



INSTRUCTIONS FOR INSTALLATION AND USE
OF ELECTRIC WATER HEATERS AND
ENAMELLED HEATER TANKS
FROM 300 to 3000L

DATASHEET

Name of supplier		ACV							
Model		LCA P 300	LCA P 500	LCA P 750	LCA P 1000	LCA P 1500	LCA P 2000	LCA P 2500	LCA P 3000
ErP class	-	C	C	D	D	D	E	E	E
Standing losses	[W/H]	93,23	112,09	145,57	168,2	205,92	246,25	277,52	302,05
Storage capacity	[l]	333	516	747	917	1550	1726	2550	2746

Name of supplier		ACV							
Model		LCA 300 hh	LCA 500 hh	LCA 750 hh	LCA 1000 hh	LCA 1500 hh	LCA 2000 hh	LCA 2500 hh	LCA 3000 hh
ErP Class	-	C	C	D	D	D	E	E	E
Standing losses	[W/H]	95,13	114,38	148,54	171,63	210,12	251,28	283,18	308,21
Storage capacity	[l]	333	515	744	914	1551	1727	2551	2747

Name of supplier		ACV							
Model				LCA 750 mh	LCA 1000 mh	LCA 1500 mh	LCA 2000 mh	LCA 2500 mh	LCA 3000 mh
ErP Class	-			D	E	E	E	E	E
Standing losses	[W/H]			163,54	186,63	225,12	266,28	298,18	323,21
Storage capacity	[l]			748	918	1555	1731	2552	2748

Name of supplier		ACV							
Model		LCA 1CO 300 hh	LCA 1CO 500 hh	LCA 1CO 750 hh	LCA 1CO 1000 hh	LCA 1CO 1500 hh	LCA 1CO 2000 hh	LCA 1CO 2500 hh	LCA 1CO 3000 hh
ErP Class	-	C	C	D	D	E	E	E	E
Standing losses	[W/H]	97,03	116,67	151,51	175,06	214,32	256,31	288,84	314,37
Storage capacity	[l]	317	489	709	865	1508	1684	2485	2681

Name of supplier		ACV							
Model				LCA 1CO 750 mh	LCA 1CO 1000 mh	LCA 1CO 1500 mh	LCA 1CO 2000 mh	LCA 1CO 2500 mh	LCA 1CO 3000 mh
ErP Class	-			D	E	E	E	E	E
Standing losses	[W/H]			166,81	190,36	229,62	271,61	304,14	329,67
Storage capacity	[l]			713	869	1512	1688	2486	2682

DATASHEET

Name of supplier		ACV							
Model		LCA 300 2CO hh	LCA 500 2CO hh	LCA 750 2CO hh	LCA 1000 2CO hh	LCA 1500 2CO hh	LCA 2000 2CO hh	LCA 2500 2CO hh	LCA 3000 2CO hh
ErP Class	-	D	D	D	D	E	E	E	E
Standing losses	[W/H]	98,94	118,96	154,48	178,5	218,52	261,33	294,51	320,54
Storage capacity	[l]	317	489	711	870	1501	1657	2476	2672

Name of supplier		ACV							
Model				LCA 750 2CO mh	LCA 1000 2CO mh	LCA 1500 2CO mh	LCA 2000 2CO mh	LCA 2500 2CO mh	LCA 3000 2CO mh
ErP Class	-			E	E	E	E	E	E
Standing losses	[W/H]			170,08	194,1	234,12	276,93	310,11	336,14
Storage capacity	[l]			715	883	1505	1674	2486	2682

supplier		ACV							
Model			LCA HP 500 hh	LCA HP 750 hh	LCA HP 1000 hh	LCA HP 1500 hh	LCA HP 2000 hh		
ErP Class	-		D	D	D	E	E		
Standing losses	[W/H]		121,24	157,45	181,93	222,73	266,36		
Storage capacity	[l]		480	676	838	1467	1631		

Name of supplier		ACV							
Model				LCA HP 750 mh	LCA HP 1000 mh	LCA HP 1500 mh	LCA HP 2000 mh		
ErP Class	-			D	E	E	E		
Standing losses	[W/H]			173,35	197,83	238,63	282,26		
Storage capacity	[l]			680	842	1471	1635		

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1. RECOMMENDATIONS

1-1 General recommendations

1. This very important manual is an indispensable part of the appliance.

The manual must be kept in a safe place and must be passed onto any subsequent owners or users of the appliance and/or in the event that the boiler is transferred to another site.

2. Read the instructions and advice provided carefully, as this will help you to ensure your appliance is safely installed, used and maintained.

3. The purchaser is responsible for installation, which must be carried out by an industry professional in accordance with the instructions in the manual.

4. Any use of the appliance other than that stipulated herein is prohibited.

The manufacturer shall in no way be held liable for any damages arising from the improper, incorrect or unreasonable use of the appliance or failure to follow the instructions contained in this manual.

5. Installation, maintenance and all other operations must be carried out by industry professionals according to the applicable regulations and the indications provided by the manufacturer.

6. The manufacturer accepts no liability for any personal injuries, injuries to animals or damage to goods as a result of any incorrect installation of the appliance.

7. The packaging (clips, plastic bags, expanded polystyrene, etc.) must be kept out of the reach of children.

8. This appliance is not designed for use by persons (including children) with reduced physical, sensory or mental capacities, or who do not have sufficient knowledge or experience, unless they have benefited from supervision and instruction concerning the use of the appliance by the person responsible for their safety.

9. Children must be supervised to ensure they do not play with the appliance

10. Do not touch the appliance with your bare hands or any wet body parts.

11. For all repairs, call an accredited technician and insist that genuine spare parts are used. Failure to comply with these instructions could compromise safety and shall exempt the manufacturer from all liability. Before carrying out any repair and/or maintenance operation on the unit, it is important to isolate all supply sources. In case of a malfunction in the unit, switch it off and phone technical assistance.

12. No inflammable objects must be kept near the appliance.

13. Correct usage also includes following the instructions for use and installation, and adhering to any additional documentation, as well as the inspection and maintenance conditions.

14. Any use outside these conditions is forbidden.

1-2 User recommendation

Before installing the appliance, please read the instructions in this manual carefully. Failure to comply with them will invalidate the warranty.

The purchaser is responsible for installing the product. Installation, start-up, maintenance and repairs must only be carried

out by a qualified professional in accordance with industry practice and applicable national standards. It is

essential to comply with all prescriptions relating to domestic hot water tanks, as well as the instructions supplied by the manufacturer.

To prevent burns, use suitable mixing devices to avoid exceeding a temperature of 50°C at the catchment points.

If the appliance is inactive for a prolonged period (e.g. during winter holidays) in an unheated area, water may freeze in the appliance and the pipes. Ensure that the installation is protected from freezing.

If any accessories are installed on the unit, they must only be original parts from the manufacturer.

To clean the exterior of the unit, it is recommended to use a damp cloth and cleaning products intended for this purpose.

The use of abrasive products or solvents is strongly discouraged.

No inflammable objects must be kept near the appliance.

GENERAL SAFETY STANDARDS

Failure to respect the warnings could result in injury and may even lead to death.

Failure to comply with warnings could result in serious damage to objects, plants or animals.

The general and specific safety standards relating to the product must be observed.

Do not carry out any operation which requires the appliance to be opened.

Burn injuries from hot components or injuries caused by parts that protrude or by sharp edges.

Do not carry out any operation which requires the appliance to be moved.

Contact with live components can cause electrocution.

Flooding caused by water escaping from disconnected pipes.

Do not use the connector plug on the main supply cable to connect or shut down the appliance.

Electrocution can be caused by a damaged cable, socket or connector plug.

Do not damage the main supply cable.

Electrocution caused by stripped live wires.

Never place any objects on the appliance.

Injuries can be caused by the item falling due to vibrations.

Damage to the appliance or items below it caused by items that fall because of vibrations.

Do not climb on the appliance.

Injury can be caused by the appliance falling over.

Damage to the appliance or items below it due to the appliance becoming detached from its supports and falling over.

Do not climb on chairs, step stools, ladders or unstable supports to clean the appliance.

Injury due to falling or folding of the ladder (double ladder).

Do not carry out any cleaning operations on the appliance without having switched it off, disconnected the connector plug or deactivated the relevant switch.

Contact with live components can cause electrocution.

Install the appliance on a solid wall that will not be subject to vibrations.

Noise during operation.

When drilling the wall, take care not to damage the electrical cables or pipes.

Contact with live conductors can cause electrical arcing. Explosions, fires or poisoning in the event of gas leaking from a damaged duct.

Damage to existing installations. Flooding in the event of water leaking from damaged ducts.

Protect connection cables to prevent them from being damaged.

Contact with live conductors can cause electrocution
Flooding caused by water escaping from damaged pipes

Check that the part and the installations to which the appliance will be connected comply with the current applicable regulations.

Contact with incorrectly installed live conductors can cause electrocution.

Damage to the appliance due to unsuitable operating conditions.

Use accessories and manual equipment suitable for the usage (ensure that the tool is not damaged and the handle is securely attached and in good condition), use this equipment correctly, protect it against being accidentally dropped and store it after use.

Injury may be caused by flying debris or fragments, dust inhalation, impacts, cuts, pricks and abrasions.

Damage to the appliance or to nearby objects caused by flying debris or fragments, impacts or incisions

Use suitable electrical equipment (in particular, check that the supply cable and connector plug are in good condition and that rotating or alternating parts are properly secured).

Use the equipment correctly, do not allow a trailing supply cable to obstruct access, secure it to prevent falling, and disconnect and store it after use

Injury can be caused by electrocution, projected shards or fragments, inhaling dust, being hit, or cuts, pricks, abrasions, noise or vibrations.

Damage to the appliance or to objects nearby caused by projected debris or fragments, cuts, incisions.

Ensure that portable ladders are stable and sturdy and will not slip, and that the rungs are in good condition.

Ensure that someone is present to ensure that ladders cannot move when someone else is using them.

Injury due to falling or folding of the ladder (double ladder).

Ensure that materials, components or equipment used during installation cannot fall from height.

Injury or death due to collapsing and/or falling parts.

Ensure that mobile ladders are correctly supported and sufficiently sturdy, that the rungs are in good condition and not slippery, and that the rungs and platforms are fitted with rails.

Injury due to falling.

When working at height (generally during use with height differences of more than 2 m), ensure that there is a safety rail surrounding the working area or that personal equipment is used to prevent falling, that the route of any potential fall is not obstructed by dangerous objects and that any possible impact would be cushioned by semi-rigid or deformable supports.

Injury due to falling.

Ensure that the health and safety conditions are adequate in terms of lighting, ventilation, structural soundness and emergency exits.

Injury caused by being hit, tripping, etc.

During work, wear personal protective equipment and clothing.

Injury can be caused by electrocution, projected shards or fragments,

inhaling dust, being hit, or cuts, pricks, abrasions, noise or vibrations.

The utmost care must be taken during operations inside the appliance, and contact with sharp edges avoided.

Injury caused by cuts, pricks and abrasions.

Do not use insecticides, solvents or harsh cleaning products for maintenance of the appliance.

Painted or plastic parts can be damaged.

Do not use the appliance for any use other than standard household use.

The appliance may be damaged by operation overload.

Damage to incorrectly treated objects.

Do not allow children or inexperienced persons to use the appliance.

Damage to the appliance may be caused by improper use.

Electrical connections must be made using conductors with a suitable cross section.

Fire due to overheating caused by current passing through cables which are too small.

Protect appliances and nearby areas using suitable equipment.

Damage to the appliance or to objects nearby caused by projected debris or fragments, cuts, incisions.

Move the appliance using the necessary protective equipment and with the utmost care.

Damage to appliances or nearby objects caused by impacts, incisions or crushing.

Ensure that all equipment is stored in a way that makes it simple and safe to handle; avoid creating piles which are in danger of collapsing.

Damage to appliances or nearby objects caused by impacts, incisions or crushing.

Reset any safety and control functions affected by an operation on the appliance, and make sure that they are operating correctly before it is put back in service.

Damage to or stoppage of the appliance due to uncontrolled operating conditions.

Before working on roofs, structures, surfaces, etc., ensure that they are stable and suitable for the work to be carried out.

Injury or death due to collapsing and/or falling from height.

SAFETY STANDARDS SPECIFIC TO THE PRODUCT

Drain any components which contain hot water by activating the drain before using them.

Injury caused by burns

Descale components in accordance with the instructions in the safety sheet for the product in question. Carry out the operation in a well-ventilated area and wear protective clothing.

Avoid mixing different products and protect the appliance and nearby objects.

Personal injury through skin and eyes coming into contact with acidic substances, inhalation or ingestion of harmful chemical agents.

Damage to the appliance or objects nearby due to corrosion caused by acidic substances.

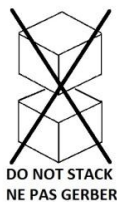
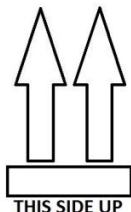
Do not carry out work on the product in strong sunlight.

Injury caused by burns

TRANSPORT, STORAGE AND RECYCLING INSTRUCTIONS

The appliance must be transported in accordance with the pictograms hereunder on the packaging.

The appliance must be transported and stored in dry conditions and freezing conditions must be avoided.



EU directive 2002/96/EC requires selective collection and recycling of used electrical and electronic devices.



The "crossed-out wheeled bin" symbol on the appliance indicates that the product must be disposed of separately from standard household waste at the end of its useful life, and must be brought to a waste sorting centre for electrical and electronic devices or returned to the seller when a replacement appliance is purchased.

DECLARATION OF CONFORMITY

Conformity of design and production

This product conforms to EU directive 97/23EC, article 3, paragraph 3 concerning pressure equipment and 93/69/CEE relating to standard EN12897-2006 specific to indirectly heated, unvented water heaters.

If the addition of a resistance is recommended by the manufacturer (kit specified in the manual), this product complies with the following European directives and standards: LVD Directive (electrical safety) 2006/95/EC
EMC Directive 2004/108/EC.

DESCRIPTION OF APPLIANCES

Enameled tanks are designed for both the production and storage of domestic hot water.

These tanks can be combined with both solar energy systems and more common energy systems such as gas- or oil-fired boilers.

The tanks are protected by an enamel covering applied at 850°C, in accordance with the requirements of DIN 4753/3.

2. INSTALLATION

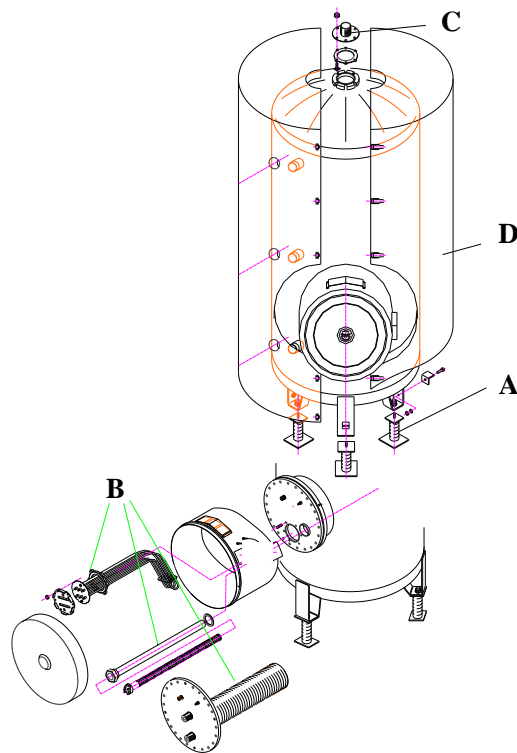
IMPORTANT:

The appliance must be installed in accordance with professional good practice and in compliance with the national regulations in force for hydraulic and electrical connections, under the entire responsibility of the installer.

This appliance must be installed in covered premises, sheltered from frost and having sufficient upper and lower ventilation.

- Installation of the water heater with its raising feet (label A)
- Installation of heating components (label B)
- Installation of hydraulic accessories (Option)
- Installation of safety unit + drain (Option)
- Installation of M1 or M0 insulation (label D)
- Hydraulic connection (label C)
- Principle with 1 water heater
- Principle with two water heaters in series
- Hydraulic tests
- Electrical connection
- Assembly test

INSTALLATION OF THE APPLIANCE



RECOMMENDATIONS

- The appliance must be as close as possible to the supply stations.
- For operations of maintenance or replacement of heating components, easy access must be provided. (Fig 1)

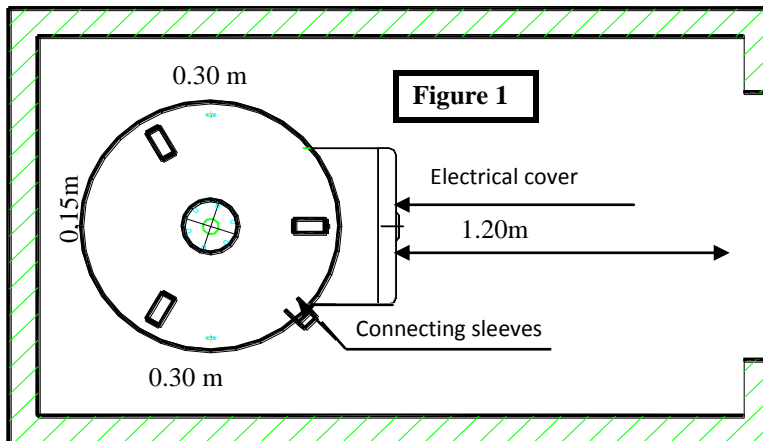
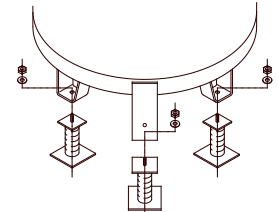


Figure 2



- **Installation of raising feet** (using the bolts provided) (Fig 2)
 - Either use of the lifting rings of the appliance (at the top of the appliance),
 - Or possibility of tilting the appliance (without lying it down), taking care not to put stress on the cylinder of the tank and of course without impact.

For information **any external marking may entail internal damage to the appliance and will therefore invalidate the warranty.**

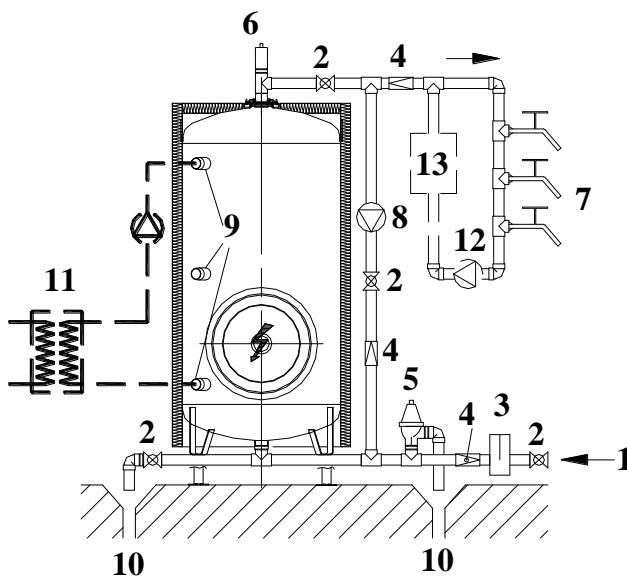
 - Position the water heater in its final position.
 - Check the stability of the water heater.

3. HYDRAULIC CONNECTION

To enable optimal use of the water heater, we recommend that you carry out the hydraulic connection as follows:

IMPORTANT NOTE

Not all appliances labelled on these installation diagrams are supplied by us. However, the correct installation of the appliance in accordance with the national regulations in force is under the entire responsibility of the installer.



Key:

- 1 - Cold water inlet
- 2 - Stop valve
- 3 - Water filter
- 4 - Check valve
- 5 - Safety valve
- 6 - Degassing bottle with bleeder
- 7 - Supply points (with thermostatic mixers).
- 8 - Homogenisation pump (mandatory against Legionnaire's Disease)
- 9 - Connection sleeves For special fitting
- 10 - Funnel to the drain
- 11 - Example special fitting (plate exchanger)
- 12 - Loop pump
- 13 - Loop reheater

DIAGRAM OF PRINCIPLE WITH ONE WATER HEATER

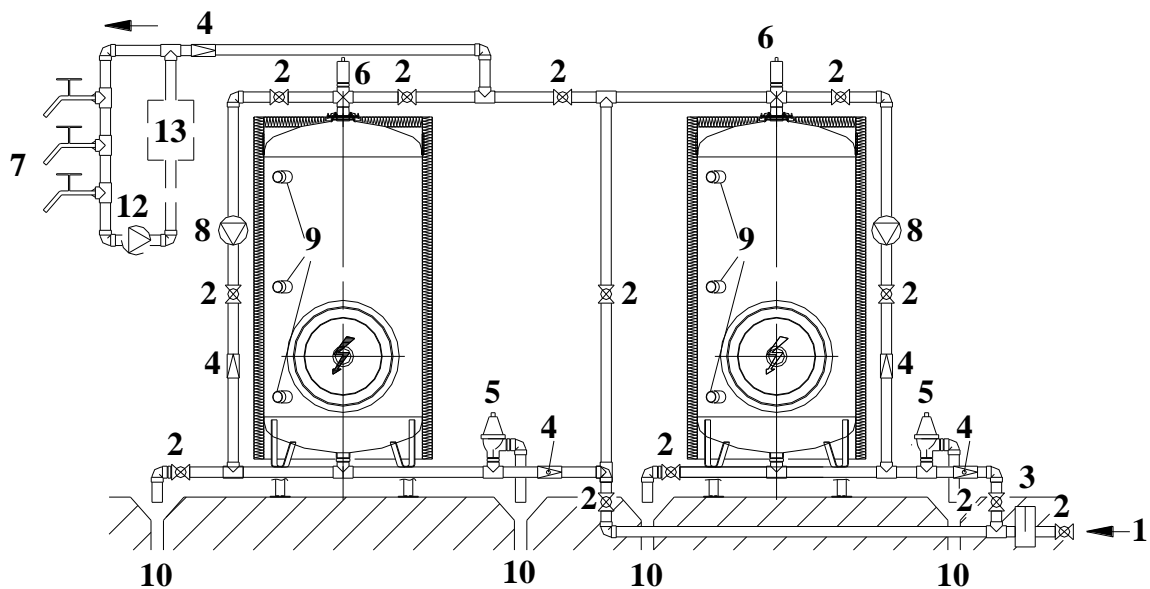


DIAGRAM OF PRINCIPLE WITH TWO WATER HEATERS CONNECTED IN SERIES/PARALLEL

IMPORTANT:

In the event of installation of battery appliances, it is imperative to install a safety valve specific to each appliance.

Safety units for the whole of the range (as option) to be installed on each appliance.

These valves must be calibrated at 7 bar maximum and comply with NF.

NB:

Generally, with regard to combating the proliferation of Legionnaire’s Disease, it is necessary to comply with the recommendations of the *Conseil Supérieur d’Hygiène Publique de France*, and more particularly the conformity of materials and equipment implemented in respect of the compatibilities defined on pages 59 & 61 of the risk management guide linked to Legionella of November 2001

The quality of the water distribution pipes is very important.

Beware of connections between different metals; we advise you to comply with the instructions of DTU 60-1.

Provide a “dielectric insulating” connection near to the appliance on each pipe connecting to the water network.

- Verify that the pressure of the distribution network does not exceed 5 bars. Otherwise, install a pressure reducer upstream of the appliance and its safety systems.

- To enable the expansion of the water in the water heater, the safety valve must be fitted with a pipe which will allow this expansion to overflow into a funnel connected to the drain. Under no circumstances must you reduce its diameter or close this pipe with a plug or a stop valve. **Plugging will invalidate the warranty of the appliance.**
- Fitting of a filter on the cold water inlet is strongly recommended in order to eliminate foreign matter such as sand, gravel, sludge, etc.
- It is imperative to install a T-square on the low pipe of the appliance enabling a direct transition valve to be fitted in order to carry out “shunts” and eliminate sludge stagnating at the bottom of the tank.
- Provide a degasser with air drain on the hot water outlet (evacuation of dissolved gas).
- Equip the water heater with a domestic circulating system for proper homogenisation of the water volume
- For the purposes of combating Legionella, it is imperative that any thermostatic mixer is installed as close as possible to the supply points, in order to minimise the water circuit to **40°, temperature for maximum proliferation of Legionella**
- There must be no cutout or regulation system between the tank and the safety valve

4. HYDRAULIC TESTS

- **Upon first filling with water**, it is down to the installer to verify the seal of the upper flange and the manhole, and to **tighten the bolts if necessary.**
- After hydraulic connection of all pipes, and before carrying out the electrical cabling, completely fill the appliance and pressurise it. Check and rectify the watertightness of each connection.
- **After each intervention on the hydraulic installation, it is imperative to carry out a hydraulic seal test**

5. ELECTRICAL CONNECTION

Before connecting the appliance, check that the power is off, that the appliance is full of water and that it is watertight.

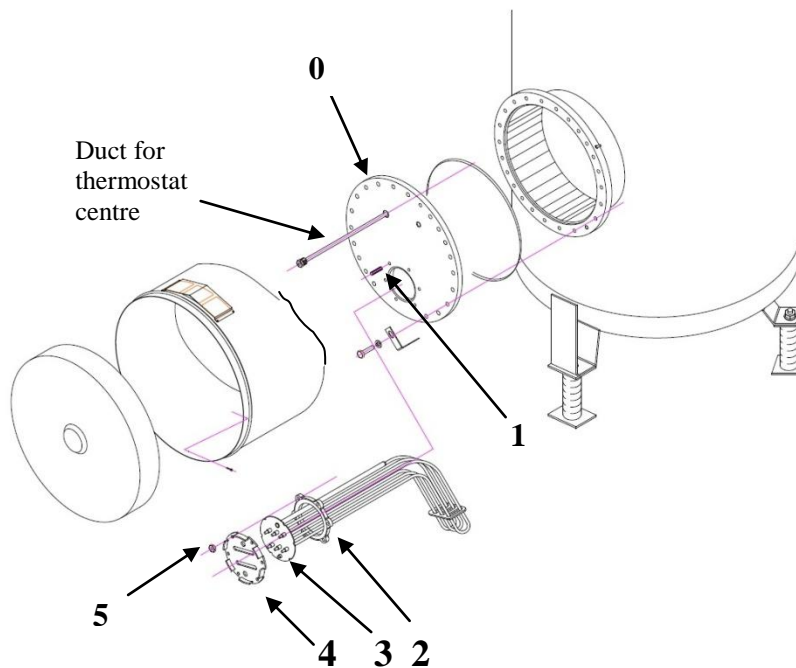
Recommendations for installation:

- The electrical installation must comply with national regulations in force in the country of installation. For France, see standards NF C 73200 and NFC 15100.
- Install a general circuit breaker and calibrated protection upstream on the electrical supply.
- Use correctly sized wires (refer to the manufacturers' values) and ensure all connections are fully tightened.
- The components mentioned on the electrical diagrams are provided with the electrical kits.
- Each component and the tank must be connected to earth (via the sleeves situated on the flange of the tank).
- **The resistances must be supplied using an electromagnetic switch** (not provided). Connect its electrical circuit and the loop pump using terminals C1 and C3 of the terminal block.
- **Never block it manually.**
- **Do not install manual override switches.**
- It must be sufficiently sized.

6. INSTALLATION OF HEATING COMPONENTS

A) Single resistance platinum shielded (9Kw - 15Kw - 30Kw)

ASSEMBLY DIAGRAM

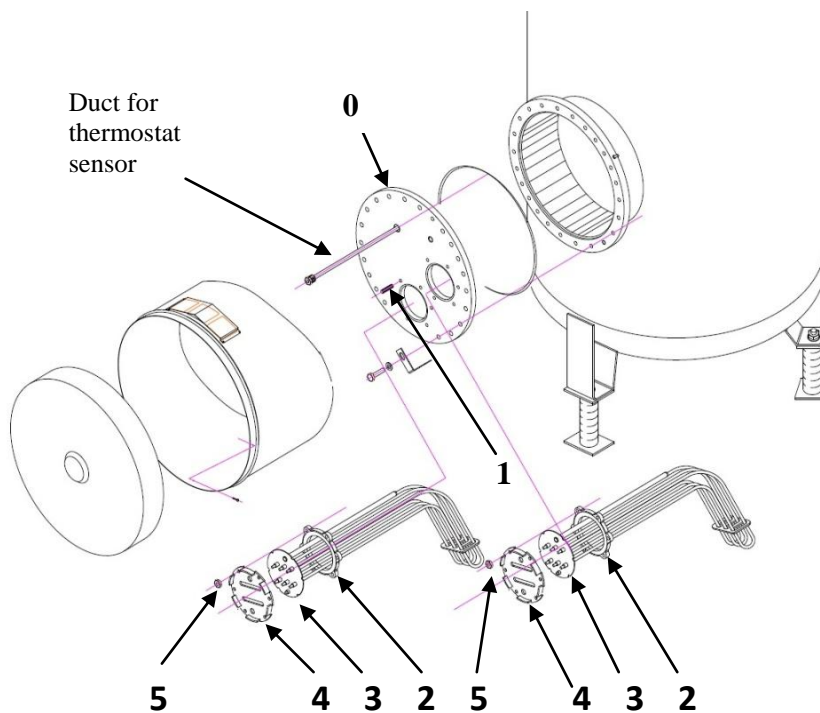


Recommended order of assembly

- 0 - Assembly of the flange with tightening to 3dN
- 1 - Installation of M10 Pins
- 2 - Installation of the seal
- 3 - Installation of the resistance (NB loop downwards for 15 & 30 Kw model)
- 4 - 1 backflange (model 15 & 30 Kw)
- 5 - 6 M10 bolts

B) Multi-resistance platinum shielded (45Kw - 60Kw)

ASSEMBLY DIAGRAM

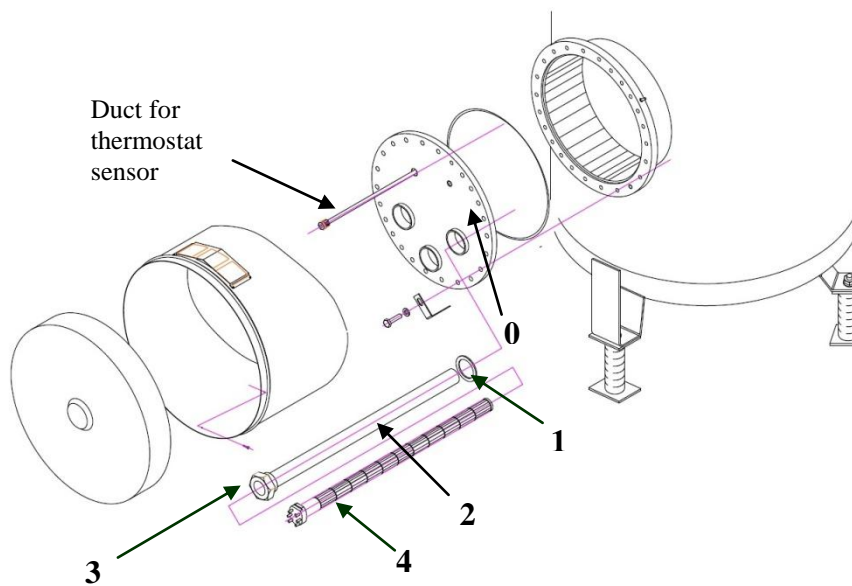


Recommended order of assembly

- 0 - Assembly of the flange with tightening to 3dN
- 1 - Installation of Pins M10
- 2 - Installation of seal
- 3 - Installation of resistance (NB loop downwards for 15 & 30 Kw model)
- 4 - 1 backflange (Model 15 & 30 Kw)
- 5 - 6 M10 bolts

C – Multi-resistance steatite

ASSEMBLY DIAGRAM

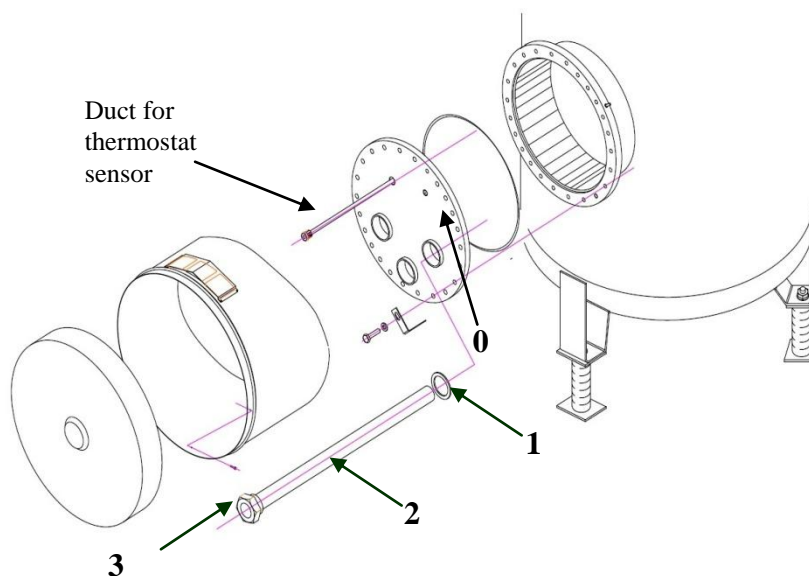


Recommended order of assembly

- 0 Assembly of the flange with tightening to 3dN
- 1 Installation of seals, abutting the head of the sheaths
- 2 The sheaths must be assembled by hand, using a tube giving counterweight to facilitate the engagement of the thread of the sheath into the sleeve
- 3 Tightening of the sheaths using a key.
- 4 Installation of steatite resistances.

D - Multi resistance screwed shielded

ASSEMBLY DIAGRAM

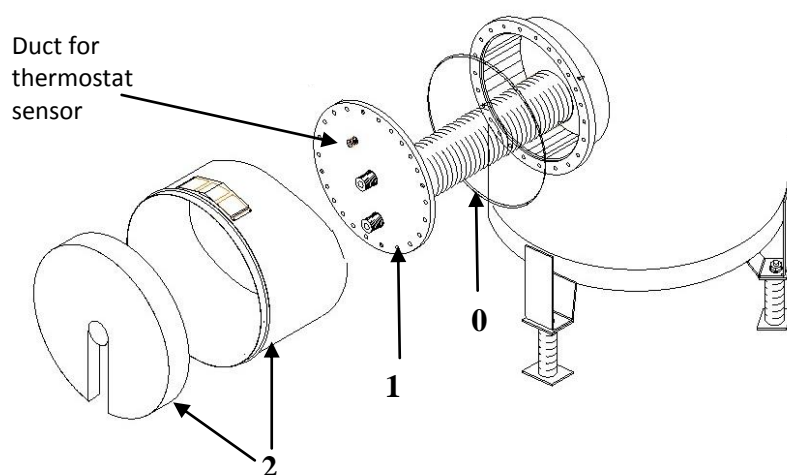


Recommended order of assembly

- 0 Assembly of the flange with tightening to 3dN
- 1 Installation of joints, abutting the head of the resistances
- 2 The resistances must be assembled by hand, to facilitate engagement of the threads in the sleeve
- 3 Tightening of the resistances using a key.

E - Coil with flange 1m² or 3m²

ASSEMBLY DIAGRAM



Recommended order of assembly

- 0 Installation of joint on the flange.
- 1 Assembly of the flange fitted with its coil on the tank and tighten the bolts at 3dN.
- 2 Installation of cap.

7. ELECTRICAL SPECIFICATIONS AND CABLING DIAGRAMS

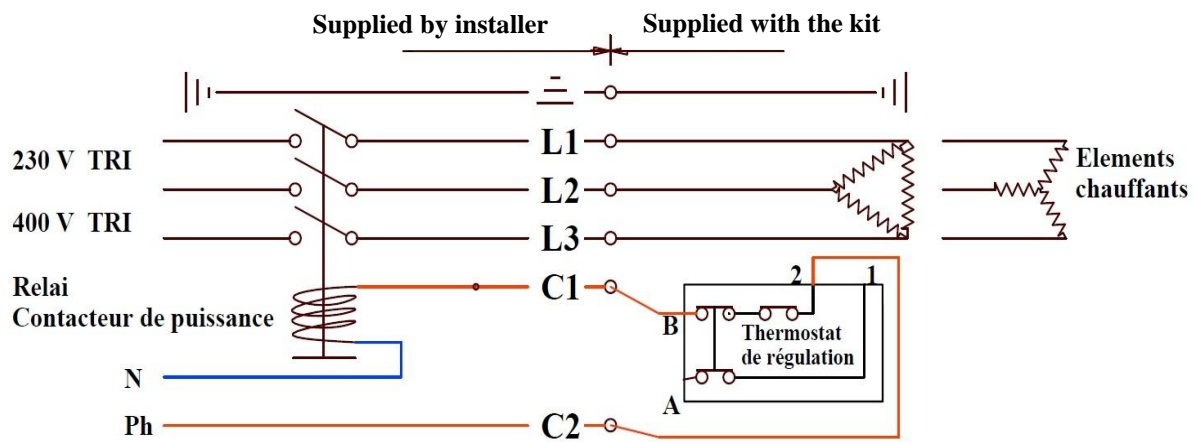
A – Shielded platinum resistance (9 Kw - 15 Kw - 30 Kw)

- Enamelled tank of 300 to 3000 litres with lateral flange DN110.
- Enamelled tank of 750 to 3000 litres with lateral flange DN400.
- Flange equipped with immersion resistance, straight (9 kW), bent (15 to 30 kW), directed towards the bottom of the tank, thus avoiding cold zones and the proliferation of bacteria.
- Resistance supply voltage 230 TRI, 400 V TRI without neutral.
- Dual thermostat, regulation from 30 to 80°C and overheating safety device at 95°C with manual reset.
- Soft jacket cover, M1 fire classification, or steel cover, M0 fire classification.
- These appliances are delivered on a wooden pallet; the tank, insulation (if M0 jacket, separate parcel) and the electrical kit are fixed to this.

Capacity in litres	Power in kW	Heating time Delta T 60K	Weight with jacket		Electrical diagram Fig N°	
		In h,mn	M1 In Kg	M0 In Kg	Star	Triangle
300	9	2h20mm	109	117	1	2
500	9	3h55mm	135	143	1	2
750	9	5h40mn	235	243	1	2
	15	3h30mn	235	243		3
	30	1h44mn	235	243		4
	45	1h19mm	238	246		5
	60	0h50mm	238	246		5
1000	9	7h27mm	265	273	1	2
	15	4h39mn	265	273		3
	30	2h20mn	265	273		4
1000	45	1h43mm	268	276		5
	60	1h09mm	268	276		5
1500	9	11h12mm	245	254	1	2

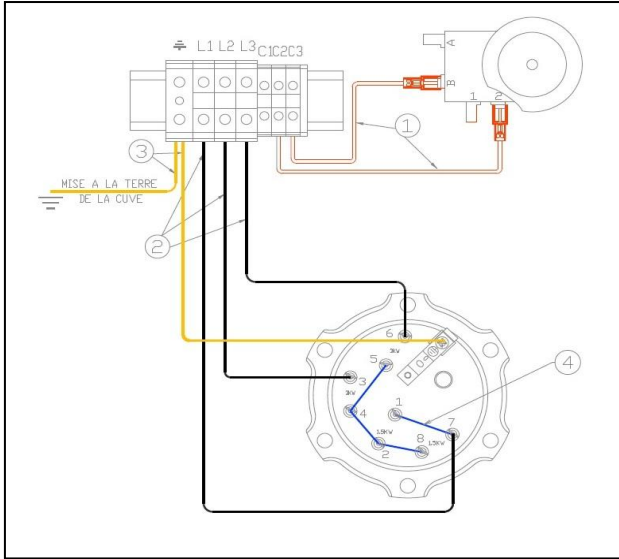
	15	6h59mn	345	354		3
	30	3h29mn	345	354		4
	45	2h41mn	348	357		5
	60	1h45mn	348	357		5
2000	9	14h56mn	374	383	1	2
	15	9h20mn	374	383		3
	30	4h39mn	374	383		4
	45	3h27mn	377	386		5
	60	2h21mn	377	386		5
2500	9	18h42mn	503	513	1	2
	15	11h40mn	503	513		3
	30	5h49mn	503	513		4
	45	4h25mn	506	516		5
	60	2h57mn	506	516		5
3000	9	22h25mn	541	552	1	2
	15	14h00mn	541	552		3
	30	7h00mn	541	552		4
	45	5h15mn	544	555		5
	60	3h28mn	544	555		5

ELECTRIC DIAGRAM



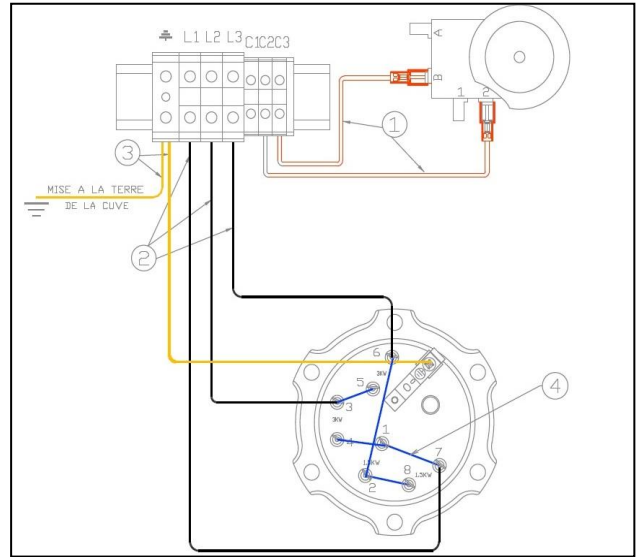
CABLING DIAGRAMS

Fig N° 1
Star Cabling 9 kW (3x400 V)



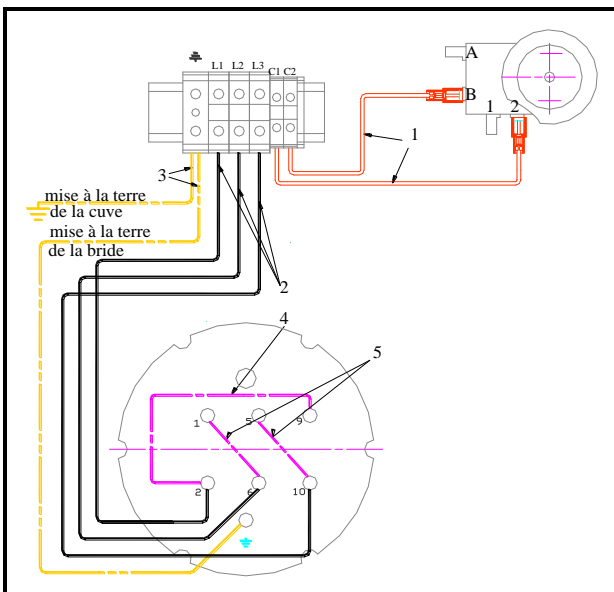
ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/Yellow	2
4	Power connection	6 mm ²	Black	4
≡	Bloc cond.protec. cap	16 mm ²	Green/Yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 2
Triangle Cabling 9 kW (3x230 V)



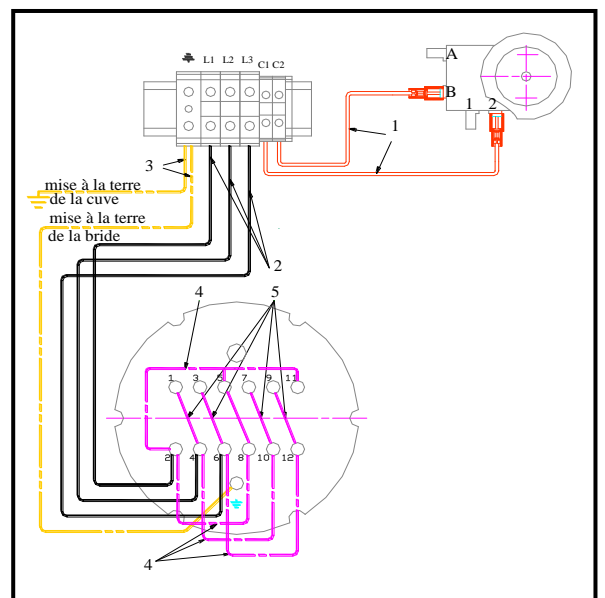
ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/Yellow	2
4	Power connection	6 mm ²	Black	5
≡	Bloc cond.protec. cap	16 mm ²	Green/Yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 3
Triangle Cabling 15 kW (3x400 V)



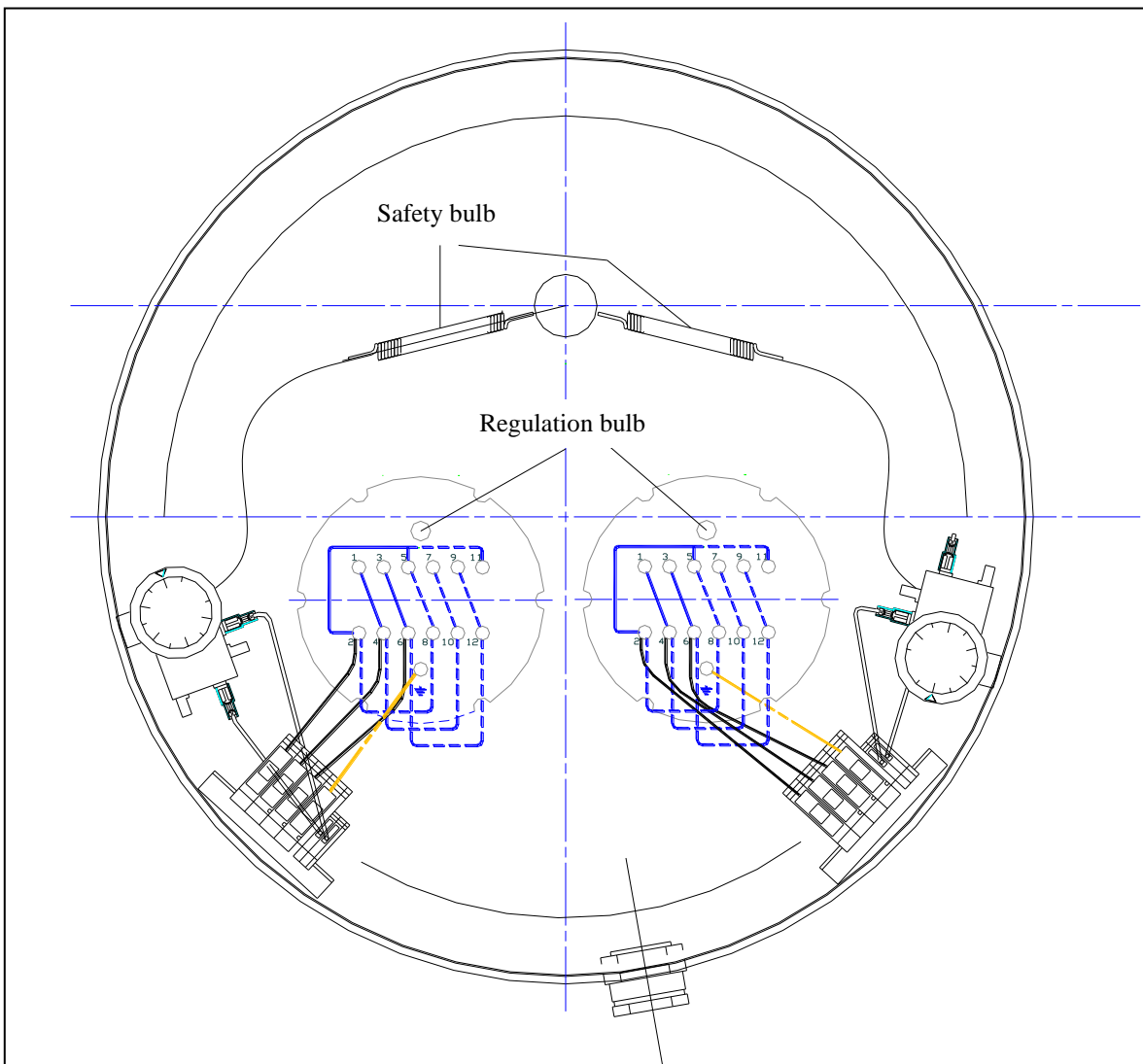
ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/Yellow	2
4	Power connection	6 mm ²	Black	1
5	Power bar	6 mm ²	Brass	2
≡	Bloc cond.protec. cap	16 mm ²	Green/Yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 4
Triangle Cabling 30 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/Yellow	2
4	Power connection	6 mm ²	Black	4
5	Power bar	6 mm ²	Brass	5
≡	Bloc cond.protec. cap	16 mm ²	Green/Yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 5
Triangle Cabling 45 kW / 60 kW (3x400 V)



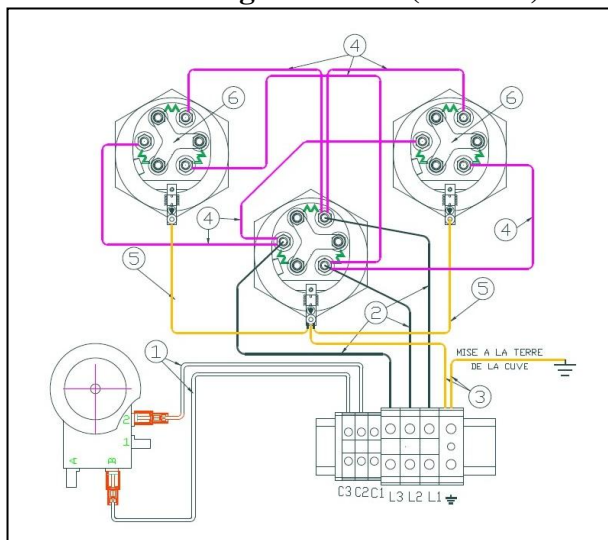
B - Multi steatite resistances

- Enamelled tank of 750 to 3000 litres
- Flange equipped with immersion steatite resistances (from 2 to 5 steatites depending on heating power) directed towards the bottom of the tank, thus avoiding cold zones and the proliferation of bacteria.
- Low charge (5 to 6.5W/cm²) so appliance is at low risk of scaling
- Resistance power voltage 230 TRI, 400 V TRI without neutral
- Dual thermostat, regulation from 30 to 80°C and overheat safety device at 95°C with manual reset
- Soft jacket cover, M1 fire classification, or steel cover, M0 fire classification.
- These appliances are delivered on a wooden pallet; the tank, insulation (if M0 jacket, separate parcel) and the electrical kit are fixed to this.

Capacity in litres	Power in kW		Heating time Delta T 60K	Weight with jacket		Electrical diagrams Fig N°	
			In h,mn	M1 In Kg	M0 In Kg	Star	Triangle
750	(3x3)	9	5h40mn	240	248	6	7
	(4x3)	12	4h25mn	250	258	8	9
	(5x3)	15	3h30mn	260	268	10	11
1000	(3x3)	9	7h27mn	270	278	6	7
	(4x3)	12	5h49mn	280	288	8	9
	(5x3)	15	4h39mn	290	298	10	11
1500	(3x3)	9	11h12mn	350	359	6	7
	(4x3)	12	8h51mn	360	369	8	9
	(5x3)	15	7h00mn	370	379	10	11
	(5x6)	30	3h29mn	370	379	10	11
2000	(3x3)	9	14h56mn	377	686	6	7
	(4x3)	12	11h50mn	387	396	8	9
	(5x3)	15	9h20mn	397	406	10	11
	(5x6)	30	4h39mn	397	406	10	11
2500	(3x3)	9	18h42mn	506	516	6	7
	(4x3)	12	14h45mn	516	526	8	9
	(5x3)	15	11h40mn	526	536	10	11
	(5x6)	30	5h49mn	526	536	10	11
3000	(3x3)	9	22h25mn	544	555	6	7
	(4x3)	12	17h42mn	554	565	8	9
	(5x3)	15	14h00mn	564	575	10	11
	(5x6)	30	7h00mn	564	575	10	11

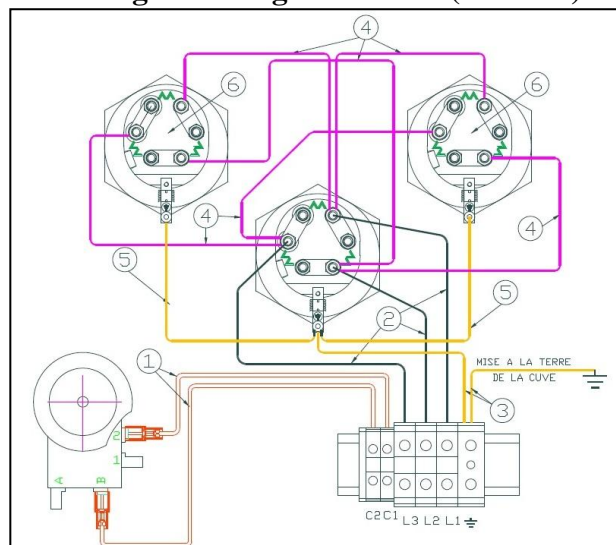
CABLING DIAGRAMS

Fig N° 6
Star Cabling 9 – 18 kW (3x400 V)



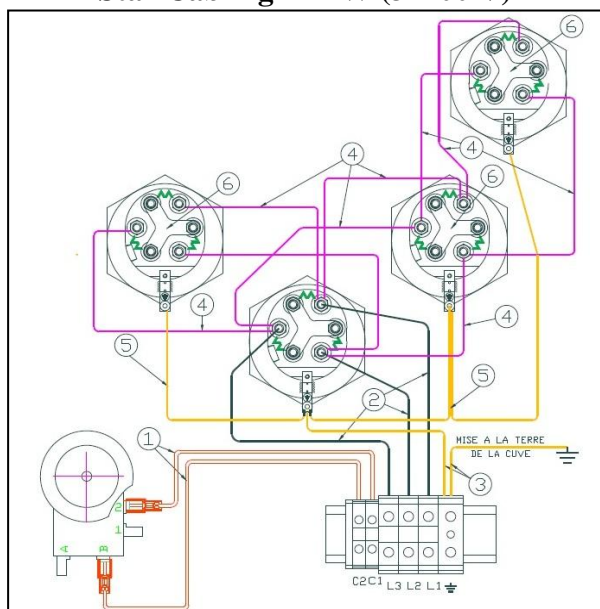
ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/yellow	2
4	Power connection	6 mm ²	Black	6
5	Earth connection	6 mm ²	Green/yellow	2
⏚	Bloc cond.protec. cap	16 mm ²	Green/yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 7
Triangle Cabling 9 – 18 kW (3x230 V)



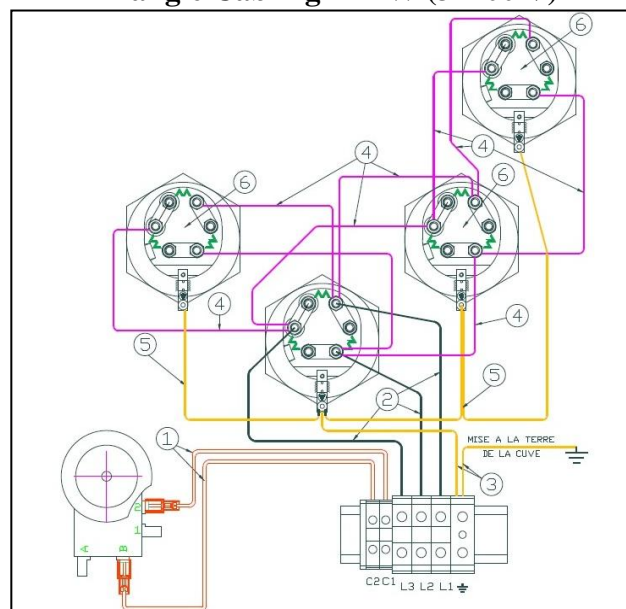
ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/yellow	2
4	Power connection	6 mm ²	Black	6
5	Earth connection	6 mm ²	Green/yellow	2
⏚	Bloc cond.protec. cap	16 mm ²	Green/yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 8
Star Cabling 12 kW (3x400 V)



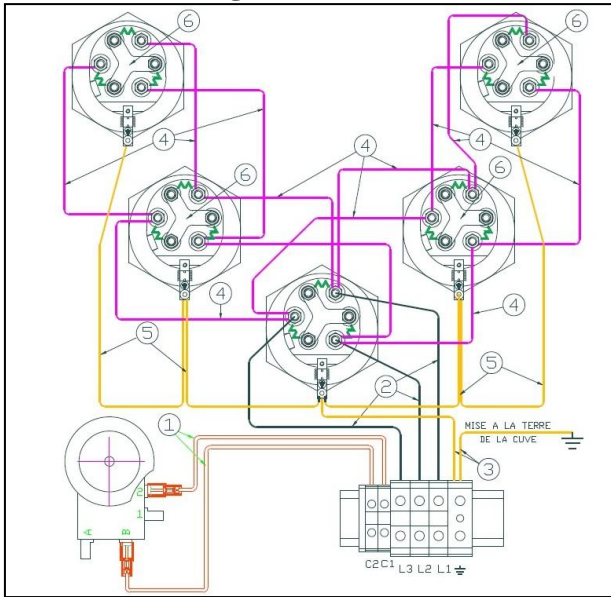
ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/yellow	2
4	Power connection	6 mm ²	Black	9
5	Earth connection	6 mm ²	Green/yellow	3
⏚	Bloc cond.protec. cap	16 mm ²	Green/yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 9
Triangle Cabling 12 kW (3x400 V)



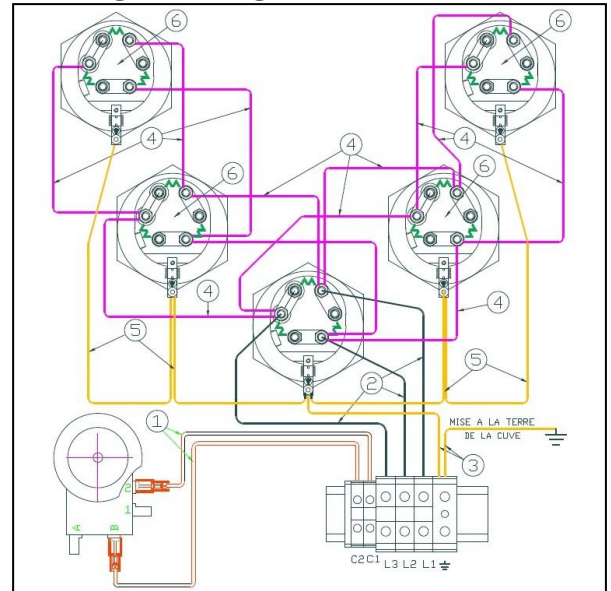
ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/yellow	2
4	Power connection	6 mm ²	Black	9
5	Earth connection	6 mm ²	Green/yellow	3
⏚	Bloc cond.protec. cap	16 mm ²	Green/yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 10
Star Cabling 15 – 30 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/yellow	2
4	Power connection	6 mm ²	Black	12
5	Earth connection	6 mm ²	Green/yellow	4
≡	Bloc cond.protec. cap	16 mm ²	Green/yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	3

Fig N° 11
Triangle Cabling 15 – 30 kW (3x230 V)

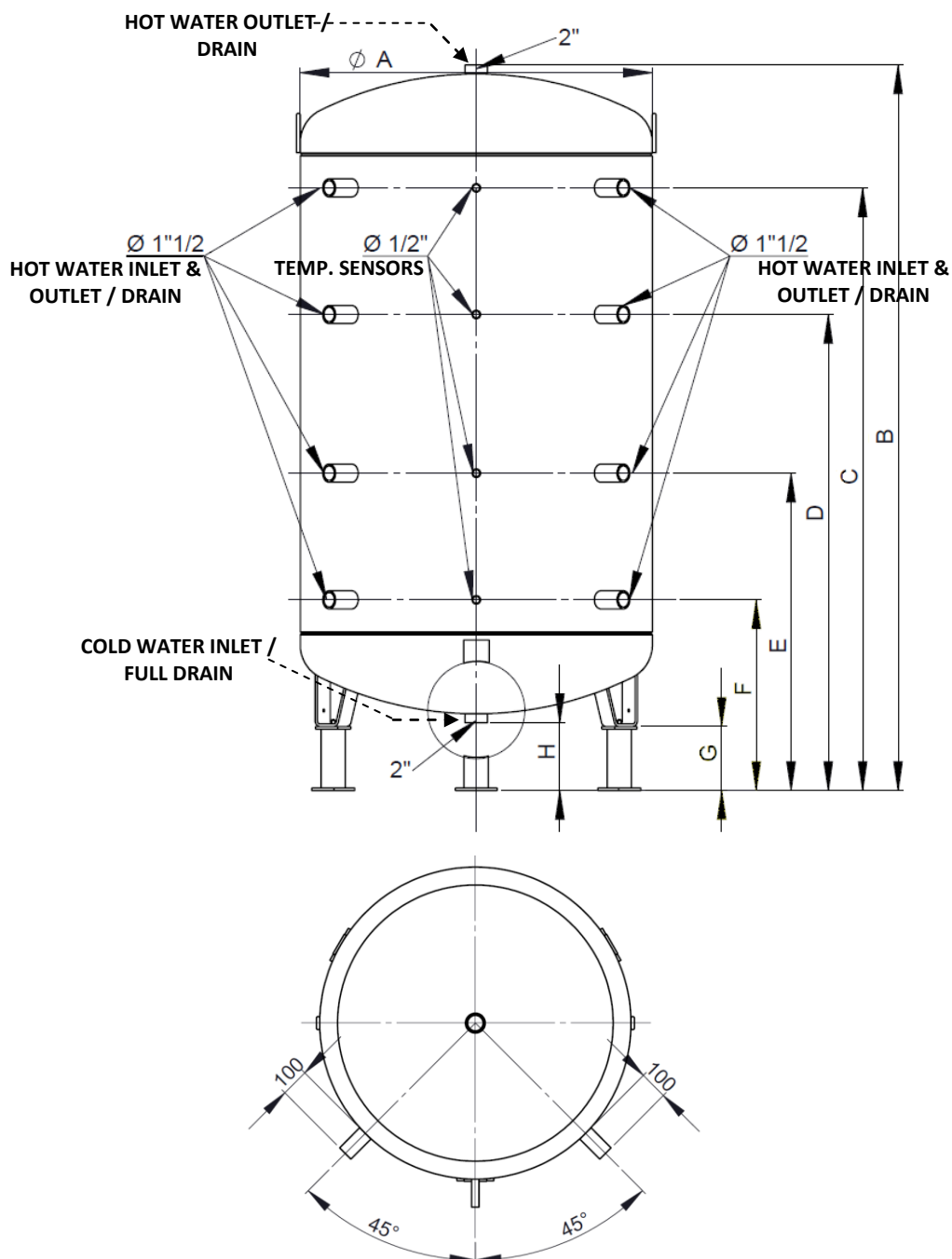


ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5 mm ²	Red	2
2	Power	10 mm ²	Black	3
3	Earth	10 mm ²	Green/yellow	2
4	Power connection	6 mm ²	Black	6
5	Earth connection	6 mm ²	Green/yellow	2
≡	Bloc cond.protec. cap	16 mm ²	Green/yellow	1
L	Unit block 1 jonc	16 mm ²	Grey	3
C	Unit block 1 jonc	5-6 mm ²	Grey	2

8. PUFFER RANGE

This is a carbon steel tank designed for the **storage of water for primary network** (*Operating pressure max : 5bar*).

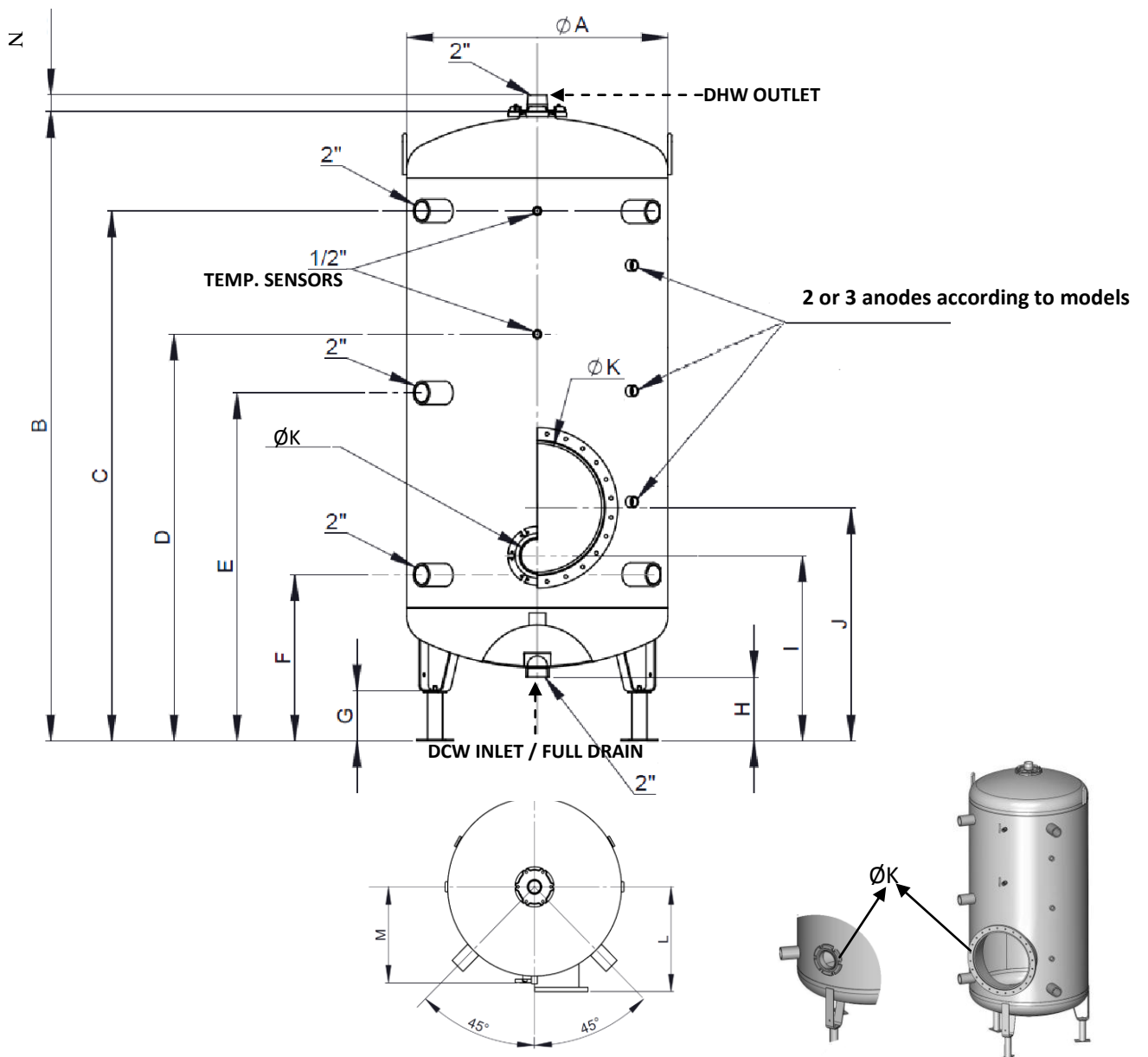
LITRES	Ø A (mm)	ELEVATION (mm)							WEIGHT WITH INSULATION (kg)
		B	C	D	E	F	G	H	
300	630	1409	1145	920	688	472	150	204	85
500	630	2005	1752	1322	893	472	150	204	112
750	790	1906	1601	1246	861	501	150	196	157
1000	790	2259	1956	1471	936	501	150	196	192
1500	1100	2085	1700	1334	967	600	200	221	314
2000	1100	2274	1888	1458	1029	600	200	221	330
2500	1400	2148	1679	1349	1010	670	200	215	516
3000	1400	2275	1808	1432	1056	670	200	215	536



9. DOMESTIC HOT WATER STORAGE RANGE

This is an **enamelled tank** designed for the storage of Domestic Hot Water (*Operating pressure max : 7bar*).

LITRES	Ø A (mm)	ELEVATION (mm)													WEIGHT WITH INSULATION (kg)
		B	C	D	E	F	G	H	I	J	K	L	M	N	
300	630	1386	1155	807	807	472	150	204	525	-	110	-	330	36	85
500	630	1983	1752	1494	1108	472	150	204	525	-	110	-	330	36	124
750	790	1891	1601	1246	1051	501	150	196	551	704	110 or 400	465	425	34	195/231
1000	790	2244	1956	1471	1246	501	150	196	551	704	110 or 400	465	425	34	247/283
1500	1100	2073	1700	1380	1140	600	200	221	650	803	110 or 400	620	580	32	365/406
2000	1100	2261	1888	1500	1244	600	200	221	650	803	110 or 400	620	580	32	394/430
2500	1400	2136	1680	1350	1180	680	200	216	730	883	110 or 400	730	730	31	517/559
3000	1400	2263	1808	1430	1250	680	200	216	730	883	110 or 400	730	730	31	544/586

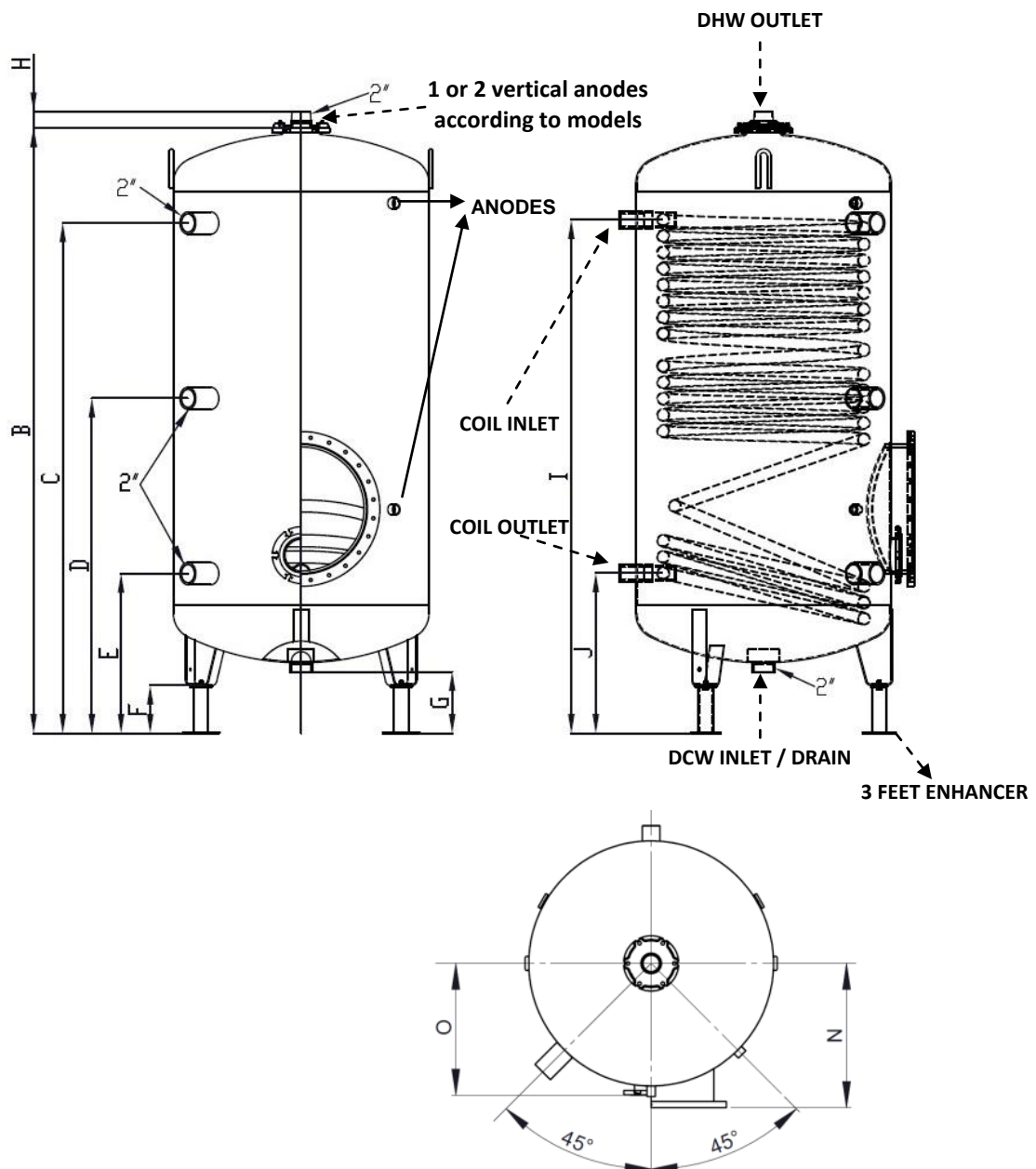


Important : For the tank of 2500 and 3000L there are 3 side connections extenders in stainless steel. These pieces are into the box of feet enhancers.

11. HEAT PUMP COIL RANGE

This is an **enamelled tank with single exchanger** designed for the production of Domestic Hot Water from a heating application such as **boiler, Heat Pump or solar panels** (*Operating pressure max : 7bar*).

(L)	Ø A (mm)	ELEVATION (mm)											EXCHANGE SURFACE (m ²)	WEIGHT WITH INSULATION (kg)
		B	C	D	E	F	G	H	I	J	K	L		
500	630	1983	1752	1108	472	150	204	36	1390	472	-	330	5,5	253
750	790	1891	1601	1051	501	150	196	34	1611	501	465	425	7	334/370
1000	790	2244	1956	1246	501	150	196	34	1713	501	465	425	8	366/402
1500	1100	2073	1700	1150	600	200	221	32	1569	600	620	580	9	470/512
2000	1100	2261	1888	1244	600	200	221	32	1671	600	620	580	10	510/554

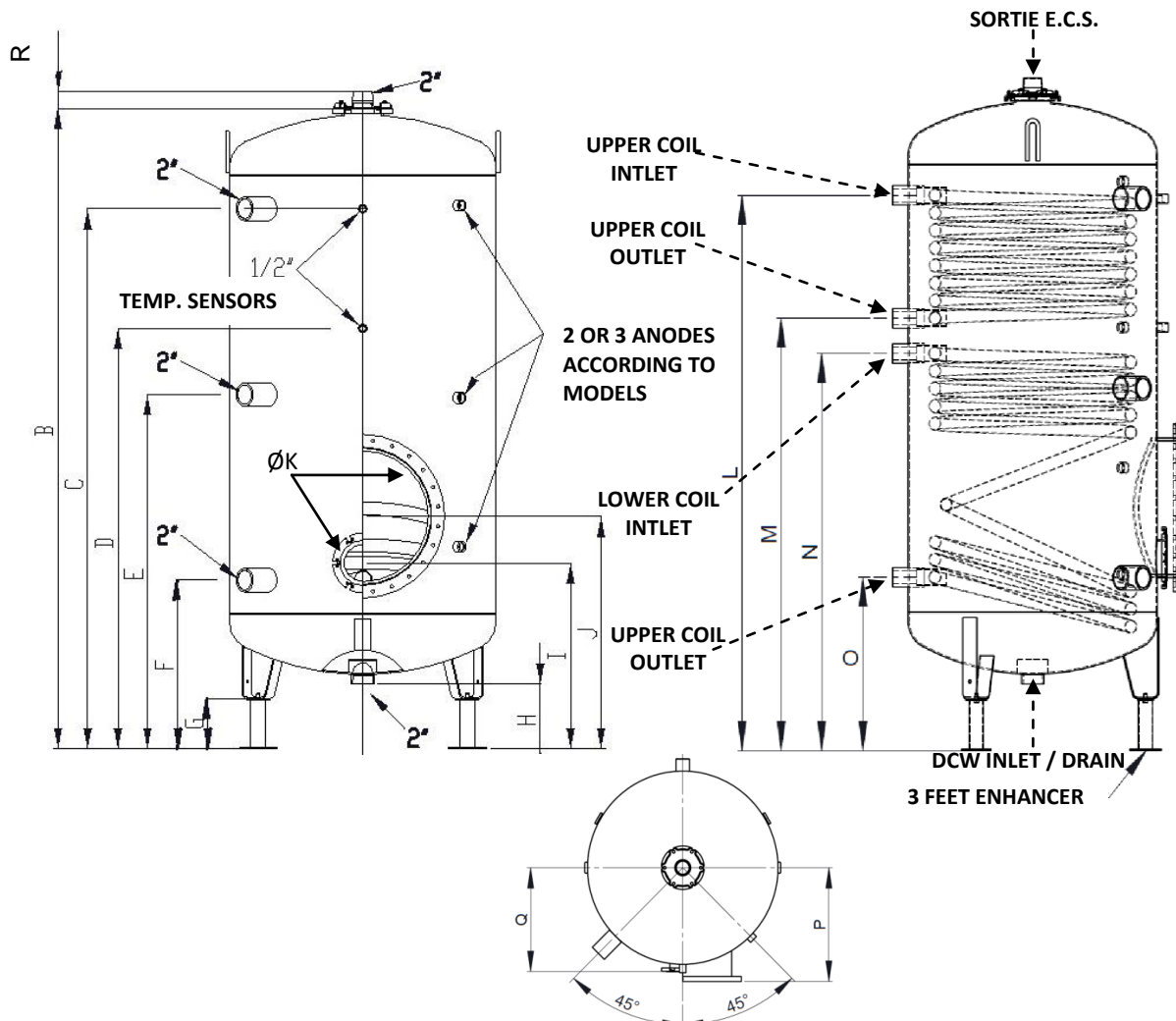


This range is fitted with both vertical anodes on the upper flange and horizontal anodes.

12. DOUBLE COIL RANGE

This is an **enamelled tank with double exchanger** designed for the production of Domestic Hot Water from twin applications such as **boiler, PAC and solar panels** (*Operating pressure max : 7bar*).

(L)	Ø A (mm)	ELEVATION (mm)										EXCHANGE SURFACE (m ²)						Weight (kg)				
		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q		R	Upp. Coil.	Low. Coil.TP Ø 110	Low. Coil TH Ø 400
300	630	1386	1155	806	807	472	150	204	525	-	110	1033	880	778	472	-	330	36	0.6	1.2	-	139
500	630	1983	1752	1494	1108	472	150	204	525	-	110	1390	1033	931	472	-	330	36	1.4	1.6	-	176
750	790	1891	1601	1246	1051	501	150	196	551	704	110 or 400	1623	1266	1164	501	465	425	34	1,7	2	2	295
1000	790	2244	1956	1471	1246	501	150	196	551	704	110 or 400	1674	1317	1215	501	465	425	34	1,7	3,2	2,4	317/345
1500	1100	2073	1700	1380	1150	600	200	221	650	803	110 or 400	1695	1722	1467	600	620	580	32	1,8	3,6	3,6	460/502
2000	1100	2261	1888	1500	1244	600	200	221	650	803	110 or 400	1824	1467	1365	600	620	580	32	2,5	5	3,6	491/533
2500	1400	2136	1680	1350	1180	680	200	216	730	883	110 or 400	1689	1434	1332	680	730	730	31	2,4	5,7	4,8	638/680
3000	1400	2263	1808	1430	1250	680	200	216	730	883	110 or 400	1689	1434	1332	680	730	730	31	2,4	5,7	4,8	660/702



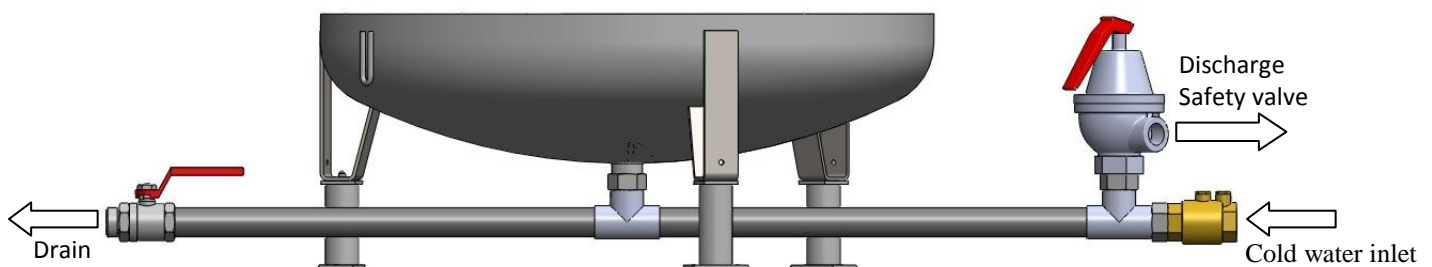
Important : For the tank of 2500 and 3000L there are 3 side connections extenders in stainless steel. These pieces are into the box of feet enhancers.

This range is fitted with both vertical anodes on the upper flange and horizontal anodes.

13. INSTALLATION OF HYDRAULIC ACCESSORIES

- Installation of upper flange using 6 M10 bolts and seal.
The Flange, Seal and Screws assembly is provided in a box inside the electrical kits or fixed to the pallet.
- The drain in the lower part is connected to the cold water (see diagram of hydraulic installation and dimensions).
- Connection coils to the left on the lateral part.
(If sleeves: Need to fit a coil)
(Do not connect anything to these coils before installing the insulation)

ASSEMBLY DIAGRAM OF THE HYDRAULIC KIT
(provided as Option)



IMPORTANT

Every installation **MUST** comprise a correctly sized hydraulic safety device against:

- **Overpressure in the distribution network.**
- **Overpressure due to temperature rises (expansion during heating).**
- **Overpressure due to failure of a thermostat or a contact switch.**

The sizing of a hydraulic safety device varies according to:

- **the capacity of the appliance,**
- **the power of the appliance installed.**

Capacity in litres	500	750	1000	1500	2000	2500	3000
Ø of connections	1"1/2	1"1/2	1"1/2	2"	2"	2"	2"

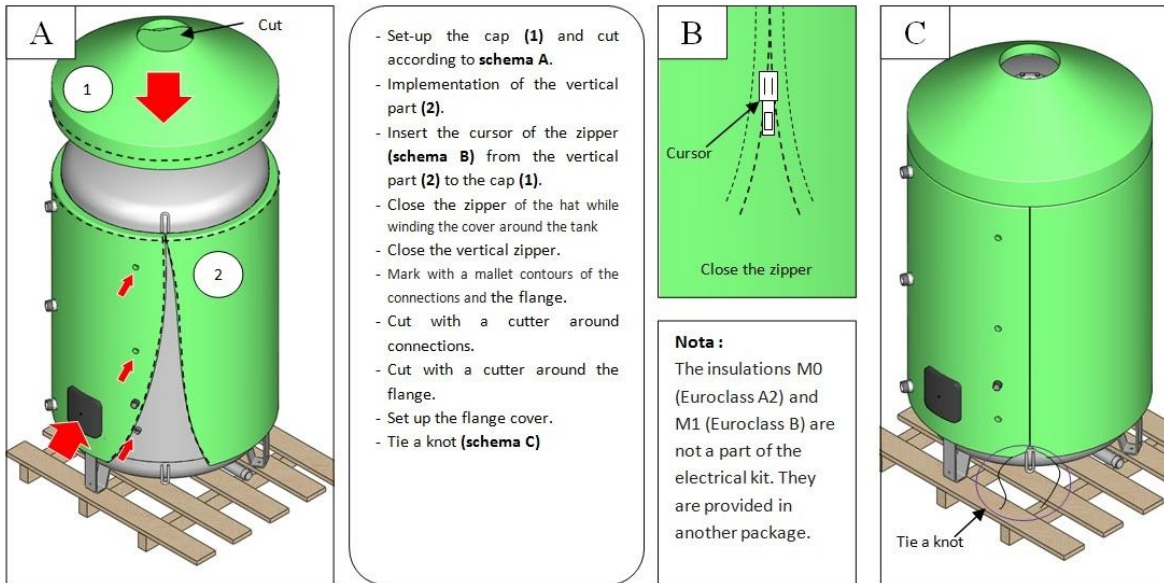
A hot water expansion vessel and a anti hammer can also be connected to protect the entire installation. The implementation of these devices will take into account regulatory recommendations and those of their manufacturers

In the event of installation of battery appliances, it is imperative to install a safety valve specific to each appliance.

Safety units for the whole range (as option) to be installed on each appliance. These valves must be calibrated at 7 bar maximum and comply with NF.

14. INSTALLATION OF THE INSULATION

A – INSTALLATION OF SOFT INSULATION M1 – EUROCLASS B

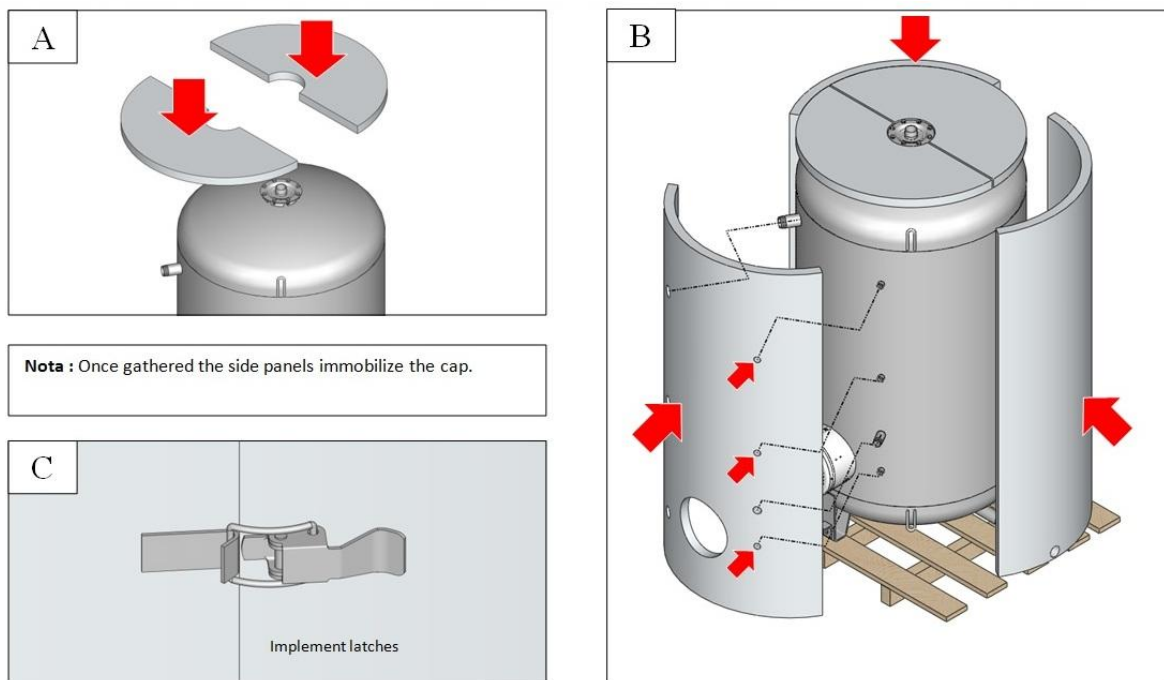


B - INSTALLATION OF SOFT INSULATION M0 – EUROCLASS A2

Unpack the shells, place them near the water heater.

Install panels A&B (or +) closed to the tank, rests on the upper bottom.

Close latches C.



15. COMMISSIONING

VERY IMPORTANT

15-1 CHECK THAT THE TANK IS FULL OF WATER

To do this:

- Fill the water heater (by opening the water inlet valve and a hot water supply tap to evacuate the air from the tank).
- The water heater is full when the water flows normally at this tap.

NB The appliance must never be connected to the mains when it is empty; the electrical components (if existing) may become damaged.

15-2 CHECK:

- That the connections are suitable for the specifications of the current distributed and the heating components.
- That all connection terminals are securely tightened.
- That the element or the thermostat is not short circuited.
- The free flow of the safety valve(s) and their correct sizing.
- The good watertightness of the seals, the flange and any electrical components.

15-3 CONNECTING TO THE MAINS

Connect to the mains and monitor the first rise in temperature in order to check the thermostat cuts in properly.

15-4 WATERTIGHTNESS

After a few days of operation, check that all seals are watertight.

16. SHUTDOWN OF THE SYSTEM

NORMAL (less than 3 months, no risk of frost)

- Shut off the power to the water heater.
- Close the cold water inlet.

PROLONGED (over 3 months)

- Shut off the power to the water heater.
- Drain the appliance: Close the cold water shutdown tap
 Open a tap on the hot water circuit
 Open the drain valve.

17. USER RECOMMENDATIONS

With regard to the water temperature:

The distribution temperature of 65 °C is the ideal temperature for most needs. However, in the event of hard water the water temperature must be below 60 °C to limit the scaling of the heating elements.

In the event of boiling in a water heater and emission of steam jets at the supply taps, immediately switch off the power, open a hot water tap and notify your installer.

To define an average water temperature via the thermostat, refer to the table below. (The temperatures on the table are only guidelines and need to be checked by the user. They cannot be considered as formal and remain dependent on the thermostat).

Thermostat Label	10	9	8	7	6	5	4
Temperature	75	68	60	50	45	40	35

With regard to the expansion of the water volume in the tank:

Normal dripping of water occurs upon each heating by the safety unit. This normal phenomenon is inevitable following expansion of the heated water.

REMINDER: It is essential to connect the system or the valve to a visible permanent discharge.

Quality of the water:

In order to ensure a maximum “life expectancy” of your water heater and benefit from the warranty, certain rules must be respected:

- ➔ Hard water: provide an effective anti-scale device
- ➔ Soft water: Have:
 - a TH between 12 and 30° F,
 - a pH between 6.8 and 7.3
 - resistance between 2200 and 4500 ohm/cm.

NB:	Our warranty will not apply if, in the event of incident, these instructions have been neglected or if the water quality does not allow correct treatment within the framework of the legislation.
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SWITCH OFF THE ELECTRICAL SUPPLY BEFORE ANY WORK ON THE APPLIANCE

The frequency of interventions depends on the quality of the water stored and the output. However, it is recommended to check the condition of the heating elements and the inside of the tank twice a year. These water heaters have an enamelled internal coating. This protection is completed with two or three magnesium anodes accessible from the front. Check the anodes three months after filling.

These anodes will wear according to the quality and consumption of water and its temperature. The anodes must be checked regularly and replaced when their diameter is below 10 mm.

The internal corrosion protection warranty shall only apply if the anodes have been checked and changed at the appropriate times.

Nevertheless, for soft water and for regions where the water is very aggressive or acidic, it is essential to have the water neutralised with an appropriate treatment. Failure to observe this rule will invalidate the warranty (see Water Quality chapter).

Monthly operation

- Check the correct operation of the safety valve (or safety unit) by manoeuvring the lever that lifts the heating reset flap valve, to check that the water is expanding normally. A slight drip may manifest during operation of the appliance.

Carry out “shunts” via the quick drain valve to eliminate any sludge stagnating at the bottom of the tank.

Half-yearly operation

- Dismantle the heating elements (resistances and sheath) and clean them carefully of any deposit.

Descaling

- In regions where the water is rich in calcium, it is recommended to frequently check the inside of the tank and remove the scale with a water jet.
- If the tank is too scaled, carry out chemical descaling.
- As this operation is tricky, you are strongly advised to use a specialised company.

Important note:

Before reassembling each element comprising a seal, change the seals.

Annual operation (mandatory)

- Disassemble the flange and the heating elements (resistances and sheath)
- Check the inside of the tank; descale if necessary
- Change the seal
- Dismantle the heating elements (resistances and sheath) and clean them carefully of any deposit.
- As this operation is tricky, you are strongly advised to use a specialised company.

Our warranty will not apply if, in the event of incident, this operation has been neglected.

19. TROUBLESHOOTING

This appliance has been designed to give you full satisfaction. However, here are a few examples of possible malfunctions and the related solutions.

SWITCH OFF THE POWER BEFORE ANY INTERVENTION ON THE APPLIANCE

➔ No hot water at all

a) The appliance has not yet worked:

- First check that the safety thermostat is not activated. Press the black button on the outside of the unit to reset it. Incident often caused by transport.
- Check, using a voltmeter, that the current is reaching:
 - 1 - the thermostat, otherwise check the circuit breaker, the fuses, the EDF meter or any other remote control programmed to "STOP".
 - 2 - the switch, otherwise check the thermostat and its adjustment, which may be too low.
 - 3 - the resistances, otherwise check that the switch is not abnormally stuck in the open position.
 - 4 - check:
 - ↳ the connection of each resistance
 - ↳ that it corresponds to the type of current
 - ↳ the cabling diagram of the instructions.
 - 5 - Lastly, replace the resistances

b) The appliance has worked before:

If the safety device is not at issue, check the power supply with a voltmeter, in the order of points 1 to 5 above.

→ **Insufficient hot water**

Check successively:

- the adjustment of the thermostat, and modify it if it is not in the stop position,
- the correct tightening of the connections,
- the power of the resistances on the three phases and the type of current used,
- use an ohmmeter to check for faulty elements whose values are too far from the averages read,
- change the resistances in question.

→ **Evaporation or water much too hot**

Check:

- the condition of the thermostat and its adjustment temperature,
- that the switch is not blocked and that its cutout power is adapted to the power consumed,
- that no remote control is shunting the thermostat.
- descaling of the thermowell of the thermostat

→ **Losses of earth perceived on the taps and pipes**

Check:

- that the appliance and its components are properly connected to earth and that this is effective,
- the tightening of the connections,
- the condition of the components (resistances, thermostat) to detect any accidental earthing.

→ **Water leaks**

A dripping flow in the discharge of the safety valve is normal; it is caused by the expansion of the water in the heating periods.

On an ongoing basis,

- Check the pressure of the cold water; if this is greater than 4 bars, install a pressure reducer upstream of the safety valve.
- Check the hot water and cold water connections and the flange seals. Tighten them or change them.
- Lastly, implicate the tank and contact the supplier.

20. WARRANTY

- **Tank guarantee: 5 years** (*Please refer to our General Conditions of Sale*).
- **Parts guarantee: 2 years** (*Please refer to our General Conditions of Sale*).

In case of trouble or damage, please note the Serial Number of the boiler in all your enquiries. You can find it at the lowest part of the tank (see the picture below).

Then contact your authorized dealer.





ACV International
Oude Vijverweg 6
1653 DWORP
BELGIUM