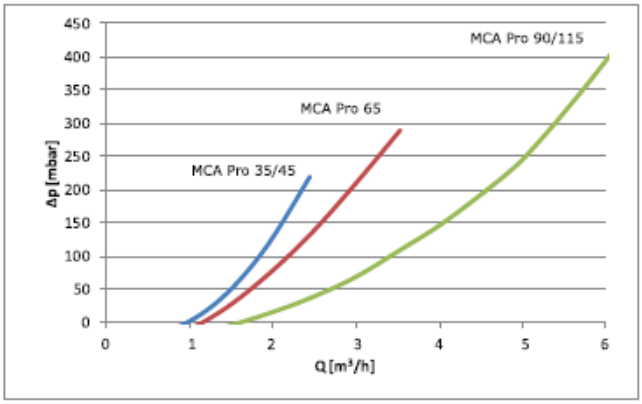
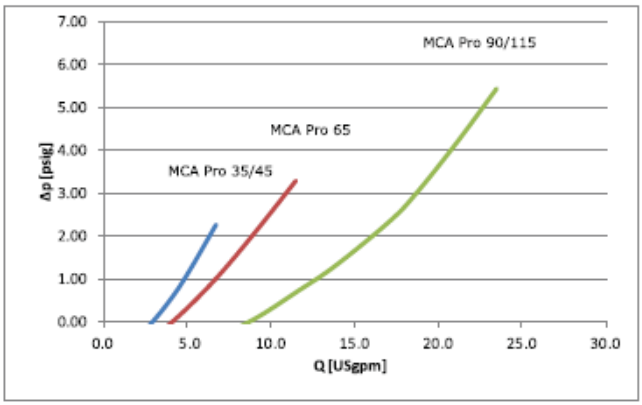
3. Technical description

3.3 Operating principle





Δp Pressure drop
Q Water flow

3.3.1. Boiler pump

⚠ CAUTION

If the power consumption of the pump is more than 150 VA/1.3A, it must be connected to the SCU-S02 (Accessory)

The boiler is supplied without a pump. The proper pump selection has to reflect the pressure drop and system flow calculation which includes the DHW sizing.

Back flow preventer
A backflow preventer must be used in the cold water supply piping when required by national or local codes having jurisdiction.

☞ Refer to the Technical Specifications on page 17.
If possible, install the pump directly under the boiler on the return connection. The pump must be pumping into the boiler.

☞ Refer to chapter 4.5. Installation Examples, (page 25 and 26.)

Recommended pumps for the MCA Pro boilers are:
- Taco
- Wilo
- Grundfos

☞ See chapter: 4.10.3 "Connection possibilities for the PCB (SCU-S02)", page 61

3.3.2. System in cascade
The boiler is ideally suited for a cascade system. There are a number of standard solutions available. For example:
- Cascade systems (quick assembly) for the installation of 2 to 6 boilers next to each other or 3 to 6 boilers mounted back to back on a free-standing frame. When the boilers are mounted next to each other, they can be mounted either on the wall or on a freestanding frame. The wall or the frame must be able to bear the weight of the boilers and must be sufficiently stable.
- Hydraulic separators/Low loss headers for a cascade system of 2 or 3 boilers (MCA Pro 45 and/or MCA Pro 65). The supply and return of each boiler can be directly connected to these.

i Please contact us for further information.

3.3.3. DHW tank connection
An indirect DHW tank can be connected to an individual boiler. The DHW tank can be connected to the boiler in two ways:

- Using a three-way diverting valve.
- Using a DHW tank pump.

3.3.4. Water flow rate
The minimum and maximum waterflow, as listed on the next page should be taken into account to protect the boiler for to low- or high waterflow / temperature differences in the heat exchanger.

The boiler's modulating control system limits the maximum difference in temperature between the heating supply and return and the maximum speed at which the supply temperature increases, this could cause a reduction of heat output of the boiler.