TECHNICAL MANUAL

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

EN

Document ref.: 428016 02

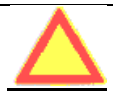
CONTENTS

1.1. General Recommendations

1. **This manual is very important and forms part of the appliance. It must be kept carefully and must be passed on with the appliance if it is transferred to another owner or user and/or to another facility.**
2. **Read the instructions and advice given carefully; they will help you to ensure the safety of installation, use and maintenance of your appliance.**
3. Installation is the responsibility of the purchaser and must be carried out by a professional in the sector in compliance with the instructions in the manual.
4. This appliance must only be used for the purpose for which it is intended. The manufacturer may not under any circumstances be held liable for damages owing to improper, incorrect or unreasonable use or failure to respect the instructions contained in this manual.
5. Installation, maintenance and any other intervention must be carried out by a professional in the sector in compliance with the regulations applicable in the matter and the indications provided by the manufacturer.
6. The manufacturer disclaims any liability in the event of damage suffered by people, animals or property following poor installation of the appliance.
7. Do not leave packaging components (staples, plastic bags, expanded polystyrene, etc.) within the reach of children; they may be dangerous.
8. The appliance **must not** be used by children or inexperienced people.
9. **Do not touch** the appliance with bare feet or if parts of your body are wet.
10. If a repair is needed, contact an approved technician and demand the use of original replacement parts. Failure to respect this instruction may compromise your safety and the manufacturer disclaims all liability.
11. The temperature of the hot water is regulated by an operating thermostat which also serves as reset safety device to avoid dangerous temperature rises.
12. Carry out the electrical connection (if existing) as indicated in the corresponding paragraph.
13. No inflammable object must be placed near to the appliance.

GENERAL SAFETY STANDARDS

Key to symbols:

Symbol	Meaning
	Failure to respect the danger notice may entail risk of injury, even fatal in some cases, for **people**
	Failure to respect the danger notice may harm and damage, seriously in some cases, **objects, plants or animals**
	Obligation to respect the general and special safety standards of the product

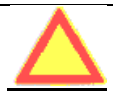
Ref.	Recommendation	Risk	Symbol
1	Do not carry out any operation requiring the appliance to be opened	Electrocution by contact with live components Injuries in the form of burns due to the presence of overheated components or injuries caused by protrusions and sharp edges.	
2	Do not carry out any operation requiring the appliance to be removed	Electrocution by contact with live components	
		Flood due to water escaping from disconnected pipes	
3	Do not use the electrical power cable plug to connect or shut down the appliance	Electrocution caused by poor condition of the cable, the plug or the socket	
4	Do not damage the electrical power cable	Electrocution caused by stripped live wires	
5	Never put objects on the appliance	Injury caused by objects falling owing to vibrations	
		Damage to the appliance or objects placed below caused by the fall of the object owing to vibrations	
6	Do not climb on the appliance	Injury caused by the appliance falling	
		Damage to the appliance or objects placed below by the appliance falling if detached from its brackets	
7	Do not climb on chairs, stools, ladders or unstable supports to clean the appliance	Injury caused by fall from height or by breakage (folding ladder)	

8	Do not carry out any cleaning operation without having first switched off the appliance, disconnected the plug or deactivated the dedicated switch	Electrocution by contact with live components	
9	Install the appliance on a solid wall, not subject to vibrations	Noisy operation	
10	Be careful not to damage the cables or pipes when drilling the wall	Electrocution by contact with live conductors Explosion, fire or intoxication due to gas escaping from damaged pipes	
		Damage to pre-existing facilities Flood due to water escaping from damaged pipes	
11	Protect the pipes and the connecting cables to avoid damage	Electrocution by contact with live conductors	
		Flood due to water escaping from damaged pipes	
12	Check that the part and the facilities to which the appliance will be connected comply with the applicable regulations	Electrocution by contact with improperly installed live conductors	
		Damage to the appliance owing to poor conditions of operation	
13	Use appropriate manual tools and apparatus (check in particular that the tool is not damaged and that its handle is properly fixed), use them correctly and take the necessary precautions to avoid them falling; tidy them away after use	Personal injury caused by projection of splinters or fragments, inhalation of dust, knocks, cuts, scratches, abrasions	
		Damage to the appliance or neighbouring objects by projection of splinters, knocks, scratches	
14	Use appropriate electrical equipment (check in particular that the cable and the electrical plug are in good condition and that rotary or alternative parts are properly fixed), use them correctly, do not obstruct passages by allowing the power cable to hang, fix them to avoid their falling from height, disconnect them and tidy them away after use	Personal injury caused by electrocution, projection of splinters or fragments, inhalation of dust, knocks, cuts, scratches, abrasions, noise, vibrations	
		Damage to the appliance or neighbouring object by projection of splinters, knocks, scratches	
15	Check the stability of portable ladders, their resistance, the good condition of their steps, which must not be slippery, and that a person is ensuring they are not moved when there is somebody on them	Injury caused by fall from height or by breakage (folding ladder)	

16	Ensure that trolley ladders are stable, sufficiently resistant, with steps in good order and not slippery, and that they have handrails along the slope and on the platform	Injury caused by fall from height	
17	Check that in the event of work executed at height (with roughly more than two metres difference in level) a handrail has been provided around the work zone or an individual safety harness to avoid the risk of fall, that in the event of inevitable fall there are no dangerous obstacles and that the impact is softened by semi-rigid or crumple surfaces	Injury caused by fall from height	
18	Check that the workplace has adequate health and hygiene conditions with regard to lighting, ventilation, solidity of structures, emergency exits	Personal injury caused by knocks, slips, wounds	
19	During works, use individual protective clothing and equipment	Personal injury caused by electrocution, projection of splinters or fragments, inhalation of dust, knocks, cuts, scratches, abrasions, noise, vibrations	
20	Operations internal to the appliance must be carried out with as much care as possible to avoid any sudden contact with sharp points	Personal injury following cuts, scratches, abrasions	
21	Do not use insecticides, solvents or aggressive cleaning products to maintain the appliance	Damage to painted or plastic parts	
22	Do not use the appliance other than for usual domestic use	Damage to the appliance owing to operation overload Damage to improperly treated objects	
23	Do not allow children or inexperienced people to use the appliance	Damage to the appliance owing to improper use	
24	For electrical connections, use duly sized conductors	Fire following overheating caused by electrical current passing inside undersized cables	
25	Protect the appliance and the surrounding areas of the workplace with appropriate material	Damage to the appliance or neighbouring objects by projection of splinters, knocks, scratches	
26	Move the appliance with suitable protection and plenty of precaution	Damage to the appliance or neighbouring objects following knocks, impacts, scratches, collapse	
27	Ensure that the storage of the equipment and material makes handling easy and safe, avoid creating piles that risk collapsing	Damage to the appliance or neighbouring objects following knocks, impacts, scratches, crushing	
28	Reset all safety and control functions affected by an intervention on the appliance and ensure their correct operation before restarting	Damage to or breakdown of the appliance following unchecked operation	

SAFETY STANDARDS SPECIFIC TO THE PRODUCT

Key to symbols:

Symbol	Meaning
	Failure to respect the danger notice may entail risk of injury, even fatal in some cases, for **people**
	Failure to respect the danger notice may harm and damage, seriously in some cases, **objects, plants or animals**

1-2 User Recommendation

Before installing the appliance, please read the instructions in this booklet carefully.
Failure to observe these instructions may invalidate the warranty.

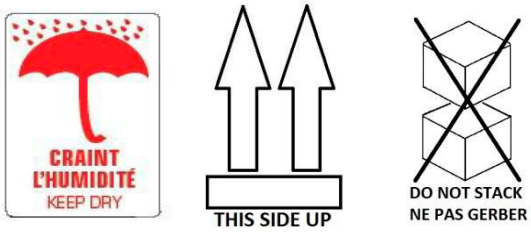
1. Installation of the water heater is the responsibility of the purchaser.
   Commissioning, maintenance operations and repairs may only be carried out by a qualified professional, who must meet the national standards in force.
   All prescriptions relative to water heaters must be complied with.
2. The user is responsible for recycling the appliance at the end of its life.
3. The manufacturer disclaims any liability for any damage caused by an installation not carried out with professional good practice and in failing to respect the prescriptions of the method of use.
4. The electrical connection (where there is one) must be carried out in compliance with the prescriptions featuring in the "electrical connection" section hereunder.
5. To avoid any risk of burn, use appropriate mixers and do not exceed a temperature of over 50°C at the supply points. To avoid the risk of bacterial proliferation, the thermostat must be adjusted to a minimum of 60°C.
6. In the event of prolonged absence of the user (more than one month), close the hydraulic circuits and the electrical supply of the water heater and drain the appliance.
7. In all cases of intervention (installation, setup, maintenance, repair, etc.) call upon a professional.

1-3 Installer Recommendation

The appliance and its safety valve (not delivered by the manufacturer of the water heater) must be installed in premises sheltered from frost and properly ventilated.

To enable maintenance operations, it is imperative to provide a free space of +/- 1.2 m opposite the metal cap enabling access to the electrical components.
It is essential that it is fixed with drainage if the water heater is installed above inhabited premises (attic, for example).

The appliance must never travel horizontally, even for a short distance and on shock absorbing material. The appliance must not under any circumstances have parcels stacked on top. **Failure to respect these recommendations will invalidate the warranty of the appliance.**
This is why the logos below are fixed on the front during its delivery.



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

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Ce produit est conforme à la directive EU 2002/96/EC.

Le symbole "poubelle barré" reporté sur l'appareil indique que le produit, en fin de vie, devant être traité séparément des déchets domestiques, doit être rapporté dans un centre de tri des déchets pour les appareils électriques et électroniques ou alors rapporté au revendeur, le jour de l'achat d'un nouvel appareil équivalent.
L'utilisateur doit s'assurer que l'appareil en fin de vie soit déposé dans un centre de collecte appropriée.
Le tri sélectif, permettant le recyclage de l'appareil en fin de vie, le traitement de celui-ci et l'évacuation respectueux de l'environnement, contribue à éviter les éventuels effets négatifs sur l'environnement, sur la santé e favorise le recyclage des matières qui composent le produit.
Pour en savoir plus sur les centre de collectes des déchets existants, adressez vous au service locale de collecte des déchets, ou auprès du magasin dans lequel vous avez effectué l'achat de votre appareil.

This product complies with EU Directive 2002/96/EC.
The "crossed-out wheeled bin" symbol marked on the appliance indicates that the product, at the end of its life, has to be treated separately from domestic waste and must be taken to an electrical and electronic waste sorting centre or returned to the reseller on the date of purchase of an equivalent new appliance.
The user must check that at the end of its life the appliance is deposited in an appropriate collection centre. Selective sorting, enabling recycling of the appliance at the end of its life, its treatment and its environmentally friendly disposal, contributes to avoiding any negative effects on the environment and on health and encourages recycling of the materials composing the product.
To find out more on existing waste collection centres, contact your local waste collection authority or the store from which you purchased your appliance.

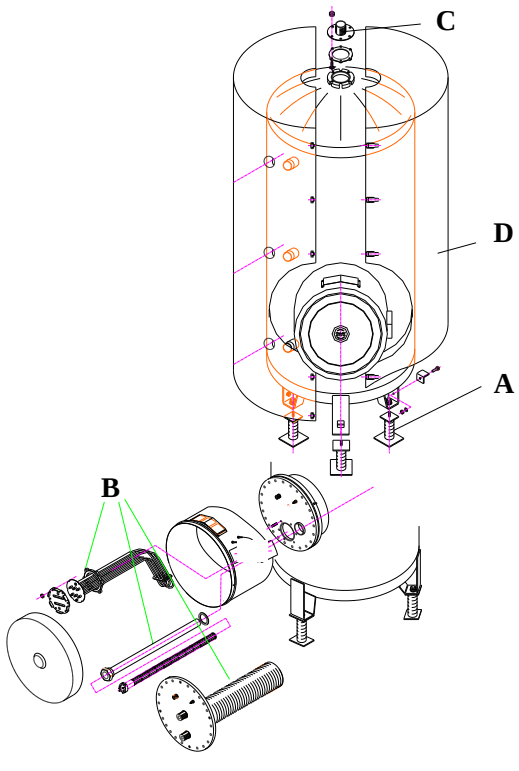
2. INSTALLATION

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)

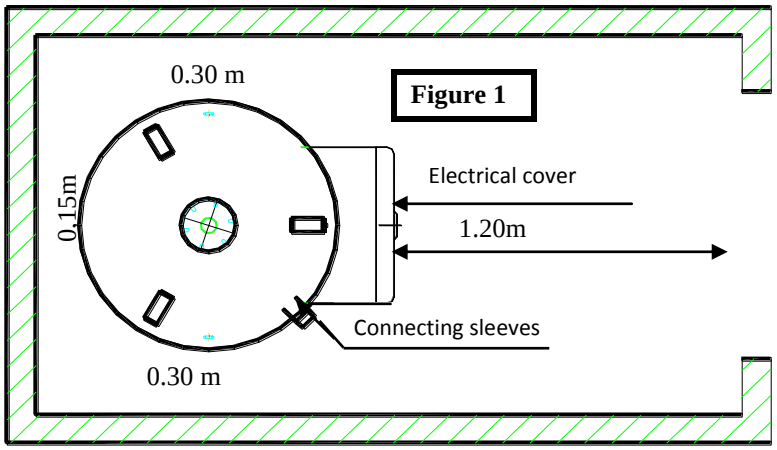
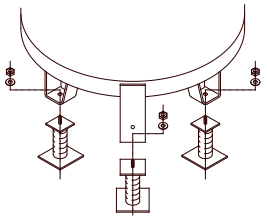


Figure 1

Figure 2



➢ **Installation of raising feet** (using the bolts provided) (Fig 2)

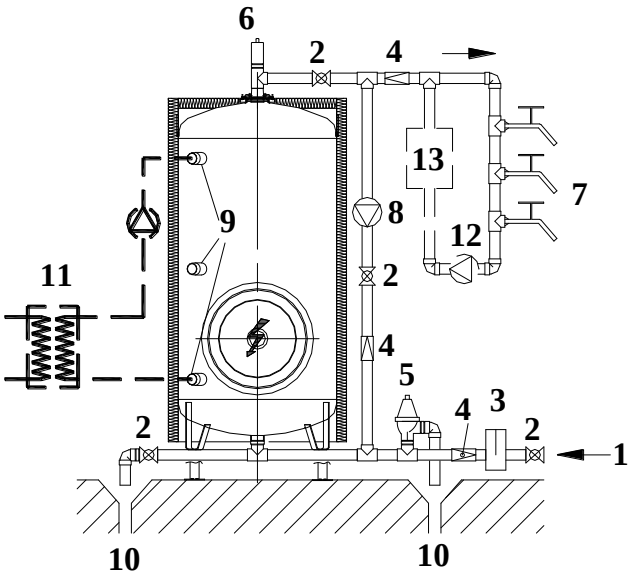
- Either use of the lifting rings of the appliance (at the top of the appliance),
- Or possibility of tilting the appliance (without lying it down), taking care not to put stress on the cylinder of the tank and of course without impact.
  For information **any external marking may entail internal damage 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

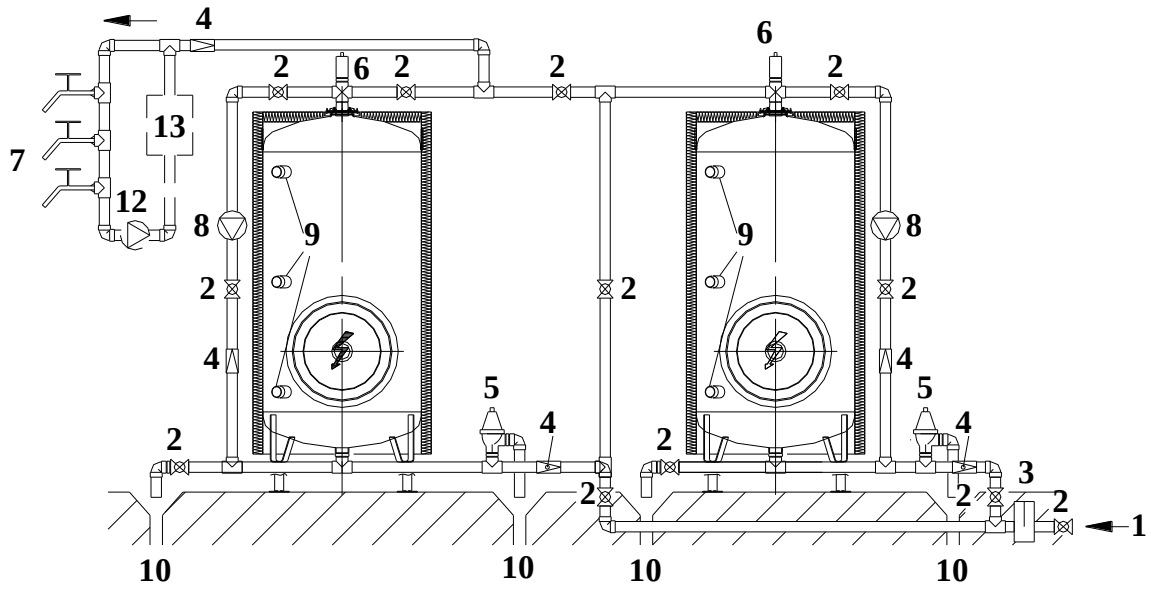


DIAGRAM OF PRINCIPLE WITH TWO WATER HEATERS CONNECTED IN SERIES/PARALLEL

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.

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.

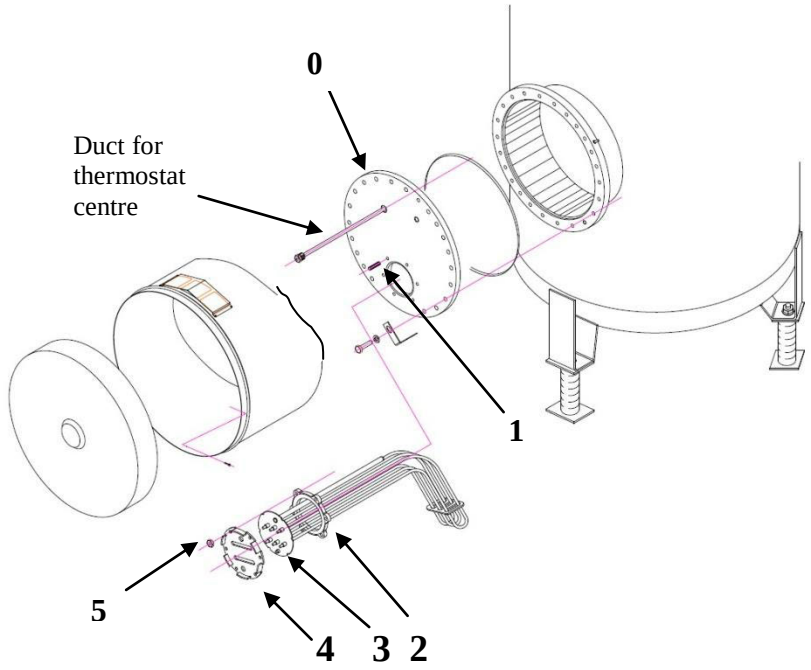
Recommendations for installation:

- The electrical installation must comply with national regulations in force in the country of installation. For France, see standards NF C 732OO 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

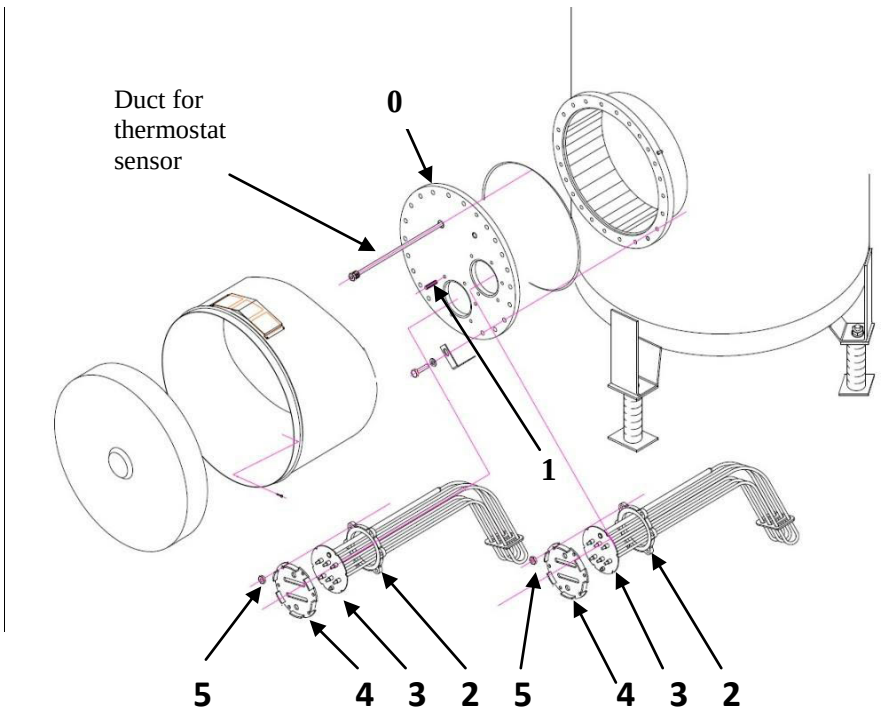


Recommended order of assembly

- **0 -** Assembly of the flange with tightening to 3dN
- **1 -** Installation of M10Pins
- **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

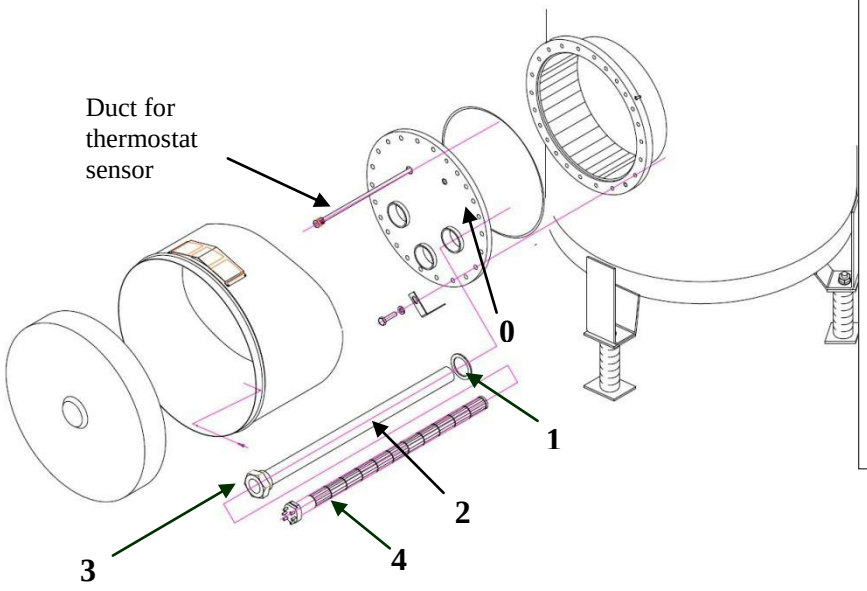


Recommended order of assembly

- **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

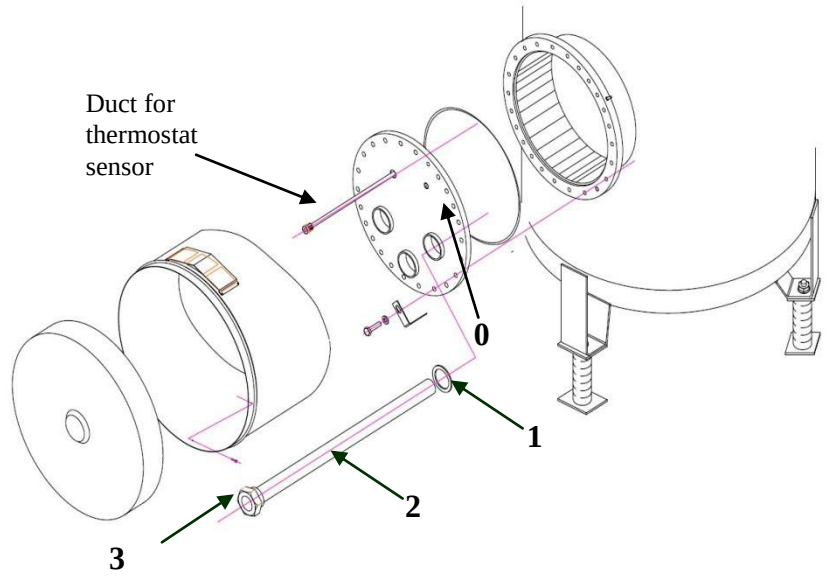


Recommended order of assembly

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

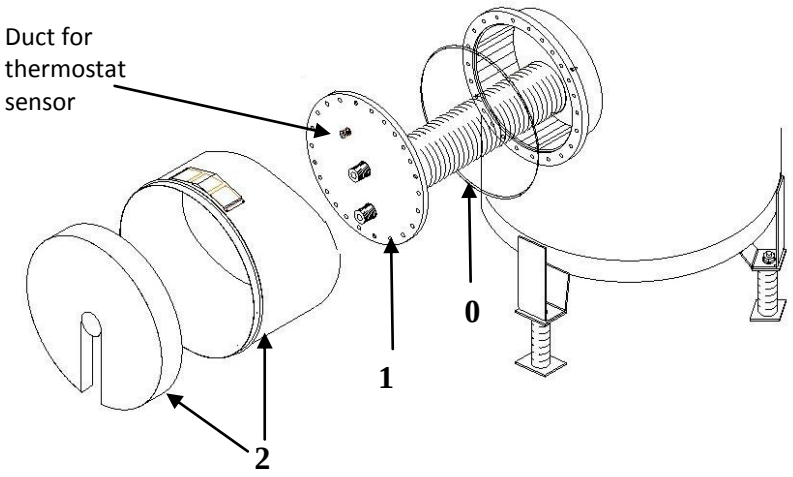


Recommended order of assembly

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)***

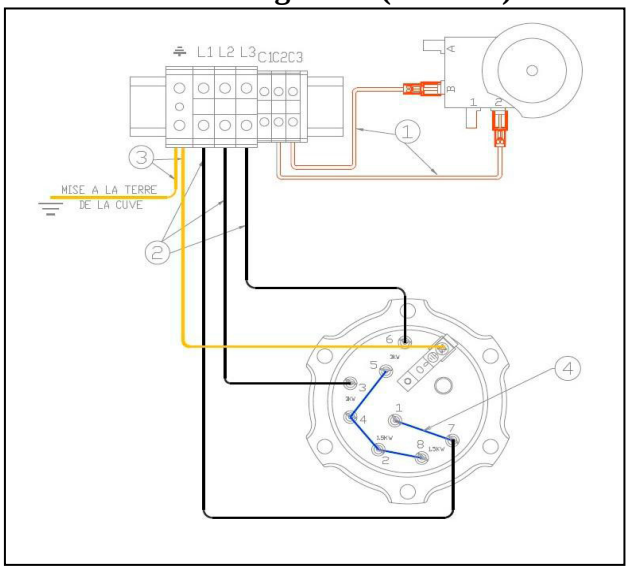
- Enamelled tank of 300 to 3000 litres with lateral flange DN110.
- Enamelled tank of 750 to 3000 litres with lateral flange DN400.
- Flange equipped with immersion resistance, straight (9 kW), bent (15 to 30 kW), directed towards the bottom of the tank, thus avoiding cold zones and the proliferation 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	2h41mm	348	357		5
	60	1h45mm	348	357		5
2000	9	14h56mm	374	383	1	2
	15	9h20mm	374	383		3
	30	4h39mn	374	383		4
	45	3h27mm	377	386		5
	60	2h21mm	377	386		5
2500	9	18h42mm	503	513	1	2
	15	11h40mm	503	513		3
	30	5h49mn	503	513		4
	45	4h25mm	506	516		5
	60	2h57mm	506	516		5
3000	9	22h25mm	541	552	1	2
	15	14h00mm	541	552		3
	30	7h00mn	541	552		4
	45	5h15mm	544	555		5
	60	3h28mm	544	555		5

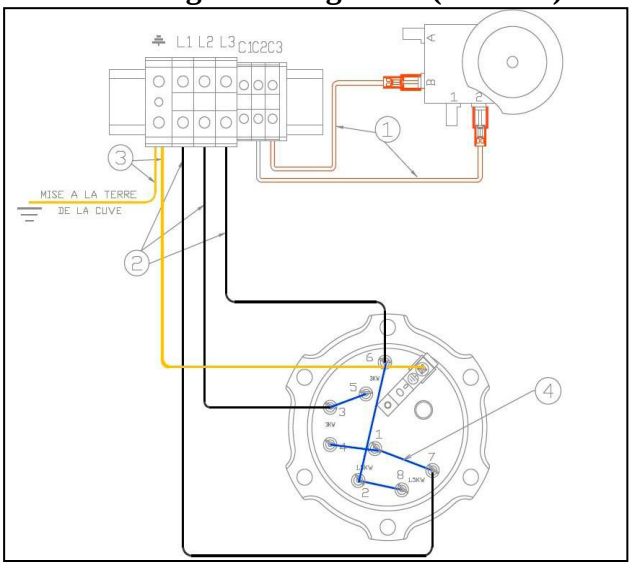
CABLING DIAGRAMS

Fig N° 1
Star Cabling 9 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/Yellow	2
4	Power connection	6 mm²	Black	4
⏚	Bloc cond.protec. cap	25 mm²	Green/Yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

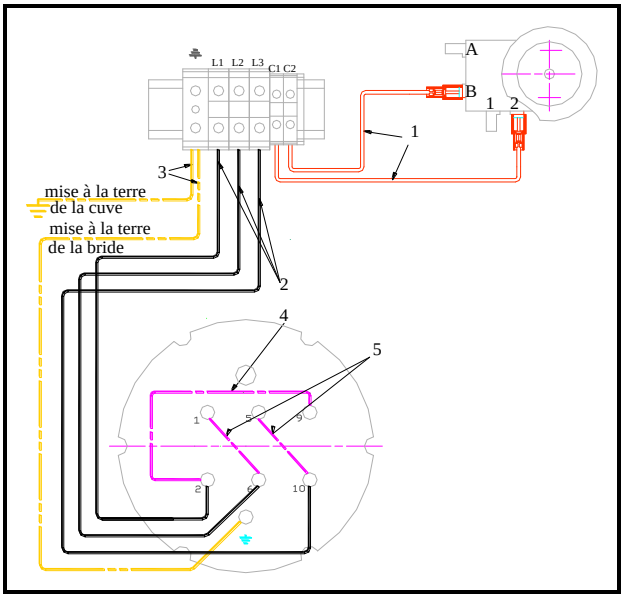
Fig N° 2
Triangle Cabling 9 kW (3x230 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1.5mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/Yellow	2
4	Power connection	6 mm²	Black	5
⏚	Bloc cond.protec. cap	25 mm²	Green/Yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

Fig N° 3

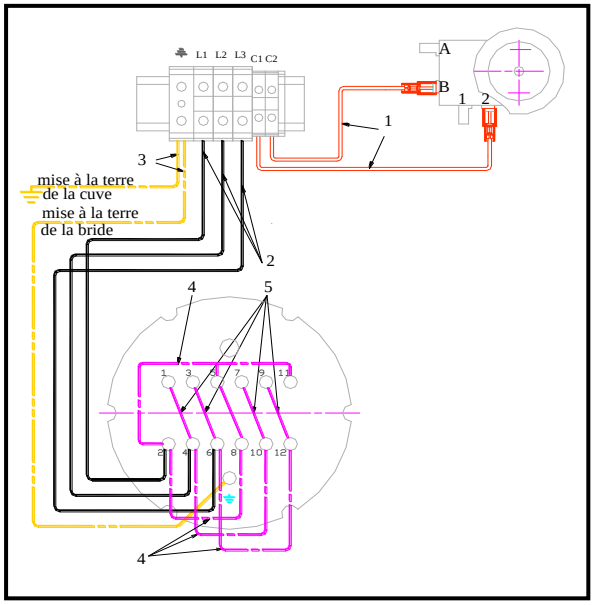
Triangle Cabling 15 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/Yellow	2
4	Power connection	6 mm²	Black	1
5	Power bar	6 mm²	Brass	2
⏚	Bloc cond.protec. cap	25 mm²	Green/Yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

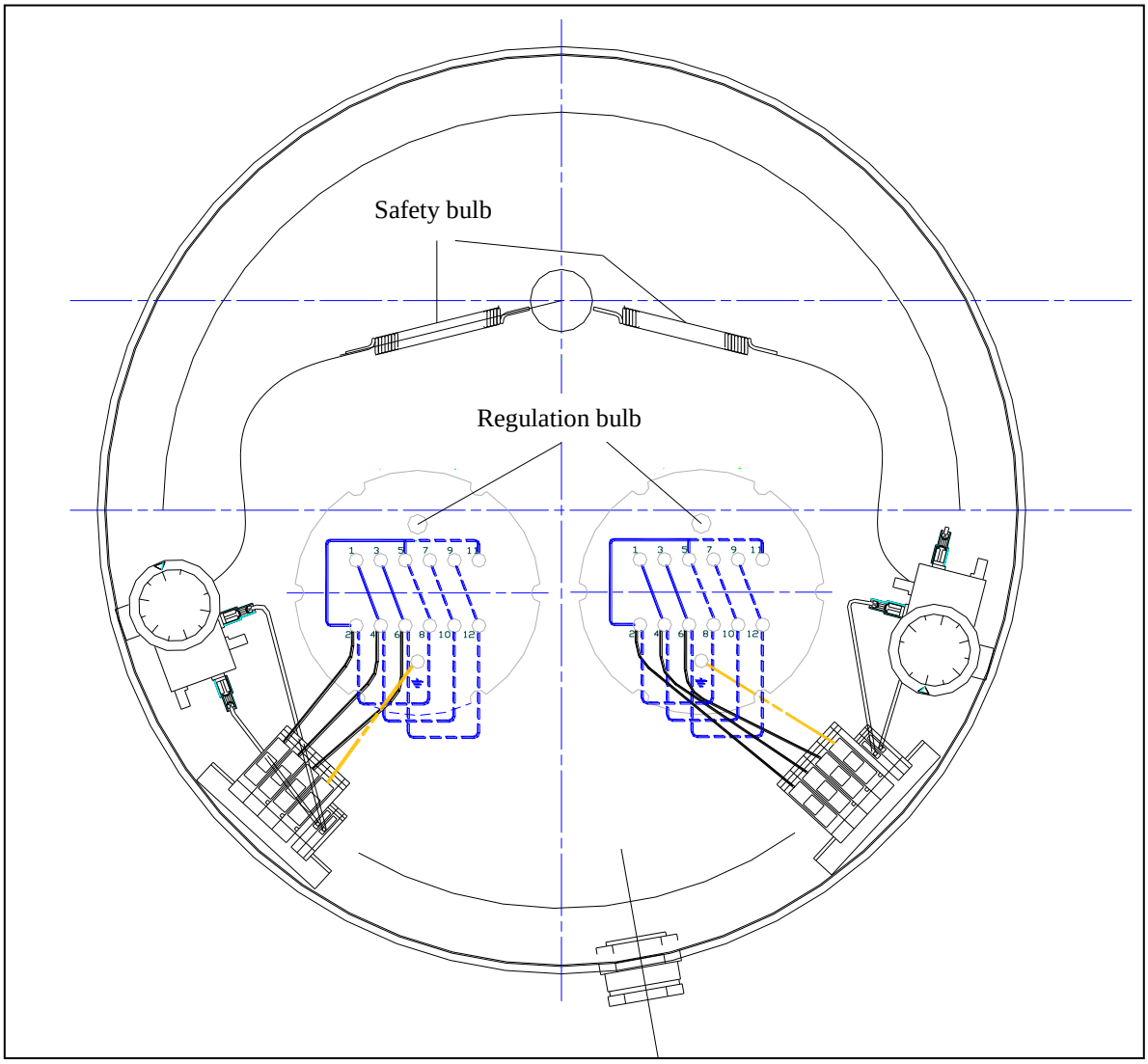
Fig N° 4

Triangle Cabling 30 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/Yellow	2
4	Power connection	6 mm²	Black	4
5	Power bar	6 mm²	Brass	5
⏚	Bloc cond.protec. cap	25 mm²	Green/Yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

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



B - ***Multi steatite resistances***

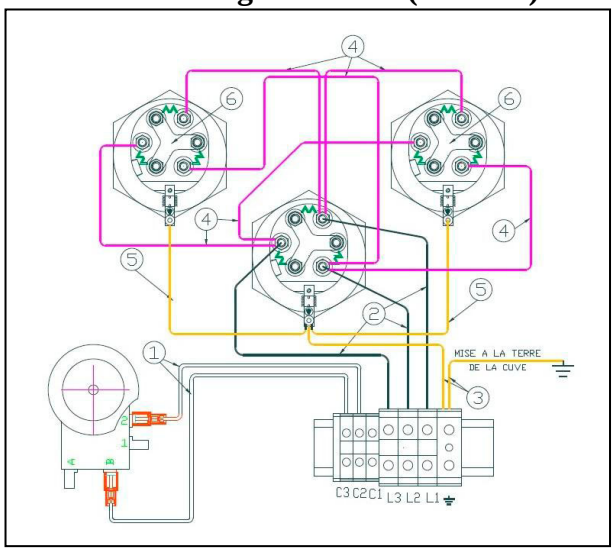
- Enamelled tank of 750 to 3000 litres
- Flange equipped with immersion steatite resistances (from 2 to 5 steatites depending on heating power) directed towards the bottom of the tank, thus avoiding cold zones and the proliferation of bacteria.
- Low charge (5 to 6.5W/cm²) so appliance is at low risk 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	4h25mm	250	258	8	9
	(5x3)	15	3h30mn	260	268	10	11
1000	(3x3)	9	7h27mm	270	278	6	7
	(4X3)	12	5h49mn	280	288	8	9
	(5x3)	15	4h39mn	290	298	10	11
1500	(3x3)	9	11h12mm	350	359	6	7
	(4x3)	12	8h51mm	360	369	8	9
	(5x3)	15	7h00mm	370	379	10	11
	(5x6)	30	3h29mn	370	379	10	11
2000	(3x3)	9	14h56mm	377	686	6	7
	(4x3)	12	11h50mm	387	396	8	9
	(5x3)	15	9h20mm	397	406	10	11
	(5x6)	30	4h39mn	397	406	10	11
2500	(3x3)	9	18h42mm	506	516	6	7
	(4x3)	12	14h45mm	516	526	8	9
	(5x3)	15	11h40mm	526	536	10	11
	(5x6)	30	5h49mn	526	536	10	11
3000	(3x3)	9	22h25mm	544	555	6	7
	(4x3)	12	17h42mm	554	565	8	9
	(5x3)	15	14h00mm	564	575	10	11
	(5x6)	30	7h00mn	564	575	10	11

CABLING DIAGRAMS

Fig N° 6

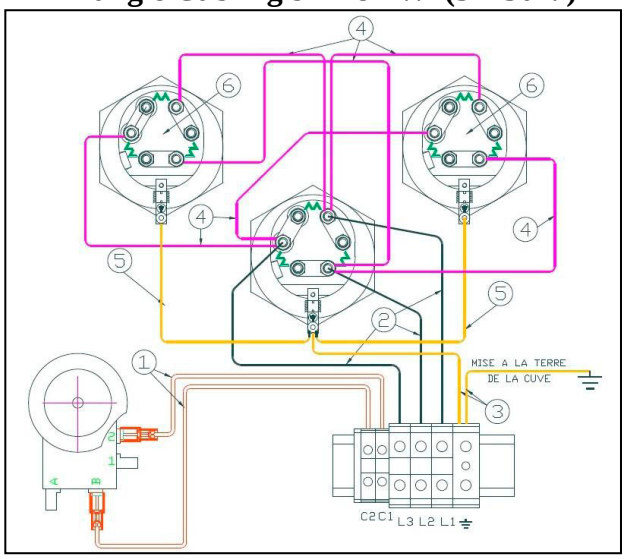
Star Cabling 9 – 18 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/yellow	2
4	Power connection	6 mm²	Black	6
5	Earth connection	6 mm²	Green/yellow	2
⏚	Bloc cond.protec. cap	25 mm²	Green/yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

Fig N° 7

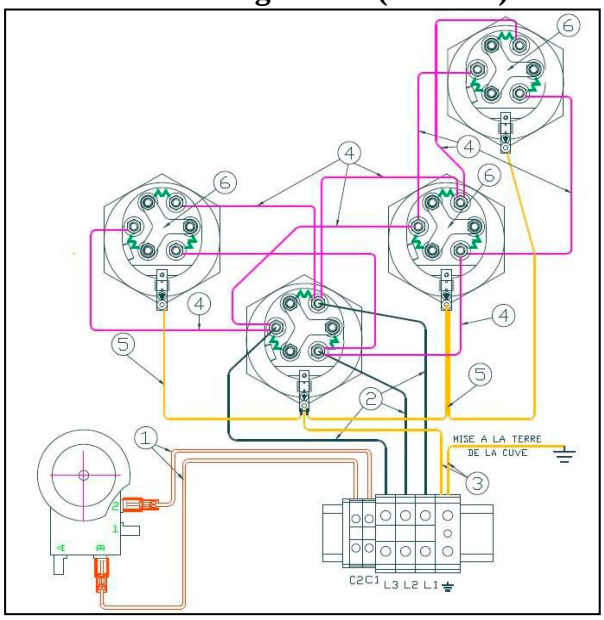
Triangle Cabling 9 – 18 kW (3x230 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/yellow	2
4	Power connection	6 mm²	Black	6
5	Earth connection	6 mm²	Green/yellow	2
⏚	Bloc cond.protec. cap	25 mm²	Green/yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

Fig N° 8

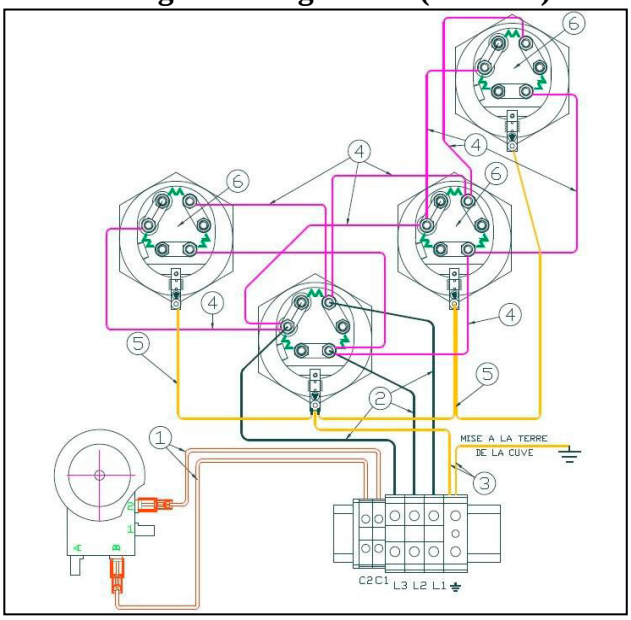
Star Cabling 12 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/yellow	2
4	Power connection	6 mm²	Black	9
5	Earth connection	6 mm²	Green/yellow	3
⏚	Bloc cond.protec. cap	25 mm²	Green/yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

Fig N° 9

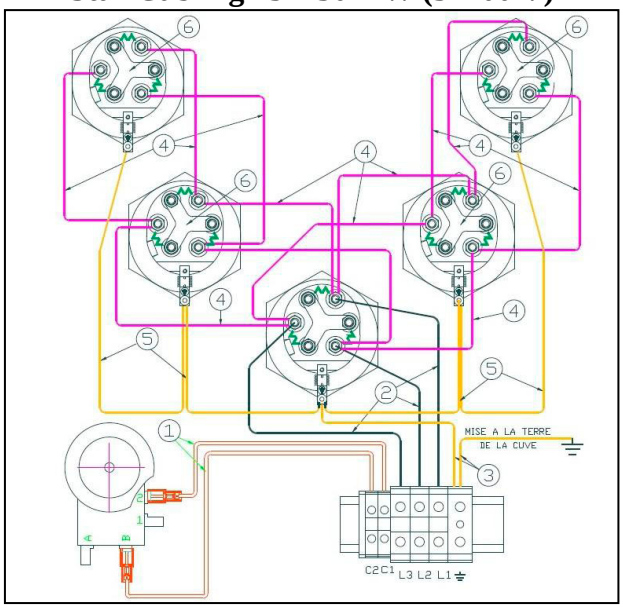
Triangle Cabling 12 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/yellow	2
4	Power connection	6 mm²	Black	9
5	Earth connection	6 mm²	Green/yellow	3
⏚	Bloc cond.protec. cap	25 mm²	Green/yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

Fig N° 10

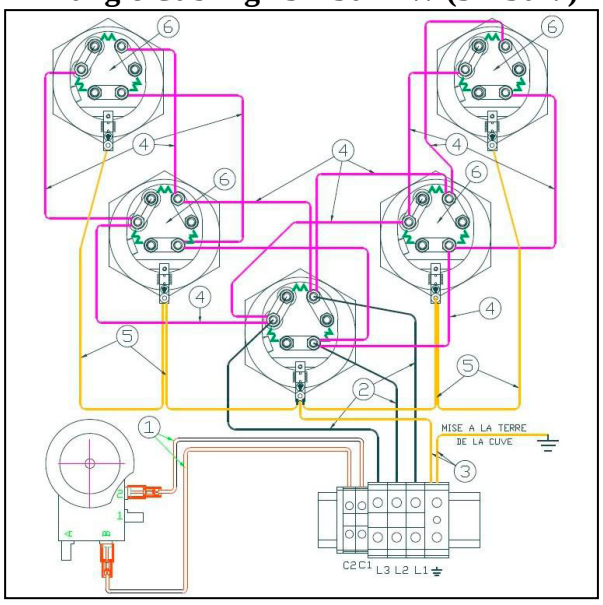
Star Cabling 15 – 30 kW (3x400 V)



ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/yellow	2
4	Power connection	6 mm²	Black	12
5	Earth connection	6 mm²	Green/yellow	4
⏚	Bloc cond.protec. cap	25 mm²	Green/yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	3

Fig N° 11

Triangle Cabling 15 – 30 kW (3x230 V)

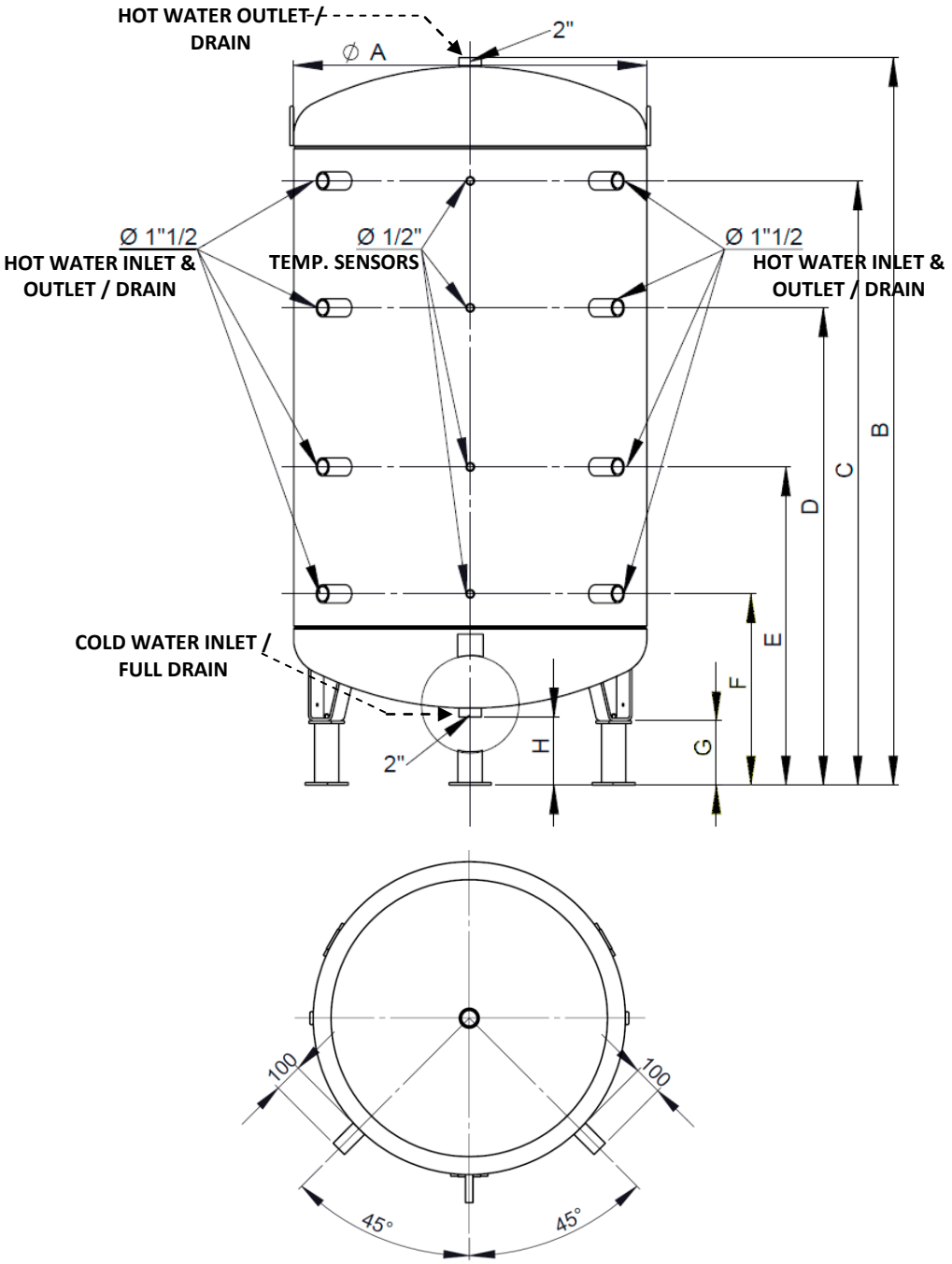


ID	TYPE	SECTION	COLOUR	QTY
1	Control	1..5 mm²	Red	2
2	Power	10 mm²	Black	3
3	Earth	10 mm²	Green/yellow	2
4	Power connection	6 mm²	Black	6
5	Earth connection	6 mm²	Green/yellow	2
⏚	Bloc cond.protec. cap	25 mm²	Green/yellow	1
L	Unit block 1 jonc	25 mm²	Grey	3
C	Unit block 1 jonc	5-6 mm²	Grey	2

8. PUFFER RANGE

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

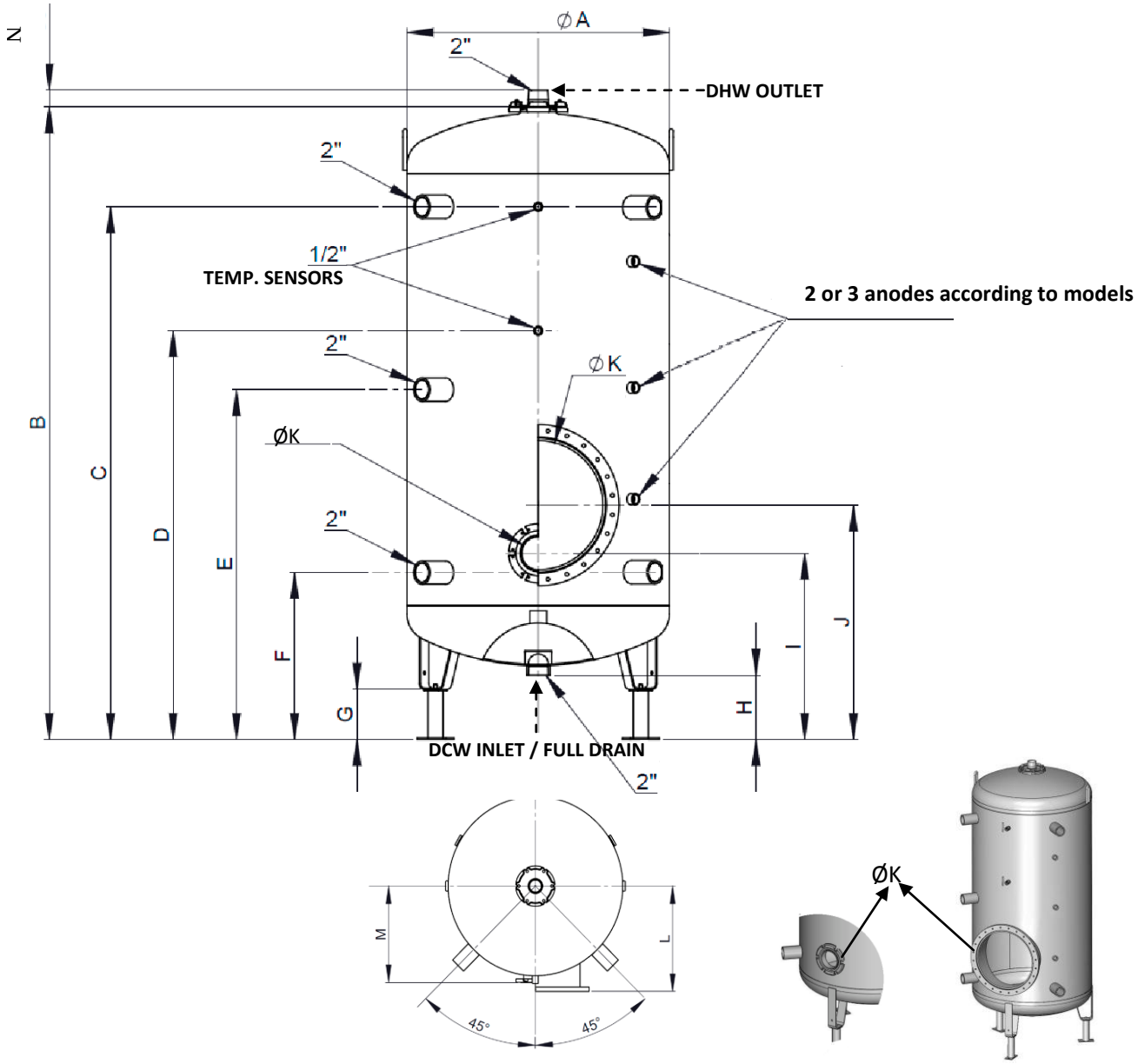
LITRES	Ø A (mm)	ELEVATION (mm)							WEIGHT WITH INSULATION (kg)
		B	C	D	E	F	G	H	
300	630	1409	1145	920	688	472	150	204	85
500	630	2005	1752	1322	893	472	150	204	112
750	790	1906	1601	1246	861	501	150	196	157
1000	790	2259	1956	1471	936	501	150	196	192
1500	1100	2085	1700	1334	967	600	200	221	314
2000	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

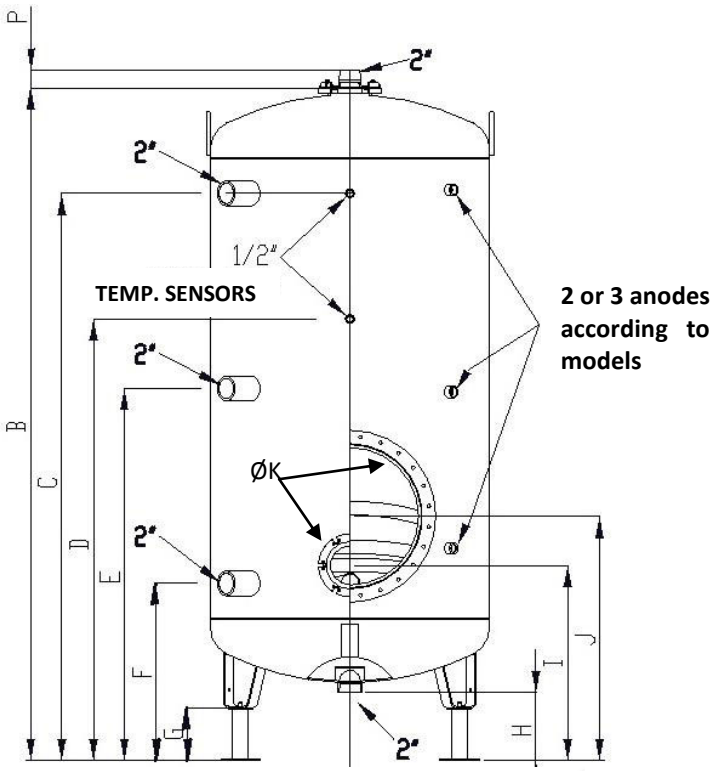


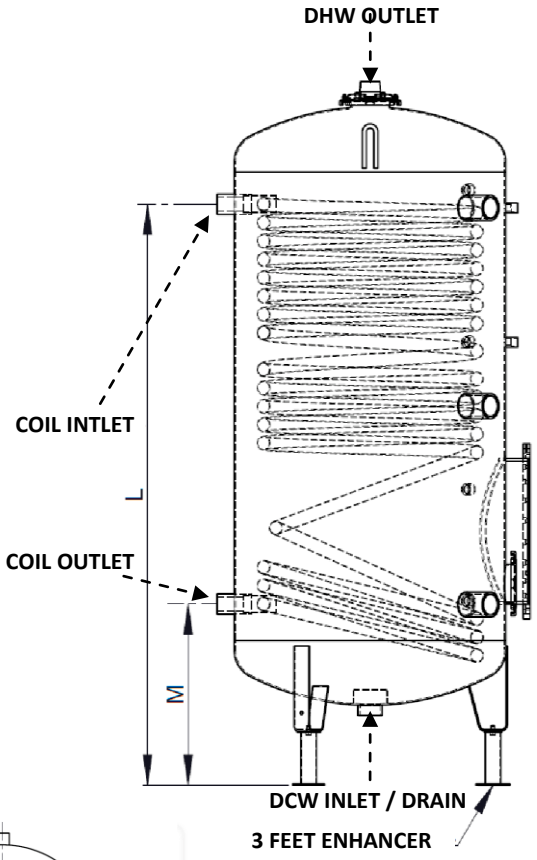
Important : For the tank of 2500 and 3000L there are 3 side connections extenders in stainless steel. These pieces are into the box of feet enhancers.

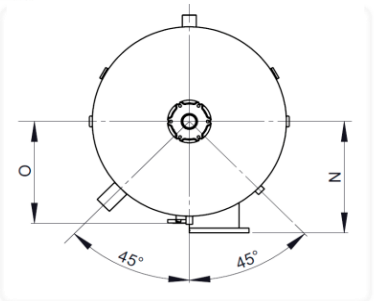
10. SINGLE COIL RANGE

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

(L)	Ø A (mm)	ELEVATION (mm)															EXCHANGE SURFACE (m²)	WEIGHT WITH INSULATION (kg)
		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
300	630	1386	1055	807	807	472	150	204	525	-	110	982	472	-	330	36	1,6	127
500	630	1983	1752	1332	1108	463	150	204	525	-	110	1615	472	-	330	36	3	177
750	790	1891	1601	1246	1051	501	150	196	551	704	110 or 400	1623	502	465	425	34	4	256/295
1000	790	2244	1956	1471	1246	501	150	196	551	704	110 or 400	1929	502	465	425	34	5.2	326/362
1500	1100	2073	1700	1380	1150	600	200	221	650	803	110 or 400	1722	605	620	580	32	5,6	458/500
2000	1100	2261	1885	1500	1244	600	200	221	650	803	110 or 400	1722	605	620	580	32	5,6	489/531
2500	1400	2136	1680	1350	1180	680	200	216	730	883	110 or 400	1587	680	730	730	31	7	636/678
3000	1400	2269	1808	1432	1245	680	200	216	730	883	110 or 400	1587	680	730	730	31	7	658/700







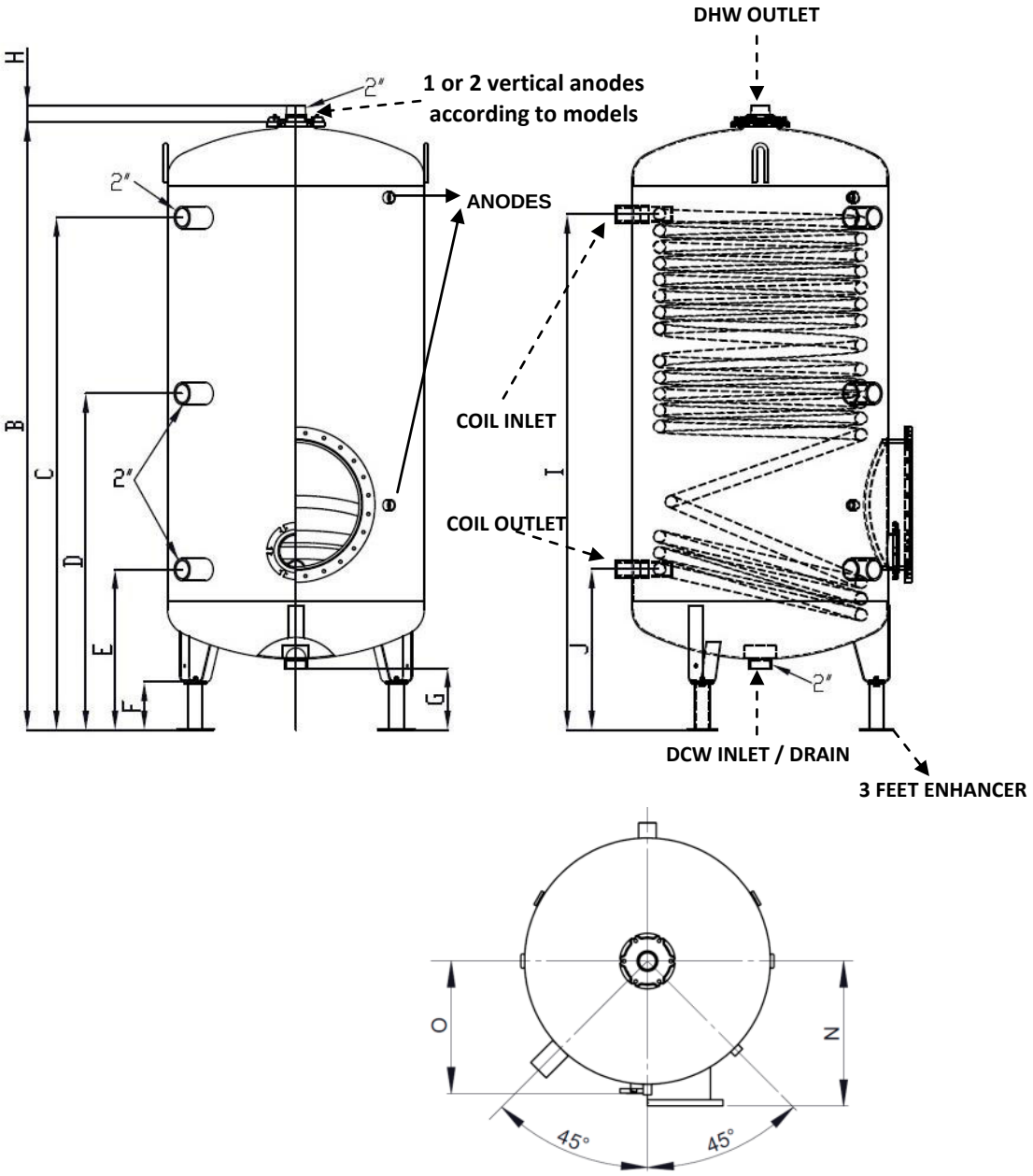
Important : For the tank of 2500 and 3000L there are 3 side connections extenders in stainless steel. These pieces are into the box of feet enhancers.

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

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

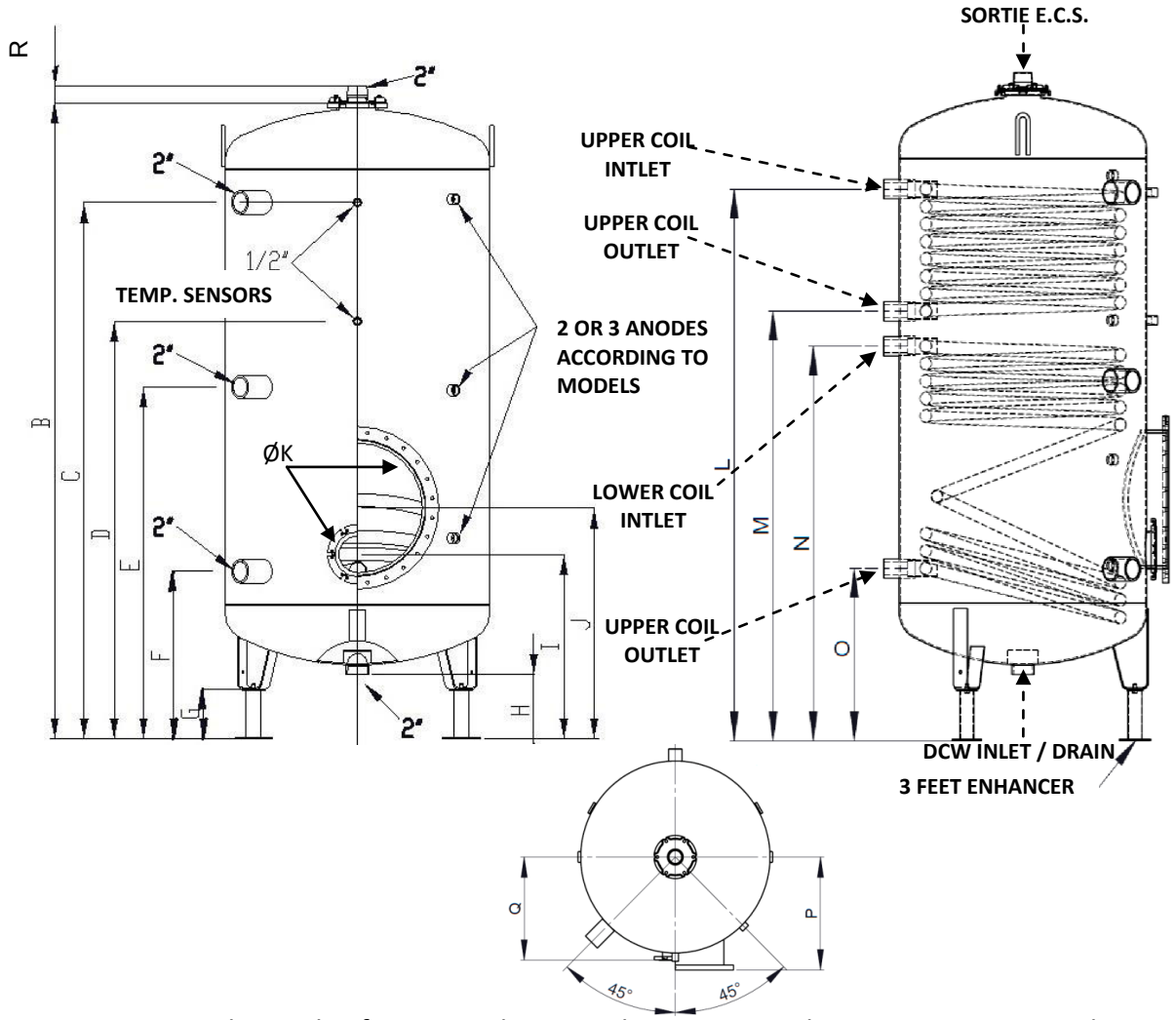


This range is fitted with both vertical anodes on the upper flange and horizontal anodes.

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 (m²)			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



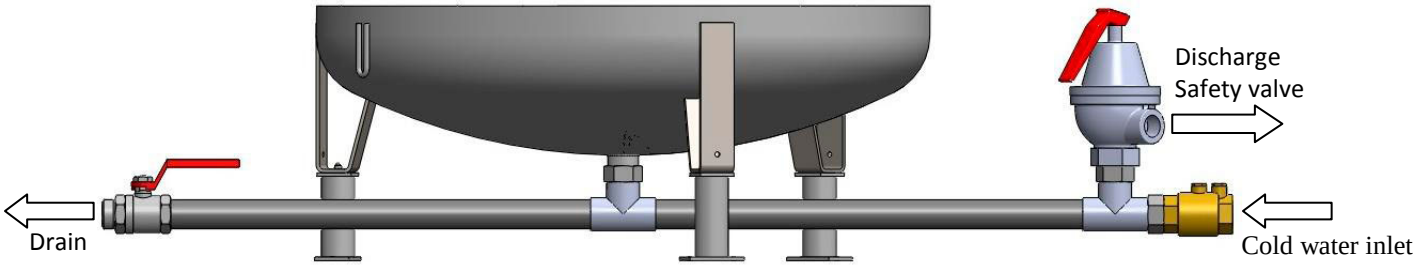
Important : For the tank of 2500 and 3000L there are 3 side connections extenders in stainless steel. These pieces are into the box of feet enhancers.

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.

14. COMMISSIONING

VERY IMPORTANT

14-1 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.

14-2 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.

14-3 CONNECTING TO THE MAINS

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

14-4 WATERTIGHTNESS

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

15. 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.

16. 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.**

17. MAINTENANCE AND CLEANING

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)

- Dissemble 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.

18. 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.

19. WARRANTY

Tank warranty: *5* years.

Components warranty: 2 years.

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