



# REMKO STORAGE TANK SYSTEMS

*Buffer tank for hot water  
HPS 500, MPS 800, MPS 1000*

*Operation · Technology*





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**Carefully read this operating manual prior to commissioning/using the units!**

**This operating manual is a translation of the German original.**

**This operating manual is an integral part of the unit and must always be kept in the vicinity of the installation location or on the unit itself.**

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

# 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 provides useful tips,  notes and  hazard warnings to prevent injury and material damage. Failure to follow the directions in this manual can endanger persons, the environment and the equipment itself and will void any claims for liability.

- Keep this manual in the vicinity of the units.
- Only qualified personnel may set up and install the units and components.
- Set-up, connection, and operation of the units and their components must be carried out in accordance with the operating conditions as specified in this manual, and comply with all applicable local regulations.
- Modification of the 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 power 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 if there are obvious defects or signs of damage.
- The units and components must be kept at an adequate distance from flammable, explosive, combustible, abrasive and dirty areas or atmospheres.
- Installation, repair and maintenance work may only be carried out by authorised specialists. Visual inspections and cleaning can be performed by the operator as long as the unit is disconnected from the power.
- Take appropriate precautions when performing installation, repair or maintenance work or cleaning the unit to make sure the unit does not pose a danger to persons.

## **Environmental protection and recycling**

### **Disposing of packaging**

All products are packed for transport in environmentally friendly materials. Make a valuable contribution to reducing waste and sustaining raw materials. Only dispose of packaging at approved collection points.



### **Disposing of the 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. Help protect the environment by only disposing of the components in accordance with local regulations and in an environmentally safe manner, e.g. through authorised disposal and recycling specialists or at collection points.

## **Guarantee**

The guarantee conditions are listed in the "General terms and conditions". Please contact your direct contractual partner about this first instance.

## **Intended use**

The buffer tanks are employed for the storage of hot water in all types of hot water central heating systems (solid fuel/oil-fired boilers, heat pumps, solar plant, 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 is a non-intended use. The manufacturer/supplier assumes no liability for damages arising from non-intended use. The user bears the sole risk in such cases. Intended use also includes working in accordance with the operating and installation instructions and complying with the maintenance requirements.

## **Operation**

Manual operation is not necessary.

# REMKO HPS 500, MPS 800, MPS 1000

## Description

The buffer tanks are used to store hot water in all types of hot water central heating systems (combustible burners for solid fuel, oil-fired boilers, heat pumps, solar plants, gas/electric instantaneous water heaters) within enclosed spaces.

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

The insulation of the HPS 500 and MPS 800/1000 hot water tanks consists of high-efficiency double-lining thermal insulation.

All buffer tanks are produced from high-quality steel in accordance with DIN EN 10025/10111, and are provided with rust protection on the outside. Immersion heater elements can be screwed into the built-in 6/4" socket in the buffer tanks.

A D240 blank flange cover is included to retrofit a fine-tube heat exchanger. The buffer tanks have 9 (11 for the MPS 800/1000) 6/4" IG connection threads as well as inflow restrictors. A conductive rail is installed in the storage tank to enable probe/thermometer immersion sleeves to be used.

## Shutdown

### Temporary shutdown

1. Disconnect the electrical connection at all poles.
2. Drain the storage tank in areas where it is at risk from frost and before the onset of winter.
3. Then drain all pipes leading to the heating units and to the unit itself, as well as all water carrying fittings and pipes (also heating cycle = heat exchanger) to the frost-proof part of the installation provided by the customer.



### CAUTION

*When emptying the storage tank, hot water may escape!*



### CAUTION

*When putting the storage 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 shutdown

Ensure that units 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 in your area.

## Care and maintenance

### Care

- Clean the units with a damp cloth (by adding a liquid household cleaner, for instance).  
Do not use any caustic, abrasive or solvent-based cleaning products.

### Maintenance

- We recommend that you take out a maintenance contract with an annual service from an appropriate specialist firm.



#### NOTE

*This will guarantee that your equipment always operates reliably!*

- Regularly check that the safety valve is functioning.

The expansion water amount at maximum heat represents approx. 3.5 % of the storage tank capacity.

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



#### CAUTION

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

If the storage tank is not heated or if hot 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 buffer 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 buffer 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 build-up of heat.
- Leave at least 500 mm of space free to remove the fine-tube heat exchanger.
- Check the contents of the packaging for completeness and check the unit for visible transport damage. Immediately notify your contract partner of any deficiencies.
- The unit must be assembled on site.
- For all connecting sockets, ensure that the thread is fully engaged.



## NOTE

*Installation should only be performed by authorised specialists.  
The hot water must be prepared in compliance with the latest applicable standards.*

## Installation

### General notes

- Do not continually top up the water level in the buffer tank. This will prevent corrosion damage to the storage tank.
- Observe DIN-VDI 2035 on system filling.
- You must bleed the buffer tank.



## CAUTION

*The buffer tank is not suitable for preparation for domestic water!*

## Central heating connection

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



### CAUTION

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



### NOTE

*Installation should only be performed by authorised specialists.*

## Buffer tank with auxiliary heater (immersion heater elements)

Electric booster heaters (immersion heater elements) must be equipped with a safety temperature limiter which stops heating the buffer tank at a temperature of max. 110 °C. The choice of connection components (connecting pipes, circulation, safety valve combination, etc.) must be such that, in the event of a malfunction of the temperature control, the connection components will withstand temperatures of 110 °C, avoiding possible damage.

- Use one of the 1 1/2" sockets to install an auxiliary heater (see chapter: Connection examples). On the MPS 1000, either a combustible burner for solid fuel or one or two immersion heater elements can be fitted.
- Please note that the auxiliary 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.**
- You must bleed the buffer tank.

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## Fitting the insulation

To install the insulation, proceed as follows:

1. Open the packaging and pull the perforated insulation section onto the connections with the matting pointing inwards. In order to prevent danger to those under your supervision (e.g. children suffocating), all packaging must be disposed of immediately or cut up.
3. Hook the supplied cover assembly strips over the hooked closure strip. This will prevent the hooked closure opening during further installation.



2. Hook the unperforated insulation section onto the hooked closure strip on the insulation section that you attached previously.

4. After fitting the cover assembly strip, the insulation can be closed using the second hooked closure strip. If the insulation consists of three sections, repeat the previous two steps.



5. Insert the round section of insulation on top of the storage tank and fix it in place by pressing down lightly.
7. Fit the supplied collars to the connections.



### CAUTION

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

6. Correctly position and attach the insulation cover using the hooked strip openings on the top of the insulation.



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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 using a hot-air blower.



## CAUTION

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

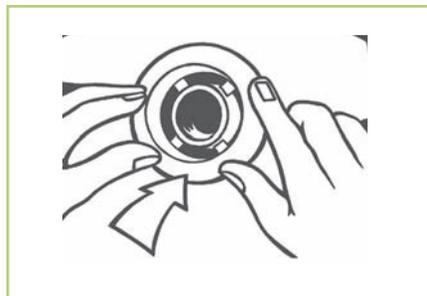
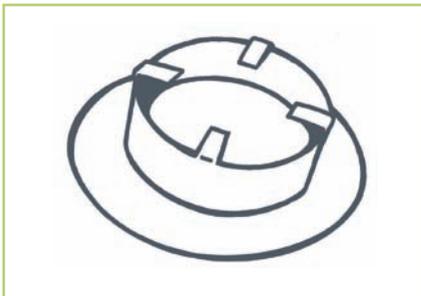
## NOTE

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

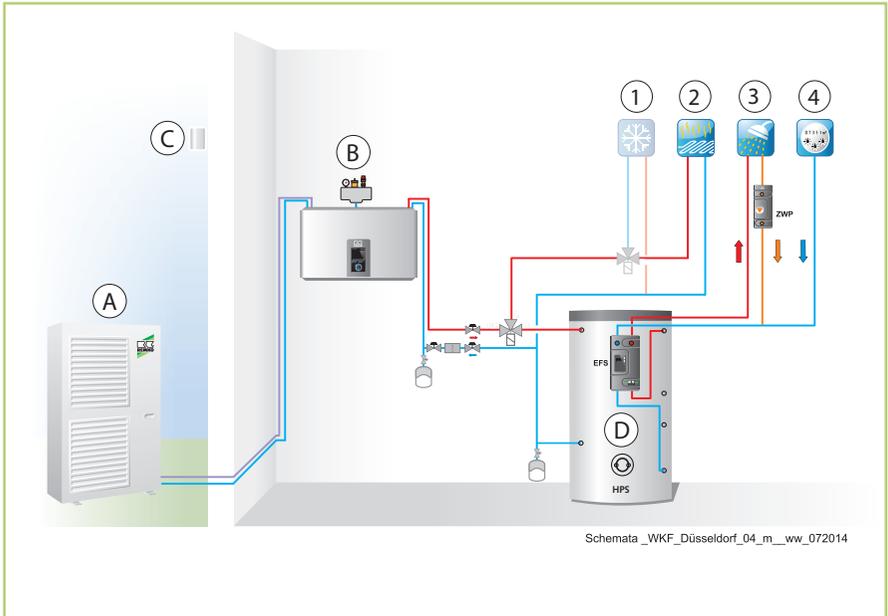
## Fitting the collars

When fitting the collars, please carry out the following steps:

1. Remove the packaging for the collars as delivered.
2. Slide the completed collar centrally on to the socket/pipe.



## HPS 500 connection example



### Legend

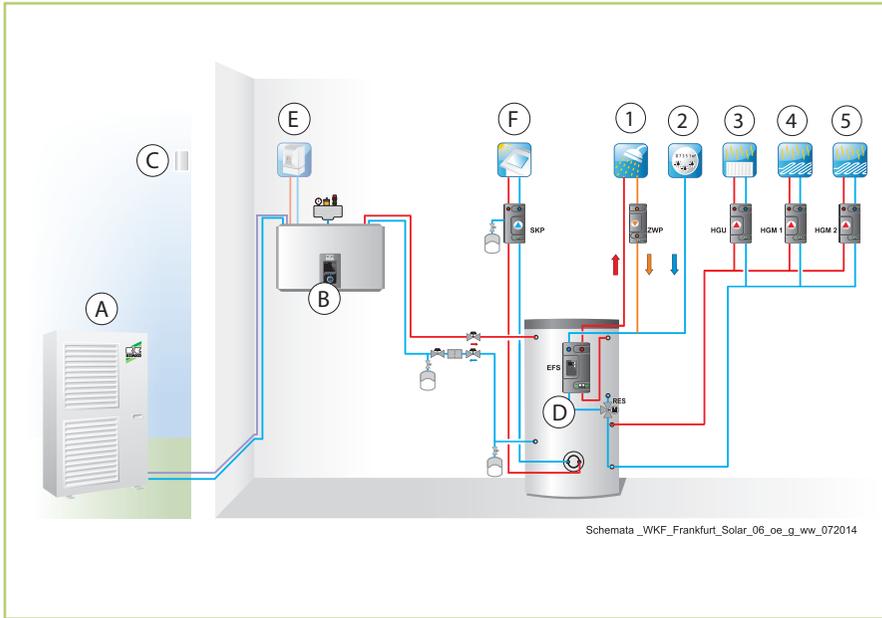
- |                                 |                        |
|---------------------------------|------------------------|
| A: Outdoor unit                 | 1: Cooling cycle       |
| B: WFK indoor unit              | 2: Mixed heating cycle |
| C: External probe               | 3: Hot water           |
| D: HPS 500 storage tank example | 4: Cold water          |

**This hydraulic circuit diagram is only to be used as a planning aid, and does not replace an installation drawing!**

**Hydraulic systems provided by the customer must be designed and planned by a specialist installer!**

# REMKO HPS 500, MPS 800, MPS 1000

## MPS 800/MPS 1000 connection example



### Legend

- |                                     |                          |
|-------------------------------------|--------------------------|
| A: Outdoor unit                     | 1: Hot water             |
| B: WFK indoor unit                  | 2: Cold water            |
| C: External probe                   | 3: Unmixed heating cycle |
| D: MPS 800 or MPS 1000 storage tank | 4: Mixed heating cycle 1 |
| E: Boiler/wall heating device       | 5: Mixed heating cycle 2 |
| F: Solar                            |                          |

This hydraulic circuit diagram is only to be used as a planning aid, and does not replace an installation drawing!

Hydraulic systems provided by the customer must be designed and planned by a specialist installer!

## Commissioning



### NOTE

*Commissioning should only be performed and documented by specially trained personnel. (DIN-VDI 2035)*

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

### Flange installation port

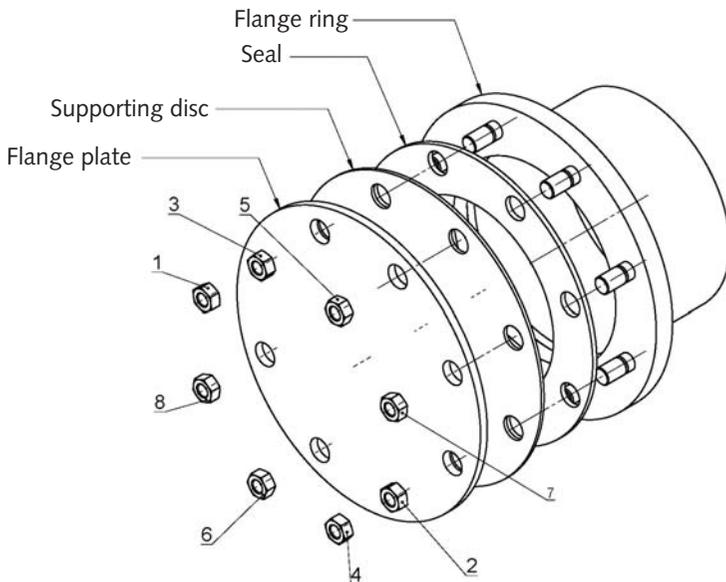
Depending on the design of your system, fine-tube heat exchangers may be attached to the boiler flanges.

1. Check all connections, even those which were sealed ex works (flange), for leak-tightness.
2. Then check all pipes for any leaks and fix them if necessary.
3. Test the safety module and valves to ensure they are functioning.

■ First tighten the nuts by hand.

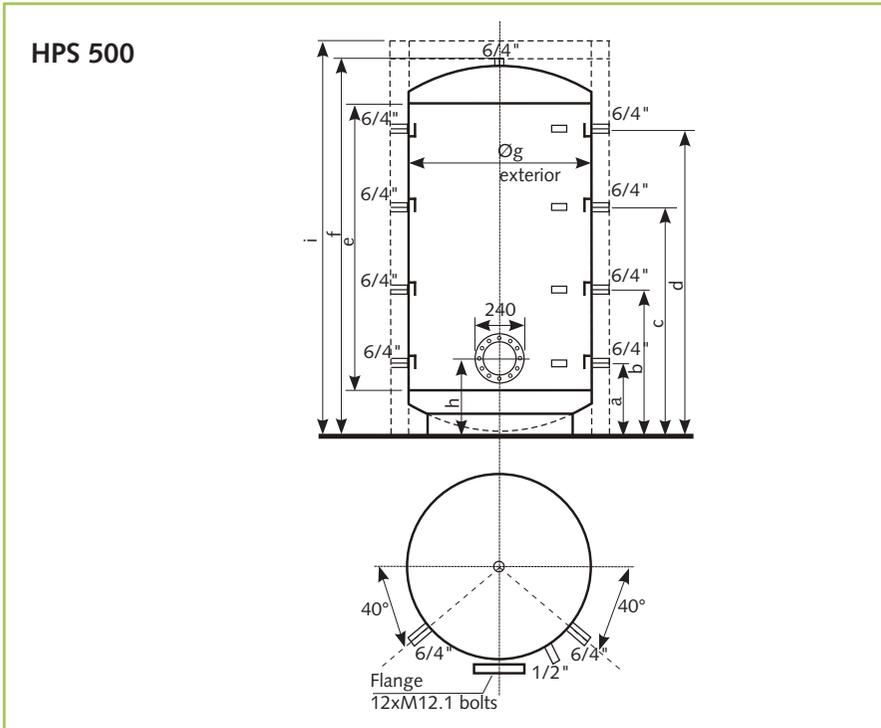
■ Then tighten the nuts, in the sequence specified below, to a torque of 20 Nm to max. 25 Nm.

### Fitting the flange installation port



# REMKO HPS 500, MPS 800, MPS 1000

## Unit dimensions and technical data

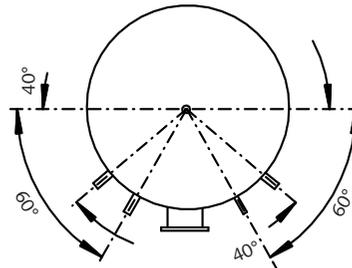
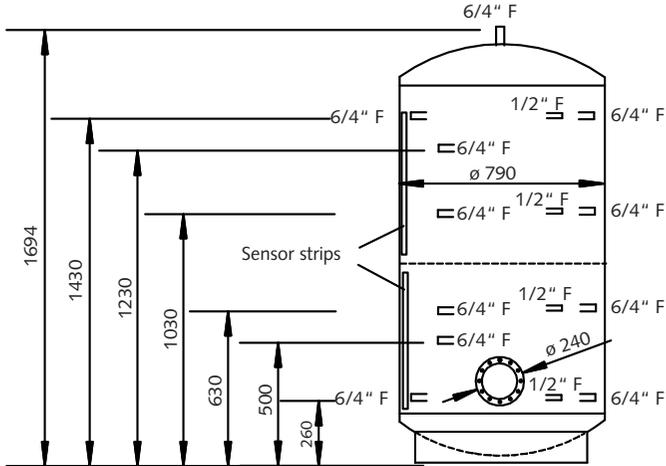


| Unit type | Nominal contents<br>[l] | Max. operating temperature<br>[°C] | Operating pressure<br>[bar] | Test pressure<br>[bar] | Tilt height<br>[mm] | Weight<br>[kg] |
|-----------|-------------------------|------------------------------------|-----------------------------|------------------------|---------------------|----------------|
| HPS 500   | 500                     | 95                                 | 3                           | 4.5                    | 1670                | 113            |

| Unit type | Dimensions in mm |     |      |      |      |      |       |     |      |
|-----------|------------------|-----|------|------|------|------|-------|-----|------|
|           | a                | b   | c    | d    | e    | f    | g (Ø) | h   | i    |
| HPS 500   | 220              | 620 | 1010 | 1390 | 1250 | 1640 | 650   | 340 | 1725 |

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

## MPS 800



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

| Unit type | Nominal contents | Max. operating temperature | Operating pressure | Test pressure | Tilt height | Weight |
|-----------|------------------|----------------------------|--------------------|---------------|-------------|--------|
|           | [l]              | [°C]                       | [bar]              | [bar]         | [mm]        | [kg]   |
| MPS 800   | 800              | 95                         | 3                  | 4.5           | 1750        | 157    |

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



## Technical data for the insulation

| Designation                                 |                   | Value   |
|---|-------------------|---|
| Mass per unit area                          | kg/m <sup>2</sup> | 1.7   |
| Insulation thickness                        | mm                | 100   |
| Thermal conductivity $\lambda$ (calculated) | W/mK              | 0.038   |
| Standby energy consumption                  |                   | For specification, see rel. product folder (in accordance with EN 60379)                |
| Thermal resistance                          | °C                | Max. continuous load 110 °C (inside)  |
| Fire class                                  |                   | B2 in accordance with DIN 4102  |
| Number of parts                             |                   | 2 (or 3), divided outside of the connection levels                                      |
| Environmental compatibility                 |                   | Min. 70 % 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 hypoallergenic                              |

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

# REMKO INTERNATIONAL

*... and also right in your neighbourhood!  
Take advantage of our experience and advice*



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