

REMKO TANK SYSTEMS

*Hot water storage tank
HPS 500, MPS 800, MPS 1000*

Operation · Technology



Contents

<i>Safety notes</i>	4
<i>Environmental protection and recycling</i>	5
<i>Warranty</i>	5
<i>Intended use</i>	5
<i>Operation</i>	5
<i>Description</i>	6
<i>Decommissioning</i>	6
<i>Care and maintenance</i>	7
<i>Installation instructions for qualified personnel</i>	7-8
<i>Installation</i>	8-9
<i>Fitting the insulation</i>	10-13
<i>Connection examples</i>	14-15
<i>Commissioning</i>	16
<i>Unit dimensions and technical data</i>	17-19

Read these operating instructions carefully before commissioning / using these units!

These instructions are an integral part of the unit and must always be kept in the vicinity of the installation location or on the unit itself.

This operating manual is a translation of the German original.

Subject to modifications; no liability accepted for errors or misprints!





Made by REMKO

REMKO HPS 500, MPS 800, MPS 1000

Safety notes

Carefully read the operating manual before placing the unit in service for the first time. It contains useful tips and notes

 such as hazard warnings to prevent injury and material damage . Failure to follow the directions in this manual can result in endangerment to persons, the environment and the equipment itself and will void any claims for liability.

- Keep this manual in the vicinity of the units.
- The units and components should be set up and installed only by qualified personnel.
- The set-up, connection, and operation of the units and their components must be in accordance with the operating conditions stipulated in this manual and comply with all applicable local regulations.
- Modification of units and components supplied by REMKO is not permitted and can cause malfunctions.
- Units and components may not be operated in areas where there is an increased risk of damage. Observe the minimum clearances.
- The electrical supply is to be adapted to the requirements of the units.
- The operational safety of units and components is only assured if they are fully assembled and used as intended. Safety devices may not be modified or bypassed.
- Do not operate units or components with obvious defects or signs of damage.
- The equipment and components must be kept an adequate distance from flammable, explosive, combustible, abrasive and dirty areas or atmospheres.
- Installation, repair and maintenance work may be carried out only by authorised specialists. Visual inspections and cleaning can be performed by the operator as long as power is disconnected from the equipment.
- To preclude any danger from the unit, take appropriate hazard-prevention measures when performing installation, repair or maintenance work or cleaning the units.

Environmental protection and recycling

Disposal of packaging

All products are packed for transport in environmentally friendly materials. You can make a valuable contribution to reducing waste and sustaining raw materials by only disposing of packaging at approved collection points.



Disposal of components

The manufacturing process for the units is subject to continuous quality control. Only high-grade materials are processed, the majority of which are recyclable. You can also contribute to environmental protection by only disposing of components in accordance with local regulations and in an environmentally safe manner, e.g. through authorised disposal and recycling specialists or at collection points.

Intended use

The storage tanks are employed for the storage of hot water in all types of warm water central heating systems (solid fuel/oil-fired boilers, heat pumps, solar energy systems, gas/electric instantaneous water heaters) within enclosed spaces and for the storage of cold water for cooling processes or heat recovery purposes.

Any different or additional use shall be classed as non-intended use.

The manufacturer/supplier assumes no liability for damages arising from such use. The user bears the sole risk in such cases.

Intended use also includes working in accordance with the operating manual and installation instructions and complying with the maintenance requirements.

Operation

Manual operation is not necessary.

Warranty

The warranty conditions are listed in the "General terms and conditions". Please contact your contractual partner in the first instance.

REMKO HPS 500, MPS 800, MPS 1000

Description

The storage tanks are employed for the storage of hot water in all types of warm water central heating systems (solid fuel/oil-fired boilers, heat pumps, solar energy systems, gas/electric instantaneous water heaters) within enclosed spaces and for the storage of cold water for cooling processes or heat recovery purposes.

The tank volume can be adapted to your particular needs by connecting several storage tanks to form batteries. The storage tanks may be used universally, either as parallel storage (hydraulic switch) or series storage.

The insulation of the HPS 500 and MPS 800/1000 hot water tanks consists of a 100 mm thick layer of silver-grey flexible foam.

All storage tanks are produced from high-quality steel acc. to DIN EN 10025/10111, and are provided with an anti-rust coating on the outside. Immersion heater elements can be screwed into the in-built 6/4" socket in the storage tanks. For retrofitting a fin-tube heat exchanger a D240 blank flange cover is included.

The storage tanks have 9 (11 for the MPS 1000) 6/4" IG connection threads as well as inflow restrictors. To enable to use of sensor/thermometer immersion sleeves, the unit incorporates four 1/2" socket screw threads.

Decommissioning

Temporary shutdown

1. Disconnect the electrical connection at all poles.
2. Drain the tank in areas where it is at risk from frost and before the onset of winter.
3. Then also drain all cold water pipes leading to the heating elements and to the unit itself as well as all water-carrying valves, fittings and lines (even the heating circuit = register) back as far as the frost-proof section of the domestic water system (domestic water connection).



ATTENTION

When emptying the tank, hot water may escape!



ATTENTION

When placing the tank back into service, ensure that it is filled with water and that water which is free of bubbles is escaping from the valves!

Permanent decommissioning

Ensure that equipment and components are disposed of in accordance with local regulations, e.g. through authorised disposal and recycling specialists or at collection points.

REMKO GmbH & Co. KG or your contractual partner will be pleased to provide a list of certified firms near you.

Care and maintenance

Care

- Only clean the units with a damp cloth (adding, for instance, a liquid household cleaner).
Do not use any sharp, scouring or solvent-based cleaners.

Maintenance

- We recommend concluding a maintenance contract with a specialist firm, which includes annual maintenance services.



NOTE

This ensures the operational reliability of your equipment!

- Regularly check the function of the safety valve.

The expansion water amount at maximum heat (approx. 80°C) represents approx. 3.5% of the tank capacity.

When the safety valve test knob is lifted or turned to the "Test" position, the water must flow unhindered out of the safety valve body into the drainage funnel.



ATTENTION

This can cause the cold water supply and parts of the storage tank connection fitting to become hot!

If the tank is not heated or when warm water is removed, no water should be dripping from the safety valve. If this does occur, either the pressure in the water pipe is greater than the permitted value, or the safety valve is defective. If the pressure in the water pipe is higher than permitted, a pressure relief valve must be used.

Installation instructions for qualified personnel

General instructions prior to installation

- Ensure that the area in which the unit is to be operated is free of frost and easily accessible for required maintenance, repairs and even for the possible replacement of the unit (e.g. avoid overly narrow thoroughfares and doorways).
- When installing the storage tank in unusual locations, such as in lofts, residential units with floors that are sensitive to water, storerooms, etc. take account of the possibility of leaking water, and ensure that a facility is in place to catch the water, including appropriate drainage methods.
- The unit may only be positioned and operated on level surfaces.

REMKO HPS 500, MPS 800, MPS 1000

- When planning the unit's installation surface and selecting the installation location, note the total weight of the storage tank, including the weight of the water (the nominal capacity), in order to ensure that the statics of the load-bearing surface are not exceeded.
- Ensure proper clearance from firing systems.
- Make sure that units with enclosures, which are installed in small, tight spaces or in suspended ceilings have the connection block (water and electric connections and heater installation) still freely accessible and that there is no buildup of heat.
- Leave at least 500mm of space free for the removal of the heating flange.
- Check the contents of the packaging for completeness and check the unit for visible transport damage. Immediately notify your contractual partner of any deficiencies.
- The unit must be assembled on site.
- For all connecting sockets, ensure that the thread is fully engaged.



NOTE

Installation may only be performed by authorised specialists. Preparation of the hot water must be in compliance with the latest applicable standards.

Installation

General Information

- Do not continually top up the water level in the storage tank. This will avoid corrosion damage to the tank.
- If aggressive water is an issue, please note that special models of the tank can be tested (address all queries to your contractual partner)
- In hard water areas, connect a standard descaling device upstream of the tank.
- It is essential to bleed the storage tank.



CAUTION

The storage tank is not suitable for preparing drinking water!

Central heating connection

Before being placed into service, the heat distribution system must be flushed in order to remove any soiling (e.g. scale) from the heating circuit. You have the option to connect another heat generator (e.g. a solar-thermal system) using a fin-tube heat exchanger (special accessory) in a closed system.



ATTENTION

However, under no circumstances may the supply and return lines be blocked, as otherwise the water in the register will not have room to expand and there is a risk of damage to the heat exchanger!



NOTE

Installation may only be performed by authorised specialists.

Storage tank with electric booster heaters (immersion heater elements)

Electric booster heaters (immersion heater elements) must be equipped with a safety temperature limiter which stops heating the storage tank at a temperature of max. 130°C. The choice of connection components (connecting pieces, circulation, safety valve combination, etc.) must be such that, in the event of a malfunction of the temperature control, the connection components will maintain temperatures of 130°C, avoiding possible damage.

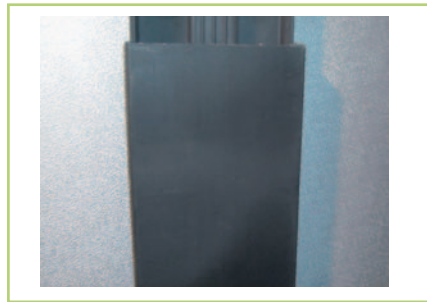
- Use one of the 1 1/2" sockets to install an electric booster heater (see chapter "Connection examples"). Connection examples On the MPS 1000, either a solid fuel boiler or rather one or two immersion heater elements can be fitted.
- Please note that the electric booster heater must not be used as a permanent heating system.
- Please note that the inflow restrictor must first be bent back with a pipe or similar.
- It is essential to bleed the storage tank.
- A contactor is required for automatic activation of the electric booster heater via the heat pump manager.

REMKO HPS 500, MPS 800, MPS 1000

Fitting the insulation

To install the insulation, proceed as follows:

1. Open the packaging and lift the insulation section with the holes in it, with the matting on the inside, over the connections. In order to avoid danger to those under your supervision (e.g. children suffocating), all packaging must be disposed of immediately or else cut up.
3. Snap the supplied installation strip cover over the hooked closure strip. This will prevent the hooked closure strip from opening during the rest of the installation process.



2. Engage the section of insulation-with no holes into the hooked closure strip of the previously attached insulation section.

4. After attaching the installation strip cover, the insulation can be sealed with the second hooked closure strip. If the insulation consists of three sections, repeat the two previous steps.



5. Insert the round section of insulation on top of the tank and fix it in place by pressing down lightly.



CAUTION

In order to achieve optimum heat insulation, there must not be an air gap between the round section and the insulation.

7. Attach the supplied collars to the connections.
If necessary, bend the clamping tongues of the collar into the centre. This ensures that the collars are properly seated on the pipes and sockets.
If fitting the collars later on, the material must be cut through at the predetermined breaking point specified for the collars.



6. Position the insulation cover and attach it properly to the insulation using the openings in the top of the hooked strip.



REMKO HPS 500, MPS 800, MPS 1000

The insulation must not be bent or pushed in, as this risks damage (stress whitening). Any stress whitening which occurs through improper handling can be carefully removed or minimised with a hot-air blower.



CAUTION

Depending on the heating output of the hot-air blower, it may be necessary to maintain a minimum distance between the insulation and the blower. Naked flames are prohibited.



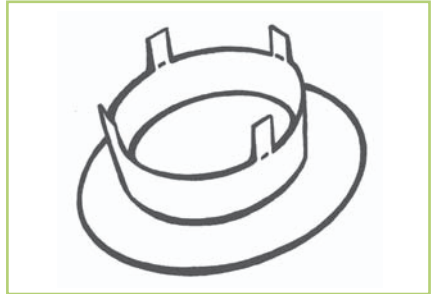
NOTE

During operation, the tank temperature must not consistently exceed 110°C.

Fitting the collars

When fitting the collars, please note the following steps:

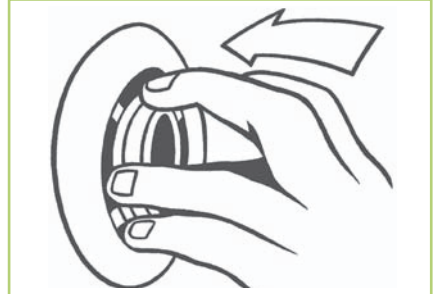
1. Remove the collars from the packaging in their delivered condition.
2. Bend the clamping tongues inwards at an acute angle.



3. Slide the completed collar centrally on to the socket/pipe.



6. Adjust the O-ring as necessary.



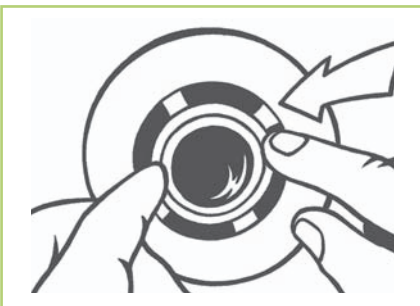
4. Fit the O-ring onto the socket/pipe, starting from the bottom.



7. Attach the completed collar to the connections.



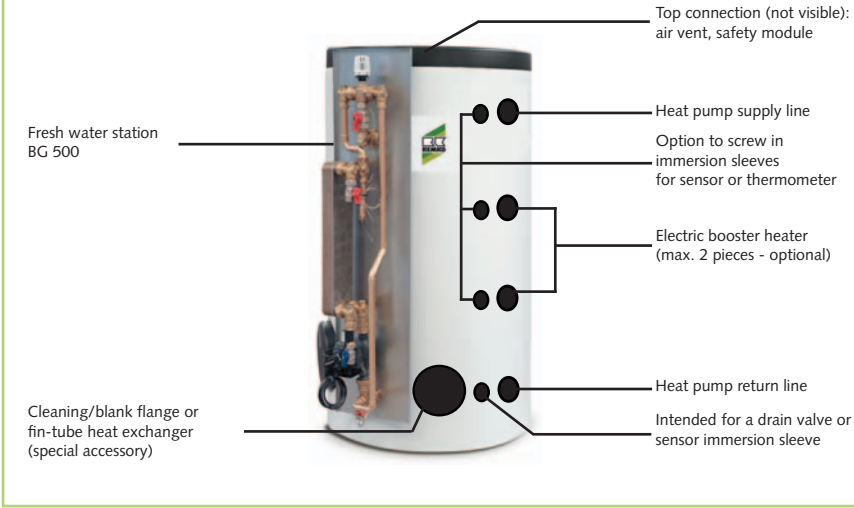
5. Slide the O-ring over the top edge of the socket or pipe.



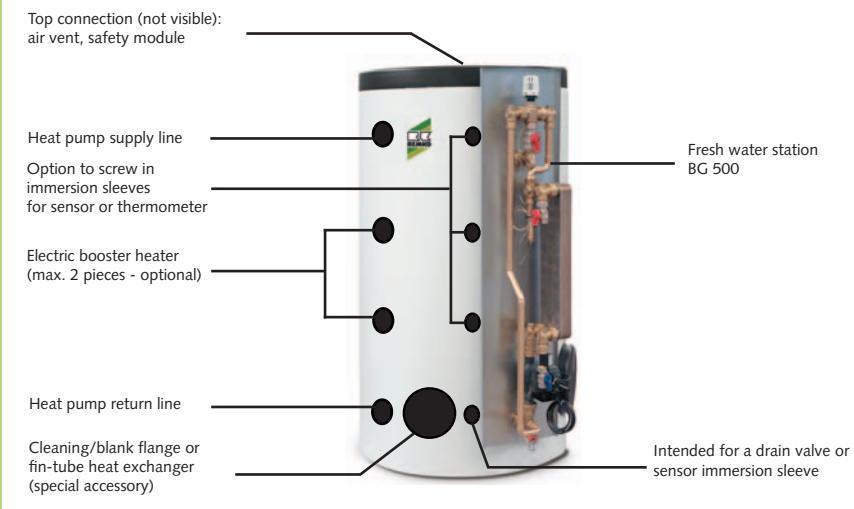
REMKO HPS 500, MPS 800, MPS 1000

Connection examples

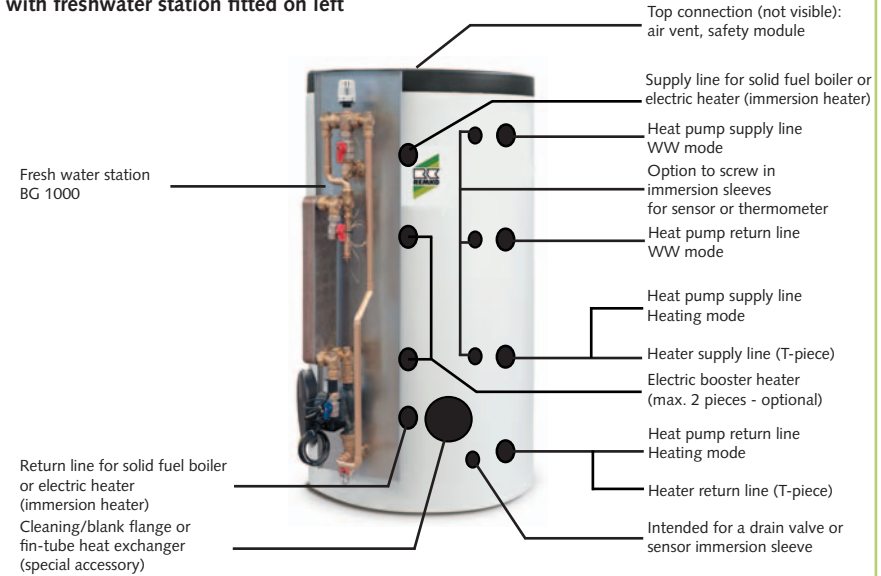
Connection example for the HPS 500 with freshwater station fitted on left



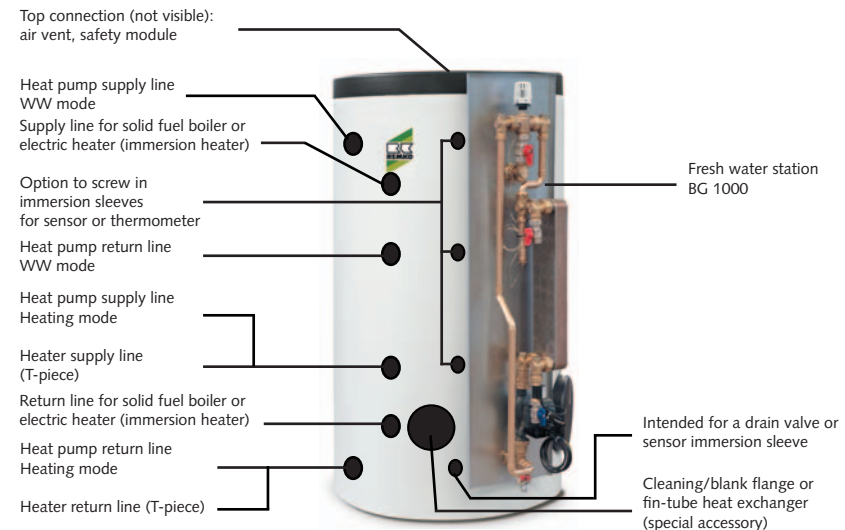
Connection example for the HPS 500 with freshwater station fitted on right



**Connection example for the MPS 800, MPS 1000
with freshwater station fitted on left**



**Connection example for the MPS 800, MPS 1000
with freshwater station fitted on right**



REMKO HPS 500, MPS 800, MPS 1000

Commissioning



NOTE

Commissioning should only be performed and documented by specially trained personnel.

During the heating process, all expansion water generated in the internal boiler must be captured by an appropriate expansion vessel.

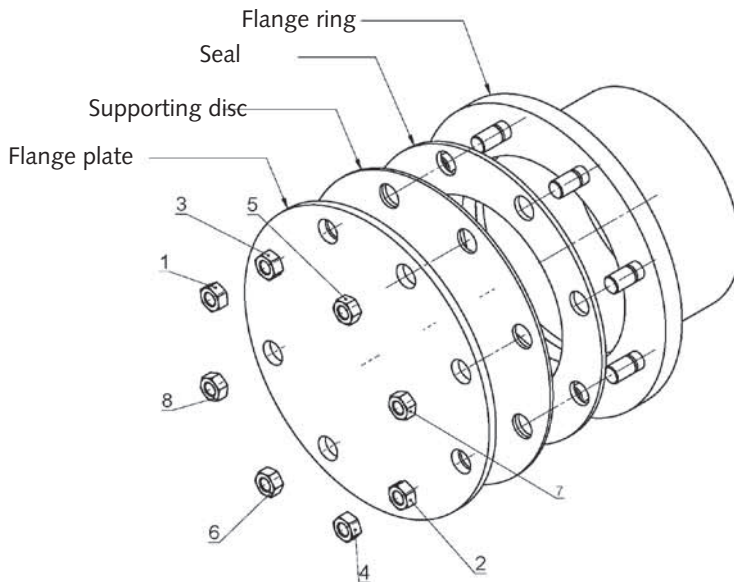
1. Check all connections, even those which were sealed at the factory (flange), for leak-tightness.
2. Then check all pipes for any leaks and, if necessary, fix them.
3. Test the safety module and valves for function.

Flange installation port

Depending on the design of your system, fin-tube heat exchangers may be attached to the boiler flanges.

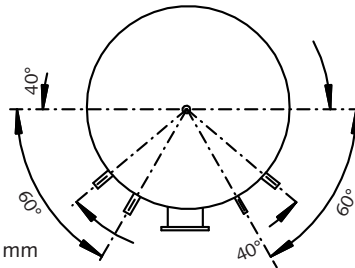
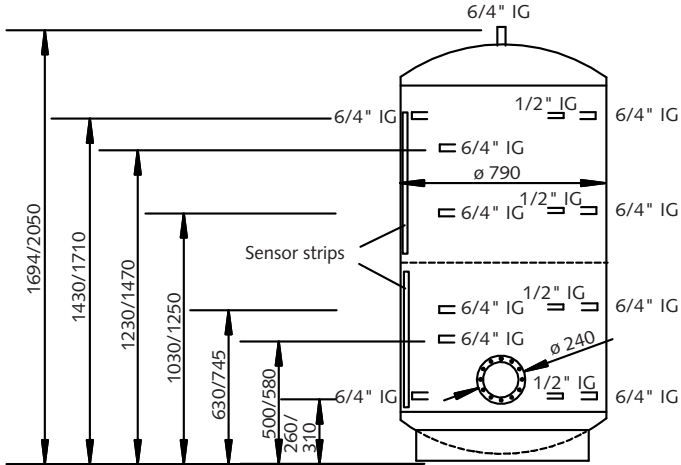
- First tighten the nuts by hand.
- Then tighten the nuts, in the sequence specified below, to a torque of 20 Nm to max. 25 Nm.

Fitting the flange installation port



REMKO HPS 500, MPS 800, MPS 1000

MPS 800/1000



Tilt height without insulation: 1750/2090 mm
 Diameter with insulation: 990/990 mm
 Height with insulation: 1735/2135 mm

Unit type	Nominal capacity [l]	Max. operating temperature [°C]	Operating pressure [bar]	Test pressure [bar]	Tilt height [mm]	Weight [kg]
MPS 800	800	95	3	4,5	1750	157
MPS 1000	1000	95	3	4,5	2090	176

We reserve the right to modify the dimensions and constructional design as part of the ongoing technical development process.

Technical data for the insulation

Description		Value
Mass per unit area	kg/m ²	1,7
Insulation thickness	mm	100
Thermal conductivity λ (calculated)	W/mK	0,038
Standby energy consumption		See rel. product folder for details (acc. to EN 60379)
Thermal resistance	°C	Max. continuous load 110 °C (inside)
Fire class		B2 acc. to DIN 4102
Number of parts		2 (or 3), divided outside of the connection levels
Environmental compatibility		Min. 70% of recycled material in the raw materials, even the matting itself is recyclable
Toxicologically harmless		Yes
CFC and HCFC-free		Yes
Other properties		Good sound insulation, kind to the skin and safe to allergy sufferers

REMKO INTERNATIONAL

*... and right in your own location too!
Benefit from our experience and advice*



REMKO GmbH & Co. KG
Air conditioning and heating technology

Im Seelenkamp 12
Postfach 1827
Telephone
Fax
e-mail
Website

D-32791 Lage
D-32777 Lage
+49 52 32 606-0
+49 52 32 606-260
info@remko.de
www.remko.de

