

Consists of

Qty. Product

4	1 DEFA Termina - interior heater with holder
1	1 DEFA Futura - time program controller/Timer
3	1 DEFA MultiCharger 1203 - battery charger/relay
6	1 DEFA Extension cable - interior heater 1,5 m
6	1 DEFA Extension cable 0,5 m
6	1 DEFA Extension cable 1,0 m
15	1 DEFA MiniPlug cable 1,5 m
5	1 DEFA Connection cable 2,5 m
2	1 12V Wiring harness for Futura and MultiCharger
7	1 DEFA socket 460829

Fastening accessories for MiniPlug

Qty. Product

- 1 Fastening nut
- 1 Flat washer for nut for curved surfaces
- 1 O-ring for fastening nut
- 1 Holder/bracket
- 1 Spacer for holder/bracket
- 2 Black stainless steel bolt M4x20 mm
- 2 Fastening bolts for PlugIn the holder (3x7 mm)
- 2 Fastening plugs for the holder
- 1 Self-tapping screw (4.2x13 mm)

Fastening accessories for other components

Qty. Product

- 3 Fastening bolts (3.5x16 mm) for Termina holder
- 4 Double-sided tape for time-program controller
- 8 Fastening strips (200 mm) for extension cable
- 1 Fuse holder with 5A fuse
- 12**  MultiCharger cable (200 mm) between fuse holder and battery
- 2 Fastening bolts (4.2x32 mm) for socket
- 1 Feed through (14x28x7.5 mm)
- 1 Fastening bolt (4.2x32 mm) for battery charger
- 1 Fastening bolt (4.2x32 mm) for charger holder
- 1 Holder for battery charger

 The MultiCharger cable (200 cm) between the fuse holder and battery may not be shortened. If the cable has to be extended, the cross section must also be enlarged.
Double the length = double the cross section

Preparing for installation

The workshop/garage is always responsible for taking all necessary precautions when installing DEFA WarmUp. Avoid locating units too close to high temperature engine components like the exhaust system, turbo etc. Ensure proper distance from rotating or moving parts such as the alternator and steering rod.



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Installing

Mounting procedure of DEFA WarmUp:

1. Disconnect the battery at the negative terminal. Read the instructions from the vehicle manufacturer before disconnecting the battery.
2. The engine heater is selected according to the model list from DEFA. Install the engine heater at the location as specified in the respective installation manual. Fill the vehicle's cooling system with an approved coolant and bleed air out of the system in accordance with the instructions from the vehicle manufacturer.
3. Determine a suitable path to route the extension cables for the interior heater.
4. Install the interior heater in the interior of the vehicle.
5. Install DEFA MiniPlug in an easily accessible spot at the front of the vehicle or where the customer requests.
6. Position the battery charger/relay box in such a way that it can be connected to the extension cables from the interior heater, engine heater and device connector.
7. Place the Futura timer on the dashboard according to your customer's wishes. Use the enclosed double-sided tape.
8. Connect the battery at the negative terminal.
9. Test DEFA WarmUp to ensure that it functions properly.



- 12 Red:** Connect via the fuse, to the blade terminal marked with + (positive) on the battery charger/relay box and to the +12V terminal on the battery.
- 10 Black:** Connect to the blade terminal marked with - (negative) on the battery charger/relay box and to the chassis.
- 11 Yellow:** Connect to the blade terminal marked with the „clock“ symbol on the battery charger/relay box.
- 13 Green:** Connected to the Temperature sensor.
- 9 Blue:** Connect to the ignition in the vehicle's fuse box or to the ignition lock; 12V = ignition ON, 0 V = ignition OFF.
- 14** Temperature sensor. Install it in the front of the vehicle away from engine parts who can affect the outdoor temperature.



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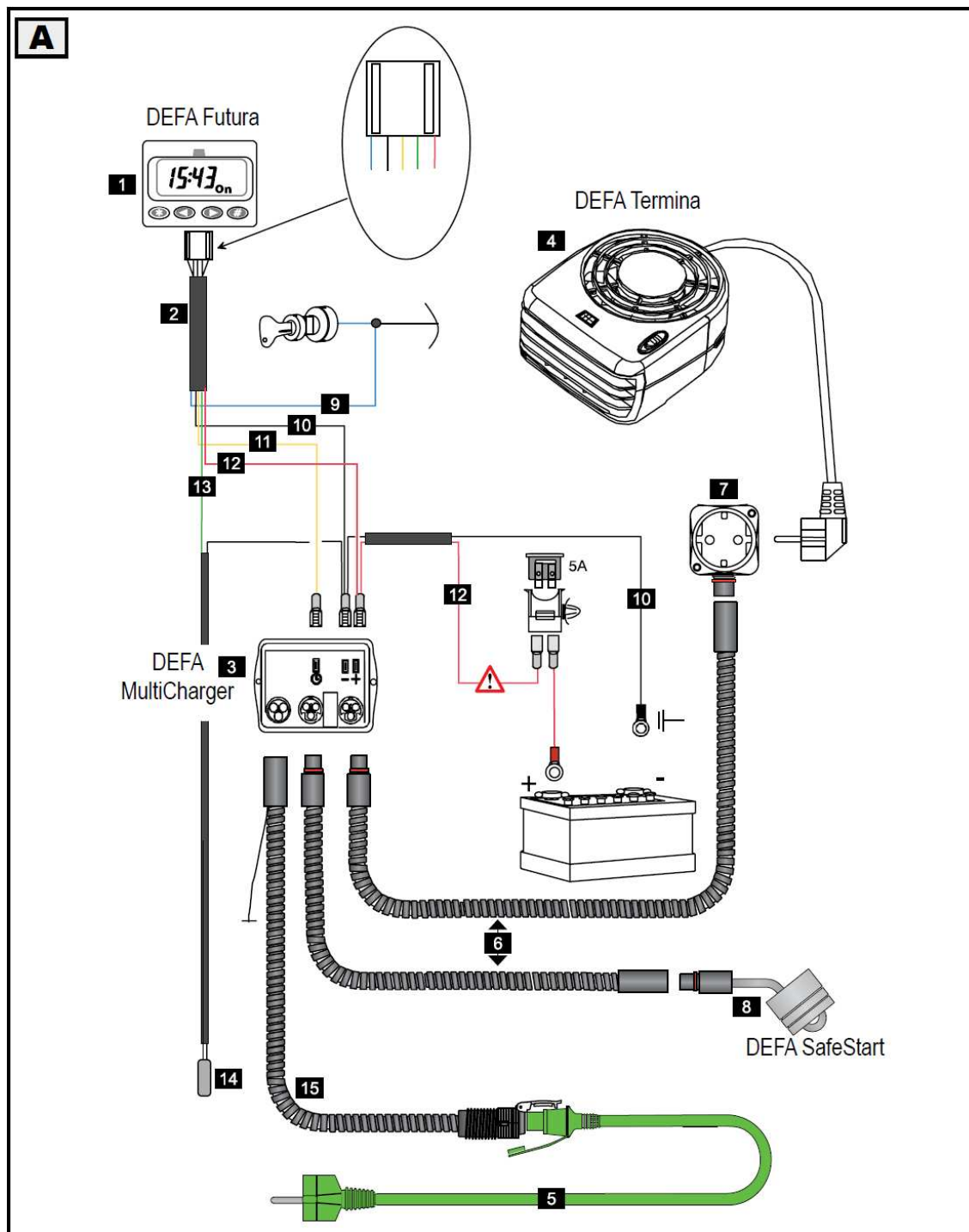
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B

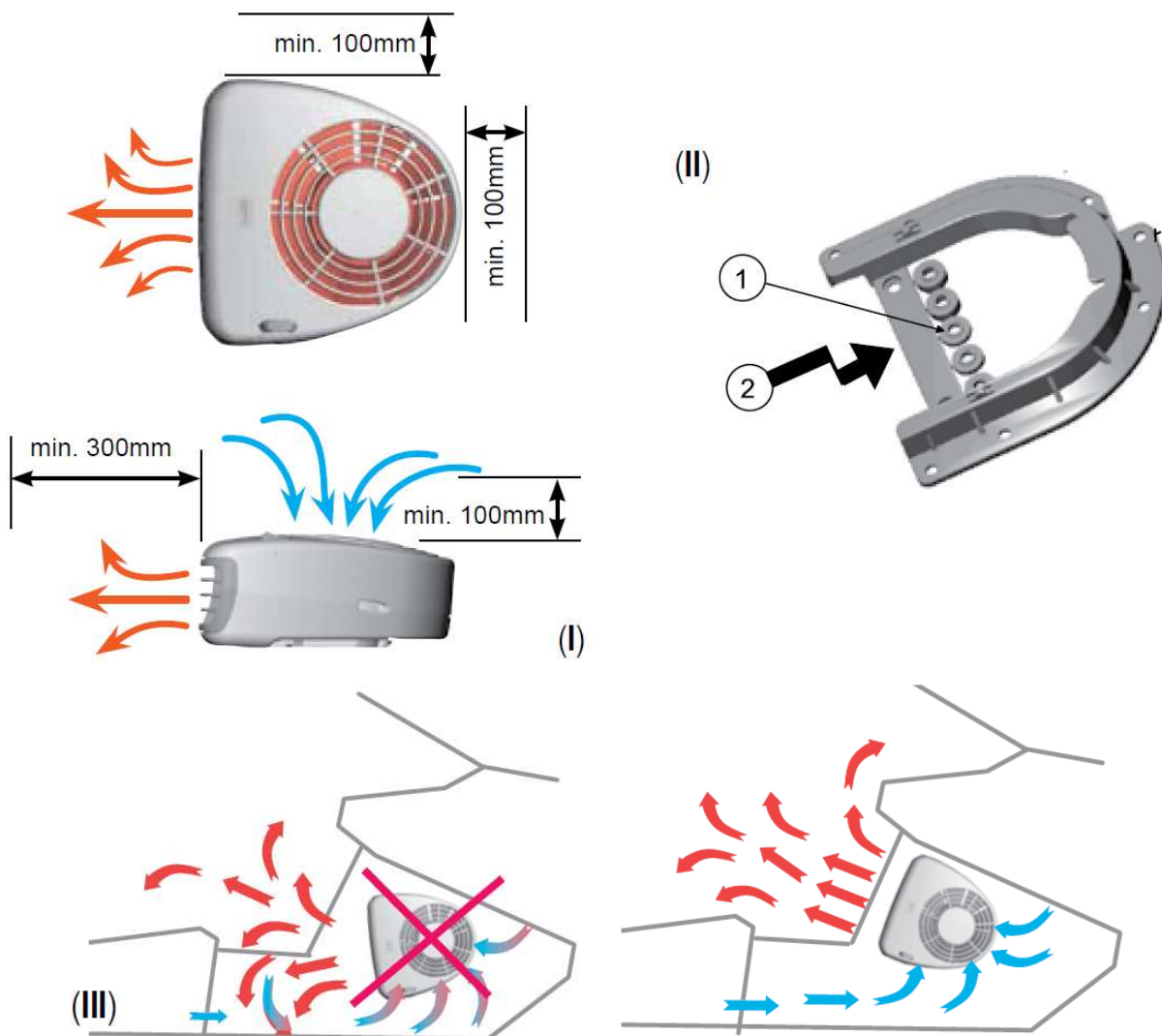
Termina interior heater

The interior heater can be installed in the vehicle cabin. The interior heater can be fitted "upside down" under the glove compartment or on the A-pillar. The discharge opening may not be positioned face down (**III**). The interior heater must be installed so that sufficient spacing is maintained (**I**).

The holder (**II**) is designed so that it can also be installed on uneven surfaces by using the enclosed spacer sleeves¹. Dismount the holder² from the interior heater by pushing it backwards. The spacer sleeves¹ must be removed before the holder is installed. Any of the holes in the holder can be used, however, we do recommend that the fastening points are spaced as far apart as possible. The holder is fastened with the enclosed screws.

The interior heater is guided into the holder² until it you hear it click in place.

DEFA always recomend to fasten the heater in the cabin.



⚠ The interior heater must be installed in such a way, that it does not pose a safety hazard in case of an accident or abrupt braking. When drilling holes and installing screws to mount the holder, always make sure that no cables or time-program controllers on the back of the wall will be damaged.



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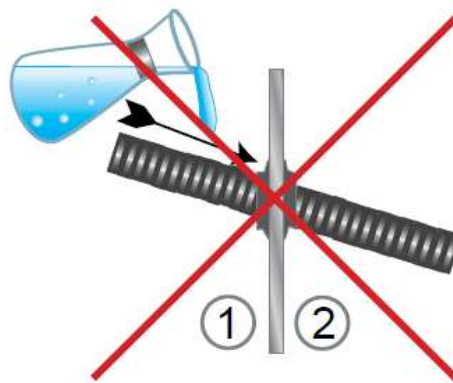
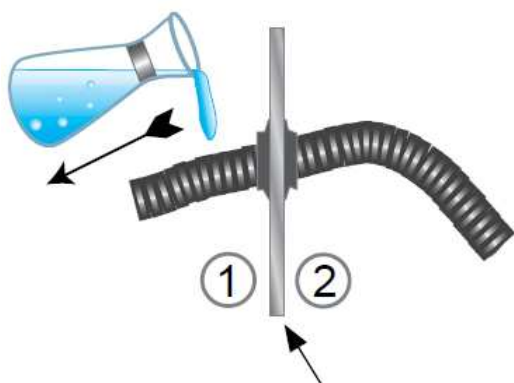
Firewall feed through into the vehicle cabin

9 On many vehicle models, the manufacturers have left openings in the firewall in order to accommodate the feed through of accessories. In many cases, these openings can be used to feed through the DEFA extension cable to the interior heater.

If it is necessary to drill a hole in the firewall of the vehicle in order to feed through the DEFA extension cable into the interior of the vehicle from the engine compartment, extreme caution must be exercised. No holes may be drilled in double sheeting or reinforcements.

The DEFA hole saw ($\varnothing$ 20 mm) is ideal for this task. It is extremely important to ensure that the tool will not damage any installed components, brake lines, cables, etc. The supplied rubber bushing is used to seal the area around the cable. When installing the bushing, make sure that it is properly seated. Otherwise, water may be able to penetrate the interior of the vehicle. Before the extension cable is fed through, make sure it is routed at a downward angle in the engine compartment^① so that no water runs into the interior of the vehicle^②.

⚠ When drilling holes in the firewall, it is imperative to make sure that the tool will not damage any installed components, brake lines, cables, etc. No holes may be drilled in double sheeting or reinforcements. Apply a suitable rust protection coating around the hole.



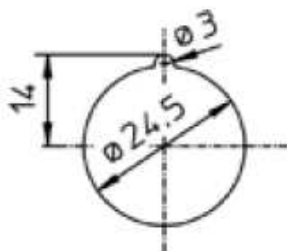
D

DEFA MiniPlug connection cable

Flush installation

DEFA MiniPlug must be installed in such a way that it is protected from splash water and mechanical damage, and so that the connection cable can be easily connected. If the fitting surface is not level for the fastening nut, the enclosed installation ring must be used. If used, the O-ring is inserted in the groove in the plastic nut or installation ring.

For flush installation, a hole with a diameter of 24.5 mm is drilled and a guide slot with a diameter of 3 mm is filed. Use the special tool from DEFA for this. Make sure that there is enough space on the back side for the cable and the fastening nut. Proceed with extreme caution in order to avoid damaging installed components, cables and the like.



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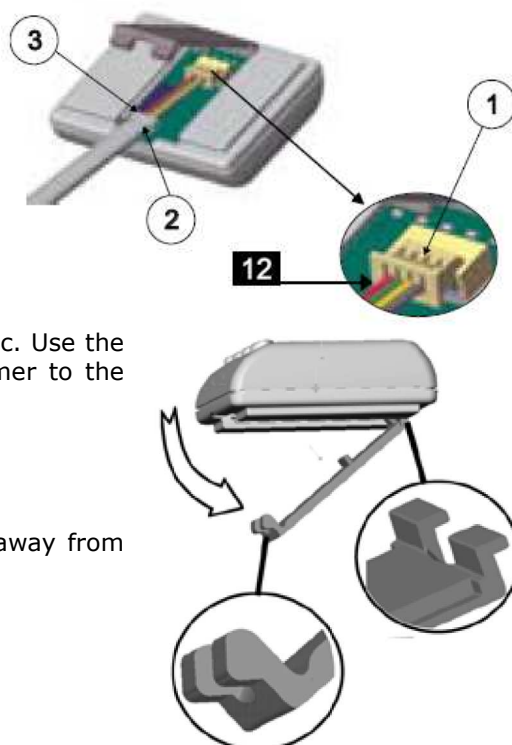
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1 DEFA Futura

2 The "wiring harness" cable is connected to the Futura timer under the small cover*. The cover is opened as shown in the illustration. The plug is installed with the red cable arranged as shown in the illustration¹. The cable² must be placed inside the housing and centred into the housing and cover track³. *Note! The cover can only be open in one end. Look for a suitable installation point for the Futura timer on the dashboard or on the centre console. Consider also to install the timer on the sun visor or at the edge of the windscreen. Carefully clean the surface with suitable grease solvent (e.g. Acrysol). Do not use acetone, Tri, Breakclean and the like, as they can damage PVC and other types of plastic. Use the enclosed double-sided tape to place and fasten the Futura timer to the preferred area.



14 Temperatur sensor. Install it in the front of the vehicle away from engine parts who can affect the outdoor temperature.

E DEFA MiniPlug and extension cable

DEFA MiniPlug with holder

Depending on the installation point, the holder can be mounted on both sides. The contact can be adjusted and turned in order to achieve the desired position. The contact is normally installed with the lid hinge at the top. However, it can also be installed with the lid hinge to the side. The contact may NOT be installed with the lid hinge at the bottom.



F Drainage

Regardless of whether DEFA MiniPlug is installed flush or with a holder, the contact should always be installed to the lid at a downward angle so that water (condensation) can drain. If the contact is installed at an upward angle, the lowest of three dampers MUST be opened for drainage (1). Draining - Do not press the plastic piece into the contact. Use a knife.



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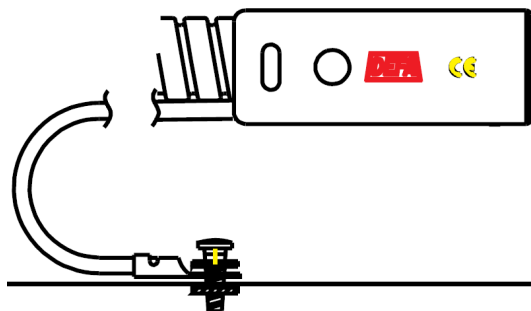
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G Earthing

The earth connection (black, single-phase cable with toothed ring terminal) MUST be connected to a suitable earthing point on a bare metal part of the vehicle's bodywork. Paint, primer and the like MUST be removed from the connection point for the earthing cable. Only original DEFA connection cables may be used with the original DEFA device terminal. The connection may only be made with an earthed plug.

DEFA PlugIn and extension cables

The PlugIn connectors ensures a safe and secure connection. Press male and female PlugIn contacts together firmly enough to ensure that the O-ring will sufficiently seal the plug contact. The O-ring shall not be visible when correct connected. The extension cables must be fastened to suitable points in the engine compartment of the vehicle with ample spacing between them and moving parts such as belt pulleys, fans, etc. Make sure that the extension cables are not routed too close to hot parts, such as exhaust manifolds, turbo chargers and the like. Cable connections may not be subjected to stress from twisting or bending.



A

MultiCharger 1203 - Battery charger

Switch off the mains supply before disconnecting the DC voltage connection. Use the enclosed 5A fuse on the RED cable to positive battery terminal and the BLACK cable to the negative battery terminal. To interrupt the charging process, the mains supply (230V) is disconnected (i.e. negative terminal first, then the positive terminal). Do not shorten or extend the cables (12V), as this cause incorrect charging voltages. The charger must be correctly installed in order for water to drain. The direction is indicated on the label on the charger and/or on the top side of the charger. The temperature of the battery may not exceed +40°C while charging. Fasten the charger using cable ties or the enclosed bracket and screws.



The charger must be correctly installed, connectors pointing downwards, in order for water to drain.



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Support

Claims will be rejected if the fault or defect is attributed to the following causes:

- Normal wear or ageing.
- DEFA products were connected with third-party products and/or accessories and an appropriate investigation has been conducted.
- Installation errors.
- Insufficient maintenance/care and improper or unintended use.
- The product has been tampered with, modified or repaired, or attempts to do so were made, by persons not affiliated with DEFA, without having first obtained written permission from DEFA to open, modify or repair the product.
- Circumstances which are beyond the control of DEFA.

Applications:



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