

Thermo Top C Additional Heater


00 0002

Installation Instructions

FORD Connect

Gasoline and Diesel

not with automatic transmission

only applies to left-hand drive vehicles

See Page 2 for validity



Список дополнительных расходных материалов:

Наименование	Идент №	Кол-во
Заготовка кронштейна	70937030201 или 70938030211	1
Заготовка растяжки	70938030222	1
Тройник 8x5x8	31277	1
Хомут 12мм	1310763	2
Соединительный патрубок 8мм	462535	2
Броня жидкостного шланга	9012112	1
Шланг жидкостной	126840	1



WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating and cooling 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, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

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.

Table of Contents

Validity	2
Heater Unit/Installation Kit	3
Foreword	3
Special Tools	3
General Instructions	3
Preliminary Work	4
Heater Unit Installation Location	4
Blade-Type Fuse Holder and Fan Relay	5
Fan Controller	6
Digital Timer and Summer/Winter Switch Option	7
Remote Option (Telestart)	8
Installing Heater Unit	9
Exhaust System	11
Integration in Water Circuit	12
Combustion-Air Intake Pipe	17
Fuel Connection	17
Final Work	22
Operating Instructions for End Customer	23

Validity

Manufacturer	Model	Type	EG-BE No.
Ford	Connect	K220 T220 T200 K210 K230 PH2	L071 L072 e1*2001/116*0206*-- e1*2001/116*0207*--

Engine code	Engine model	Output in kW	Displacement in cm ³
EYPA	Gasoline	85	1796
BHPA	Diesel	55	1796
P7PA	Diesel	55	1796
HCPA	Diesel	66	1796
HCPB	Diesel	66	1796
P9PA	Diesel	66	1753

NOTE

Vehicle models, engine types, equipment variants as well as national specifications, which are not listed in these installation instructions, have not been tested.

However, installation according to these installation instructions may be possible.

Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	Ford Delivery Scope of <i>TT-C</i> Gasoline without Heater Control	9010521A
or		
1	Ford Delivery Scope of <i>TT-C</i> Diesel without Heater Control	9010522A

Optional heater control either:

Quantity	Description	Order No.:
1	Digital timer	9010869A
1	Telestart T91	9016028A
1	Telestart T100 HTM	9013937A
1	Thermo-Call Connect	9013654A
1	Thermo-Call Comfort	9016027A
1	Thermo-Call Locate	9014272A

or:

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See price list
1	Installation Kit for Ford Connect	1312556A

Foreword

These installation instructions apply to the FORD Connect passenger car gasoline and diesel passenger cars for validity, see page 2 - from model year 2003 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, where this is the case the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C* should be observed.

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

Special Tools

Hose clamping pliers

Torque wrench for 2 - 10 Nm

General Instructions

- Provide bare areas on body, e.g. on holes, with corrosion protection
- Secure hoses, lines and wiring harnesses with cable ties and provide them with a protective hose in rubbing areas
- Provide sharp edges with edge protection (cut-open fuel hose)

Preliminary Work

General Preliminary Work

- Remove years that do not apply from duplicate label.
- Attach duplicate label (type label) in an easily visible place

Engine compartment

WARNING:

Disconnect the battery "earth" or "ground" connection.

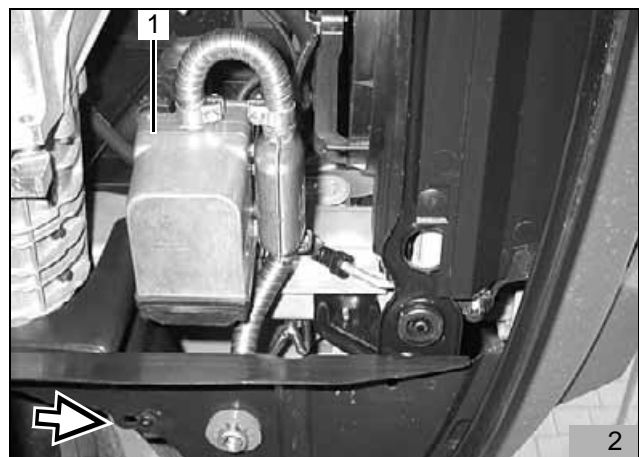
- Remove battery.
- Open radiator cap, release pressure and close radiator cap again.
- Remove air filter.

Outside of vehicle

- Open fuel tank cap, release pressure from fuel tank system and close fuel tank cap again
- Remove front left wheel well trim
- Remove heat guard plate for fuel tank on right

Heater unit installation location

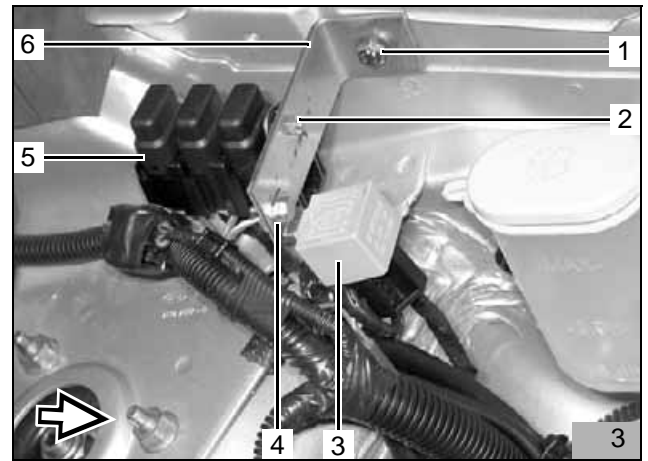
The heater unit (1) is installed on the frame side member before the transmission. The installation position is vertical and perpendicular to the driving direction.



Blade-type fuse holder and fan relay

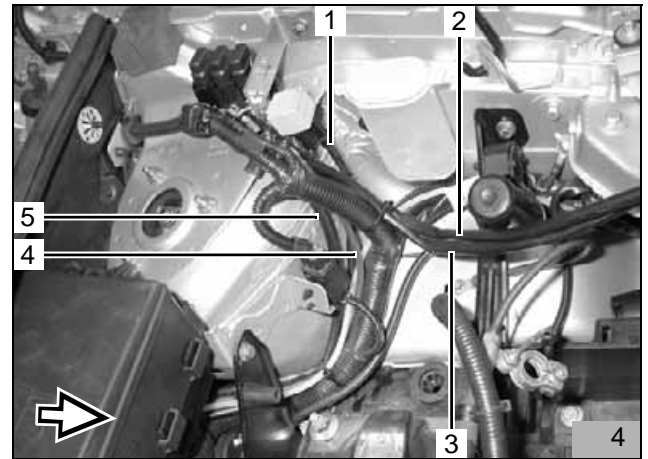
Installing fuse carrier and K3 fan relay

- Fasten blade-type fuse holder (5) with M4x12 bolt (2), large diameter washer and M4 nut on fuse carrier (6)
- Fasten fan relay K3 (3) with M5x12 bolt (4) and M5 flanged nut on fuse carrier (6)
- Fasten fuse carrier (6) with M6x20 bolt (1) and A6 spring lockwasher on original vehicle threaded hole above the left strut tower

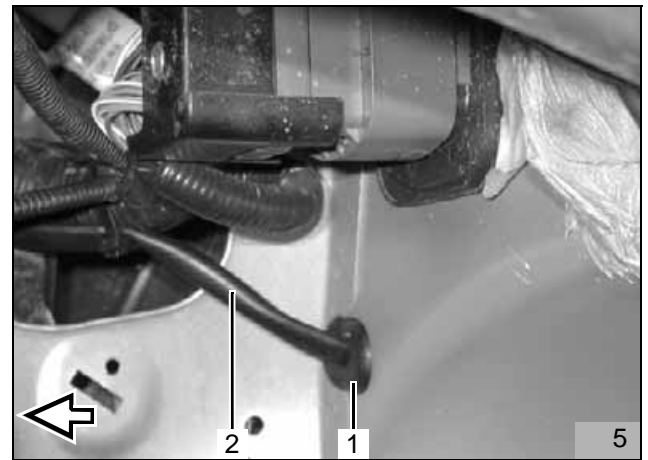


Installing wiring harnesses

- Route wiring harness of heater unit (2) to installation location of heater unit
- Route positive and ground wire (3) to battery
- Route wiring harness of digital timer (1), wiring harness of fan controller (5) and wiring harness of metering pump (4) along original vehicle wiring harness to firewall



- Route wiring harness of digital timer (2) to outside into wheel well and from there through original vehicle protective rubber plug (1) into passenger compartment



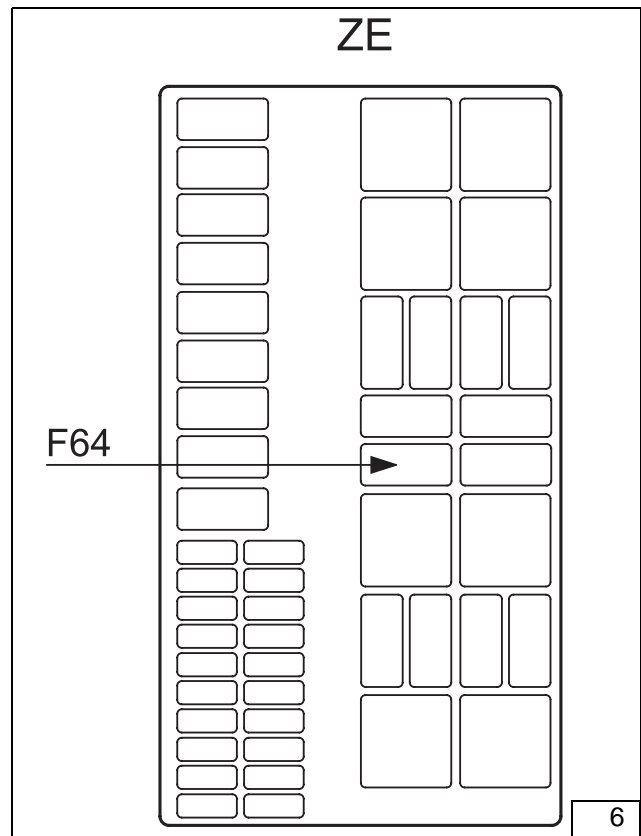
Fan controller

The fan is controlled at the central electrical box (fan fuse F64) on the firewall.

Make connections with connectors provided as shown in wiring diagram in Figure 6

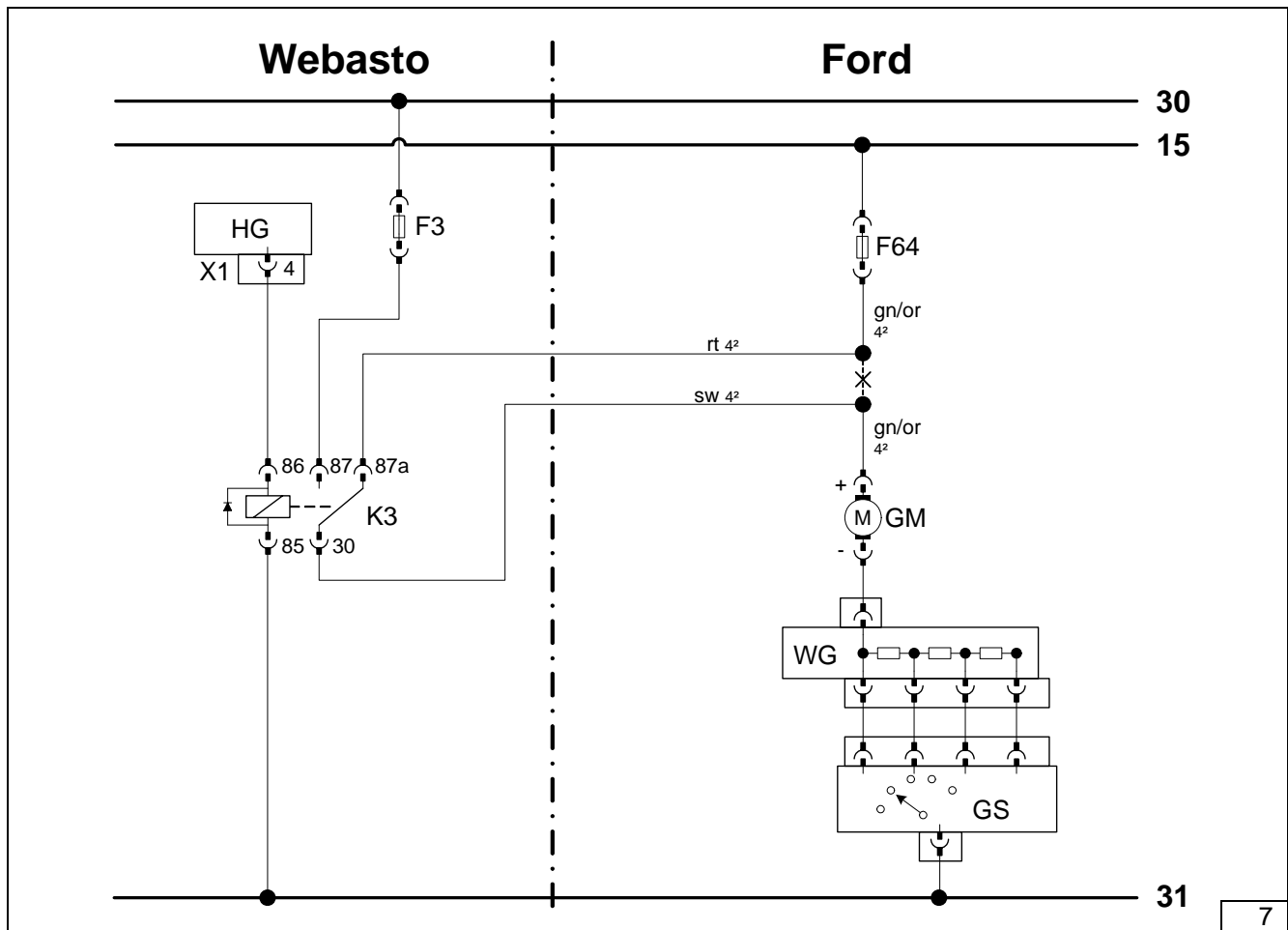
Legend for Figure 6:

- ZE Central electrical box
- F64 Original vehicle fan fuse, 30 A

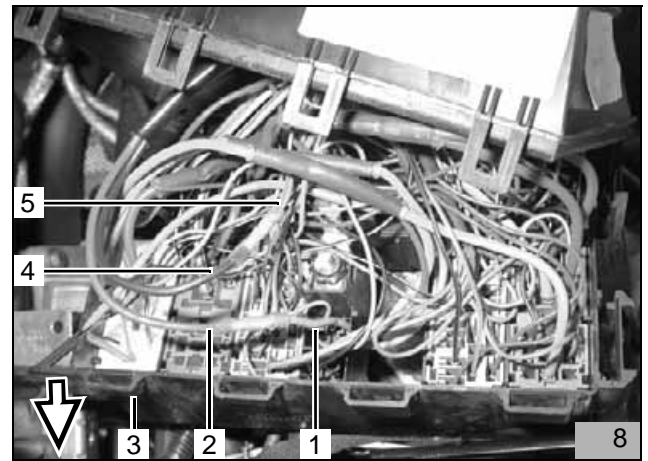


Legend for Figure 7:

- F3 Webasto fuse, 25 A
- F64 Original vehicle fan fuse, 30 A
- HG Webasto heater unit
- K3 Webasto fan relay
- GM Vehicle fan motor
- WG Vehicle resistor group
- X separate
- rt red
- gn/or green/orange
- sw black



- Detach central electrical box (3) and open
- Cut wiring harness of fan connection to length at central electrical box
- Cut off green/orange (gn/or) wire (1,5) 4 mm² from fan fuse F64 approx. 50 mm before fuse F64
- Connect green/orange (gn/or) wire (5) to fan motor and black (bk) wire (4) from fan relay K3/30
- Connect green/orange (gn/or) wire (1) from fuse F64 and red (rt) wire (2) from fan relay K3/87a
- Complete central electrical box (3) again



Digital Timer and Summer/Winter Switch Option

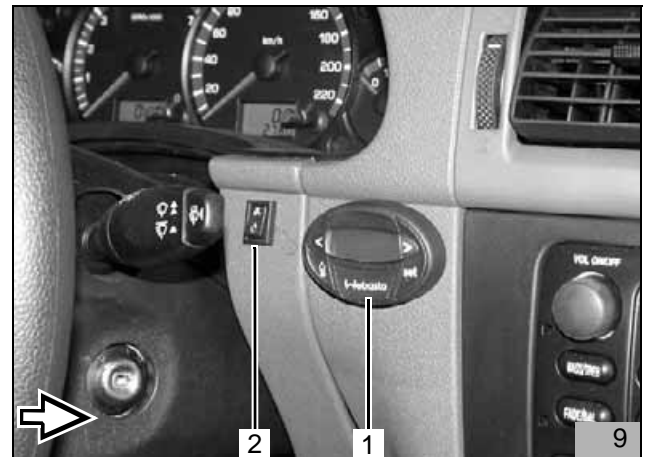
WARNING:

Do not press the LCD display when installing the digital timer!

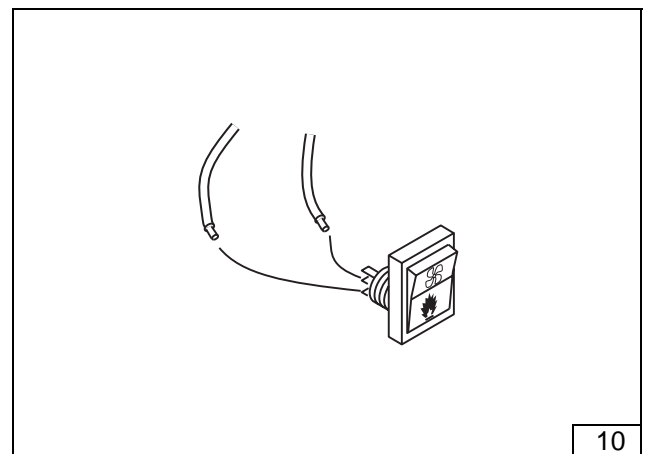
Note:

The illustrated installation location of the digital timer (1) and the summer/winter switch (2) is a recommendation! Please coordinate the installation location with your customer prior to the installation.

- Glue on drilling template for digital timer at desired position
- Drill two holes according to template
- Remove template
- Connect wiring harness of digital timer to included wiring harness extension and route to installation location of digital timer
- Pull wiring harness of digital timer out through hole
- Connect connector to digital timer
- Fasten digital timer (1) with self-tapping screw



- Copy hole pattern of summer/winter switch (9/2) at desired position and drill 12 mm dia. hole
- Guide nut and toothed washer over both lines
- Guide brown (br) and violet (vi) wires through hole and connect to switch as shown in Figure (lower contacts)
- Fasten summer/winter switch with toothed washer and nut



Remote option (Telestart)

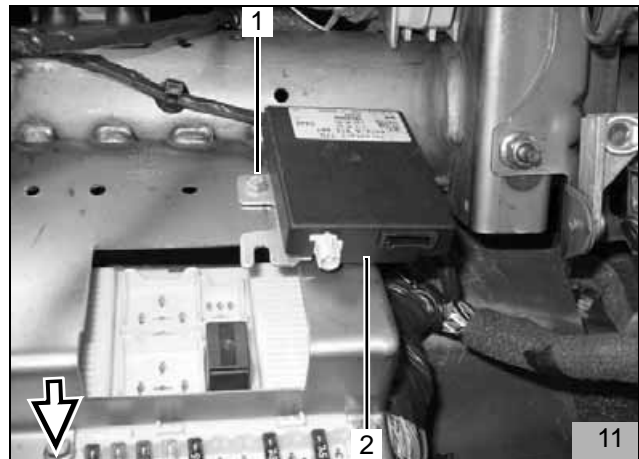
Installing Telestart receiver

NOTE

Observe the included general "Installation Instructions" for the Telestart option.

The Telestart receiver (2) is installed on the left-hand side behind the footwell trim!

- Fasten receiver (2) with M5x20 bolt and flanged nut on existing hole



Installing Telestart antenna

NOTE

Clean and degrease the bonding surface for the Telestart antenna prior to mounting.

The installation location of the Telestart antenna (1) is on the windshield at the lower left!

- Clean and degrease bonding surface on windshield
- Glue on Telestart antenna (1)



Installing temperature sensor (HTM T 100)

NOTE

Clean/degrease the bonding surface for the temperature sensor on the air duct.

The installation location of the temperature sensor is on the left below the instrument panel on the air duct!

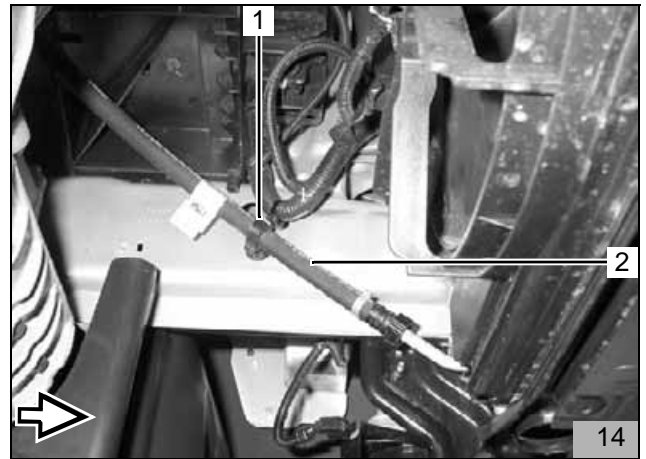
- Clean and degrease bonding surface on air duct
- Glue on temperature sensor (1)



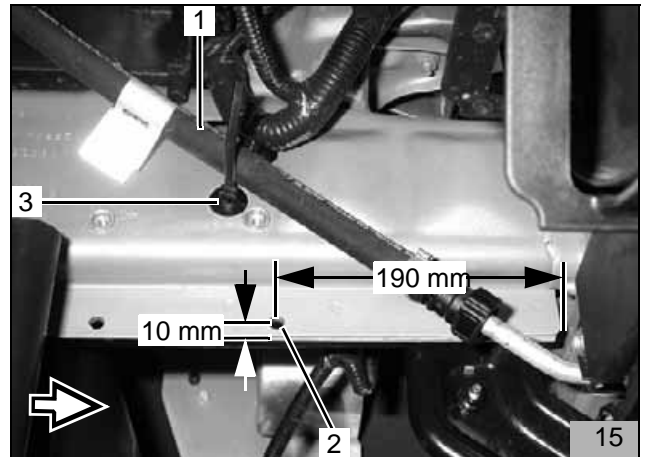
Installing Heater Unit

Preparing installation location

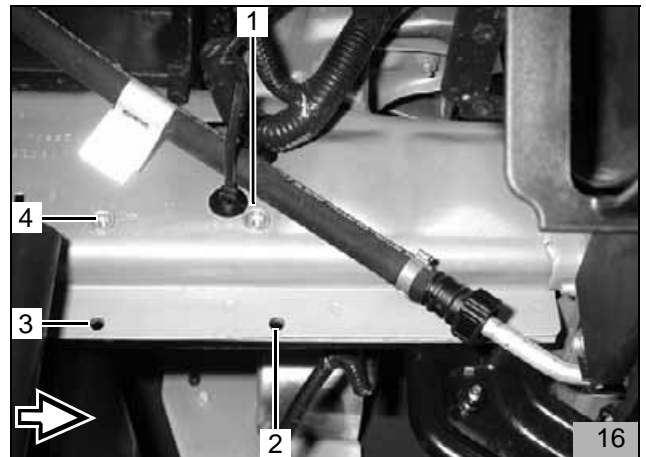
- Remove cable clip (1) of original vehicle line (2) and discard



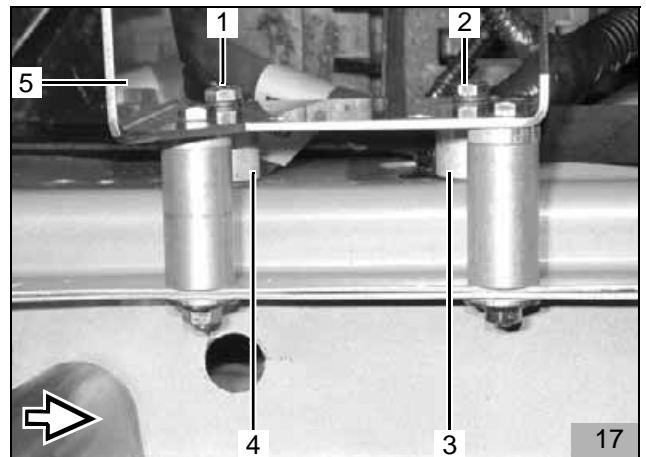
- Mount included cable clip at Position (3) and fasten original vehicle line (1)
- Drill 7 mm dia. hole in frame side member at Position (2)



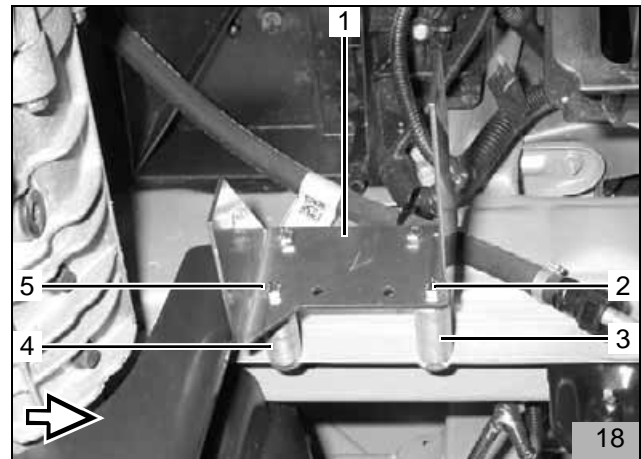
- Hold on bracket at Position (2) and copy hole pattern (1,3,4) to frame side member
- Drill 7mm dia. hole (3) in frame side member
- Drill two 9.1 mm holes (1,4) in frame side member
- Mount rivet nuts (1,4) in frame side member



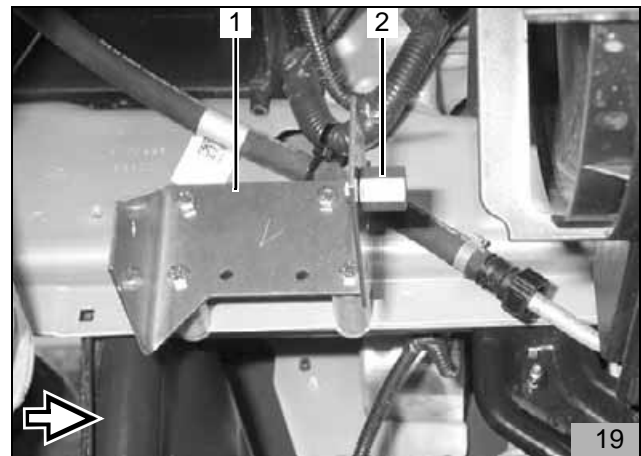
- Fasten bracket (5) on prepared rivet nuts on frame side member with M6x35 bolts (1,2), A6 spring lockwashers and 20 mm spacer sleeves (3,4)



- Fasten bracket (1) on prepared holes on frame side member with M6x60 bolts (2,5), 5 mm spacer sleeves and 40 mm spacer sleeves (3,4), A7.4 large diameter washers and M6 flanged nuts



- Fasten M6x20 spacer nut (2) with M6x12 bolt and A6 spring lockwasher on bracket (1)

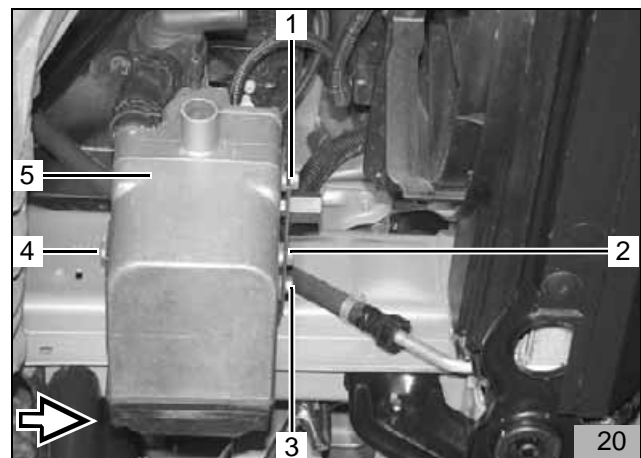


Installing heater unit

Note:

Use only the special bolts type EJOT PT included in the delivery scope to fasten the bracket!
 (Tightening torque 10 Nm)
 Insert two washer between bracket and heater unit at Position (1)

- Guide heater unit (5) to installation location and connect wiring harness of heater unit
- Fasten heater unit on bracket with Ejoyt screws (1,2,3,4) while inserting two bolts between heater unit and bracket at Position (1) (tightening torque 10 Nm)



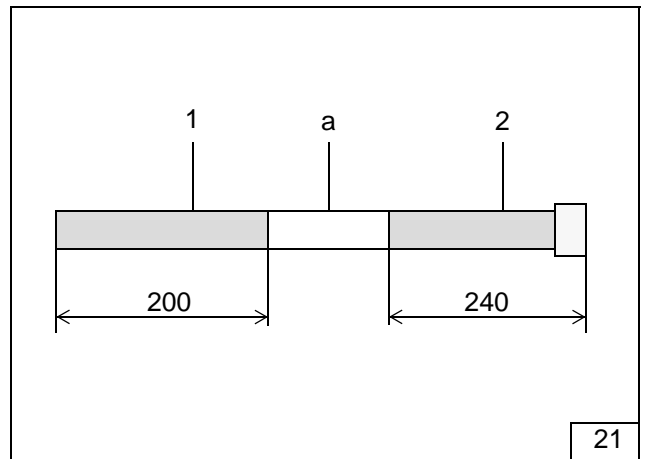
Exhaust system

WARNING:

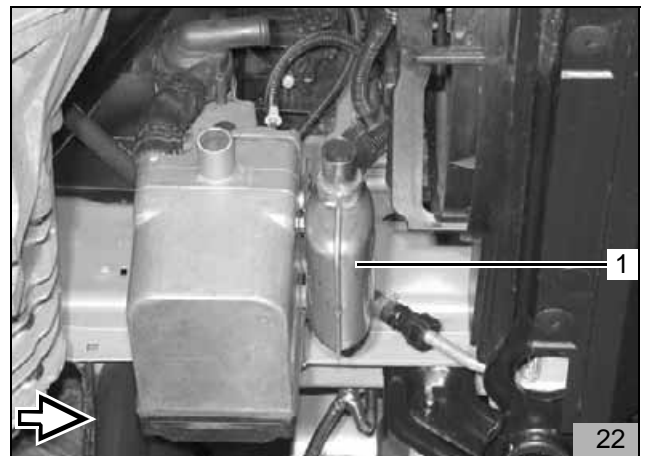
Ensure sufficient spacing to hoses and lines when installing exhaust system.

- Cut exhaust pipe (1) and exhaust-pipe end section (2) to length as shown

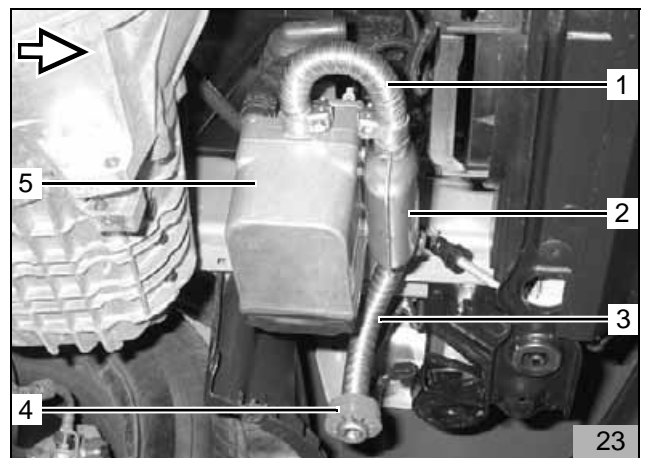
a = section



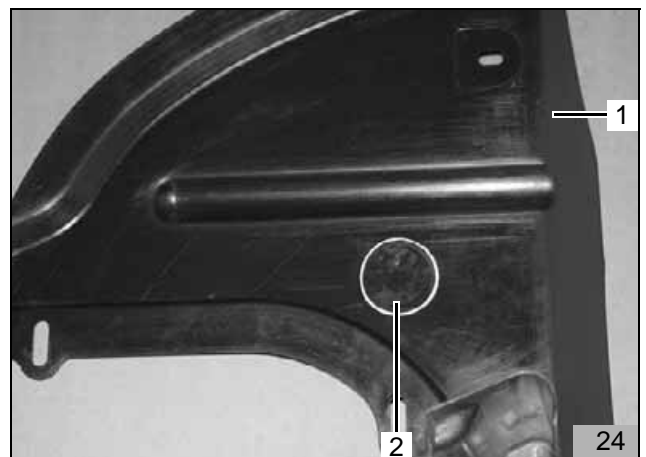
- Fasten exhaust muffler (1) on 20 mm spacer nut with M6x12 bolt and A6 spring lockwasher



- Shape 200 mm long exhaust pipe (1) as shown
- Connect exhaust pipe (1) to heater unit (5) and to exhaust muffler (2) and fasten with hose clamps
- Connect-pipe end section (3) to exhaust muffler (2) and fasten with hose clamp
- Push red (rt) rubber isolator with groove (4) onto t-pipe end section
- Shape t-pipe end section as shown



- Drill 42 mm dia. hole (2) in wheel well trim (1) in area of exhaust outlet
- Reinstall wheel well trim



- Insert red (rt) rubber isolator (2) between t-pipe end section (1) and wheel well trim



Integration in Water Circuit

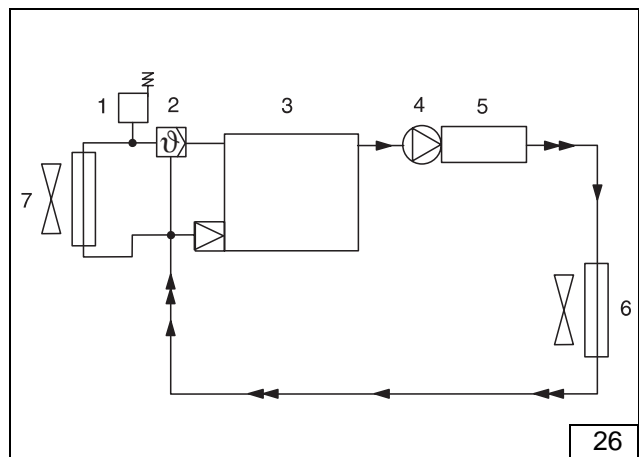
Note:

Any coolant running off should be collected with an appropriate container!
 Install hoses so that they are kink-free.
 Position hose clamps so that no other hose can be damaged!

The connection of the heater unit "in series" (inline) in the vehicle coolant circuit is described in the following.(Figure 26)

Legend for Figure 26:

- 1 Expansion tank
- 2 Radiator thermostat
- 3 Vehicle engine
- 4 Circulating pump (heater unit)
- 5 Heater unit
- 6 Heater heat exchanger (vehicle)
- 7 Radiator



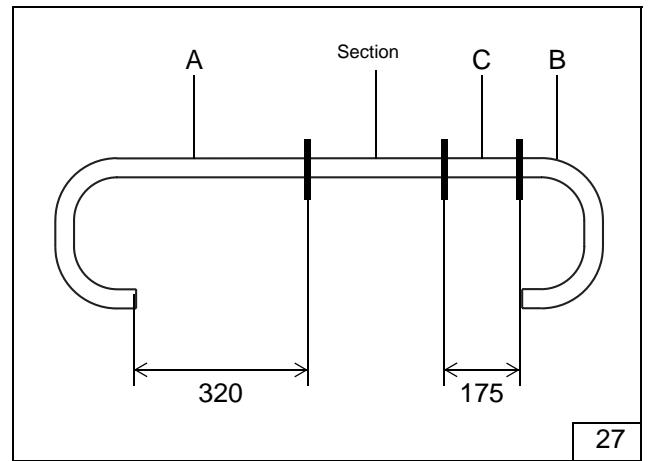
Only for gasoline engine

- Cut three hose sections from the coolant hose included in the delivery scope as shown in Figure 24.

Hose A: 320 mm+180° elbow
(from connection piece of engine outlet to hose B)

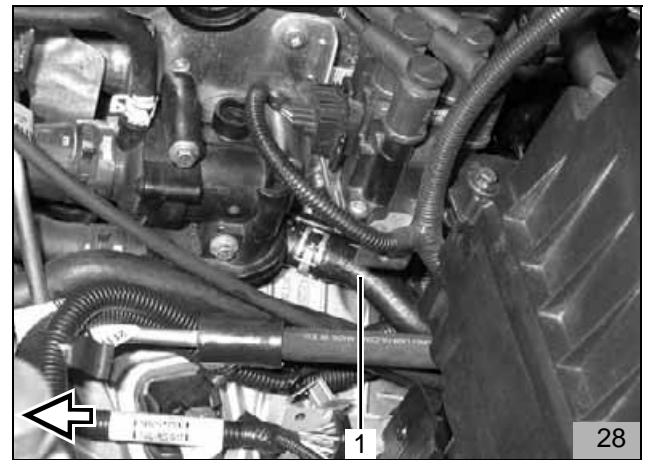
Hose B: 180° elbow
(from hose A to heater-unit coolant inlet)

Hose C: 175 mm straight section
(from heater-unit coolant outlet to original vehicle coolant hose on heat-exchanger coolant inlet)

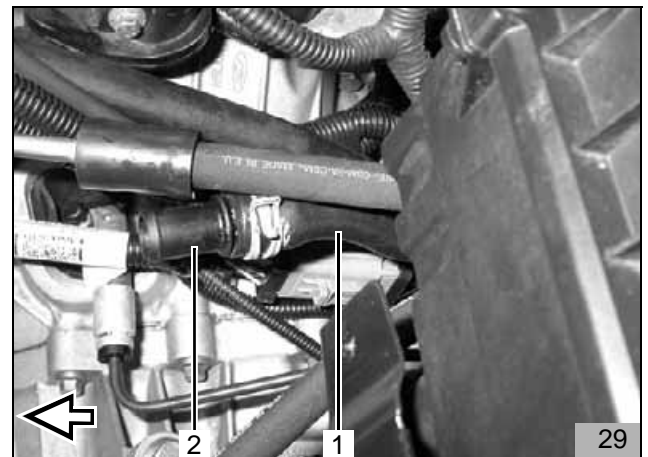


- Cut included braided protection hose for hose C and for hose A to length accordingly and push on
- Cut included heat shrink plastic tubing into four equal pieces, push over ends of braided protection hoses and shrink

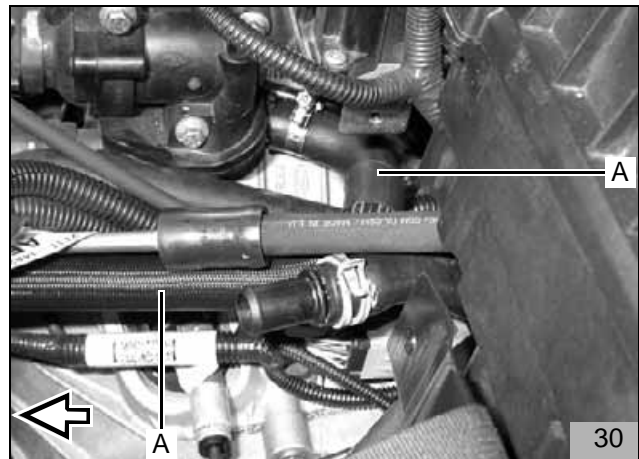
- Pull original vehicle coolant hose (1) off engine coolant outlet to heat-exchanger coolant inlet on connection piece of engine coolant outlet



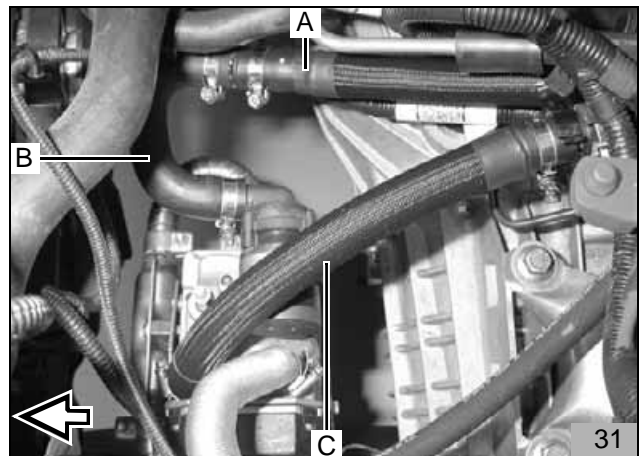
- Insert connecting pipe 20x20 (2) in original vehicle coolant hose (1) to heat-exchanger coolant inlet and fasten with original-vehicle spring clip



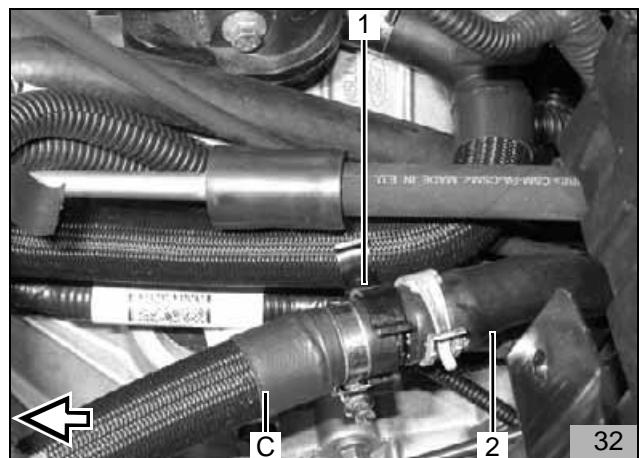
- Connect hose A with 180° elbow to connection piece of engine coolant outlet, align and fasten with hose clamp as shown



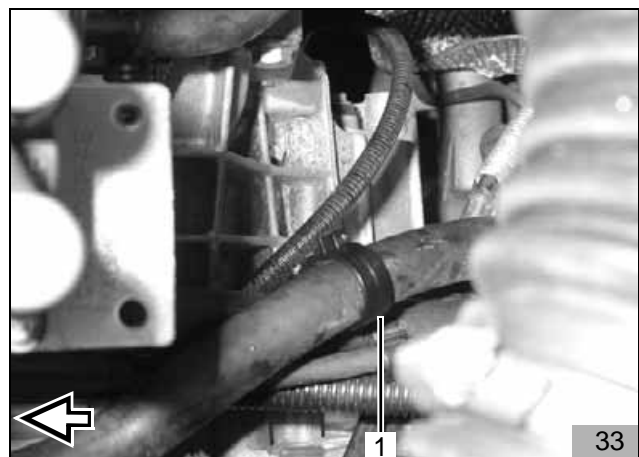
- Connect hose B to heater-unit coolant inlet, align and fasten with hose clamp as shown
- Connect hose B and hose A from engine coolant outlet with 20x20 connecting pipe and hose clamps
- Connect hose C to heater-unit coolant outlet and fasten with hose clamp



- Connect hose C to 20x20 connecting pipe in original vehicle coolant hose (2) and fasten with hose clamp
- Install included spacer bracket (1) as shown



- Install included spacer bracket (1) as shown



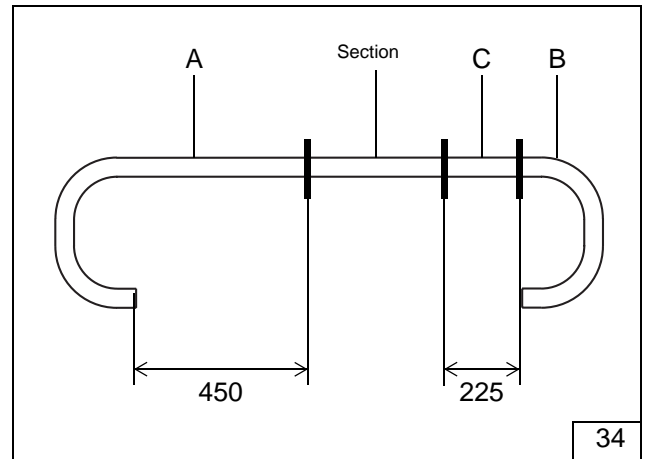
Only for diesel engine

- Cut three hose sections from the coolant hose included in the delivery scope as shown in Figure 34.

Hose A: 450 mm+180° elbow
(from connection piece of engine outlet to hose B)

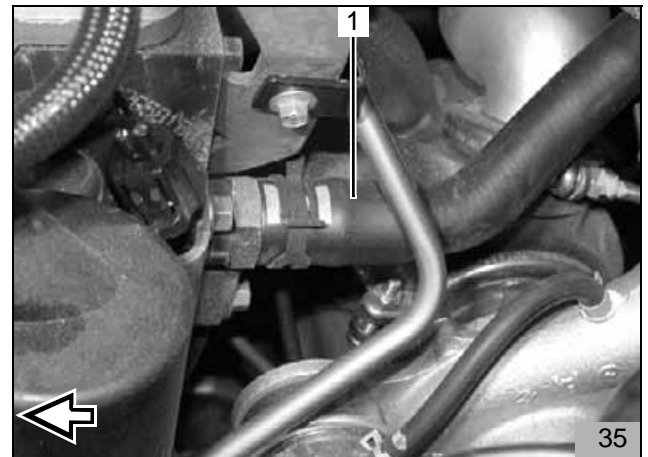
Hose B: 180° elbow
(from hose A to heater-unit coolant inlet)

Hose C: 225 mm straight section
(from heater-unit coolant outlet to original vehicle coolant hose on heat-exchanger coolant inlet)

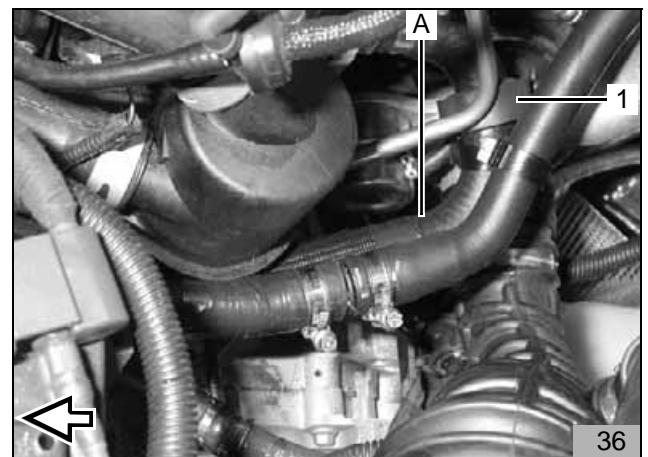


- Cut included braided protection hose on hose C and hose A to length accordingly and push on
- Cut included heat shrink plastic tubing into four equal pieces, push over ends of braided protection hoses and shrink

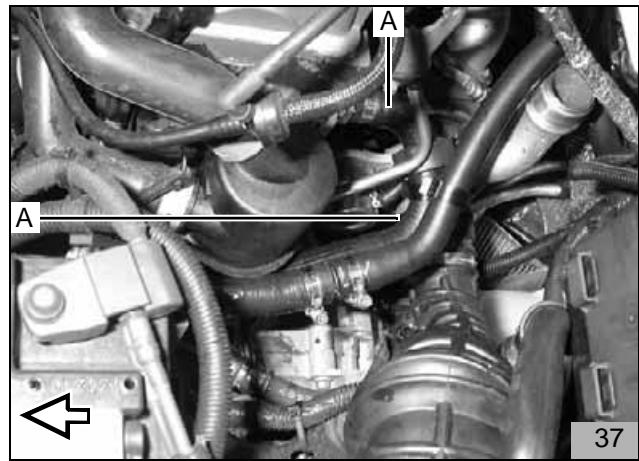
- Pull original vehicle coolant hose (1) off engine coolant outlet to heat-exchanger coolant inlet on connection piece of engine coolant outlet



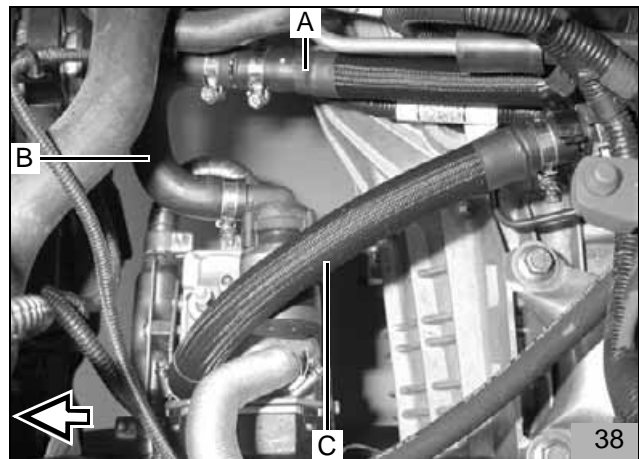
- Push black (sw) rubber isolator (1) onto hose A



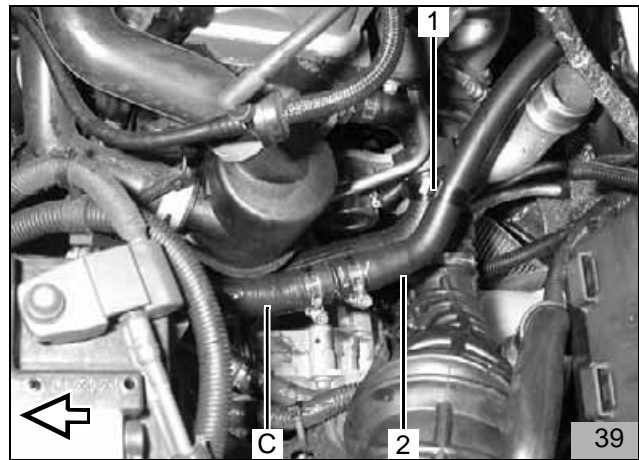
- Connect hose A with 180° elbow to connection piece on engine coolant outlet, align as shown and fasten with original vehicle spring clip



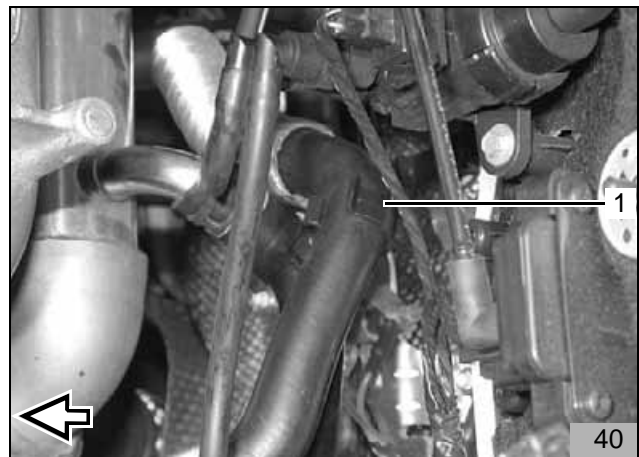
- Connect hose B to heater-unit coolant inlet, align and fasten with hose clamp as shown
- Connect hose B and hose A from engine coolant outlet with 20x20 connecting pipe and hose clamps
- Connect hose C to heater-unit coolant outlet and fasten with hose clamp



- Connect hose C from heater-unit coolant outlet and original vehicle coolant hose (2) to heat-exchanger coolant inlet with 20x20 connecting pipe and hose clamp
- Install included spacer bracket (1)



- Install included spacer bracket (1)

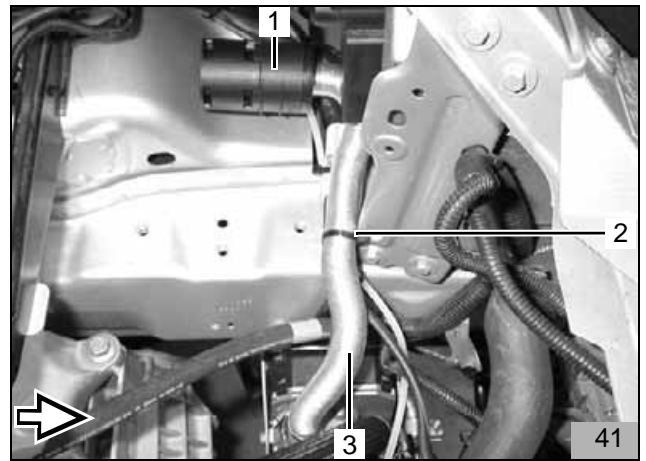


Combustion-Air Intake Pipe

Note:

Ensure proper installation position of combustion-air intake muffler, see "Installation Instructions"!

- Connect combustion-air intake pipe (3) with slotted side to heater unit combustion-air connection piece and secure with 27 mm hose clamp
- Route combustion-air intake pipe as shown
- Screw combustion-air intake muffler (1) as far as possible into combustion-air intake pipe (3)
- Fasten combustion-air intake muffler on original vehicle wiring harness with cable tie as shown
- Fasten combustion-air intake pipe (3) with cable tie (2) as shown



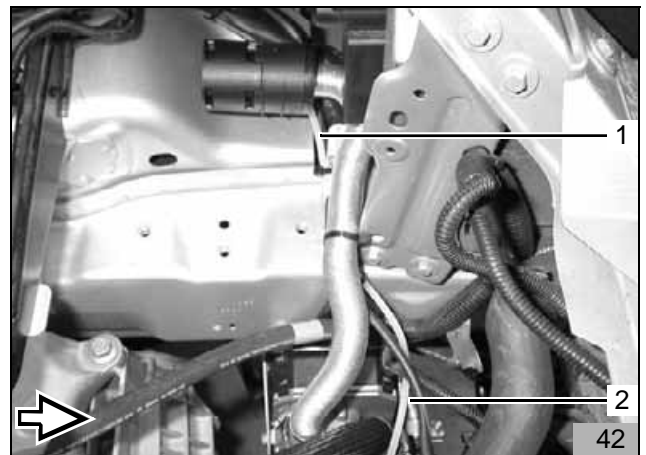
Fuel Connection

WARNING:

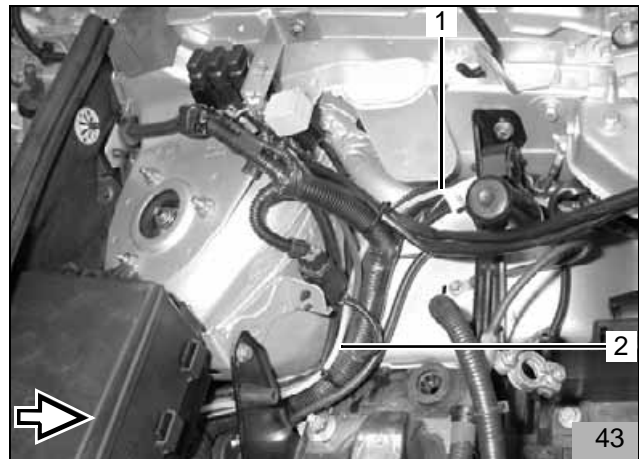
Route fuel line so that it is protected against stone impact. Mount the fuel line and wiring harness with rub protection on sharp edges.

Installing fuel line

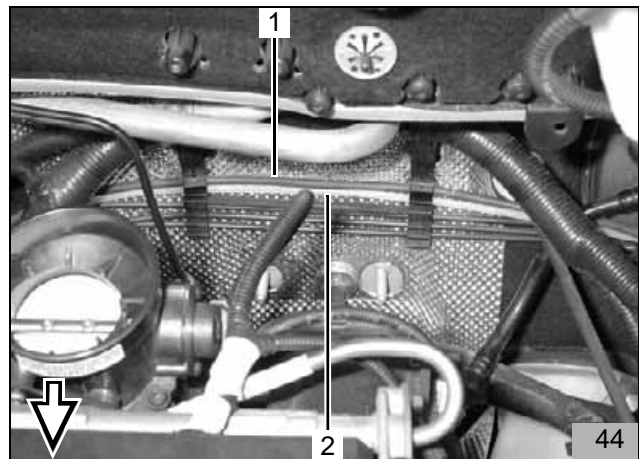
- Fasten Mecanyl fuel line on heater unit with hose section and 10 mm hose clamp
- Route Mecanyl fuel line (1,2) from heater unit along wiring harness of heater unit



- Route Mecanyl fuel line (1,2) further along original vehicle lines to firewall



- Route Mecanyl fuel line (2) together with wiring harness of metering pump (1) along original vehicle brake lines to right-hand side of vehicle and from there along original vehicle fuel lines to installation location of metering pump

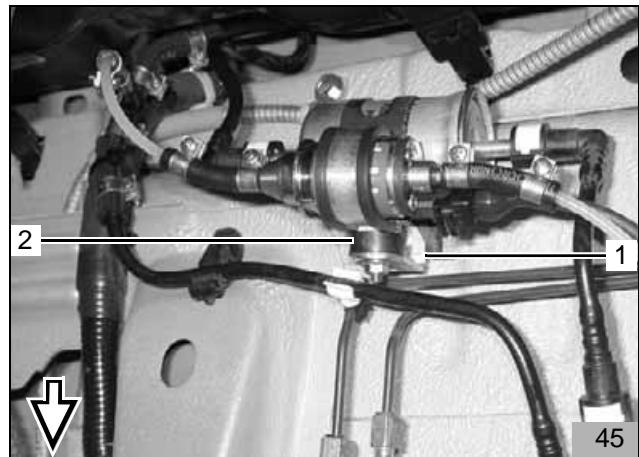


Metering pump for gasoline engine

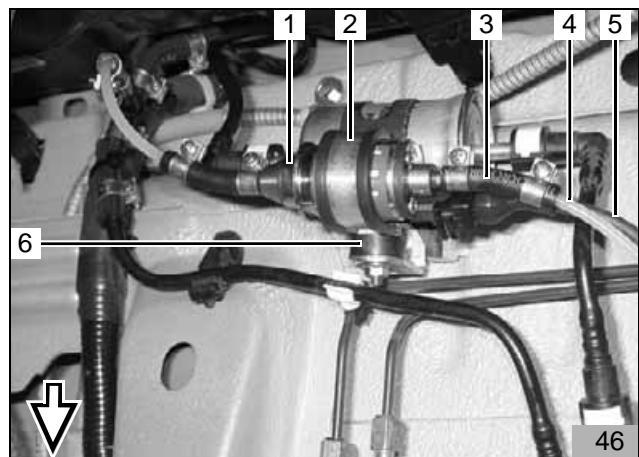
Note:

Ensure proper installation position of metering pump, see "Installation Instructions".

- Fasten angle bracket (1) on original vehicle bolt of fuel filter as shown
- Fasten silent block (2) on angle bracket (1) with spring lockwasher and M6 nut



- Fasten metering pump (1) on silent block (6) with rubber-coated p-clamp (2) and M6 flanged nut
- Cut Mecanyl fuel line (4) on metering pump (1) to length and connect to pressure side of metering pump (side with connector) using hose section (3) and 10 mm dia. hose clamps
- Cut wiring harness of metering pump (5) on metering pump to length, push on protective rubber plug, crimp on tab connector and complete connector housing
- Connect wiring harness to metering pump
- Fasten wiring harness of metering pump (5) and Mecanyl fuel line (4) with cable ties



Removing fuel with gasoline engine

WARNING:

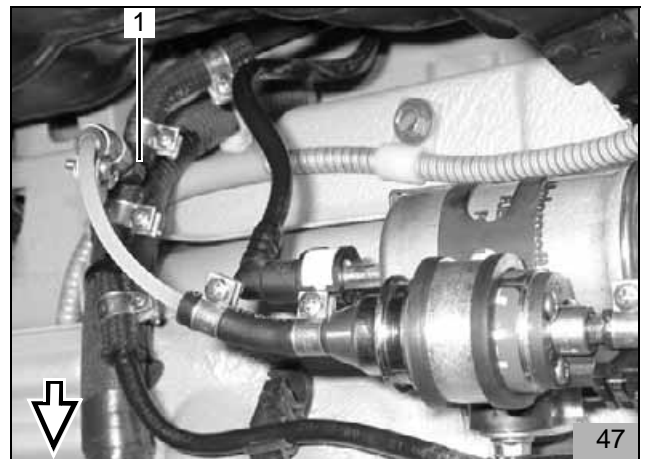
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the fuel tank cap.
Catch any fuel running off with an appropriate container.

The fuel is removed from the fuel return line with the fuel standpipe

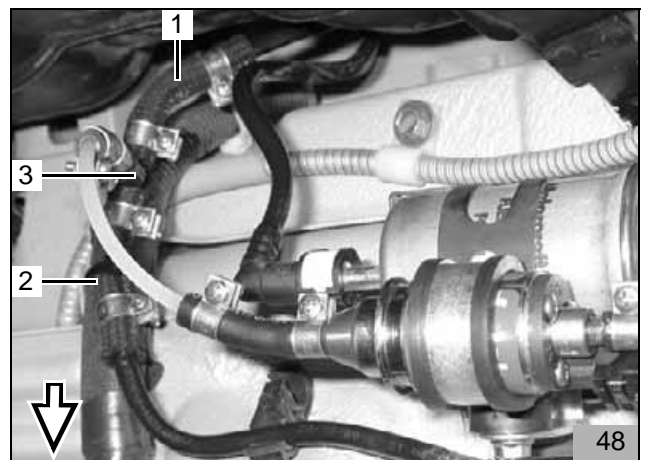
Note:

Ensure proper installation position of fuel standpipe, see "Installation Instructions".

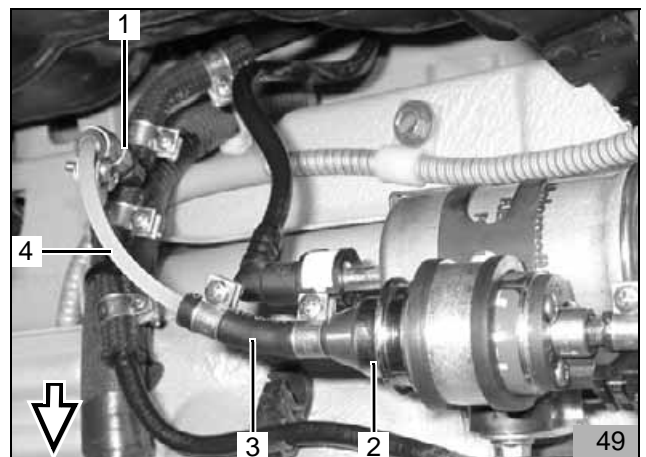
- Cut off fuel return line at Position (1).
- Install included support sleeve in ends of fuel return line



- Connect fuel standpipe (3) and disconnected fuel return line with fuel hoses (1,2) and 12 mm hose clamps



- Fasten remaining section of Mecanyl fuel line (4) on fuel standpipe (1) with hose section and hose clamps
- Cut Mecanyl fuel line (4) on metering pump (2) to length and connect to intake side of metering pump using hose section (3) and 10 mm dia. hose clamps

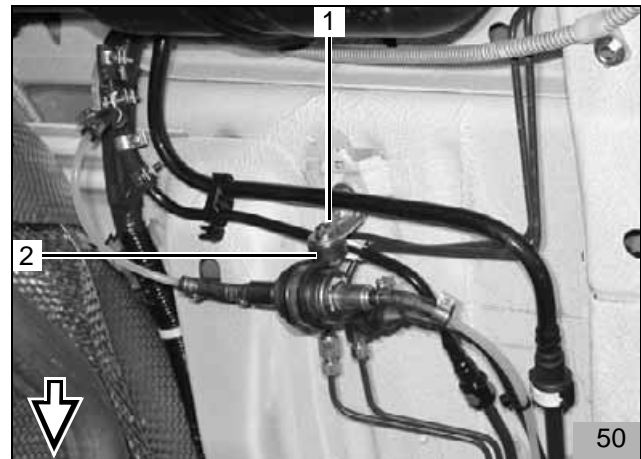


Metering pump for diesel engine

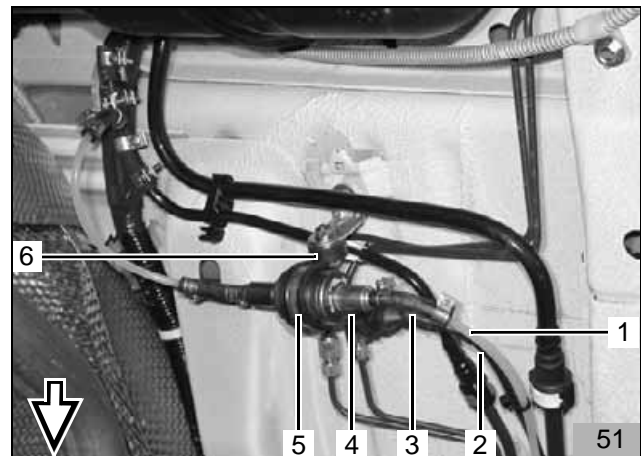
Note:

Ensure proper installation position of metering pump, see "Installation Instructions".

- Fasten angle bracket (1) to original vehicle threaded hole with M6x20 bolt and A7.4 large diameter washer
- Fasten silent block (2) on angle bracket (1) with M6 flanged nut



- Fasten metering pump (4) on silent block (6) with rubber-coated p-clamp (5) and M6 flanged nut
- Cut Mecanyl fuel line (1) on metering pump (4) to length and connect to pressure side of metering pump (side with connector) using hose section (3) and 10 mm dia. hose clamps
- Cut wiring harness of metering pump (2) on metering pump (4) to length, push on single wire seal, crimp on tab connector, complete connector housing and connect wiring harness to metering pump
- Fasten wiring harness of metering pump (2) and Mecanyl fuel line (1) with cable ties



Fuel removal for diesel engine

WARNING:

Open the vehicle's fuel tank cap, ventilate the tank and then re-close the fuel tank cap. Catch any fuel running off with an appropriate container.

The fuel is removed from the fuel return line with the fuel standpipe

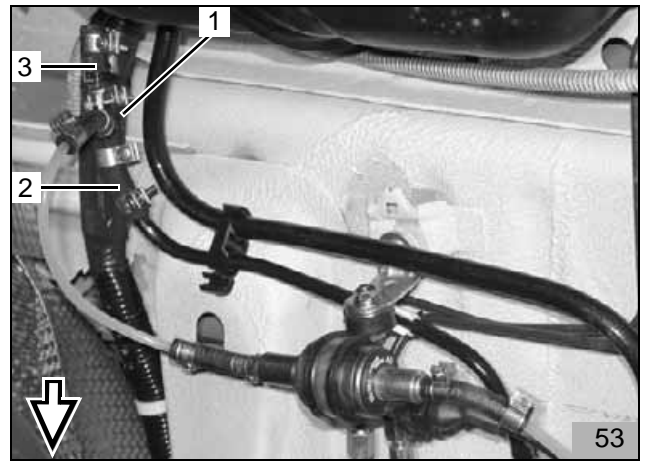
Note:

Ensure proper installation position of fuel standpipe, see "Installation Instructions".

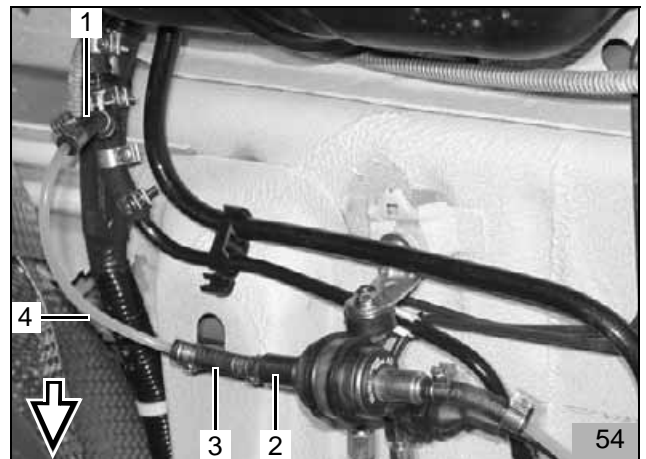
- Cut off fuel return line at Position (1).
- Install included support sleeve in ends of fuel return line



- Connect fuel standpipe (1) and disconnected fuel return line with fuel hoses (2,3) and 12 mm hose clamps



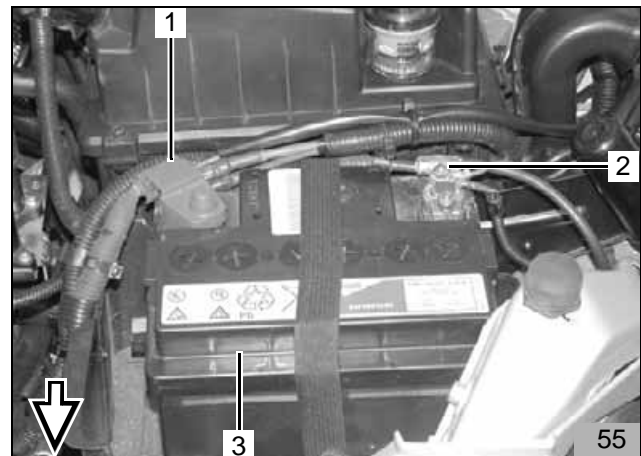
- Fasten remaining section of Mecanyl fuel line (4) on fuel standpipe with hose section (1) and hose clamps
- Cut Mecanyl fuel line (4) on metering pump (2) to length and connect to intake side of metering pump using hose section (3) and 10 mm dia. hose clamps



Final Work

- Reassemble disassembled components in reverse order.
- Check all hoses, hose clamps and p-clamps and all electrical connections for firm seating.
- Secure all loose cables using cable ties
- Remove tools, e.g. hose clamping pliers etc. from the engine compartment.
- Spray heater unit components with anti-corrosion wax (Tectyl ML, Order No. 111329)

- Reinstall battery (3)
- Connect ground wire to negative terminal (2)
- Connect positive wire (1) to positive terminal
- Start engine, bleed coolant circuit according to instructions of vehicle manufacturer and add coolant.
- Set vehicle heater to "max." and fan to speed 1
- Switch on Webasto heater, see "Operating and Maintenance Instructions"



Note:

Fill out installation confirmation on back of included EC type approval and hand over to customer!

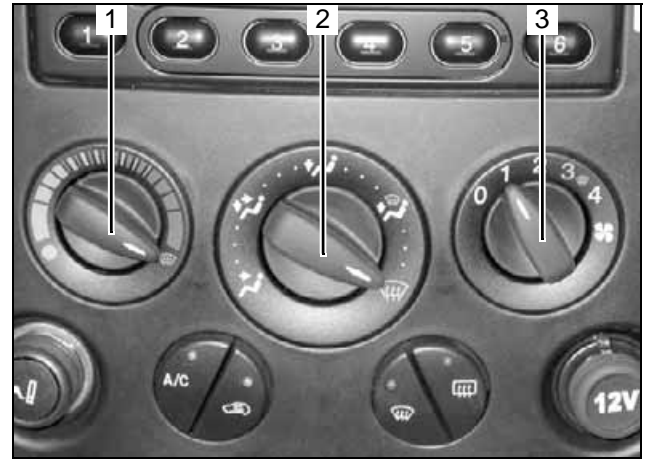
Cut out "Operating Instructions for End Customer" and hand over to end customer.

Operating Instructions for End Customer**Note:**

Please cut out and hand over to end customer.

Please make the following settings before switching off the vehicle

- Set air outlet (2) to windshield
- Set thermostat (1) to "max."
- Set fan (3) to level 1





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