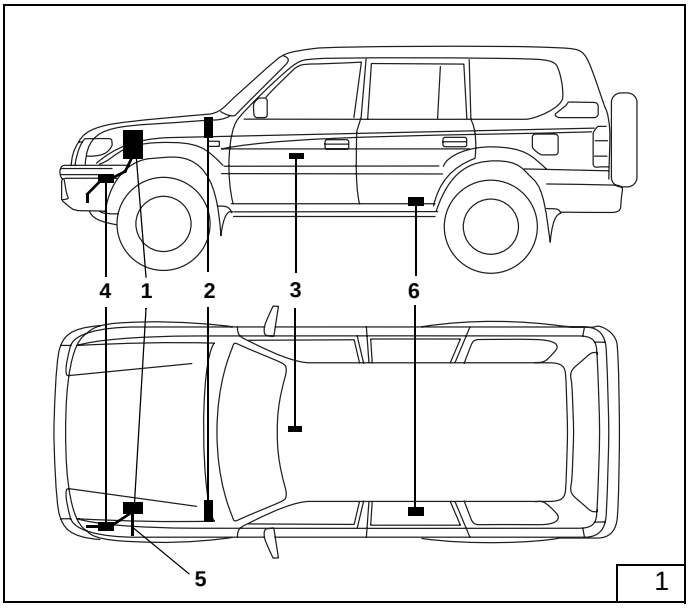
Water Heater Unit

Thermo Top Z/C Additional Heater
Mark of Conformity~~~ S 289 / ~~~ S 292



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Legend for Figure 1

1 Thermo Top Z/C-B/-D heater unit
2 Blade-type fuse holder and fan relay
3 Digital timer
4 Exhaust muffler
5 Combustion-air intake pipe
6 Metering pump

Special Tools

Hose clamping pliers
Torque wrench for 2.0 - 10 Nm
TORX E5 3/8'' socket

Installation Instructions

Toyota
Land Cruiser

Gasoline and Diesel

For left-hand drive vehicles only

See Page 2 for validity

**Vehicle types, engine types and equipment variants, which are not listed in these installation suggestion, have not been tested. However, installation according to this installation suggestion may be possible.
In any case, the approval regulations on Page 2 must be observed!**

**Note:
The general type approval (ABG)
has been applied for with the Federal Office of Motor Vehicles and
has not yet been granted!**

Table of Contents

ID No. 64752D_EN Printed in Germany 07/01 Printing: Steffen

Heater Unit/Installation Kit

Quantity	Designation	Order No.
1	***Thermo Top* Z/*C-B* Water Heater Unit with Delivery Scope**	**906 04A**
	or	
1	***Tele Thermo Top* Z/*C-B* Water Heater Unit with Delivery Scope**	**670 83A**
	or	
1	***Thermo Top* Z/*C-D* Water Heater Unit with Delivery Scope**	**892 44A**
	or	
1	***Tele Thermo Top* Z/*C-D* Water Heater Unit with Delivery Scope**	**670 87A**
Also required:		
1	**Installation Kit for TOYOTA Land Cruiser J 9 *Thermo Top* Z/*C-B/-D***	**647 50D**

Validity

Manufacturer	Model	Type	EG-BE No.
Toyota	Land Cruiser	J 9	e6*93/81*0023*..

Engine type	Engine model	Output in kW	Displacement in cm^3
1KZ-TE	Diesel	92	2982
5VZ-FE	Otto/6	131	3378
1KD-FTV	Diesel	120	2982

Foreword

These non-binding installation instructions apply to TOYOTA Land Cruiser J 9 passenger cars - for validity, see title page - from model year 1997 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 instructions" for the ***Thermo Top Z/C*** should be observed. The corresponding rules of technology must be complied with during installation.

WARNING:
The approval regulations must be observed!

In the Federal Republic of Germany, the retrofitting of the Thermo Top Z/C auxiliary heater according to this installation suggestion is subject to approval, as there is no special supplement to the General Type Approval (ABG) for this purpose. Installation must be carried out according to the installation instructions. It must be checked

a) during the type approval of the vehicles according to §20 of the German Federal Motor Vehicle Safety Standards (StVZO),
b) during the individual approval according to §21 of the StVZO or
c) during the expertise according to §19 of the StVZO by an officially recognized expert or tester for motor vehicle traffic, a motor vehicle expert or an employee according to Section 4 of Appendix 8b to the StVZO

and in case c) it must be certified with specification of the vehicle manufacturer, vehicle model and vehicle identification number on the approval certificate. The validity of the type approval is dependent on this.

Note on Vehicles with Gasoline Engine

Please ask your customers to deliver the vehicle with the smallest possible fuel tank contents, as the fuel tank must be lowered and the fuel-tank sending unit removed during installation in vehicles with a gasoline engine!

General Instructions

- Provide bare areas on the 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)

General Preliminary Work

- 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.

Engine compartment

WARNING:
Disconnect both vehicle batteries.

- Remove the left-hand battery (only on KDJ 95)
- Release the pressure from the cooling system.

Outside of vehicle

- Open the fuel tank cap, release the pressure from the fuel tank system and close the fuel tank cap again
- Remove the trim or splash guard (rubber) in the front left wheel well

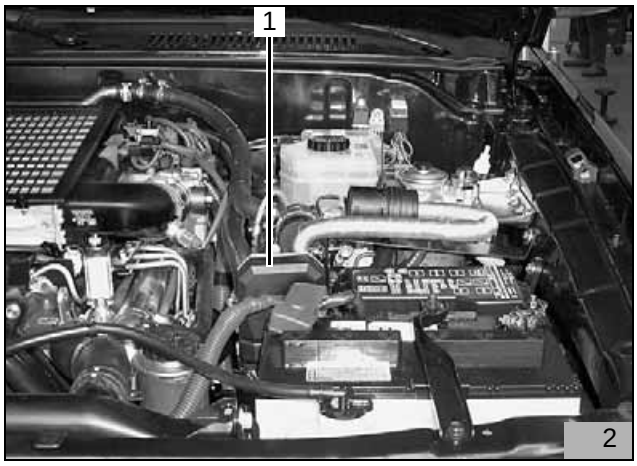
Underside of vehicle

- Remove the soundproofing pan (diesel)

Heater unit installation location

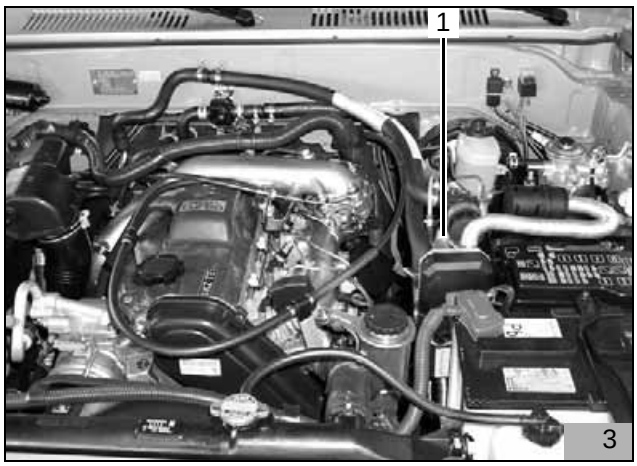
1KD-FTV

Installation location and installation position (Figure 2)
The heater unit (2/1) is installed on the left-hand wheel well



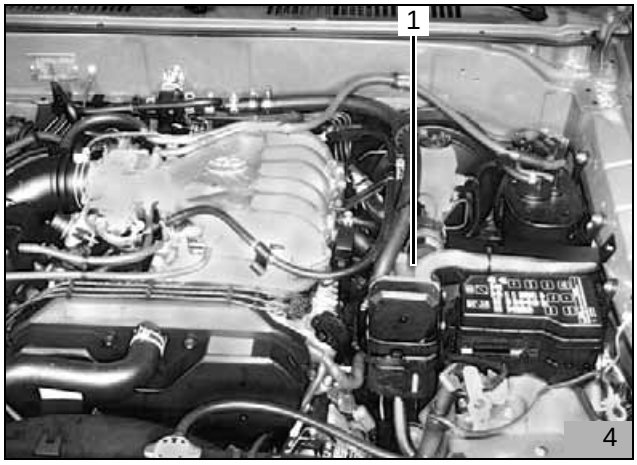
1KZ-TE

Installation location and installation position (Figure 3)
The heater unit (3/1) is installed on the left-hand wheel well



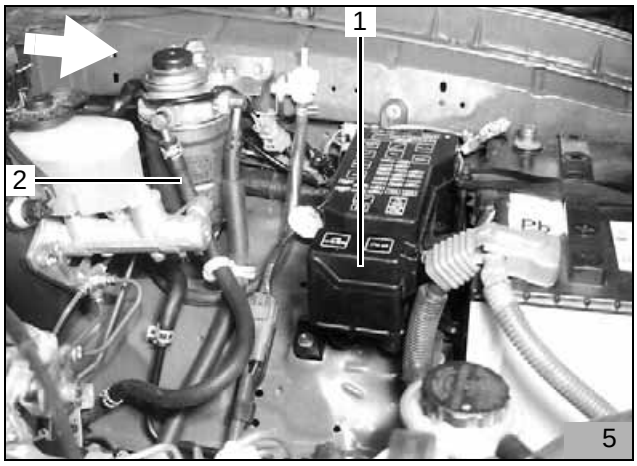
5VZ-FE

Installation location and installation position (Figure 4)
The heater unit (4/1) is installed on the left-hand wheel well

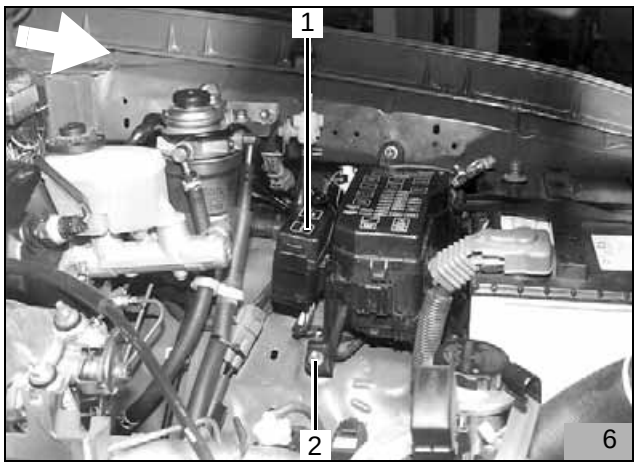


Preliminary Work for KZJ 9 Diesel and KDJ 95

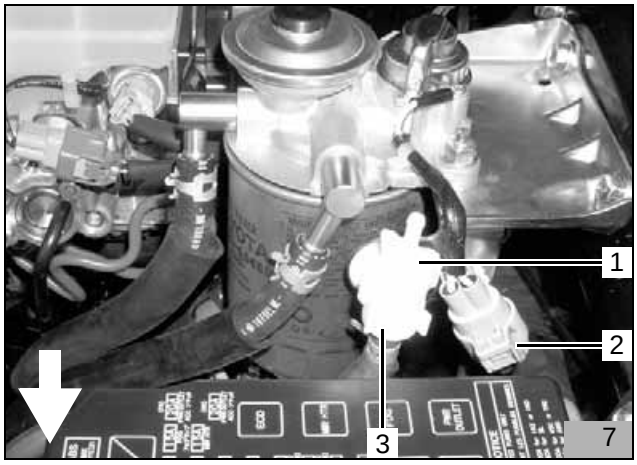
- Shorten fuel hose (5/2) by 150 mm and route as shown in Figure 6
- Unclip relay box (5/1)



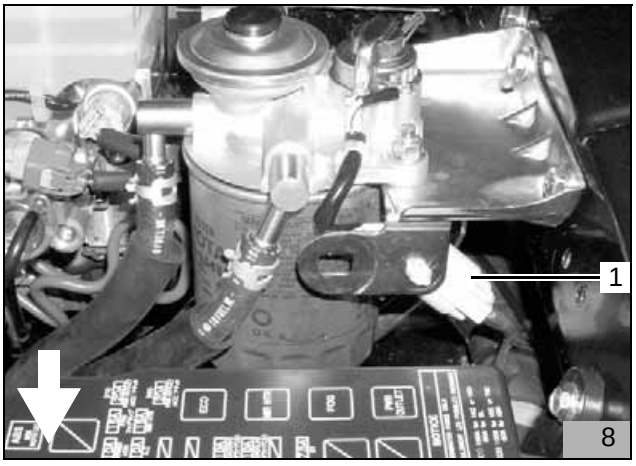
- Unscrew bolt (6/2) of relay and fuse box and route wiring harness of relay box (6/1) behind bracket as shown in Figure 6
- Refasten relay and fuse box



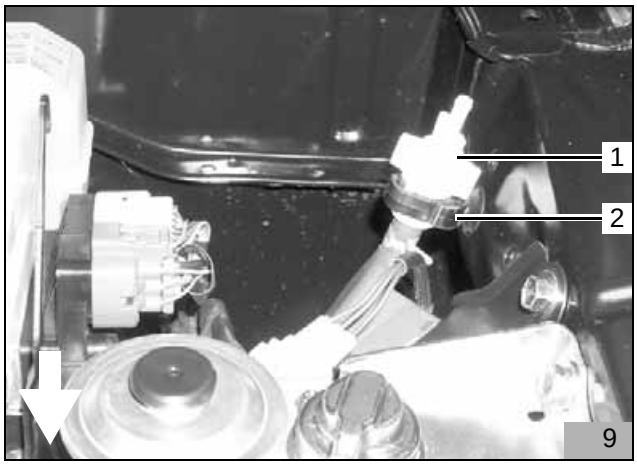
- Unclip water drain valve (7/1) from clip (7/3)
- Remove clip (7/3) and discard



- Unclip connector (8/1; 7/2) and clip in again as shown in Figure 8



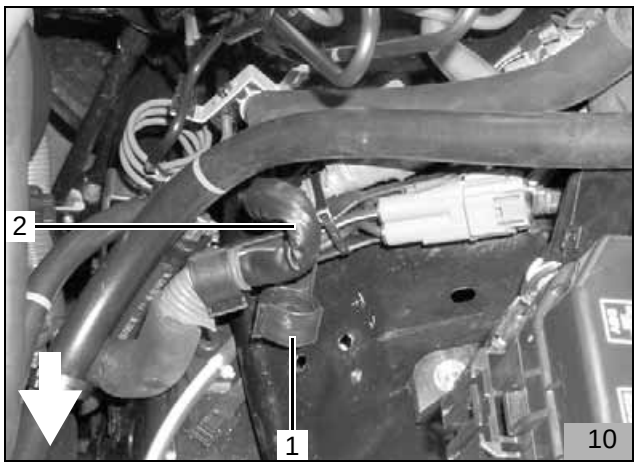
- Fasten water drain valve (9/1) in existing hole on fender side wall with clip (9/2) provided as shown in Figure 9



- Unclip original vehicle wiring harness (10/2)
- Remove clip (10/1) from hole

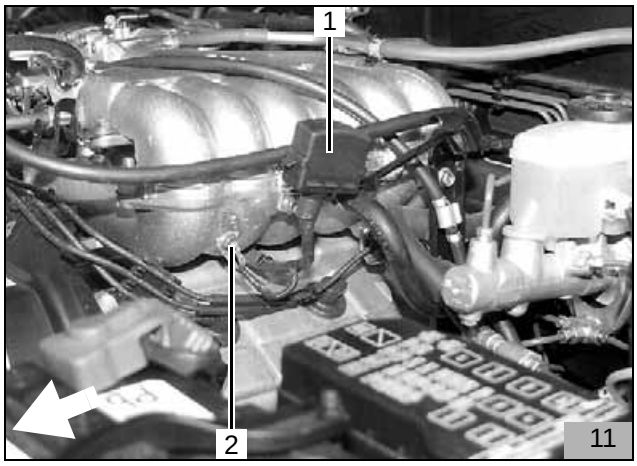
Note:
The hole is required for the heater unit bracket

- Relocate original vehicle of wiring harness (10/2) as shown in Figure 10 and secure it with a cable tie

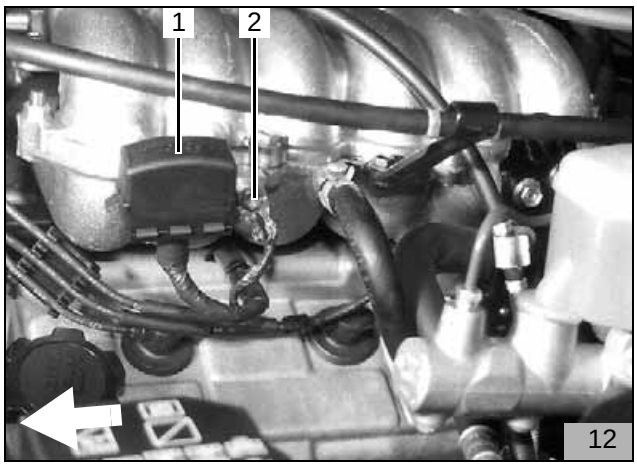


Preliminary Work for VZJ 9 Gasoline

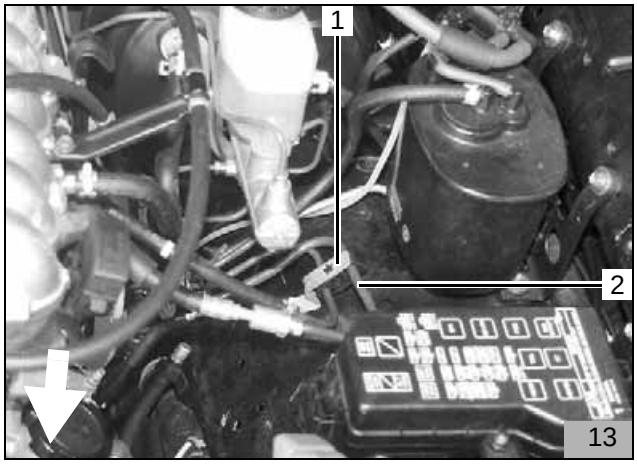
- Remove diagnosis socket outlet (11/1)
- Remove ground wire (11/2)



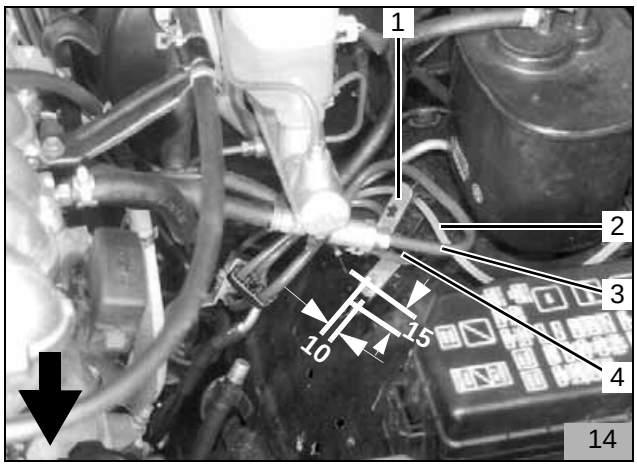
- Refasten diagnosis socket outlet (12/1) and ground wire (12/2) as shown in Figure 12



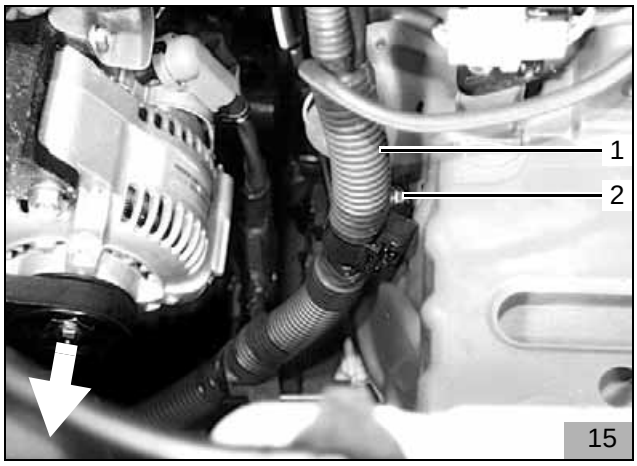
- Remove bracket (13/1) for fuel lines
- Remove fuel supply line (13/2) from bracket (13/1)



- Drill 7 mm dia. hole for bracket (14/1) as shown in Figure 14 (reference point is existing hole for bracket)
- Carefully form fuel lines (14/3,4) as shown in Figure 14
- Insert Mecanyl fuel line (14/2) for heater unit in bracket in place of fuel supply line (14/3)
- Refasten bracket (14/1) with existing nut as shown in Figure 14

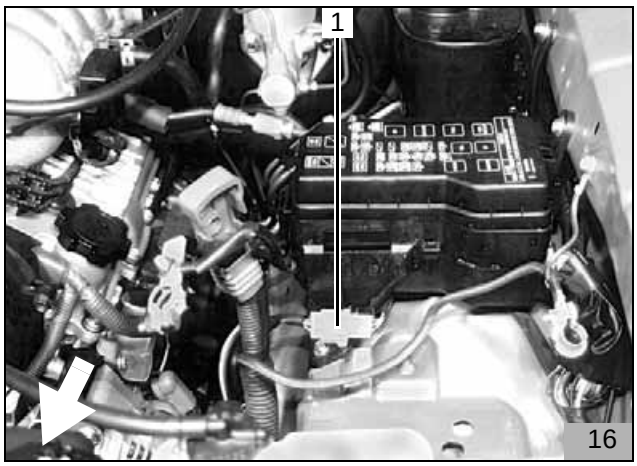


- Disconnect wiring harness (15/1) from positive battery terminal on weld-in nut (15/2)
- Align wiring harness (15/1) as shown in Figure 15 and relocate approx. 10 mm toward front with existing bolt, spring lockwasher and nut
- Remove clamp, turn and refasten wiring harness as shown



15

- Unclip connector under fuse holder and disconnect
- Reconnect connector (16/1) before fuse holder and position as shown in Figure 16



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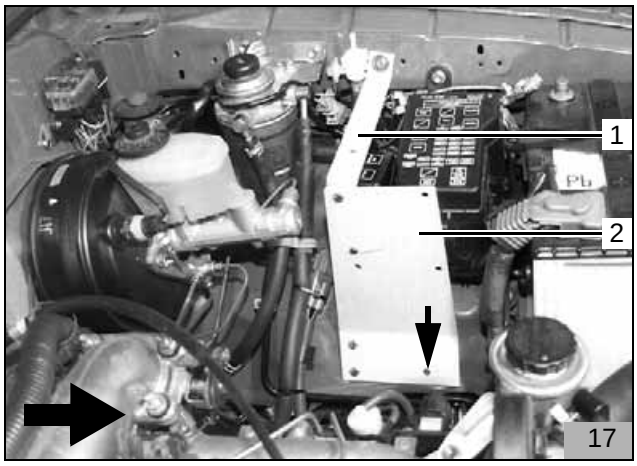
Installing Bracket

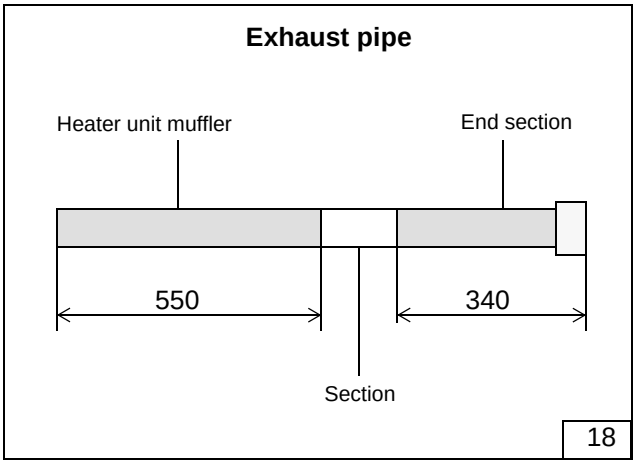
KZJ 9 diesel, VZJ 9 gasoline and KDJ 95 (diesel shown)

- Loosely fasten bracket (17/2) on existing holes on wheel well with two M6x20 bolts
- Loosely fasten strut (17/1) in existing weld-in nut on edge of fender with M6x20 bolt, large diameter washer and spring lockwasher
- Loosely fasten strut on bracket (17/2) with M6x20 bolt, spring lockwasher and nut
- Align bracket (17/2) and copy hole pattern to wheel well
- Remove bracket again
- Drill 7 mm dia. hole (arrow) in wheel well



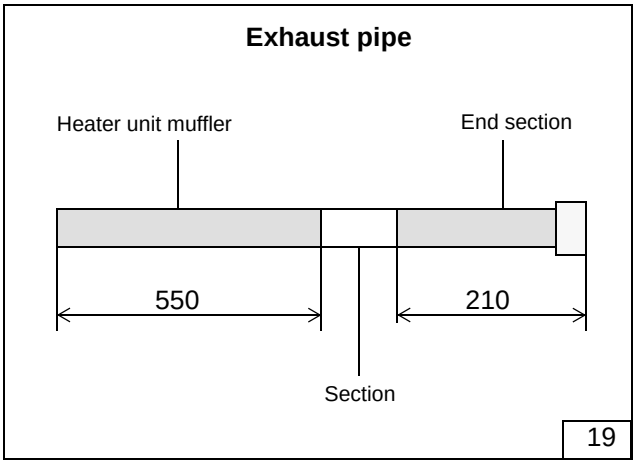
KZJ 9 diesel and VZJ 9 gasoline

- Cut exhaust pipe and exhaust-pipe end section to length for KZJ 9 diesel and VZJ 9 gasoline as shown in Figure 18



KDJ 95

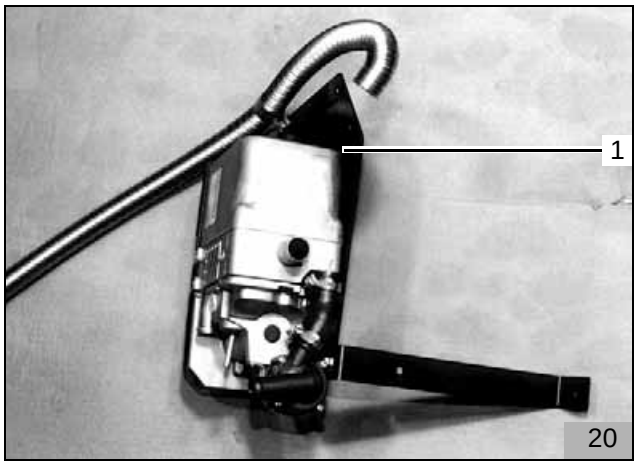
- Cut exhaust pipe and exhaust-pipe end section to length for KDJ 95 as shown in Figure 19



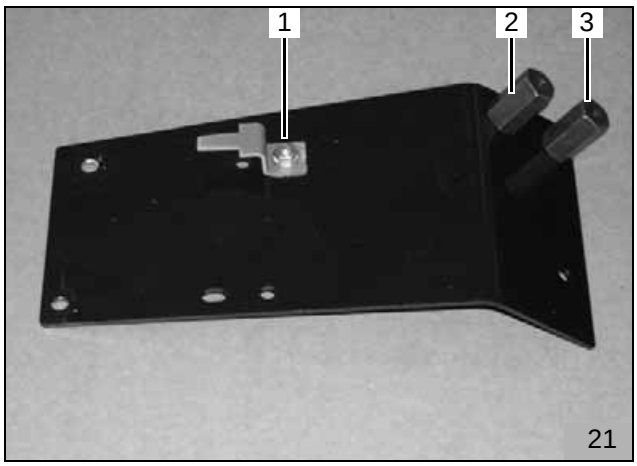
Note:
Use only the special bolts type EJOT PT included in the delivery scope to fasten the heater unit (Tightening torque 10 Nm)!

On diesel vehicles, the lug (21/1) must be fastened as shown in Figure 21 to install the relay box (23/2).

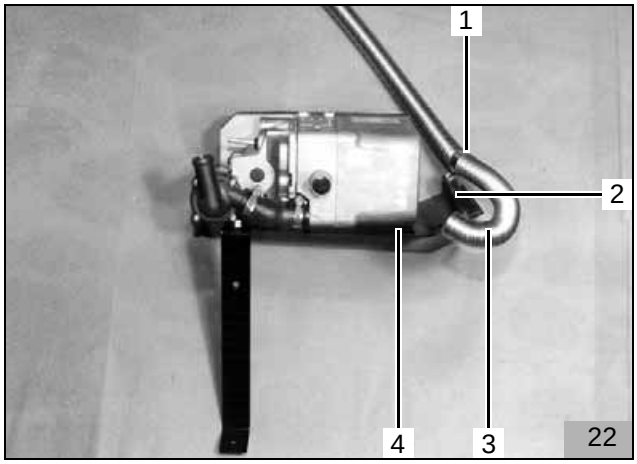
- Fasten bracket with strut (20/1) on heater unit with 3 special bolts (type EJOT PT) included in delivery scope as shown in Figure 20 (tightening torque 10 Nm)



- Premount M6x30 spacer nuts (21/2,3) with M6x12 bolts and A6 spring lockwashers on bracket

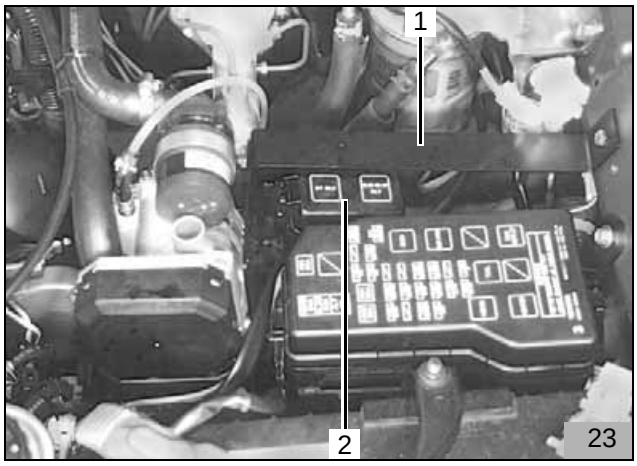


- Drill out M6x20 mm spacer nut to 7 mm dia.
- Mount exhaust pipe on heater unit, shape exhaust pipe (22/3), and fasten on bracket (22/4) using p-clamp (22/1), spacer nut (22/2) and M6x35 bolt, M6x30 spacer nut and A6 spring lockwasher
- Remove exhaust pipe
- Slide rubber isolator (red) onto exhaust pipe



Installing Heater Unit

- Fasten premounted heater unit on wheel well with 3 M6x20 bolts, A6 spring lockwashers and A7.4 washers
- Loosely fasten strut (23/1) in existing weld-in nut on edge of fender with M6x20 bolt, large diameter washer and spring lockwasher
- Mount exhaust pipe on heater unit and secure with hose clamp
- Route exhaust pipe downward into wheel well
- Tighten all loose bolts
- Mount relay box (23/2) - only on diesel - on lug (21/1)
- Position rubber isolator (red) in area of fuel lines



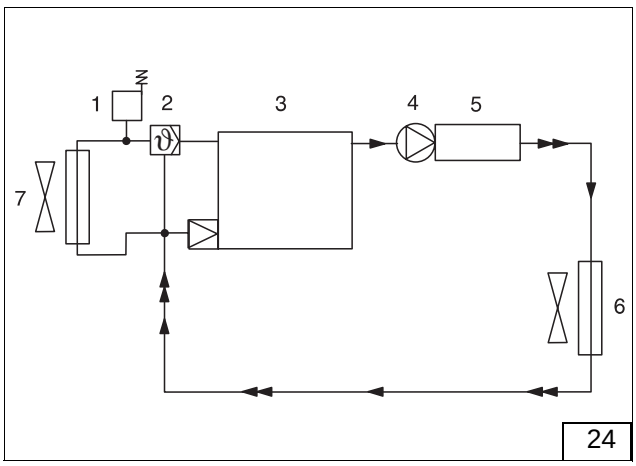
Integration in Water Circuit

Note:
Tighten all hose clamps to 2.0 + 0.5 Nm. Any coolant running off should be collected with an appropriate container!
Install hoses so that they are kink-free.

The connection of the heater unit "in series" (inline) in the vehicle coolant circuit is described in the following.(Figure 24)

Legend for Figure 24:

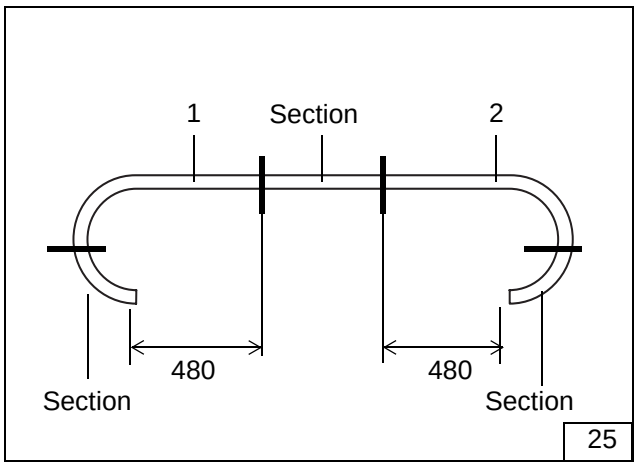
1 Expansion tank
2 Radiator thermostat
3 Vehicle engine
4 Circulating pump (heater unit)
5 Heater unit
6 Heater heat exchanger (vehicle)
7 Radiator



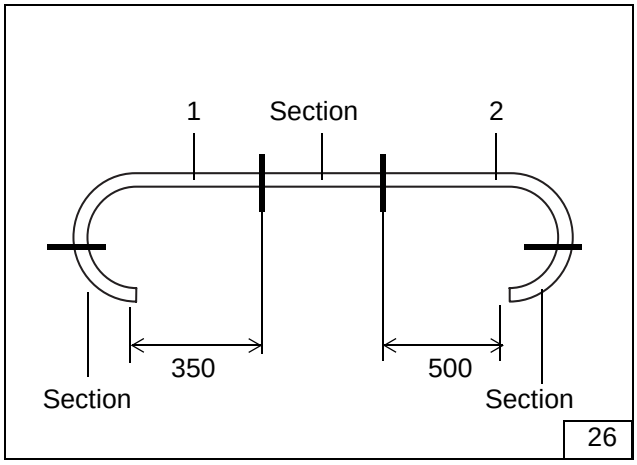
Cutting coolant hoses to length

- Cut two hose sections to length from coolant hose contained in delivery scope:

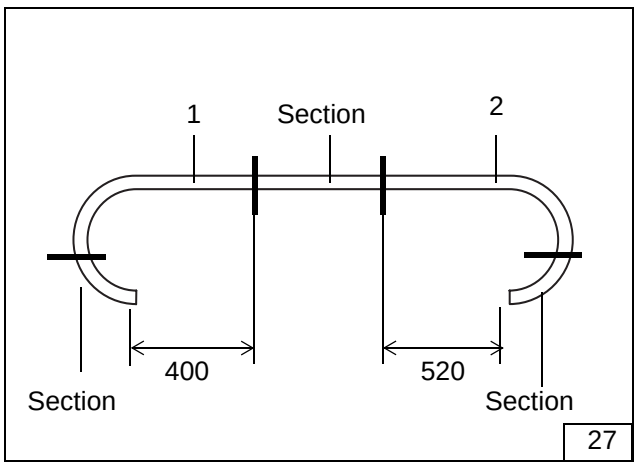
KZJ 9 diesel (Figure 25)
- 1 x 480 mm + 90° elbow (25/1) heater-unit coolant inlet
- 1 x 480 mm + 90° elbow (25/2) heater-unit coolant outlet



KDJ 95 diesel (Figure 26)
- 1 x 350 mm + 90° elbow (26/1) heater-unit coolant inlet
- 1 x 500 mm + 90° elbow (26/2) heater-unit coolant outlet

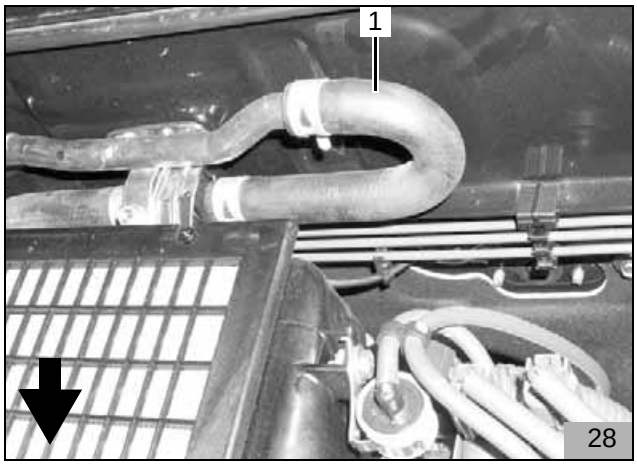


VZJ 9 gasoline (Figure 27)
- 1 x 400 mm + 90° elbow (27/1) heater-unit coolant inlet
- 1 x 520 mm + 90° elbow (27/2) heater-unit coolant outlet

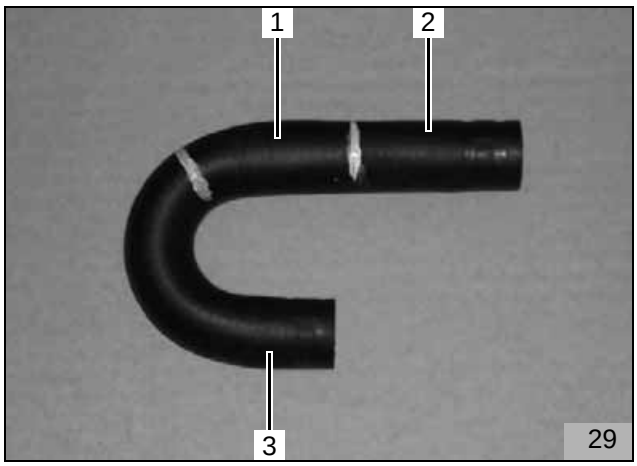


Coolant connection KDJ 95

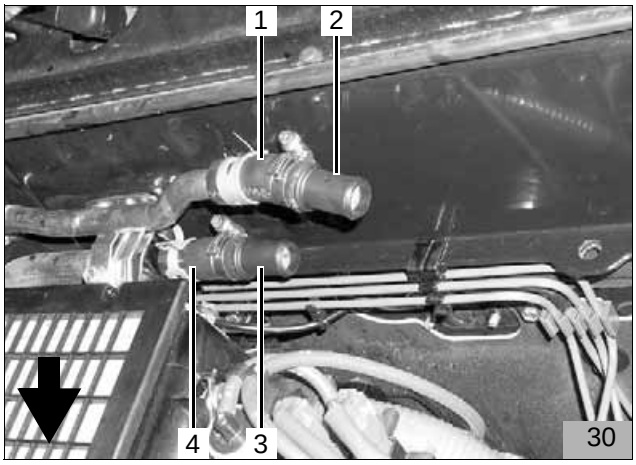
- Remove original vehicle coolant hose (28/1)



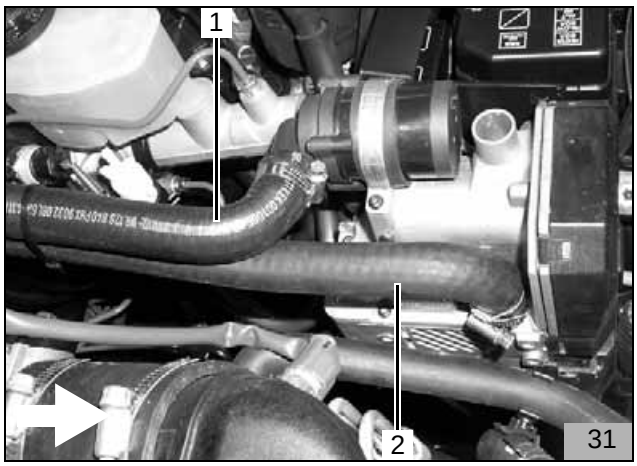
- Cut 2 hose sections (29/1,2) 60 mm in length from removed coolant hose (29/1)
- Discard hose section (29/3)



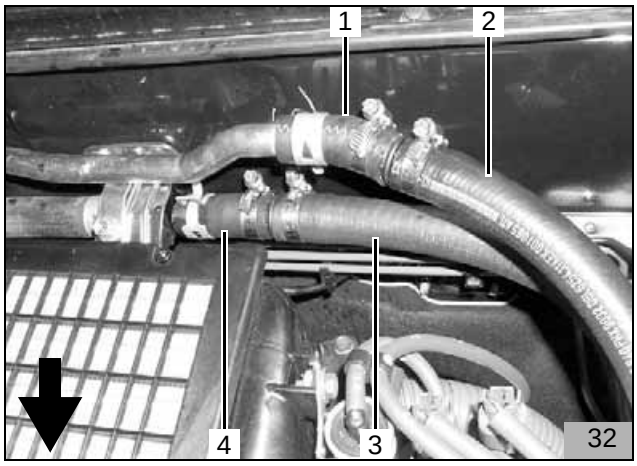
- Mount hose sections (30/1,4) with original vehicle clamps, 18x20 connecting pipes (30/2,3) and hose clamps as shown in Figure 30



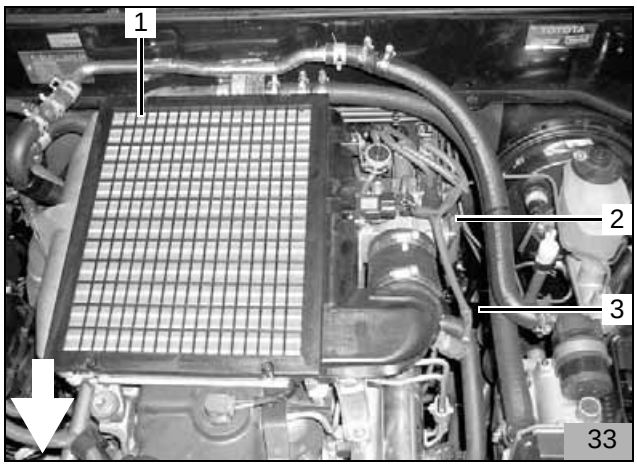
- Mount coolant hose, 300 mm long (31/1) on heater-unit coolant inlet (circulating pump) with 90° elbow and fasten with hose clamp as shown in Figure 31
- Mount coolant hose, 500 mm long (31/2) on heater-unit coolant outlet with 90° elbow and fasten with hose clamp as shown in Figure 31



- Route coolant hose (32/2) from heater-unit coolant inlet as shown in Figure 32, connect to hose section (32/1) from engine outlet and fasten with hose clamp
- Route coolant hose (32/3) from heater-unit coolant outlet as shown in Figure 32, connect to hose section (32/4) on control valve and fasten with hose clamp

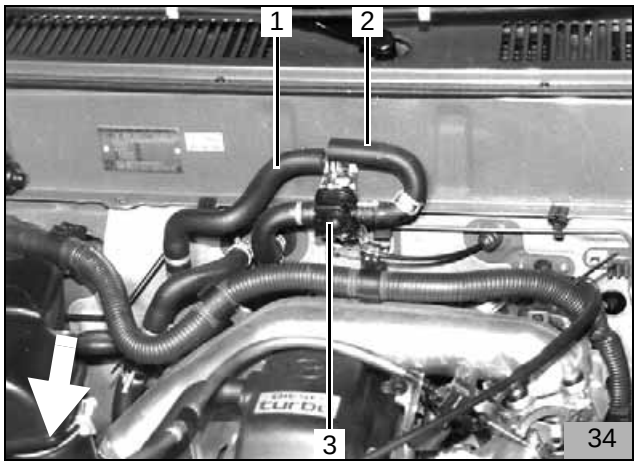


- Fasten coolant hoses with cable ties as shown in Figure 33

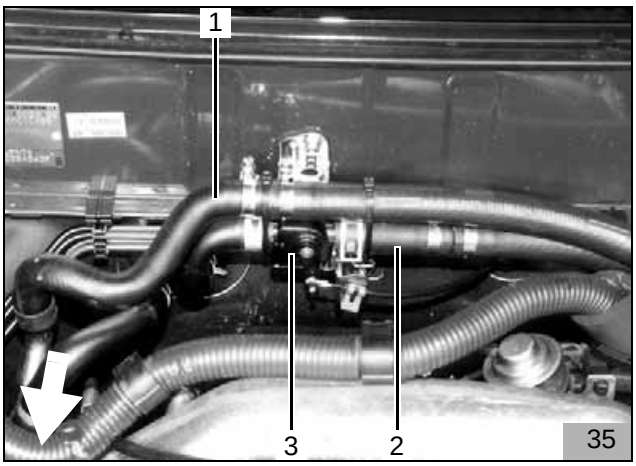


Coolant connection KZJ 9 diesel

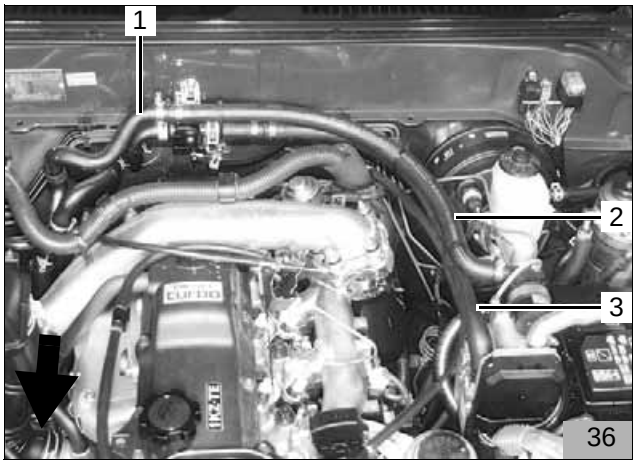
- Disconnect coolant hose on vehicle (34/1,2) from engine outlet to control valve (34/3) (heat exchanger) as shown in Figure 34
- Remove hose elbow (34/2)
- Cut off straight, 80 mm long hose section from hose elbow



- Mount straight, 80 mm long hose section (35/2) on control valve (35/3) (heat exchanger) and secure with hose clamp
- Mount 18/20 mm connecting pipe in hose sections (35/1) and (35/2) and secure with hose clamp

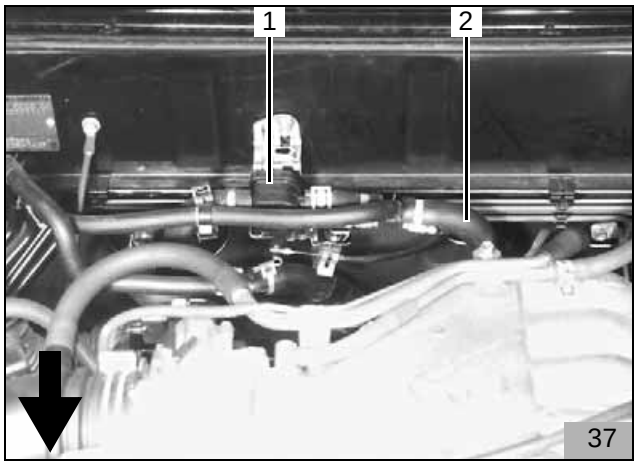


- Mount coolant hose, 480 mm long (36/2) on heater-unit coolant inlet (circulating pump) with 90° elbow and fasten with hose clamp as shown in Figure 36
- Route coolant hose (32/2) from heater-unit coolant inlet as shown in Figure 36, connect to coolant hose (36/1) from engine outlet and fasten with hose clamp
- Mount coolant hose, 480 mm long (36/3) on heater-unit coolant outlet with 90° elbow and fasten with hose clamp as shown in Figure 36
- Route coolant hose from heater-unit coolant outlet as shown in Figure 26, connect to hose section on control valve and fasten with hose clamp
- Secure coolant hoses with cable ties as shown in Figure 36

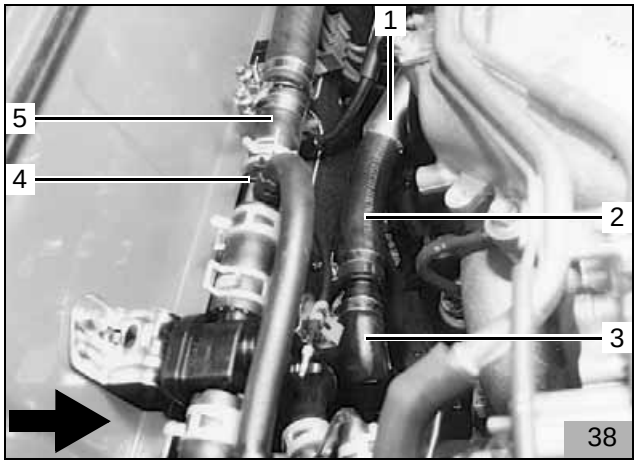


Coolant connection on VZJ 9 gasoline

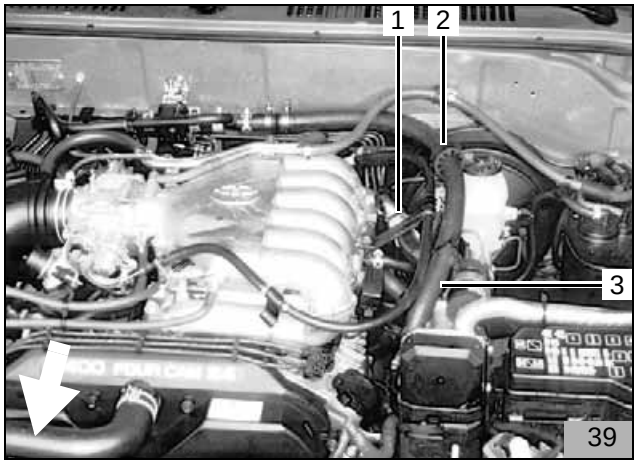
- Disconnect vehicle-side coolant hose (37/2) from engine outlet to control valve (37/1) (heat exchanger) at (T-piece) and remove 180° hose elbow (also see Figure 38)
- Cut off straight, 60 mm long hose section from hose elbow



- Mount straight, 60 mm long hose section (38/5) on control valve (T-piece) (38/4) and secure with hose clamp
- Mount 18/20 mm connecting pipe in hose sections (38/3) and (38/5) and secure with hose clamp
- Push approx.300 mm long heat protection hose (38/1) onto 400 mm long coolant hose
- Connect 400 mm long coolant hose (38/2; 39/1) to coolant hose (38/3) from engine outlet and secure with hose clamp
- Route coolant hose to heater-unit coolant inlet (circulating pump) , mount on circulating pump with 90° elbow and secure with hose clamp as shown in Figure 38 and Figure 39



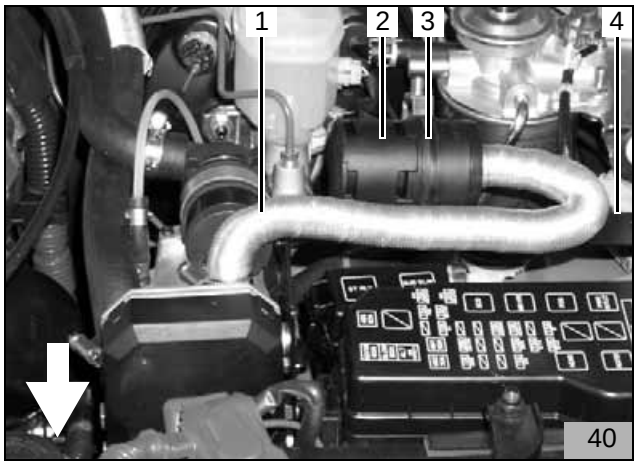
- Mount scuff guard (39/2) on 520 mm long coolant hose
- Mount coolant hose, 520 mm long (39/3) on heater-unit coolant outlet with 90° elbow and fasten with hose clamp as shown in Figure 39
- Connect coolant hose to hose section on control valve (T-piece) and secure with hose clamp as shown in Figure 39
- Position scuff guard (39/2) as shown in Figure 39
- Fasten coolant hoses with cable ties



Combustion-Air Intake Pipe

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

- Mount combustion-air intake pipe (40/4) with slotted side on heater unit combustion-air connection piece and secure with hose clamp
- Screw combustion-air intake muffler (40/2) into combustion-air intake pipe as far as possible
- Insert retaining clip (40/3) in existing hole of strut (40/4) and clip in combustion-air intake muffler
- Route combustion-air intake pipe as shown in Figure 40

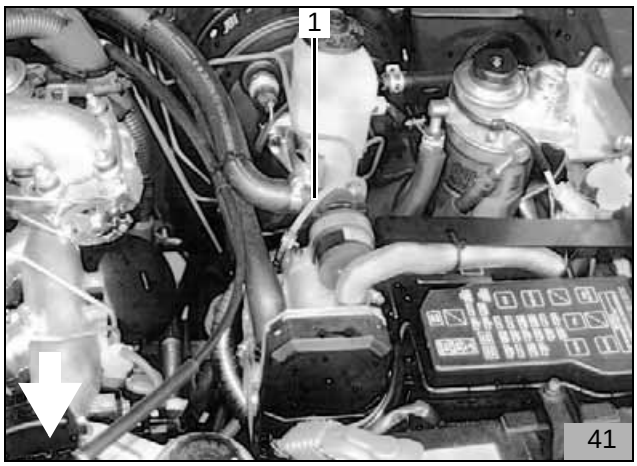


Fuel Connection

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.

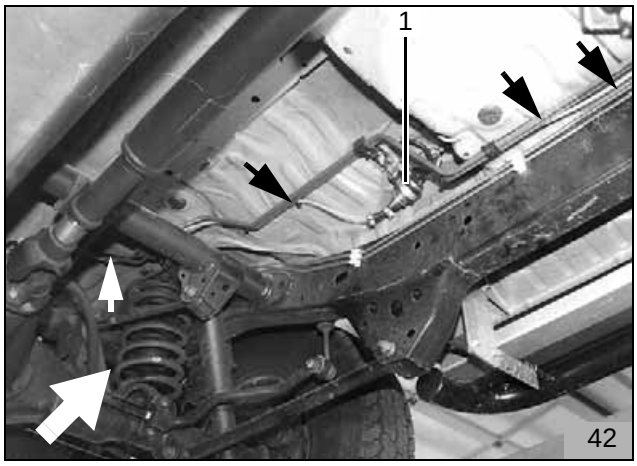
KZJ 9 diesel, KDJ 95 diesel and VZJ 9 gasoline

- Connect Mecanyl fuel line (41/1) to fuel inlet of heater unit using hose section and hose clamp
- Route Mecanyl fuel line and wiring harness of metering pump downward along existing fuel lines on firewall and secure with cable tie



Vehicle with long chassis

- Route Mecanyl fuel line and wiring harness of metering pump along existing fuel lines on left-hand frame side member to installation location of metering pump (42/1) and secure with cable ties

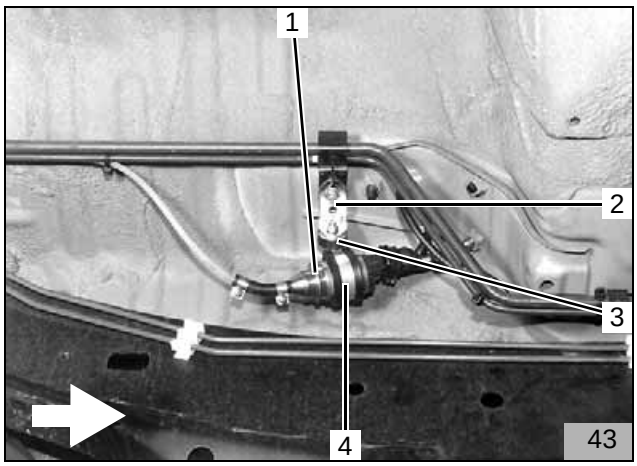


Metering pump

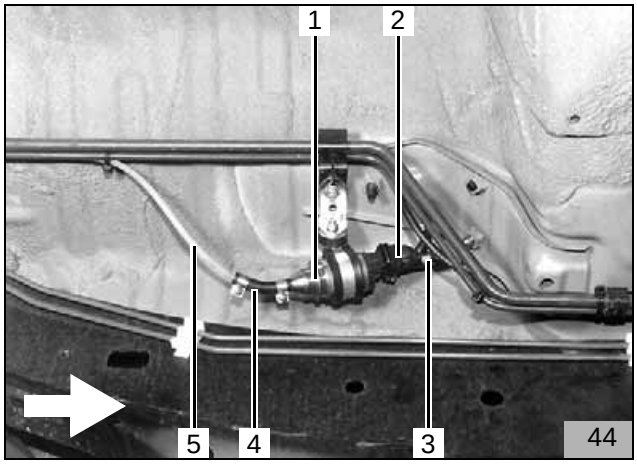
- Fasten angle bracket (43/2) on existing stud bolts with existing nut
- Fasten silent block (43/3) on angle bracket (43/2) with flanged nut

Note:
Ensure correct installation position of metering pump and fuel standpipe, see "Installation Instructions"

- Fasten metering pump (43/1) on silent block with rubber-coated p-clamp (43/4) and flanged nut a shown in Figure 43

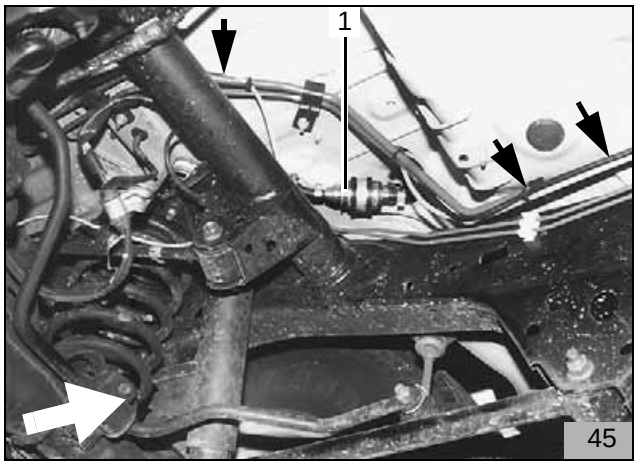


- Cut Mecanyl fuel line (to heater unit) on metering pump (44/1) to length and connect to pressure side of metering pump using a hose section (44/3) and hose clamps
- Connect Mecanyl fuel line (44/5) to fuel standpipe with hose section (44/4) on intake side of metering pump (44/1) and secure with hose clamps
- Cut wiring harness (44/2) of metering pump to length, push on protective rubber plug, crimp on tab connector, complete connector housing and mount wiring harness on metering pump



Vehicle with short chassis

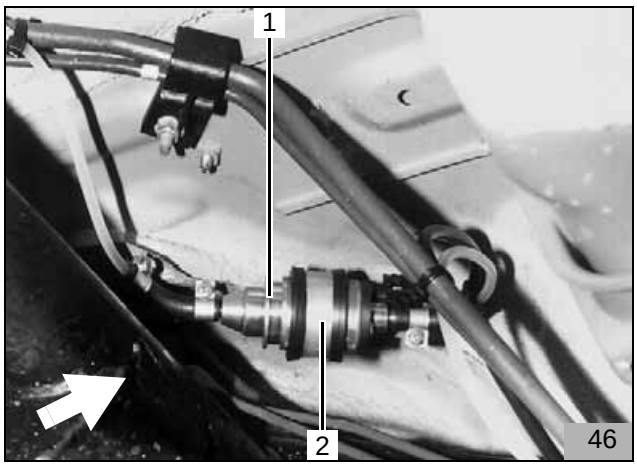
- Route Mecanyl fuel line and wiring harness of metering pump along existing fuel lines on left-hand frame side member to installation location of metering pump (45/1) and secure with cable ties



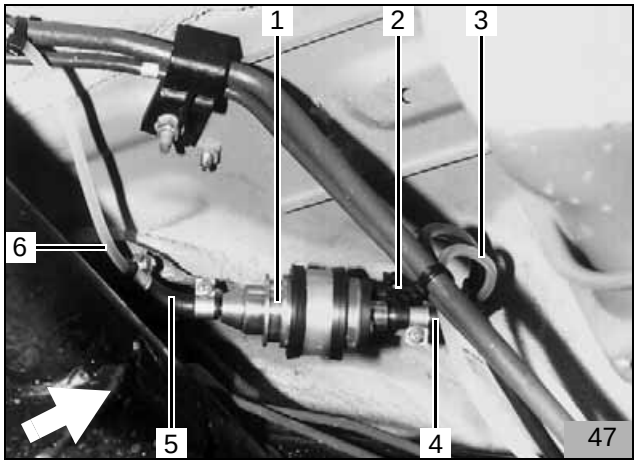
Metering pump

Note:
Ensure correct installation position of metering pump and fuel standpipe, see "Installation Instructions"

- Fasten metering pump (46/1) with angle bracket, silent block, rubber-coated p-clamp (46/2) and flanged nuts a shown in Figure 46



- Cut Mecanyl fuel line (47/3) (to heater unit) on metering pump (47/1) to length and connect to pressure side of metering pump using a hose section (47/4) and hose clamps
- Connect Mecanyl fuel line (47/6) to fuel standpipe with hose section (47/5) on intake side of metering pump (47/1) and secure with hose clamps
- Cut wiring harness (47/2) of metering pump to length, push on protective rubber plug, crimp on tab connector, complete connector housing and mount wiring harness on metering pump



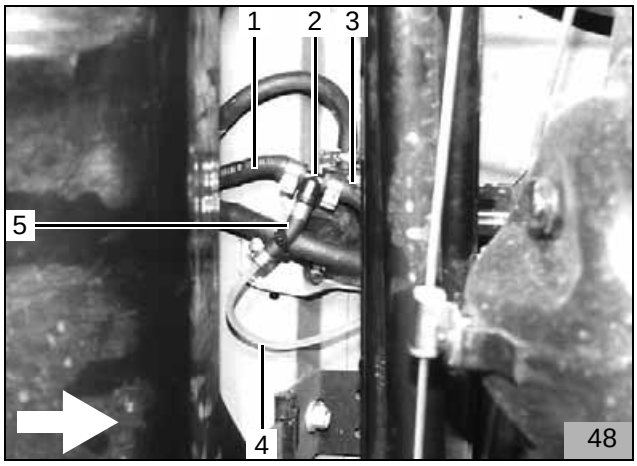
Fuel Connection (on Vehicle Side)

KZJ 9 diesel and KDJ 95 diesel

- Disconnect original vehicle fuel return hose (48/1,3) as shown in Figure 48

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

- Insert 8x5x8 mm fuel standpipe (48/2) in disconnected return line and secure with hose clamps as shown in Figure 48
- Route Mecanyl fuel line (48/4) from metering pump (intake side) to fuel standpipe and cut to length as shown in Figure 49
- Mount Mecanyl fuel line (48/4) on fuel standpipe (48/2) with hose section (48/5) and secure with hose clamps
- Secure Mecanyl fuel line on existing lines with cable ties



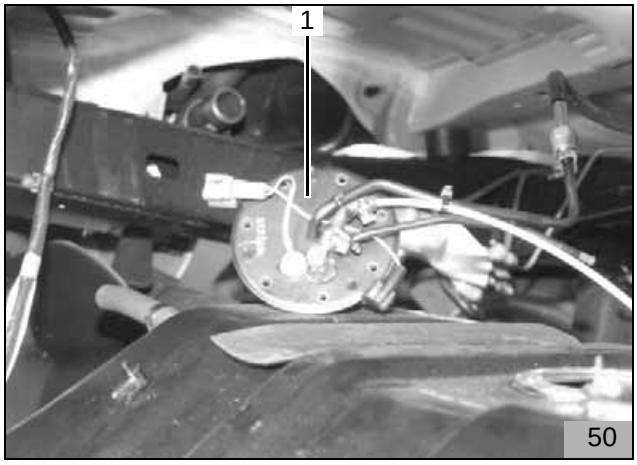
VZJ 9 gasoline

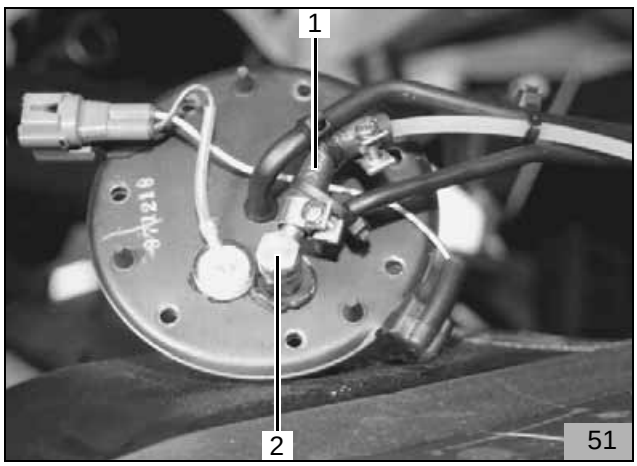
The fuel is removed via the fuel-tank sending unit using the fuel standpipe contained in the kit

WARNING:
Drain fuel tank according to manufacturers instructions!

- Remove stoneguard from fuel tank
- Disconnect line from tank filler neck and vent line on fuel tank
- Disconnect fuel tank mount, disconnect electrical connections and lower fuel tank
- Remove fuel-tank sending unit (50/1) in accordance with manufacturer's instructions

- Drill 8.5 mm dia. hole in fuel-tank sending unit a shown in Figure 51
- Shorten fuel standpipe (51/2) by 190 mm
- Mount fuel standpipe in fuel-tank sending unit
- Fasten fuel standpipe with copper ring, washer and M8 nut
- Install fuel-tank sending unit in fuel tank according to manufacturer's instructions
- Connect Mecanyl fuel line to metering pump on fuel standpipe with hose section (51/1) and hose clamps
- Fasten hose section and Mecanyl fuel line on existing lines with cable tie as shown in Figure 51
- Completely remount fuel tank



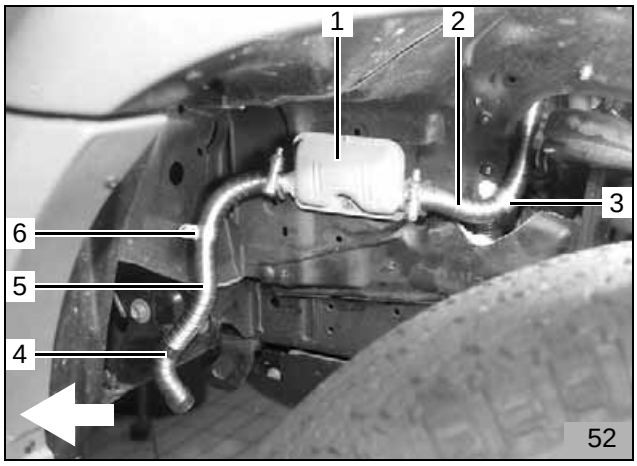


Exhaust system

KZJ 9 diesel and VZJ 9 gasoline (diesel shown)

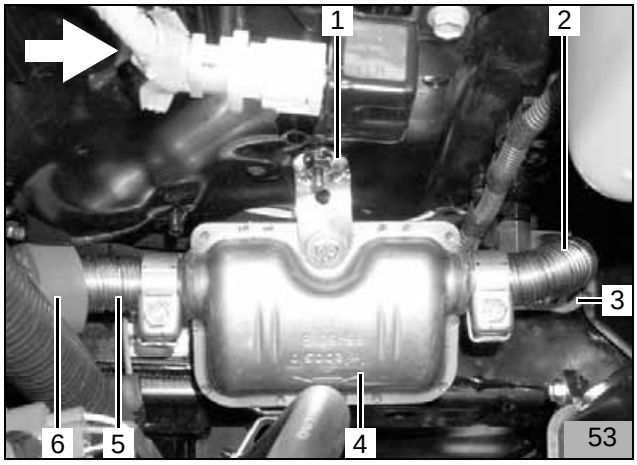
WARNING:
When routing the exhaust pipe, ensure sufficient spacing to the wiring harness of the positive battery line, to the fuel lines and to the suspension system!

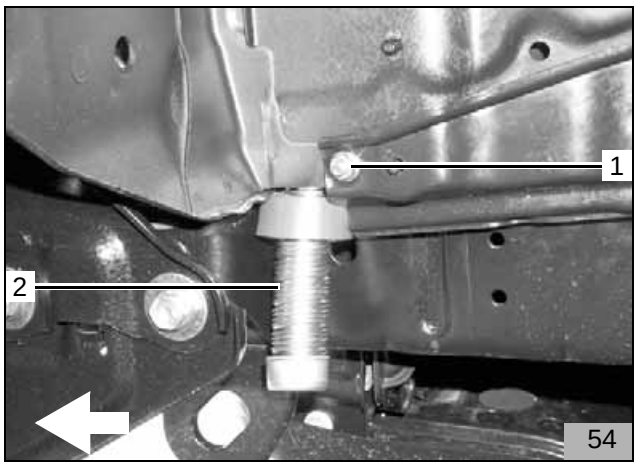
- Secure exhaust pipe (52/2) on exhaust muffler (52/1) with hose clamp
- Secure exhaust-pipe end section (52/5) on exhaust muffler with hose clamp
- Drill out M6x20 mm spacer nut to 7 mm dia.
- Fasten exhaust muffler (52/1) at existing hole using drilled-out spacer nut with M6x30 bolt, large diameter washer, and flanged nut
- Fasten exhaust pipe (52/2) in existing hole on wheel well with p-clamp (52/3), M6x20 bolt and flanged nut
- Shape exhaust-pipe end section (52/5) as shown in Figure 52
- Fasten exhaust-pipe end section in existing hole on wheel well with p-clamp (52/6), M6x20 bolt and flanged nut
- Bend down lug and fasten exhaust-pipe end section in existing hole with p-clamp (52/4), M6x20 bolt and flanged nut



KDJ 95 diesel

- Fasten angle bracket (53/1) at existing hole with M6x20 bolt and M6 flanged nut as shown in Figure 53
- Fasten exhaust muffler (53/4) to angle bracket (53/1) with M6x20 bolt and M6 flanged nut as shown in Figure 53
- Push red rubber isolator (53/3) onto exhaust pipe (53/2) from heater unit
- Mount exhaust pipe (53/2) from heater unit on exhaust muffler (53/4), align and secure hose clamp as shown in Figure 53
- Align red rubber isolator (53/3) as shown in Figure 53
- Push red rubber isolator (53/6) onto exhaust-pipe end section (53/5)
- Mount exhaust-pipe end section (53/5) from heater unit on exhaust muffler (53/4), align and secure hose clamp as shown in Figure 53 and Figure 54
- Align red rubber isolator (53/6) as shown in Figure 53
- Remove clip from existing hole (54/1)
- Fasten exhaust-pipe end section (54/2; 53/5) to hole (54/1) with p-clamp, M6x40 bolt, 20 mm dia. spacer nut, A 7.4 washer and M6 flanged nut as shown in Figure 54 and Figure 53

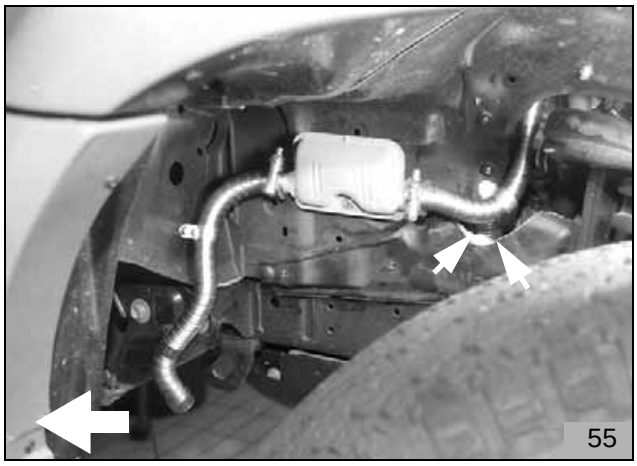




Installing trim piece

KZJ 9 diesel

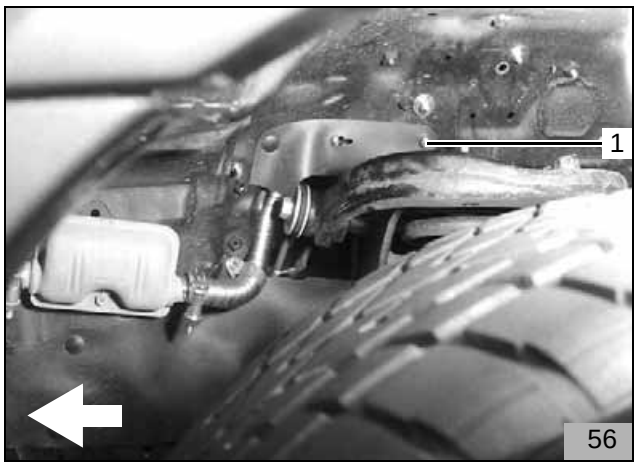
- Cut out trim in area of exhaust system as shown in Figure 55 and install



Installing splash guard

VZJ 9 gasoline

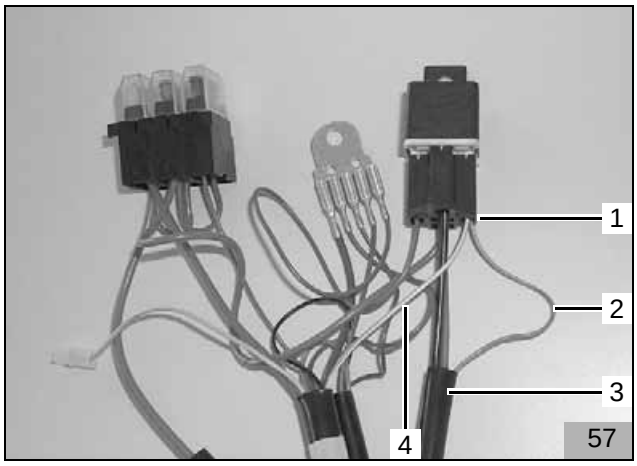
- Cut out splash guard (rubber) in area of exhaust system as shown in Figure 56
- Install splash guard while fastening it with nut (56/1) of bracket



Blade-Type Fuse Holder and Fan Relay

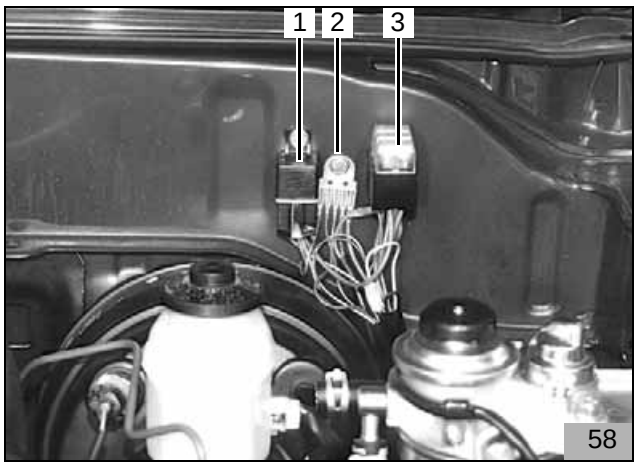
Premounting additional line (only on vehicles with automatic air-conditioning)

- Uncrimp green/white wire (57/4) from heater-unit control unit on fan relay K3/86 (57/1)
- Crimp on 0.75 mm^2 black wire provided (57/2) together with green/white wire (57/4) from heater-unit control unit on fan relay K3/86 (57/1) with tab receptacle
- Also pull 0.75 mm^2 black wire (57/2) into protective sleeving (57/3) of fan wiring harness (red wire and black wire)



All vehicles

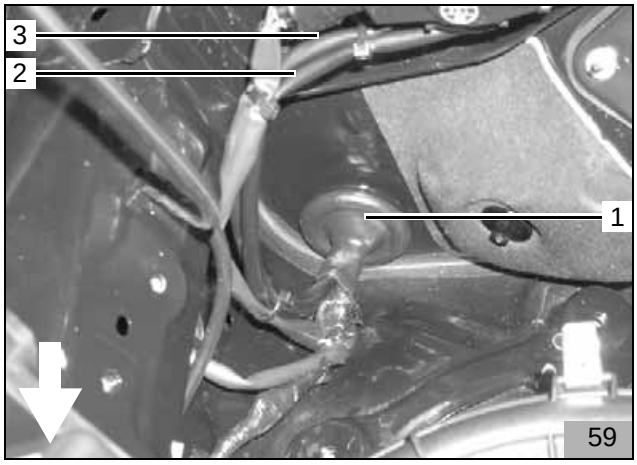
- Copy hole pattern of mounting plate of fuse holder (58/3), of ground support point (58/2) and of fan relay (58/1) to firewall as shown in Figure 58
- Drill hole for 2.5 mm dia. fuse holder and fan relay and 4.0 mm dia. ground support point
- Fasten mounting plate of fuse holder with 3.5x13 mm self-tapping screw, and fan relay and ground support point with 5.5x9.5 mm self-tapping screws
- Mount fuse holder on mounting plate
- Connect positive wire to positive battery pole of left-hand battery



- Route wiring harness for digital timer (59/3) and wiring harness of fan connection (59/2) through existing cable grommet (59/1) into passenger compartment

Note:
Make sure scuff guards are installed for all cable pass throughs!

- Route wiring harness for heater unit along wheel well and connect to heater unit
- Make loops of remaining wiring harness and tie together with cable tie



Digital Timer and Summer/Winter Switch Option

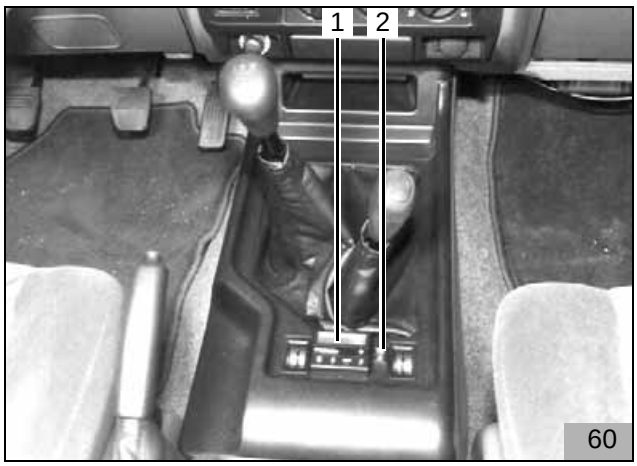
WARNING:
Do not press the LCD display when installing the digital timer

Note:
The illustrated installation location of the digital timer (60/2, 61/2) and the summer/winter switch (60/2, 61/1) is a recommendation! Please coordinate installation location with your customer prior to the installation.

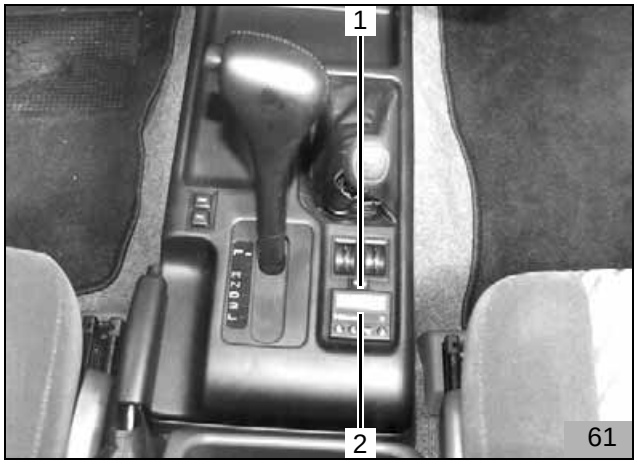
- Glue on drilling template for digital timer at location suggested in Figure 60 (with manual transmission) or Figure 61 (with automatic transmission)
- Drill two holes according to template
- Remove template
- Mount securing sleeve with self-tapping screw

Note:
Ensure proper direction of locking teeth (see Installation Instructions)! Ensure scuff protection is provided when installing the wiring harness!

- Pull wiring harness of digital timer through hole and connect connector to digital timer
- Mount digital timer

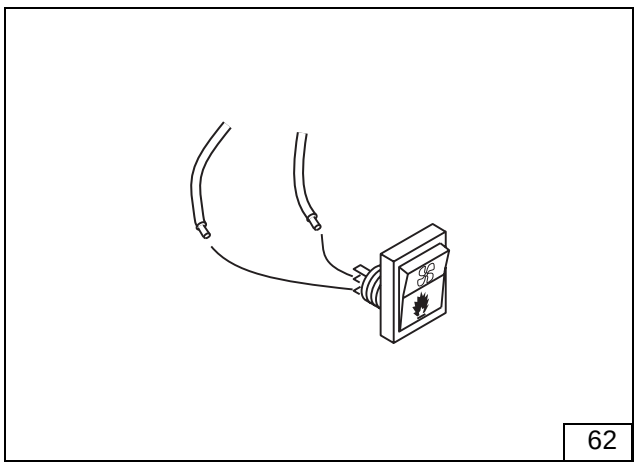


60



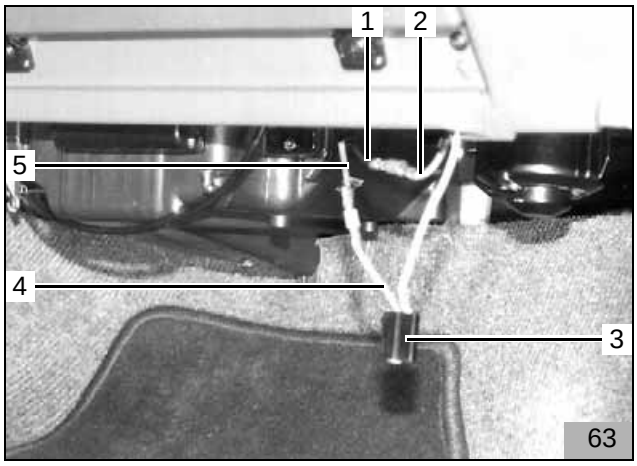
61

- Copy hole pattern of summer/winter switch 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 62 (lower contacts)
- Fasten summer/winter switch with toothed washer and nut

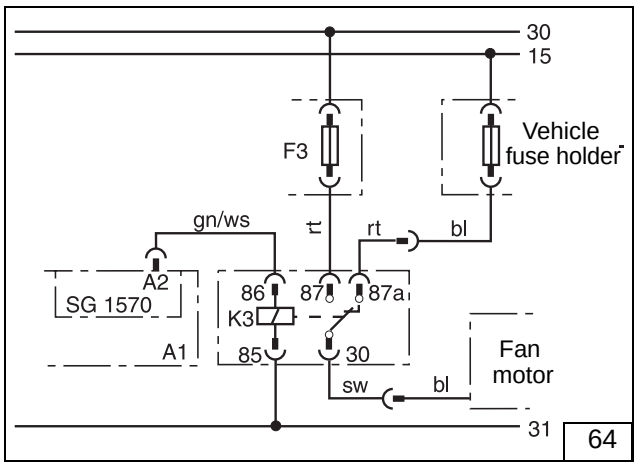

62

Fan Controller for Manual Air Conditioning

- Guide red and black wire from K3 fan relay to connection plug of fan motor and cut to suitable length
- Disconnect connector (63/3) from fan motor
- Cut off blue wire (63/2,4) approx. 30 mm before connector
- Crimp on circular connector

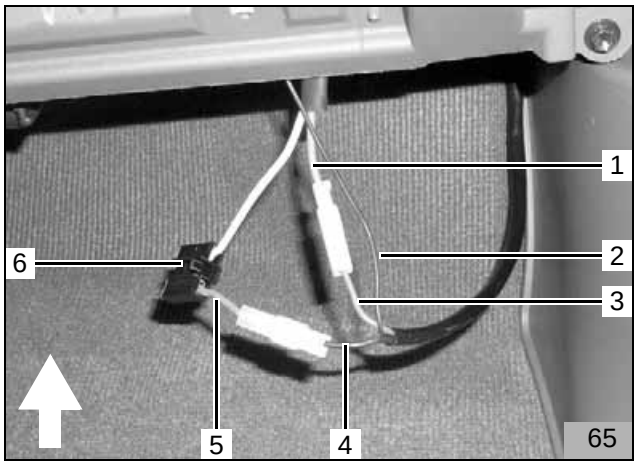


- Produce connections according to wiring diagram in Figure 64
- Connect red wire (63/1) from fan relay K3/87a to blue wire (63/2) to vehicle fuse
- Connect black wire (63/5) from fan relay K3/30 to blue wire (63/4) to fan motor

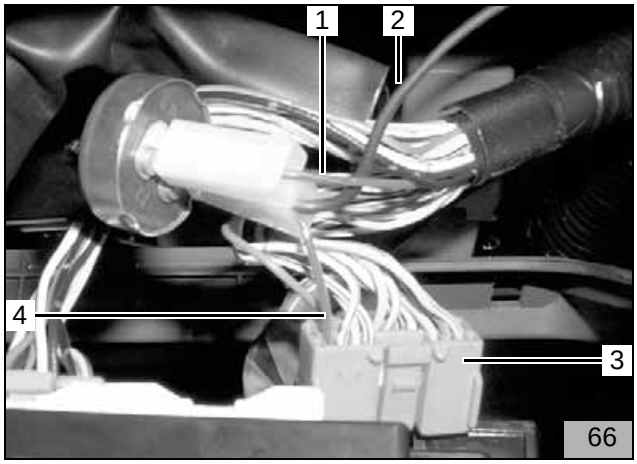


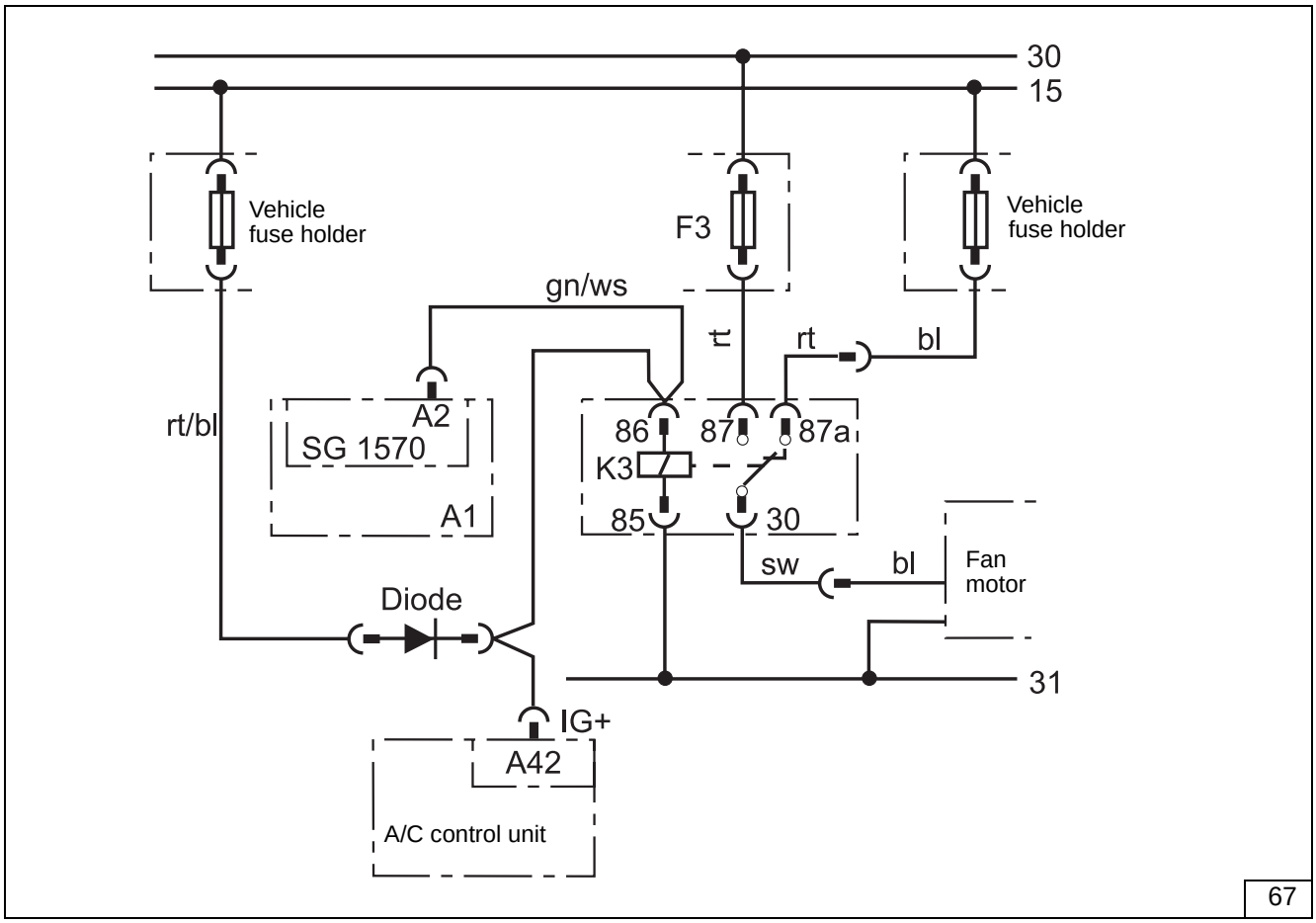
Fan Controller for Automatic Air-Conditioning

- Fan control takes place on connector (65/6) of fan motor in footwell of front passenger side
- Remove the glove compartment
- Route red (rt) wire (65/3) and black (sw) wire (65/4) from fan relay K3 to connection plug if fan motor and cut to length
- Make connections with blade connectors provided as shown in wiring diagram in Figure 67
- Cut off blue (bl) wire (65/1,5) approx. 50 mm before connector (65/6)
- Connect black (sw) wire (65/4) from fan relay K3/30 to blue (bl) wire (65/5) to fan motor
- Connect red (rt) wire (65/3) from fan relay K3/87a to blue (bl) wire (65/1) from original vehicle fan fuse
- Route additional 0.75 mm^2 black (sw) wire (65/2) to A/C control unit



- A/C control unit is controlled on right-hand A42 compact connector (66/3) of A/C control unit
- Remove A/C control unit in accordance with manufacturers instructions
- Make connections with blade connectors and diode as shown in wiring diagram in Figure 67
- Cut off red/blue (rt/bl) wire (66/1,4) approx. 50 mm before A42 connector (66/3), Pin 1 (connection IG+)
- Connect diode in conducting direction from original vehicle fuse to A/C control unit
- Connect red/blue (rt/bl) wire (66/1) from original vehicle fuse to diode
- Connect red/blue (rt/bl) wire (66/4) to A/C control unit together with additional 0.75 mm^2 black (sw) wire (66/2) from K3/86 fan relay to cathode of diode
- Secure diode and wires with cable tie



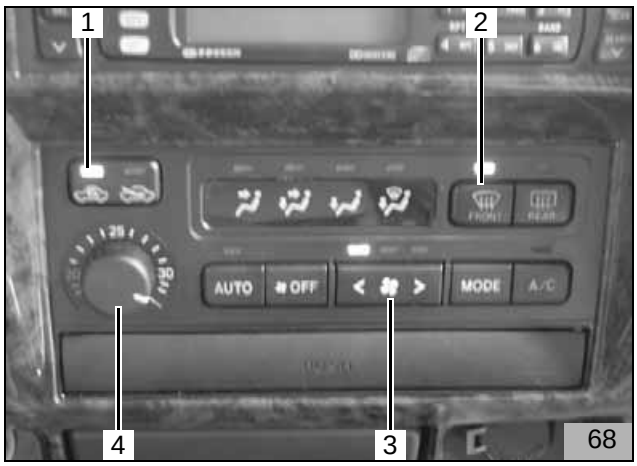


Operating Instructions for End Customer

Only on vehicle with automatic air-conditioning

Please make the following settings as shown in Figure 68 before switching off the vehicle

- Set temperature (68/4) to max./warm
- Adjust air outlet (68/2) to windshield
- Switch on recirculating air (68/1)
- Set fan (68/3) to speed 2 (speed 3 if necessary)



Final Work

- Connect vehicle batteries
- 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
- Spray heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329)
- Start the engine, bleed the coolant circuit according to the instructions of the vehicle manufacturer and add coolant.
- Set vehicle heater to "warm" and fan to speed 2
- Switch on Webasto heater, see "Operating Instructions/Installation Instructions"

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