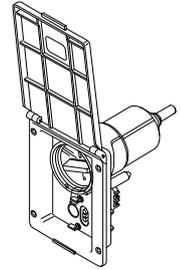




Crystal Filter Housing



GB

Operating instructions
Installation instructions

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To be kept in the vehicle!

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Truma Crystal Filter Housing

then destroyed by the silver content. This action also avoids bacteriological growth in the filter.

The waterpump is detachable from the Crystal Filter Housing for security and while touring. A waterway plug 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.

Introduction

The Crystal Filter Housing is a high quality product designed to bring water to your caravan in a convenient and efficient manner. The system includes a special two stage filter which removes unpleasant tastes, smells and colouring to give clear, fresh, tasting water.

The first stage is a fine filter paper to retain small solids. The second stage is a bed of silverised activated carbon, which removes chlorine, tastes and smells, etc. by absorption and by mechanical filtration reduces algae and bacteria. Bacteria retained are

The winterised Crystal Filter System

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 a 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 will be fitted to the Housing not being used. Special instructions on installing the winterised Crystal are shown on page 5.

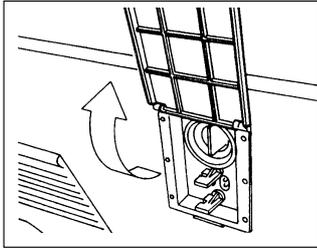
During the winter when the caravan or motor home is not in use. It is advisable to remove the filter to avoid any retained water within the filter freezing.



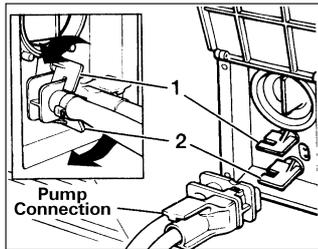
All switches and wiring in the pump circuit must be rated at a minimum of 5 A.

Power packs and power supply units must have a stabilised 12 V-output (ripple content less than 0.5 V). The use of an unfiltered power supply will cause an increased wear of the pump motor.

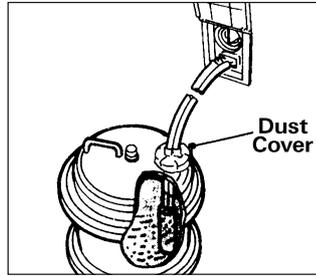
Operating instructions



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



Plug the pump assembly into the socket. Turn the top security clip anti-clockwise and the bottom security clip clockwise to lock the plug into place.



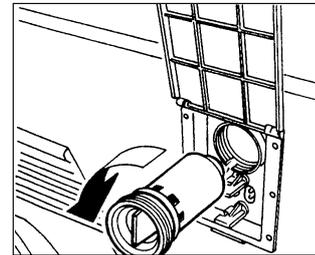
Place the pump into the water container, ensuring that it is fully submerged before operating the system. A Dust cover is available to stop contaminates falling into the water container.

To remove the pump assembly from the Crystal Filter 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.**

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.
4. To change the filter cartridge. Turn the cartridge anti-clockwise to remove.
5. Ensure that the new cartridge is fully tightened in the holder. If the cartridge is difficult to fit smear the ring with vegetable oil.



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. And/or the filter cartridge is not fully tightened. Ensure that the filter cartridge is screwed fully into its holder.

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. It is recommended that for this operation an old filter is fitted as the fluid reduces the effectiveness of a new filter.

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

Filter Cartridge

1. After fitting a new filter cartridge it is recommended that the system is flushed through for approx. 30 seconds to remove any harmless particles of carbon.

2. It is suggested that the filter cartridge should be replaced after approx. 30 days of caravanning. After such time the carbon filter will become less effective.

3. Always ensure that the filter cartridge is fully tightened in the holder. If fitting of the new filter cartridge is difficult smear the O-ring with vegetable oil.

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.

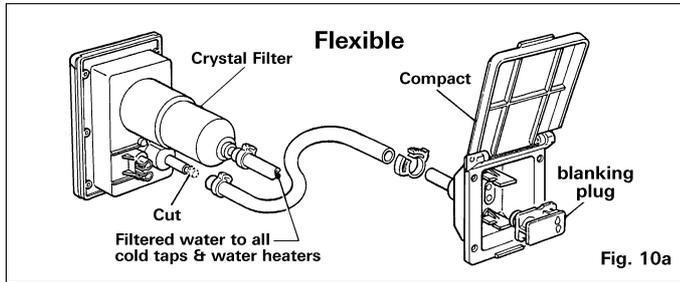
How to prepare your water system for winter use

During winter caravanning it is desirable to keep the water container within the caravan to prevent freezing. This can be achieved by fitting a Compact Housing unit inside the caravan in a location where

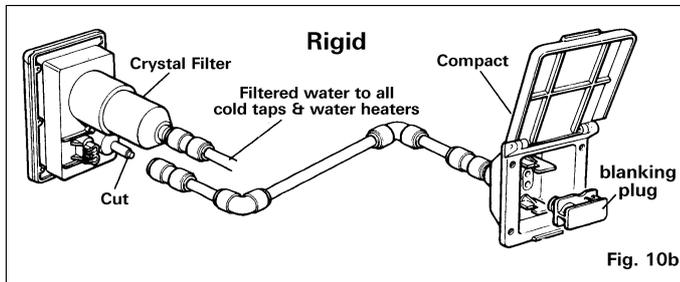
it is convenient to store a container, e.g. the washroom or under the sink etc.

Fit a Compact Housing in the required position.

Cut the end off blanked off tube at the rear of the Crystal Filter Housing and connect the water hoses as suggested in fig. 10a or 10b.



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



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
- Non hardening mastic
- 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

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

1. Inside the Caravan

Temporarily fit the template (page 9) to the inside wall with the bottom of the template touching the floor. Mark position „O“ through the template onto the wall. Remove the template and drill through the inner and outer walls using a 4 mm drill bit, ensure that the drill is kept square to the walls.

2. Outside the Caravan

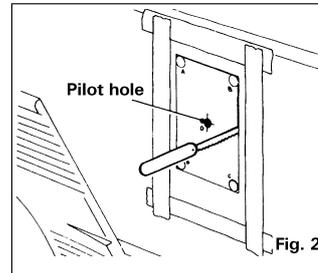
The pilot hole drilled through the two walls allows the template to be positioned correctly on the outer wall. It is advisable to cover an area approx. 250 mm x 150 mm around the pilot hole with masking tape to protect the

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 Filter Housing will fit into the hole.

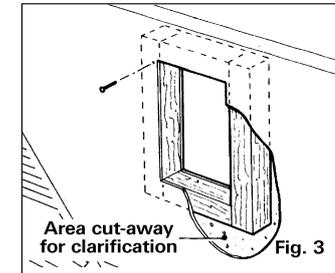


Lining the hole

It is suggested that the hole should be lined with timber as this makes the installation of the Crystal Filter 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 152 mm high x 98 mm wide.

Using a non hardening mastic (do not use silicone) 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 Filter Housing

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

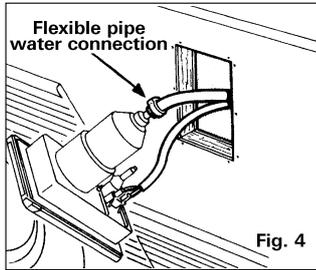


Fig. 4

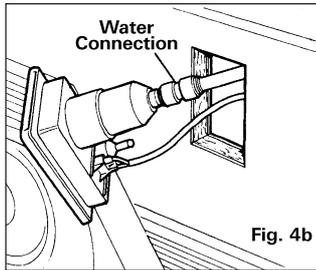


Fig. 4b

Water connections

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

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

At the rear of the Crystal Filter Housing unit there are two water connections, one of which is blanked off. It is recommended that only water that will be used for drinking or cooking should be filtered and that unfiltered water be supplied to the water heater e.g. the Truma-Ultrastore.

Three types of system may be used:

1. Drinking and cooking water filtered, hot water system unfiltered. Connect the hose from the cold water taps to the rear of the filter cartridge, then cut off the end of the blanked off tube as shown in fig. 5 and 5b and connect the hose from the hot water system.

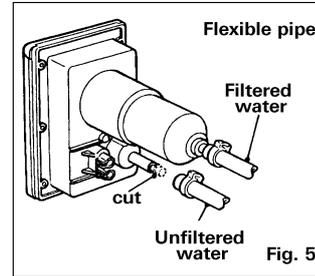


Fig. 5

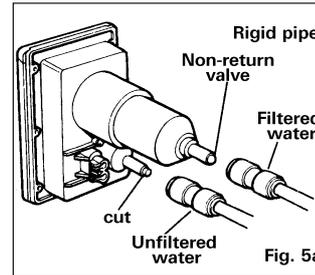


Fig. 5a

2. All water filtered, no modification to the unit is required (see fig. 6 and 6a).

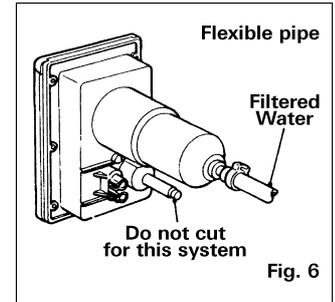


Fig. 6

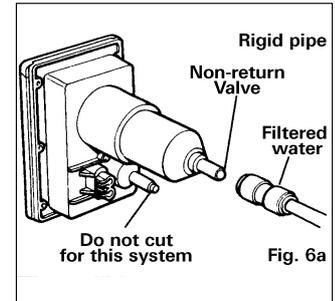


Fig. 6a

3. Winter use system. When the Crystal Filter Housing is to be used in conjunction with a Crystal Compact Housing (see page 5).

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 mm^2 , suitable for 12 volts DC and fused at 10 A.

Power packs and power supply units must have a stabilised 12 V-output (ripple content less than 0.5 V). The use of an unfiltered power supply will cause an increased wear of the pump motor.

 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 Filter Housing.

Connect the cable via the switched taps or pressure switch to the filtered caravan 12 volt supply (max. 0.5 V AC).

Important notes:

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.

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

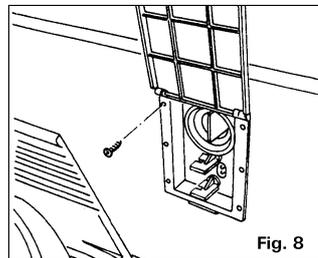
If a pressure switch is to be used, then an electrical isolation switch must be used in conjunction with it. The isolation switch should be positioned so that it is convenient for the user to operate.

Fixing to the caravan wall

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

2. Apply a non hardening mastic sealant to the back flange of the Crystal Filter and using the six counter-sunk head screws secure the Crystal Filter into position (see fig. 8). Finally remove any excess sealant from the coachwork.

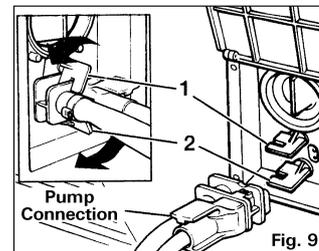
Ensure that the rest of the water system is connected and that all the joints are secure.



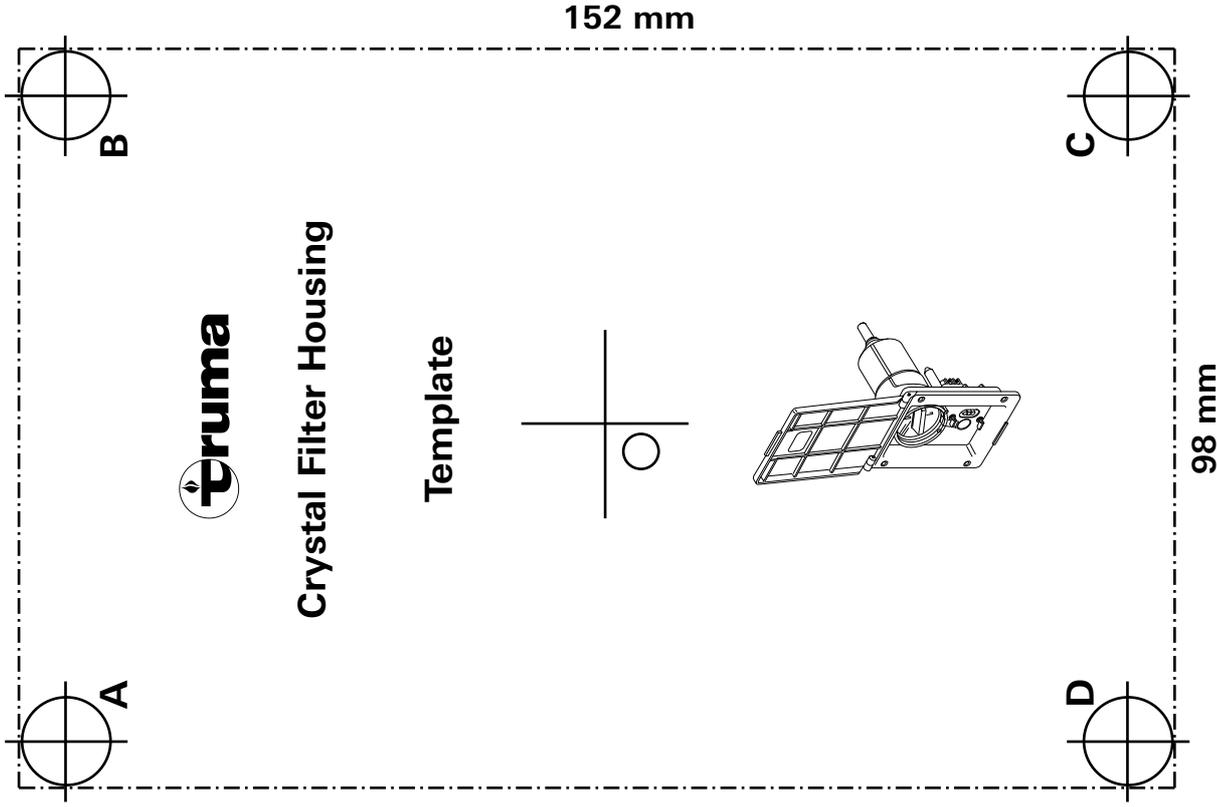
Checking the installation

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. 9) 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.



TOP



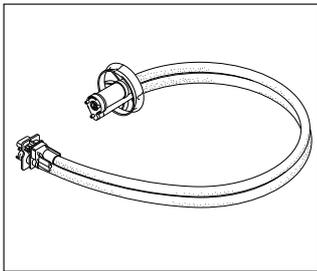
Accessories

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
– Part no. 46100-01 –
(not suitable for pre 1992
Aqua rolls)

Thames Pump Assembly
– Part no. 46200-01 –



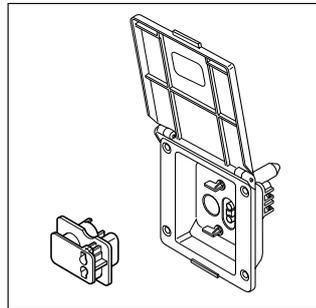
Winter Conversion Kit

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)
– Part no. 46500-02 –

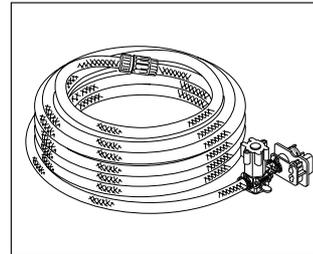
Winter Conversion Kit (ivory)
– Part no. 46500-01 –



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
– Part no. 46600-01 –

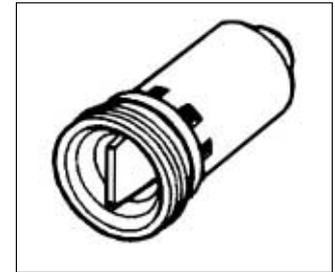


Replacement Filter Cartridge

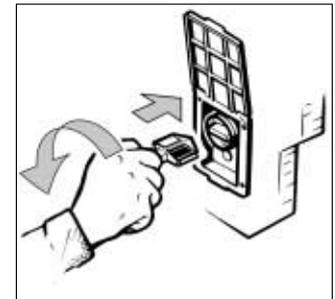
The Crsytal Filter Cartridge is a high quality water filter which removes unpleasant tastes and odours from the caravan's stored water. For the occasional caravanner,

the cartridge should be replaced at the start of each season. The regular caravanner may find it necessary to replace the filter more frequently.

Replacement Filter Cartridge
– Part no. 46810-01 –

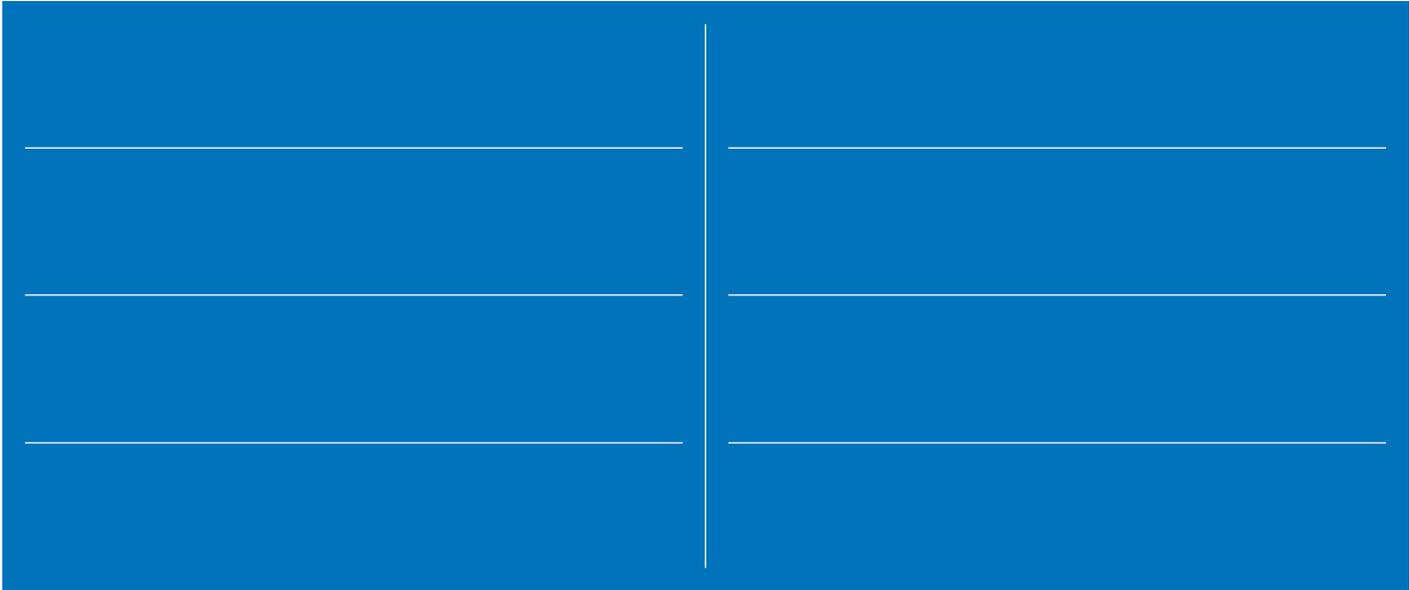


Filter Removal Tool
Part no. 40060-59900





Crystal Filter Housing



40060-33800 · 02 · 12/2004 · 10' B · ©

Manufacturer:
Truma Gerätetechnik
GmbH & Co. KG

Postfach 1252
D-85673 Putzbrunn (Munich)