# Truma AquaGo



**Operating instructions** To be kept in the vehicle Page 02



#### Truma AquaGo instant water heater (appliance)

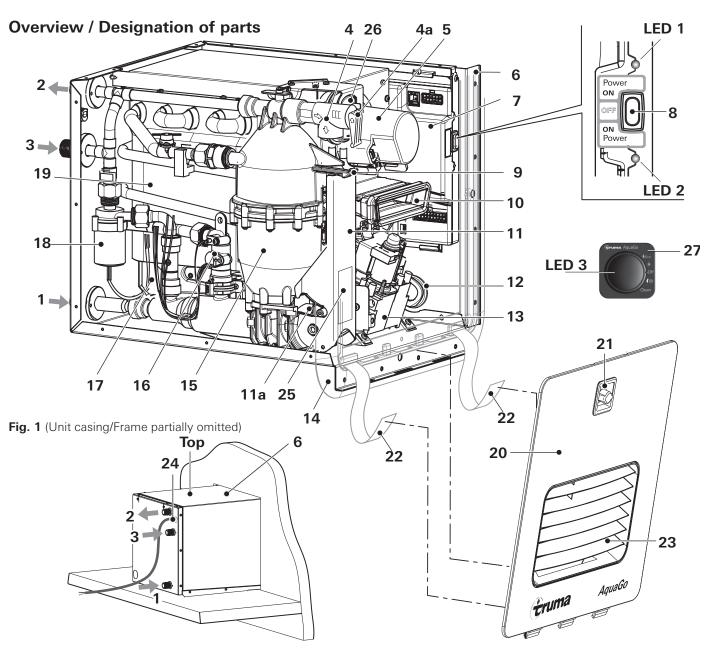


Fig. 2 (rear view of appliance)

#### Legend

- 1 Cold water connection 1/2 inch NPT
- 2 Hot water connection 1/2 inch NPT
- 3 Circulation line connection 1/2 inch NPT (comfort plus model only)
- 4 Pressure relief valve
- 4a Test lever
- 5 Flue fan
- 6 Unit casing
- 7 Control unit
- 8 POWER switch
- 9 Latch
- 10 Flue duct
- 11 Easy Drain Lever
- 11a Water inlet filter
- 12 Gas pipe grommet (side)
- 13 Gas valve
- 14 Cover plate
- 15 Temperature stabiliser

- 16 Water flow sensor
- 17 Burner with manifold, orifice size 0.82mm
- 18 Circulation pump
- 19 Heat exchanger
- 20 Access door (assembly)
- 21 Turn lock
- 22 Webbing
- 23 Ventilation grille (air inlet, exhaust)
- 24 Grommet for 12 V cable (power supply)
- 25 Type plate
- 26 Exhaust pressure switch
- 27 Control panel
- LED 1 Power-ON LED 1- green
- LED 2 Error code LED 2 red
- LED 3 Status LED 3 yellow

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# **Trademark information**

Truma AquaGo referred to as AquaGo below.

Truma AquaGo comfort referred to as AquaGo comfort below. Truma AquaGo comfort plus referred to as AquaGo comfort plus below.

### Intended use

The AquaGo instant water heater (appliance) may be used only to heat tap water in recreational vehicles (RVs) that are used for recreation, travel or camping.

RVs are recreational vehicles designed as temporary living quarters for recreation, camping or travel use. Such vehicles have their own power or are towed by another vehicle.

# **Prohibited use**

Any use other than the intended use (see above) is prohibited. Examples of prohibited use:

- Use in a marine environment.
- Use as part of a space heating system.
- Use in mobile homes.
- Use in food trucks or roadside food vending vehicles.
- Use in construction trailers
- Use as a pool heater

## Glossary

electric antifreeze kit AquaGo electric antifreeze kit

appliance	AquaGo instant water heater
AWG	American Wire Gauge
control panel	Control panel CP classic AquaGo
heating cartridge	AquaGo electric antifreeze kit cartridge
MWG	Metric Wire Gauge

### Model

Truma AquaGo comfort Truma AquaGo comfort plus

# Safety symbols and signal words

A This is the safety alert symbol. This symbol alerts you to potential hazards that can kill or hurt you and others.

**ADANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION** indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTICE** is used to address practices not related to physical injury.

Other important information or tips

# Safety behaviour and practices

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

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

# Ensuring a safe operating environment

- **A DANGER** Suffocation through exhaust gases. To ensure dissipation of exhaust gases, operate the appliance outdoors only.
  - Never use in enclosed spaces or tents or breathe in the exhaust gases.
  - If installing an awning, make sure that the exhaust system terminates outdoors.
  - If you park the RV in an enclosed space, such as a garage or repair shop:
    - · You must block the fuel supply.
    - You must switch the appliance off at the control panel.

- Keep the air inlet and exhaust outlet free of obstructions in order to ensure clean combustion.
- **Do not** place articles on or against the appliance. Do not lean any objects against the water heater's access door or place any foreign objects within 61 cm (2 feet) of the access door.
- **Do not** use or store flammable materials near the appliance.
- **Do not** spray aerosols in the vicinity of the appliance while it is in operation.
- **Do not** modify the appliance.

# Responsibilities of the operator

- Avoid possible serious health issues caused by electromagnetic radiation. All persons with a pacemaker are prohibited from opening the access door and maintaining the appliance during operation.
- The operator is responsible for the water filled into the appliance and its quality.
- 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 forklifts) must not be used, since they would result in damage to the gas system.
- Gas systems and pressure regulators must comply with the technical and administrative regulations of the country in which the appliance is used .
- 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.

# Safe operation

- Use only with propane gas (in accordance with national regulations).
- The nominal gas system pressure must be 2.75 kPa.
- LP tanks must be filled by a qualified gas supplier only.
- Hot water can be dangerous, especially for infants, children, the elderly or infirm. It can cause severe burns. Therefore:
  - Never actuate the pressure relief valve
     (Fig. 1 4) as long as the appliance is still hot.
  - Never actuate the Easy Drain Lever
     (Fig. 1 11) as long as the appliance is under water pressure and/or still hot.
- Always check the water temperature before entering a shower or bath.
- How long before hot water causes skin damage?

Temperature °C	Time before skin becomes scalded	
68	1	second
64	2	seconds
60	5	seconds
56	15	seconds
52	1	minute
51	3	minutes
48	5	minutes
37	safe bathing temperature	

Source: Moritz, A.R. / Herriques, F.C.: Studies of thermal injuries: the relative importance of time and surface temperature in causation of cutaneous burns A. J. Pathol 1947; 23: 695 – 720

• The water pressure on the inlet side must be limited to 450 kPa, otherwise internal components of the appliance will be damaged. On (city) water connections with a pressure higher than 450 kPa a pressure regulator is strongly recommended.

# While driving

- To avoid damage, make sure the access door (Fig. 1 – 20) to the appliance is closed before moving the RV, as follows:
  - Turn lock is engaged.
  - Access door is flush with the cover plate.
- Shut OFF gas and the LP tank when moving the RV. This disables all gas appliances and pilot lights. Gas appliances must never be operated while the vehicle is in motion.
- Shut OFF the appliance when refueling or pumping gas, in multi-storey car parks, in garages or on ferries.
- To avoid damage, make sure no spray water enters the appliance when cleaning the RV, e.g., do not spray directly into the openings/ ventilation grille.

# Safe handling of malfunctions

- Switch OFF the gas supply and the appliance:
   if anything seems to be out of the ordinary.
   if you smell gas.
- **A DANGER** Fire / explosion if you attempt to use an appliance that has been damaged by flooding or if the vehicle has been involved in an accident. A damaged appliance must be repaired by an expert or be replaced.
- Only carry out repairs yourself if the solution is described in the troubleshooting guide of this manual.
- A damaged appliance may have to be replaced with a new one.

### Safe maintenance and repair

- Repairs may only be carried out by an expert.
- Children must not carry out maintenance, repair or cleaning work.
- Before accessing terminals, please secure all supply circuits (i.e. 12 V) and make sure that the gas supply is securely turned off.
- Any work involving connection or interconnecting wiring must be carried out by a licensed electrician.
- Only use AquaGo decalcification tablets to decalcify the appliance to avoid damage and the voiding of your warranty.
  - Never use vinegar.
  - The use of non-Truma-approved substances for decalcification can cause chemical reactions and produce hazardous substances that could enter the drinking water.
- Any alteration to the appliance or its controls can cause unforeseen serious hazards and will void the warranty.
- After a long period of winterisation: Flush all hot/cold water hoses and the appliance thoroughly with drinking water before using it.
- Keep the appliance free of foreign objects, e.g., leaves, animals, spiderwebs, and keep the area around free of snow and ice. The appliance will not function properly if the intake air or exhaust terminal is obstructed.

# Safety features

The appliance is equipped with the following safety devices:

#### Flame monitoring

If the flame goes out, the gas supply to the burner is switched off (after 3 failed restarts).

#### Low-voltage (over-voltage) shutdown

If the voltage drops below 10 VDC (or rises above16.4 VDC), the appliance shuts off.

#### **Overcurrent protection**

If there is a short circuit in the appliance (>10 A), a fuse on the control unit is activated and the appliance is switched off.

#### Monitoring of the flue fan

If there is a failure of the flue fan, the gas supply to the burner is switched off.

#### Monitoring of hot water temperature

A water over temperature switch avoids excessively high water temperatures in case of a malfunction.

# **Operating instructions**

#### Read and follow the "Consumer Safety Instructions" before operating the appliance.

### **A WARNING**

Scalding injuries caused by hot water!

Water temperatures over 52 °C can cause severe burns or scalding and in extreme cases even death.

- Before using the hot water tap or using the shower, allow the hot water to run until the water temperature no longer increases.
- Test the temperature of the water before placing a child in the bath or shower.
- Do not leave a child or an infirm person in the bath unsupervised.

## How the appliance works

The appliance was developed exclusively for use in recreational vehicles (RVs).

The appliance is connected between the vehicle's fresh water supply and its hot water system.

It is powered by propane and a 12 VDC power supply. The ventilation grid on the access door allows combustion air to flow into the appliance and exhaust gas to flow out.

When the appliance is switched on, the tap water will be heated on-demand:

- A volume-flow sensor in the appliance detects when the hot water tap has been opened and the volume flow is greater than approximately 1.5 litres/min. The burner then starts automatically.
- The burner control continously adjusts the heater output based on volume flow and inlet water temperature, so that the temperature at the hot water outlet is approximately 49 °C. A temperature stabiliser is also installed in the appliance to minimise fluctuations of the outlet temperature.
- After some time the maximum temperature at the tap or in the shower is reached. The length of time will depend on the model and variations in the water system (length of pipes, insulation, circulation line, etc.). Like in a home shower, a comfortable water temperature at the shower head is reached by mixing in cold water.
- When the volume flow is less than approximately 1.5 litres/min or the tap is closed, the burner is automatically switched off.

The AquaGo is equipped with a circulation pump. The circulation pump as well as the burner are switched on automatically by the control unit in order to keep the water temperature above 39 °C in "COMFORT" mode and 5 °C in "ECO" mode.

# NOTICE

#### Risk of damage in frost conditions.

Refer to "Operation in frost conditions" on Page 11.

# Pressure relief valve

# A WARNING

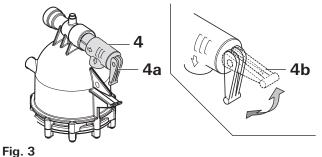
Scalding injury from hot water and/or tampering with the pressure relief valve!

- Never actuate the pressure relief valve as long as the appliance is still hot.
- Do not place a plug or reducing coupling on the outlet part of the valve

• The pressure relief valve is a safety component and must not be removed for any reason other than replacement.

• The pressure relief valve is not serviceable; if defective, it must be replaced. It must be replaced by a Truma certified service technician.

Tampering with the pressure relief valve will void the warranty.



19.0

- 4 Pressure relief valve
- 4a Lever in "valve closed during operation" position
- 4b Lever in "open" position

# Access door

#### Opening the access door

1. Turn the turn lock counterclockwise to the vertical position.

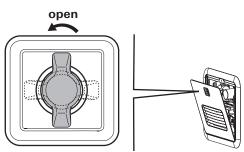


Fig. 4

- The access door can be opened in two different positions:
  - Position ① is the maximum opening width for switching the appliance on or off.
  - Position ② is the starting position for removing the access door.

## NOTICE

#### Damage to the hinge!

- Do not try to remove the access door in Position ①. Position ① is the maximum opening width of the access door.
- Only remove the access door in Position @.
- 2. Open the access door to Position ①.

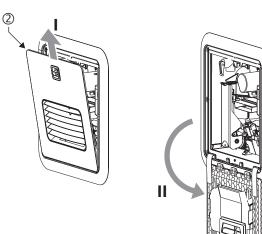


Fig. 5

# Removing the access door

1. Open the access door to Position ②.

2. Move the access door upwards to remove it.



#### Fig. 6

Closing the access door

# NOTICE

# Damage to the access door and the RV if the access door is not closed properly!

- Make sure that the access door is flush with the cover plate when closed.
- 1. If removed, insert the access door into the cover plate.
- 2. Make sure that the webbing is not pinched between the access door and the cover plate.
- 3. Press the access door against the cover plate.
- 4. Turn the turn lock clockwise  $\frown$  into the horizontal position.

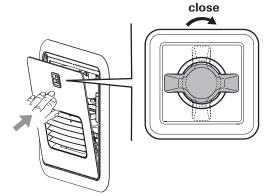


Fig. 7

# Starting the appliance

# **A WARNING**

# Danger of over-temperature and toxic exhaust gases!

- Use with propane gas only. Butane or any mixtures containing more than 10 % butane must not be used.
- Keep the air inlet and exhaust gas outlet free of obstructions. Do not lean any objects against the appliance's access door or place any foreign objects within 61 cm of the access door.

# A WARNING

# Danger of combustion, personal injury and damage to RV!

- Keep the area around the appliance free from combustible materials, petrol, and other flammable vapours or liquids.
- Switch the gas supply and the appliance off:
  - if anything seems to be out of the ordinary.
  - if you smell gas.
  - if you move the RV.
  - before entering a service station.
  - before entering a tunnel.

#### Inspections before each use

Check the appliance for the following points before each use. In case of damage, contact an authorised Truma service provider and do not operate the appliance.

- 1. Check for visible damage, e.g., on the cover plate or access door.
- 2. Provide adequate quantities of propane gas and fresh water.
- 3. Switch ON and check the 12 V power supply of your RV.
- 4. Check that the access door of the appliance is closed.
- 5. Keep the appliance free of foreign objects, e.g., leaves, animals, spiderwebs, and keep the area around free of snow and ice. The appliance will not function properly if the intake air or exhaust terminal is obstructed.

# Operating procedures

# NOTICE

#### Risk of damage in frost conditions.

In frost conditions, ambient temperatures below 4 °C, there is a risk that water in pipes, taps and appliances could freeze. This can cause considerable damage.

• Before you fill water into appliances and parts that transport water, you must heat the installation area sufficiently so that the water cannot freeze.

Proceed as follows to fill the appliance with water:

- 1. Close open bypass lines (if present). Insert the water inlet filter or heating cartridge – if removed. See "Draining the water and cleaning the water inlet filter" on Page 13, steps 2, 7, 9 – 11.
- 2. Turn on fresh water supply or switch on water pump.
- 3. Fill the water system.
  - Open all water-release points, e.g., cold and hot water taps, showers, toilets.

It is important that you bleed the water system before starting the appliance.

 Once water flows continously, the water system is vented. Close the water-release points. Start the appliance as follows:

- 4. Make sure that the propane gas supply is turned on.
- 5. Switch on the 12 V power supply (RV).
- 6.Open the access door (refer to "Opening the access door" on Page 8).
- 7. Switch on the appliance at the POWER switch (refer to "Switching ON the appliance" on Page 9).
- 8. Select the desired operating mode (refer to "Operating modes (control panel)" on Page 10.
- 9. Close the access door (refer to "Closing the access door" on Page 8).

# **A** WARNING

#### Scalding injuries caused by hot water!

Water temperatures over 52 °C can cause severe burns or scalding and in extreme cases even death.

- Before using the hot water tap or using the shower, allow the hot water to run until the water temperature no longer increases.
- Test the temperature of the water before placing a child in the bath or shower.
- Do not leave a child or an infirm person in the bath unsupervised.
  - There may be a variation between the temperature delivered from the appliance and the temperature at the tap due to water conditions or the length of pipe from the appliance.
  - The presence of a flow restrictor in the hot water line may limit the water flow.
- 10. How to use hot water:
  - To obtain the desired water temperature at the tap or in the shower, mix cold and hot water.
  - Particularly when showering, wait until the water temperature has stabilised before entering or allowing other people or animals to enter the shower.

### Switching ON the appliance

- 1. Open the access door (refer to "Opening the access door" on Page 8).
- 2. To switch on the appliance, switch the POWER switch (Fig. 8 8) to one of the two "ON" positions.
  - Both ON positions on the POWER switch have the same function. Choose your preferred position.
  - When the green power ON LED 1 (Fig. 8 LED 1) is lit, the appliance is switched on.
  - If the red error code LED 2 (Fig. 8 LED 2) is lit / flashes, there is a fault or warning. (refer to "APPENDIX A – Error Codes" on Page 27).

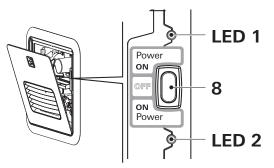


Fig. 8

 The appliance is now ready for using the control panel inside your vehicle (refer to "Operating modes (control panel)" on Page 10).

# Operating modes (control panel)

A control panel to select the operating mode is included with the delivery.

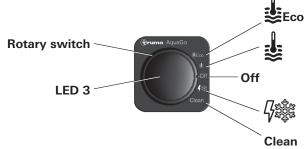


Fig. 9

With the rotary switch (Fig. 9) you can choose between the following operating modes:

Sign	Operating mode / Description		
0	ECO		
Eco	The appliance is now running in energy-saving mode.		
	<ul> <li>Water temperature at outlet is approximately 49 °C.</li> <li>Prevention of freezing by using propane gas. The temperature in the appliance is automatically kept above 5 °C.</li> <li>During operation, the yellow status LED 3 is lit.</li> </ul>		
-	COMFORT		
*	The appliance is now running in a mode that pro- vides rapid availability of hot water.		
	<ul><li>Water temperature at outlet is approximately 49 °C.</li><li>Standby heat.</li></ul>		
	The temperature in the appliance is automatically kept above 39 °C.		
	• During operation, the yellow status LED 3 is lit.		
Off	Stand-by. The appliance is not running in any oper-		
	ating mode. • The yellow status LED 3 is off.		
	To switch off the POWER and gas supply refer to "Switching OFF the appliance" on Page 10.		
Πεύζα	ANTIFREEZE		
7 <sup>22</sup> 25 <sup>25</sup>	Prevention of freezing using 12 VDC electricity:		
	Operating mode with installed electric anti- freeze kit (available as an accessory) and ap- pliance switched on. The temperature in the appli- ance is automatically kept above 5 °C.		
	• During operation, the yellow status LED 3 is lit.		
Clean	DECALCIFICATION		
	See "Decalcification" on Page 14.		
	For safety reasons, after 30 seconds the de- calcification process cannot be stopped until the system has been rinsed in accordance with the instructions. See "Interrupting decalcification" on Page 16		

#### Description of the yellow status LED 3 (see Fig. 9 - LED 3)

Signal	Meaning
LED 3 lit	<ul> <li>Appliance is switched on</li> </ul>
LED 3 is off	<ul> <li>Appliance is switched off.</li> <li>See "Troubleshooting" on Page 17.</li> </ul>
Every 7 s, LED 3 is interrupted for 1 s	– The appliance must be decalcified
LED 3 flashes slowly 1 s on, 1 s off	<ul> <li>Decalcification mode has been activated</li> </ul>
LED 3 flashes quickly	<ul> <li>Before you use the water system you must rinse it (see step f) "Rins- ing the water system" on Page 15).</li> </ul>
LED 3 flashes 2 x briefly after a break.	<ul> <li>There is a fault in the appliance. The exact fault diagnosis must be determined via error LED 2. Refer to "APPENDIX A – Error Codes" on Page 27.</li> </ul>
	<ul> <li>Risk of freezing, the temperature in the appliance is below 3 °C.</li> </ul>

# Switching OFF the appliance

1. Set the control panel to "Off".

2. Open the access door (refer to "Opening the access door" on Page 8).

3. Switch off the appliance at the POWER switch (Fig. 8).

The green Power-ON LED 1 (Fig. 8) extinguishes.

4. Close the access door (refer to "Closing the access door" on Page 8).

5. If the appliance is not needed, turn off the gas supply to the appliance.



If you intend to put the RV into storage or turn off the appliance during freezing temperatures, refer to "Winterising" on Page 11.

# **Operation in frost conditions**

(Ambient temperatures below 4 °C)

## NOTICE

#### Risk of damage in frost conditions.

In frost conditions, ambient temperatures below 4 °C, there is a risk that water in pipes, taps and appliances could freeze. This can cause considerable damage.

- If the appliance is not to be used in frost conditions, you must winterise the appliance. Refer to "Winterising the appliance" on Page 11.
- Winter operation will not protect the RV's entire water system. Water lines, taps, water tanks and the external water valves and the vehicle must be heated separately.
- The RV must be designed for winter use/freezing conditions.
- The water pipes in the RV must be ice-free to operate the AquaGo in winter. Otherwise, there is no water flow and the appliance does not start.

#### When the vehicle is standing, to -20 °C

- The appliance has a built-in thermostat that will start the burner and the circulation pump whenever the temperature in the appliance falls below +5 °C. The burner will automatically shut off when it senses a temperature above 44 °C.
- **NOTICE** For the appliance to operate properly, you must ensure a constant supply of power (12 V), propane gas, sufficient water in the system. You must leave the appliance powered "ON". The operating mode must be "ECO" or "COMFORT". The water system must be bled so that the circulation pump works.
- **NOTICE** If the vehicle is standing and ambient temperatures are below -20 °C, the appliance must not be operated and must be winterised. To winterise the appliance (refer to "Winterising" on Page 11).

#### While driving (or if there is no gas supply), to -20 °C

- **NOTICE** Gas must not be used for heating while the vehicle is in motion. Ask your dealer / vehicle manufacturer about options for heating your RV while driving.
- An electric antifreeze kit is available as an accessory (ask your dealer). With this kit, the appliance can be kept frostfree while you are driving or if there is no gas supply (to ambient temperatures of -20 °C). The electric antifreeze kit includes detailed instructions.
  - NOTICE While the vehicle is in motion and at ambient temperatures below -20 °C the appliance must not be operated and must be winterised. To winterise the appliance (refer to "Winterising" on Page 11).

# Winterising

# NOTICE

#### Severe damage to the water system components and the appliance!

Any damage caused by freezing or an unsuitable winterising fluid will not be covered by warranty.

- Follow the recommendations below if the appliance will be stored under freezing conditions or for an extended period of time.
- Winterise the appliance at the start of the winter season or before travelling to a location where freezing conditions are likely.

If your RV is equipped with a bypass around the appliance, separate the appliance from the water system with the bypass.

#### Winterising the appliance

To winterise the appliance, you must drain all water from the appliance. To do this we advise the following steps:

- Remove the water inlet filter or heating cartridge. See "Draining the water and cleaning the water inlet filter" on Page 13, steps 1 to 8.
- Let water completely drain from the appliance. This can take several minutes.
- Do not insert the water inlet filter or heating cartridge into the appliance during winter - if the appliance is not used.
- **A CAUTION** Danger of crushing/pinching of fingers when the Easy Drain Lever is closed! Never put fingers between the Easy Drain Lever and latch.
- Close the Easy Drain Lever and the access door.

Once the water has been drained, the appliance is protected against freezing conditions.

#### Winterising the RV with a winterising fluid



- Winterising the RV with a winterising fluid is only possible with an installed bypass kit (not in scope of delivery)
- Refer to the connection diagram "Connection diagrams" on Page 22 for all letters referred to in the following description.

#### Winterising AquaGo comfort

- 1. Close valves A and B.
- 2. Open valve C.
- 3. Drain the appliance (see "Draining the water and cleaning the water inlet filter" on Page 13).
- 4. Flush the RV's water system with a suitable winterising fluid according to the supplier's or RV manufacturer's guidelines.

#### Winterising AquaGo comfort plus

- 1. Close valves A, B and E.
- 2. Make sure that valve D remains in the closed position.
- 3. Open valve C.
- 4. Drain the appliance (see "Draining the water and cleaning the water inlet filter" on Page 13).

- 5. Flush the RV's water system with a suitable winterising fluid according to the supplier's or RV manufacturer's guidelines.
- 6. Close all taps (if open).
- 7. Open valve D.
- 8. Wait until winterising fluid has drained. Collect escaping fluid in a suitable vessel.
- 9. Close valve D.

# AquaGo technical data

Nominal input power (calorific value)		61.9 MJ/h			
Fuel		propane gas (in accordance with national regulations)			
Fuel inlet pres	ssure	2.62 - 3.49			
		2.75 kPa (n			
Fuel manifold	pressure	0.33 – 2.50			
Nominal volta	ige	12 V DC (<	1 V <sub>pp</sub> )		
Power input					
AquaGo com	fort	< 2.5 A			
AquaGo com	fort plus	< 2.5 A			
Water operati	ng pressure	450 kPa ma	aximal		
Standard wat temperature	er outlet	49 °C			
Water volume	e	1.3 litres			
Ambient ten	nperature				
AquaGo com AquaGo com		-20 °C+40 °C			
Dimensions	(without flange	and cover	plate)		
	Width	Height	Depth		
mm	318	318	394		
Dimensions	of cover plate				
Size XS					
mm	384	394	20.2		
Standard					
mm	450	450	20.2		
Adapter					
mm	510	510	20.2		
	Installation cutout and depth				
Width		Height	Depth*		
mm	324	324	450 - 500**		
Weight of uni access door	t without	(approx.) 1			
	cess door stand- ss door XS	(approx.) 1	3 kg		
	cess door adapt-	(approx.) 2	.5 kg		
* Depending c	on application				

\*\*Recommended

### Approval

#### AGA approval number 8638

#### **RCM (Regulatory Compliance Mark)**





Registration No.: R-R-tRm-AquaGo Equipment name (Model): Truma AquaGo (Truma AquaGo comfort / Truma AquaGo comfort plus) Manufacturing Date: see marking on the type plate Registrant: Truma Geraetetechnik GmbH & Co. KG Manufacturer/Country of Origin: Truma Geraetetechnik GmbH & CO. KG / Germany

# Maintenance

Repairs must be performed by a certified service technician. Truma recommends that the appliance be serviced annually by a certified service technician. Verify proper operation after servicing.

# **A WARNING**

# High temperatures or repair attempts while the gas supply is turned on may result in scalding injuries!

- Turn OFF the electrical power supply and the gas supply before starting maintenance and repair work.
- Allow the appliance to cool down.
- Never actuate the pressure relief valve as long as the appliance is still hot.

# **A**CAUTION

#### Injuries caused by the Easy Drain Lever!

• Never actuate the Easy Drain Lever as long as the appliance is under water pressure and/or is still hot.

# **A**CAUTION

#### Sharp edges can cause cuts and injury!

• Always wear protective gloves to avoid injuries from sharp edges during maintenance work.

# Draining the water and cleaning the water inlet filter

To keep the appliance fully functional, clean the water inlet filter at least once a year.

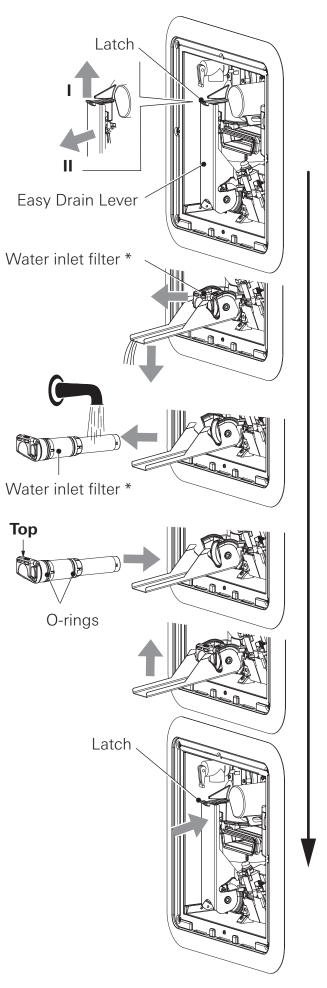
- 1. Set the control panel to "Off".
- 2. Remove the access door (refer to "Removing the access door" on Page 8.)
- 3. Switch OFF the appliance at the POWER switch.
- 4. Open all hot water taps and wait for cold water. This will ensure that hot water is removed from the appliance before draining.
- 5. Turn OFF the water supply or switch OFF the water pump.
- 6. Leave the hot water tap open in order to depressurise and vent the water system.

# **A**CAUTION

#### Injuries caused by the Easy Drain Lever!

When the Easy Drain Lever is folded out, it protrudes beyond the side wall of the vehicle.

- When walking past or bending over, make sure that you and others have sufficient distance.
- 7. Open the latch with your thumb while pulling the Easy Drain Lever down as far as it will go.
- 8. Remove the water inlet filter (or heating cartridge) as shown in Fig. 10 and clean it with clean water.
- 9. Inspect the O-rings on the water inlet filter (or heating cartridge) for cracks. Change the filter assembly (see, "APPEN-DIX C – Spare Parts (all models)" on Page 31) if there are cracks.



\* or heating cartridge

Fig. 10

# **A**CAUTION

# Danger of crushing/pinching of fingers when the Easy Drain Lever is closed!

• Never put fingers between the Easy Drain Lever and water inlet filter or latch.

If, during installation, it is difficult to install the filter cartridge, use a small amount of soap on the O-rings. Never use grease because the O-rings are not resistant to grease.

10. Install the water inlet filter (or heating cartridge) as shown in Fig. 10. Observe the correct installation position and close the Easy Drain Lever until it is locked by the latch.

You can hear a "clicking" sound as the Easy Drain Lever engages.

11. Insert and close the access door (refer to "Closing the access door" on Page 8).

# Decalcification

# NOTICE

Risk of damage in frost conditions.

In frost conditions, ambient temperatures below 4 °C, there is a risk that water in pipes, taps and appliances could freeze. This can cause considerable damage.

• Do not decalcify the appliance in frost conditions.

# Decalcification frequency

Lime scale occurs especially as a result of precipitation from "hard" water. The appliance must be decalcified regularly depending on water hardness and hot water consumption.

#### Recommended decalcification frequency per year

	Very hard >180	1	2	4
dness 33	Hard 121 – 180	1	1	3
Water hardness mg/l CaCO <sub>3</sub>	Moderately hard 61 – 120	1	1	2
Wat€ mg/l	Soft 0 – 60	1	1	1
	Use	low*	normal*	high*

\* Hot water consumption

low	-> approximately	2400 I /Year
normal	-> approximately	6000 I /Year
high	<ul> <li>–&gt; approximately</li> </ul>	24000 I /Year

# Performing decalcification

An integrated water consumption meter recognises (after hot water consumption of approx. 6000 I) that decalcification is necessary. The assumed water hardness is "hard" and cannot be changed. The yellow status LED 3 (Fig. 9) indicates that decalcification is necessary (goes off briefly about every 7 seconds).

# **A** WARNING

#### The use of non original AquaGo decalcification tablets (e.g. vinegar) for decalcification can cause chemical reactions and produce hazardous substances that could enter the drinking water supply.

- **Do not** mix AquaGo decalcification tablets with other substances to avoid chemical reactions and production of hazardous substances.
- Use only AquaGo decalcification tablets to decalcify the appliance to avoid:
  - chemical reactions and production of hazardous substances,
  - damage to your appliance,
  - and the voiding of your warranty.
  - Call your local AquaGo dealer or service provider or see www.truma.com for more information to obtain AquaGo decalcification tablets.

#### Irritation of skin and eyes in case of contact with decalcification agent

Wear protective gloves, eye protection and face protection to avoid contact.

- Never use the water supply in the RV during decalcification
- In case of skin contact with the decalcification agent, immediately rinse the affected area with plenty of water.
- In case of eye contact, hold eyelid open and rinse with running water for 10 – 15 min. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist.
- If you swallow the decalcification agent, immediately rinse your mouth and drink plenty of water in small sips. Do not vomit. Consult a doctor.

# During decalcification, you must also observe the following

- Damage to the appliance if decalcification is interrupted.
   You must complete the decalcification process and then
  - rinse thoroughly with clean water. – Allow about 3 hours for decalcification. The appliance
  - Anow about 5 nours for decalcification. The appliance works on its own for most of this time.
- Sensitive surfaces (e. g. marble) may be damaged through contact with the decalcification agent.
  - Immediately remove splashes of decalcification agent on these surfaces.

### a) Preparing for decalcification

For safety reasons, once the decalcification process has started it must not be stopped until the system has been rinsed (see process f). All operating modes of the appliance are blocked until decalcification has been completed.

#### Tasks within the RV

- Set the control panel to "Off".
- Turn OFF the water supply or switch OFF the water pump.
- Open a hot water tap to relieve pressure in the system.
- On all water taps attach the warning sign "Caution decalcification in progress" in a clearly visible position. Warning signs are enclosed with the decalcification tablets.

#### b) Draining the water system

#### Tasks outside the RV

- · Remove the access door (refer to "Removing the access door" on Page 8)
- Switch OFF the appliance at the POWER switch
- Drain the water system and remove the water inlet filter. To do this, please refer to "Draining the water and cleaning the water inlet filter" on Page 13, Steps 4 to 8.
- NOTICE You must use the water inlet filter for decalcification (included with the delivery Fig. 1 – 11a). If you are using an electric antifreeze kit, it must be removed and be unplugged from the power supply before decalcification (see Fig. 11). Fig. 11

#### c) Introducing the decalcification agent

#### Tasks outside the RV

- WARNING Irritation of skin and eyes in case of contact with decalcification agent. Wear protective gloves, eye protection and face protection to avoid contact.
- Fill the water inlet filter with 6 AquaGo decalcification tablets (content of one blister pack).

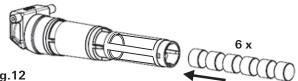


Fig.12

- Re-insert the water inlet filter. See Step 9 in "Draining the water and cleaning the water inlet filter" on Page 12.
- Switch ON the appliance at the POWER switch.

#### d) Filling the water system

#### Tasks within the RV

• Turn on fresh water supply or switch on water pump

The decalcification tablets dissolve in water quickly (approx. 10 minutes). So that the decalcification agent is not rinsed out, when filling, run the water only as long as necessary. The Truma decalcification tablets colour the water slightly red.

- Fill the water system.
  - Open all water-release points, e.g., hot water taps, showers, toilets.
  - Once water flows evenly, the water system is vented.
  - Close the water-release points.

You must bleed the water system thoroughly otherwise the circulation pump cannot circulate the decalcification solution.

#### e) Starting decalcification

#### Tasks within the RV

- Set the control panel to "Clean".
  - If decalcification does not start, switch the appliance on at the POWER switch.
  - Decalcification takes about 3 hours (during this time, you do not have to do anything).
    - Decalcification is indicated by a slow flashing (1 s on, 1 s off) of the status LED 3 (Fig. 9) on the control panel.
    - During decalcification, the control panel must remain set to "Clean".
    - Decalcification is complete when the status LED 3 (Fig. 9) flashes quickly on the control panel.

#### f) Rinsing the water system

- You will need about 30 litres of water to rinse the water system.
  - Dispose of (used) decalcification solution in accordance with local laws and regulations.

#### Tasks within the RV

- Open all water-release points, e.g., hot water taps, showers, toilets.
- Run the water until the status LED 3 (Fig. 9) on the control panel goes out.
- Set the control panel to "Off".
- Close all water-release points.
- Turn OFF the water supply or switch OFF the water pump.
- Open a hot water tap to relieve pressure in the system.

To make sure that the appliance and the water pipes contain no decalcification agent, empty the water system again and refill it.

#### Tasks outside the RV

- Switch the appliance OFF at the POWER switch (red error code LED 2 (Fig 8) flashes before it switches off).
- Drain the water system. Refer to "Draining the water and cleaning the water inlet filter" on Page 13, Steps 4. to 8.
- Install the water inlet filter\* referring to step 9.
- \* Or antifreeze cartridge if electric antifreeze kit is installed.
- Switch ON the appliance at the POWER switch.
- Insert and close the access door. Refer to "Closing the access door" on Page 8.
- You have to switch the appliance off and on to unblock decalcification and enable further operation.

#### g) Filling the water system

#### Tasks within the RV

- Turn on fresh water supply or switch on water pump.
- Fill the water system.
  - Open all water-release points, e.g., hot water taps, showers, toilets .
  - Once water flows evenly, the water system is vented.
  - Close the water-release points.
- Before you use the water system and the appliance, check the colour of the water at all taps:
  - Slightly red -> rinse again.
  - Clear -> decalcification is finished.
- Remove the warning signs "Caution decalcification in progress".

#### Interrupting decalcification

Decalcification is indicated through slow flashing (1 s on, 1 s off) of the status LED 3 (Fig. 9) on the control panel.

- Decalcification can be interrupted by switching the control panel to "Off".
  - Decalcification is interrupted after about 2 s.
  - The status LED 3 (Fig. 9) on the control panel flashes quickly.
- **A WARNING** Irritation of skin and eyes in case of contact with decalcification agent. Wear protective gloves, eye protection and face protection to avoid contact.
- First you must take out the water inlet filter and remove any AquaGo decalcification tablets that it may contain.
  - To take out the water inlet filter, refer to "Draining the water and cleaning the water inlet filter" on Page 12.
  - Dispose of AquaGo decalcification tablets in accordance with local laws and regulations.
- Before you use the water system again, you must rinse it (see Step f) "Rinsing the water system" on Page 15) and fill it with water (see Step g) "Filling the water system" on Page 16).

#### Accessories

#### Electric antifreeze kit \*

Truma offers an electric antifreeze kit (part no. 77400-01) that keeps the appliance frost-free to -20 °C while you are driving or if there is no gas supply. To operate the kit, you need a 12 V (120 W) power supply from the vehicle's on-board system. Ask your dealer.

#### AquaGo decalcification tablets

Truma offers decalcification tablets (part no. 77300-01) to decalcify the AquaGo.

#### Truma rear installation gas connection kit

Truma offers a rear installation gas connection kit (part no. 77000-37500) if installation from the back of the appliance is required.

# Troubleshooting

Problem	Potential cause	Resolution
No hot water at	Gas supply is turned off or interrupted.	Check and/or turn on gas supply.
the tap	Gas tank is empty.	Refill/replace the gas tank.
	The appliance is switched off.	Switch on the appliance according to instructions (refer to "Operating procedures" on Page 9).
	Fresh water supply is turned off.	Open the fresh water supply.
	Power supply to the appliance is switched off.	Switch on power supply to the appliance.
	Defect in the appliance.	LED 2 flashes red (refer to "APPENDIX A – Error Codes" on Page 27) and contact a certified ser- vice technician if necessary.
Boiling noises	Too much lime scale in the appliance.	The appliance must be decalcified (refer to "Decal- cification" on Page 14).
Hot water temper- ature too low.	Gas flow to the appliance is too low (gas inlet pressure < 2.62 kPa.	Consult vehicle documentation to determine if gas supply is capable of providing the necessary volume of gas for the appliance.
		Contact a service technician to verify a suitable gas installation.
	Volume flow of hot water is too high and/or the temperature of cold water reaching the appliance	Turn down hot water at the tap or in the shower in order to reduce volume flow.
	is too low.	Potentially retrofit a volume flow throttle into the water system. This must be performed only by a certified service technician.
	Too much lime scale in the appliance.	The appliance must be decalcified (refer to "Decal- cification" on Page 14).
Water escaping at pressure relief valve.	Water pressure in water system too high.	Adjust the water pump pressure to a maximum of 450 kPa.
		If the water system is connected to a central water supply higher than 450 kPa (4.5 bar) (rural or urban connection), a water pressure reducer must be used.
		Install a water pressure reducer (e.g. Truma water pressure regulator) at the fresh water supply.
	Water cannot expand in the water system.	Contact the vehicle manufacturer about retrofitting a pressure compensation element.
	Lime or dirt under the pressure relief valve seat.	Allow the appliance to cool and then slowly raise the test lever (Fig. $3 - 4a$ ) to flush the water system and attempt to force dirt or foreign matter out of the pressure relief valve seat.
		Replace pressure relief valve. This must be per- formed only by a Truma certified service technician.
Water escaping at the water inlet filter	Lime or dirt under the O-ring seats.	Clean the O-rings and their corresponding sealing surfaces with clean water.
The yellow LED 3 is off although an	Power switch is OFF.	Switch ON the appliance at the POWER switch.
operating mode was selected.	Power supply to the appliance is switched off.	Switch on power supply to the appliance.
	The power supply was interrupted.	Reset by switching OFF at the control panel, waiting 2 seconds and then switching on again.

If fault persists, please contact the nearest Service center.

Should problems occur, please contact the Truma Service Centre or one of our authorised service partners (see www.truma.com).

In order to avoid delays, please have the unit model and serial number ready (see type plate).

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