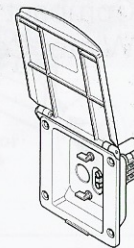




Crystal Compact Housing and Winter Kit



(GB) **Operating instructions**
Installation instructions

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To be kept in the vehicle!

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Truma-Crystal Compact Housing & Winter Conversion Kit

Introduction

The Compact Housing

The Crystal Compact Housing is a high quality product designed to bring water to your caravan in a convenient and efficient manner.

The waterpump is detachable from the Crystal Compact Housing for security and while touring. A blanking plug (art. no. 40060-49000) is available to blank off the inlet when the pump is not attached.

To connect the pump, simply align the plug with the socket and push into position. This

makes both the water and electric connections. Turn the security clip anti-clockwise to lock the connector plug into place. The pump system has been designed so that it cannot be fitted incorrectly.

The Winter Conversion Kit

If caravanning in the winter there is a possibility that the water in the outside container will freeze. It is therefore recommended that a winterised system is fitted. This is achieved by simply fitting the Compact Housing to the inside of the Caravan in a suitable place such as the wash-room or kitchen. The pump and the water container can then be used outside or inside as required. The blanking plug supplied with the Winter Conversion Kit will be fitted to the Housing not being used. Special instructions on installing the winterised Crystal are shown on page 4.

For use with a Crystal 3 water system an additional Winter Adaptor Kit (art. no. 40060-54000) will be necessary.



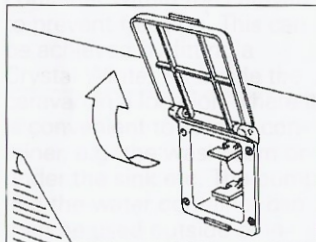
During the winter when the caravan or motor home is not in use. It is advisable to remove the filter from the Crystal Filter Housing to avoid any retained water within the filter freezing.



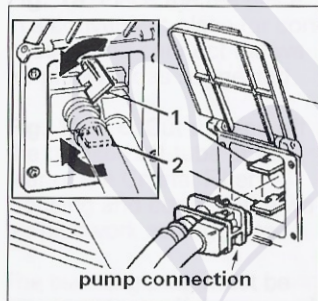
All switches and wiring in the pump circuit must be rated at a minimum of 5 A.

Operating instructions

Compact and Winter Kit Crystal 2

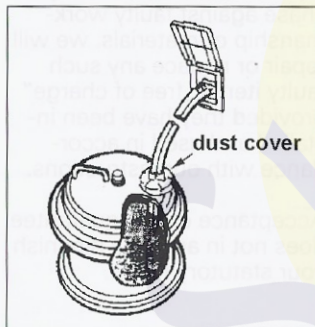


Raise the lid, clean both the water socket and the plug of the pump assembly.



Plug the pump connector into the socket. Turn the top

security clip anti-clockwise and the bottom security clip clockwise to lock the plug into place.



Place the pump into the water container, ensuring that it is fully submerged before operating the system. A Dust cover is available to stop contaminants falling into the water container.

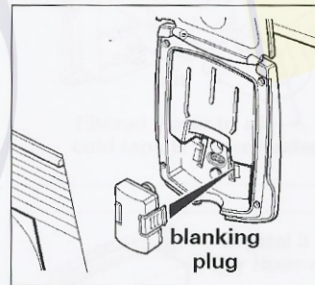
To remove the pump assembly from the Crystal Compact Housing, release the security clips and pull the hose adaptor by using the finger grips provided.

Do not remove by pulling the hose or electric cable.

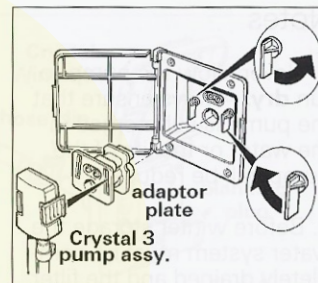
When using the Winter Kit the blanking plug provided will be fitted to the housing not being used.

Winter Kit Crystal 3 (only with Adaptor Kit art. no. 40060-54000)

Remove the pump assembly from the Crystal 3 Filter Housing, by squeezing inwards on the side tags and gently easing side to side. Push in the blanking plug and „snap“ fully home.



Remove the blanking plug if fitted and store safely. Push the adaptor plate into the socket and lock the plate with the clips into place.



Push the pump connector onto this adaptor- it will click securely into place.

Routine maintenance

1. Ensure that the 'O' ring seal on the hose adaptor and socket are free from dirt.
2. To aid fitting of the plug assembly smear the O-ring with vegetable oil.
3. To help protect the electrical connections smear both the male and female terminals with petroleum jelly.

Notes

1. Never allow the pump to run **dry**. Always ensure that the pump is submerged in the water or the life of the pump will be reduced.

2. Before winter storage the water system must be completely drained and the filter cartridge removed. The filter hole may be sealed with an old filter end cap or left open but do ensure that the lid is firmly closed.

3. Clean the water system at the start and end of the season with sterilising fluid (see notes under sterilising).

4. If the pump fails to deliver water the most likely cause will be air in the system. Switch off the pump and shake the pump assembly in the water. Then switch on again.

Sterilising

1. When cleaning the water system at the start or the end of the season it is advisable to use a sterilising fluid e.g. Chempro SDP or similar.

2. Flush the system thoroughly to remove the effective fluid traces.

3. After sterilising the system at the start of the season it is recommended that a new filter cartridge should fitted.

Guarantee

Crystal products are fully guaranteed for a period of 2 years from date of first purchase against faulty workmanship or materials. We will repair or replace any such faulty items „free of charge“ provided they have been installed and used in accordance with our instructions.

Acceptance of this guarantee does not in any way diminish your statutory rights.

How to prepare your water system for winter use


During winter caravanning it is desirable to keep the water container within the caravan in a location where it is convenient to store a container, e.g. the washroom or under the sink etc. The pump and the water container can then be used outside or inside as required.

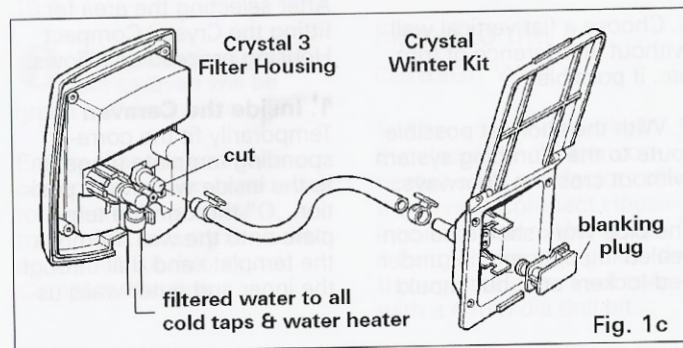
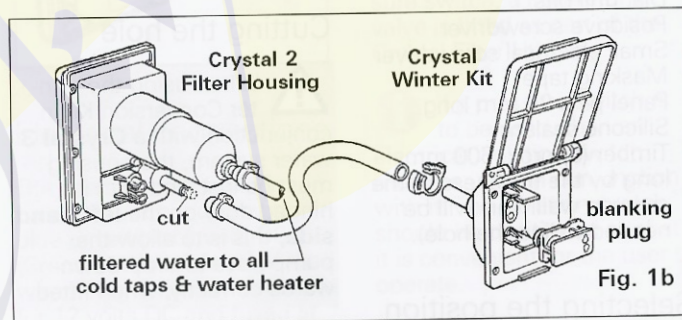
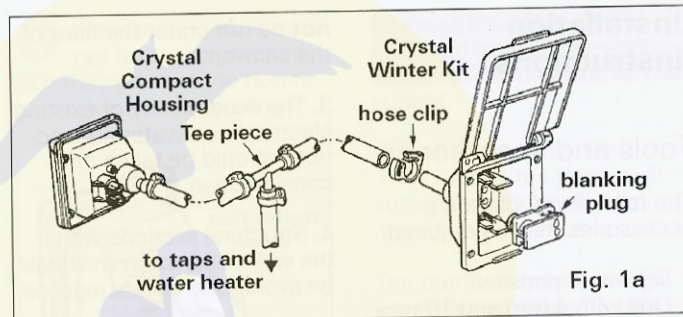
Fit a Winter Kit in the required position.

Fig. 1a: Place the tee piece in a convenient place for connection and connect the water pipework as suggested.

Fig. 1b + c: Cut the end off the blanked off tube at the rear of the Crystal Filter Housing and connect the water pipework as suggested.

The blanking plug must be fitted to blank off the unused Compact or Crystal Filter system.

 For the Crystal 3 Filter Housing an additional adaptor Kit, part no. 40060-54000 will be necessary.



Installation instructions

Tools and accessories

The following tools and accessories may be required:

- Jigsaw or padsaw
- Drill with 4 mm and 10 mm Dia. drill bits
- Posidrive screwdriver
- Small electrical screwdriver
- Masking tape
- Panel pins 20 mm long
- Silicone sealant
- Timber (approx. 600 mm long by the thickness of the caravan wall. This will be needed to line the hole).

Selecting the position

1. Choose a flat vertical wall without interference of trim etc. if possible.
2. With the shortest possible route to the plumbing system without crossing doorways.

The pipe work should be concealed in cupboards or under bed-lockers etc., but should

not be run under the floor of the caravan.

3. The accessibility of existing electrical and water connections should be taken into consideration.

4. Structural sections within the wall of the caravan should be avoided for safety reasons.

Cutting the hole



When using the Winter Conversion Kit in conjunction with a **Crystal 3** water system, the housing must be installed with its hinged door on the **left hand side**, this is to allow the pump hose to drop downwards correctly, when fitted.

After selecting the area for fitting the Crystal Compact Housing proceed as follows:

1. Inside the Caravan

Temporarily fit the corresponding template (page 9) to the inside wall. Mark position „O“ through the template onto the wall. Remove the template and drill through the inner and outer walls us-

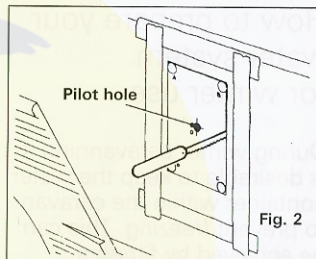
ing a 4 mm drill bit, ensure that the drill is kept square to the walls.

2. Outside the Caravan

The pilot hole drilled through the two walls allows the template to be positioned correctly on the outer wall. It is advisable to cover an area approx. 250 mm x 150 mm around the pilot hole with masking tape to protect the paintwork during the cutting operation.

Align the „O“ position of the template with the pilot hole and ensure that the template is square to any locally fitted trim etc..

Drill the four 10 mm dia. holes at A, B, C and D through both the outer and inner walls, ensuring that the drill is square to the wall. Using a jigsaw or padsaw cut the walls to the lines shown on the template (see fig. 2).



Remove the cut section together with the template and all the masking tape. Carefully dress the edge of both the inner and outer walls to remove any sharp edges. Check that the Crystal Compact Housing will fit into the hole.

Lining the hole

It is suggested that the hole should be lined with timber as this makes the installation of the Crystal Compact Housing secure.

Before fitting the timber lining the insulation around the hole should be removed to the depth of the timber lining. The finished hole should be 86 mm high x 69 mm wide (86 mm wide x 69 mm high with Crystal 3).

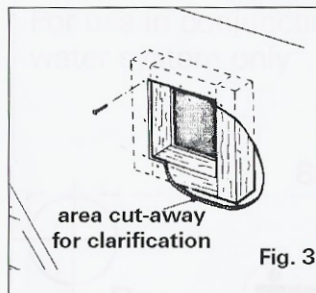


Fig. 3

Using the silicon sealant seal the lining to the inner and outer walls then secure the timber lining in place with the panel pins (see fig. 3). Then remove any excess sealant from around the hole. It is important to check that all the edges are sealed to prevent water entering the walls.

Fixing the Crystal Compact Housing

It is easier to bring the water hose and electric cable through the cut hole and make any connection before fitting the Crystal Compact Housing to the caravan wall (see fig. 4a or 4b for Rigid Pipe).

Water connections

The Crystal Compact Housing is designed for connection to 12 mm diameter bore hose, and must be secured with a suitable hose clip.



Food quality hose must be used to avoid the risk of unpleasant tastes in the water.

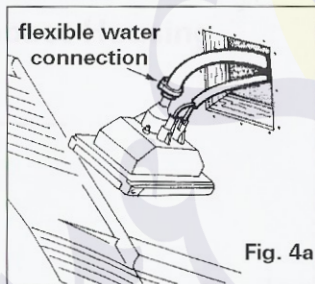


Fig. 4a

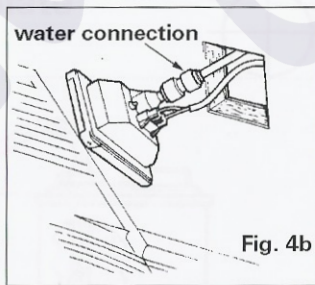
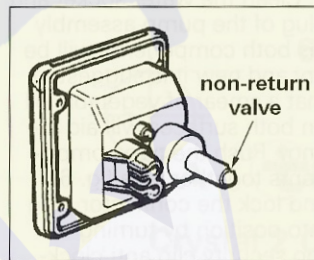


Fig. 4b

Flexible pipe clips must not be over tightened as it may prevent the non-return valve from operating.



Electrical connections

The cable should be twin core colour coded brown/blue or red/black with CSA (Cross Sectional Area) of the wire being 0,75 mm², suitable for 12 volts DC and fused at 10 A.

The internal wiring of the caravan will be green „+“ and white „-“.

Ensure that the polarity is correct i.e. brown or red wire to „+“ and blue or black to „-“. The polarity is marked on the rear of the Crystal Compact Housing.

Connect the cable via the switched taps or pressure switch to the caravan 12 volt supply.

If the polarity is reversed the pump will still operate but with a reduced performance.

The pump may be operated via switched taps or a pressure switch, a non-return valve is fitted as part of the Crystal Filter Housing.

If a pressure switch is to be used, then an electrical isolation switch must be used in conjunction with it. The isolation switch should be positioned so that it is convenient for the user to operate.

Fixing to the caravan wall

1. After ensuring that both the electric and water connections are satisfactory offer the Crystal Compact Housing into its position. Using the 4 flange holes as a guide, drill through the outer wall only with a 4 mm dia drill bit.

2. Apply the silicone sealant to the back flange of the Crystal Compact and using the 4 countersunk head screws secure the Crystal Compact into position (see fig. 5). Finally remove any excess sealant from the coachwork.

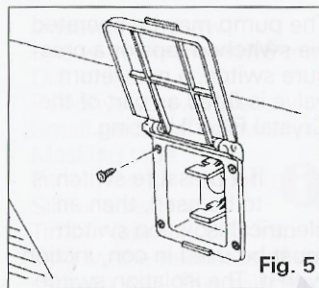


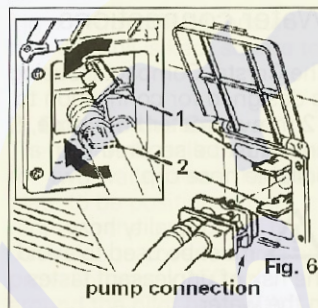
Fig. 5

Ensure that the rest of the water system is connected and that all the joints are secure.

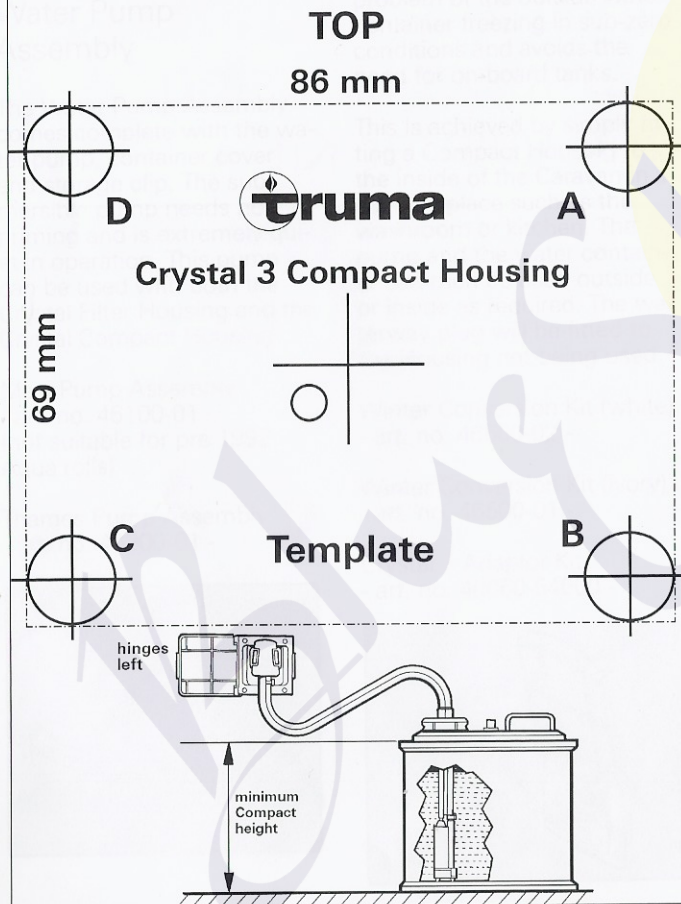
Checking the installation

1. Clean the water socket and plug of the pump assembly (as both components will be dry and new it is suggested that a smear of vegetable oil on both surfaces will aid fitting). Push the two components together (see fig. 6) and lock the connector plug into position by turning the top security clip anti-clockwise and the bottom security clip clockwise.

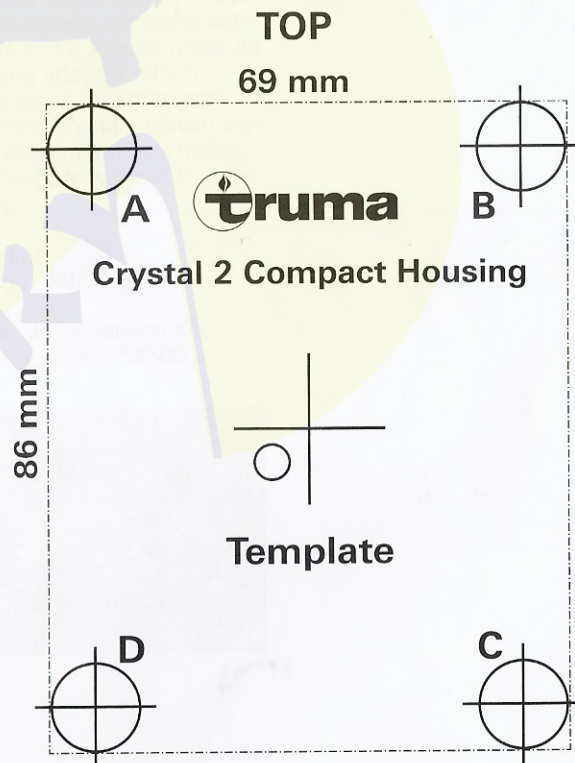
2. Place the pump into the water container and ensure that it is totally submerged. Check that the electric supply is connected and working satisfactory. Operate the system, and check that the water is flowing from all taps and that the system is free from leaks.



For use in conjunction with a **Crystal 3** water system only



For use in conjunction with a **Crystal 2** water system only



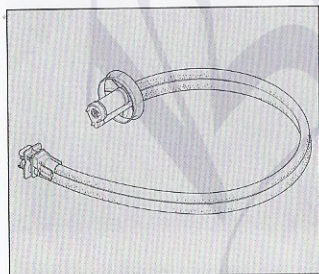
Accessories

Water Pump Assembly

The Water Pump Assembly comes complete with the water pump, container cover and storage clip. The submersible pump needs no priming and is extremely quiet in operation. This pump can be used with both the Crystal Filter Housing and the Crystal Compact Housing.

Maxi Pump Assembly
- art. no. 46100-01 -
(not suitable for pre 1992 Aqua rolls)

Thames Pump Assembly
- art. no. 46200-01 -



Winter Conversion Kit

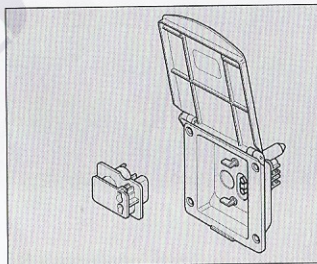
This conversion kit solves the problem of the outside water container freezing in sub-zero conditions and avoids the need for on-board tanks.

This is achieved by simply fitting a Compact Housing to the inside of the Caravan in a suitable place such as the washroom or kitchen. The pump and the water container can then be used outside or inside as required. The waterway plug will be fitted to the Housing not being used.

Winter Conversion Kit (white)
- art. no. 46500-02 -

Winter Conversion Kit (ivory)
- art. no. 46500-01 -

Crystal 3 Adaptor Kit
- art. no. 40060-54000 -

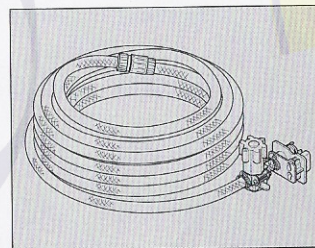


Waterline

The Crystal Waterline is a 15 metre „food quality“ hose pipe. It comes complete with fittings and a special pressure reducing adaptor which allows caravanners to connect their Crystal caravan water system direct to a mains water supply without modification.

Waterline
- art. no. 46600-01 -

Crystal 3 Conversion Kit
- art. no. 40060-54500 -





Crystal Compact Housing and Winter Kit



Manufacturer:
Truma Gerätetechnik
GmbH & Co. KG

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