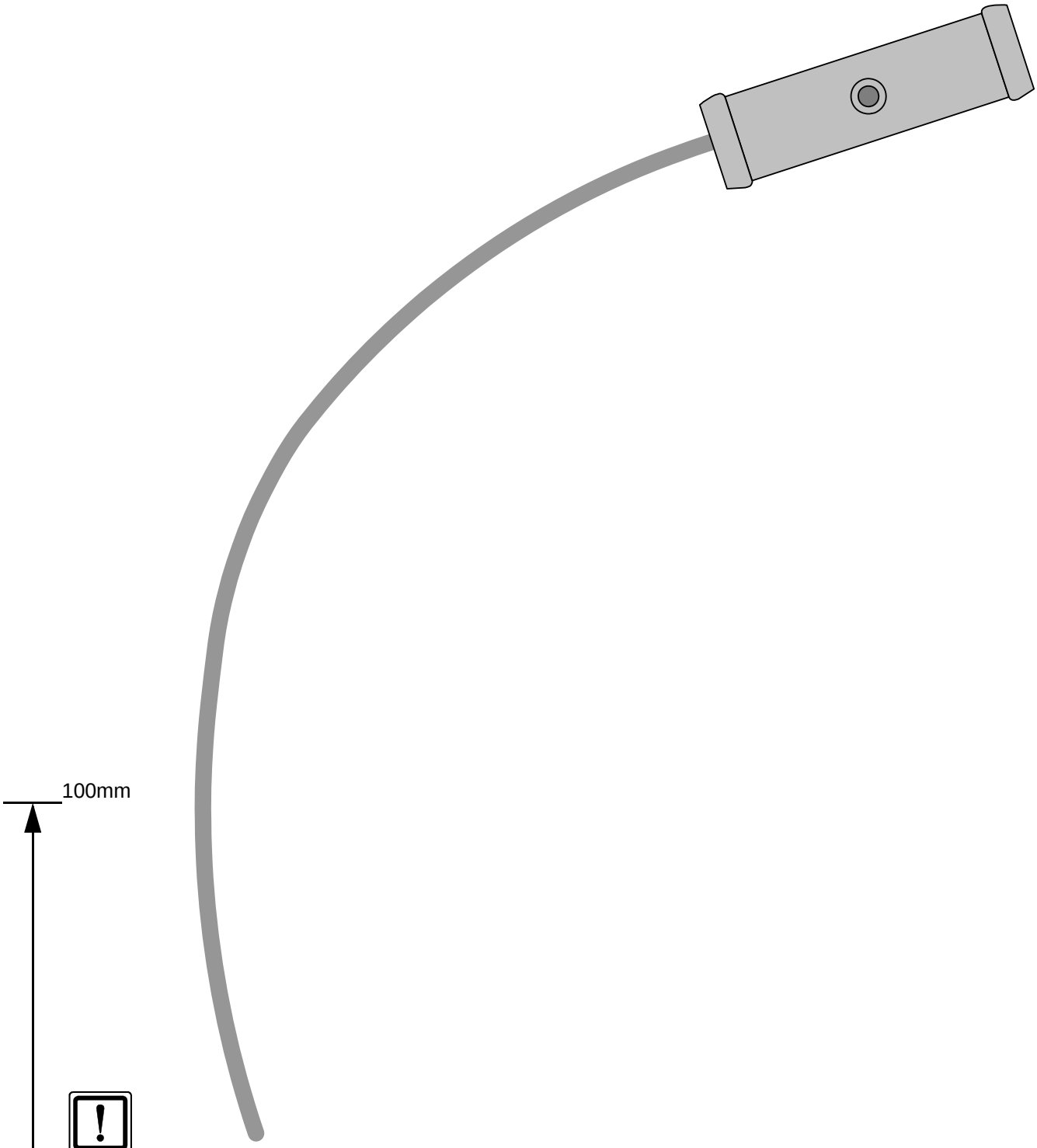
Cutting out trim

Ensure sufficient distance from neighbouring components.

Aligning exhaust pipe a2

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

Template for Fuel Standpipe



Webasto
Feel the Drive

Operating Instructions for Manual A/C

Please remove page and add to the vehicle operating instructions.

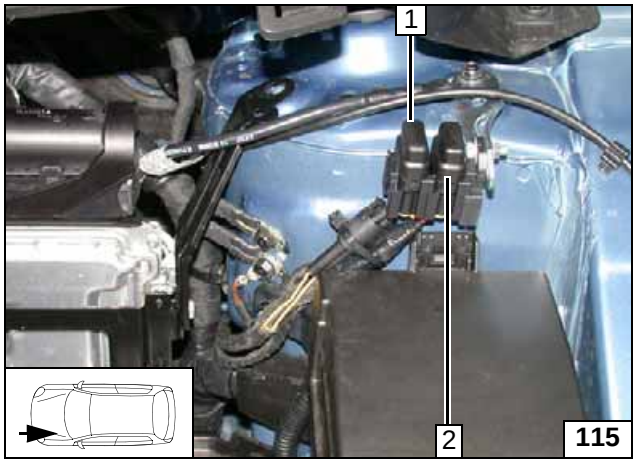
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

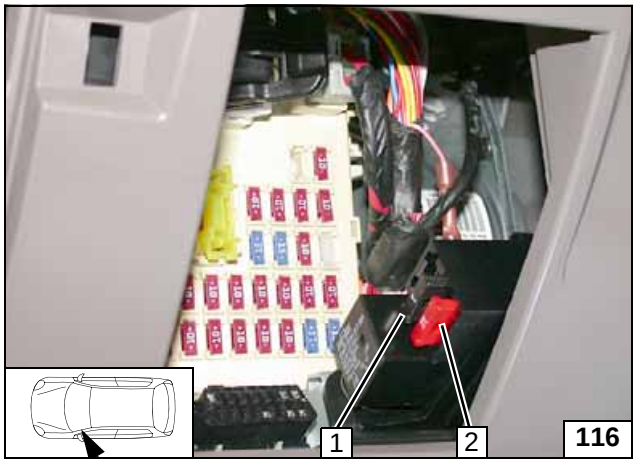
1 Air outlet to windscreen
2 Set temperature to ‘max.’
3 Set fan to level ‘1’, or ‘2’

A/C control panel



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

Engine compartment fuses



1 1A fuse F3 of heater control
2 10A fan fuse F4

Passenger compartment fuses

Operating Instructions for Automatic A/C

Please remove page and add to the vehicle operating instructions.

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

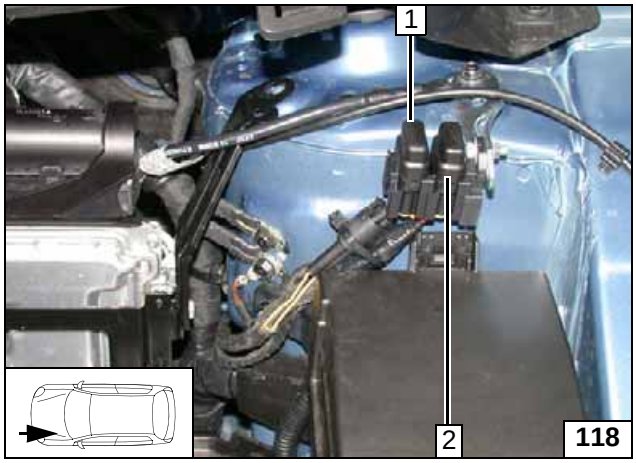
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

Image shows A/C control panel up to 2013.
Key assignment changed as from 2014!

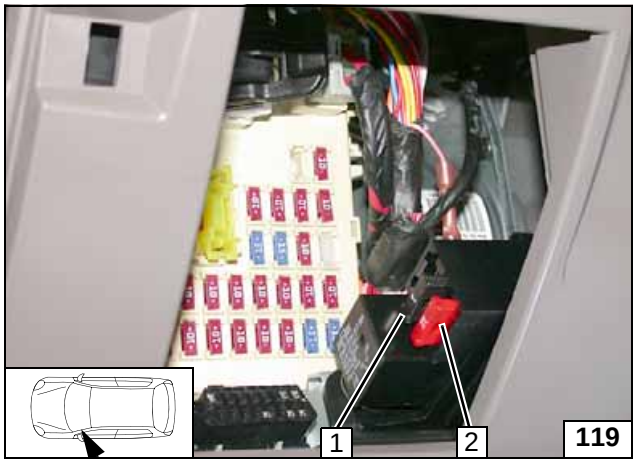
1 Air outlet faces upward
2 Set temperature to ‘HI’
3 Set fan to level ‘2’, or ‘3’

A/C control panel



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

Engine compartment fuses



1 1A fuse F3 of heater control
2 10A fan fuse F4

Passenger compartment fuses