



Combi 2 E / 4 E CP plus (Australia)

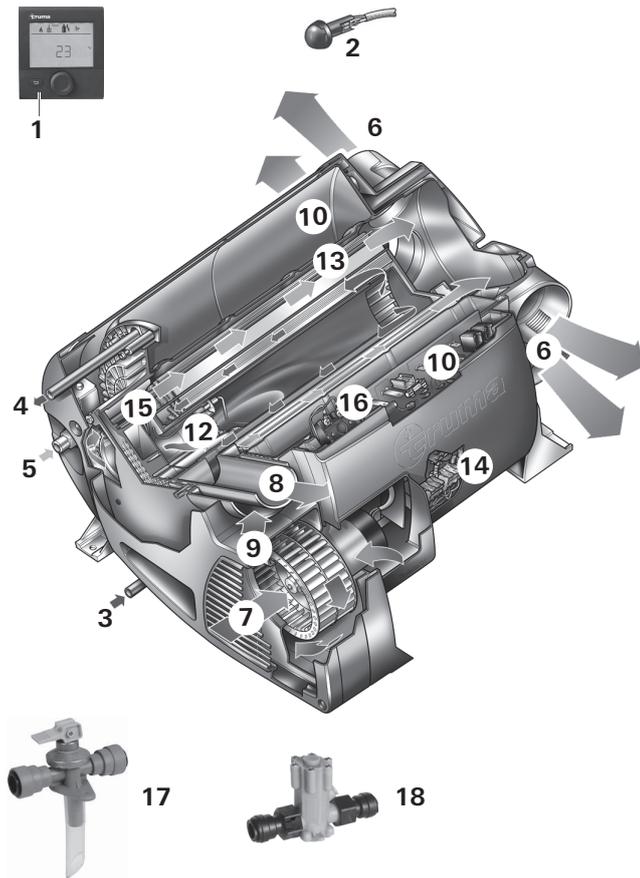
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Operating instructions
Installation instructions

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To be kept in the vehicle!



- 1 Control panel (digital)
- 2 Room temperature sensor
- 3 Cold water connection
- 4 Hot water connection
- 5 Gas connection (with pressure test point – not shown)
- 6 Hot air outlets
- 7 Recirculated air intake
- 8 Waste gas discharge
- 9 Combustion air infeed
- 10 Electronic control unit
- 11 Water container (10 litres)
- 12 Burner
- 13 Heat exchanger
- 14 Power electronics
- 15 Heating elements 240 V
- 16 Overheating switch 240 V
- 17 Safety/drain valve
- 18 Water pressure reducer

Fig. 1

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Symbols used



The unit must only be installed and repaired by an expert.



Symbol indicates a possible hazard.



Comment including information and tips.



Observe the ESD-regulations! An electro-static charge can destroy the electronics. Ensure potential equalisation before touching the electronics.

Function description

The Combi 2 E / 4 E CP plus (Australia) liquid gas heater is a warm-air heater with integrated hot water boiler (10 litre capacity). The burner is fan-assisted, which ensures that operation is problem-free, even when on the move. The unit also has heating elements for electrical operation.

In **heating and hot water mode** the heater can be used to heat the room and heat water up at the same time. If only hot water is required, select **hot water mode**.

3 different options are available for operating the unit:

- **gas mode** only
LPG for autonomous use
- **electrical mode** only
240 V for stationary use on camp sites
- or gas and electrical mode – **mixed mode**
Only possible in heating and hot water mode.

Heating and hot water mode

In **heating and hot water mode**, the unit automatically selects the required operating level according to the temperature difference between the temperature set on the control panel and the current room temperature. If the boiler has been filled, the water is automatically heated as well. The water temperature depends on the selected operating mode and the heater output.

All 3 energy selection options can be used for winter deployment.

- In **gas mode** the unit automatically selects the operating level that is required.
- In **electrical mode** output of 980 W (4.1 A) or 1960 W (8.1 A) can be manually preselected in accordance with the fuse protection at the camp site.

If more output is required (e.g. heating up or low outside temperatures) gas or mixed mode should be selected so that enough heating power is always available.

- In **mixed mode** 240 V electrical mode is preferred if the power requirement is low (e.g. for maintaining the room temperature). The gas burner is not enabled until the power requirement is higher, and is the first to switch off during heat-up operations.

Hot water mode

(with filled boiler only)

Gas mode or 240 V electrical mode is used to generate hot water. The water temperature can be set to 60 °C.

- In **gas mode** the water is heated at the lowest burner setting. Once the water temperature has been reached, the burner switches off.
- In **electrical mode** output of 980 W (4.1 A) or 1960 W (8.1 A) can be manually selected in accordance with the fuse protection at the camp site.

 **Mixed mode** is not possible. With this setting the unit automatically selects electrical mode. The gas burner is not enabled.

Safety instructions

The use of upright gas cylinders from which gas is **taken in the gas phase** is mandatory for the operation of gas regulators, gas equipment and gas systems. Gas cylinders from which gas is taken in the liquid phase (e. g. for fork lifts) must not be used, since they would result in damage to the gas system.

If the gas system is leaking or if there is a smell of gas:

- extinguish all open flames
- open windows and door
- close all quick-acting valves and gas cylinders
- do not smoke
- do not activate any electric switches
- ask an expert to inspect the entire system!



Repairs may only be carried out by an expert!

During use, please observe the regulations of AS/NZS 60335.1:2010, according to which this device has not been designed for use by people (including children) who have restricted physical, sensory or mental abilities or a lack of experience and / or knowledge, unless they are supervised by a person responsible for their safety or have received instructions from that person as to how the device is to be used.

Children should be supervised to ensure they do not play with the device.

Guarantee claims, warranty claims and acceptance of liability will be ruled out in the event of the following:

- modifications to the unit (including accessories),
- modifications to the exhaust duct and the cowl,
- failure to use original Truma parts as replacement parts and accessories,
- failure to follow the installation and operating instructions.

It also becomes illegal to use the appliance, and in some countries this even makes it illegal to use the vehicle.

The operating pressure for the gas supply is 2.75 kPa and must correspond to the operating pressure of the appliance (see type plate).

LPG systems and pressure regulators must comply with the technical and administrative regulations of the country in which the appliance is used (AS/NZS 5601). For your own safety it is absolutely necessary to have the complete gas installation regularly checked by an expert (at least every 2 years).

The vehicle owner is always responsible for arranging the gas inspection.

Liquid gas equipment may not be used when refueling, in multi-storey car parks, in garages, or on ferries.

During the initial operation of a brand new appliance (or after it has not been used for some time), a slight amount of fumes and smell may be noticed for a short while. It is a good idea to heat the device up several times in hot water mode operation (60 °C) and to make sure that the area is well ventilated.

- Do not place articles on or against this appliance.
- Do not use or store flammable materials near this appliance.
- Do not spray aerosols in the vicinity of this appliance while it is in operation.
- Do not modify this appliance.

The flow rate of the pressure control device must correspond to at least the maximum consumption of all devices installed by the system manufacturer.

We recommend the gas pressure control system Truma MonoControl CS for vehicles and the Truma gas pressure control systems DuoControl CS for dual-cylinder gas systems.

At temperatures of around 0 °C or less the gas pressure regulator and the changeover valve should be operated using the EisEx regulator heater.

Controller connecting hoses that meet national regulations must always be used in the respective country for which the equipment is destined. These hoses must be checked regularly for brittleness. Winter-proof special hoses must always be used if the equipment is operated during the winter.

Important operating notes

If the cowl has been placed near or directly beneath an opening window, the device must be equipped with an automatic shut-off device in order to prevent operation with the window open.

The integrity and tight fit of the exhaust gas double duct must be checked regularly, particularly at the end of long trips. Also check the mounting of the appliance and the cowl.

Following a blow-back (misfire) always have the exhaust duct checked by an expert.

Keep the cowl for the exhaust duct and combustion air intake free of contamination (slush, ice, leaves etc.) at all times.

The warm air outlets and the circulated air intake openings must be clear so that the unit does not overheat.

Do not use any after market air filters or air grills. The use of such components may cause the unit to overheat.

The integrated temperature limiter blocks the gas supply when the unit becomes too hot.

Warning: Air from the discharge vent may be hot. Do not place combustible materials directly in front of the discharge vent. Keep curtains, bedding and other flammable materials away from the vent.

 If **no** safety shut-off device (e.g. for the gas pressure control system Truma MonoControl CS / DuoControl CS) has been installed, the gas cylinder needs to be closed when driving and **appropriate signs** must be displayed in the gas cylinder protection box and close to the control panel.

The safety shut-off device is also recommended for safety reasons if caravans are being heated while driving.

Operating instructions

Always observe the operating instructions and “Important operating notes” prior to starting! The vehicle owner is responsible for the correct operation of the appliance.

The installer or vehicle owner must apply the yellow sticker with the warning information, which is enclosed with the appliance, to a place in the vehicle where it is clearly visible to all users (e.g. on the wardrobe door)! Ask Dometic Service to send you stickers, if necessary.

i Before using for the first time, it is essential to flush the entire water supply system through with clean water. If the heater is not being used, always drain the water contents if there is a risk of frost. **There shall be no claims under guarantee for damage caused by frost!**

Digital Control Panel

The digital control panel is described in a separate operating instruction.

Room temperature sensor

To measure the room temperature, an external room temperature sensor (2) is located in the vehicle. The position of the sensor is determined by the vehicle manufacturer, depending on the vehicle model. More information can be found in the operating instructions for your vehicle.

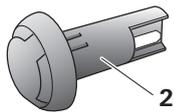


Fig. 2

The thermostat setting on the control panel depends on the personal heating requirement and the type of vehicle and must be individually determined.

Safety/drain valve

The safety/drain valve automatically equalises the pressure in the event of overpressure in the system. When this occurs, the water is drained to the outside in intermittent bursts via a drainage socket.

i This safety/drain valve does not protect the water container from **frost damage**.

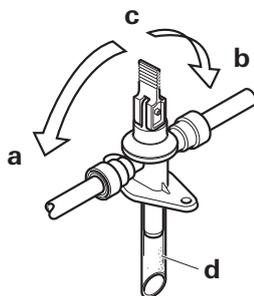


Fig. 3

- a = Lever in position “Operational – closed”
- b = Lever in position “Operational – closed”
- c = Lever in position “Drain”
- d = Drainage socket (led outside through floor of vehicle)

Opening the safety/drain valve

- Move lever to position (c) - vertical. The water from the boiler drains through the drainage socket (d).

The drainage socket (d) of the safety/drain valve must be free of contamination (slush, ice, leaves, etc.) at all times so the water can drain out easily! **There shall be no claims under guarantee for damage caused by frost!**

Closing the safety/drain valve

- Move lever to position (a) or (b) - horizontal.

Filling the boiler

Check whether the safety/drain valve is closed (see “Closing the safety/drain valve”).

- Switch on the power for the water pump (main switch or pump switch).
- Open hot water taps in kitchen and bathroom, (set pre-selecting mixing taps or single-lever fittings to “hot”). Leave the fittings open for as long as it takes for the boiler to displace the air and fill up, and the water to flow without interruption.

i If only the cold water system is being operated without the boiler, the boiler also fills up with water. To avoid frost damage, the boiler must be drained via the safety/drain valve, even if it was not operated.

In the event of frost, filling may be prevented by residual water that has frozen. The boiler can be thawed out again by briefly starting it up (max. 2 minutes). Frozen lines can be thawed out by heating up the interior.

! If connected to a central water supply (rural or urban connection), a pressure reducer must be used, which will prevent pressures of greater than 2.8 bar from occurring in the boiler.

Draining the boiler

! If the motor home / caravan is not used during the winter, the boiler must be drained!

- Switch off the power to the pump assembly (main switch or pump switch).
- Open hot water taps in kitchen and bathroom.

i In order to check the water that is flowing out, place an appropriate container (capacity 10 litres) beneath the drainage socket (d) of the safety/drain valve.

- Open safety/drain valve (see “Opening the safety/drain valve”).

The boiler is now drained directly to the outside via the safety/drain valve. Check whether all of the water in the boiler (10 litres) has been drained into the container via the safety/drain valve.

- There shall be no claims under guarantee for damage caused by frost!

Start-up

The use of the installed control panel is described in separate operating instructions.

The interior can be heated in gas, electrical or mixed mode, either with or without water, depending on the setting.

Check whether the power supply fuse protection at the camp site is adequate for the 980 W (4.1 A) or 1960 W (8.1 A) that have been selected.

The cable drum must be fully unwound in order to prevent the power cable from overheating.

- Check to make sure the cowl is unobstructed. Be sure to remove any covers that may be present.
- Open gas cylinder and quick-acting valve in gas supply line.
- Fill boiler with water if necessary (see “Filling the boiler”).
- Switch on heater at control panel.

Switching off

- Switch off heater at control panel.
- The switch-off procedure may be delayed by several minutes because of internal heater operations.

Always drain water contents if there is a risk of frost!

If the heater is not going to be used for a long period of time, close the quick-acting valve in the gas supply line and turn off the gas cylinder.

Maintenance

Only original Truma parts may be used for maintenance and repair work!

The device must be descaled on a regular basis (at least twice a year).

 Servicing shall be carried out only by authorised personnel.

Please contact Dometic Service Centre for service and repairs.

Biofilm, deposits and limescale must be removed using chemicals to protect the unit from infestation by microorganisms. Only chloride-free products must be used in order to prevent damage to the unit.

The effectiveness of the use of chemicals to combat microorganisms in the unit can be increased by heating the water in the boiler to 70 °C at regular intervals.

- Select “Gas” mode.
- Set water temperature to 60 °C.
- Switch on device.

 Once the water in the boiler has reached a temperature of 60 °C, the burner will switch off. The unit must stay switched on for at least 30 minutes and no warm water may be removed. The residual heat in the heat exchanger will heat the water up to 70 °C.

Fuses

Fuse 12 V

The fuse is in the electronics beneath the connection cover. Replace the unit's fuse only with an identical fuse.

Device fuse: 10 A – slow – (T 10 A)

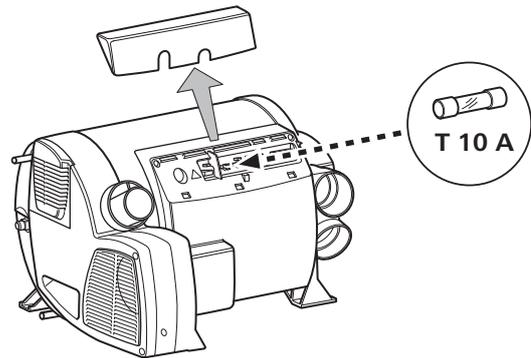


Fig. 4

Fuse 240 V

The fuse and the power supply lines must only be replaced by an expert!

 The unit must be disconnected from the mains (all poles) before opening the electronic housing lid.

The fuse is in the power electronics (16) beneath the electronic housing lid.

This fine fuse must always be replaced with a fuse of the same type: 10 A, slow, interrupting capacity “H”.

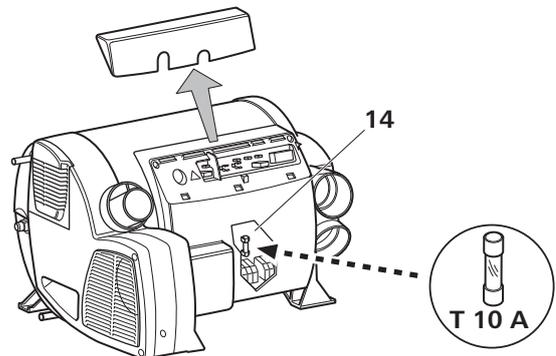


Fig. 5

Overheating protection 240 V

The 240 V heating facility has a mechanical overheating switch. If the 12 V power supply is interrupted during operation or during the after-run period, for example, the temperatures within the unit could activate the overheating protection.

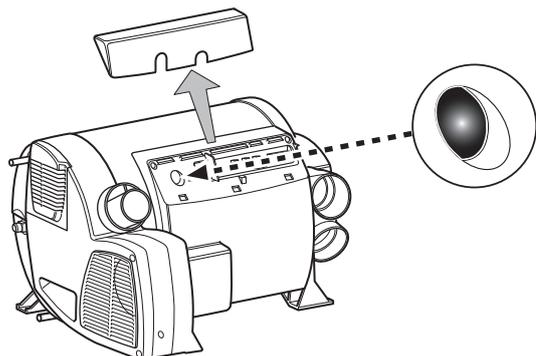


Fig. 6

To reset the overheating protection, allow heater to cool, remove connection cover and press red reset button.

Faults

Faults – Heater

Descriptions of possible fault causes and a troubleshooting guide can be found in the operating instructions for the control panel that is installed.

Faults – Water supply

Possible fault causes and a troubleshooting guide – See “Troubleshooting guide (water supply)”.

Troubleshooting guide (water supply)

Fault	Cause / Remedy
Water taking an extremely long time to heat up.	Water container furred. / Descale water system (see “Maintenance”).
Water running out, cannot fill boiler.	Safety/drain valve open. / Close safety/drain valve.
Cannot empty boiler, even though safety/drain valve is open.	Safety/drain valve draining connection blocked. / Inspect opening for contamination (slush, ice, leaves, etc.) and remove contamination if necessary.
Water dripping/flowing from draining socket of safety/drain valve.	Water pressure too high. / Check pump pressure (max. 0.28 MPa). If connected to a central water supply (rural or urban connection), a pressure reducer must be used, which will prevent pressures higher than 0.28 MPa entering the boiler.
When opening the cold water tap, hot water comes out.	Hot water flows back through the cold water supply. / Fit a non-return valve in the cold water supply (refer to installation instructions “Water connection”).

If these measures do not remove the failure, please contact the nearest Dometic Service.

Disposal

The device must be disposed of in line with the administrative regulations of the respective country in which it is used. National regulations and laws must be observed.

Technical data

determined in accordance with EN 624 or Truma test conditions

Type of gas

LPG (Liquefied Petroleum Gas – propane / butane)

Operating pressure

2.75 kPa (see type plate)

Water contents

10 litres

Heating up time from approx. 15 °C to approx. 60 °C

Boiler approx. 23 minutes (measured according to EN 15033)

Heater + boiler approx. 90 min.

Pump pressure

max. 0.28 MPa

System pressure

max. 0.45 MPa

Nominal input (Propane)

Combi 2 E CP plus (Australia): 6.9 MJ/h

Combi 4 E CP plus (Australia): 13.6 MJ/h

Thermal output

Electrical operation (240 V): 980 W / 1960 W

Mixed operation (gas and electrical): max. 3900 W

Gas operation

Combi 2 E CP plus (Australia): max. 1950 W

Combi 4 E CP plus (Australia): max. 3900 W

Gas consumption (Propane)

Combi 2 E CP plus (Australia): 130 g/h

Combi 4 E CP plus (Australia): 130 – 260 g/h

Air delivery volume (free-blowing without hot-air pipe)

with 3 hot-air outlets max. 249 m³/h

with 4 hot-air outlets max. 287 m³/h

Current input at 12 V

Heater + boiler

Short-term max. 5.6 A (average power consumption 1.1 A)

Heating up of boiler: 0.4 A

Stand-by: 0.001 A

Current input at 240 V

4.1 A (980 W) or 8.1 A (1960 W)

Weight (not containing water)

Heater unit: 15.8 kg

Heater unit with peripheral devices: 16.4 kg

Declaration of conformity

The heater Combi 2 E / 4 E CP plus (Australia) is approved according AS 4552, AS 4556, AS/NZS 60335.2.21+A1-A3, AS/NZS 60335.2.30+A1, AS/NZS 60335.1+A1 and fulfills these standards:



Dimensions

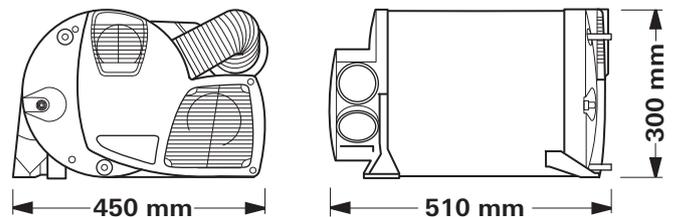


Fig. 7

The right to effect technical modifications is reserved!

Truma CP plus

Digital control panel Truma CP plus (part no. 36020-01).



Fig. 8

Accessories (without picture) for control panels

- Cable 3 m (part no. 36110-01)
- Cable 6 m (part no. 36110-02)
- Cable 9 m (part no. 36110-03)

Truma warranty policy

The warranty is given by Dometic Pty Ltd, Building 3B, Clayton Business Park, 1508 Centre Road, Clayton, Victoria, 3168, for 12 months from the date of purchase against any defect arising from faulty materials or workmanship.

Repairs will be carried out during normal business hours only by Dometic Pty Ltd, or its duly authorised service agents, and are subject to the warranty conditions and exclusions hereunder.

Warranty conditions

- The company will only provide service on presentation of proof of purchase, on either the Truma product, or the Caravan / RV / Pleasure Craft in which the Truma product has been installed, to any authorised service agent. The purchaser must allow the service agent to photocopy the proof of purchase to facilitate his claim to the manufacturer.
- Warranty repairs can only be performed by authorised service agents and under no circumstances will Dometic reimburse repairs carried out by unauthorised persons. Tampering with any part of the product by unauthorised personnel will automatically void the warranty.
- The product must be used solely for domestic purposes only. If the product is used for commercial purposes the warranty is 6 months only.
- Where applicable, the products must be used on the appropriate electrical voltage, gas type and pressure, or fuel source.
- If at any time during the warranty period any part or parts are replaced with a part or parts not supplied or approved by Truma, this warranty shall immediately become void.

Important notice

Before calling a service technician please check carefully the operating instructions, warranty terms and conditions. If the product fails for any of the reasons detailed therein, or is faulty due to abuse, misuse or improper installation, then a service fee shall be charged to the purchaser.

If you have any queries regarding the interpretation of the warranty you should contact Dometic Pty Ltd.

Whilst this book represents service outlets at the time of printing, changes occur from time to time. Should you have any queries or wish to locate your nearest authorised service agent please contact Dometic Pty Ltd.

Warranty does not cover

- Any heater which has been:
 - (a) Subject to misuse, neglect, accident or alteration by any person.
 - (b) Damaged or destroyed by fire, flood, act of God or other inevitable accident.
- Fair wear and tear.
- Damage from foreign substances such as dirt or liquid.
- Travelling expenses or call out fee to and from authorised service agents premises.
- Accommodation or Site Expenses.
- Cleaning of the system or cleaning and adjustment of the gas system. This is considered to be a part of normal product maintenance.
- Non operation of the heater or resultant damage to the unit where the heater has been operated in an out of level situation.
- Freight cost of the appliance or parts, to or from, point of service or transit damage.
- Dometic / Truma are not responsible for resultant loss or damage sustained by the purchaser.
- Non operation of the appliance or resultant damage to the unit where the appliance has not been installed, ventilated, flued or operated in accordance with the manufacturers instructions.

Apart from any warranties implied by the Trade Practices Act 1974 or any relevant State legislation all other warranties express or implied whether arising by virtue of statute or otherwise are hereby excluded.

Installation instructions



Read the installation instructions carefully prior to starting work and observe the instructions!

! Non-compliance with installation instructions or incorrect installation can result in endangerment of persons and property.

This appliance shall be installed in accordance with the manufacturer's installation instructions, local gas fitting regulations, municipal building codes, electrical wiring regulations. AS/NZS 5601 "Gas installations", and any other statutory regulations.



Please pay attention to the ESD regulations!

Intended use

The Truma Combi 2 E / 4 E CP plus (Australia) liquid gas heater is a warm-air heater with integrated hot water boiler (10 litre capacity).

The heater comes with additional electric heating elements, for operation with a mains voltage of 240 V ~.

This unit was designed for installation in motor homes and caravans. The equipment must not be installed in buses or vehicles for transporting hazardous goods (vehicle classes M2 and M3). If the equipment is installed in special vehicles, the applicable regulations must be followed.

Vehicles for hazardous materials

Combustion heaters for gaseous fuel are not permitted.

Approval

Declaration of conformity

The heater Combi 2 E / 4 E CP plus (Australia) is approved according AS 4552, AS 4556, AS/NZS 60335.2.21+A1-A3, AS/NZS 60335.2.30+A1, AS/NZS 60335.1+A1 and fulfills these standards:

The heater complies with the electromagnetic compatibility for vehicles UN ECE R10.

SAI Global Certification Number

GAS40016

The year when the equipment was first taken into operation must be indicated with a check on the type plate.

Regulations

Guarantee claims, warranty claims and acceptance of liability will be ruled out in the event of the following:

- modifications to the unit (including accessories),
- modifications to the exhaust duct and the cowl,
- failure to use original Truma parts as replacement parts and accessories,
- failure to follow the installation and operating instructions.

It also becomes illegal to use the appliance, and in some countries this even makes it illegal to use the vehicle.

In-vehicle installations must comply with the technical and administrative regulations of the respective country of use (e.g. AS/NZS 5601.2 for vehicles). The national regulations and rules must be complied with.

More information on the regulations in the relevant destination countries can be requested from our foreign representatives (see Truma Service Booklet or www.truma.com).

Selecting a location

The unit and its exhaust duct must always be installed so that they are easy to access at all times for service work (e.g. gas and water connection via a service flap, furniture doors etc.) and are easy to remove and install.

The distance between the unit and surrounding furniture items or vehicle components must be at least 10 mm at all sides:

The flue and warm air ducts can be installed without clearance. Make sure that there is at least 10 mm clearance to combustible materials around the warm air discharge vent and 500 mm in front of the vent. Locate the vent so that curtains, bedding, etc. cannot be blown directly in front of or in contact with the warm air vent.



For warm air ducting only Truma ductings have to be installed.

The scope of delivery includes a second type plate (duplicate) with removable bar code.

If the type plate on the heater is not visible after the heater has been installed, the second type plate (duplicate) must be affixed to the unit in a clearly visible location.

The duplicate must only be used in conjunction with the original.

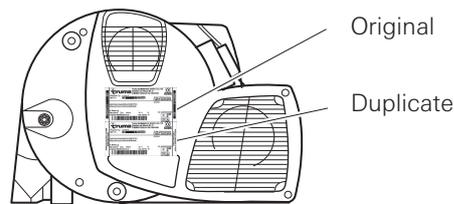


Fig. 9

In order to heat the vehicle evenly throughout, the heater must be installed in a location in the vehicle that is as **central** as possible in a wardrobe, stowage compartment or the like with an adequate height, so that the air distribution ducts can be routed with equal lengths. Appropriate openings must be present in the installation compartment so that air can be drawn in – see relevant sections concerning circulated air intake and warm air distribution.



In order to reduce the potential danger caused by a heater becoming loose in the event of an accident, the upper covering plate (17) of the installation cabinet can be screwed to other pieces of furniture in a position that makes it flush with the heater. Depending on the installation situation, it may be necessary (especially with rear-mounted fixtures) to install a stable furniture console (18) in front of (next to) the heater, perpendicular to the direction of travel. For this purpose, a solid spacer (minimum cross section 30 x 50 mm) can be attached at a height of approx. 180 mm above the floor, or a board (18a) for sliding in on a stable furniture console.

There must not be any heat-sensitive materials beneath the unit (e.g. floor coverings such as PVC, cables etc.), since high temperatures can occur at the base of the unit.

In order to prevent damage to components inside the equipment, no cables or water lines of any kind may be attached to the equipment's insulation.

The operation of important vehicle components must not be adversely affected.

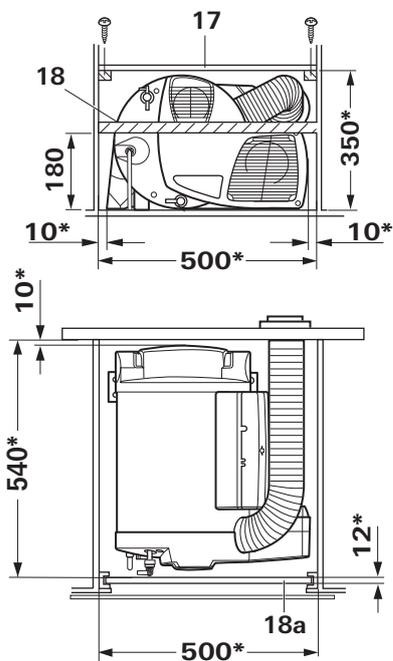


Fig. 10

* Minimum dimensions – additional space must be provided for the gas connection, water connections and the Frost-Control depending on the installation situation. All dimensions in mm.

The cowl must be placed in such a way that exhaust gas cannot find its way into the vehicle interior.

 The cowl must be in the form of a wall or roof cowl

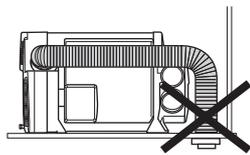


Fig. 11

The wall or roof cowl must be attached such that there is no fuel tank filler neck or fuel tank breather opening within 500 mm (R). There must also be no living area ventilation openings or window openings within 300 mm.

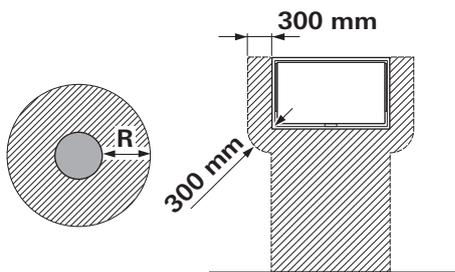


Fig. 12

 If the cowl is being installed directly underneath a window that will be opened, installation of an electric window switch (part no. 34000-85800) is mandatory.

Information about roof windows

In the case of roof windows (pop-out), the cowl top needs to protrude at least 10 cm above the opened window. If the cowl is next to the window, steps must be taken to ensure that, depending on where it is installed (opened on the right or left), no exhaust air can enter the open window (e.g. via wind) and that the cowl has a good supply of incoming air.

Refer to AS/NZS 5601.2 – Gas Installations, for location requirements of the flue terminal.

Securing the device

Check whether the vehicle has a load-bearing floor or false floor for securing the heater. If the floor is unsuitable, create a load-bearing surface beforehand by gluing a plywood board to the floor, for example.

Screw heater to vehicle floor or false floor using four B 5.5 x 25 screws (included in scope of delivery). Depending on the situation, it may be possible to secure the heater with three screws; in this case, always screw aluminum feet (a) and selectively one of the plastic feet (b) to the vehicle floor.

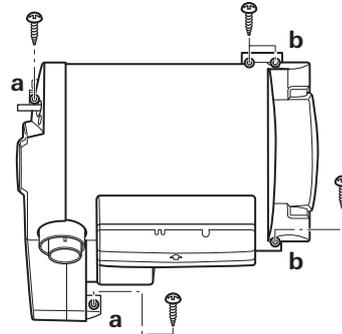


Fig. 13

 **The heater must be screwed to the floor of the vehicle or the false floor in order to prevent the gas system from becoming damaged because of movement while driving!**

Exhaust gas removal

Only Truma exhaust duct AA 3 (part no. 39320-00) and combustion air infeed ZR (part no. 39580-00) may be used for the Truma Combi 2 E / 4 E (Australia) heater because the unit was tested and approved only with these ducts.

Do not crush or kink these ducts during installation.

 The roof cowl is available as an accessory to the heating device – assembly instructions are enclosed with the delivery.

Installing the wall cowl

Permissible duct lengths

The length specifications refer to the combustion air intake duct.

Ducts with a length of at least 60 cm to a maximum of 100 cm can be routed with any amount of rising for the wall cowl, or with a maximum fall of 20 cm.

Duct lengths from 100 cm to max. 200 cm may only be installed rising.

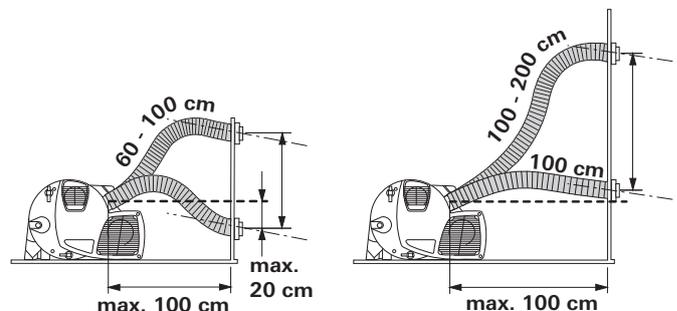


Fig. 14

The ducts must be cut to length so that they protrude from the hole for the cowl after installation. The exhaust duct (1) must be 10 % longer than the combustion air intake duct (5). This avoids exhaust duct expansion and tensile load.

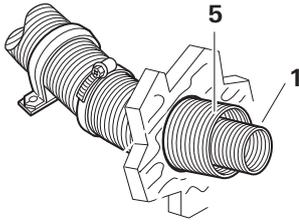


Fig. 15

Installing the wall cowl

Install wall cowl (arrow pointing up) on an even surface around which wind can flow from all sides. Drill opening with a diameter of 83 mm (duct hole must be lined with wood in cavities). Seal with provided rubber seal (8). Use flexible body sealant on textured surfaces – do not use silicone!

Before pushing the exhaust double duct through the hole, slide clamp (7) over duct.

Slide rubber seal (8 – **smooth side towards cowl, sealing lips towards wall**) onto inner part of cowl (9).

Compress beginning of exhaust duct (1) (approx. 2 cm thereof) so that the coils are lying against each other.

Slide clip (2 - claws facing cowl) over exhaust duct (1).

Slide exhaust duct (1) onto connection as far as it will go (11 – bend facing upwards).

Slide on clip (2) as far as it will go (end position must be between claws of clip) and screw in place.

Slide combustion air intake duct (5) onto toothed connecting piece (12).

Attach cowl inner part (9) with six screws (13), fit outer part of cowl (14) and screw on with two screws (15) (screws B 3.5 x 25, included with delivery).

Use clip (7) to attach combustion air intake duct to connection (12) from inside and (if length greater than 60 cm) attach to wall with at least one clip ZRS (16 - part no. 39590-00).

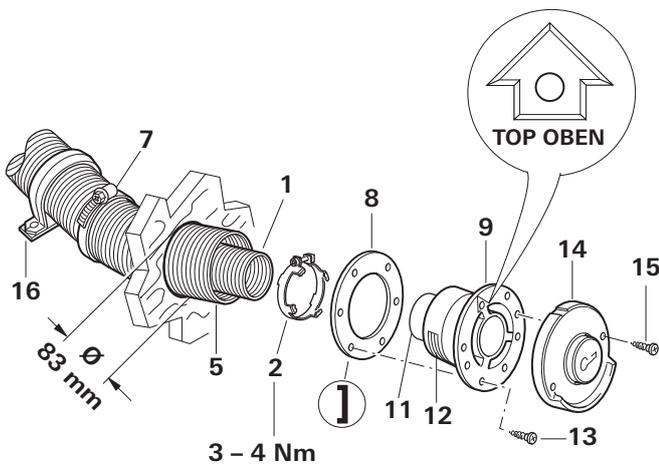


Fig. 16

Connecting the exhaust double duct to the device

Compress exhaust duct (1) at its beginning so that the coils lie next to each other. Slide clip (4 – claws toward unit) over exhaust duct (1). Slide clip (7) onto combustion air infeed (5). Slide exhaust duct (1) all the way onto connection (3). Slide exhaust duct clip (4) as far as it will go (end position must be between claws of clip) and screw in place. Slide combustion air intake duct (5) onto connection (6) and secure with clip (7).

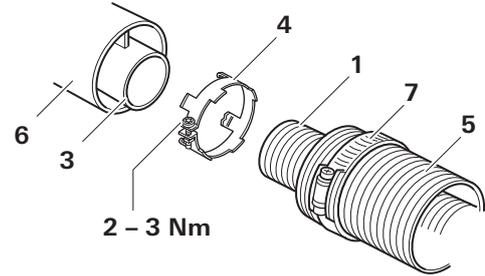


Fig. 17

Recirculated air intake

The circulated air is drawn in by the unit. This must have one large or several small openings with a total area of at least 150 cm² between the living compartment (not the rear storage space) and the installation compartment.

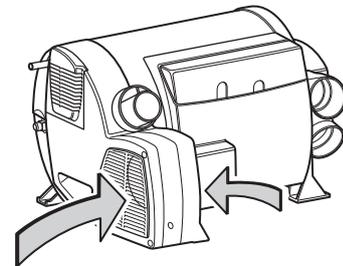


Fig. 18

The circulated air inlets must be arranged such that exhaust from the vehicle engine or the heater cannot be drawn in under normal operating conditions. Structural measures must be taken in order to ensure that the heating air that is led into the interior of the vehicle cannot be contaminated.

Warm air distribution

Most of the warm air is led into the floor area of the living compartment via flexible ducts.

The 4 connections on the unit are designed for the 65 mm diameter ÜR duct (part no. 40230-00).

! Only Truma ducts are approved with the heating system and must be used.

Use only pressure-safe ducts in compliance with Truma quality requirements. Other ducts that do not meet our quality standard (particularly crown pressure resistance, duct diameter and number of grooves) must not be used.

If the warm air duct has to be subjected to a considerable amount of bending immediately behind the warm air outlet of the unit in confined spaces, we recommend the use of the BGC 90° elbow (part no. 34091-01). This elbow makes it possible to connect a ÜR warm air duct with a diameter of 65 mm or a VR warm air duct with a diameter of 72 mm.

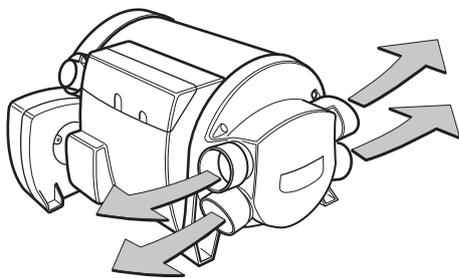


Fig. 19

With a duct length of less than 2 m the air outlet must not be installed higher than the warm air duct muff. With a duct length of less than 50 cm, the duct must create a siphon between the connection and the outlet.

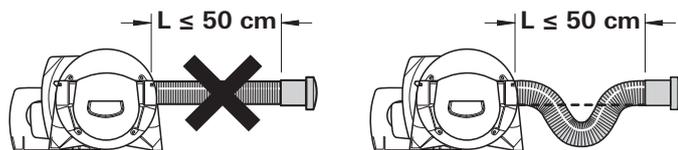


Fig. 20

These measures prevent undesirable heating of the vehicle due to convection (cowl effect) during operation in hot water mode.

i The ducts for warm air distribution must be firmly inserted into the connections. A clip is attached to each connection to provide a more secure grip.

For optimum warm air distribution, Truma always recommends using the 4 warm air outlets of the heater. If only three warm air outlets are needed, one of the lower warm air outlets must be sealed with a blank cover VD (part no. 34310-01). The blank cover must be firmly pushed into the moulded part of the heater until it audibly engages and is firmly seated. Check for firm seating.

i If four warm air outlets are being used, a closable end outlet EN may be installed in **one** warm air branch. If there are only 3 warm air outlets, it must be ensured that if a closable end outlet is being used (e.g. bathroom) a second non-closable nozzle must be installed in the warm air branch.

Gas connection

! A gas pressure regulator has to be used, which ensures gas supply at gas pressure level 2.75 kPa. The gas supply's operating pressure must be the same as the unit's operating pressure (see type plate). The gas installation must comply with AS/NZS 5601.2.

The gas inlet connection on the Combi 2 E / 4 E CP plus (Australia) is a 8 mm connection.

Prior to connecting the appliance make sure that the gas lines are free from dirt, chips and such!

Gas-connection muff (20) on the unit may not be shortened or bent.

Choose to route the pipes in a way that will facilitate removing the unit for service tasks.

To connect, the UNF 1/2" – 20 (SAE Male AN Flare) gas inlet connection (19) provided with the appliance must be used. The gas inlet connection is preinstalled. Carefully counterhold with another spanner when tightening!

For connection to 8 mm steel piping Dometic provides an adapter UNF 1/2" x RVS 8, part no. 70020-02700.

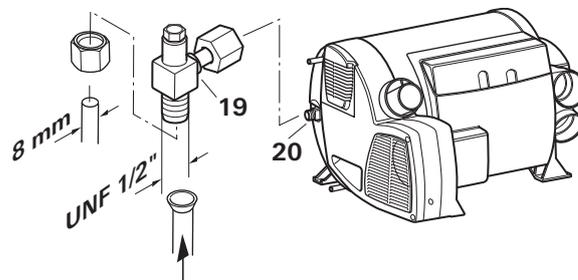


Fig. 21

Route the pipes in such a way that the appliance can be removed again for servicing.

Refer to AS/NZS 5601.2 – Gas Installations, for gas pipe sizing.

It is absolutely mandatory that the tightness of the gas installation is proved before starting up for the first time.

Check for gas leaks (do not check for gas leaks with a naked flame), then check that the gas pressure is as follows:

LPG: 2.75 kPa

Keep the number of parting connections in the gas supply line in rooms frequented by people to a technically feasible minimum.

The gas system must accord with the technical and administrative provisions of the individual country of use (in Australia, AS/NZS 5601 for motor vehicles).

Water connection

For operating the water heater it is possible to use all pressure pumps and submersible pumps up to 0.28 MPa, also all mixing taps with or without electrical switch.

! In order to guarantee complete emptying of the water content and to prevent pressures of greater than 0.45 MPa occurring in the boiler, the enclosed pressure reducer (22), the enclosed water connectors (27 + 28) and the enclosed safety (pressure relief) drain valve (24) must be used!

When using pressure pumps with high switching hysteresis, hot water may flow back through the cold water tap. To prevent the backflow, we recommend that a non-return valve (nrV – not included in the scope of supply) be fitted between the outlet to the cold water tap and the drain valve.

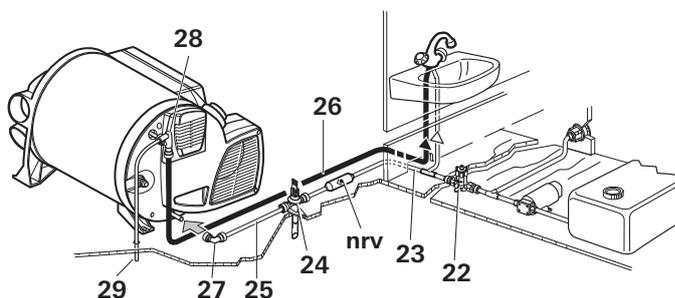


Fig. 22

i The supplied water connectors (27 + 28) and safety/drain valve (24) have a 12 mm rigid piping connection (e. g. John Guest System). For connecting to rigid pipes with other diameters appropriate adapters (not included in scope of delivery) must be used.

Hoses with a diameter of 12 mm that are drinking water compatible, pressure-resistant (up to 0.45 MPa) and hot water-resistant up to +80 °C must be used to connect the unit and the accessories. We recommend the use of John Guest pipes, insertion sleeves and hose clamps.

As accessories Truma supplies the water connectors (27 + 28) and safety/drain valve (24) with a 10 mm / 3/8" diameter hose nipple.

i The included elbow fittings (27 + 28) must always be used in order to completely empty the water and prevent the water pipes on the unit from leaking over the long-term!

Elbow fitting (28 – with aeration valve) is connected to the upper warm water connection; the second elbow fitting (27) is connected to the lower cold water connection.

i Route all water lines so they drop down to safety/drain valve! **There shall be no claims under guarantee for damage caused by frost!**

Mounting the safety/drain valve

Mount the safety/drain valve (24) to an easily accessible point close to the device.

The draining is to be directly to the outside at a position protected against splash water (apply splash guard, if necessary).

Drill hole with 18 mm diameter and pass through discharge socket with hose (24a). Fasten safety/drain valve with 2 screws.

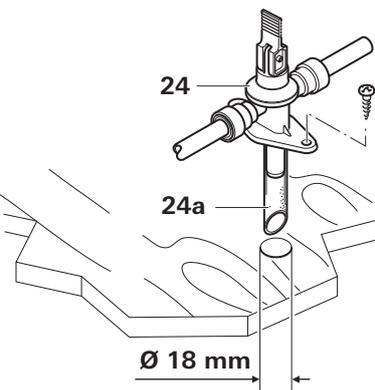


Fig. 23

Installation of the pressure reducer

The pressure reducer (22) must be fitted between the safety/drain valve and water pump in accordance to the **direction of flow**.

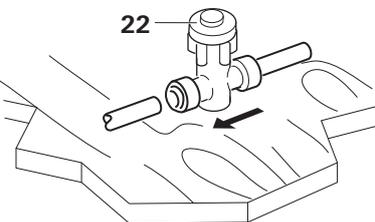


Fig. 24

Water pipe routing

Water pipes (hoses) need to be installed as short as possible without kinks. All hose connections must be secured with hose clips or John Guest connections with safety rings (even cold water)! When the water is warmed, the resulting expansion may create pressure levels up to 0.45 MPa until the safety valve triggers (also possible for submersible pumps).

When installing a water supply into the vehicle, please ensure that there is an adequate distance between the water pipes (hoses) and the heat source (e.g. heater, warm air duct).

Hose clips SC (part no. 40712-01) are suitable for fastening the pipes (hoses) to walls or the floor. These hose clips also make it possible to route water pipes (hoses) on the heater's warm-air distribution pipes as a way to avoid the danger of frosting.

A water pipe (hose) may only be fitted at a clearance of 1.5 m to the heater on the warm air duct. The Truma hose clip SC can be used if this distance is observed. In the case of parallel installations, e.g. openings through a wall, a spacer element should also be attached (e.g. insulation) to prevent contact.

Connect cold water supply (23) to safety/drain valve (24). To guarantee the correct function of the safety/drain valve, the water pipes/hoses need to be installed without tension!

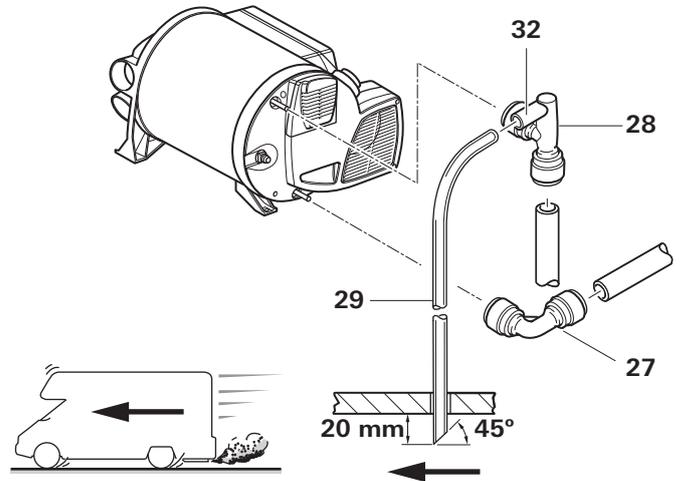


Fig. 25

The elbow fitting (28 – with aeration valve) is inserted into the upper warm water connection and the second elbow fitting (27) is inserted in the lower cold water connection of the heater up to the stop. Pull in opposite direction in order to make sure the elbow fittings are securely attached.

Create a pipe/hose connection (25) for the cold water supply between the safety/drain valve (24) and the boiler intake.

i Ensure that the cold water supply does not come into contact with cold bridges (e.g. the outer wall) in order to prevent freezing.

Route the hot water supply (26) from the elbow connection with integrated vent valve (28) to the hot water consumers.

Push the venting hose, external diameter 11 mm (29), onto the hose grommet of the venting valve (28a), and lay it to the outside without any kinks. Ensure that the bend radius is not smaller than 40 mm.

Cut off the aeration hose about 20 mm below the vehicle floor at a 45° angle to the direction of travel (see figure 25).

Installing the room temperature sensor

When selecting the location, bear in mind that the room temperature sensor must not be subjected to any direct radiant heat. For optimum room temperature regulation, we recommend that the room temperature sensor be fitted above the entrance door.

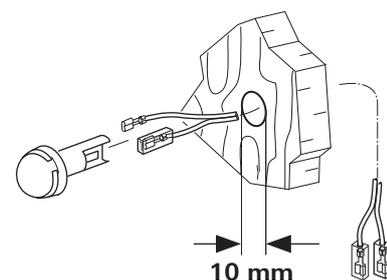


Fig. 26

i Please ensure that the room temperature sensor is always attached to a **vertical** wall. There may be no obstructions preventing the room air from flowing around it.

Drill a hole 10 mm in diameter. Guide the connection cable through the drillhole from behind and plug the cable end to the sensor by means of an insulated connector plug (there is no need to be concerned about polarity). Slide in the room temperature sensor and lay the cable end with the two insulated connector plugs to the electronic control unit (extend to a maximum overall length of 10 m using 2 x 0.5 mm² cable if necessary).

! The provided room temperature sensor must always be connected, otherwise the heater will switch to fault.

Installing the control panel

The installation of the control panel is described in the instructions included with the control panel.

Electrical connections

Route connecting cables in such a way that they cannot chafe. Please also use leadthrough bushings or edge protection profiles where there are sharp edges such as metal panel leadthroughs. The connecting cables must not be attached to or come into contact with metal surfaces, the exhaust duct or warm air ducts.

The electrical connections are located under the connection cover (39). The cover can be removed by pressing and simultaneously sliding it in the direction of the arrow. When removing or installing the connection cover on the connection cables, make sure that the cables are not pulled out or become pinched.

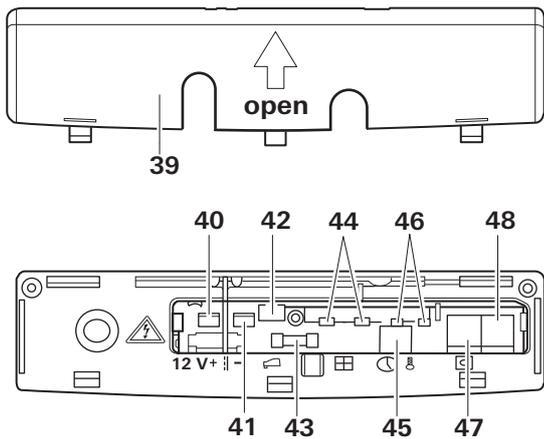


Fig. 27

- 40 = Input voltage +12 V (spade connector 6.3 mm)
- 41 = Input voltage -12 V (spade connector 6.3 mm)
- 42 = not used
- 43 = Device fuse: 10 A – slow – (T 10 A)
- 44 = Wire bridge (or window switch – accessory)
- 45 = not used
- 46 = Room temperature sensor
- 47 = Control panel / Diagnostic connector*
- 48 = Control panel / Diagnostic connector*

* Alternative connections.

All connections to the unit should be made with sagging connection cables. This will prevent condensation water from running down the connection cables and into the unit.

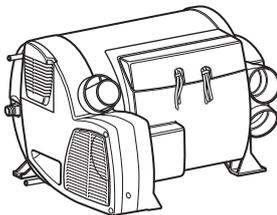


Fig. 28

The connecting cables and plugs must not be subjected to force. Bundle connecting cables (see figure 29) and secure each one to housing using a cable binder in order to provide strain relief.

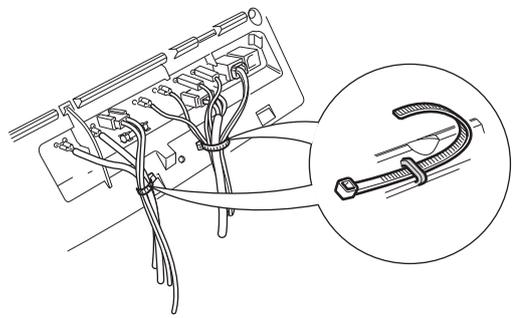


Fig. 29

All cables must be securely attached and must not become loose or disconnected due to vibration – risk of fire!

12 V voltage supply

Electric cables, switching units and control units for heaters must be arranged in the vehicle in such a way that their satisfactory operation cannot be adversely affected under normal operating conditions. All cables leading to the outside must be splash proof at the leadthrough opening.

Prior to working on electric components the appliance must be disconnected from the power supply. Switching off at the control panel is not sufficient!

When carrying out electric welding work on the body the appliance connection must be disconnected from the vehicle electrical system.

i The unit is equipped with reverse polarity protection. If the unit is connected with incorrect polarity, there will be no display on the LED. The unit can be used after establishing proper polarity.

To guarantee optimum power supply, the heating system **must** be connected to the fused on-board network (central electronics unit 10 A) **with a 2 x 2.5 mm² cable** (for lengths over 6 m with 2 x 4 mm² cable). If relevant, voltage drops in the supply cable must be taken into account. Connect the negative lead to the central earth. If connected directly to the battery, the positive and negative leads must be fused. For the connections (40, 41), we recommend 6.3 mm fully insulated flat connectors.

Do not connect any other consumers to the supply line!

i When power packs or power supply units are being used, note that the output voltage is between 11 V and 15 V and the alternating current ripple is < 1.2 Vpp. We recommend the automatic chargers from Truma for the different applications. Please ask your dealer. Other chargers may be used only with a 12 V battery as a buffer.

Room temperature sensor

Attach plug of connecting cable to connection (46 – no need to observe polarity).

Control panel / air conditioning system

The following connecting combinations are possible.

1	CP plus control panel	Combi 2 E / 4 E CP plus (Australia) (heater with electrical heating elements)
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and

1	Air conditioning system	Suitable systems – see CP plus control panel operating instructions
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Insert the plug of the connecting cable into one of the connections (47 or 48) and engage.

240 V voltage supply



The 240 V ~ electrical connection must always be made by an expert (in accordance with e.g. IEC 60364-7-721). The instructions shown here do not constitute a request to non-experts to make the electrical connection but serve as additional information for an expert who is employed to do the work!

It is imperative for the connection to be made with care using the correct colours!

An insulating device for providing all-pole insulation from the mains with contact clearance of at least 3.5 mm must be provided by the customer for carrying out maintenance and repair work.

Make connection to power supply by attaching 150 cm long silicon cable to a line that is protected with at least 10 A (16 A would be better).

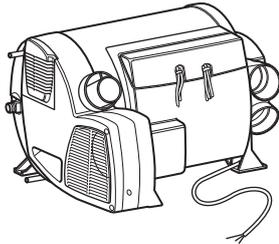


Fig. 30

All cables must be secured with cable clips.

Function test

After installation, the gas feed line must be tested for tightness by the pressure-drop method.

Then test all functions of the unit as described in the operating instructions, particularly the drainage of the water contents.

There shall be no claims under guarantee for damage caused by frost!

The operating instructions must be handed over to the vehicle owner.

Warnings

The installer or vehicle owner must apply the yellow sticker with the warning information, which is enclosed with the appliance, to a place in the vehicle where it is clearly visible to all users (e.g. on the wardrobe door)! Ask Dometic to send you stickers, if necessary.

AUS In Australia, always notify the Dometic Service Centre if problems are encountered; in other countries the relevant service partners should be contacted (www.truma.com).

Having the equipment model and the serial number ready (see type plate) will speed up processing.

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