
Installation and maintenance instructions

AquaTank EM & HC EM (10bar)

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AquaTank EM 10bar



AquaTank HC EM 10 bar



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General information

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Alfa Laval reserves the right, without prior notification, to make technical changes compared with the illustrations and information contained in these instructions, should it necessary for improving the AquaTank.

These instructions provide important information that is necessary to ensure that the storage vessel is both reliable and safe. The operating/installation personnel must have access to these instructions. Therefore, please make sure that a copy of these instructions is available in plenty of time.

If the AquaTank is sold to a third party, or there is a change of owner, please pass on these instructions to the new owner. Please let us have the name and address of the new owner for the unlikely event that we need to contact them regarding the safety of the installation.

Read these instructions carefully before installing the equipment. Pay particular attention to the safety information.

Intended use

The AquaTank is a hot water storage vessel and is used to store potable water for normal use in potable water supply systems and is suitable for group or central drinking water supplies.

Using the equipment as intended also includes following these operating instructions, the maintenance conditions and design data specified.

Misuse

Any use that exceeds the use described above is misuse. The manufacturer is not liable for damage resulting from misuse. The operator bears the risk. Please keep the order data/article numbers of the AquaTank handy so that we can deal with your needs and spares orders promptly.

Regulations and standards

Take heed of the common regulations and standards in your country as well as the regulations of your public water supply for unvented hot water storage systems.

Safety information

The AquaTank must be connected according to the common regulations and standards of your country.

Each hot water storage system or storage vessel has to be equipped with safety devices.

Controls and instruments or safety devices are not included in the delivery of the cylinder.

Do not place any shut-off between the safety device and the cylinder.

The reliability of the safety device has to be documented by a certificate.

Keep the blow-off pipe / tundish always open. Blow-off pipes and drip pipes must be arranged so that nobody is exposed to the hot water if it escapes.

Manually open every now and then the safety device to test its function.

Health and safety instructions

The hot water storage tank is state of the art and reliable in operation. However, it can be dangerous if it is incorrectly operated or maintained by unqualified personnel or is not used as intended.

Anyone responsible for its operation and maintenance must have read and understood the health and safety information.

The vessel, particularly its safety equipment, may only be operated and maintained by people (qualified people) who are fully conversant with it and have been informed of the dangers. If you are not sure about something, ask your manager or the system supplier or manufacturer.

The relevant regulations and also the other generally recognised rules must be observed.

Never work in a way that prejudices the safety of the system.

In principle, no safety devices should be removed, taken out of service or adjusted without knowledge of the common regulations and standards and a qualified person in attendance. The safety devices protects against serious physical damage (burns, electric shock, etc.).

If damage to the system or defects is recognised, particularly those affecting the safety devices, expansion tanks, etc. and if unusual noises or smells develop, switch the system off and inform your supplier.

In principle any service and cleaning work on the storage vessel must only be done when it is stationary. The vessel must be protected against unauthorised operation.

Special danger points

If leaks occur on the primary side and the temperature is above 100°C, hot steam will escape. Contact with hot steam can cause considerable scalding. Therefore, avoid any contact with the steam. Remember that even after it has been switched off, the system will stay hot for some time longer and you may burn yourself.

Contact with hot parts of the cylinder can cause serious burns. Avoid any contact with hot parts of the vessel.

Warning against your own conversions and changes:

For safety reasons, you must not convert or modify the vessel yourself. The guarantee covering the vessel will inevitably lapse if you do.

Sizes of pressure relief valves:

nominal capacity of vessel in litre	max. heating load in kW	min. diameter
up to 200	75	DN 15
above 200 to 1000	150	DN 20
above 1000 to 5000	250	DN 25

Water quality:

Water hardness

By nature, drinking water contains alkaline earths and also calcium and magnesium components that are the main cause of "water hardness". The temporary component of water hardness, carbonate hardness, is the part that is precipitated as boiler scale when the water is heated and is deposited on the surfaces of that water storage systems, increasing with increasing temperature and according to the "lime-carbon dioxide balance" of the water.

Water with high lime content (total hardness of 2.5-3.8 mmol/l and exceeding) built up very quickly scales on the immersion heater. This causes capacity losses and breakdowns of the immersion heater.

If necessary, consult the water utility and take into account experience with lime scale deposits in the catchment area concerned.

Warranty

If no trade term is specifically agreed the warranty shall be according to the ORGALIME S 2000 (General conditions for the supply of mechanical, electrical and electronic products, Brussels, August 2000)

Installation

Please safeguard the storage tank during unloading and transportation against tilting. Do not use inappropriate transport equipment and avoid damages by crushes and whams.

The vessel is very heavy and has a high centre of gravity. Please transport it carefully and only use suitable equipment, e.g. forklift, crane, lifting truck.

NB: please check the AquaTank delivered for completeness and possible damage in transit before transferring it to the place where it is to be installed.

Siting

Avoid siting in damp locations and places below zero °C.

Important: Any work to which a requirement of the common regulations and standards applies must be carried out with suitable materials and in a workmanlike manner.

The AquaTank may only be installed and commissioned by a person holding a certificate for the installation of unvented hot water storage systems. This person is then responsible for the correct installation, connection and the equipment.

Space required

Install the AquaTank in a room that is protected from frost, flooding and is adequately ventilated. The maximum admissible temperature in the room where the system is installed must not exceed 40°C. Make sure that there is an adequate space between the AquaTank and the wall and other components to allow maintenance and inspection (minimum 60 cm).

Substrate/foundation/load-bearing capacity

The load-bearing capacity of the substrate must be adequate for the weight of the system (see delivery documents).

Alignment

Set up the system on the site and align horizontally. If the substrate is soft, place suitable shims under the foot ring/frame feet so that the system does not sink in.

Connection

The pipes for connecting the AquaTank must be designed so that they will safely withstand the expected chemical, mechanical, pressure and temperature stresses. The pipes connected to the AquaTank must not transfer any reaction forces and vibrations into the vessel.

Electrical connection

The installation of the immersion heater needs to comply with the common regulations and standards for electrical equipment as well as with the regulations of the public electricity supplier. The installation must be carried out by a person holding a certificate for electrical installations. This person is then responsible for the correct installation and connection of the immersion heater.

Corrosion protection

All tanks are equipped with a magnesium anode rod. The anode rod is specifically designed to help prevent premature tank failure due to electrolysis (stray current). This anode must be inspected every second year. If the anode rod is worn or shows signs of pitting replace it by a new one before placing the vessel back into service.

On request the vessel can be equipped with an impressed current anode.

Commissioning & Operation

When charging the vessel with the water for the first time, make sure that all screw connections are properly tightened, tighten any loose connections with a suitable tool and make sure that all seals are firmly seated and leak-tight, particularly the flange seal on the tank.

We recommend the use of strainers/filters if the cold water from the mains or the re-circulated hot water from the circulation pipework contains particles.

Do not operate the equipment at pressures or temperatures in excess of those specified on the nameplate of the vessel marking and drawings.

Do not subject the equipment to conditions of vacuum or partial vacuum.

Open the mains stop cock and fill the unit with water.

Open successive the air vent on top to purge the unit of air.

Open the primary heating circuit successive and adjust the primary control valve on the setpoint and heat the water to its temperature of use.

Check all gaskets/sealings at the water connections and the inspection opening for leaks when the vessel has reached its working temperature and rectify as necessary. Some bolt tightening maybe necessary after the unit has been first pressurerised.

The periodical change of cold and hot temperatures causes a load alteration on all gaskets and sealings and degrades its elasticity during the period of operation. This can cause leaks after a certain period.

Call the attention of the user/operator regarding this circumstance. Give the necessary instructions for periodical checks of all water connections and issue instructions how to refit the leak tightness.

Only AquaTank HC EM (with heating coil)

The primary water introduced must comply with the specifications according to common standards for boiler water. If the cylinder incorporates also an immersion heater and the heating coil is connected with isolating valves to the primary heat supply then the heating coil must be safeguarded with an expansion valve.

Maintenance

The AquaTank must be inspected by a competent person in time intervals not exceeding 1 year.

Annual maintenance should include cleaning and debris from the base of the vessel to comply with guidelines on prevention of legionella bacteria proliferation.

Check the magnesium anode rod of wear and replace it if necessary.

The leak-tightness of all screw and flange connection seals must be checked at regular intervals. Because of constantly fluctuating temperature loads, i.e. topping up with cold water when water is extracted and re-charging to tank temperature, the elasticity of the seal materials used suffers during the life of the system.

The tension of the screw connections can decline at the same time, resulting in leaks.

Open the air vent and pipe the drain to a drain point and open the drain valve.

The cylinders internal condition can be inspected by removing the inspection cover to allow visual examination. Do not use abrasive detergents or chemicals corroding the enamel when cleaning the cylinder.

Re-fit the gaskets/sealings and re-fill the vessel according to the commissioning instructions above.

The screws/nuts of the inspection opening have to be screwed in a cross pattern with a torque of 20 Nm.

Design data

Ratings

Vessel design pressure, max. 10 bar(g)

Vessel design temperature, max. 95°C

only AquaTank HC EM

Heating coil design pressure, max. 10 bar(g)

Heating coil design temperature, max. 110°C

Materials

The vessel is made of mild steel according to EN material number S235JRG2. All surfaces in contact with water are coated with enamel (glass-lined).

Insulation > capacity 200 to 500 litre, PU rigid foam / powder coated metal cladding, Euro fire class B
capacity 800 and 1000 litre, soft foam / PVC jacket, Euro fire class F

Anode > all capacities are equipped with a Mg-anode

Dimensions

See separate design drawing which is directly attached to the delivered vessel.

Documentation

AquaTank EM 10bar and AquaTank HC EM 10 bar are in **article 3.3** according to **PED 97/23/EC**.

The DECLARATION of SUPPLIER is directly attached to the delivered vessel.