Water Heater



Thermo Top Evo Parking Heater



Installation documentation

Dacia Duster / Sandero / Logan

Petrol
from model year 2011
Left-hand drive vehicle
Manual air conditioning
2WD 5-gear manual transmission
4WD 6-gear manual transmission
Electric and hydraulic power steering



WARNING!

Hazard warning:

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



Specialist company training, technical documentation, specialised tools and equipment are required to install and repair Webasto heating and cooling systems.

Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

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

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

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

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

Ident. No.: 1317365B_EN Fee Euro 10.00 © Webasto AG

Table of Contents

Validity	2	Preparing installation location	10
Heater / Installation Kit	3	Premounting circulating pump	11
Foreword	3	Preparing heater	12
General Instructions	3	Installing heater	15
Special Tools	3	Fuel	17
Explanatory Notes on Document	4	Exhaust gas	20
Preliminary Work	5	Coolant circuit	25
Heater installation location	5	Combustion air	31
Preparing electrical system	6	WARNING!	32
Electrical system	7	Template for fuel standpipe	33
Fan control	8	Template for heater mounting	34
Remote option (Telestart)	9	Operating Instructions for End Customer	35

Validity

Dacia Duster SD e2 * 2001 / 116 * 0314 *	Manufacturer	Model	Туре	EG-BE No./ABE
	Dacia	Duster	SD	e2 * 2001 / 116 * 0314 *

Engine type	Engine model	Output in kW	Displacement in cm ³
K4M	Petrol	77	1598

Manufacturer	Model	Туре	EG-BE No./ABE
Dacia	Sandero	SD	e2 * 2001 / 116 * 0314 *

Engine type	Engine model	Output in kW	Displacement in cm ³
K7M	Petrol	62	1598

Manufacturer	Model	Туре	EG-BE No./ABE
Dacia	Logan	SD	e2 * 2001 / 116 * 0314 *

Engine type	Engine model	Output in kW	Displacement in cm ³
K7M	Petrol	62	1598

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

The installation location of the digital timer must be coordinated with the end customer before installation.

Heater / Installation Kit

Quantity	Designation	Order No.:
1	Basic delivery scope Thermo Top Evo	See price list
1	Installation kit for Dacia Duster / Sandero / Logan 1.6 Petrol 2011	1317364A
1	Heater control	See price list

Foreword

This installation documentation applies to Dacia Duster / Sandero / Logan Petrol vehicles - for validity, see page 2 - from model year 2011 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.

The specification of this "installation documentation"; the "operating instructions" and the "installation instructions" of the *Thermo Top Evo* are to be observed under all circumstances.

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

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wires and tie back.

Sharp edges should be fitted with rub protection (split-open fuel hose).

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329). When installing an IPCU, check or adjust the corresponding settings before the installation.

Special Tools

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

Explanatory Notes on Document

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

Mechanical system

Electrical system



Coolant circuit



Fuel



Exhaust gas



Combustion air



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 or explosion.



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



Reference to a special technical feature.



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

All dimensions are in mm!

Tightening torque of 5x13 heater bolts = 8Nm!

Tightening torque of 5x15 bolt of water connection piece retaining plate = 7Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Depressurise the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Disconnect and remove the battery.
- Remove the engine control unit.
- Drain the coolant fluid.
- Remove the expansion tank.
- Fold down the rear bench seat.
- Open the tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the underride protection.
- Remove the instrument panel trim on the driver's side.
- Remove the fan controls.

Remove page 35 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

Image shows Duster.

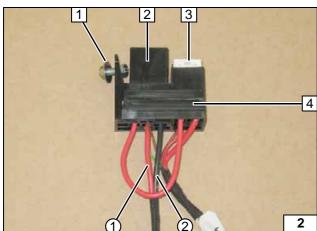
1 Heater



Installation location







4

rt/sw 0,5² gn/ws 0,75² ₫ F4 √86 ∱87 √87a K1 [,] 85 🖞 30

Preparing electrical system

Make connections according to the following figure.

Wire sections retain their numbering through the entire document.

Insert red (rt) wire 1 4² in socket of K1/87a and black (sw) wire 2 in the socket of K1/30.

- 1 Premount M5x16 bolt, large diameter washer [2x], nut loosely
- 2 Insert K1 relay
- 3 Insert fuse F4 25A
- 4 Fuse holder of passenger compartment



Premounting fuse holder of passenger compartment

Premounting fuse holder of passenger compartment



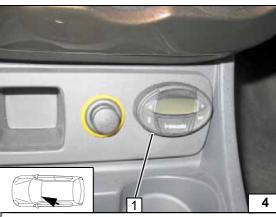
Electrical system

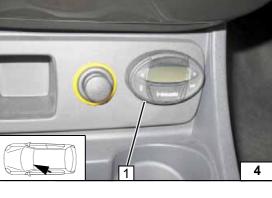
Positive and earth wire

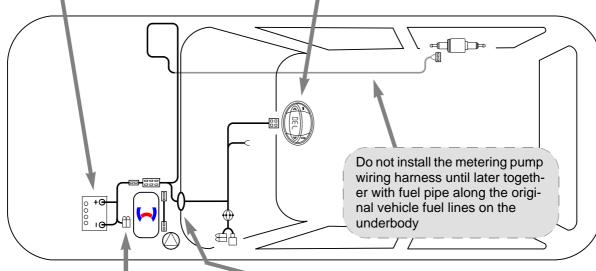
- 1 Earth wire
- 2 Positive wire



1 Digital timer

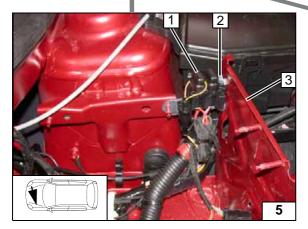








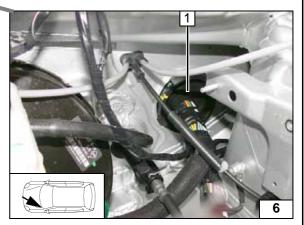
Wiring harness routing diagram



ROMBAT CALCIU

Fuse holder of engine compartment

- 1 Fuses F1-2
- 2 M5x16 bolt, large diameter washer [2x], retaining plate of fuse holder, nut, existing hole
- 3 Battery carrier

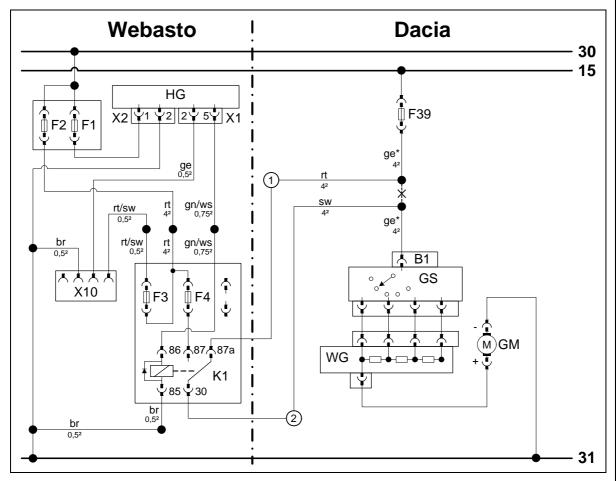


Wiring harness pass through

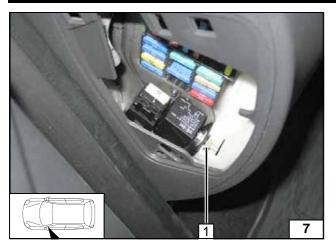
1 Protective rubber plug



Fan control



Weba	Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	GM	Fan motor	rt	red	
X1	6-pin heater connector	GS	Fan switch	sw	black	
X2	2-pin heater connector	WG	Resistor group	ge	yellow	
X10	4-pin connector	B1	Connector B Pin 1	gn	green	
	Heater control	F39	Fuse 30A	br	brown	
K1	Fan relay			ws	white	
F1	Fuse 20A			br	brown	
F2	Fuse 30A					
F3	Fuse 1A			Х	Cutting point	
F4	Fuse 25A			*Wirir	ng colours may vary.	



Insert fuse holder of passenger compartment into the recess, tighten bolt 1.



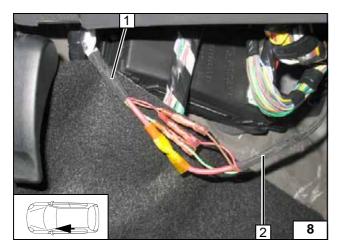
Wiring diagram

Legend



Mounting fuse holder of passenger compartment

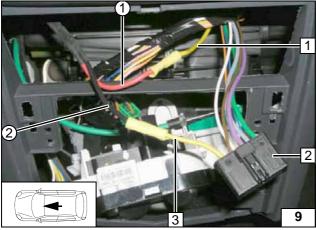




Connect same colour wires of the wiring harness of the passenger compartment fuse holder 1 to those of the heater wiring harness 2 as shown in wiring diagram.



Connecting wiring harnesses



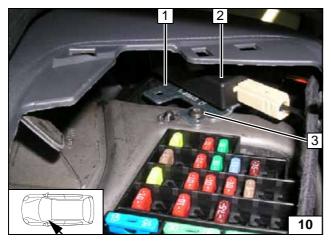
Connection to 6-pin connector B **2** from fan switch.

Produce connections as shown in wiring diagram.

- 1 Yellow (ge) wire from fuse 39
- 3 Yellow (ge) wire from connector B1
- ① Red (rt) wire from K1/87a
- ② Black (sw) wire from K1/30



Connecting fan motor



Remote option (Telestart)

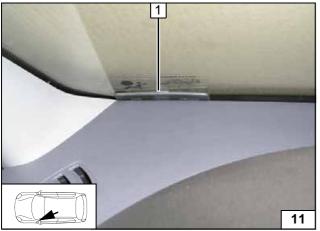
- 1 Telestart bracket
- 2 Telestart
- 3 Original vehicle bolt



Mounting receiver







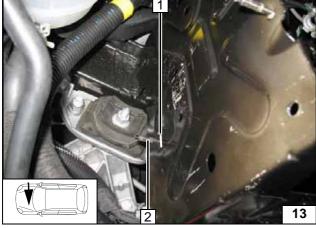




Preparing installation location

- 1 Cut 17mm dia. corrugated tube to length and push on
- 2 Form original vehicle wiring harness

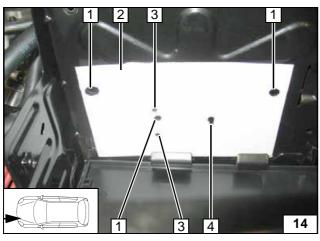
Preparing wiring harness



Saw off stud bolt 2 at cutting line 1 and discard it. Protect cut area against corrosion using suitable means!



Removing stud bolt



Position template 2 and align it to the existing holes 1 [3x].

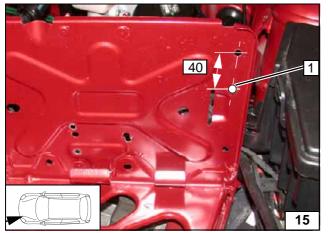


- 3 Copy hole pattern [2x], 6 mm dia. hole4 Transform original vehicle hole into an oblong hole

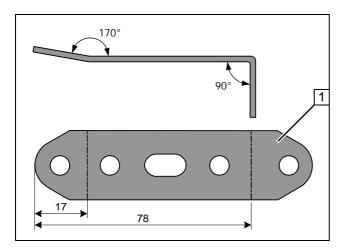
Copying hole pattern

1 7mm dia. hole



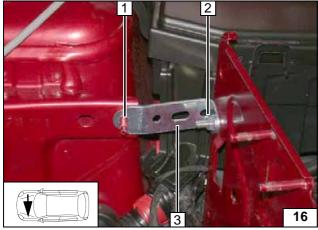






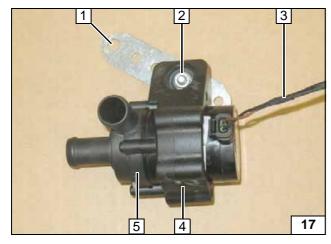
1 Perforated bracket

Angling down perforated bracket



- 1 Original vehicle stud bolt2 M6x20 bolt, flanged nut
- 3 Perforated bracket

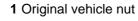
Mounting perforated . bracket



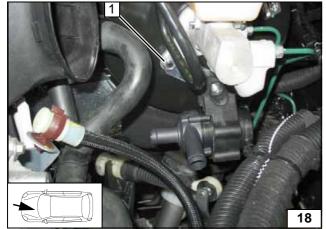
Premounting circulating pump

- 1 Perforated bracket, enlarge hole to 8.5mm
- 2 M6x25 bolt, flanged nut
- 3 Mount wiring harness of circulating pump
- 4 Circulating pump bracket
- 5 Circulating pump

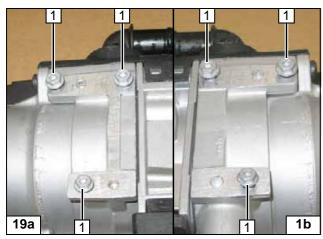
Preparing bracket



Installing circulating pump







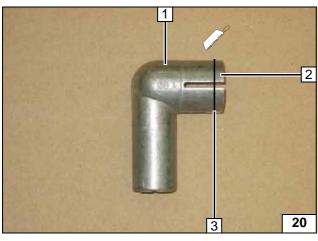
Preparing heater

All vehicles

Precut threads with 5x13 self-tapping bolts 1 [6x].



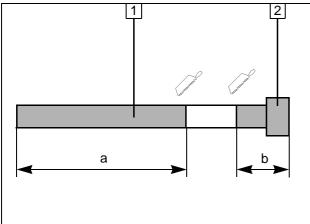
Precutting threads



Shorten exhaust elbow 1 at cutting line 3 by 3mm. Discard section 2.



Shortening exhaust elbow



Duster

2 WD

- 1 Exhaust pipe a = 750
- **2** Exhaust end section b = 100

4 WD

- 1 Exhaust pipe
- a = 1080
- 2 Exhaust end section

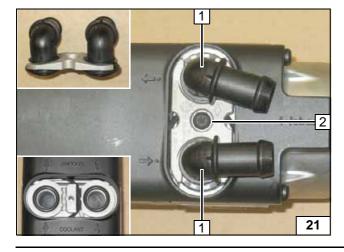
b = 70



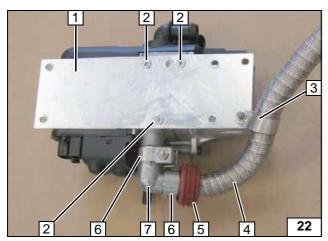
- 1 Water connection piece, sealing ring [2x each]
- 2 5x15 mm self-tapping bolt, retaining plate of water connection piece



Installing water connection pieces

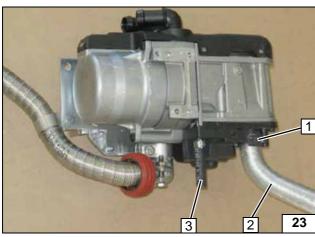






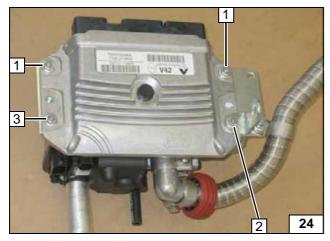
- 1 Retaining plate
- 2 M5x10 countersunk head screw [3x]
- 3 M6x20 bolt, clamp, flanged nut
- 4 Exhaust pipe
- 5 Spacer bracket of flexible tube6 Hose clamp [2x]
- 7 Exhaust elbow

Premounting heater



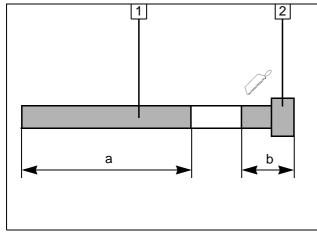
- 1 25mm dia. spring clip
- 2 Combustion air pipe
- 3 Hose section, 10mm dia. clamp

Premounting heater



- **1** M6x20 bolt, original vehicle flanged nut [je 2x]
- 2 M6x20 bolt, angle bracket (for wiring harness mounting), original vehicle flanged nut
- 3 M6x20 bolt, flanged nut

Mounting control unit



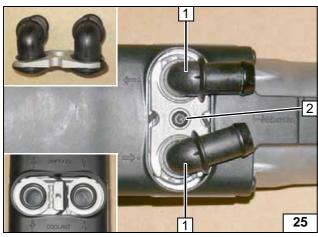
Sandero

- 1 Exhaust pipe
 - a = 670
- 2 Exhaust end section

b = 280

Preparing exhaust pipe

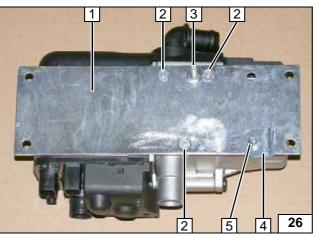




- 1 Water connection piece, sealing ring [2x each]
- 2 5x15 mm self-tapping bolt, retaining plate of water connection piece



Installing water connection pieces

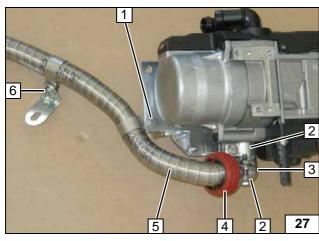


Insert M6x25 countersunk head screw **3** before assembly.



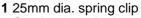
- 1 Retaining plate
- 2 M5x10 countersunk head screw [3x]
- **4** Angle bracket (for wiring harness mounting)
- **5** M6x16 bolt, flanged nut





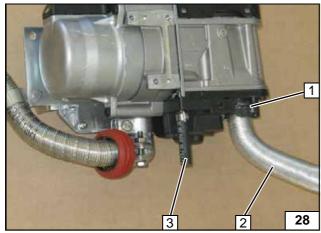
- 1 M6x20 bolt, clamp, flanged nut
- 2 Hose clamp [2x]
- 3 Exhaust elbow
- 4 Spacer bracket of flexible tube
- 5 Exhaust pipe
- 6 M6x20 bolt, angle bracket, clamp, flanged nut

Mounting exhaust pipe

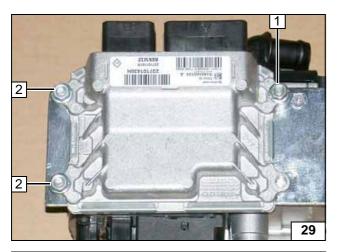


- 2 Combustion air pipe
- 3 Hose section, 10mm dia. clamp

Premounting heater

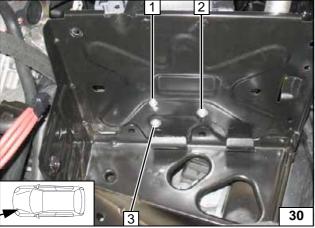






- 1 Original vehicle flanged nut
- 2 M6x25 bolt, original vehicle M6 flanged nut [2x each]

Mounting control unit



Installing heater

Two washers are positioned between heater and battery carrier at position **3**.

- 1 M5x13 self-tapping bolt
- 2 M5x13 self-tapping bolt, large diameter washer
- **3** M5x13 self-tapping bolt, large diameter washer, washer [2x]

Mounting heater

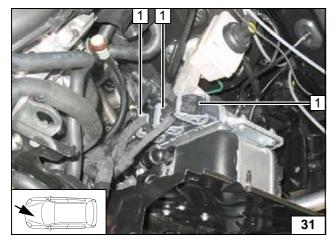
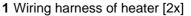


Image shows Duster.

1 Attach control unit wiring harness [3x]

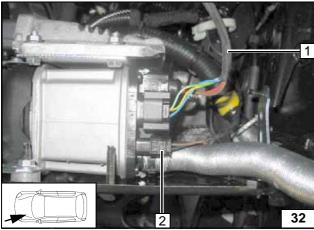


Mounting wiring harnesses

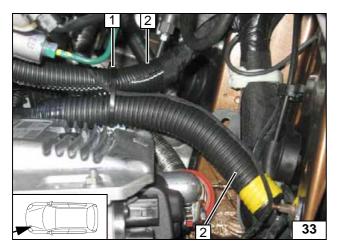


2 Wiring harness of circulating pump

Mounting wiring harnesses







Attach original vehicle wiring harness **2** [2x] to premounted angle bracket using a cable tie **1**. Ensure sufficient distance between exhaust system and neighbouring components.



Fastening wiring harness



Fasten wiring harness using cable tie 1 [3x].



Fastening wiring harness



Fuel

CAUTION!

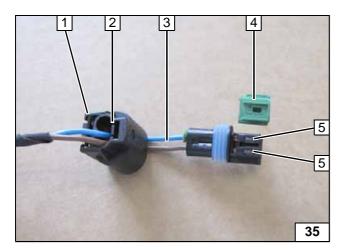
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in an appropriate container.

Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

Mount the fuel line and wiring harness with rub protection on sharp edges.

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

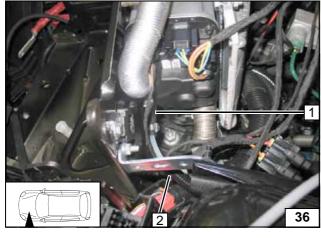


Complete connector of metering pump again after routing. Pin assignment is not relevant.

- 1 Connector housing
- 2 Lock
- 3 Blue/brown (bl/br) wires
- 4 Coding
- 5 Timer lock

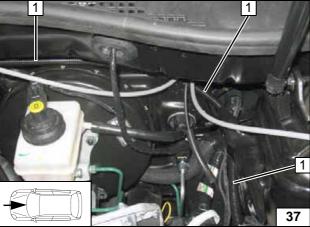


Dismantling connector



- 1 Premounted hose section, 10mm dia.
- 2 Fuel line and metering pump wiring harness in corrugated tube

Connecting heater

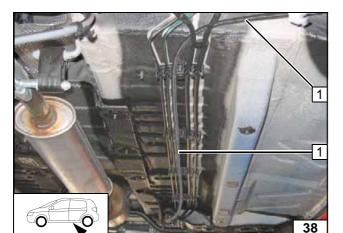


Route fuel line and metering pump wiring harness in corrugated tube 1 to the right side of the vehicle and to the underbody using original vehicle fuel lines

Routing lines



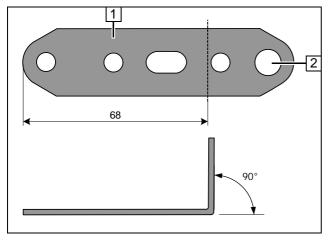




Route fuel line and wiring harness of metering pump in corrugated tube 1 to the original vehicle lines at the installation location of the metering pump.

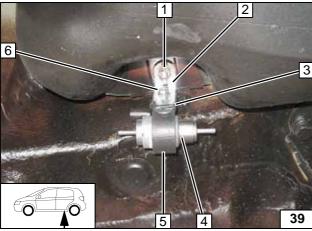


Routing lines



- 1 Perforated bracket
- 2 8.5mm dia. hole





- 1 Original vehicle stud bolt
- 2 Perforated bracket
- 3 Cable tie
- 4 Metering pump 5 Metering pump mounting 6 M6x25 bolt, flanged nut

1 Wiring harness of metering pump, connec-

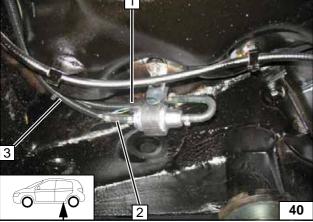


Mounting metering pump

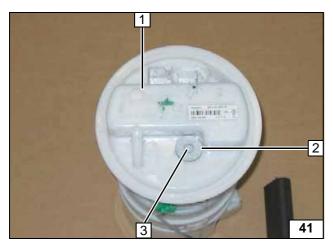




Connecting metering pump





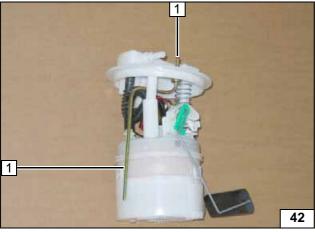


Remove fuel-tank sending unit 1 in accordance with manufacturer's instructions.

- 2 Place large diameter washer dia. d_a = 21.6mm.
- 3 Copy hole pattern, 6 mm dia. hole



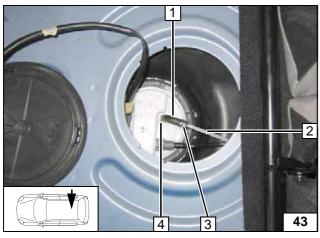
Fuel extraction



Shape fuel standpipe 1 according to template, cut to length and install.



Installing fuel standpipe

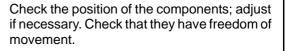


Install fuel-tank sending unit according to manufacturer's instructions.



- 1 Moulded hose, dia. 3.5 x 4.5
- 2 Fuel line
- 3 10mm dia. clamp
- 4 9mm dia. clamp

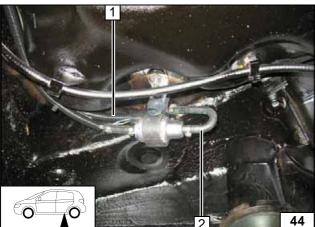
Connecting fuel line



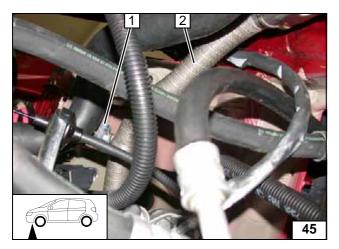


- 1 Corrugated tube with fuel line
- 2 180° moulded hose, 10 mm dia. clamp [2x]

Connecting metering pump







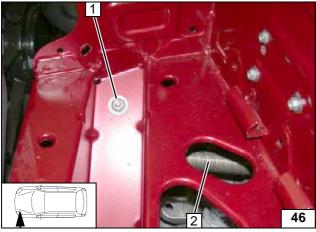
Exhaust gas

Sandero

Route exhaust pipe **2** using premounted angle bracket **1** as shown in the figure.



pipe

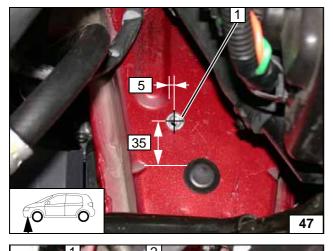


Fasten premounted angle bracket of exhaust pipe **2** as shown in the figure.

1 M6x20 bolt, large diameter washer [2x], flanged nut, existing hole



Fastening exhaust pipe



1 Copy hole pattern, 9.1 mm dia. hole, insert and tighten rivet nut

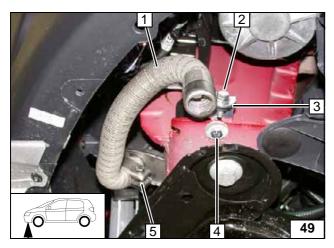
Fastening silencer



- 1 Hose clamp
- 2 Exhaust pipe
- 3 Silencer
- **4** M6x16 bolt, spring lockwasher, large diameter washer
- 5 Angle bracket
- 6 M6x20 bolt, spring lockwasher

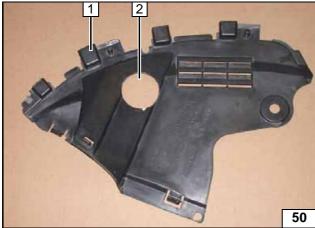
Mounting silencer





- 1 Exhaust end section
- 2 M6x20 bolt, p-clamp, flanged nut
- 3 Angle bracket
 4 M6x20 bolt, large diameter washer, flanged nut, existing hole
- 5 Hose clamp

Mounting exhaust end section



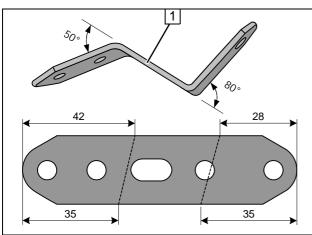
- 1 Lower wheel well trim
- 2 60mm dia. hole

Hole for exhaust end section



1 Align exhaust end section

Mounting wheel well trim

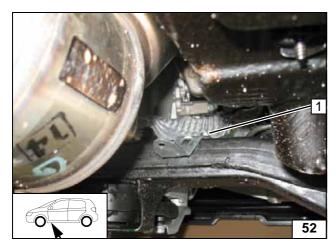


Duster 2 WD

1 Perforated bracket

Bending perforated bracket 2x

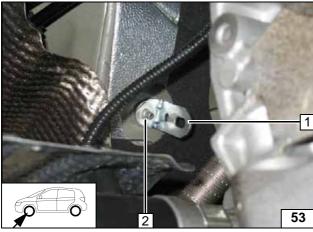




Attach long leg of perforated bracket to original vehicle bolt 1.

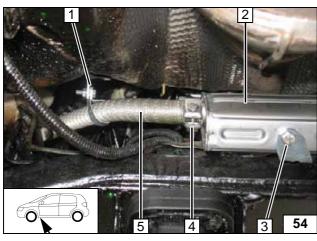


Mounting perforated . bracket



- 1 Angle bracket
- 2 Original vehicle stud bolt, plate nut with

Installing angle bracket

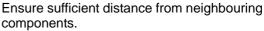


Ensure sufficient distance from neighbouring components.



- 1 M6x20 bolt, flanged nut, p-clamp
- 2 Silencer
- 3 M6x16 bolt, spring lockwasher
- 4 Hose clamp
- 5 Exhaust pipe

Mounting exhaust pipe

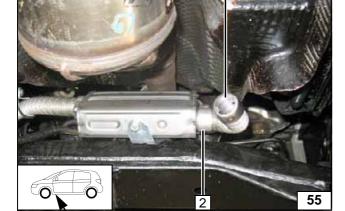




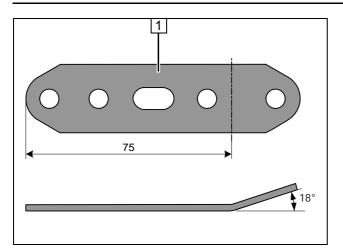
- 1 Exhaust end section
- 2 Hose clamp



Mounting exhaust end section



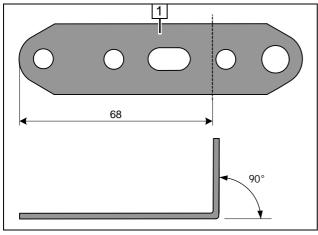




Duster 4 WD

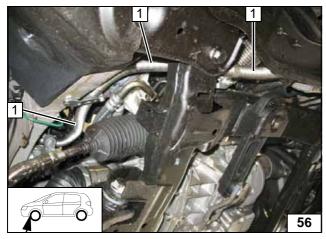
1 Perforated bracket 1

Bending perforated bracket 1



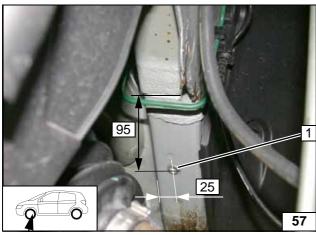
1 Perforated bracket 2

Bending perforated bracket 2



1 Exhaust pipe

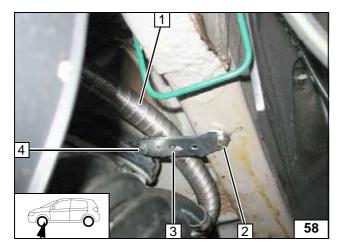
Routing exhaust pipe



1 9.1mm dia. hole, rivet nut

Installing rivet nut

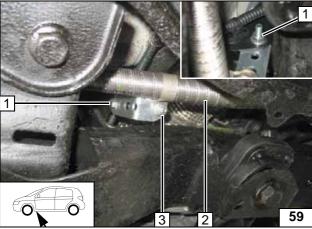




Ensure sufficient distance from neighbouring components.

- 1 Exhaust pipe2 M6x20 bolt, spring lockwasher3 Perforated bracket 1
- 4 M6x20 bolt, p-clamp, flanged nut

Mounting exhaust pipe

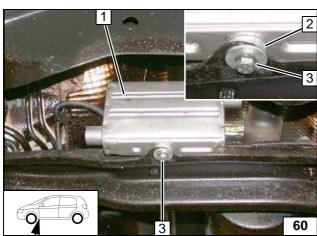


Ensure sufficient distance from neighbouring components.



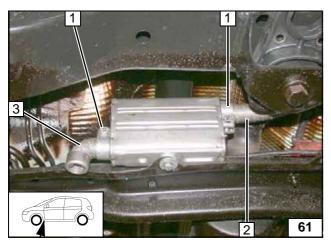
- 1 M6x20 bolt, perforated bracket 2, flanged
- 2 Exhaust pipe
- 3 M6x20 bolt, p-clamp, flanged nut

Mounting exhaust pipe



- 1 Silencer
- 2 5mm shim
- 3 M6x20 bolt, spring lockwasher, large diameter washer, 5mm shim, existing hole

Mounting silencer



- 1 Hose clamp [2x]
- 2 Exhaust pipe
- 3 Exhaust end section

exhaust pipe and end section





Coolant circuit

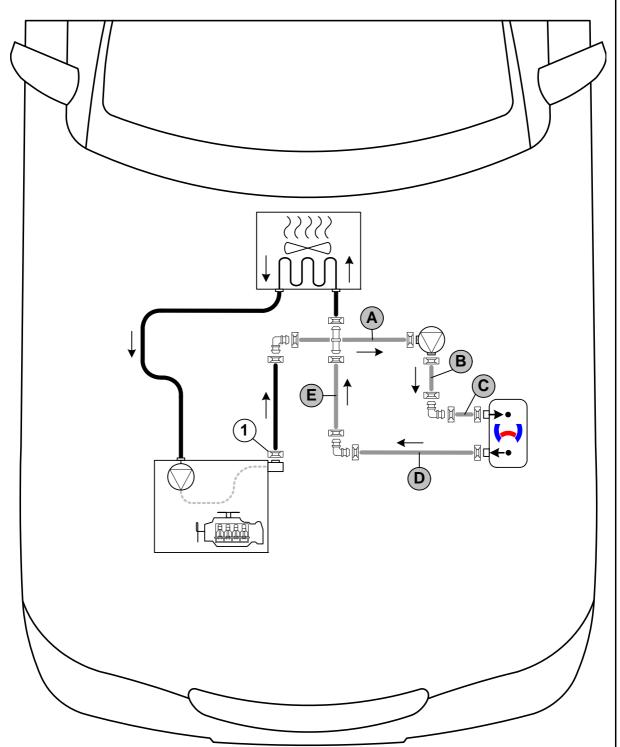
WARNING!

Any coolant running off should be collected in an appropriate container. Install coolant 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 "inline" based on the following diagram:



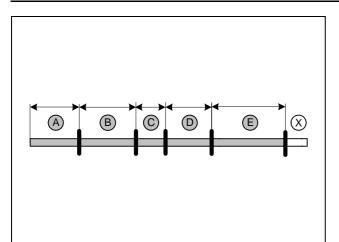
Hose routing diagram



All spring clips = 25mm dia. **1** = Spring clip = 28mm dia. (only for Sandero)! All connecting pipes without specific designation = and = 18x18mm dia.





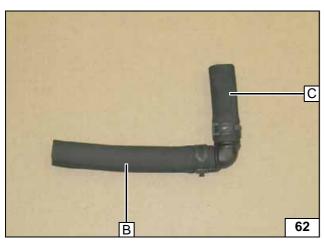


Duster

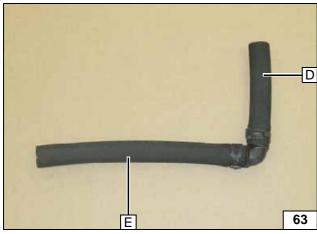
2 WD	/ 5 gear SG	4 WD / 6 gear SG		
A =	105	A =	105	
B =	150	B =	150	
C =	80	C =	80	
D =	120	D =	120	
E =	235	E =	255	

Cutting hoses to length

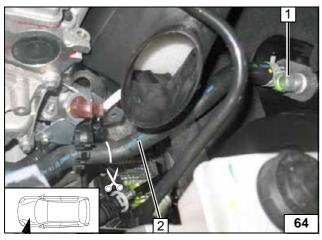
Discard section X.



Preparing hoses B and C



Preparing hoses D and E

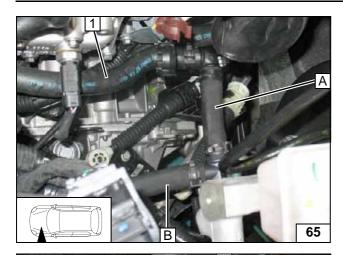


Heat exchanger outlet / engine inlet hose disassembled for better installation at position 1.

2 Hose on engine outlet / heat exchanger inlet

Cutting point





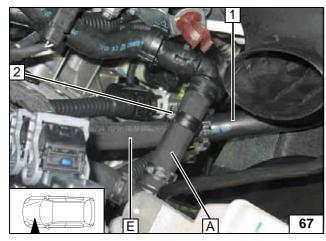
1 Hose on engine outlet

Connecting engine outlet



1 Connection pieces of heater inlet

Connecting heater inlet

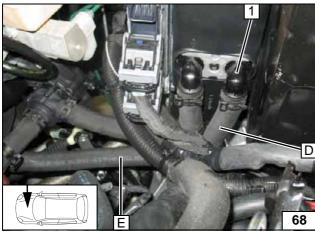


2WD / 5 gear manual transmission (SG)

Attach and align hose bracket **2** to heat exchanger inlet hose **1** and hose **A**.



Connecting heat exchanger inlet



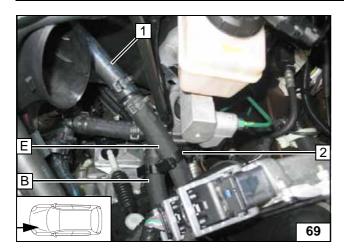
Align hoses. Ensure sufficient distance from neighbouring components.

1 Connection pieces of heater outlet



Connecting heater outlet



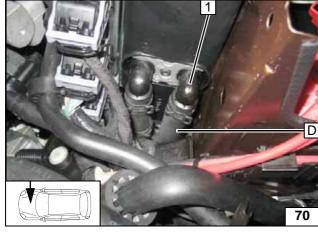


4WD / 6 gear manual transmission (SG)

Attach and align hose bracket ${\bf 2}$ to hoses ${\bf B}$ and ${\bf E}$.

1 Hose on heat exchanger inlet



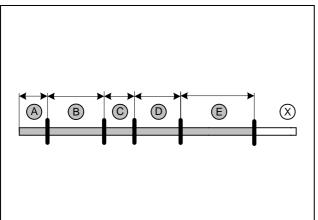


Align hoses. Ensure sufficient distance from neighbouring components.

1 Connection pieces of heater outlet



Connecting heater outlet



Sandero / Logan

Discard section X.

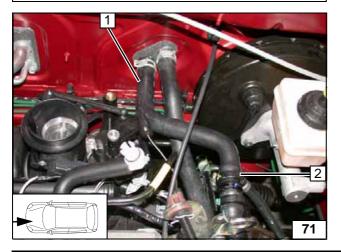
A = 60B = 180

C = 90D = 120

E = 420



Cutting hoses to length

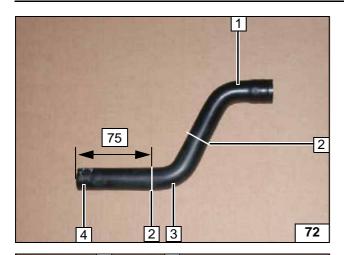


Dismount engine outlet / heat exchanger inlet hose 1. Carefully cut open plastic clamp 2.



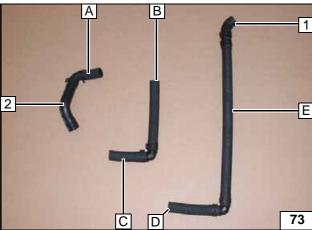
Cutting point





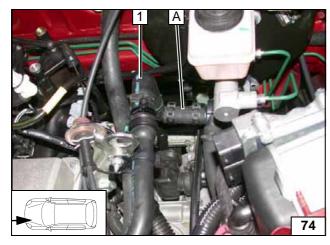
- **1** Hose section on engine outlet
- 2 Cutting point [2x]3 Hose section on heat exchanger inlet
- 4 Discard hose section

Preparing hose



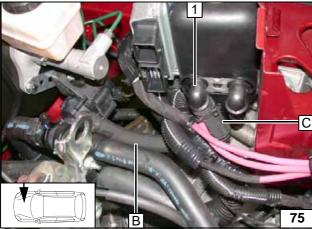
- 1 Hose section on heat exchanger inlet
- 2 Hose section on engine outlet

Preparing hoses



1 Hose section on engine outlet

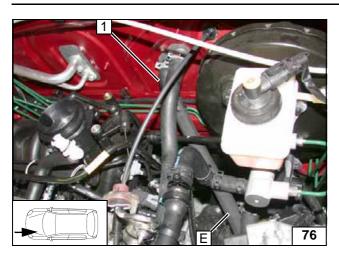
Connecting engine outlet



1 Connection pieces of heater inlet

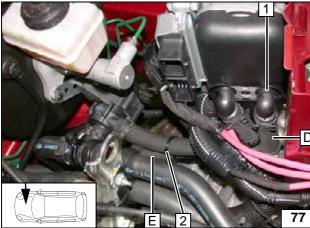
Connecting heater inlet





1 Hose section on heat exchanger inlet

Connecting heat exchanger inlet



Align hoses. Ensure sufficient distance from neighbouring components.

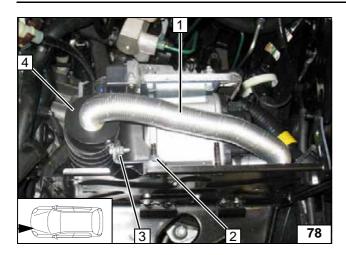




Connecting heater outlet





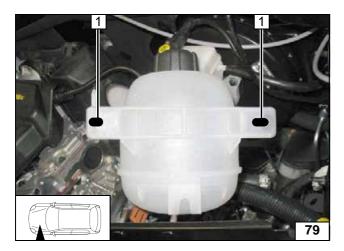


Combustion air

- 1 Combustion air pipe
 2 Original vehicle stud bolt, 10mm spacer, angle bracket, flanged nut
 3 M5x16 bolt, washer, 51mm dia. clamp, flanged nut
 1 Cilosopa
- 4 Silencer

Premounting silencer

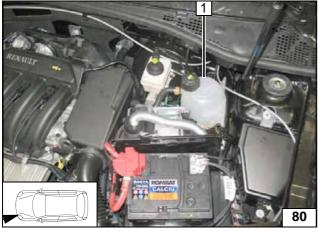




Final Work

1 Produce oblong hole [2x]

Enlarging holes



Fasten expansion tank 1. Ensure sufficient distance to heater!



Mounting expansion tank

WARNING!

Reassemble the disassembled components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose wires and tie back.

Only use manufacturer-approved coolant. Spray heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).



- Connect the battery.
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Adjust digital timer, teach Telestart transmitter
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Place signboard "Switch off parking heater before refuelling" in the area of the filler neck.
- For initial start-up and function checks, please see installation instructions



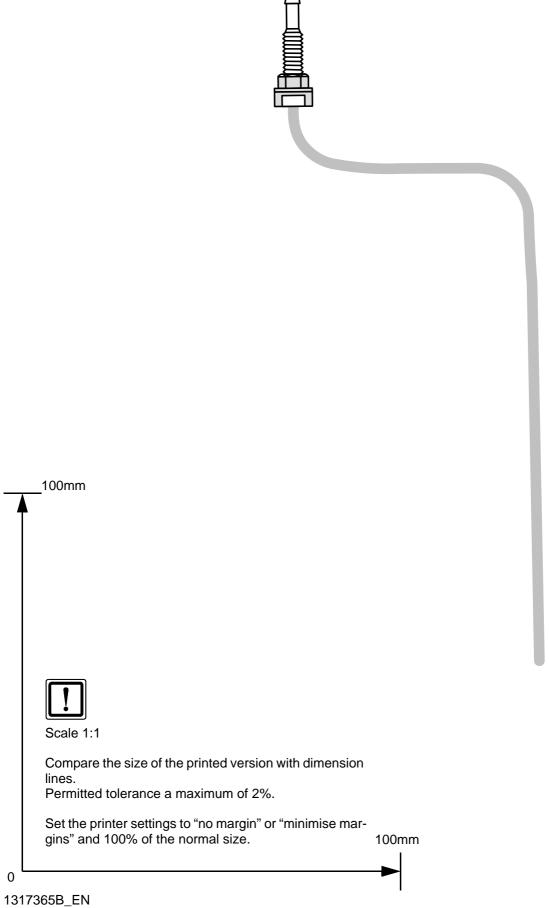




Webasto AG
Postfach 80
D-82132 Stockdorf / Germany
National Hotline: 01805 93 22 78
(14 Cent aus dem deutschen Festnetz)
Hotfax: 0395 5592 353
Hotmail: technikcenter@webasto.com
http://www.webasto.com



Template for fuel standpipe



33



Template for heater mounting



Operating Instructions for End Customer

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:

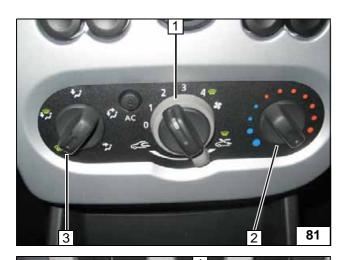
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

If the vehicle has passenger compartment monitoring this must be deactivated in addition to the vehicle settings for the heating operation.

Instructions on deactivation can be taken from the operating instructions of the vehicle.



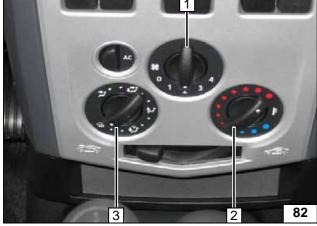
Before parking the vehicle, make the following settings:



Dacia Sandero and Dacia Duster

- 1 Set fan to level "1", or possibly "2"
- 2 Set temperature to "max."
- 3 Direct air outlet toward windscreen

Manual air condition-ing



Dacia Logan

- 1 Set fan to level "1", or possibly "2"
- 2 Set temperature to "max."
- 3 Direct air outlet toward windscreen

Manual air condition-ing