



ZODIAC

UN35 - UN70 - UN120 - UN240



GB Plate heat exchanger Instructions for installation and use



Cette notice d'installation fait partie intégrante du produit et doit être impérativement remise à l'utilisateur.

Lire attentivement les avertissements contenus dans le présent livret car ils fournissent des indications importantes au niveau de la sécurité d'utilisation et de manutention. Conserver ce livret afin de pouvoir toujours le consulter.

L'installation doit être effectuée, conformément aux normes en vigueur et en respectant les instructions du fabricant, par une personne professionnellement qualifiée.

Par "personne professionnellement qualifiée", il s'entend une personne ayant les compétences techniques dans le secteur des composants ZPCE et des installations de chauffage.

Un défaut dans l'installaton peut entraîner des dommages sur des personnes, animaux ou objets pour lesquels le fabricant ne saurait être tenu responsable.

Après avoir retiré l'emballage de l'appareil, s'assurer de l'état du contenu.

Avant de raccorder l'appareil, s'assurer que les données fournies par ZPCE sont compatibles avec l'installation à réaliser dans les limites maximales autorisées du produit concerné.

Au préalable de toute opération d'entretien, de manutention ou de réparation sur l'appareil, couper l'alimentation électrique sur ce dernier.

En cas de panne et/ou de fonctionnement anormal de l'appareil n'envisager aucune tentative de réparation sur celui-ci, couper l'alimentation électrique sur ce dernier.

L'éventuelle intervention de réparation devra être effectuée par un service d'assistance autorisé qui utilisera exclusivement des pièces de remplacement d'origine. Le non respect des clauses décrites ci-dessus peut compromettre la sécurité d'utilisation de l'appareil.

Pour garantir l'efficience de l'appareil et pour son fonctionnement correct, il est indispensable de faire effectuer un entretien périodique de ce dernier en se conformant aux instructions fournies par ZPCE.

Dans le cas où l'appareil devrait être vendu ou transféré chez un utilisateur différent, s'assurer que ce livret accompagne le matériel afin que le nouveau propriétaire ou l'installateur puisse le consulter.

Cet appareil devra être destiné exclusivement à l'usage pour lequel il a été conçu; toute autre utilisation aléatoire devra être considérée comme impropre et dangereuse.

Sont exclues toutes responsabilités contractuelles ou extracontractuelles de ZPCE pour des dommages causés suite à des erreurs d'installation ou d'utilisation, ou par un non respect des instructions fournies par ZPCE ou des normes d'installation en vigueur concernant le matériel en objet.

IMPORTANT - CAUTION - IMPORTANT

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This manual is an integral part of the product and must be supplied to the installer and the end user.

The advice included in this manual must be carefully read as they supply important indications about safety and maintenance. Keep this manual in order to consult it if necessary.

The appliance must be installed according to the standards in force, by qualified personnel, this means by personnel having skill to care of ZPCE products and heating installations.

A failing installation can cause damages to persons, pets or items. In any case, the manufacturer can be considered as responsible of such damages.

When unpacking the unit, check its state.

Before connecting the unit, make sure that the advice supplied by this manual are in accordance with the installation and its conditions of use.

Before any servicing, maintenance and repair, switch off the main supply.

In event of failure or abnormal operation, switch off the unit before any repair.

Any repair shall be performed by ZPCE authorized service personnel with genuine spare parts. The use of non-genuine parts can be harmful to the unit and to the persons.

In order to ensure a long-lasting efficiency of the unit, it shall be maintained in accordance with the instructions included in this manual.

In event of sale or transfer of this unit to another user, make sure this manual is supplied as well.

This unit must be exclusively used for the use it was designed to. Any other use shall be considered as improper and hazardous.

In event of damages due either to an improper installation or use or if the instructions provided by ZPCE or the standards in force are improperly applied, all ZPCE responsibilities will be void.

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1. GENERAL

1.1 General terms of delivery

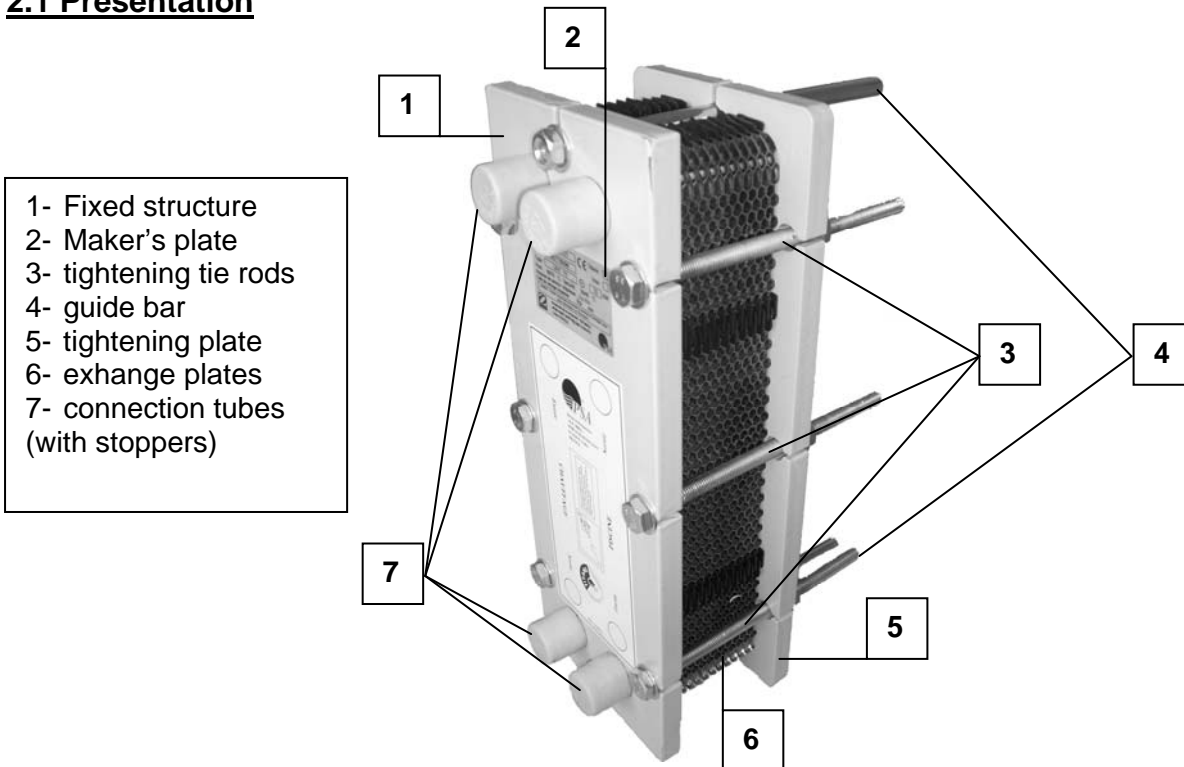
Any equipment, even CARRIAGE and PACKING FREE, travels at the consignee's risk. The consignee shall make reserves in writing on the carrier's delivery bill if he notes damage caused during the transport (confirmation to be sent to the carrier within 48 hours by registered mail and Acknowledgement of Receipt).

1.2 Water treatment

In order to use our appliances in the best conditions, swimming pool water shall comply with the following values: free chlorine: maximum 2.5 mg/L, total bromine: maximum 5.5 mg/L, pH between 6.9 and 8.0. For any other treatment, the fitter and the user shall apply to the supplier of the planned disinfection process (chemical, electrochemical or electrophysical) for the compatibility with the materials of our appliances. In any case, treatment shall be installed downstream the heating equipment.

2. DESCRIPTION

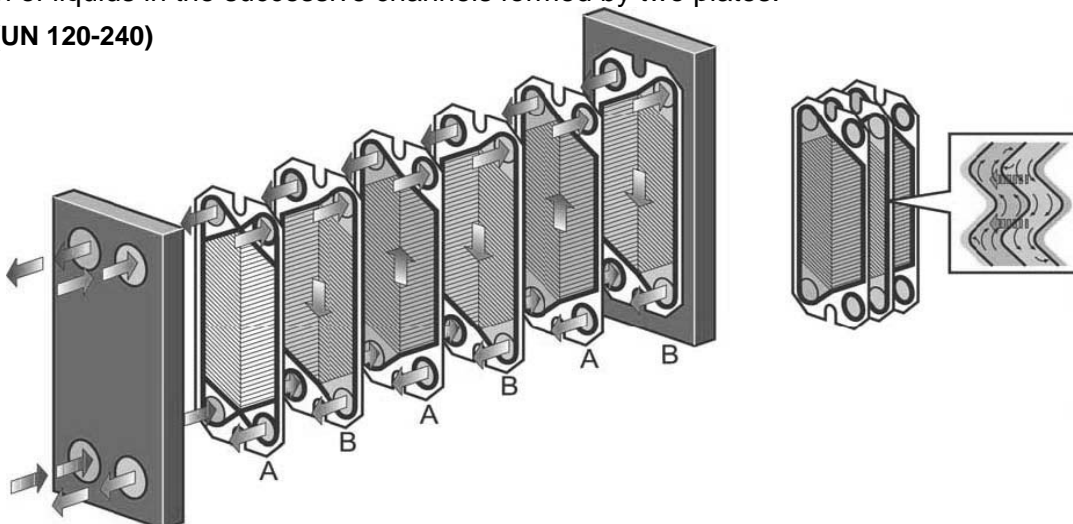
2.1 Presentation



Operation: the plate heat exchanger consists of an assembly of crimped metal plates through which heat is transferred between two liquids.

The plates are positioned in a structure consisting of a fixed part and a removable tightening plate, and are compressed by means of side tie bars. One seal per plate ensures the tightness of the duct and the distribution of liquids in the successive channels formed by two plates.

M3 (UN 120-240)

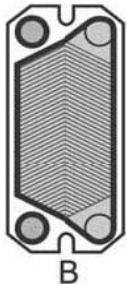


M3 (UN 120-240)



A

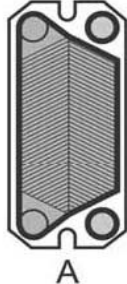
Plate A (type « high téta ») is positioned with the chevrons (120°) pointing downwards.



B

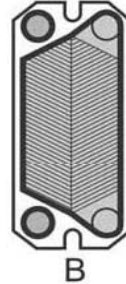
Plate B (type « low téta ») is positioned with the chevrons (60°) pointing upwards.

T2 (UN 35-70)



A

Plate A is positioned with the chevrons pointing upwards.



B

Plate B is positioned with the chevrons pointing downwards.

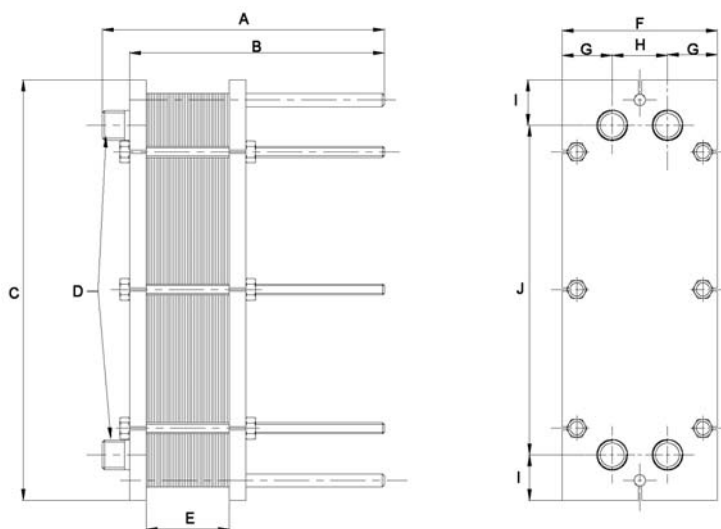
2.2 Dimensions

UN 35 => set of 15 plates – T2 titanium – 15 x 3mm

UN 70 => set of 25 plates – T2 titanium – 25 x 3mm

UN 120 => set of 17 plates – M3 titanium – 16 x 2,8mm + 1 x 3mm

UN 240 => set of 31 plates – M3 titanium – 30 x 2,8mm + 1 x 3mm

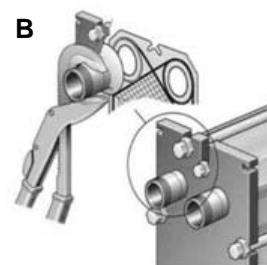
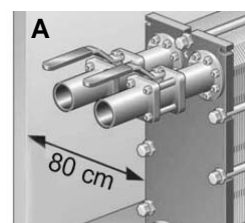


	UN 35	UN 70	UN 120	UN 240
A*	255 mm	255 mm	256 mm	407 mm
B	230 mm	230 mm	200 mm	350 mm
C	380 mm	380 mm	500 mm	500 mm
D	3/4"	3/4"	1"	1"
E	45 mm	75 mm	47,8 mm	87 mm
F	140 mm	140 mm	200 mm	200 mm
G	45 mm	45 mm	70 mm	70 mm
H	50 mm	50 mm	60 mm	60 mm
I	41 mm	41 mm	71,5 mm	71,5 mm
J	298 mm	298 mm	357 mm	357 mm

*medium tightening values

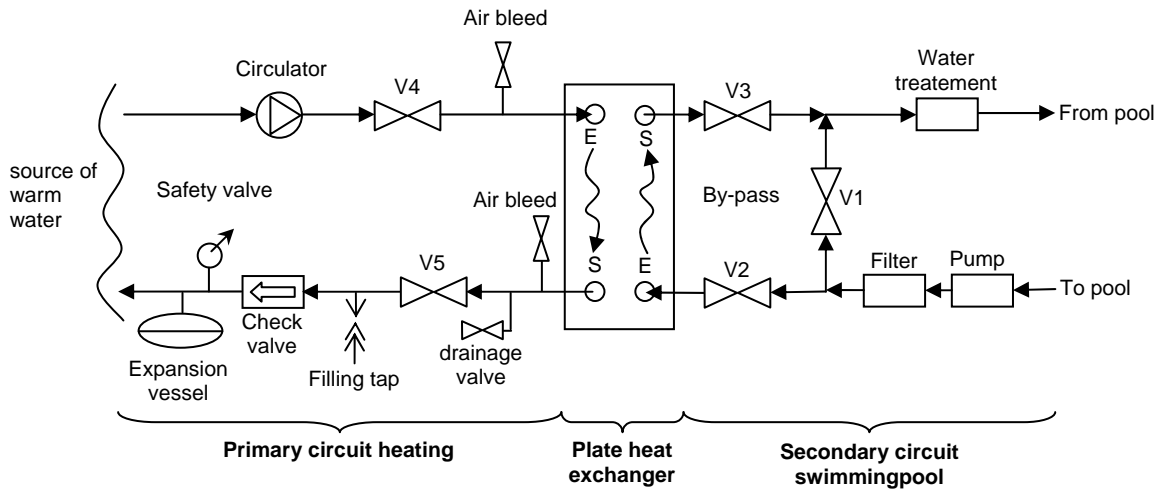
3. INSTALLATION OF THE UNIT

- The appliance shall be installed in a technical facility (ventilated, dry and without stored pool maintenance substances), close to the boiler,
- The appliance must be installed on a solid base, which is level and in a high position as a precaution against flooding or cleaning the ground with a water jet.
- A free space of at least 80 cm (see figure A) around the appliance is required to facilitate the installation and maintenance of the appliance.
- The pipes must not be supported by the exchanger but by outside fixings to reduce forces on the exchanger as much as possible.
- On the primary circuit, plan for hoses to cope with heat variations, and insulated to avoid heat loss.
- Check that the installation has a heater safety valve (max. pressure 3 bars) and an expansion vessel (volume to be determined according to the quantity of water in the primary circuit).
- install safety valves in accordance with the regulations in force relating to pressure vessels,
- Before any connection of the pipes, check that the system is cleaned,
- Make sure the connection tubes are locked when work is done on the pipes (see figure B),
- The study pressures and temperatures are indicated on the maker's plate of each appliance. These values should never be exceeded,
- Do not use quick-closing valves to avoid the water hammer phenomenon.



3.1 Raccordement hydraulique

The secondary circuit of the exchanger must be fitted as a by-pass with the pool filter.



- Test pressure of the hydraulic circuit: 5 bars

- Working pressure of the hydraulic circuit: 2 bars

4. STARTING UP

Technical features:

Model	Power	Flow rate primary circuit	Pressure drop primary circuit	Flow rate secondary circuit	Pressure drop secondary circuit	Primary connection	Weight
UN 35	35 kW*	1,5 m ³ /h	1,2 mWC	1,5 m ³ /h	1,4 mWC	1"	14 Kg
UN 70	70 kW*	1,5 m ³ /h	0,4 mWC	3 m ³ /h	1,7 mWC	1"	16 Kg
UN 120	120 kW**	3,5 m ³ /h	2,1 mWC	4,16 m ³ /h	3,1 mWC	1" 1/4	36 Kg
UN 240	240 kW**	7,06 m ³ /h	2,5 mWC	8,32 m ³ /h	3,8 mWC	1" 1/4	40 Kg

* with primary 90°C and secondary 26°C/46°C

** with primary 90°C and secondary 25°C/50°C

These plate exchangers can be used with a low temperature boiler and an air / water or water / water pump.

Below, the characteristics **with primary 45°C/40°C and secondary 28°C/38°C**

Model	Power	Flow rate primary circuit	Pressure drop primary circuit	Flow rate secondary circuit	Pressure drop secondary circuit	Primary connection	Weight
UN 35	12 kW	2,1 m ³ /h	1,6 mWC	1,0 m ³ /h	0,5 mWC	1"	37 Kg
UN 70	18 kW	2,7 m ³ /h	1,3 mWC	1,5 m ³ /h	0,5 mWC	1"	38 Kg
UN 120	27 kW	4,3 m ³ /h	3,2 mWC	2,8 m ³ /h	1,5 mWC	1" 1/4	65 Kg
UN 240	41 kW	6,6 m ³ /h	2,2 mWC	3,7 m ³ /h	0,8 mWC	1" 1/4	70 Kg

4.1 Before starting up, check

- the flow rate adjustments must be made slowly to avoid water hammering,
- Purge the primary circuit air via valves 4 and 5 and purgers.

4.2 Starting up

- Starting up the secondary pool circuit:
 - open valve 1 half way,
 - open valve 3 wide,
 - slowly open valve 2 (half way for the first adjustment).

After this first adjustment, check the pressure at the pool filter.

- Starting up the primary pool circuit:
 - start the heating system, and the circulator will engage,
 - open valves 4 and 5 wide,
 - check the primary circuit pressure.

4.3 Checking

Check that:

- the study pressures and temperatures are indicated on the maker's plate of each appliance,
- there are no leaks,
- the guide bars and the tightening tie rods are clean and lubricated.

4.4 Winter storage

- If there are risks that the primary heating and secondary pool circuits might freeze, drain the circuits.
 - Stop the pool filter, shut valves 2 and 3 and leave valve 1 open.
 - Unscrew valve 2 to drain the plate exchanger.
 - Shut down the heating system and close valves 4 and 5.
 - Open the draining valve and close it when the plate exchanger is empty.

5. MAINTENANCE

This appliance must be serviced by a qualified and approved technician.

- to avoid any risk of injury due to sharp edges, you are advised to use protective gloves whilst handling plates and protective plates,
- if the exchanger is hot, wait for it to cool down to about 40°C,
- purge the exchanger to go ahead with maintenance work.
- liquid might remain between the plates despite the draining. Place a draining container under the appliance when it is being dismantled.

5.1 Chemical cleaning

This cleaning is for cleaning the plate exchanger without having to open it.

To clean chemically, you need to connect a cleaning system to the exchanger circuits.

Make sure the plates are firmly in place, and the tolerance of the seals is right for the substances to be used.

Warning! These operations are to be done by a professional plumber.

Cleaning agents for:

- incrustation, scale: **descaling agent** (maximum concentration: 4% - maximum temperature: 60°C),
- biological growth, sludge: **demisting agent** (maximum concentration: 4% - maximum temperature: 80°C)

Families of substances **not to be used**: ketones, esters, halogenous hydrocarbons, aromatics,

Never use hydrochloric acid!

If chemical cleaning is not possible, clean manually.

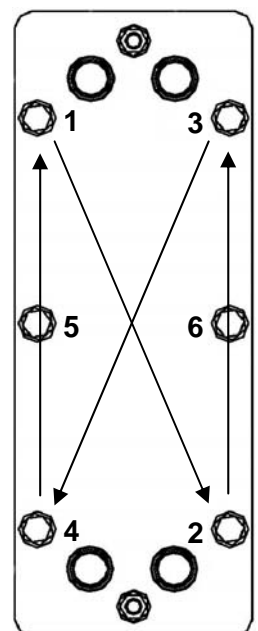
5.2 Manual cleaning

- check the friction surfaces of the guide bars and clean them,
- mark the set of plate on the outside with a diagonal line,
- measure and note dimension A,
- remove the plates:
 - remove tie rods 5 and 6,
 - unscrew tie rods 1, 2, 3 and 4 in alternance until the seals are no longer compressed.

The plates and the mobile tightening plate must always be parallel!!!

- remove tie rods 1 and 2, then tie rods 3 and 4.
- Slide the tightening plate on the guides to free the set of plates.
- if the plates have to be numbered, carry out this operation before removing them,
- the plates must be placed flat to avoid deformation,
- It is necessary to remove the plates from the structure if cleaning is done only with water – without detergent.
- To clean the plates, use a brush or high-pressure water jet.

Never use a metal brush!



5.3 Replacement or addition of plates

Replacement:

- open the exchanger (see procedure in paragraph 5.2),
- check the naming of the plate (even or odd number), and the position of the seal,
- replace a faulty plate with an identical one (same material, same thickness, same model, same seal) in its original place.

Addition of new plates:

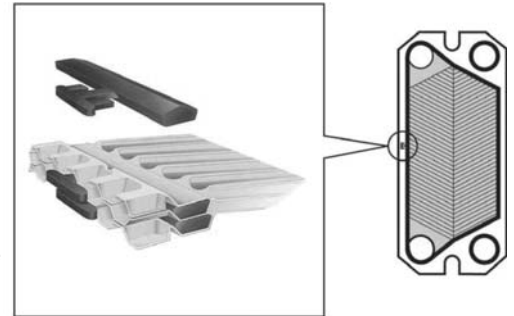
The number of plates or their position can change to make it possible to increase the surface or the internal configuration by changing the pass number:

- contact the ZPCE technical service to determine the new configuration.

5.4 ReplGasket replacement

- open the exchanger (see procedure in paragraph 5.2),
- remove the plate and remove the seals to be changed,
- check that the surfaces are clean and dry,
- push the moulded seal onto the plate,
- fold back the locking lugs under the plate,
- close the exchanger (see procedure in paragraph 5.5).

Note : a badly positioned seal goes beyond its throat or is not in place in its housing.



5.5 Reassembling the exchanger

- check that all the seal faces are clean,
- clean the threads of the tie rods with a metal brush,
- apply a fine coat of grease on the threads,
- check that all the seals are properly fixed,
- fit the plates in the initial configuration by checking that the joints are facing the fixed structure,
- refit tie rods 1, 2, 3 and 4 and retighten them in alternation until the value A is obtained on each tie rod,
- refit tie rods 5 and 6 up to value A,
- carry out a hydraulic pressure test, circuit by circuit, at working pressure, for about ten minutes to check that there are no leaks.

With an aim to improving its products, ZPCE reserves the right to modify the characteristics without prior notice

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Votre installateur - Your installer

Zodiac, la maîtrise des éléments.

Mondialement reconnu pour la qualité et la fiabilité de ses produits dans les secteurs de l'aéronautique et du nautisme, Zodiac engage son nom dans l'univers de la piscine pour vous offrir toute une gamme de piscines, nettoyeurs automatiques, systèmes de traitement d'eau, systèmes de chauffage et de déshumidification de piscines. En s'appuyant sur le savoir-faire technologique et l'expérience de PSA, Zodiac vous apporte la garantie d'appareils de très haut niveau tant dans leur conception que dans leurs performances.

Un véritable gage d'efficacité et de tranquillité !

Zodiac, mastering the elements.

Renowned worldwide for the quality and reliability of its products in the aeronautical and marine sectors, Zodiac has now brought its expertise to swimming pools, to bring you a full range of pools, automatic pool cleaners, water treatment systems, heating and dehumidification units.

Backed by PSA technology, expertise and experience, Zodiac brings you the reassurance of top quality equipment in terms of both design and performance.

A real guarantee of efficiency and peace of mind !



Chauffage et déshumidification de piscines - Heating and dehumidification of pools

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