Cetetherm

Installation and maintenance instructions

Cetetherm AquaTank EM 7 bar

GB

Rev:1902

1 General

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This manual has important information that is necessary to ensure that the AquaTank is both reliable and safe. The operating/installation personnel must have access to the manual.

If the AquaTank is sold to a third party or get a new owner, make sure that the manual is handed over. Please let us have the name and address of the new owner in the unlikely event that we need to contact them regarding the safety of the installation.
Read the manual carefully before installing the equipment. Pay attention to the safety information.

1.1 Intended use

Cetetherm 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 the operating instructions, the maintenance conditions and design data specified.

1.2 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.

1.3 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.

1.4 Health and Safety instructions

Cetetherm AquaTank must be connected according to the common regulations and standards of your country. Each hot water storage system or storage vessel must be equipped with safety devices. Tap water system have usually a safety valve set at 10 bar, when standard maximum pressure on Enamel vessel could be 7 bar only: an adapted safety valve on enamel buffer vessel is required. 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 must be documented by a certificate.
Always keep the blow-off pipe 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.

Here bellow is an example of design rules of safety valves in Germany concerning 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

In France diameter of safety valve must correspond to diameter of cold water inlet pipe: 2”.
Installer will have to check the installation conformity, especially safety devices according local rules

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 the operation and maintenance of the AquaTank must have read and understood the health and safety information.

The vessel, particularly its safety equipment, may only be operated and maintained by 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 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 protect 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.

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

For electrical potential reasons, a direct connection between copper and carbon steel pipe/frame is proscribed: for example, should be installed in such a case, dielectric sleeves or equivalent.

Unwarranted conversion or alterations:
For safety reasons, do not convert or make alterations to the tank yourself, otherwise the warranty on the tank will inevitably lapse!

1.5 Water quality:

1.5.1 Water hardness

By nature, drinking water contains alkaline earths and 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/1 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 consider experience with lime scale deposits in the catchment area concerned.

1.6 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).

2 Installation

Please guard the storage tank against tilting, during unloading and transportation
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.
Note: please check the AquaTank delivered for completeness and possible damage in transit before transferring it to the place where it is to be installed.

2.1 Sitting

Avoid sitting 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.

2.2 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).

2.3 Substrate/foundation/load-bearing capacity

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

2.4 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.

2.5 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.

2.6 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.

2.7 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.

3 Packaging details

3.1 AquaTank EM 7bar, 110mm inspection opening

A – Tank package on pallet with:
- Tank with open hand hole.
- 2 magnesium anodes for the 300 and 500 litre models, 3 anodes for larger sizes.
- 1 x carton containing 3 x raising feet.

B – Inspection hole blanking KIT package for M1 or M0 jacket:
- M1 Kit: carton containing blanking flange, gasket, 6 x bolts, plastic cover, outlet flange 50x60 with gasket, 6 x bolts and instructions.
- M0 Kit: carton containing blanking flange, gasket, 6 x bolts, steel cap with nuts and bolts, outlet flange 50x60 with gasket, 6 x bolts and instructions.

C –Jacket package:
- M1: Glass wool 100m covered with a PVC jacket EuroFire class B.
- M0: Rockwool 100mm covered with an aluminium plate cladding. EuroFire class A.

3.2 AquaTank EM 7bar with immersion heater type R, 110mm inspection opening

A – Tank package on pallet with:
- Tank with open hand hole.
- 2 magnesium anodes for the 300 and 500 litre models, 3 anodes for larger sizes.
- 1 x carton containing 3 x raising feet.

B – Inspection hole blanking KIT package with identical electrical fittings for M1 or M0 jacket.
Carton containing:
- 9kW heating element:
  flange resistance with built-in sleeve, gasket, 6 x bolts, steel cap with nuts and bolts
- double 3PH thermostat – terminal strip –connection wires - outlet flange 50x60 with gasket, 6 x bolts – instructions,
- 15 or 30 kW heating element:
  flange resistance with built-in sleeve, clamp, gasket, 6 x bolts, steel cap with nuts and bolts – double thermostat – terminal strip
- connection wires - outlet flange 50x60 with gasket, 6 x bolts - instructions. Electrical relays to be supplied by the installer.

C –Jacket package:
- M1: Glass wool 100m covered with a PVC jacket EuroFire class B.
- M0: Rockwool 100mm covered with an aluminium plate cladding. EuroFire class A.

3.3 AquaTank EM 7bar, 400mm manhole

A - Tank package on pallet with:
- Tank with 400 mm manhole and factory fitted plate
- 2 magnesium anodes for the 300 and 500 litre models, 3 anodes for larger sizes.
- 1 x carton containing 3 x raising feet.

B - Manhole blanking KIT package for M1 or M0 jacket:
Carton containing steel cap with fixing nuts and bolts, flange 50x60 with gasket, 6x bolts and instructions. The plate is factory fitted.

C –Jacket package:
- M1: Glass wool 100m covered with a PVC jacket EuroFire class B.
- M0: Rockwool 100mm covered with an aluminium plate cladding. EuroFire class A.

D –Titanium permanent anode Option only on tanks with manhole and soap stone heater.

3.4 AquaTank EM 7bar with immersion heater type S, 400mm manhole

A - tank package on pallet with:
- Tank with 400 mm manhole and tapped plate for receiving factory fitted barrels.
- 2 magnesium anodes for the 300 and 500 litre models, 3 anodes for larger sizes.
- 1 x carton containing 3 x raising feet.

B – manhole blanking KIT package with identical electrical fittings for M1 or M0 jacket.
Carton containing:
- soapstone resistances, barrels to be screwed to plate, gaskets, steel cap with nuts and bolts
- double thermostat
- terminal strip
- connection wires
- 1 x 50 x 60 outlet flange with gasket and 6 x bolts
- instructions and sleeve.

C - jacket package:
- M1: Glass wool 100m covered with a PVC jacket EuroFire class B.
- M0: Rockwool 100mm covered with an aluminium plate cladding. EuroFire class A.

D –Titanium permanent anode Option only on tanks with manhole and soap stone heater.

3.5 Insulation

The insulation must be fitted before the pipe work will be connected to the vessel.

3.5.1 PVC-jacket

Arrange the jacket collar in such a way to have the slide fastener in the back part on top of the water heater.
Start enveloping the water heater by engaging the slide fastener slider a few centimetres. Bring the two edges of the slide together by pressing the jacket forwards from the back. Lower the slider.
Cut holes for connecting connections and anodes tapping the water heater sleeves with a mallet. Cut holes for the fittings like inspection holes using a cutter.
Fit the cap. It is either housed on the collar or fixed with a slide fastener.
Tighten and knot the cord in the bottom part after having installed the bottom element (please see *9.4 Annex 4: Bottom insulation assembling*)

3.5.2 Aluminium-plate cladding

Fit the upper bottom
Put the side panels against the tank and close them up using rammers.
Install the bottom element (please see *9.4 Annex 4: Bottom insulation assembling*)

3.6 Immersion Heater

Immersion heaters or resistances are not assembled when delivered. The Installation shall comply with the local current standards. Fit upstream a main cut-off switch and calibrated protection on the electricity supply. Use wires of adequate section and make sure that connections are properly tightened.
For power rate over 9 kW, provide a power relay. Comply with the wiring and coupling diagrams provided with the electric resistances.
See *6 Electrical wiring diagrams.*
Take care that electrical continuity between the anode and tank is total.

3.7 Anodes

They are delivered not assembled and attached to the shipment pallet.

3.7.1 Magnesium anodes

Fit them on the sleeves as per design drawing. There are two anodes on the 300 and 500 litre vessels. There are three of them on the 750 to 3000 litre vessels.

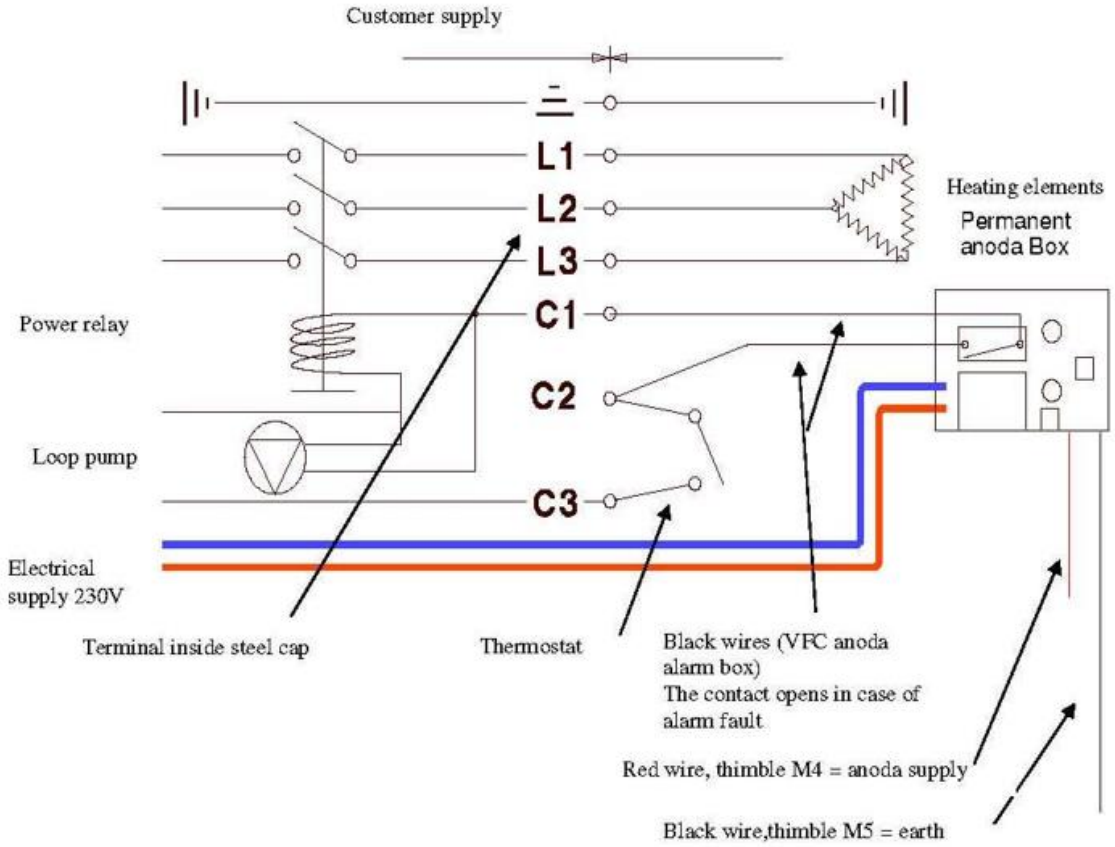
3.7.2 Anode with imposed current

(Titanium permanent anode, only for vessels with 400mm manhole)
The permanent Anode system is an electronic protection against corrosion, which ensures a maximum duration of the vessel, even with hard quality water.
The electronic circuit creates a potential differential between the vessel and the titanium anode, in order to ensure the best protection and avoid corrosion. A permanent electrical supply (230V/1Ph) is necessary even in case of the tap water module is off. The electronic circuit is also connected to the titanium anode, and to the tank to protect. The permanent green light on shows that protection system is enabled, and that there is voltage enough at the circuit terminals. The protection system cannot stand more than 48 hours with no electrical supply. In case of fault, the red light will turn on, which means short circuit with the tank, wire (tank or electrode) removed, or no water in the tank.
Good protection = green light on and red light off. Contact your installer in any other case.
For safety reasons, in case of bad protection against corrosion, the system is also fitted with an automatic heating cut off. Connect permanently electrical supply 230V/1PH to the wiring terminal located in the plastic box of the electrical anode. Connect the power and pump relay circuit to the “normally closed “wires by using wires C1 – C3 of the terminal.

3.7.3 Electrical connection of the cathodic protection anode

- Make sure that the electric installation complies with local current regulation.
- Fit upstream a main cut-off switch and calibrated protection on the electricity supply. Use wires of adequate section and make sure that connections are properly tightened. Items Ref 1 to 10 are supplied with electrical kit.
- Each component including the vessel must be earth connected.
- The heating elements electrical supply must be done with a Power Relay (not supplied).

- Connect its circuit by using wires C1 – C3 of the terminal.
  Note: The wiring must be properly dimensioned.
- Connect electrical supply 230V/1Ph permanently to the terminal in the electronic plastic box, by a short circuit protected cable.



4 Operating instructions

4.1 Commissioning & Operation

Remind: Each buffer vessel must be protected and equipped with its own safety valve with setting depending of the maxi pressure of the concerned buffer vessel. For a 7bar enamel buffer vessel, a 7bar safety valve must be added. For safety valve design, please check *1.4 Health and Safety instructions.*
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 more than 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 set point 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 pressurised.
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.

4.2 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 cylinder's 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 must be screwed in a cross pattern with a torque of 20 Nm.

5 Design data

Ratings

Vessel design pressure, max.	7 bar(g)
Vessel design temperature, max.	95°C
Vessel design temperature, min	20°C

Materials

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

Insulations:

- standard insulation is 100mm glass wool with a PVC jacket (M1), Euro fire class B
- Optional 100mm rock wool with outer aluminium-plate cladding (M0), Euro fire class A

Anodes: All capacities are equipped with Mg-anodes

5.1 Dimensions

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

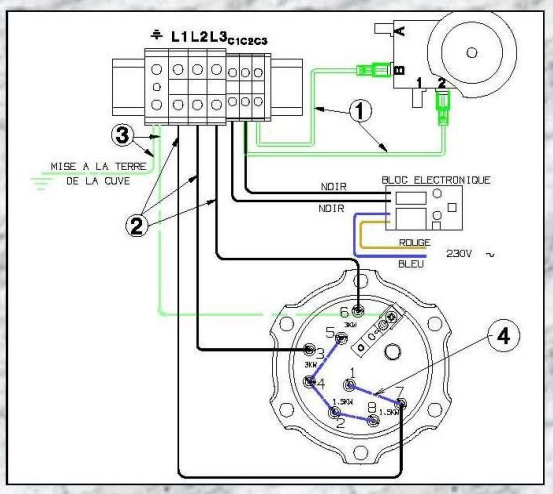
5.2 Documentation

AquaTank EM 7 bar is in article 4.3 according to PED 2014/68/EU. The DECLARATION of SUPPLIER is directly attached to the delivered vessel.

6 Electrical wiring diagrams

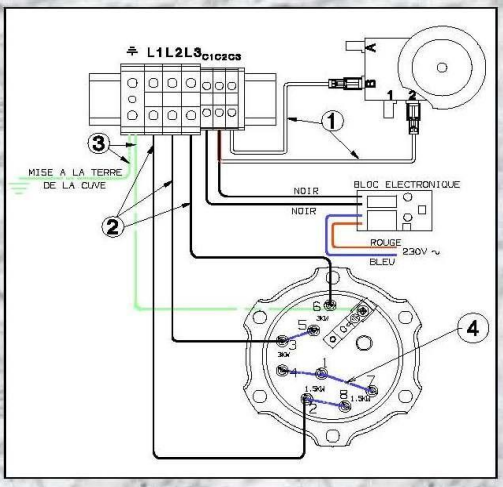
6.1 Electrical wiring of immersion heater type R

1 Star Wiring 9 kW (Tri 400 V)



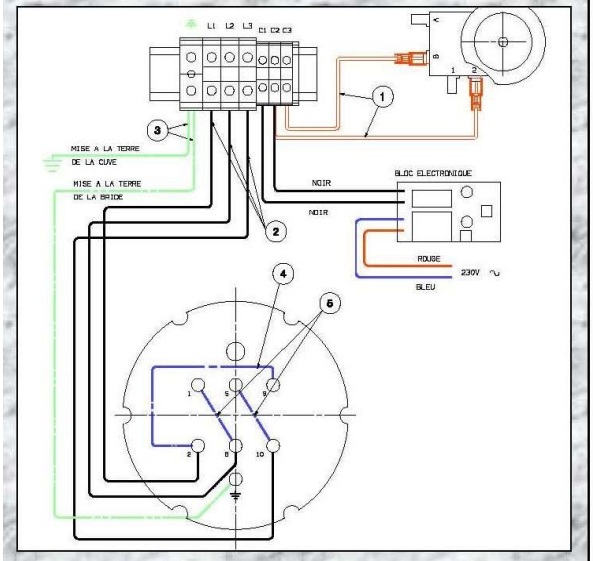
REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1.5	Rede	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	4
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3

2 Triangle Wiring 9 kW (Tri 230 V)



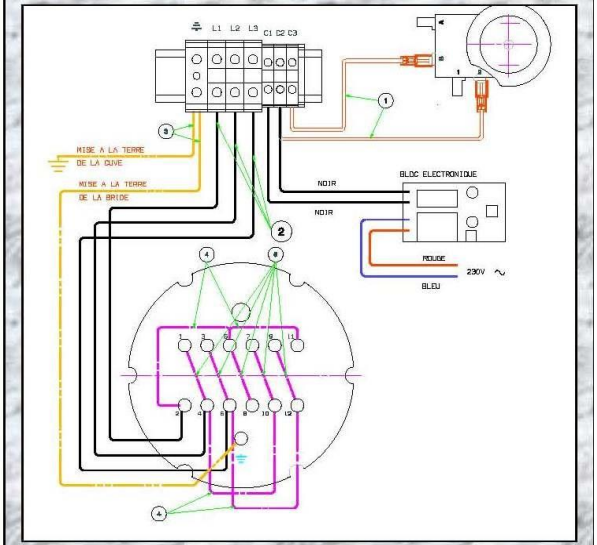
REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1.5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	5
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

3 Triangle Wiring 15 kW (Tri 400 V)



REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1.5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	1
5	Power bar	6	Brass	2
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

4 Triangle Wiring 30 kW (Tri 400 V)

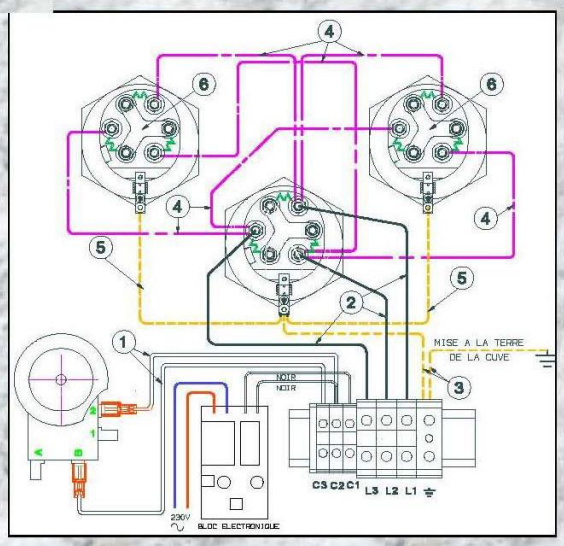


REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1.5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	4
5	Power bar	6	Brass	5
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

6.2 Electrical wiring of immersion heater type S (soap stone)

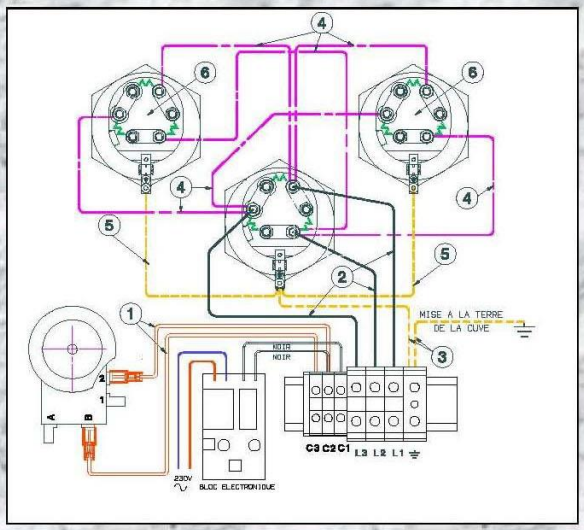
Steatite electrical bundle installation requirements on man hole Preconisation d'installation des épingles électriques stéatites sur plateau trou d'homme					
Tank capacity Volume (L)	Power - Puissance (kW)		Heating time Temps de chauffe DT 60°C	Wiring diagram N° Schéma de raccordement	
				Star - Etoile	Triangle
500	3x3	9	3h53 min	5	6
750	3x3	9	5h49 min	5	6
750	5x3	15	3h29 min	9	10
1000	4x3	12	5h49 min	7	8
1000	5x3	15	4h39 min	9	10
1500	3x6	18	5h49 min	5	6
1500	5x6	30	3h29 min	9	10
2000	3x6	18	7h45 min	5	6
2000	5x6	30	4h39 min	9	10
2500	3x6	18	9h41 min	5	6
2500	5x6	30	5h49 min	9	10
3000	3x6	18	11h38 min	5	6
3000	5x6	30	6h59 min	9	10

5 Star Wiring 9 – 18 kW (Tri 400 V)



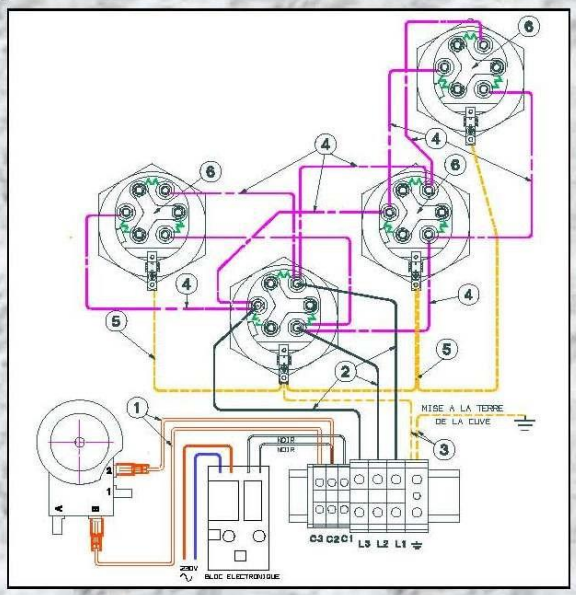
REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1..5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	6
5	Power bar	6	Green/Ylow	2
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

6 Triangle Wiring 9 – 18 kW (Tri 230 V)



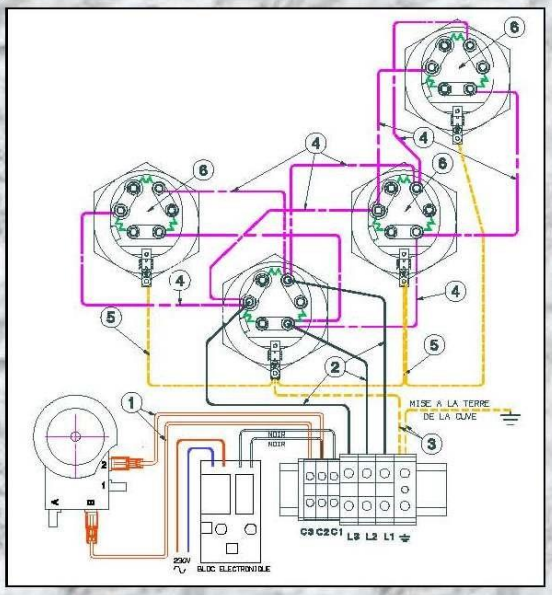
REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1..5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	6
5	Power bar	6	Green/Ylow	2
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

7 Star Wiring 12 kW (Tri 400 V)



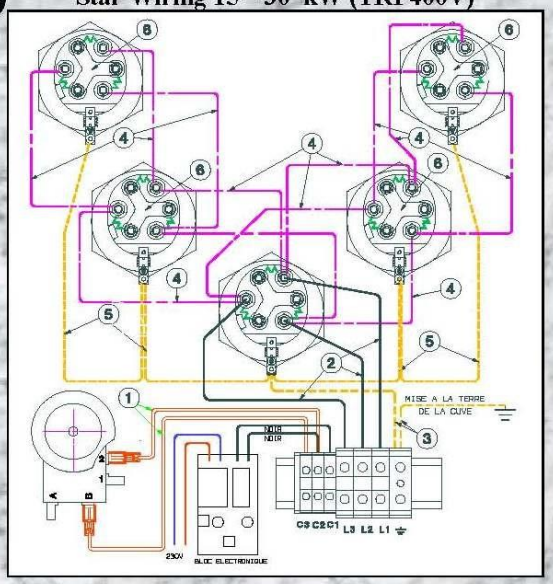
REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1..5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	9
5	Earth link	6	Grren/Ylow	3
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

8 Triangle Wiring 12 kW (Tri 230 V)



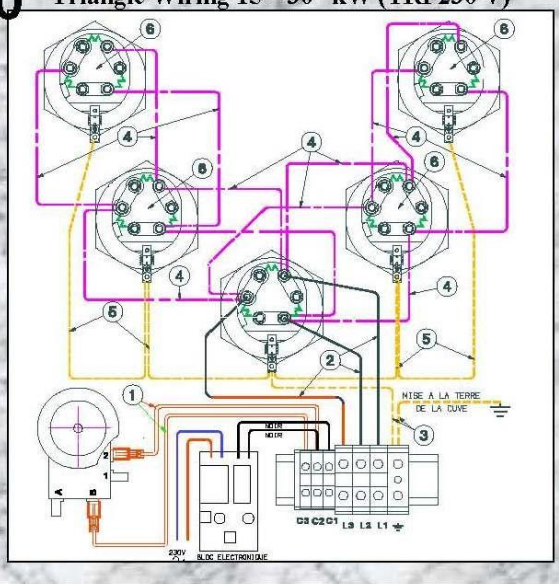
REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1..5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	9
5	Earth link	6	Green/Ylow	3
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

9 Star Wiring 15 – 30 kW (TRI 400V)



REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1..5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	12
5	Earth link	6	Green/Ylow	4
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	3

10 Triangle Wiring 15 – 30 kW (TRI 230 V)

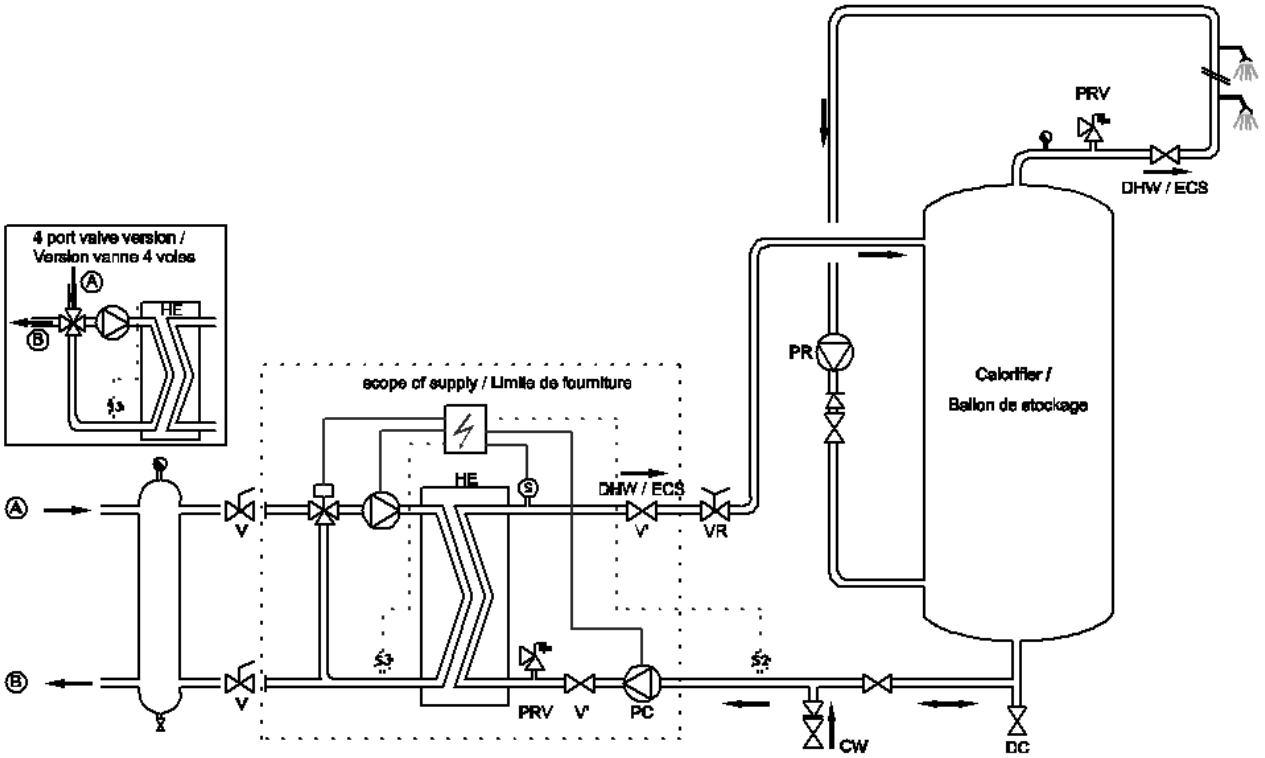


REP	TYPE	SECTION	COLOUR	QUANT
1	Command	1..5	Red	2
2	Power	10	Black	3
3	Earth	10	Green/Ylow	2
4	Power link	6	Black	6
5	Earth link	6	Green/Ylow	2
⏚	Bloc cond.protec. cap	25	Green/Ylow	1
L	Bloc unitaire 1 jonc	25	Grey	3
C	Bloc unitaire 1 jonc	5-6	Grey	2

7 Hydraulic chart

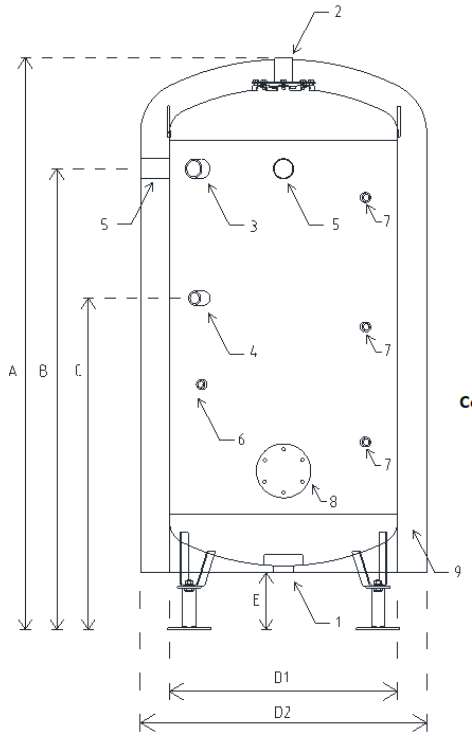
You must have PR flow rate < 60% PC flow rate.

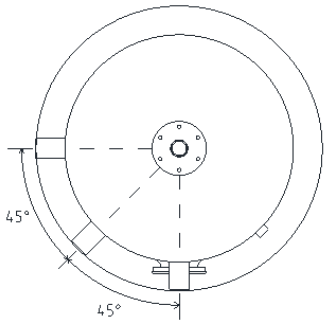
Protect the calorifier by installing a safety valve. Pressure gage=calorifier MAX working pressure and can be different from tap water module's safety valve pressure gauge.
It is to protect calorifier and NO TWH.



Rep	Designation	Rep	Designation
A	Primary Inlet	PR	Installation recycling pump
B	Primary Outlet	V	Manual gate valve
CW	Cold water inlet	V'	CIP option (F/B series only)
DC	Drain cock / flooding	VR	Flow setting valve
PC	Charging pump	S2*	Optional sensor (thermal treatment function)
PRV	Pressure relief valve	S3*	Scaling function/CIP optional sensor*

8 Product range





Connections (see table for sizes)

1. Cold water inlet with specific stratification feature
2. Hot water outlet
3. Heat Exchanger charge inlet
4. Hot water recirculation inlet
5. Two added Rp 2" connections for extra inlet or safety valve installation (not proposed on 2500 and 3000 litres enamel tank)
6. Rp 3/4" added sensor connection on all the range except on 2500 and 3000 litres enamel tank where an added Rp 2" on the bottom of the vessel, is proposed instead
7. Two or three anodes available depending on the volume of the vessel
8. Visit trap or man hole
9. 100 mm glass wool (M1) Eurofireclass B
   or 100 mm rock wool (M0) EuroFireclass A insulation

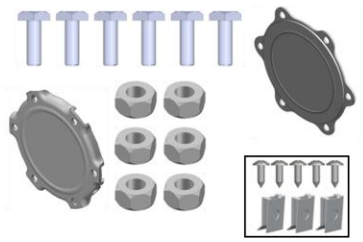
Article No.	Tank capacity (L)	Inspection opening (mm)	Insulation (100mm)	Dimensions (mm)						Connections 1 / 2 / 3 / 4	ErP class* standing losses (W)	Dryweight (Kg)
				A	B	C	E	D1	D2 (insulated)			
AQT030EB1100	300	110	M1	1804	1395	1075	216	549	749	2" / 2" / 2" / 1"	B / 61,2	110
AQT030ED1100	300	260	M1	1804	1395	1075	216	549	749	2" / 2" / 2" / 1"	B / 63,4	120
AQT050EB1100	500	110	M1	2143	1748	959	198	630	830	2" / 2" / 2" / 1"	C / 90,6	137
AQT050ED1100	500	260	M1	2143	1748	959	198	630	830	2" / 2" / 2" / 1"	C / 95,5	150
AQT050EB0100	500	110	M0	2133	1748	959	198	630	830	2" / 2" / 2" / 1"	C / 92,1	165
AQT050ED0100	500	260	M0	2133	1748	959	198	630	830	2" / 2" / 2" / 1"	C / 102,9	167
AQT075EB1100	750	110	M1	2047	1601	1151	197	790	990	2" / 2" / 2" / 1"	C / 126,7	200
AQT075EC1100	750	400	M1	2047	1601	1151	197	790	990	2" / 2" / 2" / 1"	C / 130,0	243
AQT075EB0100	750	110	M0	2037	1601	1151	197	790	990	2" / 2" / 2" / 1"	C / 121,8	260
AQT075EC0100	750	400	M0	2037	1601	1151	197	790	990	2" / 2" / 2" / 1"	C / 130,9	293
AQT100EB1100	1000	110	M1	2400	1954	1324	197	790	990	2" / 2" / 2" / 1"	C / 129,8	263
AQT100EC1100	1000	400	M1	2400	1954	1324	197	790	990	2" / 2" / 2" / 1"	C / 139,0	263
AQT100EB0100	1000	110	M0	2390	1954	1324	197	790	990	2" / 2" / 2" / 1"	C / 129,1	293
AQT100EC0100	1000	400	M0	2390	1954	1324	197	790	990	2" / 2" / 2" / 1"	C / 140,7	320
AQT150EB1100	1500	110	M1	2226	1700	1250	221	1100	1300	2" / 2" / 2" / 1"	C / 152,6	344
AQT150EC1100	1500	400	M1	2226	1700	1250	221	1100	1300	2" / 2" / 2" / 1"	C / 165,0	390
AQT150EB0100	1500	110	M0	2216	1700	1250	221	1100	1300	2" / 2" / 2" / 1"	C / 153,3	384
AQT150EC0100	1500	400	M0	2216	1700	1250	221	1100	1300	2" / 2" / 2" / 1"	C / 166,4	480
AQT200EC1100	2000	400	M1	2414	1888	1258	221	1100	1300	2" / 2" / 2" / 1"	C / 174,3	420
AQT200EC0100	2000	400	M0	2404	1888	1258	221	1100	1300	2" / 2" / 2" / 1"	C / 184,1	520
AQT250EC1100	2500	400	M1	2245	1680	1180	215	1400	1600	2" / 2" / 2" / 2"	E / 298,2	556
AQT250EC0100	2500	400	M0	2245	1680	1180	215	1400	1600	2" / 2" / 2" / 2"	E / 304,1	660
AQT300EC1100	3000	400	M1	2374	1810	1245	215	1400	1600	2" / 2" / 2" / 2"	E / 323,2	560
AQT300EC0100	3000	400	M0	2374	1810	1245	215	1400	1600	2" / 2" / 2" / 2"	E / 329,7	665

* EN12897:2006

9 Annex

9.1 Annex 1: Inspection hole TP kit assembling

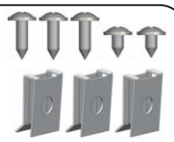
1 – Kit content



Pocket A
Close
visit trap

Designation	Quantity
screw M10x32 T	6
gasket Ø110	1
Base Ø110	1
Nut HH M10x10 Zinc	6
Pocket sticker **A**	1
Pocket **D** – insulation fixation screws	1

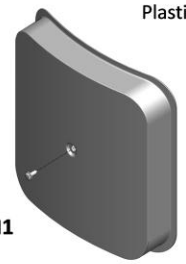
Pocket **D**
Insulation fixation
screws



Kit M0

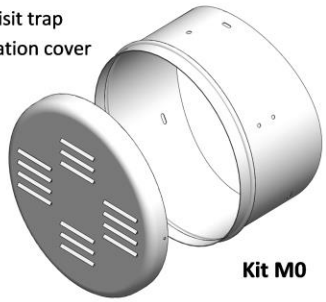
Designation	Quantity
Fast nut Réf. : NUL0921	3
screw 4,8x16 Zinc	3
screw 4,8x9.5 Zinc	2
Pocket sticker D	1

Plastic cover



Kit M1

M0 visit trap
insulation cover



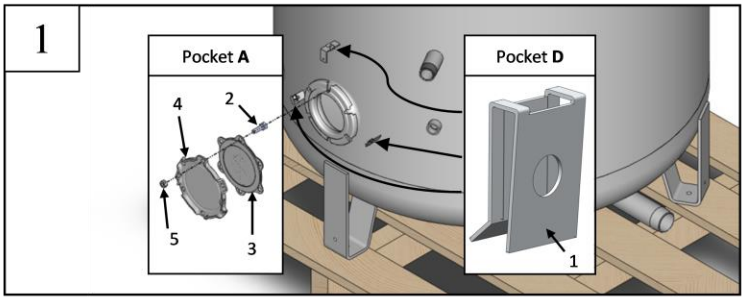
Kit M0

2 – Assembling

- It is necessary to install anodes before mounting anything else : all other kit must be installed after.
- Please respect assembling indicated order of installation

For all complementary information please refer to main documentation

M0 visit trap insulation cover assembling

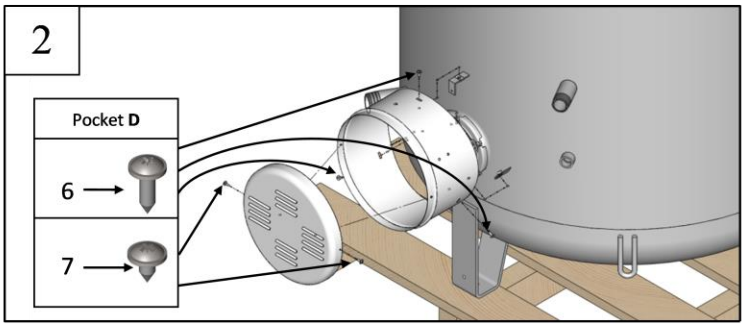


Pocket D – Insulation fixation screws

Rep.	Designation	Quantity
1	nut réf. : NUL0921	3

Pocket A – Close visit trap

Rep	Designation	Quantity
2	screw M10x32 T	6
3	gasket Ø110	1
4	Base Ø110	1
5	Nut HH M10x10 Zinc	6

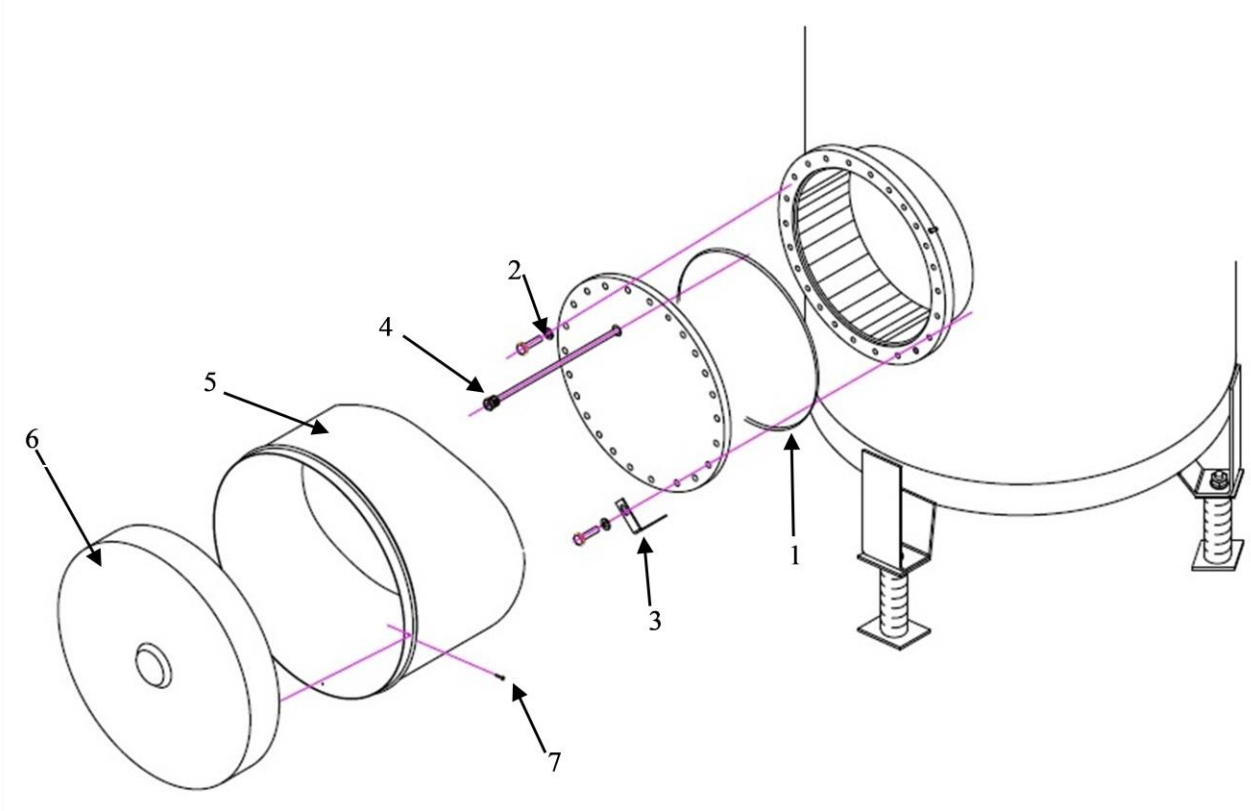


Pocket D – M0 visit trap insulation cover

Rep	Designation	Quantity
6	screw 4,8x16 Zinc	3
7	screw 4,8x9,5 Zinc	2

9.2 Annex 2: Man hole DN400 KIT assembling

9.2.1 Assembly diagram



9.2.2 Recommended order of assembly

1. Installation of O-ring by using the petrolatum supplied with the kit on the flange to fix it.
2. Assembly of the flange with tightening to 3dN.
3. Placing the brackets cuff.
   Advise: Be sure to observe how was positioned brackets before removing the original cuff.
4. Insert the thermowell after having sealed the threads. Please use the Teflon supplied with the kit.
5. Screw the cuff on the brackets. Then fix your temperature sensors into the thermowell.
6. Install the top.
7. Screw the top on the cuff.

9.2.3 Recommendations

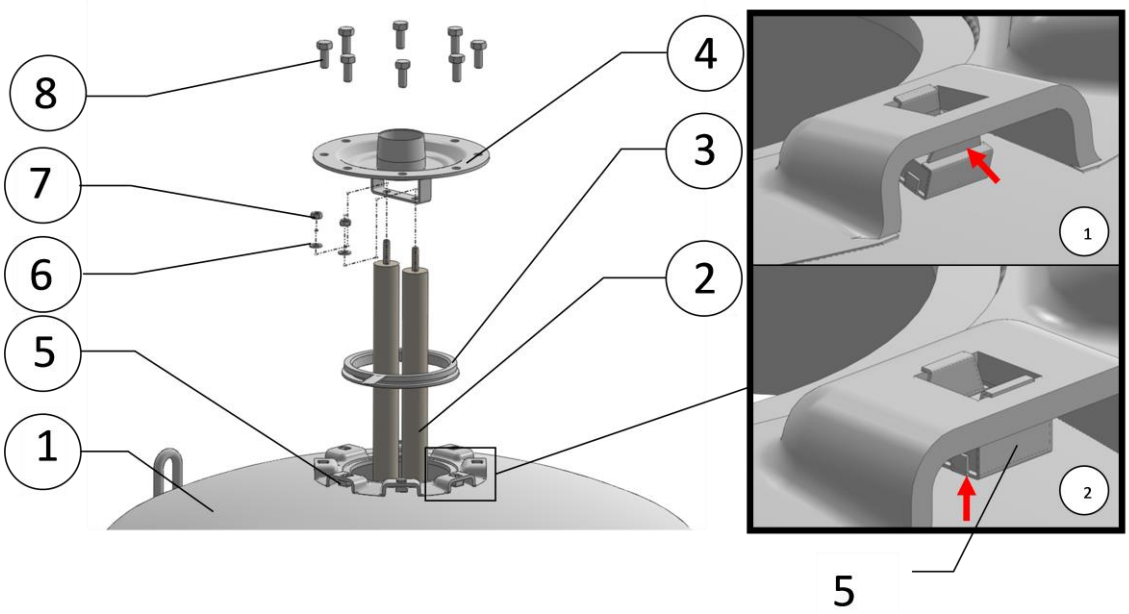
The whole mounting process and connection above must be performed by a qualified technician.
This manual complements the enclosed one delivered with the tank/boiler.
Failure to follow safety rules, operating and maintenance instructions specified in the technical manual of the boiler will void any warranty.

Remark: Thermowell is an option and for rep. 6, in case of M1 insulation;
please see *9.5.1 M1 Insulation assembling*.

9.3 Annex 3: Upper flange DN125 assembling

Landmark :	Designation :	Qty :
1	Tank	1
2	Anode Ø32 (with anode option)	1 or 2
3	Gasket	1
4	Counter flange DN 125 with bridge	1
5	Cage nut M10	8
6	Ring DE 8 (with anode option)	1 or 2
7	Nut H M8 (with anode option)	1 or 2
8	Screw TH, M10x20	8

Set-up cage nuts by using a flat screwdriver.

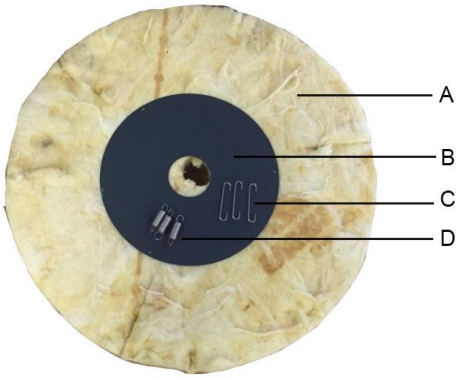


1. Set-up the gasket (3) on the tank (1) with the tab upward.
2. Set-up cage nuts (5) on the tank flange (5.1/5.2) with a flat screwdriver.
3. With anode option: Set-up anodes(s) Ø032 on the bridge of the counter flange (4) by using rings (6) and nuts (7).
4. Set-up all the flange equipped with its anodes on the tank flange.
5. Screw all the flange equipped with its anodes by using screws (8) and cage nuts (5).

Remark: Standard anode installation

9.4 Annex 4: Bottom insulation assembling

9.4.1 Kit description



A Bottom insulation
B Disc support
C Fittings for springs
D Support springs

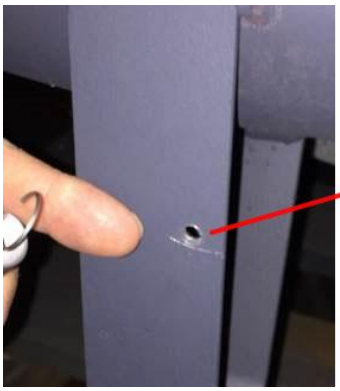
1) Put the tank on a pallet.

2) Place the bottom insulation (A) below the tank.

3) Attach the “fittings for springs” (C) to the disc support (B).

4) Place the disc below the tank.
5) Make sure that the “fittings for springs” (C) correspond to the legs of the tank.

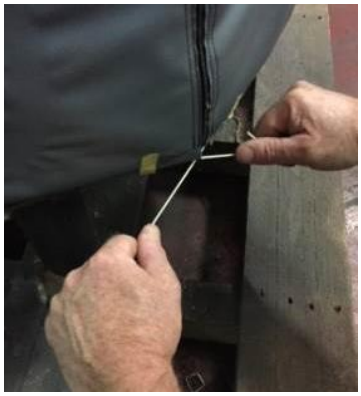
6) Install a spring (D) to each Fitting(C).



7) Attach each spring (D) to a corresponding hole on the tank leg.

8) Centre the disc support (B) under the insulation (A).

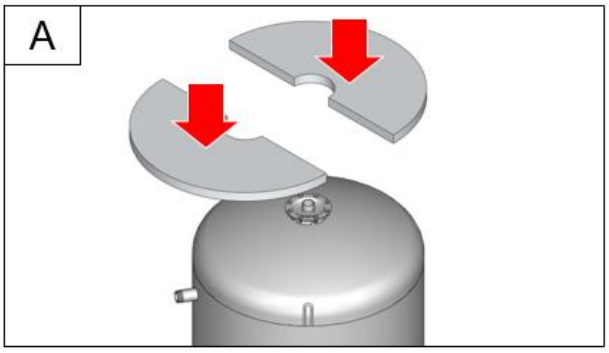
9) Pull on the outer insulation. Twist and turn to get it in place.



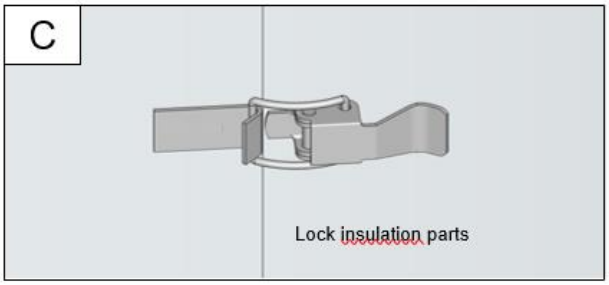
10) Put the insulation disc(A) above the lace of the insulation to get good efficiency

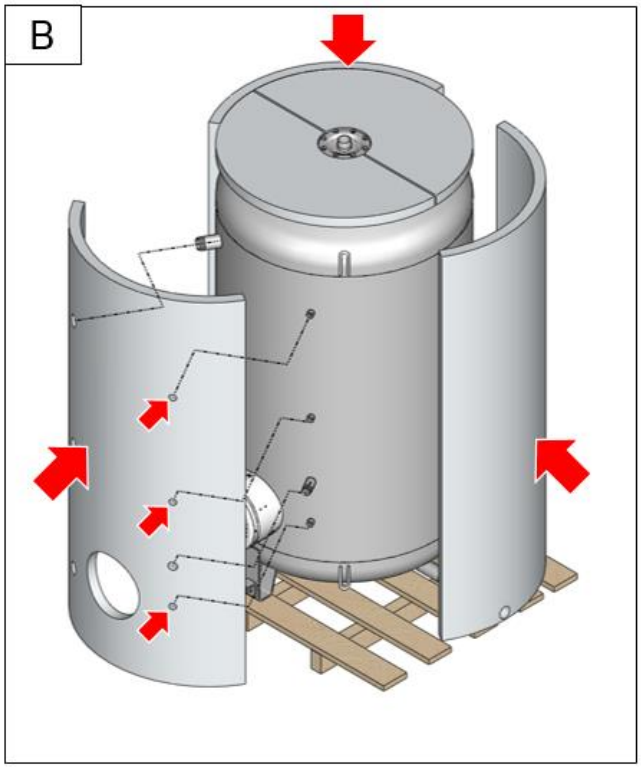
11) Connect the hydraulic connections to the installation piping.

9.5 Annex 5: M0 Insulation assembling

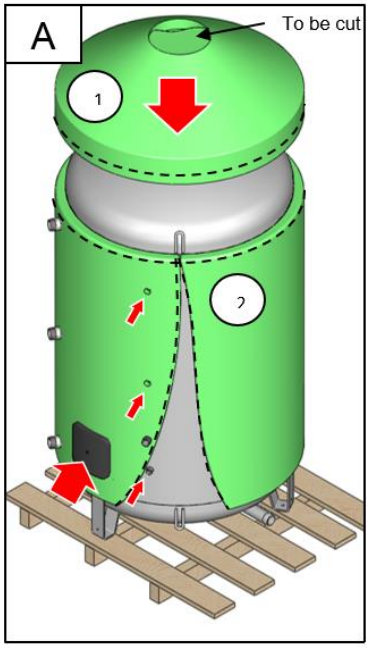


Note: when assembled side panels maintain insulation roof top

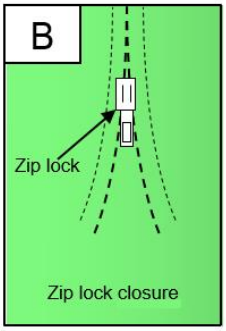




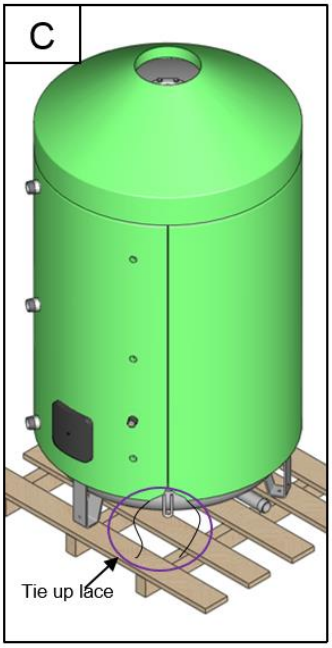
9.5.1 M1 Insulation assembling



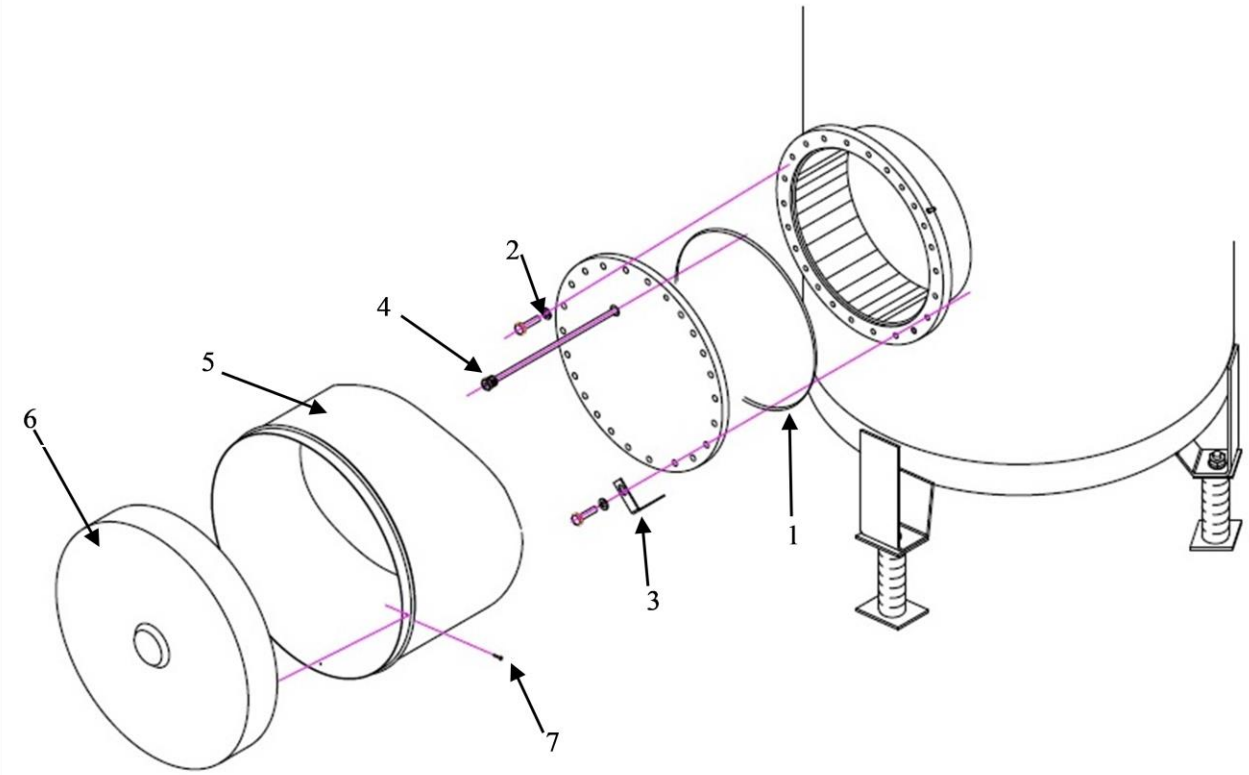
- Install roof top insulation **(1)** and cut as per **A scheme**.
- Install insulation side.
- prepare vertically zip lock **(B scheme)** of side insulation **(2)** below top roof insulation **(1)** not so far from anode position.
- Close horizontal zip lock of the roof top insulation on the side insulation **(2)**.
- Close vertical zip lock of side insulation.
- Mark with a soft hammer position of connections
- Cut insulation around marcking.
- Cut insulation around visit trap
- Tie up lace on insulation base **(C scheme)**



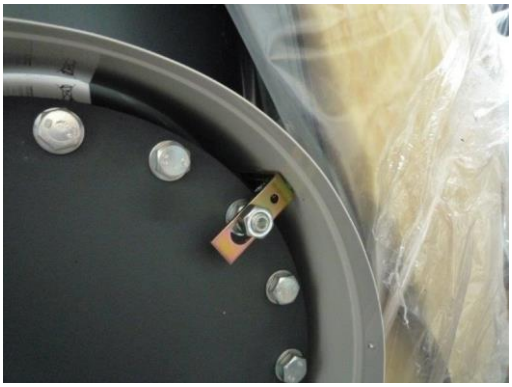
Note: M0 and M1 insulation are not included with electrical kit. They are supplied with another package.



9.6 Annex 6: M1 insulation assembling on manhole



Insulation 50 mm



Insulation 100mm

Component 5 & 6 (cuff and top) installed on the vessel, must cover the insultation.

10 Warranty

Our equipment comes with a 12-month warranty from the date of shipment. This may be extended to 6 months from the date of commissioning of the equipment, subject to commissioning report being mailed to Cetetherm. The warranty period is limited to 18 months from the actual date of shipment from the factory.

The manufacturer's liability is limited to the replacement of any defective part that cannot be repaired. No other financial compensation may be claimed in any case under the warranty.

The nature and probable cause of the defect must be reported to the manufacturer before any action is taken. The defective part should then be returned to our factory in France for assessment unless written agreement to proceed otherwise has been obtained from Cetetherm. The results of the assessment can only state whether or not the terms of the warranty apply.

10.1 Exclusion factors:

Non-compliance with the guidelines for installation, configuration and maintenance:
Over pressures, water-hammer, scaling, noncompliant water quality

Also excluded from the warranty:

- Fitting costs, refitting costs, packaging, transport, and any accessories or equipment not manufactured by Cetetherm, which will only be covered by any warranties issued by said third-party manufacturers.
- Any damage caused by connection errors, insufficient protection, misapplication or faulty or careless operations.
- Equipment disassembled or repaired by any other party than Cetetherm.

Non-payment will lead to all operational warranties covering the delivered equipment being terminated.

10.2 Spare parts

Only replace any defective part with the original spare part. Please contact your local Cetetherm agency.

10.3 How to contact Cetetherm

Our contact details are updated on our website *www.cetetherm.com*.

Cetetherm sas
ZI du Moulin, Route du Stade
69490 Pontcharra sur Turdine - France
www.cetetherm.com