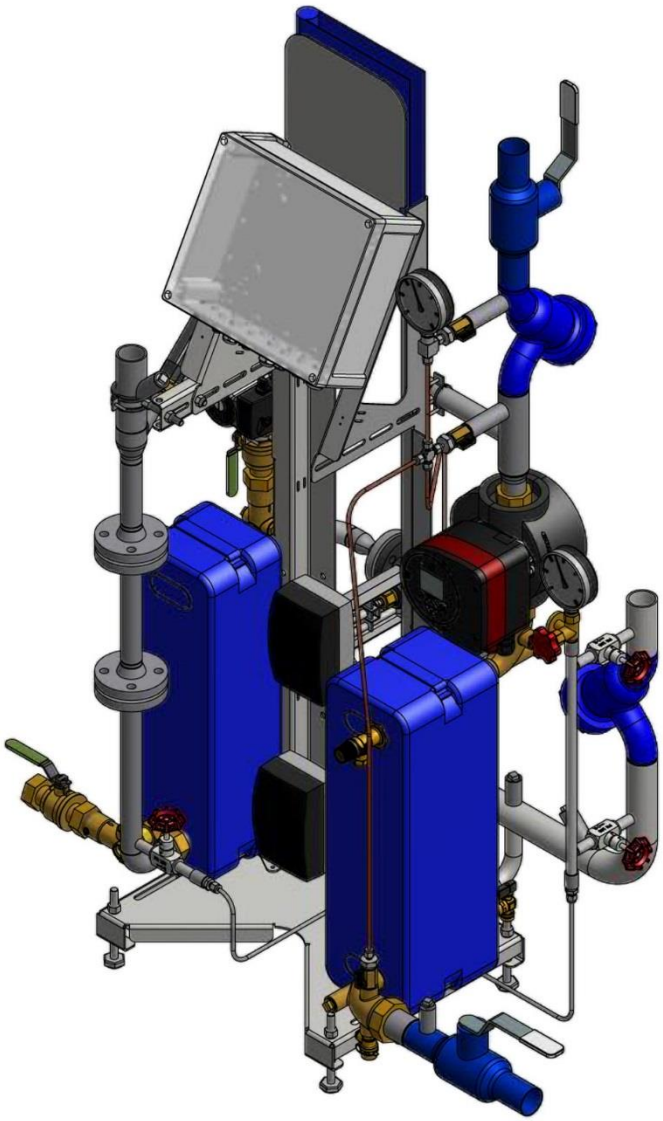
Cetetherm

Installation and service instruction Cetetherm Maxi Compact

District heating substation for premises up to 350kW



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All these types of changes will be included in future release of the manual.

Conntent

1 General

Cetetherm Maxi Compact is a complete, ready-to-install heating network substation for heating and/or hot water. It is designed for buildings with a primary connection to a heating network. Cetetherm has years of experience in heating network technology and has developed Maxi Compact with well-planned pipe work and with all components easily accessible for inspection and possible future servicing.
It is possible to get the Maxi Compact in a fully insulated version.

1.1 Comfort

Maxi Compact has fully-automatic temperature control for heating and where appropriate, hot water. The heating is controlled in relation to outside temperature and the desired room temperature. The hot water is controlled and maintained at the desired temperature.

1.2 Installation

Well planned pipe work, marked pipes and preprogrammed controller make installation very simple.
Maxi Compact is equipped with an electrical safety switch that can be locked.
Maxi Compact is designed to be placed on the floor.
Before installation this manual must be read.

1.3 Long-term security

All Maxi Compact components are adjusted together and undergo thorough function testing. For future servicing requirements, all components are easily accessible and individually replaceable.

1.4 CE-marking

Maxi Compact is CE-marked to certify that the substation conforms to pressure equipment directive, low voltage directive, and machine guidelines. See Declaration of Conformity.
To maintain the validity of the CE marking, only identical replacement parts must be used.

1.5 Information about the document

All pictures in this document are general images.
Maxi Compact is available in different models and levels of equipment.
See each supplier manual for more detailed information aboute the components.

1.6 General warnings

The installation work must be carried out by an authorized installation contractor. Before the system is taken into operation, it must be filled up and checked for leaks.

The temperature and the pressure of the primary heating water are very high. **Only qualified technicians** can work with the substation. Incorrect operation may cause serious personal injury and result in damage to the building.

If the hot water temperature is set too high, people may be scalded. If the hot water temperature is set too low, unwanted bacteriological growth may occur in the hot water system. This can result in serious personal injury.

Parts of the substation may get very hot and should not be touched.

Before the substation is connected to the electrical supply, make sure that the heating system is topped up with water. Starting up the system without water will damage the circulation pump.

The substation must be electrically connected by a qualified electrician.

When starting up the substation: To avoid the risk of scalding, make sure that no-one draws any hot water until the hot water temperature has been adjusted.

Start heating circulation by first opening the valves in the **district heating supply** and then **return** lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges. Do the same with the heating circuit, but first open heating **return** and then **supply**.

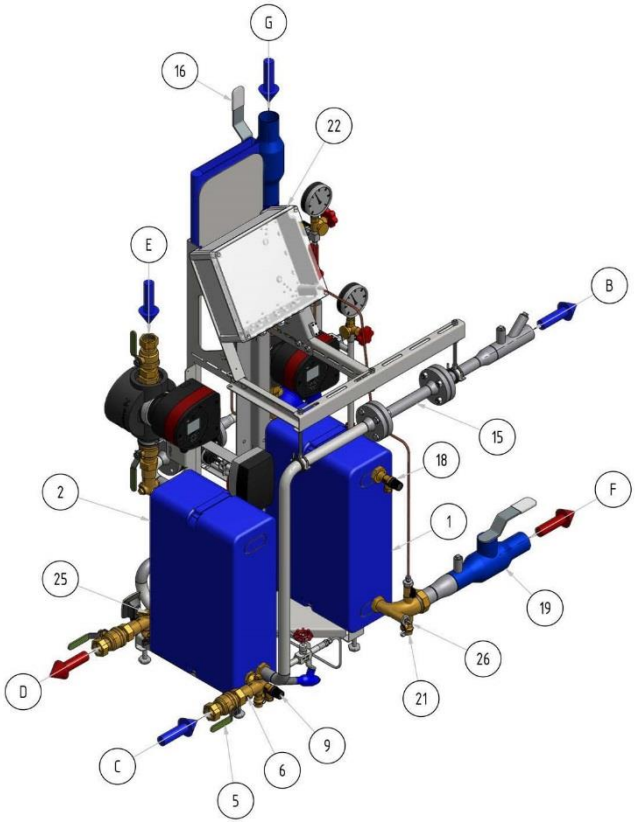
The substation should be placed in a locked area where non-authorized persons do not have access.

Be carefull when opening safety valves, draining valves, filter and air escape valves, very hot water can escape.

Some actuators automatically return to closed at a power break. Risk of crushing.

2 Product overview

2.1 Maxi Compact F2, heating, hotwater, horisontal meter section, 3- & 4-point measurement



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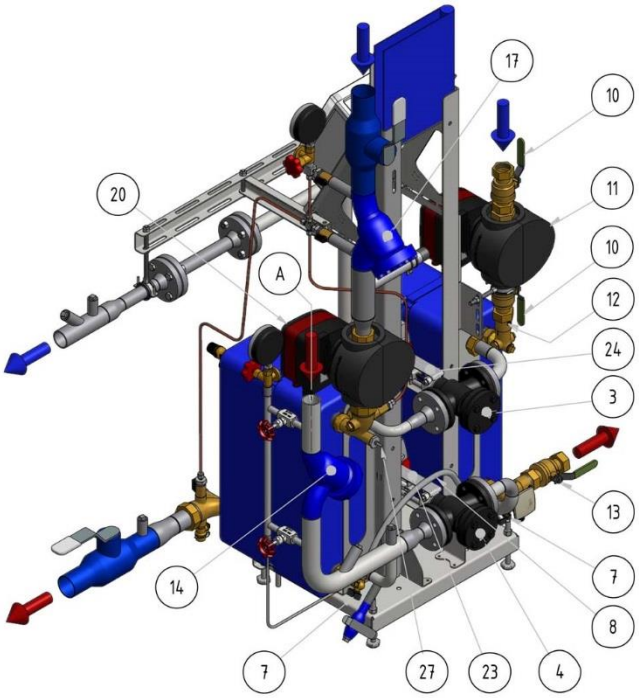
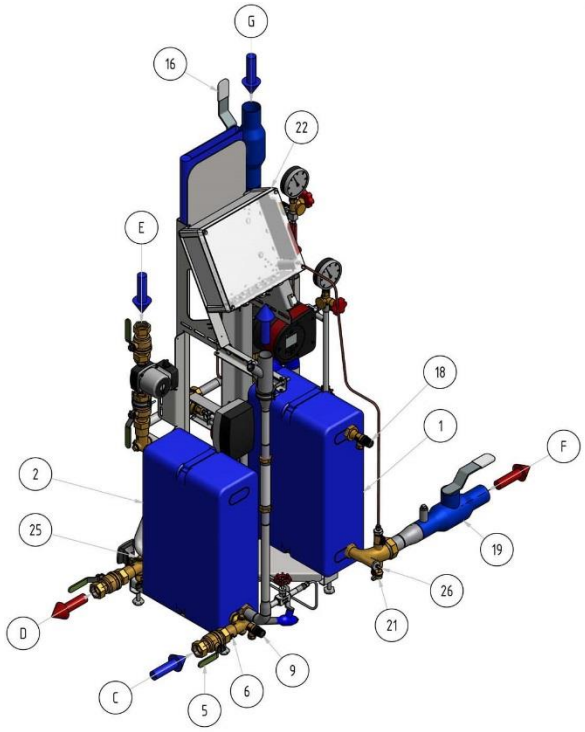


Bild 2

1	Heat exchanger, heating
2	Heat exchanger, DHW
3	Control valve, heating
4	Control valve, DHW
5	Shut off valve, cold water
6	Non-return valve, cold water
7	Topping up valve (2 pc.)
8	Hose
9	Safety valve, cold water
10	Shut of valve, DHWC (2 pc.)
11	Pump, DHWC
12	Not return valve, DHWC
13	Shut of valve, hot water
14	Filter, heating network media supply
15	Heat meter dummy
16	Shut of valve, heating return
17	Filter, heating return
18	Safety valve, heating

19	Shut of valve, heating
20	Pump, heating
21	Draining valve, heating supply
22	Control cabinet
23	Actuator, DHW
24	Actuator, heating
25	Temperature sensor, DHW
26	Temperature sensor, heating supply
27	Temperature sensor, heating return
28	Temperature sensor, outdoor (not in the picture)
A	Heating network media, supply
B	Heating network media, return
C	Cold water
D	Hot water
E	DHWC
F	Heating circuit, supply
G	Heating circuit, return

2.2 Maxi Compact F2, heating, hot water, vertical meter section, 3- & 4- point measurement



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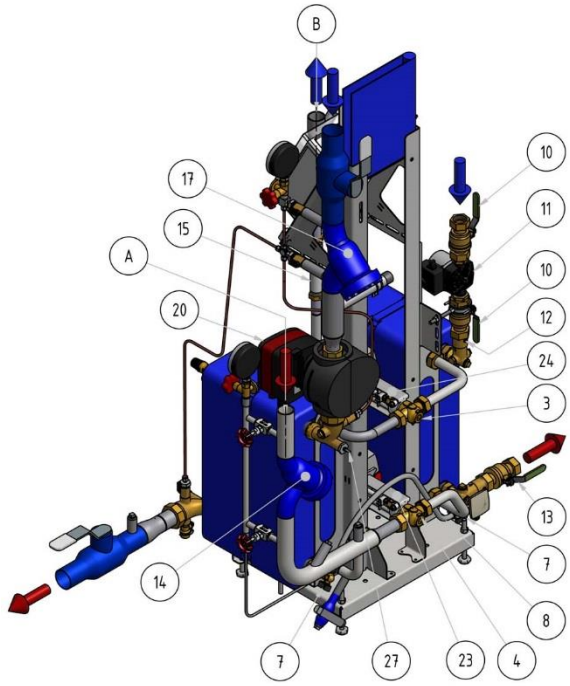
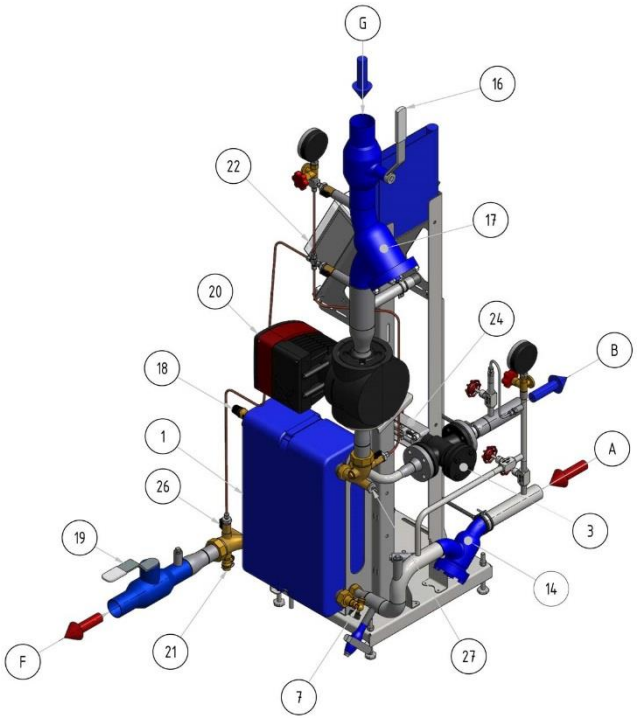


Bild 4

1	Heat exchanger, heating
2	Heat exchanger, DHW
3	Control valve, heating
4	Control valve, DHW
5	Shut off valve, cold water
6	Non-return valve, cold water
7	Topping up valve (2 pc.)
8	Hose
9	Safety valve, cold water
10	Shut of valve, DHWC (2 pc.)
11	Pump, DHWC
12	Not return valve, DHWC
13	Shut of valve, hot water
14	Filter, heating network media supply
15	Heat meter dummy
16	Shut of valve, heating return
17	Filter, heating return
18	Safety valve, heating

19	Shut of valve, heating
20	Pump, heating
21	Draining valve, heating supply
22	Control cabinet
23	Actuator, DHW
24	Actuator, heating
25	Temperature sensor, DHW
26	Temperature sensor, heating supply
27	Temperature sensor, heating return
28	Temperature sensor, outdoor (not in the picture)
A	Heating network media, supply
B	Heating network media, return
C	Cold water
D	Hot water
E	DHWC
F	Heating circuit, supply
G	Heating circuit, return

2.3 Maxi Compact F1, heating, 3- & 4-point pressure metering



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1	Heat exchanger, heating	21	Draining valve, heating supply
3	Control valve, heating	22	Control cabinet
7	Topping up valve	24	Actuator, heating
8	Hose (not in the picture)	26	Temperature sensor, heating supply
14	Filter, heating network media supply	27	Temperature sensor, heating return
16	Shut of valve, heating return	28	Temperature sensor, outdoor (not in the picture)
17	Filter, heating return	A	Heating network media, supply
18	Safety valve, heating	B	Heating network media, return
19	Shut of valve, heating	F	Heating circuit, supply
20	Pump, heating	G	Heating circuit, return

3 Operating instructions

3.1 Operation

The temperature and pressure of the incoming heating network water are very high. For this reason, only the heat from this water is used. The heating network water does not enter the heating and hot water systems of the building.

The heat from the heating network water is transferred to the heating and hot water systems of the building in the heat exchangers. The heat is transferred through thin plates of acid-resistant stainless steel which keep the heating network water completely separated from the systems in the building.

Maxi Compact has automatic temperature control for heating and hot water. The heating circuit is controlled in relation to outdoor temperature, desired room temperature by means of a controller and temperature sensors. When no heat is needed, the circulation pump in the heating circuit stops automatically, but is started regularly to make sure that it does not seize up during long idle periods.

The hot water temperature is controlled by a temperature control system which is set to about 55 ºC.
If the hot water temperature is set too high, people may be scalded. If the hot water temperature is set too low, unwanted bacteriological growth may occur in the hot water system.

After adjustment, the Maxi Compact operates completely automatic. However, in hard water areas it is advisable to be attentive and to remedy any faults in good time if the temperature of the hot water is too high; otherwise the risk of lime deposits in the heat exchanger may increase.

3.2 Safety equipment/inspection

- Daily inspection to check for leaks from pipes or components.
- Weekly inspection to make sure that the operation of the heating and hot water control systems is stable and that the temperature does not fluctuate. Fluctation in temperature causes unnecessary wear of valves, actuators and heat exchangers.
- Every three months check the safety valves and the pressure in the heating system.
- If using an earth fault breaker, it should be tested per the manufacturers' recommendation.

To check the operation of the safety valve, turn its knob until water escapes from the waste pipe of the valve, and then close the knob quickly. Occasionally a safety valve may open automatically to release excess pressure. After a safety valve, has been open it is important that it closes properly and does not drip.

4 Mounting and installation

NOTE! If a joining must be loosened and then re-installed, for example when installing the substation or when replacing a filter unit, the joining gaskets should be exchanged to prevent leaks.

4.1 Preparation and installation space recomendations

- The Maxi Compact must be installed in a space where the air temperature is between 0 and +40 °C, and where the humidity is lower than the dew point. The average temperature during 24 h must be max 35 °C. Also, see the IP class of the electrical equipment supplied, in the respective manuals or product data sheet.
- The unit has adjustable feet to compensate for minor irregularities in the floor. If the floor is very uneven, it must be made smooth before the unit is installed.
- Safety valves realease water to protect the installation. Therefore, the area must have a floor gully or similar that can take care of the released water.
- The substation may generete sounds caused by pumps and other components. This should be taken into consideration during installation of the unit, so that possible operational sounds affect the surroundings as little as possible.
- Check the applicable regulations of the district heating supplier. The available differential pressure should be at most 600–800 kPa, depending on the control valve. Where the differential pressure is higher, use a control valve suitable for the differential pressure or install a differential pressure controller.
- Flush the heating and hot water systems.

4.2 Unpacking, lifting and handling

- Remove the transport packaging and check that the product has not been damaged in transport and that the consignment agrees with the specifications.
- Check the weight of the substation before lifting it and use lifiting equipment that can handle the weight. The weight including the packaging is specified on the shipping document.
- When lifting the unit, take care not to apply stress to pipes and heat exchangers as this may weaken them. Use lifting eyes if provided and pallet lift where applicable.

Note! Risk of injury. The substation is very heavy.

- If the unit must be dismantled to move it to the installation site, carefully mark all pipes and electrical connections so that no mistakes are made during re-assembly.
- Place the Maxi Compact where the installation work can be made easy and efficiently.
  It is important to have access to the entire unit for subsequent inspection and servicing.

4.3 Installation

- Mount the shut-off valves on district heating supply and return. Shut-off valves are not supplied by Cetetherm.
- Connect the pipe works to the connection points.
- When executing hot work on or close by the substation, all flammable components should be demounted and removed. Take rules and instructions regarding hot work into account.
- Energy meters must be installed at the prepared location, replacing the heat meter dummy, or following the instructions of the energy supplier.
- Required expansion volume shall be installed and provided with adequate pre-charge before starting up.
- Remount plugs in drain valves after possible draining of circuit

4.4 Pipework

All pipes are marked so that they can be connected correctly.

Connecting the pipes incorrectly is dangerous.

- To avoid the risk of scalding, discharge pipes from safety valves and drain cocks must be installed so that water is directed downwards and close to the floor.
- Connecting pipes shall be fixed in such a way that forces and movement from the pipework are not transferred to the unit.
- If strainers are not supplied with the unit, they must be obtained and fitted to the primary supply and heating circuit.
- It may be necessary to fit additional drain cocks and air bleed valves at the lowest and highest points of the pipework. These must be fitted with plugs to prevent scalding if they are opened accidentally.

4.5 Pipework insulation

- District heating pipes and heating circuit pipes may sometimes reach temperatures at which scalding may result if they are touched.
  These pipes must be insulated at the time of installation.
- Other pipes should be insulated to prevent heat loss (hot water and hot water circulation pipes) or air humidity condensation (cold water pipes). Condensation dripping on to steel pipes may eventually cause corrosion.

4.6 Filling

- Before the system is taken into service, every circuit must be flushed to remove any contaminants in the system. Contaminants in the water are harmful to the heat exchanger and this may result in a higher return temperature.
- Before filling the system with water, re-tighten all joints in the unit including those made at the factory. Condensation dripping on to steel pipes may eventually cause corrosion and is a hazard risk.
- To fill, open the incoming cold-water supply and fill the tap water circuit. Then fill the heating circuit by opening the filling valve between the hot water and heating.
- Observe the pressure in the heating circuits during filling, to ensure that the maximum pressure of the safety valve is not exceeded. After filling, carefully close manual filling valves.
- Filling the primary side by first open the district heating supply and then return, in order is to avoid pollutions in the system. Do the same with the heating circuit, but first open the shutoff valve heating **return** and then **supply**.
- Check the manometer, the pressure should be equal to the static pressure of the building, due to the height, plus a margin of approximately 0.5 Bar.

4.7 Pressure testing

- Before the installation is taken into service, it **must** be pressure-tested in accordance with local or national regulations.
  See the identification plate data for suitable test pressures (PT) for the unit.
- Before circuits with safety valves are pressure tested, the safety valves must be removed and replaced with plugs.
- When pressure testing is complete, refit the safety valves and check for leaks.
  Check the operation and opening pressure of the safety valves.

4.8 Sealing leaks in gasket joints

- If a screw or flanged joint with a gasket is leaking, relieve the water pressure in the circuit before re-tightening the joint.
  If re-tightening with the pressure on, with water between the gasket and the mating surfaces, the gasket will be deformed and must be replaced to stop the leakage.

4.9 Bleeding

- Air is bled from heating circuits in the customary way.
- Depending on the equipment level and system type of the unit, repeated bleeding may be necessary in the initial period after starting.

4.1 Adjust the heating circuit

The Maxi Compact can be supplied with a pump for heating circuit. The heating circuit should be adjusted to extract the required performance from the substation.
A high return temperature and high flow rates on the primary side may result in excessive energy cost.

- Check that the available primary differential pressure agrees with the design values of the unit.
  The control equipment must be set for the relevant operating case, so that the control system can operate optimally and so that maximum comfort is achieved. See the controller documentation.

  NOTE: Fluctation in temperature causes unnecessary wear of valves, thermostats and heat exchangers and they might need to be replaced prematurely.
- Start the heating circulation pump at the strongest flow setting during some minutes.

4.2 Adjustment and settings of the DHWC

The Maxi Compact can be supplied with a pump for hot water circulation. The purpose of this pump is to ensure that the temperature of the water in the circulation pipe is hot enough.

- Before starting the pump, make sure that the circuit is filled with water.
  NOTE! Starting up the system without water will damage the circulation pump.
- Adjust the hot water temperature by having a hot water tap open at normal flow rate for a time.
  NOTE: Make sure that no cold water is mixed with hot water while making this adjustment.
- Measure the temperature at the draw-off point with a thermometer. The temperature should be approximately 55°C. It takes about 20 seconds to get stable tap water temperature.
  If the hot water temperature is lower than 50°C unwanted bacteriological growth may occur in the hot water system and there may be a longer wait for hot service water at each draw-off point.

To avoid the risk of scalding, make sure that no-one draws any hot water until the hot water temperature has been adjusted.

- Adjust the DHWC-flow by changing the pump setting. Appropriate flow is that the DHWC- temperature is 5 degrees lower than the hot water temperature.

NOTE: Temperature hunting causes unnecessary wear of valves, thermostats and heat exchangers and they might need to replace prematurely.

4.3 Electrical connections

- The internal electrical connections done at the factory conforms to the rules for CE marking, and has undergone electrical safety and function testing.
- The substation must be electrically connected by a qualified electrician.
- Electrical connection done during installation time must undergo appropriate safety and function testing.

4.4 Installation of the outdoor temperature sensor

- Mount the outdoor temperature sensor on the north side of the building, 2 meters above the ground, or higher.
- Connect the outdoor temperature sensor to a terminal strip on the frame to the controller box, remove any resistor. The resistor simulates an outdoor temperature of 0-10 °C. With a conductor area of 0.6 mm^2 the maximum cable length to the aoutdoor sensor is 50 meters.

4.5 Commissioning advice

- The controller has been set at the factory. If any function needs tuning, values can be changed. See the controller documentation.
  Initially, the commissioning process should be carried out with the factory settings. The parameter settings need tuning only if the substation does not function accordingly.
- Set the pump capacity of the heating circulation pump and the DHWC-pump see the pump documentation. Use the lowest setting that manages the heating demand for the building and gives a tap water temperature of 55°C.
- Make any necessary adjustment of the heating curve in the controller. For more information about the heating curve and other settings, see the controller documentation.
- Set time, date and hot water temperature in the controller.
- The property owner must be informed on how to operate, adjust and maintain the unit. It is especially important to inform about the safety systems and the risks associated with the high pressure and temperature of the district heating system water supply.

4.6 Modification of the unit

The Maxi Compact is marked and documented by Cetetherm in the configuration in which it left the factory.

Any modification or extension requires a documented assessment of compliance with the directives and regulations applicable at the time of the change.

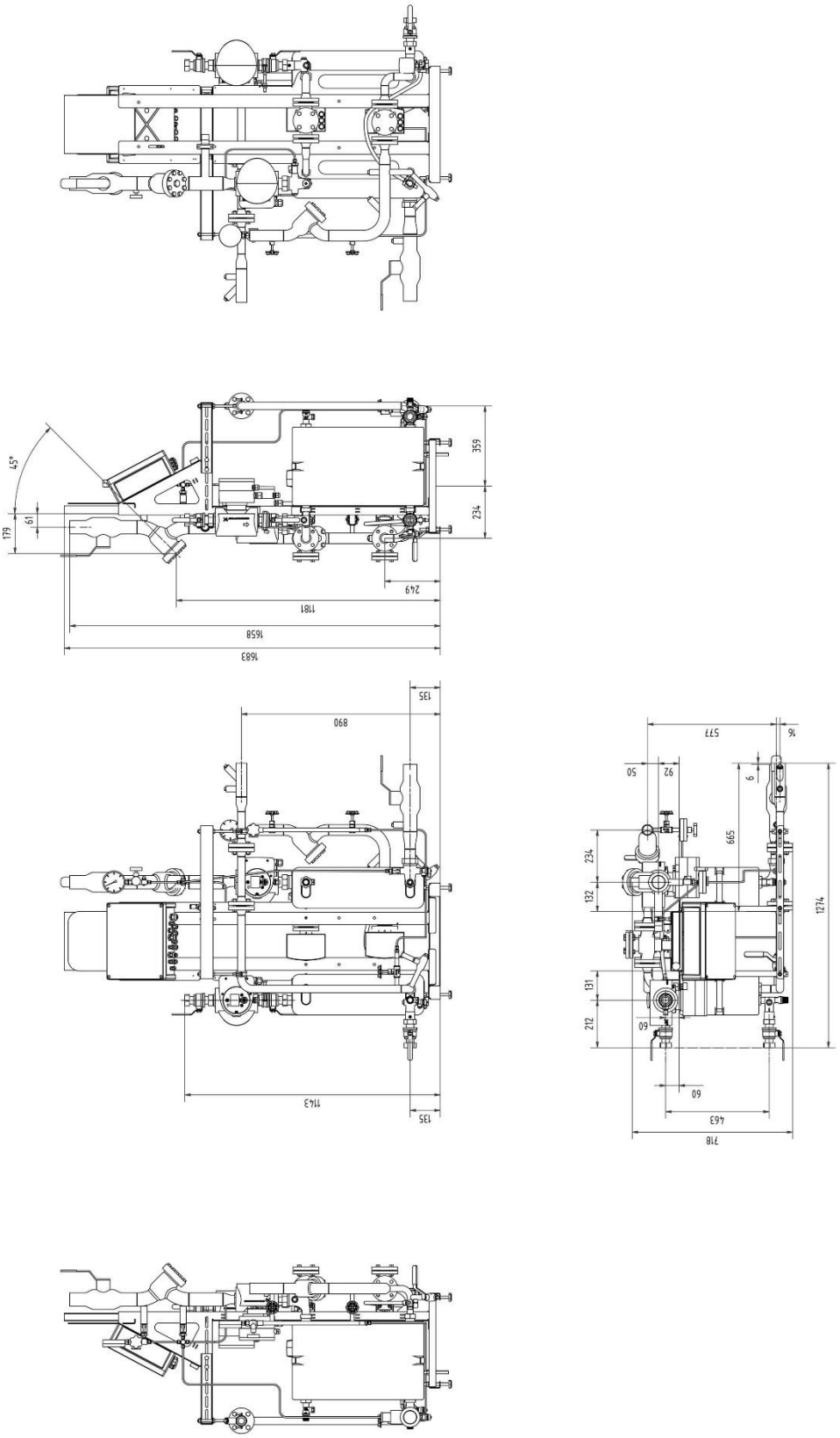
4.7 Dismantling and recycling

Maxi Compact consists primarily of metals, steel, stainless steel, brass and copper in different amounts, depending on the size of the unit and the type of system.
When the time comes to dispose of the unit, some of these can be separated and recycled.

Non-metallic parts and components must be disposed of in the correct manner in accordance with local or national regulations.

5 Measure sketch

5.1 Maxi Compact F2, heating, hotwater, horisontal meter section



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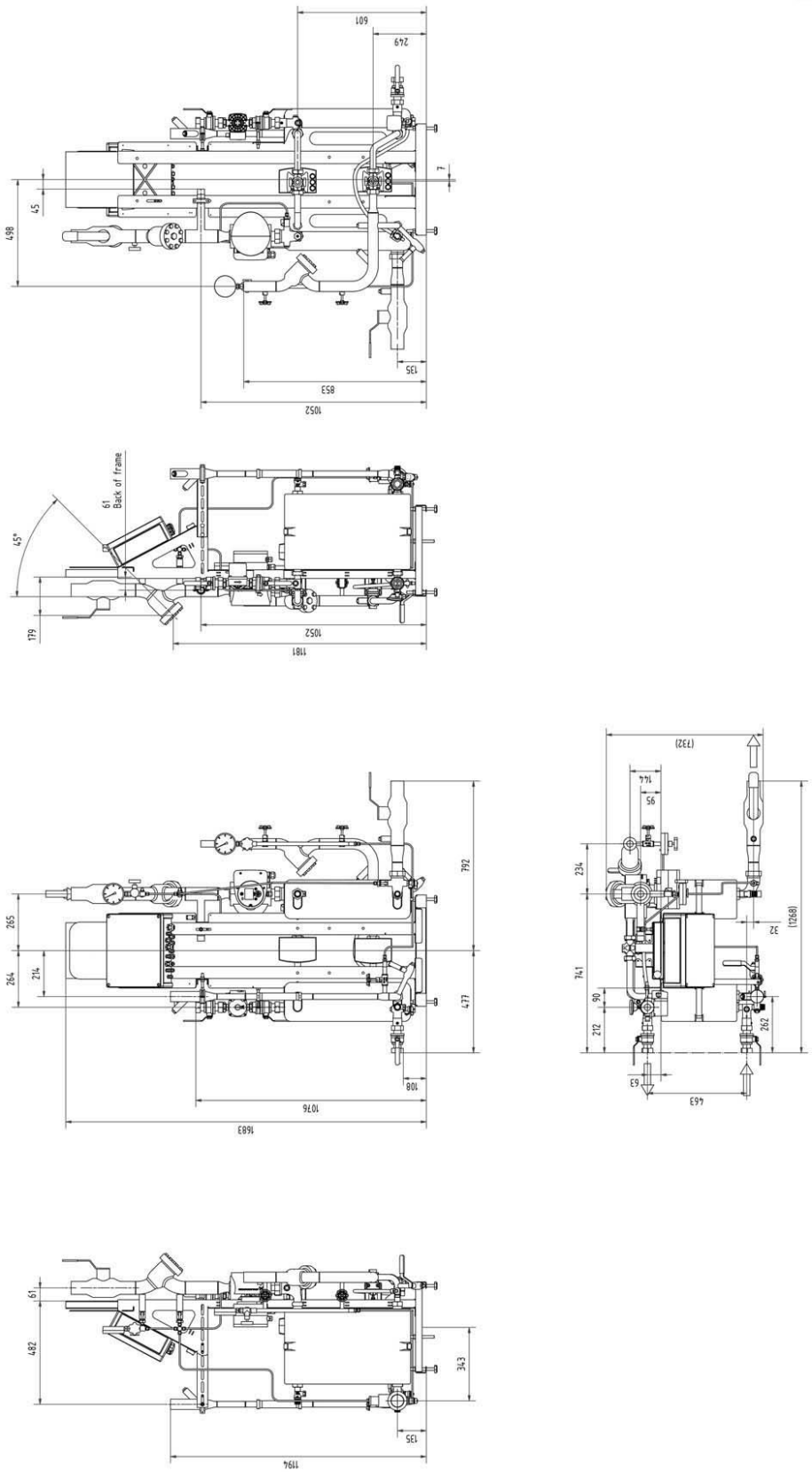
5.2 Maxi Compact F2, heating, hot water, vertical meter section



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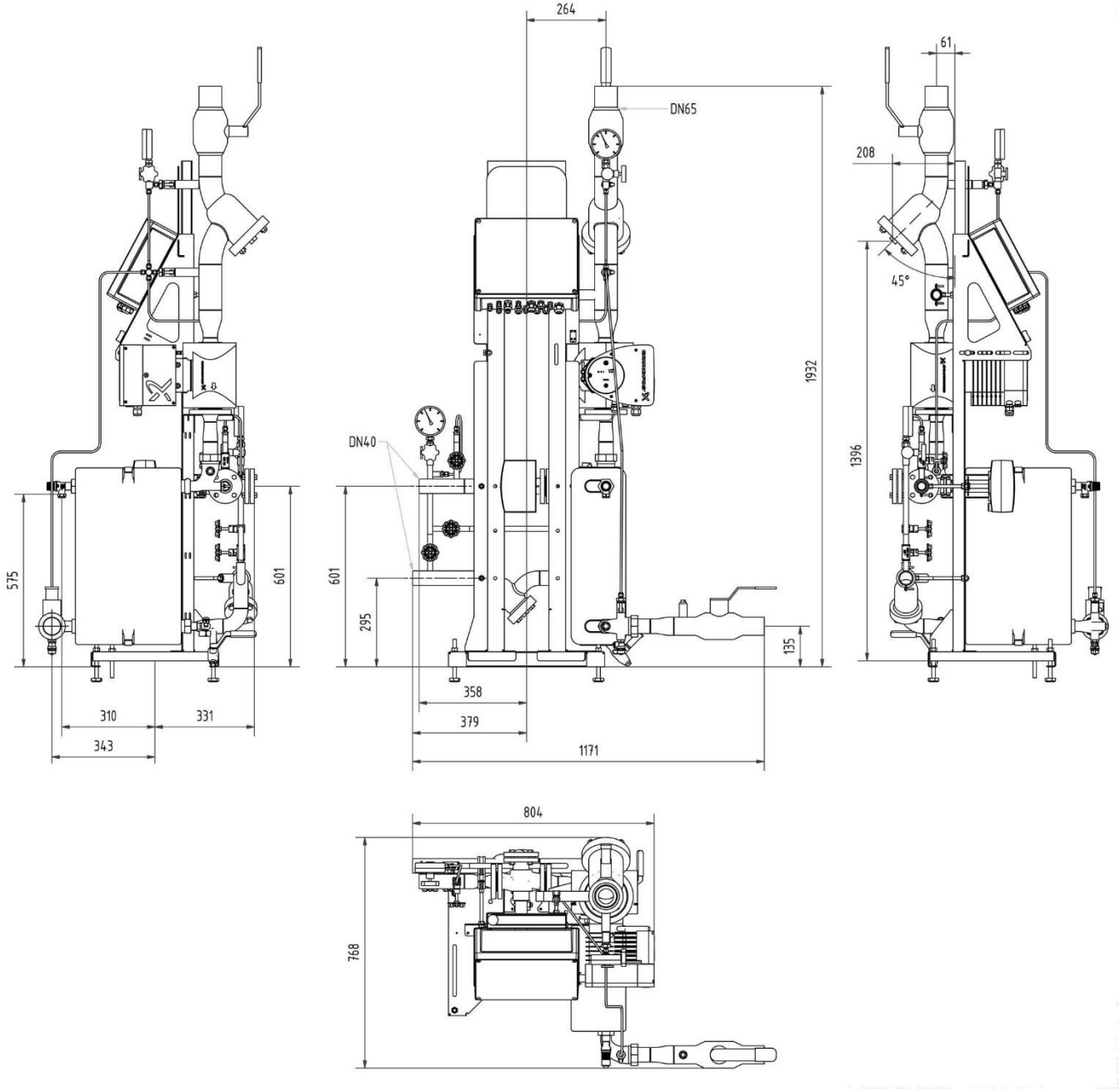
5.3 Maxi Compact F1, heating



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6 Service instruction

Note! Make sure that the substation has been correctly installed.

Grey marked service actions must be carried out by an authorized service technician.

Before starting out repairs all shut-off valves must be closed and the system drained.

After finishing repair; open the shut-off valves. Start with primary **supply** and then the **return**, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges.
Do the same with the heating circuit, but first open heating **return** and then **supply**.

6.1 Service instructions, heating circuit

The controller must be without power when manoeuvring the actuator by hand.
Some actuators automatically return to closed at a power break. Risk of crushing.

6.1.1 Heating system temperature too high or too low

Cause	Action
The heating control equipment needs to be adjusted.	**Check and adjust the heating curve.** See the controller instructions.
Supply tempertur sensors or outside temperature sensor does not work.	**Check the supply tempertur sensors and outside temperature sensor.** Check that they are placed correctly and working. This can be done via the controller.
Filter for heating media clogged.	**Check if the filter for heating media is blocked.** Release the filter holder, remove and clean the filter.
Heating valve and/or actuator does not work.	**Check the actuator per respective controller instruction.** Check the flow using the energy meter while test-running the valve. If no energy meter is available, disconnect the heating actuator from the valve using hand force. **Note**: The valve may be very hot

6.1.2 No heating

Cause	Action
Heating circulation pump not running.	**Check that the electrical power is on and that the fuses are not broken.** **Check that the controller sending a start signal to the pump.**
Air in the substation or in the heating circuit.	**Check the heating circuit pump.** If the pump fails to start after stopping, try to start it at highest setting.
	Check the set heating parameter at the controller.
	Bleed the heating circuit pump. The Magna 3 pump is self-venting. Possible remaining air in the pump may cause noise. This noise ceases after a few minutes run time. If necessary quick venting of the pump can be obtained by setting the pump to the maximum speed for a short period, depending on system size and design. When the pump has been vented, i.e. when the noise has ceased, set the pump per the recommendations.

Cause	Action
Supply temperature sensors or outside temperature sensor does not work.	**Check the supply temperature sensors and outside temperature sensor.** Check that they are placed correctly and working. This can be done via the controller.
Loss of function in the heating control unit.	**Run the pump manually.** If it becomes necessary to run the pump and actuator manually, this can be done by disconnecting the power to the substatation. Connect the replacement cable (option) to the circulation pump. Next, open the heating valve manually sufficiently to satisfy the heating needs. **NOTE!** This is a temporary solution.
Filter for heating media or heating circuit clogged.	**Check if the filter is blocked.** Release the filter holder, remove and clean the filter. Screw the filter holder.

6.1.3 Noise in the radiator system

Cause	Action
The heating pump capacity set too high.	**Reduce the pump capacity.** Reduce the level by choosing a lower output setting on the pump. The lowest setting is the most economical.
Air in the heating pump	**Bleed the heating pump.** Magna 3 pump is self-venting. Possible remaining air in the pump may cause noise. This noise ends after a few minutes run time. If necessary quick venting of the pump can be obtained by setting the pump to the maximum speed for a short period, depending on system size and design. When the pump has been vented, i.e. when the noise has ceased, set the pump per the recommendations.
Heating pump motor or pump component damaged.	**Change the pump components or the complete pump.**

6.1.4 Heating temperature unstable

Cause	Action
Variation of differential pressure.	**Check available differential pressure and temperature at the district heating medium provider.** The temperature can be checked by means of the energy meter or contact the primary heating medium provider.
Supply temperature sensors or outside temperature sensor does not work.	**Check the supply temperature sensors and outside temperature sensor.** Check that they are placed correctly and working. This can be done via the controller.

6.1.5 Heating system often need topping up

Cause	Action
Leaks in the substation or in the system.	**Check the substation and the system for leaks.** Contact a service technichan to repair any leaks on the substation.
The heating system safety valve is leaking or does not work.	**Check the heating system safety valve.** Check that the safety valve is not leaking and that it works properly. Check the safety valves' function by turning the wheel/knob until water runs out of the valve's waste pipe and then quickly close the valve.
The expansion vessel cannot handle the systems volume changes.	**Check the volume take-up and pressure equalizing of the expansion vessel.** Check the expansion vessel for possible leakage.

6.2 Service instruction, tap water

6.2.1 Tap water temperature low

Cause	Action
District heating supply too low	**Check available differential pressure and temperature at the district heating medium provider** The temperature can be checked by means of the energy meter or contact the primary heating medium provider.
The heating control equipment needs to be adjusted.	**See the controller's instruction** The tap water temperature can be checked on the controller panel.
Filter for heating media clogged	**Check if the filter is blocked** Release the filter holder, remove and clean the filter.
Hot water valve and actuator does not work.	**Check the valve and actuator function** Release the actuator from the valve and check the valve's travel. **NOTE!** The valve may be very hot.

6.2.2 Tap water temperature is to hot

Cause	Action
The heating control equipment needs to be adjusted.	**See the controller's instruction** The tap water temperature can be checked on the controller panel.
Hot water valve and actuator does not work.	**Check the valve and actuator function** Release the actuator from the valve and check the valve's travel. **NOTE!** The valve may be very hot.

6.2.3 Hot water temperature unstable

Cause	Action
Alternating pressure	**Check available differential pressure and temperature at the district heating medium provider** The temperature can be checked by means of the energy meter (min 65º C) or contact the primary heating medium provider. Check the tap water temperature on the controller.
Filter for heating media clogged	**Check if the filter is blocked** Release the filter holder, remove and clean the filter. Screw the filter holder.
Supply temperature sensors or outside temperature sensor does not work.	**Check the supply temperture sensors and outside temperature sensor** Check that they are placed correctly and working. This can be done via the controller.
DHWC pump is not running.	Check that the electrical power is on.
	If the pump fails to start after stopping, try to start it at the highest setting. **Note!** An Alpha2 pump or a Magna3 pump cannot be forced to start.  Disconnect the power feed to the pump by pulling off the connector before carrying out this task. The pump normally can be started by removing the pump motor end nut and helping the pump to start with the aid of a screwdriver in the notch on the engine shaft.
Incorrect tap water settings	**Check the tap water settings via the controller.**

6.2.4 Noice in the DHWC system

Cause	Action
The DHWC pump capacity set too high.	**Reduce the pump capacity** Reduce the pump capacity by choosing a lower setting.
Air in the DHWC pump.	**Bleed the DHWC pump** Alpha 2 and Magna 3 pump These pumps are self-venting. Possible remaining air in the pump may cause noise. This noise ends after a few minutes run time. If necessary quick venting of the pump can be obtained by setting the pump to the maximum speed for a short period, depending on system size and design. When the pump has been vented, that is when the noise has ceased, set the pump per the recommendations. Grundfos UPSO pump Set the pump to speed III. Loosen the pump motor end nut to and let it stay opened until the air in the pump is released. When the pump has been vented, that is when the noise has ceased, retighten the end nut and set the pump per the recommendations.
DWHC pump motor or pump component damaged	**Change the pump components or the complete pump.**

7 Technical data and performance

7.1 Operating data Maxi Compact

	Primary side	Heating	Hot water
Design pressure PS, bar	25/16	10	10
Design temperature TS, °C	120	100	100
Relief pressure safety valve, bar	-	4/6	9/10

Type	Temperature programme (°C)	Capacity (kW)	Primary flow (l/s)	Secondary flow (/s)	dPp (kPa)	dPs (kPa)
Heating circuit						
H1 CB60AQ-20L	100-63/60-80	53,82	0,35	0,64	4,14	10,10
	100-43/40-60	69,72	0,29	0,84	3,08	17,00
H2 CB60AQ-30L	100-63/60-80	90,26	0,58	1,08	5,24	12,56
	100-43/40-60	104,00	0,44	1,25	3,12	17,00
H3 CB60AQ-40L	100-63/60-80	126,82	0,82	1,52	6,35	14,05
	100-43/40-60	137,60	0,58	1,65	3,35	17,00
H4 CB60AQ-50L	100-63/60-80	163,49	1,06	1,96	7,63	15,17
	100-43/40-60	170,30	0,71	2,04	3,69	17,00
H5 CB60AQ-60L	100-63/60-80	200,23	1,29	2,40	9,15	16,13
	100-43/40-60	201,90	0,85	2,42	4,12	17,00
H6 CB60AQ-80L	100-63/60-80	266,10	1,72	3,18	12,35	17,00
	100-43/40-60	261,30	1,10	3,13	5,20	17,00
H7 CB60AQ-100L	100-63/60-80	319,90	2,07	3,83	15,50	17,00
	100-43/40-60	314,75	1,32	3,77	6,47	17,00
H8 CB60AQ-120L	100-63/60-80	367,00	2,37	4,39	18,89	17,00
	100-43/40-60	361,77	1,52	4,33	7,85	17,00
Hot water circuit						
T1 CB60AQ-40L:2	65-22/10-55	120,70	0,67	0,64	23,49	25,00
	60-22/10-55	86,08	0,54	0,46	15,76	13,24
T2 CB60AQ-52L:2	65-22/10-55	156,10	0,87	0,83	23,70	25,00
	60-22/10-55	123,70	0,78	0,66	19,34	16,11
T3 CB60AQ-64L:2	65-22/10-55	189,10	1,05	1,00	23,59	25,00
	60-22/10-55	160,80	1,01	0,85	21,95	18,36
T4 CB60AQ-80L:2	65-22/10-55	229,00	1,28	1,22	23,19	25,00
	60-22/10-55	210,30	1,33	1,12	24,91	15,31
T5 CB60AQ-100L:2	65-22/10-55	271,90	1,51	1,44	22,51	25,00
	60-22/10-55	254,20	1,60	1,35	25,00	21,91
T6 CB60AQ-120L:2	65-22/10-55	307,00	1,71	1,63	21,78	25,00
	60-22/10-55	292,00	1,84	1,55	25,00	22,61

7.2 Technical data Maxi Compact

Plate data
- Type designation
- Manufacturing no.
- Order no.
- Unit
    - Design temperature TS
    - Design pressure PS
    - Test pressure PT
- Year of manufacture/week of pressure test
- Design data of heat exchanger, such as
    - Capacity, kW
    - Temperatures
    - Flow
    - Pressure drop
    - Volume in liters per side
- Relief pressure of any safety valves supplied
- Electric power supply
- Fluid group 2 according to PED
- CE marking if applicable

The identification plate is affixed in a clearly visible position on the unit, a copy is provided with the delivery documentation.

Weight
The weight of the unit is approximate 100-200 kg depending on size and equipment.

Sound level

The sound level from a Maxi Compact does not exceed 70 dB(A) at 1,6 meters above the floor at 1 meter.

7.3 Technical data

Electrical data:	230 V 50Hz, 1-phase, max 550 W
Main dimension:	800x600x1300mm (WxDxH)