

ZODIAC

Uranus⁺



GB 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

IMPORTANT - CAUTION - IMPORTANT

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.

SUMMARY

1. GENERAL	2
1.1 General terms of delivery	2
1.2 Voltage	2
1.3 Water treatment	2
2. DESCRIPTION	2
2.1 Presentation	2
2.2 Dimensions	3
3. INSTALLATION OF THE UNIT	3
4. CONNECTIONS	4
4.1 Hydraulic connections	4
4.2 Electric connections	4
5. USE OF THE CONTROL DISPLAY	5
5.1 Presentation	5
5.2 Setting of required temperature	5
5.3 Access to the protection fuse	6
6. STARTING UP	6
6.1 Before starting up, check	6
6.2 Starting up	6
6.3 Checking	7
6.4 Failure	7
6.5 Winter storage	7
6.6 Restart	7
6.7 Maintenance instructions	7
7 WARNING	7
8 RECYCLING THE PRODUCT	8
9 ELECTRIC DIAGRAM URANUS+	8

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 Voltage

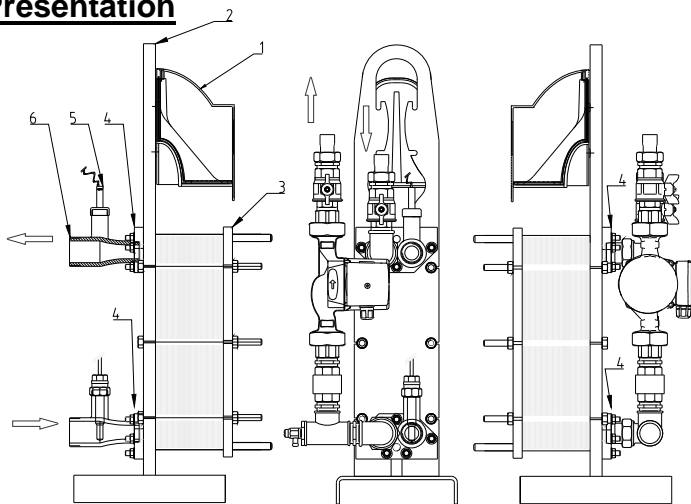
Prior to any operation, check that the voltage on the identification plate of the appliance corresponds to the mains voltage provided on site.

1.3 Water treatment

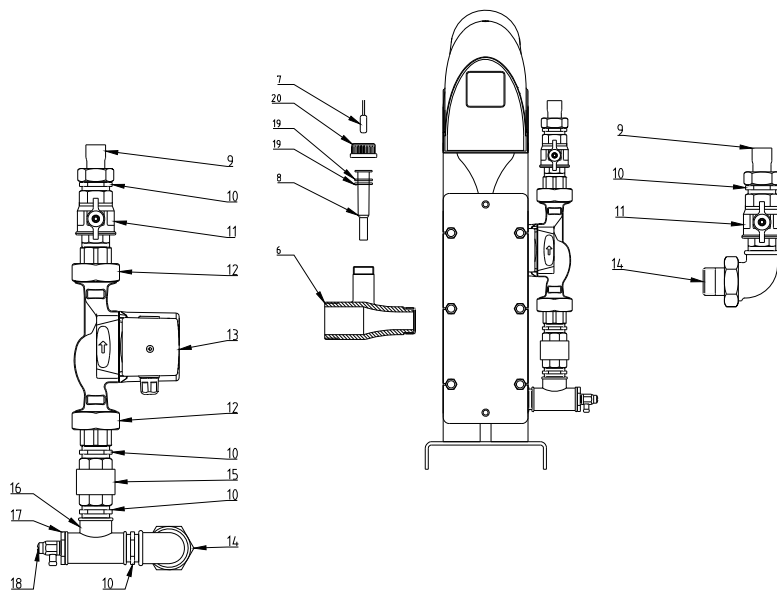
In order to use our appliances in the best conditions, swimming pool water shall comply with the following values: free chlorine: maximum 2.5 mg/L, total bromine: maximum 5.5 mg/L, pH between 6.9 and 8.0. For any other treatment, the fitter and the user shall apply to the supplier of the planned disinfection 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



- 1- electric box
- 2- body
- 3- end plate
- 4- connection flange
- 5- flow switch
- 6- connection socket
- 7- control sensor
- 8- thermowell
- 9- primary connection (to be welded)
- 10- nipple 26/34 or 33/42
- 11- valve
- 12- union fitting of circulating pump 1 1/2" or 2"
- 13- circulating pump*
- 14- elbow
- 15- check valve
- 16- tee
- 17- adaptation nut for drain valve
- 18- drain valve
- 19- pre-bored stopper PVC 20/27
- 20- flat joint 20/27



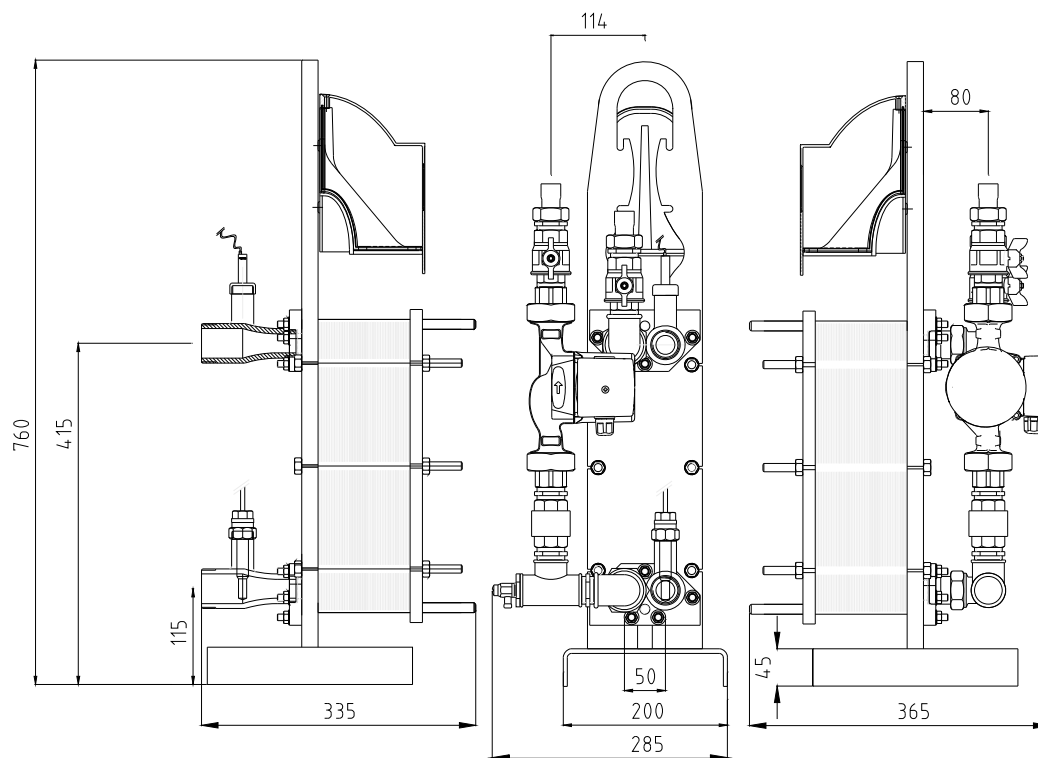
- UP+ 35 => 15 plates – T2 titanium – 0.5 mm
- UP+ 70 => 25 plates – T2 titanium – 0.5 mm
- UP+ 120 => 17 plates – M3 titanium – 0.4 mm
- UP+ 240 => 31 plates – M3 titanium – 0.4 mm

*UP+ 35-70 are fitted with circulating pumps : UPS 25/60 - length 130 mm - consumed power 70W (speed 3) - In (A) 0,30 (speed 3) - capacitor: 2.5 µF 400V

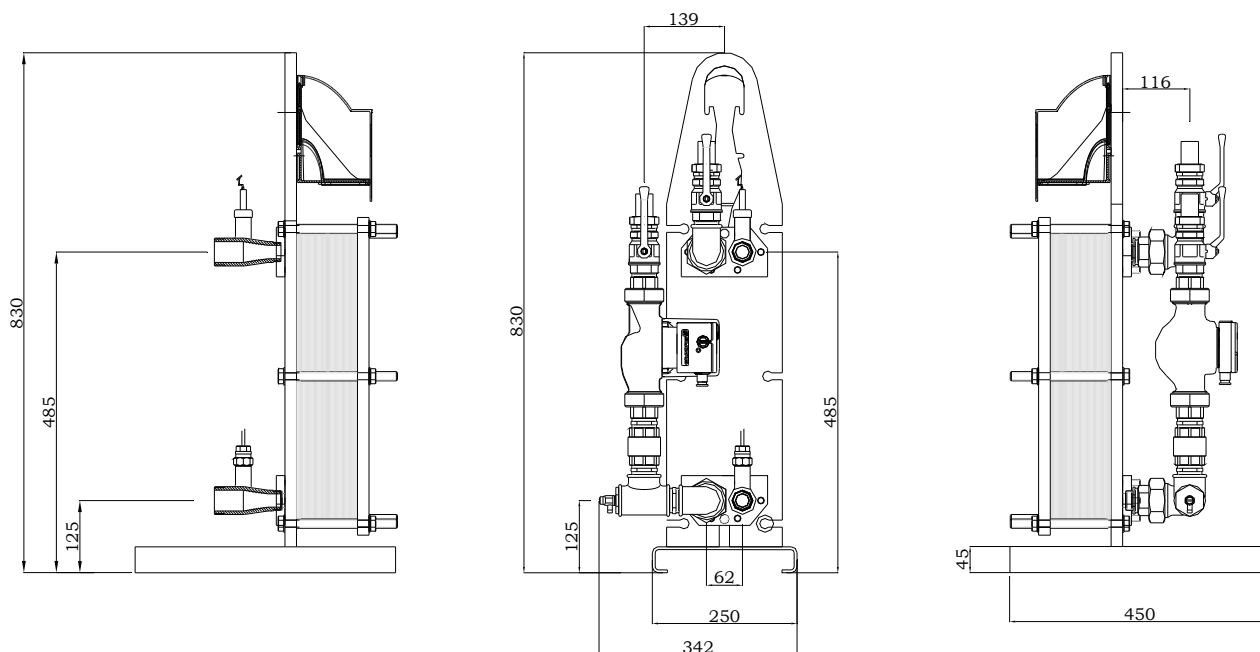
UP+ 120-240 are fitted with circulating pumps : UPS 32/80 - length 180 mm - consumed power 240W (speed 3) - In (A) 1,05 (speed 3) - capacitor: 5 µF 400V

2.2 Dimensions

UP+ 35-70



UP+ 120-240



Dimensions in mm

3. INSTALLATION OF THE UNIT

The heater shall be placed in a technical equipment area (ventilated, dry and without stored pool maintenance substances), close to the boiler and to the filter of the pool. It shall be fixed onto the floor, making sure it can't be flooded when cleaning the technical facility with a nozzle.

In the event the boiler is away from the technical facility, install the exchanger close to the boiler in order to reduce thermal losses on primary circuit. Connect to the circuit of the pool by means of \varnothing 50mm pipes.

Notice: If the exchanger is far away from the boiler, provide the hydraulic connection with appropriate section taking account of the distance, the flow rate and the pressure drop. In some cases, the circulating pump should be replaced with a more powerful pump. In any case, these connections shall be properly insulated and fitted with automatic air bleed on high points of the circuit.

4. CONNECTIONS

4.1 Hydraulic connections

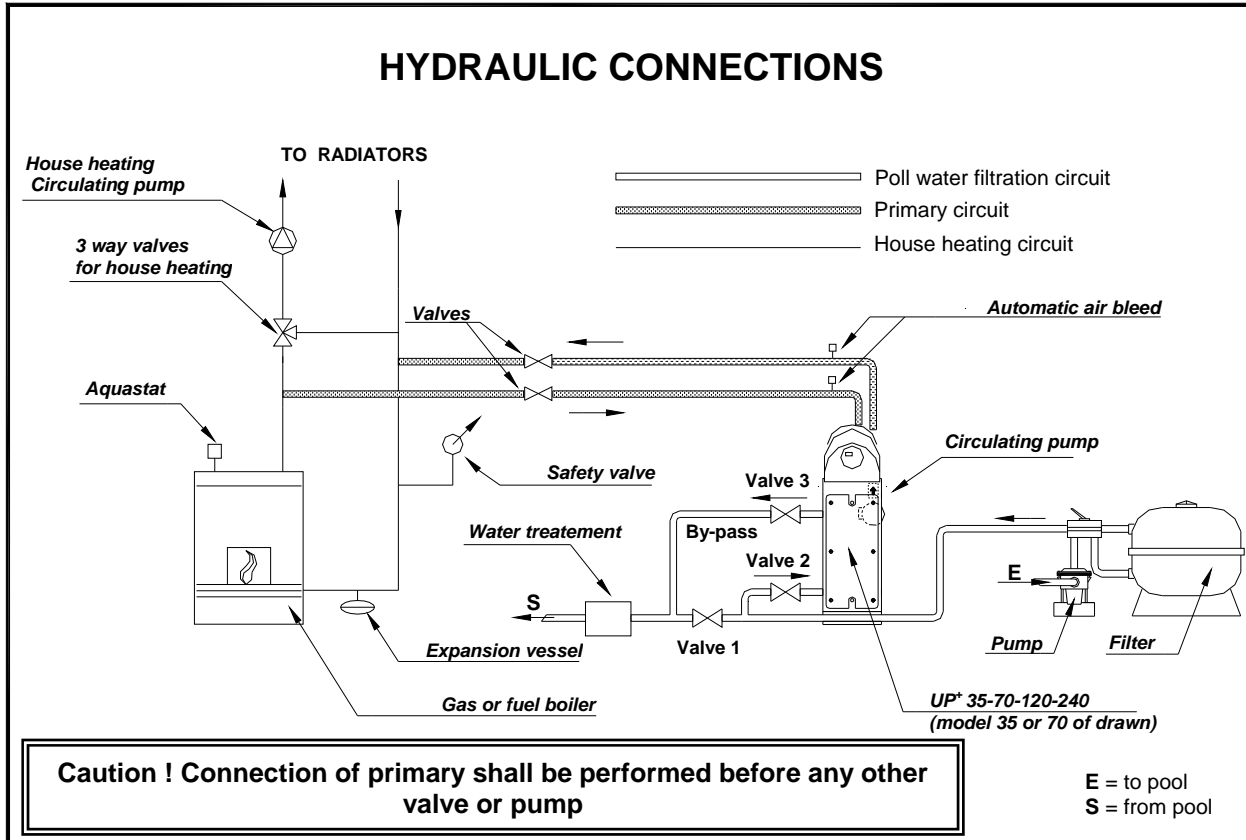
Circuit to pool: the heat exchanger shall be connected from a by-pass onto the filtration circuit upstream any disinfection process. Inlet of water on the bottom, outlet on the top shall be respected.

Circuit to boiler: the exchanger shall be connected directly to the primary circuit of the boiler supplying constant temperature (90°C/70°C mandatory). Install automatic air-bleed on high points of primary circuit.

Circulation direction: circulation of both circuits shall be counter-current. Caution, pool water inlet shall always be on the side of the thermo-well.

Tested pressure of hydraulic circuit: 5 bars.

Service pressure of hydraulic circuit: 2 bars.



Warning! Inhibit any 90° PVC elbow fitted directly at the exit of the exchanger. Leave at least 25 cm of straight tubing to avoid any knocking of the flow rate controller pallet.

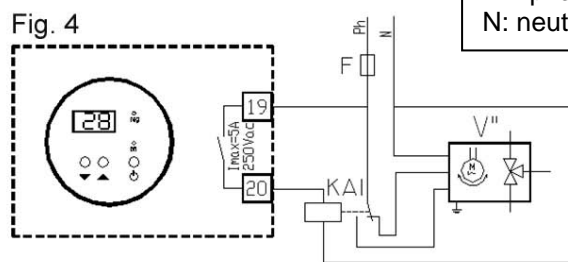
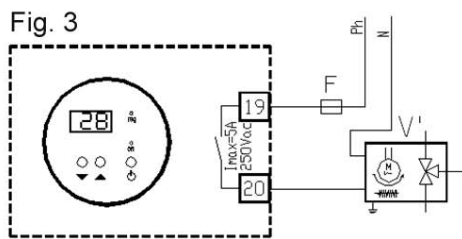
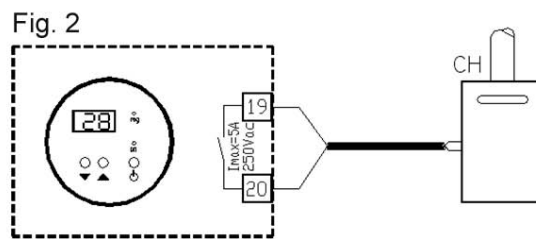
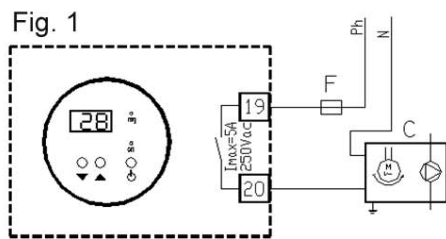
4.2 Electric connections

- The single-phase electrical supply (230V-50Hz) of the exchanger must come from a protection and switching device (not supplied) complying with the standards and regulations in force in the country where it is installed (in France, refer to standard NF C 15100).
- use the supply cable delivered with the appliance: 2 poles + Earth 10/16 A in 3G1 (section 1 mm²).

Do not admit any long extension or multisocket connection.

Remark: Plan for a socket to connect the supply cable delivered with the appliance.

- Electrical protection: this current socket must have a 5 A fuse switch with, upstream, a 30 mA differential circuit breaker (calibre > than 5 A), or an **independent** 30 mA circuit breaker (calibre 5 A) upstream.
- use a 3G1 wire (1 mm² section) if you wish to control a complementary pump (fig. 1), an electric valve (fig. 2 and 3) or a boiler (fig. 4) to provide power to the primary circuit of the exchanger. This function is carried out via the dry contact without polarity “normally open at rest” (Imax 5A at 250 Vac 50-60hZ) available on the regulator terminals 19-20.



Ph: phase
N: neutral

C: complementary pump KA1: control relay
CH: existing boiler V': 3 port valve with mechanical return
F: fuse V'': 3 port motorized valve with movement in two directions

The elements: C - CH - F - KA1 - V' - V'' are not supplied with this device.

Notice:

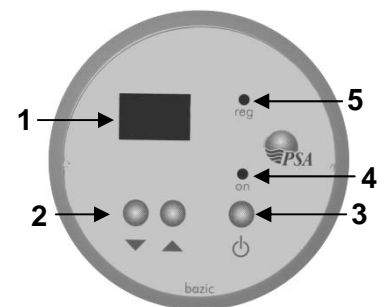
- electric cables shall be fixed,
- the wire connected to terminals 19-20 must go through the additional discharger 'grommet' (supplied) which should be installed on the base of the box.

5. USE OF THE CONTROL DISPLAY

5.1 Presentation

The "Bazic" control unit fitted in the front side is equipped with:

- a digital display of 2 digits **(1)** to display the current and required pool's temperatures,
- two sensitive switches to adjust the required temperature **(2)**,
- a sensitive on/off switch **(3)**,
- an on/off led **(on: led red)(4)**,
- an operation state led **(5) => while heating: fix led**
=> temporisation in process: **blinking led**



Comments: the adjustment range of the set point varies between 2° and 40°C*. This maximum temperature may be decreased in order to protect the swimming pool liner, or it may be increased for specific purposes.

* The temperature is adjusted to the nearest °C assymmetrically.

In order to change this maximum set point, access the menu "parameters" and change the parameter "r2":

- 1) turn the regulator switch off, the "on" light goes off and the water temperature of the pool is displayed,
- 2) press the ▼ and ▲ keys simultaneously for five seconds until "PA" is displayed,
- 3) press the ⏻ key to re-enter the number **80**, the access code for the **menu "parameters"**, using the ▼ or ▲ keys,
- 4) press the ⏻ key to validate this code; "PA" is displayed,
- 5) press the ▼ and ▲ keys simultaneously for five seconds,
- 6) press the ▲ key to view each parameter until "r2" is displayed,

Note: in order to display the parameter value "r2", press the key ⏻, then to change it, press the ▼ or ▲ key.

Important! Press the ⏻ key in order to validate this new setting.

- 7) press the ▼ and ▲ keys simultaneously to return to the pool water temperature display screen.

5.2 Setting of the temperature

The temperature is set by means of the sensitive keys **(2)**

Display the value of the required temperature by pushing either ▼ or ▲ key.

Remark: keeping one of these two buttons pressed makes it possible to go into fast search for the desired water temperature value.

5.3 Access to the protection fuse

- 1) **WARNING! Switch off** the appliance!
 - 2) remove the cover from the Uranus+,
 - 3) disconnect the regulator,
 - 4) remove the regulator cover,
 - 5) remove the protection fuse (T3,15AH250V).
- Notice: neither display nor operation if out of order



6. STARTING UP

Technical features:

Note: for primary heating connection, two pin connections for soldering are also delivered for 20/22 (models UP 35-70) and for 26/28 (models UP 120-240).

Model	Power	Flow rate primary circuit	Pressure drop primary circuit	Height of pressure available primary	Flow rate secondary circuit	Pressure drop secondary circuit	Primary connection	Secondary connection	Weight
UP ⁺ 35	35 kW [*]	1,5 m ³ /h	1,2 mWC	2,5 mWC	1,5 m ³ /h	1,4 mWC	1"	PVC Ø50	37 Kg
UP ⁺ 70	70 kW [*]	1,5 m ³ /h	0,4 mWC	4,4 mWC	3 m ³ /h	1,7 mWC	1"	PVC Ø50	38 Kg
UP ⁺ 120	120 kW ^{**}	3,5 m ³ /h	2,1 mWC	3,4 mWC	4,16 m ³ /h	3,1 mWC	1" ¼	PVC Ø50	65 Kg
UP ⁺ 240	240 kW ^{**}	7,06 m ³ /h	2,5 mWC	1,0 mWC	8,32 m ³ /h	3,8 mWC	1" ¼	PVC Ø50	70 Kg

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

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

- Protection index: IP 34

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**

6.1 Before starting up, check

Model	Power	Flow rate primary circuit	Pressure drop primary circuit	Height of pressure available primary	Flow rate secondary circuit	Pressure drop secondary circuit	Primary connection	Secondary connection	Weight
UP ⁺ 35	12 kW	2,1 m ³ /h	1,6 mWC	1,9 mWC	1,0 m ³ /h	0,5 mWC	1"	PVC Ø50	37 Kg
UP ⁺ 70	18 kW	2,7 m ³ /h	1,3 mWC	1,4 mWC	1,5 m ³ /h	0,5 mWC	1"	PVC Ø50	38 Kg
UP ⁺ 120	27 kW	4,3 m ³ /h	3,2 mWC	2,0 mWC	2,8 m ³ /h	1,5 mWC	1" ¼	PVC Ø50	65 Kg
UP ⁺ 240	41 kW	6,6 m ³ /h	2,2 mWC	1,8 mWC	3,7 m ³ /h	0,8 mWC	1" ¼	PVC Ø50	70 Kg

- the hydraulic fittings are correctly tightened,
- there is no leak,
- the appliance is stable,
- the connections of the electric cables are correctly tightened. **Incorrectly tightened cables may cause overheating of terminals,**
- the appliance is correctly connected to the ground,

Note: after a long stop, check if the circulation pump is not blocked, in this case, before switching on, undo the screw in the front of the circulator (**warning!** Water can escape), then turn the circulator motor shaft using a screwdriver.

6.2 Starting up

- open valves 1, 2 and 3 wide,
- start the filtration pump,
- check the pool water circulation in the exchanger,
- make a first by-pass adjustment to respecter more or less the nominal secondary water flow rate:
 - valve 1 lightly closed to increase the filter pressure by 200 to 300 g,
- check the filling and degassing of the heating circuit,
- switch on the 30 mA différentiel circuit breaker, at the head of the line,
- set the required temperature on the display to be on demand ("reg" light flashing) see§ 5.2,
- press key
- adjust the by-pass for the good operation of the heater (to avoid short cycles), by playing with valve 1.

With a demand for heating and the filtering in operation, the “reg” led flashes for 15 seconds, then stays on. The internal regulator contact (terminals 19-20) is then closed => heating in progress (the circulator must be in operation).

N.B.: energy is transferred to the secondary circuit to give calories to the pool.

Observation:

- when the appliance heats the water (“reg” led lit up), if the filter stops or if the water flow rate is less than 1,1 m³/h, the appliance stops heating (“reg” led flashing). The flow controller “CD” is open,
- when the pool reaches the desired temperature, the appliance stops heating (“reg” led off).

6.3 Checking

Make sure that the heat exchanger stops when:

- decreasing the required temperature on the control thermostat,
- filtration is switched off or closing a valve 2 or 3 on the by-pass,
- when pressing key \odot .

Important! Before any intervention, make sure the unit is switched off.

6.4 Failure

- if the regulation probe is out of service or disconnected, with a flashing “E0” displayed, **appliance switched off and disabled**, reconnect or change the probe.

The “E0” fault is automatically cleared.

- If the regulator display does not work, check that:
 - 1) the mains supply is live,
 - 2) the regulator protection fuse is not blown (see paragraph 5.3)
- if the pool water temperature rises beyond the setpoint temperature, check that:
 - 1) the regulator is working properly,
 - 2) no other circulator is pushing on the primary circuit. If this is so, plan for a solenoid valve at the outgoing direction of the primary heating circuit controlled by terminals 19-20.

6.5 Winter storage

- switch off the appliance by pressing key \odot ,
- switch off the power supply (by disengaging of the 30 mA differential circuit breaker at the head of the exchanger line),
- drain the pool circuit by removing both connection union fittings in order to avoid the risk of frost.
- drain the primary circuit by removing the drain plug if frost can be expected.

The guarantee will be cancelled in event of frost of the appliance due to an improper winter storage.

6.6 Restart

- refer to the procedures described in paragraphs 6.1, 6.2, 6.3 and 6.7.

6.7 Maintenance

To be done once a year by an approved and qualified person:

- visual check of the condition of the various electrical components.

7. WARNING

ATTENTION!

**Make sure the appliance is disconnected from mains supply before any intervention.
Any intervention shall be performed by qualified and authorised personnel only.**

8. RECYCLING THE PRODUCT



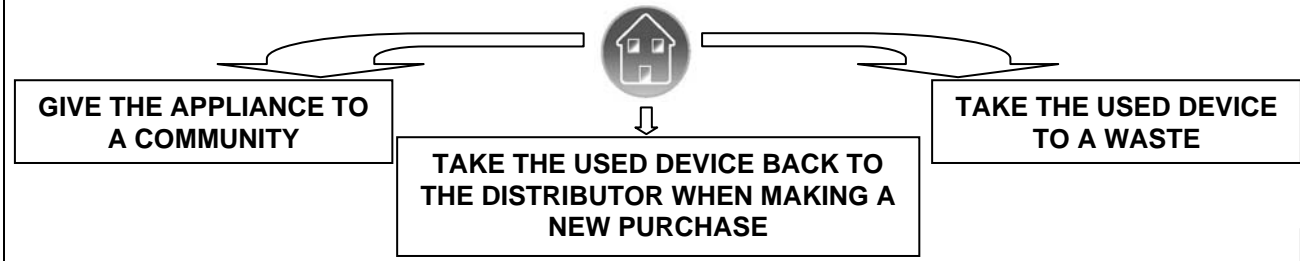
Your appliance is reaching the end of its working life. You would like to get rid of it or replace it. **Please do not throw it into the dustbin** or into your local council's selective sorting containers.

When this symbol appears on a new appliance, it means that the equipment must not be thrown away and that it will be collected selectively so that it can be reused, recycled or recovered. Any substances it may contain which are potentially dangerous to the environment will be eliminated or neutralised.

You can give it to a community association who will be able to repair it and put it back into circulation. If you buy a new one, you can take the old one to the store or ask the delivery man to take it back.

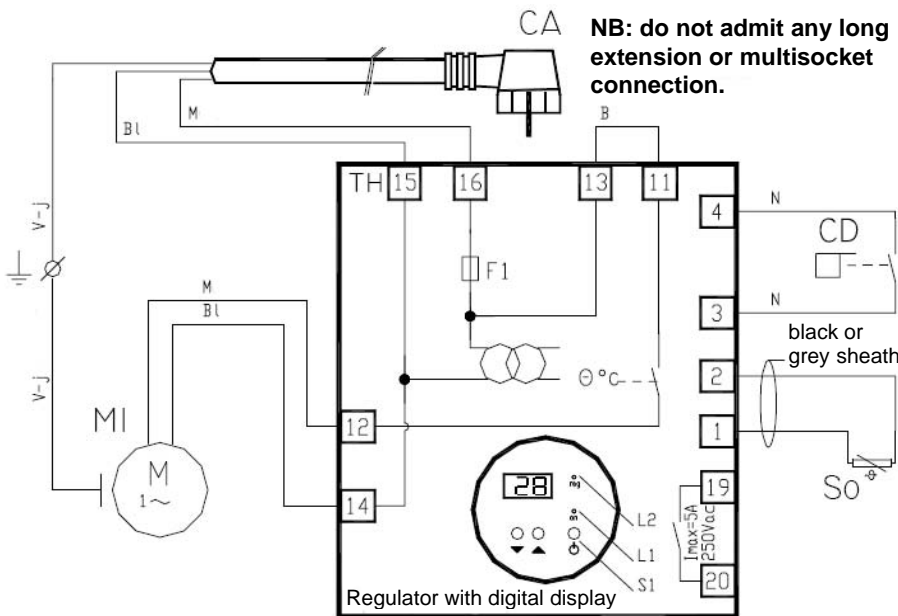
This is known as a **"One-for-One"** exchange.

Otherwise please take it to a waste collection centre, if your local council has set up a selective collection system for these products.



GB

9. ELECTRIC DIAGRAM URANUS+



NB: do not admit any long extension or multisocket connection.

LEGEND:

- CD:** flow rate controller
- F1:** protection fuse 3,15 A-T
- L1:** "on/off" led
- L2:** "reg" led timed flashing or permanently - heating in progress
- M1:** circulator motor
- S1:** "on/off" switch
- So:** Pool water regulation probe
- TH:** control thermostat with digital display
- V-j:** green-yellow
- Bl:** blue
- M:** brown
- B:** white
- N:** black

Electronic connections:

CA: supply cable: 2P+T 10/16A 3G1

Voltage: 230V-1N-50Hz

⊥ : Earth

19-20: dry control contact "normally open"

IMPORTANT!

ELIMINATION OR SHUNTING OF ONE OF THE SAFETY OR REMOTE CONTROL ORGANS LEADS AUTOMATICALLY TO THE CANCELLATION OF THE GUARANTEE

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

- Edition 01/2009

DECLARATION DE CONFORMITE

déclare que les produits ou gammes ci-dessous :
declares that the herewith products or ranges

ECHANGEURS DE CHALEUR SPECIAL PISCINE
HEAT EXCHANGERS SPECIALLY DESIGNED FOR POOLS

URANUS + (UP+)

sont conformes aux dispositions :
are in conformity with the provisions

↻ **de la directive COMPATIBILITE ELECTROMAGNETIQUE 89/336/CEE amendée par 93/068/CEE.**

↻ of the ELECTROMAGNETIC COMPATIBILITY directive 89/336/EEC, as amended 93/068/EEC.

Les normes harmonisées suivantes ont été appliquées :
The harmonized standards have been applied

EN 55011
EN 55022
CEI 801-4
CEI 801-2
CEI 801-3

↻ **de la directive BASSE TENSION 73/23/CEE, amendée par 93/068/CEE.**


↻ of the LOW VOLTAGE directive 73/23/EEC, as amended 93/068/EEC .

Les normes harmonisées suivantes ont été appliquées :
The harmonized standards have been applied

EN 60335-1

Z.P. C.E

Boulevard de la Romanerie - B.P. 90023 - 49180 Saint Barthélemy d'Anjou Cedex - FRANCE

☎ : 02 41 21 17 30  : 02 41 21 12 26 - <http://www.psa-zodiac.com>

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

ZPCE - Boulevard de la Romanerie BP 90023 - 49180 Saint Barthélemy d'Anjou Cedex - France

Tél. +33 2 41 21 17 30 - Fax +33 2 41 21 12 26 - www.psa-zodiac.com