# Water Heater Unit



Thermo Top E Additional Heater	e1 00 0003
Thermo Top C Additional Heater	e1 00 0002
Thermo Top P Additional Heater	e1 00 0104

# Installation Instructions

# **Nissan Pathfinder and Navara**

2.5 liter Dieselfrom Model Year 2005For left-hand drive vehicles only



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, 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.

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### Validity

Manufacturer	Model	Туре	EG-BE No./ABE
Nissan	Pathfinder	R51	e9 * 2001/116 * 0051 *
Nissan	Pathfinder	R51	K492
Nissan	Navara	D40	L617

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
YD25	Diesel	128	2488
YD25	Diesel/DPF	126	2488

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

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

### Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	Nissan-specific heater unit delivery scope	See Nissan price list
1	Installation Kit for Nissan Pathfinder 2.5 liter Diesel	1303633B

#### Heater unit recommended for the respective vehicle class:

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

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

#### Foreword

These installation instructions apply to Nissan Pathfinder and Navara vehicles with 2.5 liter Diesel engines - for validity, see page 2 - from model year 2005 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

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

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

#### **General Instructions**

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

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

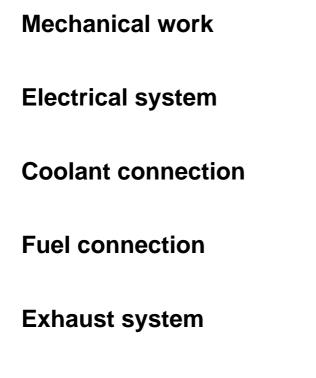
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

#### **Special Tools**

- Torque wrench for 2.0 10 Nm
- Hose clamping pliers

### **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.



Combustion air

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6

Special features are highlighted using the following symbols:









Specific risk of injury or fatal accidents.

Specific risk of damage to components.

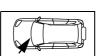
Reference to a special technical feature.

Specific risk of fire or explosion.

Reference to general installation instructions of Webasto components or to the manufacturer's vehiclespecific documents.

-<del>2</del>7



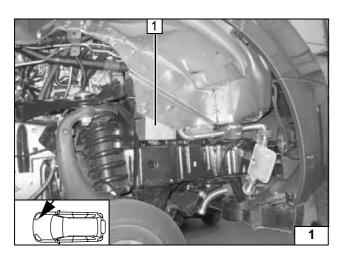


The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

### **Preliminary Work**

#### WARNING!

- 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.
- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- Disconnect and remove the battery.
- Depressurize the cooling system.
- Remove the engine cover.
- Remove the intake hose between the intercooler and the engine.
- Detach the fuel filter.
- Remove the right front wheel.
- Remove the right-hand wheel well trim.
- Remove the underride protection.
- Remove the lower footwell trim on the front passenger side (not with automatic air-conditioning).
- Expose the A/C control panel (only with automatic air-conditioning).

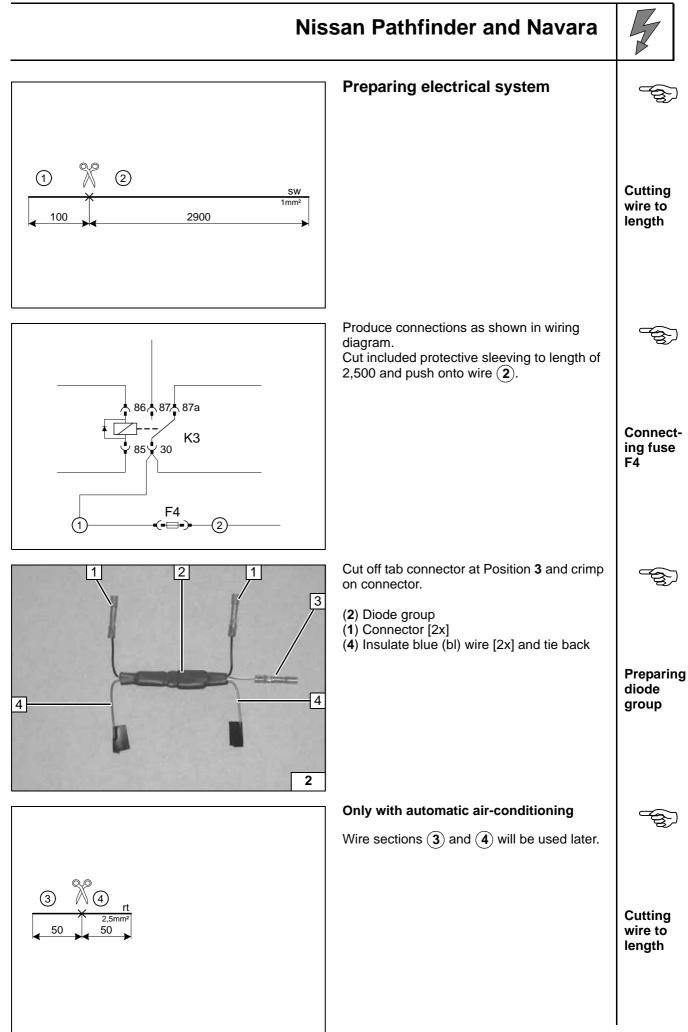


#### Heater unit installation location

1 Heater unit

Installation location







### **Electrical Connections**

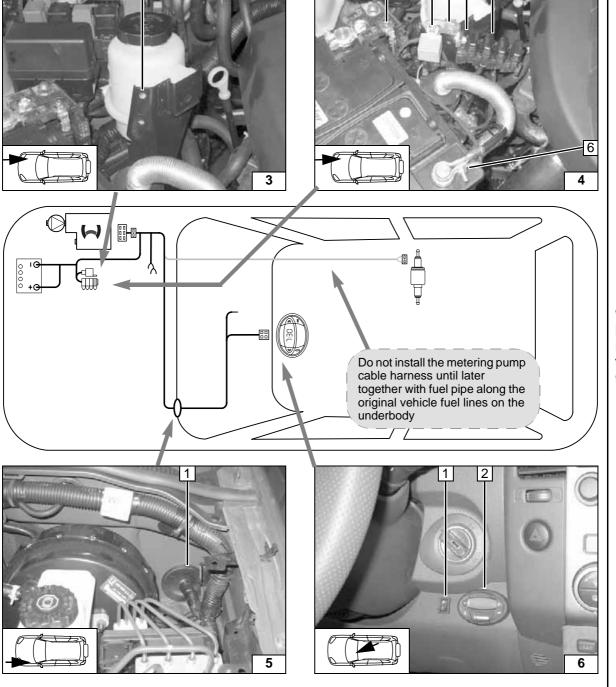
#### Fuse holder, relay K3

WARNING: Do not damage tank

(1) 6.5 mm dia. hole

#### Fuse holder, relay K3

- (3) M6x12 bolt, angle bracket, flanged nut
- (4) Retaining plate, M5x12 bolt, large diameter washer, flanged nut
- (5) Fuse holder mounted
- (2) K3 relay, M5x12 bolt, large diameter washer, flanged nut
- (1) Positive wire on positive support point
- (6) Ground wire on battery terminal

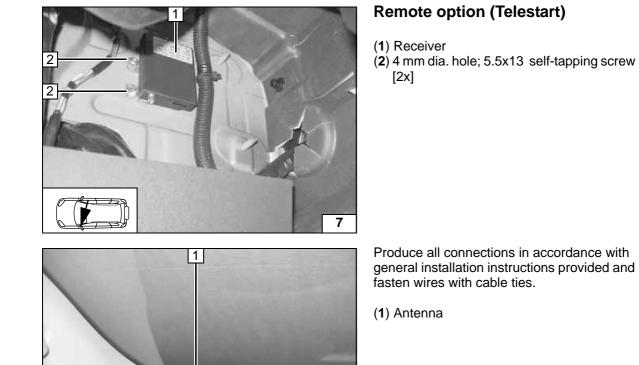


Wiring harness pass through (1) Protective rubber plug

Digital Timer and Summer/Winter Switch
(1) Summer/winter switch, hole 12 mm dia.
(2) Digital timer with extension wiring harness, drilling template



Wiring harness installation diagram

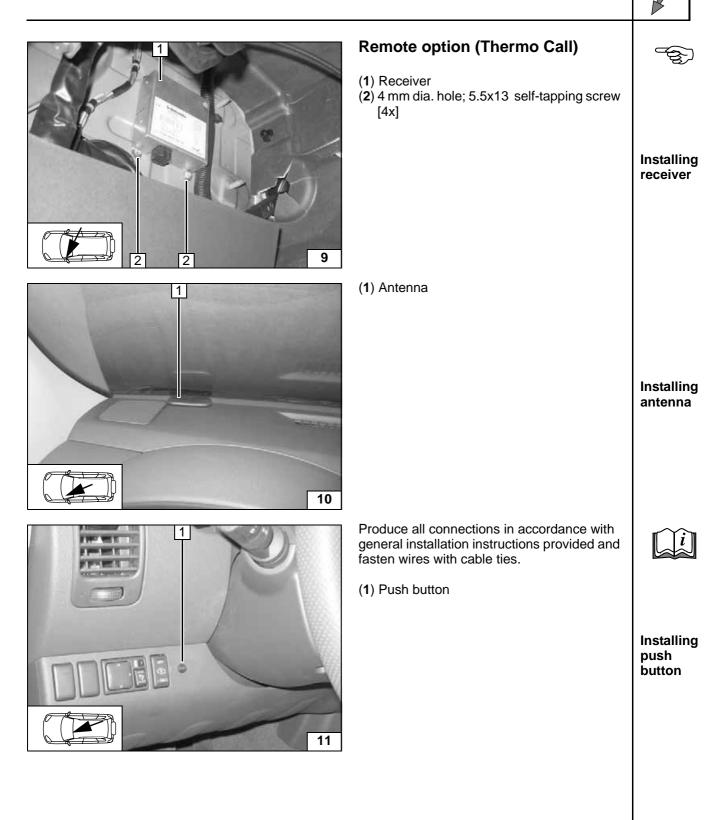


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Installing antenna

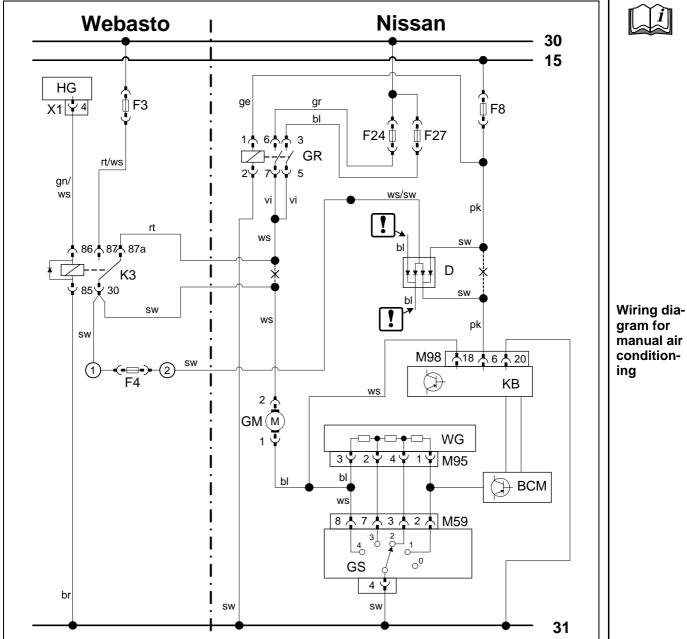
3

Installing receiver





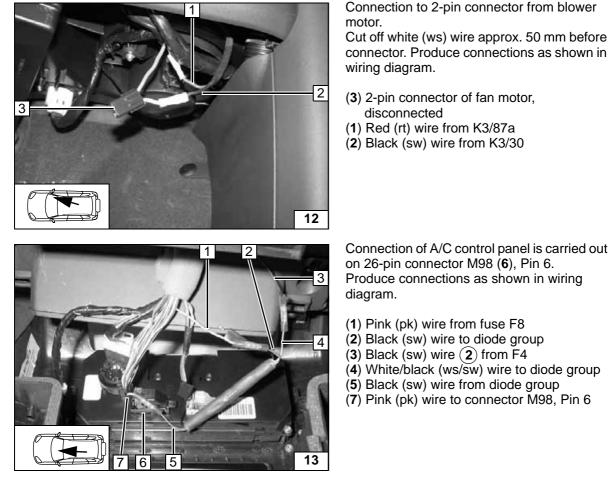
### Fan controller for manual air conditioning



Webasto components Nissa		Nissan	components	Colors and symbols	
HG	Heater unit	GM	Fan motor	rt	red
X1	6-pin heater unit connector	GR	Fan relay	WS	white
F3	25 A fuse	WG	Resistor group	SW	black
K3	Fan relay	M95	4-pin connector WG	br	brown
F4	Fuse, 3 A	GS	Fan switch	gn	green
D	Diode group	M59	8-pin connector GS	bl	blue
		F24	15 A fuse	gr	gray
		F27	15 A fuse	vi	violet
		F8	10 A fuse	pk	pink
		KB	Air-conditioning control panel		Insulate wire ends and
		M98	26-pin connector KB		tie back
				Х	Cutting point
				Wiring colors may vary.	

gram for manual air condition-

Legend



Connection of A/C control panel

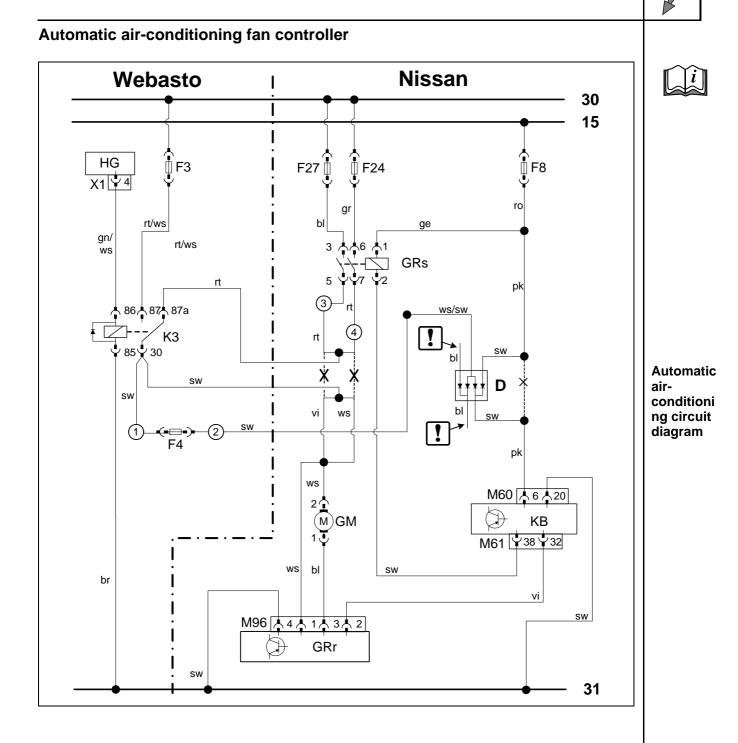
**Connect-**

ing fan

motor

Depending on the vehicle equipment and the outdoor conditions, the ultrasonic passenger compartment monitoring can be triggered during heater operation.

In these cases, the customer can deactivate the passenger compartment monitoring in accordance with the vehicle operating instructions when switching off the vehicle.

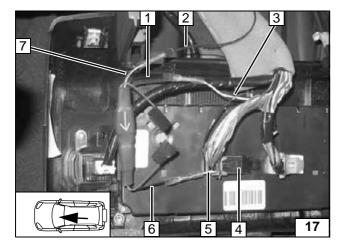


Webasto components		Nissar	n components	Colors	and symbols	
HG	Heater unit	F24	15 A fuse	rt	red	
X1	6-pin heater unit connector	F27	15 A fuse	WS	white	
F3	25 A fuse	F8	10 A fuse	SW	black	
F4	Fuse, 3 A	GRs	Fan relay, front	br	brown	
K3	Fan relay	GM	Fan motor, front	gn	green	
D	Diode group	KB	A/C control panel, front	bl	blue	
		M60	26-pin connector KB	ge	yellow	
		M61	40-pin connector KB	pk	pink	
		GRr	Fan controller, front	vi	violet	
		M96	Connector GRr		Insulate wire ends and	
					tie back	
				Х	Cutting point	
				Wiring colors may vary.		]

Legend

12

#### Nissan Pathfinder and Navara Fan motor is connected on original vehicle fan relay for front in engine compartment. (1) Fan relay, front (2) Relay carrier Fan relay 14 View of fan relay socket! \$ Seen from above! Imprint on relay or socket may differ from original vehicle wiring diagram, and is therefore irrelevant! 2 1 View of 3 6 relay 5 7 socket Route wiring harness from K3 relay to relay 3 1 Ś carrier and cut to length. Premount wiring harness with included yellow (ge) connector and wiring diagram. Connect prepared red (rt) wires (3) and (4). (1) Red (rt) wire from K3/87a 2 Preparing (2) Black (sw) wire from K3/30 wiring harness 15 4 Expose relay carrier as shown. Uncrimp original vehicle violet (vi) (2) and white (ws) (3) wires from relay socket (5), Pin 5 and 7, and cut off tab receptacles. Produce connections as shown in wiring diagram. (4) Relay carrier **Connect-**(5) Relay socket ing fan mo-(3) White (ws) wire to fan motor and fan tor 6 controller (2) Violet (vi) wire to fan motor and fan controller (1) Black (sw) wire from K3/30 (6) Red (rt) wire from K3/87a 16



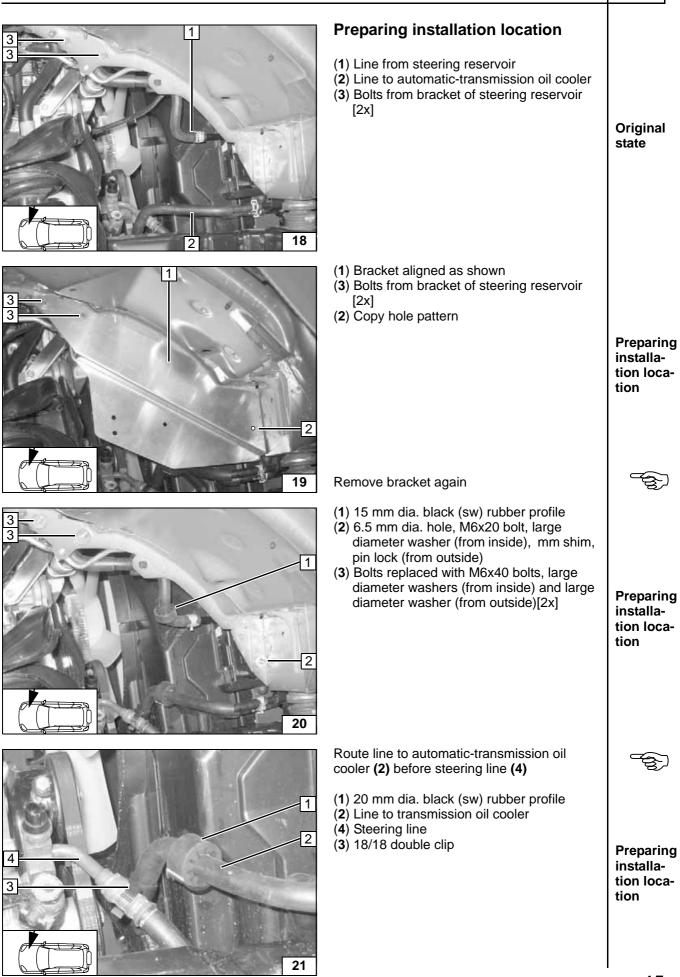
Connection of A/C control panel is carried out on left-hand 26-pin connector M98 (4), Pin 6. Produce connections as shown in wiring diagram.

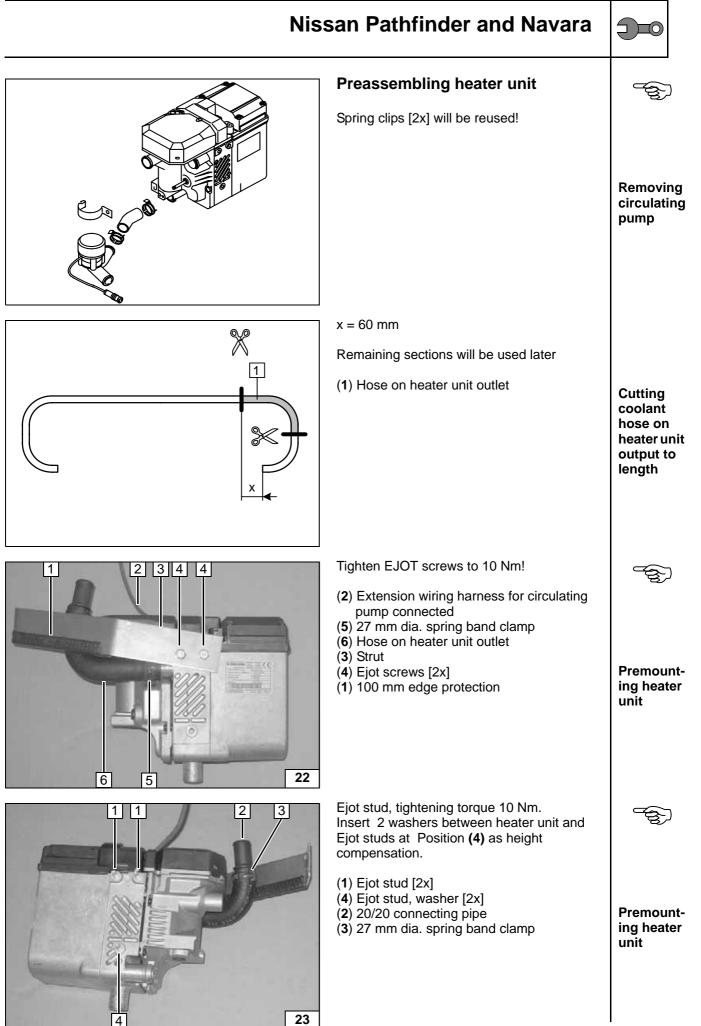
- (1) Black (sw) wire to diode group
- (2) Black (sw) wire (2) from F4 (3) Pink (pk) wire from fuse F8
- (5) Pink (pk) wire to connector M60, Pin 6
- (6) Black (sw) wire from diode group
- (7) White/black (ws/sw) wire to diode group

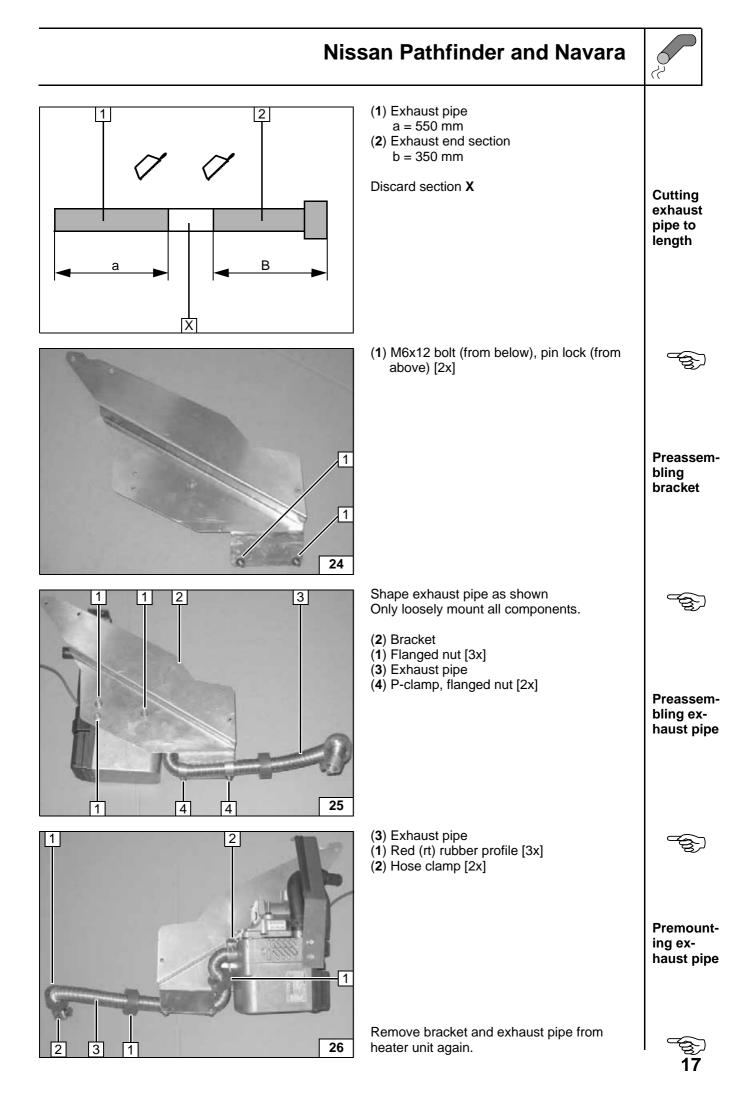
Actuating A/C control panel

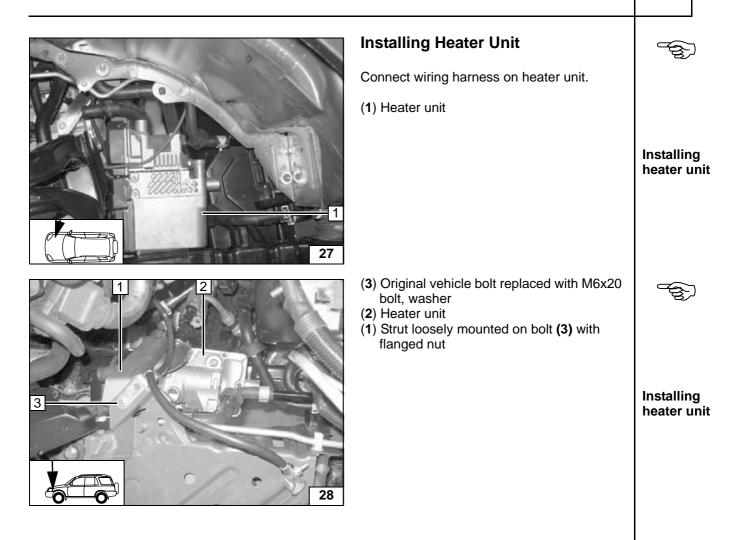
Depending on the vehicle equipment and the outdoor conditions, the ultrasonic passenger compartment monitoring can be triggered during heater operation.

In these cases, the customer can deactivate the passenger compartment monitoring in accordance with the vehicle operating instructions when switching off the vehicle.









### Coolant connection with manual transmission

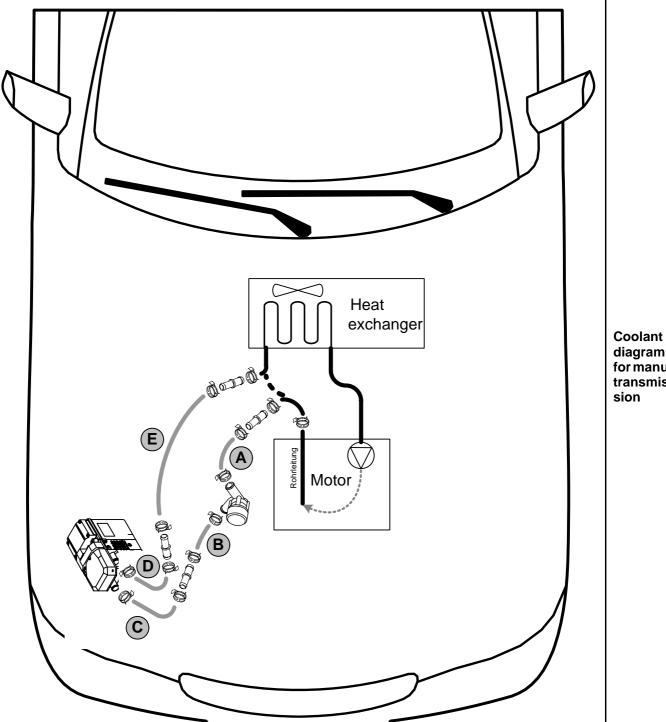
#### WARNING!

Tighten all hose clamps to 2.0 + 0.5 Nm.

Any cold water running off should be collected using an appropriate container!

Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position hose clamps and spring band clamps so that no other hose can be damaged.

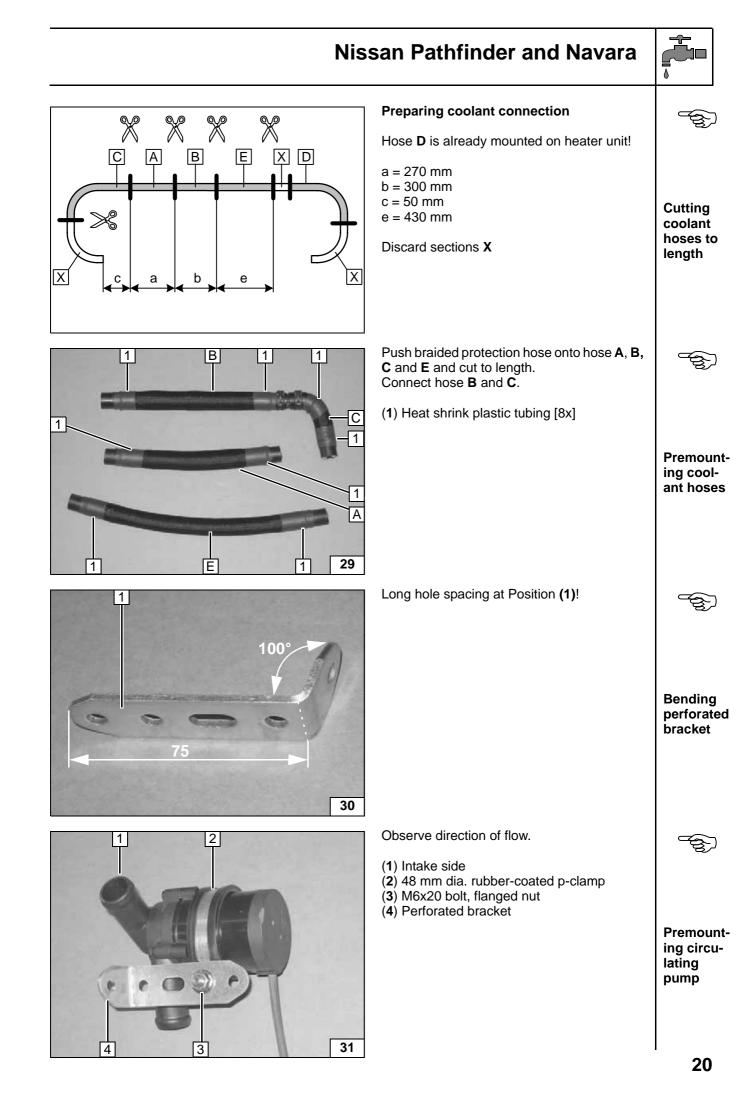
The connection should be "inline" based on the following diagram:

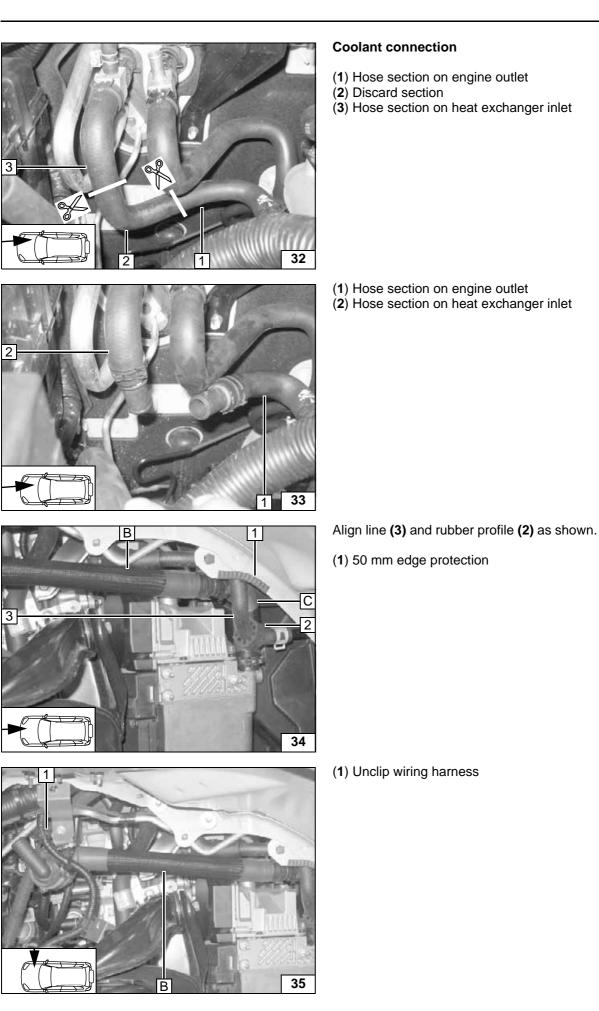


All clamps without a specific designation are 20-27 mm dia. hose clamps. All connecting pipe not specified are 20 mm x 20 mm dia.!



for manual transmis-





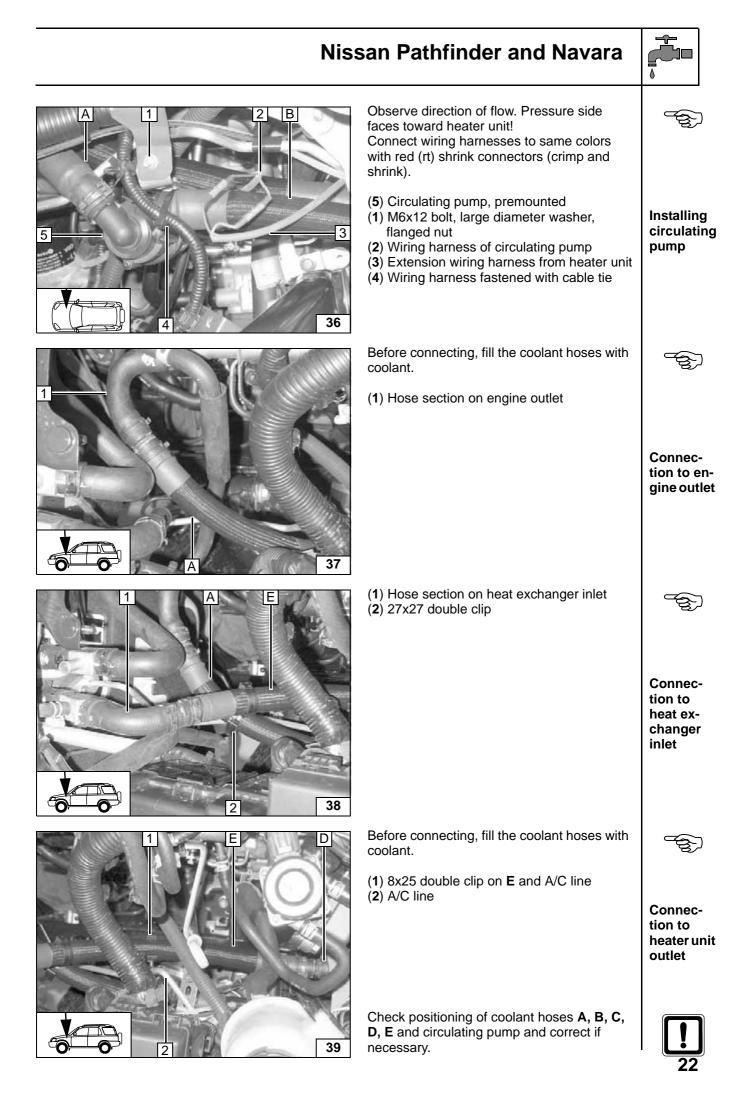
Mounting

connection pipes

Cutting point

Connection to heater unit inlet

Installation location of circulating pump



### Coolant connection for automatic transmission

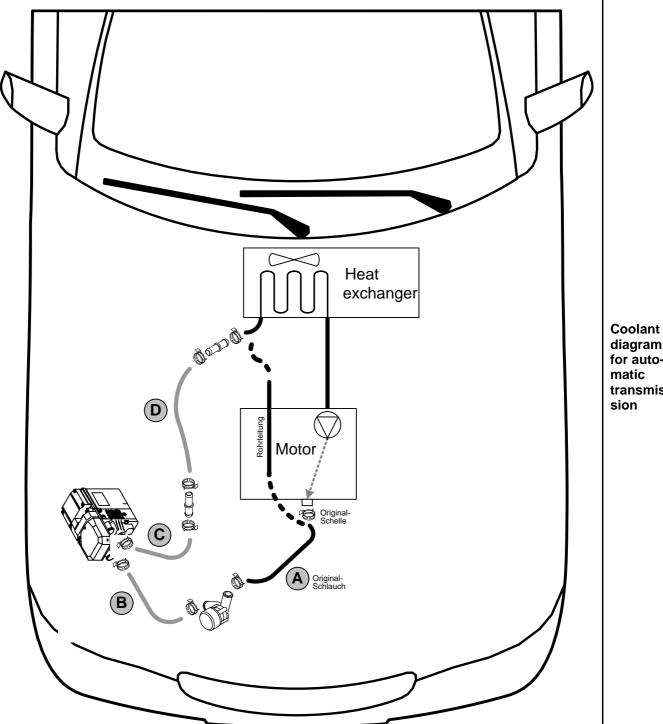
#### WARNING!

Tighten all hose clamps to 2.0 + 0.5 Nm.

Any cold water running off should be collected using an appropriate container!

Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position hose clamps and spring band clamps so that no other hose can be damaged.

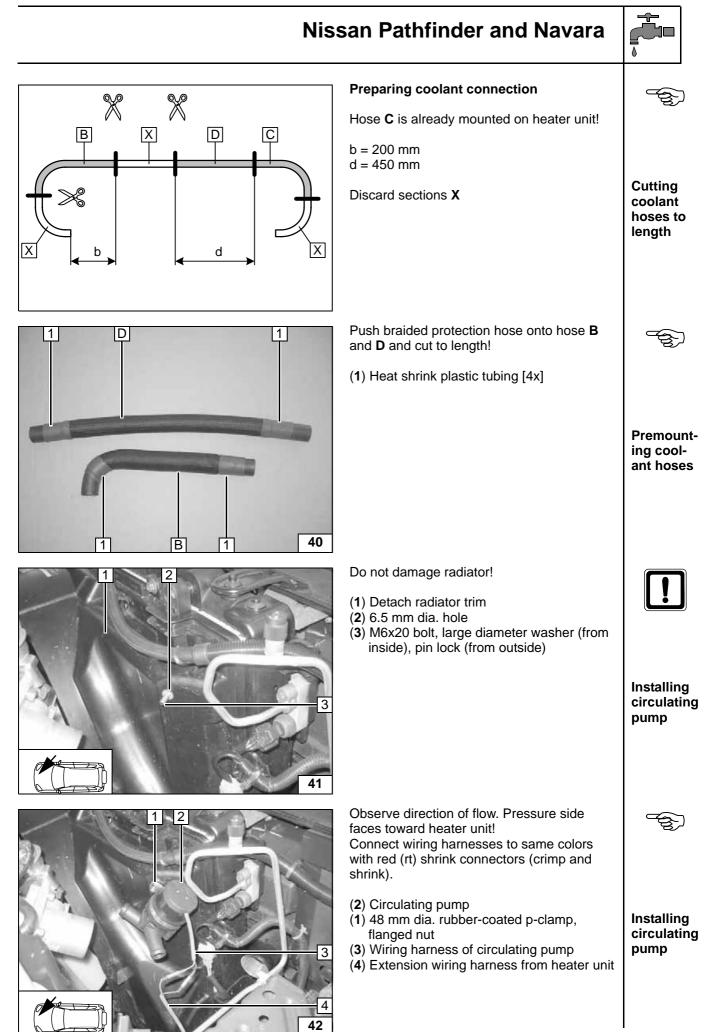
The connection should be "inline" based on the following diagram:

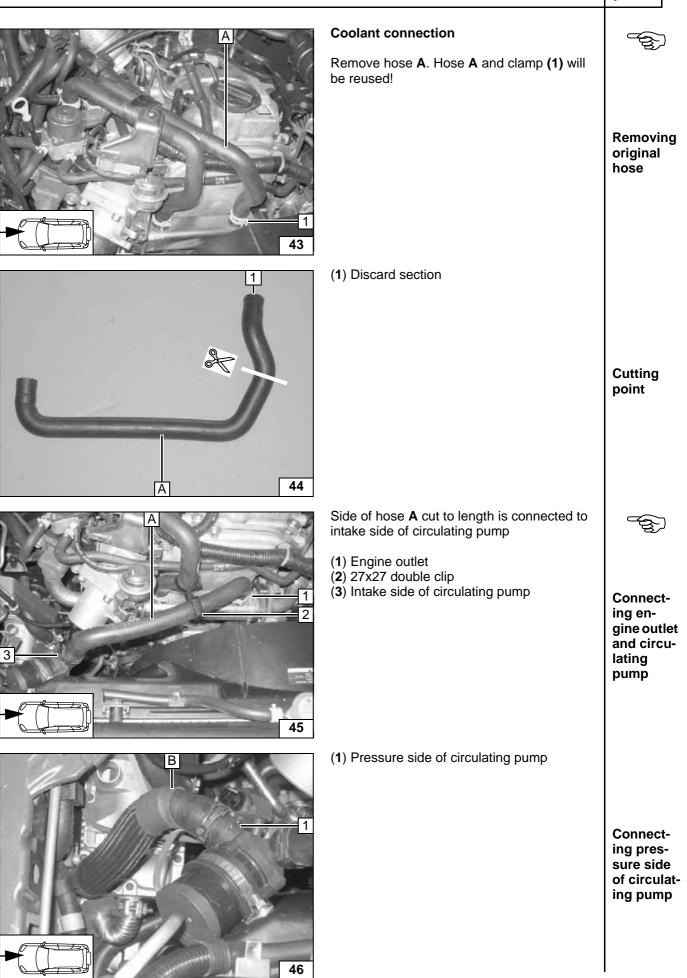


All clamps without a specific designation are 20-27 mm dia. hose clamps. All connecting pipe not specified are 20 mm x 20 mm dia.!

diagram for autotransmis-



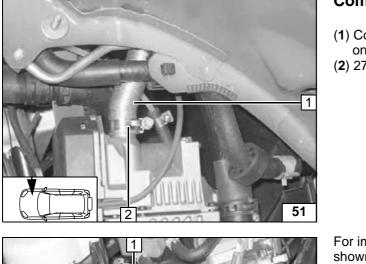




### **Nissan Pathfinder and Navara** Align line (1) and rubber profile (2) as shown. (1) 50 mm edge protection (2) Line from steering reservoir (3) Rubber profile (premounted) 1 Connec-2 tion to heater unit inlet 3 47 В (1) 8x25 double clip on **D** and A/C line D С Connection to heater unit outlet 48 Pipe (1) remains without function! ž Sz (3) Hose section on heat exchanger inlet (2) Discard hose section (**1**) Pipe 3 Cutting point 1 49 Before connecting, fill the coolant hoses with 8 coolant. (1) Hose section on heat exchanger inlet 1 Connection to heat exchanger inlet D Check positioning of coolant hoses A, B, C, D and circulating pump and correct if 50

necessary.

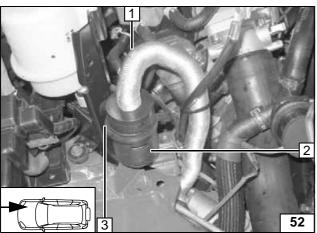




### **Combustion air**

- (1) Combustion-air intake pipe (slotted side on heater unit)
- (2) 27 mm dia. hose clamp

Installing combustion air pipe



For improved overview, fuse holder is not shown!

Shape combustion-air intake pipe as shown in picture.

- (1) Combustion-air intake pipe
- (2) Intake muffler
- (3) Retaining clip engaged in existing hole



Installing intake muffler

### **Fuel Connection**

#### **CAUTION!**

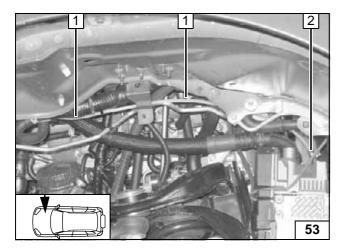
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

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

#### WARNING!

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



(1) Mecanyl line

- (2) Hose section, 10 mm dia. hose clamp [2x]
- Connection on heater unit

Route Mecanyl line and wiring harness of metering pump along vehicle wiring harness to firewall.

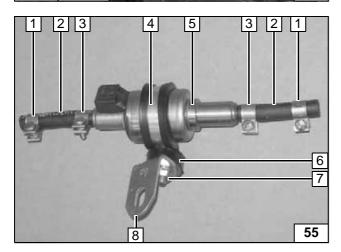
Route Mecanyl line and wiring harness of metering pump downward through cable duct **(2)**.

- (1) Mecanyl line, wiring harness of metering pump
- (2) Cable duct





Routing Mecanyl line and wiring harness of metering pump

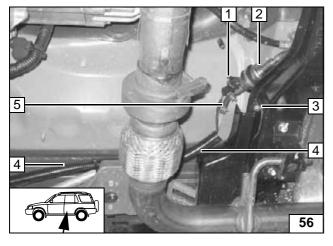


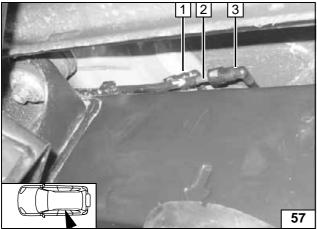
- (5) Metering pump
- (4) Rubber-coated p-clamp
- (6) Silent block

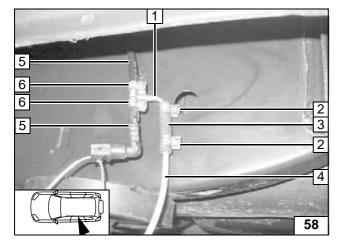
54

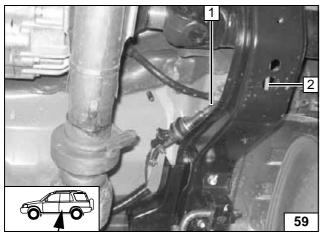
- (7) Flanged nut [2x]
- (8) Angle bracket
- (2) Hose section [2x]
- (1) 10 mm dia. hose clamp [2x] loosely mounted
- (3) 10 mm dia. hose clamp [2x]

Premounting metering pump









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

Fuel line from heater unit on pressure side of metering pump [side with connector]. Route Mecanyl line and wiring harness of metering pump in included protective pipe (4).

- (2) Premounted metering pump
- (3) Original vehicle bolt, flanged nut
- (4) Protective pipe
- (1) Wiring harness of metering pump, connector housing completed
- (5) Mecanyl line, 10 mm dia. hose clamp tightened

Fuel is removed from return line! Disconnect return line at coupling.

- (1) Supply line
- (2) Return line from fuel cooler
- (3) Return line to fuel tank

Disconnecting return line

Cut off return line as shown.

- (5) Return line
- (1) Metal 6x5x6 T-piece
- (6) 8 mm dia. hose clamp [2x]
- (3) Hose section
- (4) Remaining section of Mecanyl fuel line
- (2) 10 mm dia. hose clamp [2x]

Reconnect return line and route Mecanyl line along original vehicle fuel lines to metering pump

Fuel line from T-piece on intake side of metering pump [side without connector]. Check the position of the components; adjust if necessary. Check that they have free clearance.

- (2) Mecanyl line from T-piece
- (1) Hose section, 10 mm dia. hose clamp tightened

Align Mecanyl line and wiring harness of metering pump over entire length and fasten with cable ties



Installing metering pump





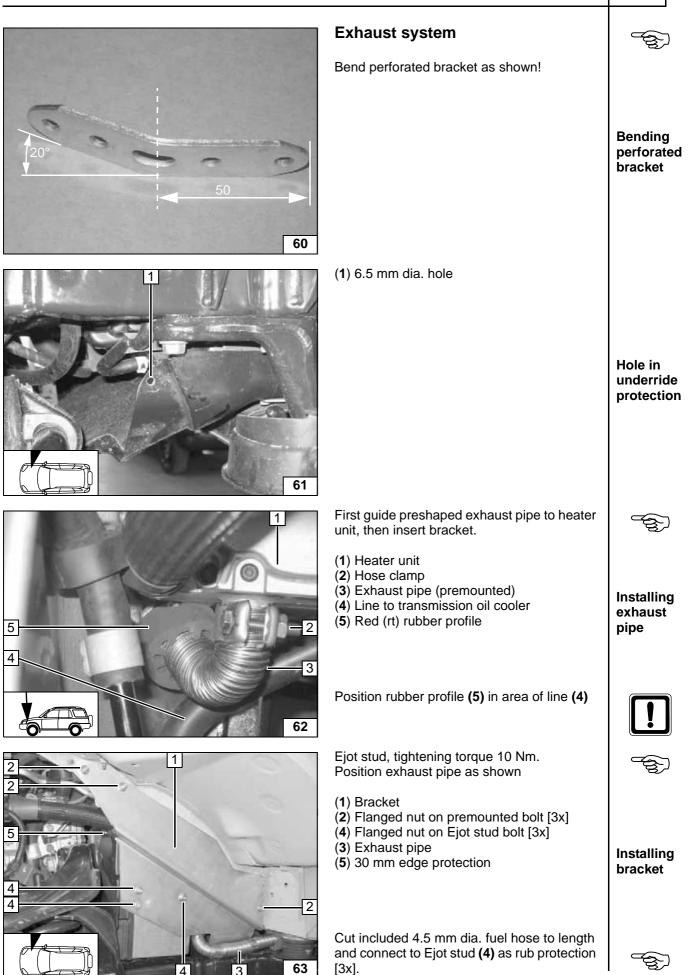
Fuel removal





Connection to metering pump





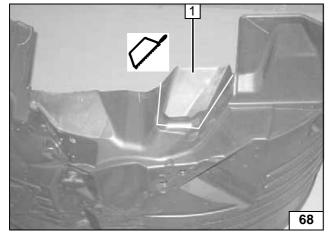
#### Nissan Pathfinder and Navara Fasten long hole spacing of perforated 4 1 2 1 3 bracket (4) on muffler. (2) Exhaust pipe (1) P-clamp [2x](8) Flanged nut on premounted bolt [2x] Installing exhaust (5) Hose clamp pipe and (7) Muffler (4) Perforated bracket (preshaped) muffler (6) M6x20 bolt, large diameter washer, flanged nut [2x each] Position rubber profiles (3) as shown [2x]. 7 64 Shape exhaust end section as shown. 1 1 2 (1) Red (rt) rubber profile [2x] (2) Hose clamp loosely mounted Premounting exhaust end section 65 (3) Exhaust end section 3 (5) Muffler (6) Hose clamp (2) P-clamp (1) M6x20 bolt, 10 mm shim, flanged nut Installing exhaust end section Position rubber profiles (4) as shown [2x]. 66 Check positioning of exhaust pipe and t-pipe end section over entire length and position of muffler and rubber profiles [5x] and correct if necessary. In particular, ensure sufficient distance of exhaust pipe, t-pipe end section and muffler from original vehicle lines and plastic parts. Positioning exhaust system 67

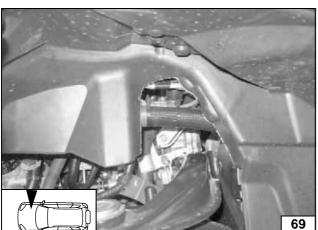
Cut out wheel well trim as shown.

Installing wheel well trim

Rework cut-out if necessary.

(1) Discard section





Ensure sufficient distance of wheel well trim from exhaust system. If necessary, cut out wheel well trim accordingly.

- (1) Exhaust pipe
- (2) Wheel well trim
- (3) Exhaust end section



 $\langle \cdot \rangle$ 

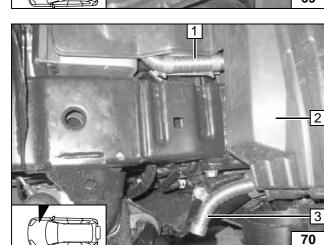
T S

Cutting out wheel well trim

Too Sol

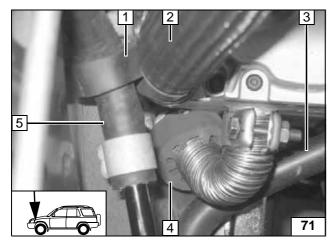
Installing wheel well trim

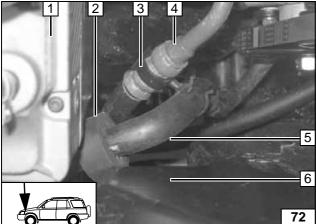
Installing wheel well trim



32







### **Final Work**

Position rubber profiles and lines as shown.

- (1) Black (sw) rubber profile positioned on hose of heater unit inlet (2)
- (4) Red (rt) rubber profile positioned on line (3)
- $({\bf 3})$  Line to automatic-transmission oil cooler
- (5) Line from steering reservoir

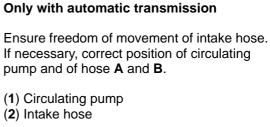
Positioning rubber profiles and lines

Position rubber profile, lines and spacer bracket as shown.

- (1) Heater unit
- (2) Black (sw) rubber profile positioned between heater unit and radiator trim (6)
- (3) Spacer bracket
- (4) Steering line
- (5) Line to transmission oil cooler
- (6) Radiator trim

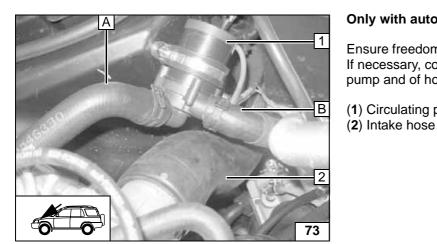


Positioning rubber profiles and lines





Installing intake hose



#### WARNING!

Reassemble the disassembled components in reverse order.

Check all hoses, hose, spring and Caillau clamps, as well as all electrical connections for firm seating. Secure all loose cables using cable ties.

Spray the heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Connect the battery
- Bleed and fill the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Adjust the vehicle heater with automatic air-conditioning or without automatic air-conditioning according to "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.





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### **Nissan Pathfinder and Navara Operating Instructions for End Customer** TS: Please remove page and add to the vehicle operating instructions. Before parking the vehicle, make the following settings: (2) Direct air outlet toward windshield 1 2 (1) Set fan to level "1", or possibly "2" (3)Set temperature to "max." Manual air conditioning 74 (1) Set temperature to "HI" [2x] (2) Direct air outlet toward windshield (3) Set fan speed to level 2 (possibly to 3) NH COS Depending on the vehicle equipment and the outdoor conditions, the ultrasonic passenger Automatic compartment monitoring can be triggered air-condiduring heater operation. tioning In these cases, the passenger compartment monitoring can be deactivated in accordance with the vehicle operating instructions when switching off the vehicle. 75 3