

***Accumulator tank***

***AQUALUX CU  
&  
AQUALUX UB***





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## General

***Read this document carefully before carrying out any installation, adjustment or service – and follow the instructions.***

- Keep these instructions close to the boiler.
- The tank must not be modified, changed or rebuilt.
- To guarantee high reliability, installation must be carried out correctly.
- The type and serial number of the tank must be quoted whenever you contact Värmebaronen, see the rating plate.
- For service issues, contact your installer.
- Värmebaronen AB retains the right to change the specification without prior notice, as part of its policy of continuous improvement and development.

## Notes

### To be completed when the tank is installed

Serial number: .....

Installation date: .....

Installer: .....

Tel: .....

Other: .....

.....

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**Storing energy to make firewood burning more convenient**

To take advantage of all the benefits of a modern, environmentally-approved firewood boiler, the excess energy produced by the boiler must be stored. This energy is then used to heat the building, even after the burning cycle has finished. Using an accumulator tank reduces the number of burning cycles, making it more convenient to use firewood as a fuel.

If your electricity offers differential electricity tariffs, it may be worth storing heat in cheaper periods, then consuming it when electricity is more expensive.

**Aqualux CU**

The Aqualux CU has connections for two immersion heaters, max 2 x 9 kW, a copper-lined water heater, a fitted shunt and thermometers for top and bottom temperatures. A ball valve, an automatic bleed valve and a 6 kW immersion heater are also supplied as standard.

**Aqualux UB**

The Aqualux UB does not have the water heater, immersion heater connections or a shunt, but is otherwise identical to the Aqualux CU. A ball valve and an automatic bleed valve are supplied as standard.

**Dimensioning**

Allow for 8 – 10 litres of tank volume per m<sup>2</sup> of heated surface area.

**Accessories**

Charging package, Accumulator Control 3, for systems with a water heater in the accumulator tank.

Charging package, Accumulator Control 11, for systems with a water heater in the boiler.

**Technical data**

The figures show the Aqualux CU. The UB versions do not have items 6 - 14.

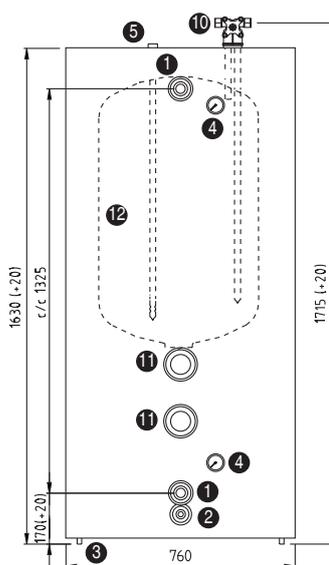
**The following applies to CU and UB versions**

1. Docking connection:  
Aqualux 500 CU / UB: R25 int.  
Aqualux 750 CU / UB: R32 int.
2. Bleed valve.
3. Adjustable base bolts.
4. Thermometers for top and bottom temperature.
5. Connection for bleed valve.

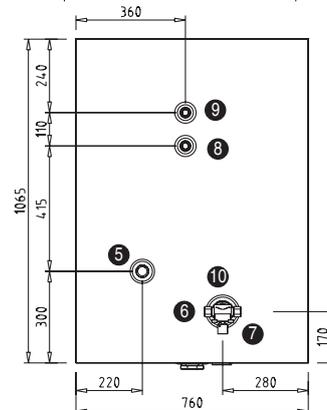
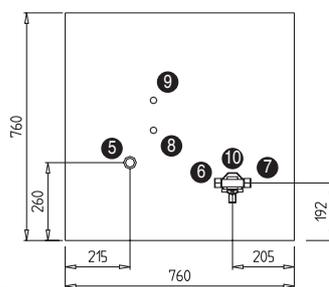
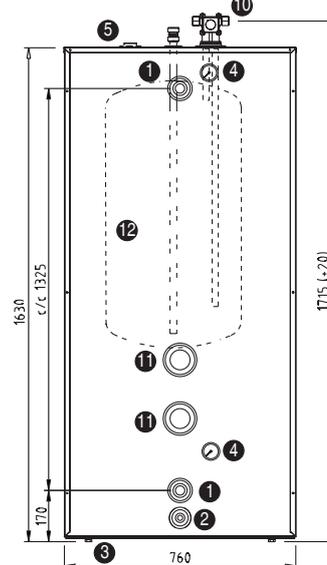
**The following only applies to Aqualux CU versions**

6. Flow pipe, compression ring Ø 22 mm.
7. Return pipe, compression ring Ø 22 mm.
8. Incoming cold water, compression ring Ø 22 mm.
9. Domestic hot water, compression ring Ø 22 mm.
10. Four-way shunt, operated by hand.
11. R50 int. connection for immersion heater.
12. Water heater.

Aqualux CU 500



Aqualux CU 750



AQUALUX	CU 500	CU 750	UB 500	UB 750		
<b>Dimensions:</b>	height	1630				mm
	width	760				mm
	depth	760	1065	760	1065	mm
<b>Weight:</b>	empty	180	225	140	185	kg
	full	680	975	640	935	kg
<b>Volume:</b>	tank	380	630	500	750	litre
	w.h.	120	-	-	-	litre
<b>Pressure:</b>	tank	1,5				bar
	w.h.	10	-	-	-	bar
<b>Max temp:</b>	100				°C	

### General

- Installation must be carried out in accordance with the Regulations for New Buildings [Nybyggnadsreglerna] and the Hot Water Instructions [Hettvattenanvisningarna].
- The accumulator tank must be installed in an upright position indoors, in a cellar or on the ground floor. The installation site must be able to support the combined weight of the boiler, the accumulator tank and any chimney.
- Adjust the base bolts to make the tank level.
- The installation must include an accumulator control.

### Design – Pipe dimensions - Venting

To ensure that the system can function if there is a power failure, the installation should be designed to allow natural circulation between the boiler and the tanks.

The pipes running between the boiler and the tanks must be kept as short and straight as possible.

If the boiler and tanks are next to each other, the recommended pipe dimension is DN 25-35.

The pipes must be laid so that air pockets are eliminated and air can escape from the system by itself. The supplied automatic bleed valve must be installed at the top of the accumulator to make venting easy.

### Expansion system

The accumulator tank must be connected to a vented or unvented expansion system.

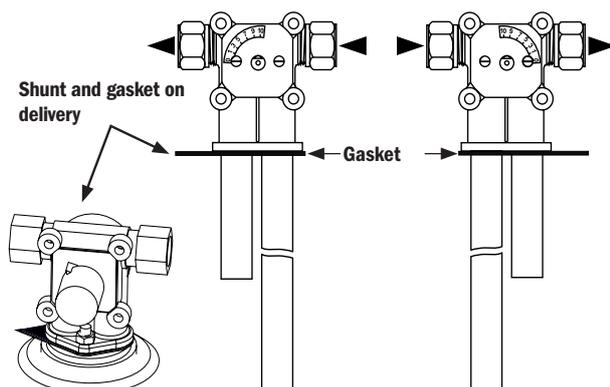
The volume of the expansion vessel depends on the volume of the heating system, the static head and the calculated temperature. The guideline values for volume are approx. 5 % of the total system volume for vented systems, or 13- 15 % for unvented systems.

**Vented** The distance between the top of the highest radiator and the expansion vessel must be at least 2.5 metres in order to prevent oxygen saturation of the water in the heating system. The expansion vessel is connected in a continuous and unisolatable rise from the boiler's expansion connection. To prevent damage occurring if the expansion system fails, for example because of freezing, the boiler should be fitted with a type approved safety valve, **1.5 bar**.

**Unvented** In unvented systems, the boiler must be fitted with a type approved safety valve, **1.5 bar**, connected using an unisolatable pipe from the connection at the top of the boiler, as well as a bleed valve. The expansion vessel is best connected using 15 mm Cu pipe, as shown in the diagram showing the system principle.

### Shunt

The shunt has a scale from 0- 10, 0 = no heat, 10 = full heat.



On delivery, the shunt's riser connection is on the left and the return is on the right. You can change this by loosening the shunt and moving the plastic pipe. Remember to move the scale on the shunt so it corresponds to the new direction.

Because of the wide temperature variations that occur in an accumulator system, the shunt should be automated to allow effective control of the room temperature and to make better use of the stored heat.

The shunt valve must be fully open while the system is being filled.

### Radiator system

An excessive flow rate in heating system can disrupt the temperature layering in the tank, and impair its functionality. It is therefore important to regulate the flow so there is a large temperature difference between the flow and return of the heating system.

### Domestic hot water

The domestic hot water installation must be equipped with a shut-off valve, a non-return valve, a mixing valve limiting the temperature to 65°C, and an approved safety valve with an opening pressure of **9 bar**.

### Accumulator control

An accumulator control, Accumulator Control 3 or Accumulator Control 11, must be fitted.

The function of the charging package is to quickly bring the boiler up to a high and constant working temperature and to maintain temperature layering in the accumulator tank during discharge in an installation with the water heater in the boiler.

To connect the accumulator control, refer to the separate instructions.

### Filling

The filling arrangement must be fitted so that the system is topped up from the bottom.

The shunt valve must be fully open while the system is being filled.

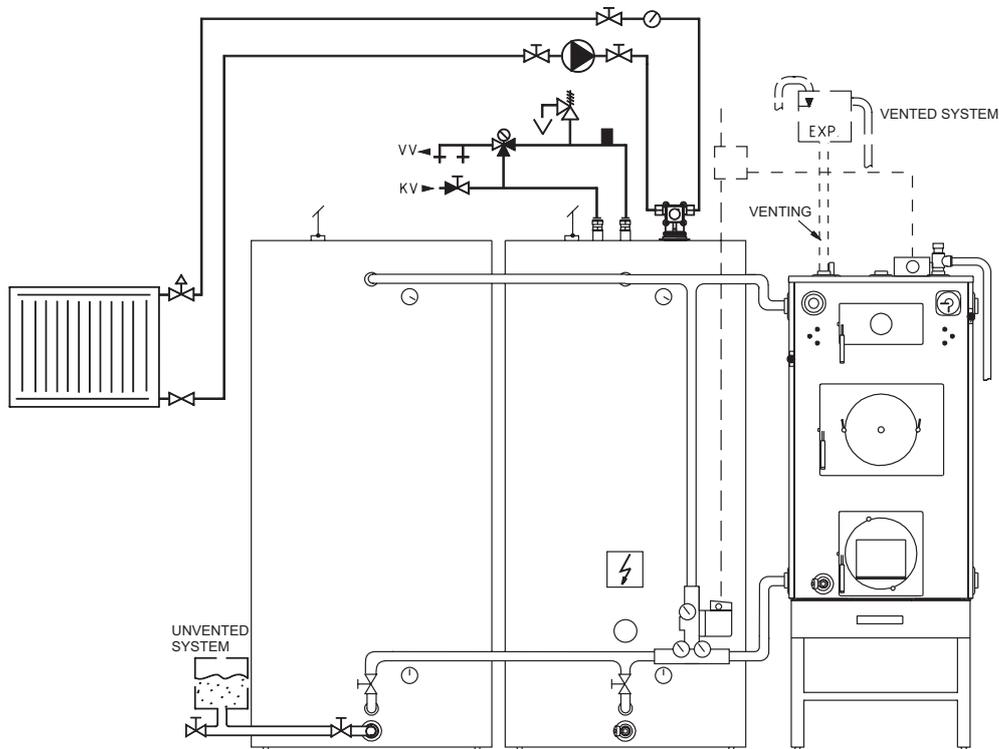
### Venting

The supplied bleed valve must be installed at the top of the relevant tank to make venting easy.

This diagram illustrates the system principle - the actual system must be designed according to the applicable standards and instructions.

## Boiler without water heater

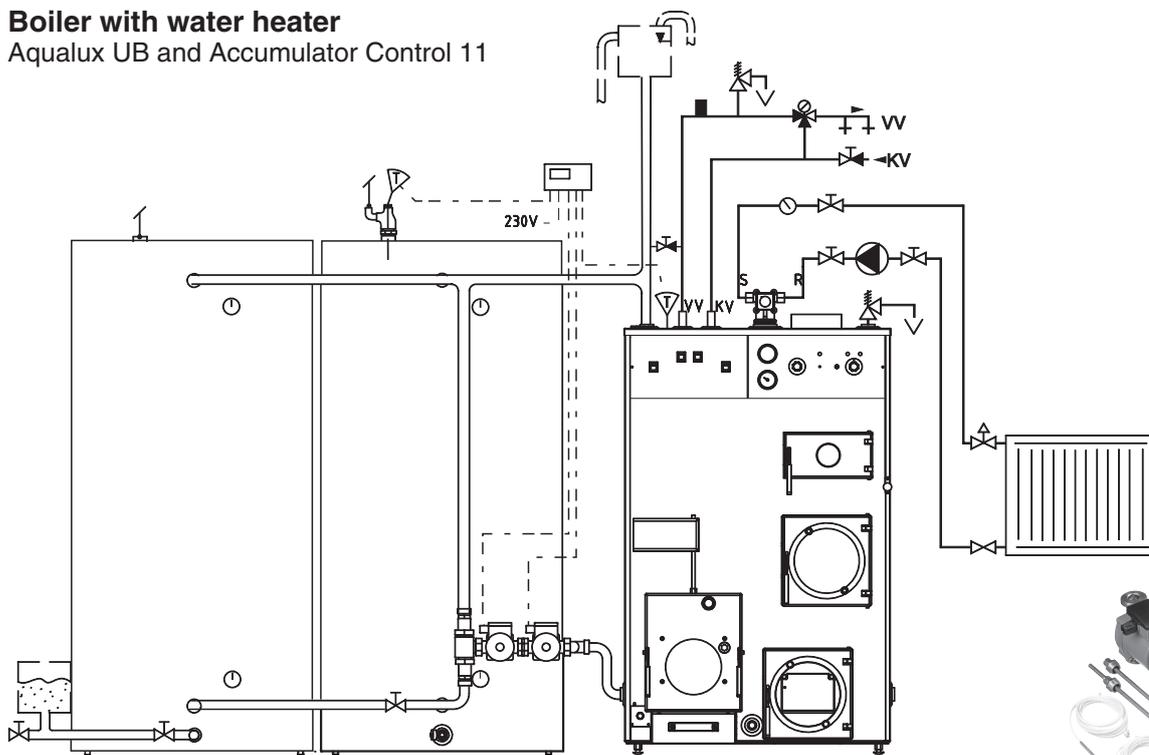
Aqualux CU, Aqualux UB and Accumulator Control 3.



Accumulator Control 3

## Boiler with water heater

Aqualux UB and Accumulator Control 11.



Accumulator control 11

### General

After installation, check with the installer that the system is in perfect condition. Ask the installer to demonstrate the settings and functions so you know how to operate and care for the system.

### Startup

- Check that the tank is full of water.
- Vent the charging pump.

### Checks

The following checks must be carried out after installation.

- All pipe connections must be watertight.
- The filling / drain valve must be properly closed.
- The safety valves must be working correctly.
- The mixing valve settings must be correct.
- The tank must be hot and heat must flow to the taps.
- The charging pump must be working.

### Safety valves

The safety valves for the domestic hot water system and the heating system must be operated regularly, around four times a year, in order to preserve the safety function.

### Water pressure in the system

The pressure required in the heating system depends on the height difference between the lowest and highest points in the system, the static head. If the difference is 5 metres, the pressure is 0.5 bar, and if it is 10 metres, the pressure is 1.0 bar.

#### **The pressure in the system varies with the boiler temperature**

**- do not add water unnecessarily.**

The volume of water changes with the temperature, and the change in volume in turn affects the pressure in the heating system. The higher the temperature the greater the volume and the higher the pressure. The expansion vessel partly takes up the changes in volume in the system. The pressure in the system will vary depending on the flow temperature set in the shunt. A higher flow temperature is necessary in winter, so the pressure will be higher than in summer.

#### Water pressure in the water heater

In the water heater, too, the pressure will vary depending on the water temperature. However, the water heater does not have an expansion vessel – instead, water is released through a safety valve when the water pressure is too high (over 9 bar).

This could happen if a large amount of hot water has been drawn off for a shower or bath, causing a lot of cold water to enter the water heater. When this cold water is heated, it expands, causing the pressure to increase.

#### If there is a risk of freezing

In severe cold weather, no part of the heating system should be turned off as this would involve a risk of burst pipes.

Never start a burning cycle if you suspect that any part of the heating system might be frozen. Call the installer.

## Troubleshooting

Problem	Possible cause	Remedy
Heat is not transferred from the boiler to the accumulator.	Wrong connections.	Check.
	Circulation pump in accumulation control.	Check that the pump is operational. Most pumps have a speed control – check that the speed is not too low.
	Air.	Vent. Check the installation. If installation is carried out according to the diagrams, the system will not be sensitive to air problems.
	Wrong connection of accumulator.	See the points above.
The safety valve opens when the system is warm.	Expansion vessel too small.	See the section “Expansion system”.
	Incorrect initial pressure in an unvented expansion vessel.	Check the pressure in the vessel.
The water from the water heater is not hot.	No power to charging pump.	Check.
	Charging pump not working.	Check, call the installer
	Mixing valve incorrectly adjusted.	Check the adjustment of the mixing valve.

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