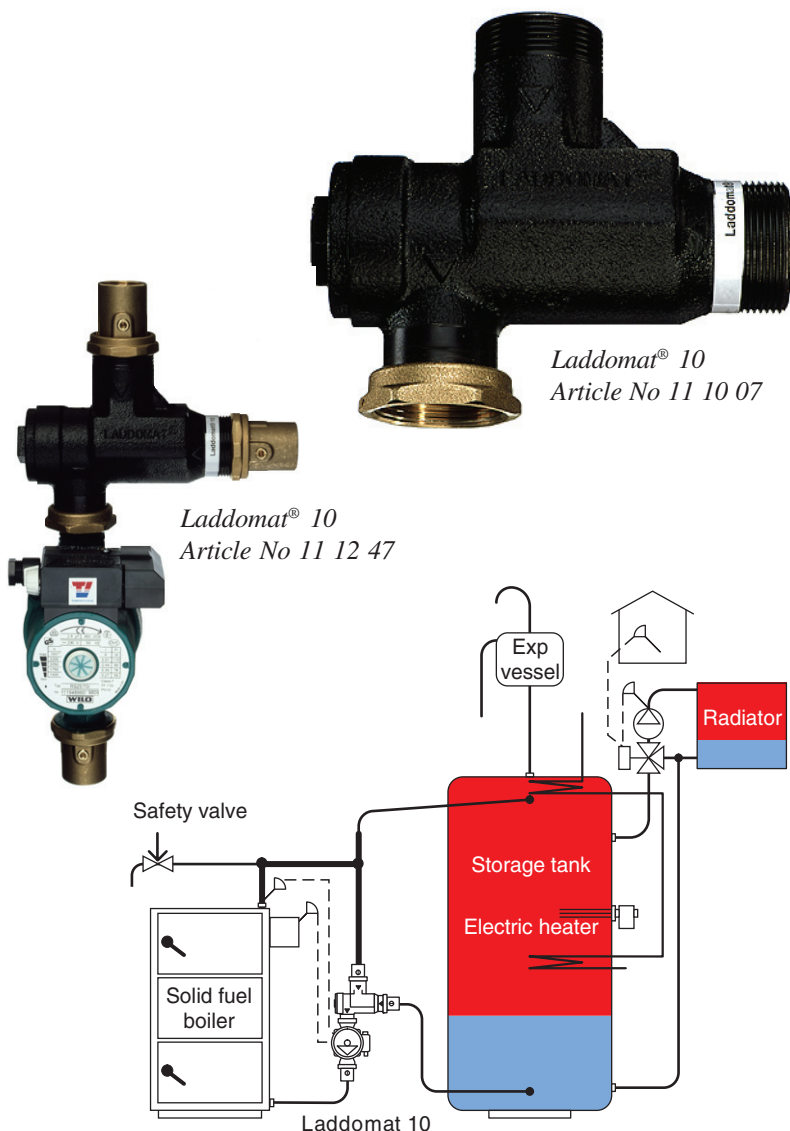


# Laddomat® 10

Charging unit for a solid fuel boiler and a storage tank with hot water heater.



Laddomat® 10  
Article No 11 12 47

Laddomat® 10  
Article No 11 10 07

- Laddomat 10 raises the return temperature to the bottom of the boiler, combats corrosion due to condensation and extends the service life of the boiler.
- Laddomat 10 helps the boiler reach its working temperature fast, and boosts the efficiency of the boiler.
- Laddomat 10 charges the boiler slowly. The *boundary layer*\* in the accumulator tank is vital for a comfortable and effective wood heating system. Laddomat 10 optimizes this layer.
- In the shut-down phase of burning, Laddomat 10 ensures the tank is completely charged by the thermal valve closing the bypass port.
- When the boiler is not lit, the built-in non-return valve prevents reverse circulation = small heat loss.
- Simple dimensioning – Laddomat 10 fits all boilers up to 100 kW.
- Laddomat 10 is connected using union couplings – servicing can be carried out easily and smoothly without draining the system.

## Technical data

Pump:	Wilco RS25-6/3-130, pressure head 6 mvp, <65 kW Laddomat LM4/3-130, pressure head 4 mvp, <35 kW
Connections:	R32 female (3 pcs) / R25 female (3 pcs)
Opening temperature:	72°C (53°, 57°, 63° and 78° optional extra)
Kv-value:	14 m³/h at 10 mvp
Boiler output:	Max 100 kW (with Wilco RS25-7 or equivalent)
Pump thermostat:	Not included. Select flue gas thermostat No 131001 and thermostat with immersed sensor stick, No 131002, as safety backup.

## Ordering data

Article	Article No
Laddomat 10 complete:	
RS25-6/3, R32 female	11 13 67
LM4/3, R25 female	11 12 47
Laddomat 10 without valves and pump	11 10 07

\* The **Boundary Layer** is a thin border between the hot water on top and the colder, denser water underneath.



## Start up

The circulation pump is started and the water circulates to the **Laddomat 10** and straight back to the boiler again.

## Operation

When the boiler water is above the opening temperature of the thermostat on the **Laddomat 10**, a little of the cold water from the bottom of the tank is mixed in.

The charging flow is slowed down and optimal layering is achieved in the tank. The water temperature at the bottom of the boiler depends on the boiler output and the selected thermostat cartridge 60–75°C.

## Shut-down phase

In the shut-down phase, the tank is charged full as the **Laddomat 10** shuts off the bypass port so that the full pump flow cools the boiler.

## Self circulation

**Laddomat 10** does not permit self circulation. To charge the tank during a power failure, an emergency power set is a possible option.

Another option is to fit the **Laddomat 21** charging pack with built-in non-return valve which allows automatic self circulation in the event of power failure.

## Starting and stopping the charging pump

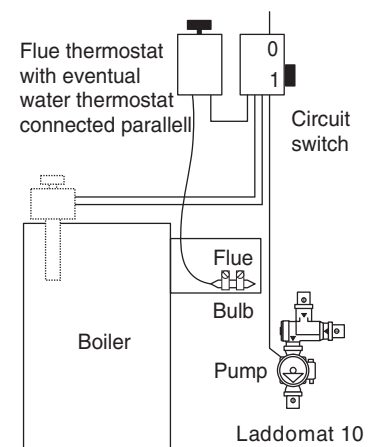
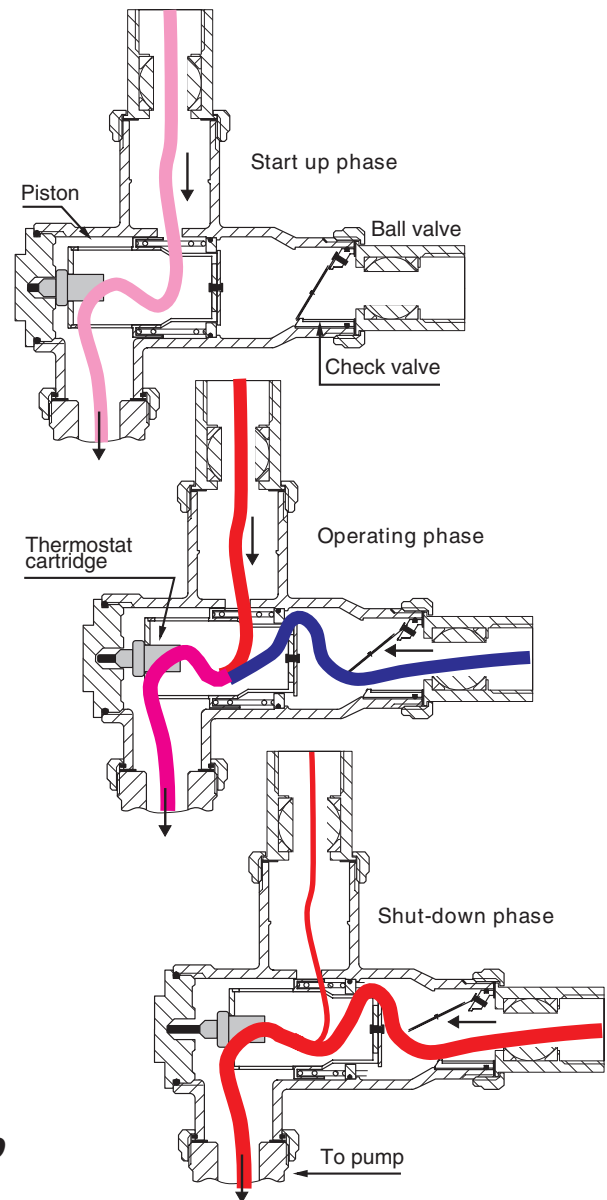
Stopping the pump quickly when the fire has gone out minimises the loss of heat by preventing unnecessary circulation between boiler and tank.

An optional flue thermostat, No. 13 10 01, deals with this as it allows the pump to run only when there is a fire in the boiler. If the boiler is equipped with a pump thermostat, this should be connected parallel to the flue thermostat and set at 90°C. This will prevent boiling if there is a lot of ember left in the boiler.

## The radiator system

The storage capacity of the tank is optimized if the radiator return is as cold as possible. This is achieved by fitting the radiator systems with:

1. The ThermOmatic CBJ or ERA 10 automatic shunt control, which releases only enough warm water to maintain the desired internal temperature.
2. Thermostatic valves with built-in chokes which are set for radiator size so that the small radiators do not short-circuit the system.



# Laddomat<sup>®</sup> 10 Charging unit

## Installation instructions

### Connection

Laddomat 10 can be connected up as illustrated in the adjoining illustrations. When connecting several tanks, an even flow distribution can be achieved if each tank has the same overall pipe length to the charging circuit's connection points A–A. The radiator circuit is connected at B–B.

If connection is via B1 radiator heat takes priority over hot water.

Laddomat 10 can be assembled in any operating position. Please check for any air pockets and ensure that the inbuilt (turnable) non-return valve lip is positioned to provide a tight seal.

The overall pipe length should be as short and have as few bends as possible. You should ensure that all air pockets are eliminated.

The delivery pipe from the boiler should preferably be a no. R32 or should at least match the boiler's connection dimensions.

Refill is performed directly in the boiler, which means that in an emergency you can prevent the risk of boiling by simply adding cold water. In the initial fill-up, a hose is connected to run directly to the bottom of the tank.

### Aeration

For optimal aeration, the pipes should be structured to allow air to dispel itself to the expansion vessel.

You can also mount a purge valve with a high working capacity to speed up the aeration process.

### Electricity connection

The pump can be connected so that it is started either:

1. By the water thermostat when the boiler reaches a working temperature of approx. 75–85°C,

or

2. When the flue and water thermostats are coupled in parallel.

The advantage with the flue thermostat is that the pump starts up quickly when you fire the boiler and stops quickly when the fire has gone out.

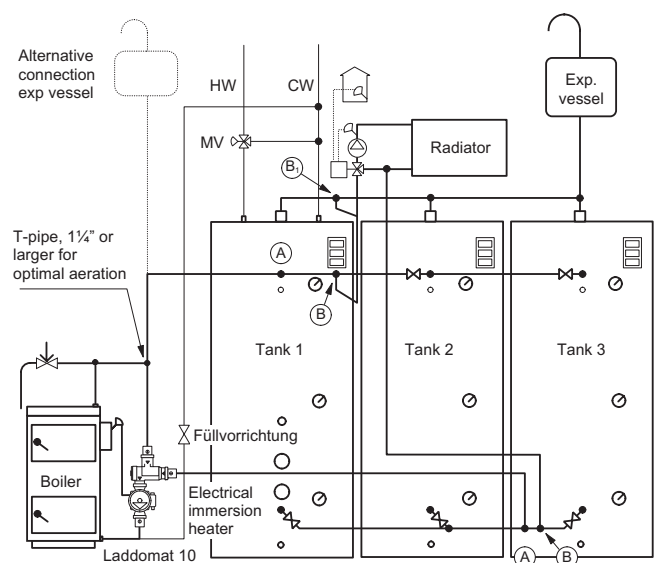
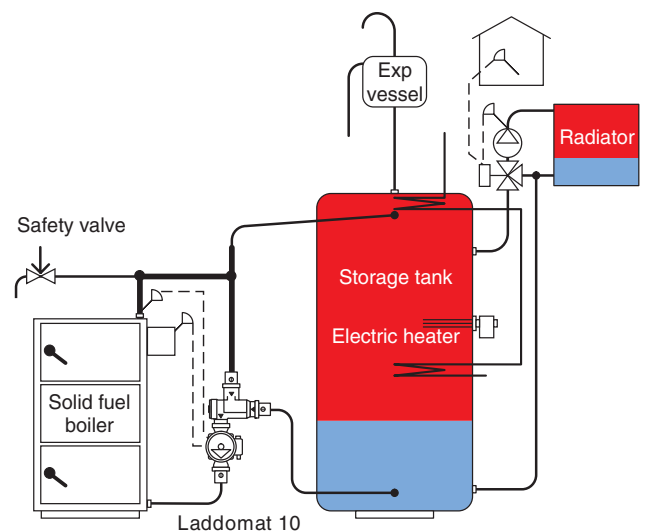
The water thermostat starts the pump when the residual heat raises the temperature in the boiler to over 90°C.

### Dimensioning

For boilers with outputs of up to 35 kW, the pipe dimensions of the circulation loop (*top of boiler: Laddomat 10, bottom of boiler: at least R25 or Cu 28*). Choose a circulation pump equivalent to Wilo RS 25-4 or Grundfos 25-40.

For longer lengths of pipe: a pump equivalent to Wilo RS 25-6 or Grundfos 25-60 should be used.

For boilers with outputs of 35–50 kW: a R32 or Cu 35 or larger should be used, as well as a Wilo RS 25-6 or Grundfos 25-60.



**Manufacturer**  
Termoventiler AB  
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[www.termoventiler.se](http://www.termoventiler.se)



# Service

Servicing the Laddomat 10 is simplicity itself thanks to the union couplings and O-ring's robust seal.

Yearly inspections and cleaning reduces the risk of operating disruptions. Remove the plunger and non-return valve when inspecting, cleaning or changing the thermostat.

When reassembling, the O-rings and their sealing surfaces should always be lubricated with valve grease.

When reassembling, press the plunger down firmly towards the inside, until the seat ring touches the retaining edge, otherwise there is a risk that the valve will not seal the tank properly.

When the plunger measures 16.5 mm (as illustrated in fig. below) it is in the correct position.

Thermostat cartridges and O-rings are available as extra and should be changed every 5 years. You may also need to replace the cartridge more frequently if it is repeatedly exposed to high temperatures close to or above boiling point.

Also check the pump: dirt and deposits in the impeller can also reduce pump capacity significantly.

## Thermostat cartridges available as extra:

No.	Opening temperature
5840	55°C
8749	57°C
5839	63°C
8719	72°C
1456	78°C

## Checking the cartridge

The cartridge opens the plunger by approx. 8 mm when the temperature rises more than 9°C above opening temperature.

The plunger opens a further 2 mm at the next 5°C temperature increase.

When inspecting the cartridge, make sure it is working against the spring tension in the valve.

A damaged cartridge will always permit uncontrolled movement.

