AES
Automated Environmental Systems

saci pumps

OPTIMA - SMART OPTIMA
WINNER - SMART WINNER

MANUAL DE INSTALACION Y MANTENIMIENTO
INSTALLATION AND MAINTENANCE MANUAL
MANUEL D'INSTALLATION ET D'ENTRETIEN
INSTALLATIONS UND WARTUNGSANLEITUNG
MANUALE DI INSTALLAZIONE E MANUTENZIONE
NÁVOD K INSTALACI A ÚDRŽBĚ
УСТАНОВКА И ОБСЛУЖИВАНИЕ
MANUAL DE INSTALAÇÃO E MANUTENÇÃO
MONTAJ VE BAKIM TALİMAT EL KİTABI

IEC
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CE

Cat. COW
Rev. 01-11-2016

OPTIMA - WINNER - SMART

DECLARACION DE CONFORMIDAD CE:

Nosotros, **BOMBAS SACI, S.A., CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers – ESPAÑA,** declaramos bajo nuestra exclusiva responsabilidad que los productos a los que se refiere esta declaración son conformes con las directivas siguientes, y posteriores revisiones:

- **2004/108/CE (Directiva Compatibilidad Electromagnética)**
- **2006/95/CE (Directiva de bajo voltaje)**
- **2009/125/CE (Directiva Diseño Ecológico)**
- **2011/65/UE (Directiva Sustancias Peligrosas)**

y también cumples las normas siguientes:

- **EN 60335-1 (Seguridad de los aparatos electrodomésticos y análogos)**
- **EN 60335-2-41 (Requerimientos particulares para bombas)**

DECLARATION OF CONFORMITY CE:

We, **BOMBAS SACI, S.A., CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers – SPAIN,** state that under our exclusive responsibility the products referred to in this statement comply with the following directives and subsequent revisions:

- **2004/108/EC (Electromagnetic Compatibility Directive)**
- **2006/95/EC (Low Voltage Directive)**
- **2009/125/EC (Ecologic Design Directive)**
- **2011/65/EU (Dangerous Substances Directive)**

and that they also comply with the following regulations:

- **EN 60335-1 (Household and Similar Electrical Appliances – Safety)**
- **EN 60335-2-41 (Particular Requirements for Pumps)**

DÉCLARATION DE CONFORMITÉ CE:

Nous, **BOMBAS SACI, S.A., CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers – ESPAGNE,** déclarons sous notre responsabilité exclusive que les produits auxquels cette déclaration fait référence sont conformes aux directives suivantes et à leurs révisions postérieures :

- **2004/108/CE (Directive CEM)**
- **2006/95/CE (Directive Basse Tension)**
- **2009/125/CE (Directive Eco-Conception)**
- **2011/65/UE (Directive Substances Dangereux)**

Et qu'ils respectent aussi les normes suivantes :

- **EN 60335-1 (Sécurité des appareils électro-domestiques et analogues)**
- **EN 60335-2-41 (Règles particulières pour les pompes)**

KONFORMITÄTSERKLÄRUNG CE:

Wir, **BOMBAS SACI, S.A: - CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers (E),** erklären unter unserer Verantwortung, dass Erzeugnisse, auf die sich diese Erklärung bezieht in Übereinstimmung mit folgenden Richtlinien sind:

- **2004/108/CE (EMV-Richtlinie)**
- **2006/95/CE (Niederspannungsrichtlinie)**
- **2009/125/CE (Ökodesign-Richtlinie)**
- **2011/65/UE (Richtlinie über gefährliche Stoffe)**

Und mit den folgenden Standards:

- **EN 60335-1 (Sicherheit von Haushalts-und ähnlichen Elektrogeräten)**
- **EN 60335-2-41 (Besondere Anforderungen für Pumpen)**

DICHIARAZIONE DI CONFORMITA CE:

Noi **BOMBAS SACI, S.A: - CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers (ES),** dichiariamo sotto la nostra esclusiva responsabilità che i prodotti ai quali questa dichiarazione si riferisce sono conformi alle seguenti direttive:

- **2004/108/CE (Direttiva EMC)**
- **2006/95/CE (Direttiva Bassa Tensione)**
- **2009/125/CE (Direttiva Progettazione Eco-compatibile)**
- **2011/65/UE (Direttiva Sostanze Dangerous)**

E con le seguenti norme:

- **EN 60335-1 (Sicurezza di elettrodomestici e apparecchi elettrici)**
- **EN 60335-2-41 (Norme particolari per le pompe)**

PROHLÁŠENÍ O SHODĚ:

My **BOMBAS SACI, S.A: - CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers (ES),** v rámci své vlastní odpovědnost, že výrobky, na které se toto prohlášení týká, jsou v souladu s těmito směrnicemi:

- **2004/108/CE (směrnice EMC)**
- **2006/95/CE (Směrnice pro nízké napětí)**
- **2009/125/CE (Směrnice Ekodesignu)**
- **2011/65/UE (Směrnice Látky Nebezpečný)**

A s těmito normami:

- **EN 60335-1 (Bezpečnost pro domácnost a podobné elektrické spotřebiče)**
- **EN 60335-2-41 (Zvláštní požadavky na čerpadla)**

ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ CE:

Мы, **BOMBAS SACI, S.A: - CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers (E),** заявляет под свою ответственность, что продукты, к которым это заявление относится в соответствии со следующими директивами:

- **2004/108/CE (Директива EMC)**
- **2006/95/CE (Директива по низкому напряжению)**
- **2009/125/CE** (Экодизайн Директива)
- **2011/65/UE** (Директива опасных веществ)

Ve aşağıdaki standartlara:

- **EN 60335-1 (Безопасность бытовых и аналогичных электрических приборов)**
- **EN 60335-2-41 (требования для насосов)**

DECLARAÇÃO DE CONFORMIDADE CE:

Nós, **BOMBAS SACI, S.A: - CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers (E),** declaramos sob nossa responsabilidade que os produtos a que se refere esta declaração estão em conformidade com as seguintes diretrizes:

- **2004/108/CE (Directiva CEM)**
- **2006/95/CE (Directiva de Baixa Tensão)**
- **2009/125/CE (Directiva Ecodesign)**
- **2011/65/UE (Directiva Substâncias Dangerous)**

E com as seguintes normas:

- **EN 60335-1 (Segurança em casa e aparelhos elétricos similares)**
- **EN 60335-2-41 (Prescrições particulares para bombas)**

UYGUNLUK CE OF BEYANI:

Biz, **BOMBAS SACI, S.A: - CL/Can Cabanyes, 50-58 - Pol. Ind. Circuit de Catalunya – 08403 – Granollers (E),** bu beyan eder hangi ürünleri aşağıdaki yönetmeliklere uygun olduğunu bizim sorumluluk altında beyan ederiz:

- **2004/108/CE (EMC Direktifi)**
- **2006/95/CE (Düşük Voltaj Direktifi)**
- **2009/125/CE (Eko-tasarım Direktifi)**
- **2011/65/UE (Tehlikeli Maddeler Direktifi)**

Ve aşağıdaki standartlara:

- **EN 60335-1 (ev güvenliği ve benzeri elektrikli ev aletleri)**
- **EN 60335-2-41 (pompalar için özel kurallar)**

saci pumps

Granollers, a 1 de Noviembre de 2016

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David Ferré Ferrer
EXECUTIVE

ENGLISH

INSTALLATION AND MAINTENANCE MANUAL

(Instructions based on Spanish)

1. SAFETY PRECAUTIONS

This symbol together with one of the following words "Warning" or "Danger" indicates the risk level deriving from failure to observe the prescribed safety precautions:

DANGER risk of electric shock (Warns that failure to observe the precautions involves a risk of electric shock)

DANGER (Warns that failure to observe the precautions involves a risk of damage to persons or things)

WARNING (Warns that failure to observe the precautions involves a risk of damaging the pump or the instalation)

2. WARNINGS

Before carrying out the installation, please read this instruction manual carefully.

It is essential that both the electrical installation and the connections are performed by qualified personnel, who possess the required technical expertise required by the specific safety regulations for the project, installation and maintenance of the technical installations for the country where the product is to be installed.

Any non-compliance with the safety regulations, in addition to being a danger to personnel and causing damage to the equipment, will cancel all rights to interventions covered by the guarantee.

- The device is not designed for use by persons (including children) with physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised and instructed by a person responsible for their safety.
- Children should be supervised to ensure they do not play with the appliance.

3. APPLICATIONS AND USE

Self-induction electric pump for swimming pools, incorporating large capacity pre-filter with high filtration capability. Transparent, polycarbonate filter cover allowing easy observation of the inside of the pre-filter basket.

Our pumps have been developed for continuous operation and the materials used in their manufacture are subjected to strict controls and are rigorously verified.

The machine has been designed to pump water that is free from explosive substances, with a density equivalent to 1000 Kg/m^3 and a kinematic viscosity of 1 mm^2/s, as well as chemically non-aggressive liquids.

It has no uses other than the one previously described.

4. TECHNICAL DATA AND LIMITATIONS OF USE

Power supply voltage:	Single-phase, 230 V, 50/60 Hz. Three-phase, 230 - 400 V, 50/60 Hz.	See data plate
Motor Protection:	"IP 55"	
Insulation class:	Class "F"	
MAXIMUM ENVIRONMENTAL TEMP.:	+40ºC	
MAXIMUM PUMPED LIQUID TEMP.:	+40ºC	

5. TRANSPORT

Do not subject the products to unnecessary bumps and knocks.

When lifting and transporting the unit, use machines and tools that have been designed for this purpose, using the pallet supplied as standard (if present).

6. STORAGE

All the pumps should be stored in a sheltered, dry, dust-free place, with regulated air-moisture levels when possible. The pumps are supplied in their original packaging, where they must remain until assembly.If not, keep the suction and discharge ports closed.

7. INSTALLATION

General

The pump should be installed as close as possible to the level of water, leaving a minimum of two metres to the swimming pool edge in accordance with IEC publication No. 364 in a horizontal position, in order to obtain minimum run length in suction and a reduction of load losses.

Sufficient space should be allowed for removing to pre-filter basket for cleaning and re-fitting.

The pump should be installed on a solid, very smooth surface. It is necessary to perfectly fit the pump through the two holes provided for this purpose in the support base by means of two screws or other similar methods to prevent any possible noise or vibration that could adversely affect the pump operation.

The pump should not be installed at a geometric height of more than 3.5 metres above the water level.

In order to obtain optimum pump self-priming, it should be installed at a maximum of 2.5 metres above the water level.

The pump should be protected from any possible flooding and correct ventilation should be ensured, but without risking the effects of freezing. In the case of outside installation, the pump should be protected from rain and a power supply cable in accordance with EEC standards, type H07-Requirement Number-F (in accordance with VDE 0250) should be installed. The pump is normally supplied without an electric power cable. In this case the pump test cables can be seen to be cut at the outlet of the motor junction box. These cables must be replaced by a suitable electric hose in accordance with the legislation in force in each country.

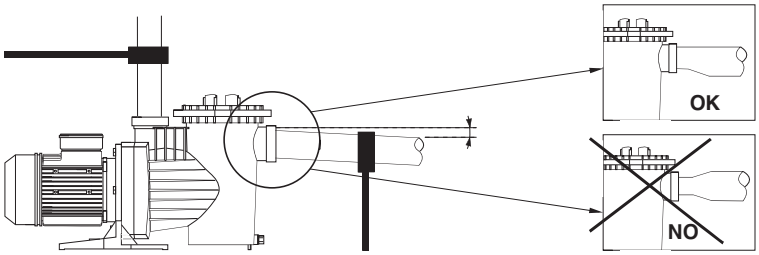
In the case of being installed a fibre housing, whether buried or half-buried, sufficient air flow should be guaranteed to generate correct ventilation that prevents the maximum interior temperature from exceeding 40ºC.

Assembling the Piping

We recommend the installation of cut-off valves in both pump suction and impulsion so that the pump may be removed from the installation without having to empty the whole circuit first.

The suction piping should be at least the same diameter as the pump connection, and it is also recommended that the impulsion piping should also be the same diameter as the pump connection.

The suction piping should be assembled with a slight inclination towards the pump to prevent air pockets forming inside.



ENGLISH

It is very important that both the suction and impulsion piping are independently supported and correctly fixed in place so that the pump does not have to support their weight nor the vibration produced by the water flow though them. In a situation where a long length of impulsion piping is used, we recommend the installation of a check valve to prevent the water hammer produced by the return of the water causing any damage when the pump stops.

If flexible piping is employed, it should be the non-compressible type.

When making the connections to the pump, totally clean connections should always be used, with the thread in perfect conditions and leak-tightness should be obtained only through the use of Teflon tape, (glues or similar products should not be employed). These connection should be slowly tightened, with special care not to strip the internal thread of the pump by over-tightening.

8. ELECTRICAL CONNECTION

Before carrying out any maintenance on the electrical part of the motor, it should be disconnected from the electricity supply.

System protection should be based on a differential breaker (Ifn = 30 mA). A GOOD EARTH CONNECTION MUST BE MADE WHENEVER POSSIBLE. The earth terminal, in particular, must be connected to the yellow/green conductor of the supply cable. An earth conductor that is longer than the phase conductors must also be used so as to prevent it from being the first to disconnect if pulled.

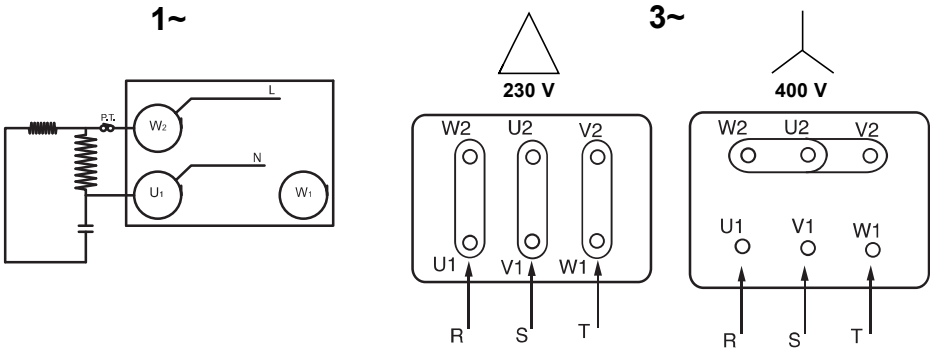
All our single-phase motors incorporate thermal protection that will disconnect the pump if the motor temperature increases due to an overload and will then connect the electricity supply again once the temperature has dropped to within normal levels again.

For three-phase versions, the user should provide appropriate protection in accordance with current regulations.

It is essential to connect the pump to a suitable ground.

The following diagram, should be used when making the electrical connections to the pump terminals.

Use is only permitted if the electric installation has safety protection systems in accordance with personal safety regulations in force in the country where the product is to be installed.



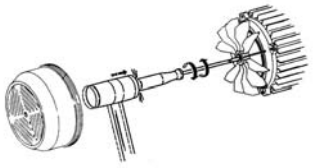
9. CHECKS PRIOR TO PUTTING INTO SERVICE

THE PUMP SHOULD NEVER BE ALLOWED TO OPERATE OFF LOAD

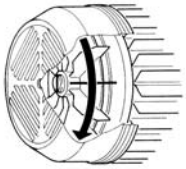
Check that the voltage and frequency of the incoming mains electricity supply correspond to those on the pump's specification plate.

Unscrew the transparent pre-filter cover and fill the pre-filter with water until the water level reaches the suction hole. Replace the pre-filter cover and hand-tighten only, ensuring that it is fully tightened.

Check the pump shaft is able to freely rotate.



Check the that the direction of motor rotation corresponds with that indicated on the specification plate (the fan should rotate in a CLOCKWISE DIRECTION, when viewed from the rear of the motor. If the motor is three-phase and it is observed that it is rotating in the opposite direction, then two of the supply phases should be inverted at the protection panel.



10. PUTTING INTO SERVICE

Open all valves, both suction and impulsion, and switch on the pump.

Wait a reasonable time for the pump and suction piping to self-prime. If this takes too long, then the priming process should be repeated.

Once the pump has correctly self-primed and the pre-filter body is seen to be full of water, the motor current should be checked and the thermal relay adjusted appropriately.

11. MAINTENANCE, DISMANTLING AND RECYCLING

The most important maintenance operation is that of keeping the pre-filter basket clean, and this filter state check should be performed after each filtration operation and especially after bottom-cleaning. The procedure is as follows:

Disconnect the electricity supply to the pump. Close the suction and impulsion valves to the pump. Open the pre-filter cover, remove the basket and clean it. Once it is clean, replace it, but before closing, check the condition of the pump body thread, pre-filter cover and the O-ring, cleaning them only with water, and where necessary apply a light coating of neutral Vaseline.

The pump should only be dismantled by qualified personnel who hold the technical qualifications required under the technical safety regulations of the country where the product is located.

This product and its components must be disposed of in accordance with environmental regulations. Use local public or private waste-collection systems.

ENGLISH

Under no circumstances should chlorine tablets be placed in the pre-filter basket.

The special key that is supplied to OPEN the pre-filter cover, should never be employed to close it.

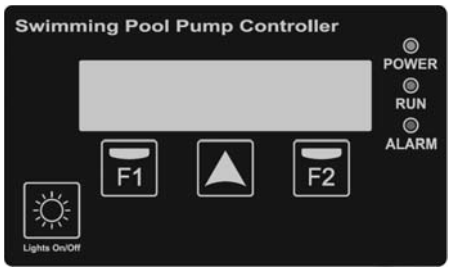
When there is a frost risk, or when the pump is to remain off for any significant length of time, then it should be emptied. This is accomplished by removing the two emptying plugs on the lower part of the pump body.

Apart from what has been stated above, our pumps do not require any other maintenance operations since the bearings have been dimensioned and lubricated for life.

POSSIBLE FAULTS, THEIR CAUSES AND SOLUTIONS

FAULTS	CAUSES	SOLUTIONS
• The pump will not prime	• The pump has not been primed • Air entering by the suction piping • Air entering via the mechanical seal • Incorrectly closed pre-filter cover • Excessive suction height • Inverted motor rotation • Incorrect voltage	• Fill the pre-filter with water. • Check the connections and piping. • Replace the mechanical seal. • Close correctly. • Install at a suitable height. • Invert two of the motor phases. • Check the plate voltage.
• The pump provides a poor flow rate	• Air entering by the suction piping. • Excessive suction height. • Inverted motor rotation. • Incorrect voltage. • Blocked • Suction piping diameter is less than that required. • Impulsion closed or blocked.	• Check the connections and piping. • Install at a suitable height. • Invert two of the motor phases. • Check the plate voltage. • Clean the pre-filter basket. • Correctly dimension the suction piping. • Open the valve and check the sand filter condition.
• The pump makes a lot of noise	• Suction piping diameter is less than that required. • The pump or piping has not been correctly secured. • Inverted motor rotation	• Correctly dimension the suction piping. • Recheck the pump and piping securing methods so that they are separate. • Invert two of the motor phases
• The pump will not start	• Lack of mains supply. • Breaker operation. • Incorrect voltage. • Motor jammed.	• Check the voltage and fuses. • Check and reset breaker. • Check the plate voltage. • Consult the Official Technical Service.

SWIMMING POOL PUMP CONTROLLER



12.1. SAFETY RULES

Before installing and using the product:

-Carefully read the whole of this manual

-The installation and maintenance must be carried out solely and exclusively by authorised personnel, responsible for making the electrical connections in accordance with current safety regulations.

-The frequency converter must not be used by people with reduced physical, sensory or mental capabilities, or without the due experience or knowledge, except if a person responsible for their safety has explained the instructions and supervised their operation of their frequency converter.

-Do not let children play with the frequency converter.

-The manufacturer accepts no liability for damage caused by improper use of the product and shall not be held responsible for damage caused by maintenance or repairs carried out by unqualified staff and/or using non-original replacement parts.

-The use of unauthorised replacement parts, alterations of the product or improper use shall automatically render the product guarantee null and void.

During normal operation:

-Before removing the cover of the controller for any maintenance work, ensure you disconnect the mains voltage.

-Never electrically disconnect the controller while the motor is rotating. This action may cause irreparable damage to the electronics of the controller.

-Even if the motor is not turning (RUN LED off), the electrical supply must still be cut off for any maintenance work.

ENGLISH

12.2. TECHNICAL DATA

Nominal values:

Power supply voltage (V)	220-240 V single phase
Motor voltage (V)	220-240 V single phase
Working frequency (Hz)	50/60 Hz
Maximum intensity (A)	16 A
Protection rating	IP 55

12.3. INSTALLATION AND ASSEMBLY

Before installing the pump with time controller, carefully read the whole of this manual and consult the safety rules valid in each country.

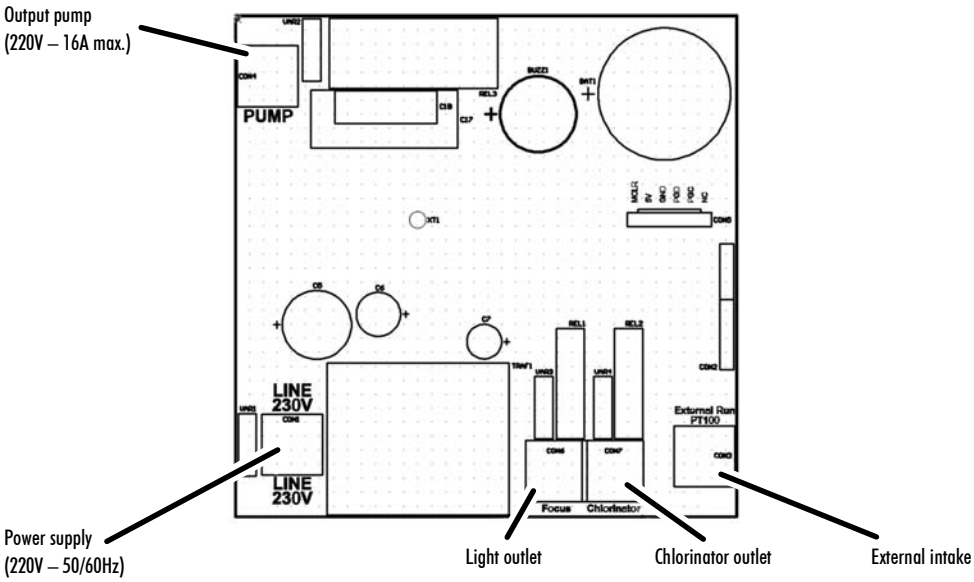
The authorised installer must consider the following indications:

-It must be installed in a well-ventilated area, protected against moisture and direct exposure to the sun and rain.

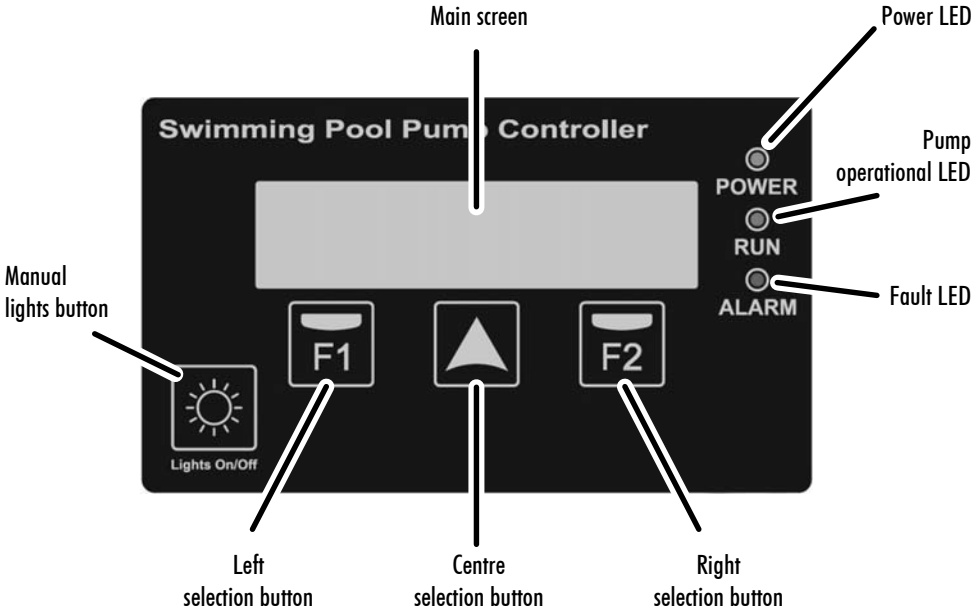
-Before making the electrical connections, ensure the cable used to provide power to the frequency converter is not live.

-The electric power cables to the controller must be of the correct size for the nominal consumption of the pump and the length of cable required.

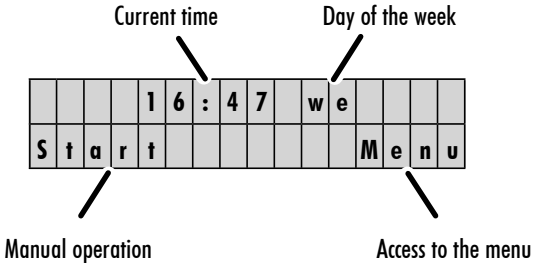
12.4. ELECTRICAL CONNECTIONS



12.5. SCREEN FORMAT



12.6. MAIN SCREEN



12.7. OPERATION MODE

The swimming pool pump's intelligent controller eliminates electrical panel installation requirements for the pump's automatic start-up, the lights, etc. in domestic installations, and includes other functions and protection elements that a conventional electrical panel does not have.

Its main features are:

-Very intuitive QuickStart assistant for the basic configuration of the unit.

-Timer control activation/deactivation of the swimming pool pump, with three configurable daily cycles and with the possibility to select the days of the week on which filtration is required.

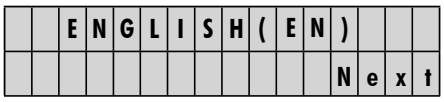
-Timer control for activating the swimming pool lights, and other programmable timing applications. This function also enables configuration of the days of the week on which the lights will be activated.

-Manual activation of the swimming pool pump, with timer stop, for occasional use.
-Manual activation of the swimming pool lights, also with timer stop, by pressing the dedicated button for this purpose.
-Programmable output for salt chlorinator activation.
-External intake programmable by remote activation of the pump, for example from a heater, a home automation system, etc.
-Activation of the pump's external intake by means of a type PT-100 temperature probe (not included as standard), which prevents frozen pipes.
-Amperimetric protection of the motor against over amperage.
-Protection of the pump against running dry (programmable).
-Alarm sound to indicate anomalies in the pump.
-Partial/total totaliser of the pump's operating hours.
-Failure logging.

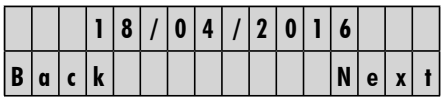
12.8. START-UP WIZARD

When starting the unit there is a QuickStart wizard, with the following sections:

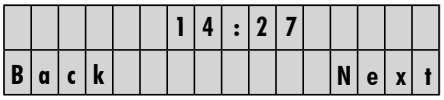
a) LANGUAGE



b) DATE (DD/MM/YYYY)



c) TIME (HH:MM)



12.9. SETUP MENU

1 - LANGUAGE

Use the ▲ button to modify the language of the menus and alerts. Press F2 to save the selection.

2 - DATE/TIME

In this submenu, the current date and time can be modified, which are very important values because the filtration and lighting programs depend on the information provided in this point.
The value to modify will flash, making modification more intuitive. The value to be modified can be increased by pressing the ▲ button.

The changes made will not be effective until the OK button is pressed F2. This text is shown when editing the minutes of the current time.
The time controller has an internal clock that together with the battery supplied guarantee that the date and time set will not be lost if there is a power cut.

3 - FILTRATION

In this submenu, the parameters and times referred to in the pump's filtration times can be set.
On the first submenu selection screen, set the days the filtration is required to be active. The filtration options available are Monday to Sunday (every day of the week) Monday to Friday, only Saturday and Sunday or only Friday and Saturday. Filtration can also be completely deactivated.
Press the ▲ button to modify the selection. Press F2 to confirm.
If "FILTRATION OFF" is selected, configuration of the remaining parameters will not continue.
If any of the other ranges of filtration days are selected, the process will continue to the selection of daily filtration cycles. From 1 to 3 daily filtration cycles can be selected in this screen, which can be modified with the ▲ button. Once the daily filtration cycles have been selected, in the following screens start time and the filtration time of each cycle individually, up to a maximum filtration time of 12 hours per cycle.

4 - AMPERAGE

Access this submenu to adjust the motor's nominal consumption.
Use the button ▲ to increase the motor's nominal consumption in increments of a decimals of an ampere, up to 10% above the nominal consumption of the pump, aiming to protect the electric motor.
Press F2 to save the selection. Press F1 to exit without changing the value.
Within this submenu also we have the option to enable detection against dry running.

5 - LIGHTING

This is the submenu for editing the automatic activation of the swimming pool lights, if this automation is required. By default the lighting programme is deactivated, although it can be activated in a very similar way to adjusting the filtration cycles in submenu "3. FILTRATION".
On the first screen, select the days on which to activate automatic lighting of the swimming pool, selecting from the options of Monday to Sunday, Monday to Friday, Saturday and Sunday and Friday and Saturday. Press F2 to modify the selection. Press ▲ to save the selection.
On the following screens set the start time for the lighting activation and the lighting time required, up to a maximum of 12 hours.

6 - HISTORY

In this submenu, merely informative, record is shown of the latest alarms, if any, due to motor current, or detection that the pump is running dry. If there is more than one, modify the viewing by pressing ▲.
The information is presented in the following format:

XX-DD/MM/YY-##

Where:
XX = type of alert (OL for overcurrent, DR for running dry)
DD/MM/YY = Day/Month/Year of alert
= Number of alert on the same day

7 - MAINTENANCE

The time controller can advise when cleaning the basket in the pump is recommended as well as when it is recommended to clean the sand filter.
The alerts, if they are active, simply show a message on the screen, which can be reset.
Warnings can be adjusted individually, indicating how frequently, in days, we want to be warned regarding the cleaning of the basket or filter, as the case may be. If they are active, they will simply show a message on the screen accompanied by a blinking light "ALARM". These warnings are only informative, with the aim of helping us to carry out the general maintenance tasks of the filtration system.
We will also find the function "SKIMMING", disabled by default, which allows us to select how frequently, in hours, the pump will be activated for a few minutes. The operating time once these hours have been completed is 3 minutes. When this time has passed, the programmed hours will be counted once again and the pump will be activated for 3 minutes, and so on. This function is very useful in swimming pools where waste often falls onto the surface of the water, such as leaves from trees, insects, etc...

8 - METERS

Informative screens that show the total count of partial operating hours (press F2 to reset), and also a totaliser of the pump's general operating hours (not resettable).
Press ▲ to select the total or partial viewing of the pump's operating hours.

9 - INTAKE/OUTPUT

The external intake as well as the relay output can be activated in this submenu (deactivated by default). Press F2 to activate/deactivate.
If the external intake is enabled, the pump will automatically start if active contact is detected, and will deactivate when contact is deactivated. Activation by active contact depends on programming in section "3. FILTRATION". Deactivation by deactivated contact takes into account the programming in section "3. FILTRATION" to decide whether the pump is in a programmed filtering cycle or not.
This intake also enables the remote activation/deactivation of the pump through a PT-100 type temperature probe. In this case, the system decides, depending on the temperature recorded by the censor, the activation and deactivation time of the pump, from running for 1 minute and stopped for 59 minutes at +3ºC up to a maximum of 55 minutes running per 5 minutes stopped at very low temperatures (-30ºC). In this extreme range of temperatures, activation and

deactivation are calculated automatically.
The pump output, if it is enabled, will activate the relay marked as "chlorinator" when the pump is activated and deactivated. This contact can be used to enable operation of a salt chlorinator or to remotely control the pump status.

10 - VERSION DE SOFTWARE
An informative screen showing the software version of the time controller.

11 - FACTORY RESET
El último submenú de los ajustes permite el reseteo total de la configuración del controlador. A través de una pregunta
The last submenu in configurations enables a total reset of the configuration of the controller. Through a question, the user can recover the factory configuration and start the start-up wizard.
The factory reset eliminate all settings made except for the alert history and the total operating hour counter on the pump.

Note 1: The ☼ button is disabled if the configuration menu is active.
Note 2: If no selection is made in the configuration menu, the stand-by screen will return after 15 seconds.
Note 3: The values changed in the start-up wizard as well as in the configuration menu will be stored in case of power cut, therefore reconfiguration is not required.

12.10. WARNING MANAGEMENT

During normal operation of the time controller there may be alerts which are mostly merely informative, and only in some cases may also stop the pump.
There are luminous and acoustic type alerts. The luminous only alerts may be considered a warning, but in no case involve modification to the normal operation of the controller. These alerts may occur due to:

-Dirty pump basket alert
-Dirty sand filter alert

These alerts can be reset manually.
There are other types of alerts that may be considered alarms, and the luminous alert will be accompanied by an acoustic alert. The acoustic alert is not continuous, and the amount of time it sounds will depend on the time the alert is active. These alarms are:

-Excess ammeter consumption of the motor
-Detection of the pump is operating without water (if the configurations are activated)

These two alarms are self-resettable, up to a point which very infrequently occurs in which the pump is totally blocked, until an authorised operator with manually reset is the fault with the F2 button. The alerts considered alarms generate an entry in the alert history.
Remember that only the alarm about ammeter consumption on the motor is always active and cannot be deactivated. All the other alerts/alarms are deactivated by default and are only operative for supervision by manually activating them.

12.11. MANUAL FUNCTIONS

The intelligent controller has, in addition to the programmable automated features for activating the pump and the swimming pool lights, two manual functions that enable manual start of the pump as well as manual activation of the swimming pool lights.

To manually activate the pump, from the stand-by screen select the pump timer activation submenu by pressing F1 :

	B	O	M	B	A		=		6	0		m	i	n	
-	>														

In this screen, each time F1 is pressed, the manual activation of the pump can be selected for 2 minutes, 5 minutes, 30 minutes, 60 minutes, 2 hours, 4 hours, 8 hours or deactivation. Just select the manual time desired and after a few seconds the pump will be activated for the set time. The pump will deactivate once the intelligent controller has checked that the selected time has transpired.

Note: It must be pointed out that if a filtration cycle begins during manual timing of the pump, or the external intake enables the pump for operation, the pump will not stop until the end of the manually selected time, as long as the programme filtration is not finalised, or the external intake disables operation of the pump, respectively. It also indicates that if the chlorinator outlet is enabled with operation of the pump, this outlet will also be activated during manual operation.

To manually activate the swimming pool lights, there is a specific button ☼ .

The same as for manual activation of the pump, each press enables manual operating time of the lights to be selected:

	L	I	G	H	T	S	=		1	5		m	i	n	

In this case, the times that can be selected are 15 minutes, 30 minutes, 60 minutes, 2 hours, 4 hours, 8 hours or deactivation. Only the manual operating time must be selected and after a few seconds the lights will activate for the manually set time.

Note: It must be pointed out that if a lighting cycle starts during the manual timing of the lights, the pump will not stop until the end of the manually selected time, as long as the automatic lighting time has not finalised.

12.12. ADDITIONAL ELEMENTS

The additional elements for installation of the intelligent controller are:

-Wall mounting

-PT-100 temperature probe

a) WALL MOUNTING:

The wall mounting enables the intelligent controller to be fixed to the wall in installations in which the controller does not need to be directly connected to the motor's terminal cover. In these situations it is very important to ensure the correct sizing of the pump/intelligent controller electrical connection cable. The following table shows the recommended cable selections based on the electrical power of the motor and the distance:

Motor power (HP)	Cable section (mm^2)		
	1	1,5	2,5
	Maximum distance (metres)		
0,25 / 0,33	40	130	220
0,5 / 0,75	25	60	110
1 / 1,5	-	30	60
2 / 3	-	15	35

b) PT-100 TEMPERATURE PROBE:

The PT100 temperature probe is an element for detecting the water temperature in installations in which there is a possibility that the pipes may freeze. To place the probe into location, it is recommended that it is as close as possible to the swimming pool and as far away as possible from the pump room. The temperature probe has a ¼" male threaded connection, and it is recommended to install it on the pump's pressure pipes.

It must be connected to electricity through the intake marked "PT100" on the intelligent controller. For its operation, "INTAKE ON" must be selected in configuration menu "9. INTAKE/OUTPUT".

12.13. WARRANTY

The controller is guaranteed for 24 months from the purchase date. The use of original spare parts, alterations or improper use will void the product guarantee.

12.14. DISPOSAL AND ENVIRONMENTAL ASPECTS

To remove the parts that make up the time controller, the current rules and regulations in each country in which the product is used must be adhered to. In any case, do not dispose of polluting parts into the environment.

13. INFORMACION TECNICA

TECHNICAL INFORMATION

INFORMATION TECHNIQUE

TECHNISCHE INFORMATIONEN

INFORMAZIONI TECNICHE

TECHNICKÉ INFORMACE

ТЕХНИЧЕСКАЯ ИНФОРМАЦИЯ

INFORMAÇÃO TÉCNICA

TEKNİK BİLGİLER

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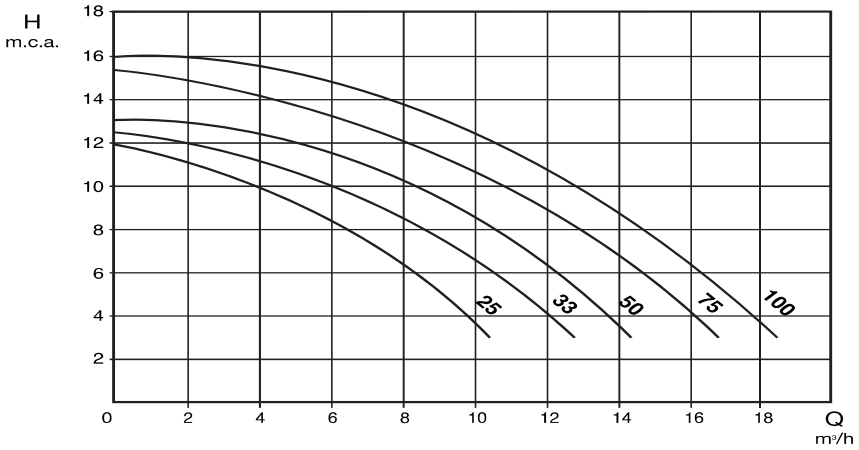
CARACTERISTICAS / CHARACTERISTICS / CARACTERISTIQUES / FEATURES
CARATTERISTICHE / VLASTNOSTI / ОСОБЕННОСТИ / CARACTERISTICAS / ÖZELLİKLERİ



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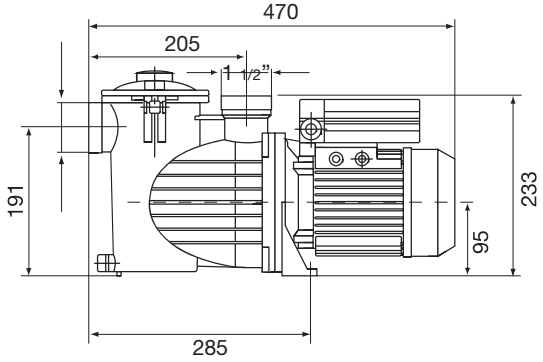
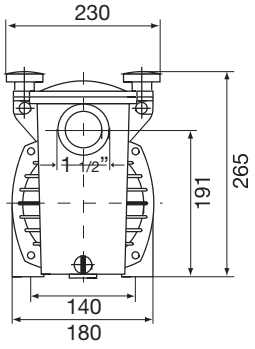
DIMENSIONI / ROZMĚRY / РАЗМЕРЫ / DIMENSÕES / BOYUTLAR

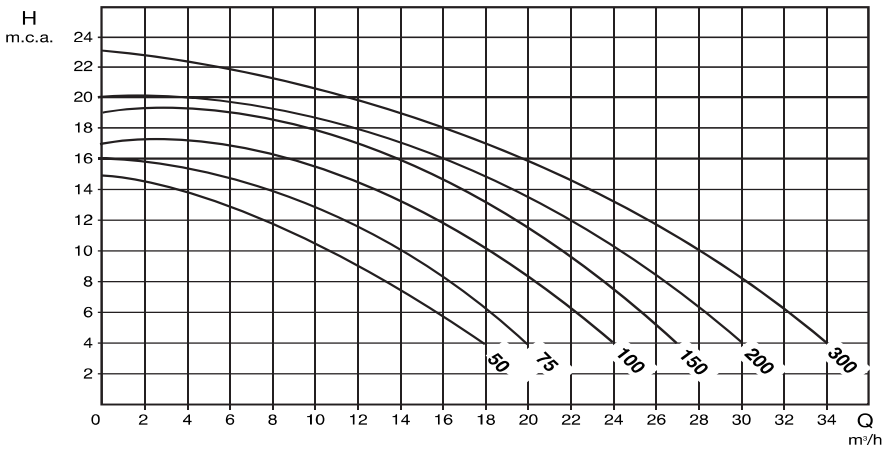




Tipo/Type	"Kg"	PVC Fiting
25	11,6	Ø 50
33	11,6	Ø 50
50	11,6	Ø 50
75	12,6	Ø 50
100	12,6	Ø 50

saci pumps

CARACTERISTICAS / CHARACTERISTICS / CARACTERISTIQUES / FEATURES
CARATTERISTICHE / VLASTNOSTI / ОСОБЕННОСТИ / CARACTERISTICAS / ÖZELLİKLERİ



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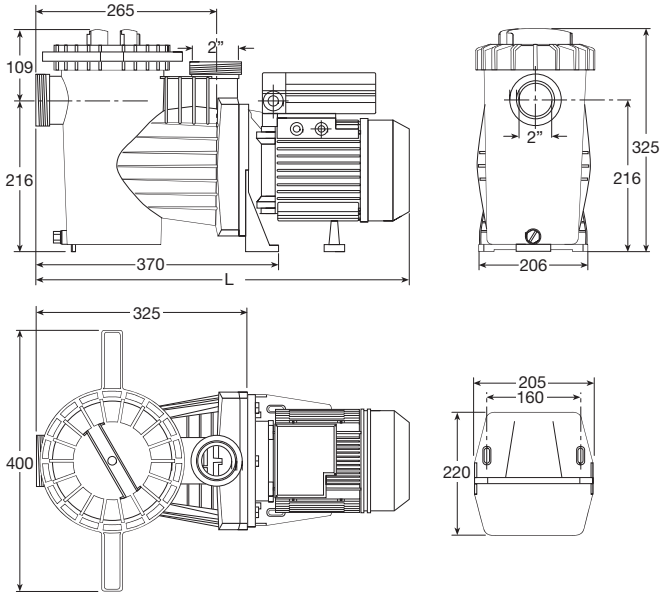
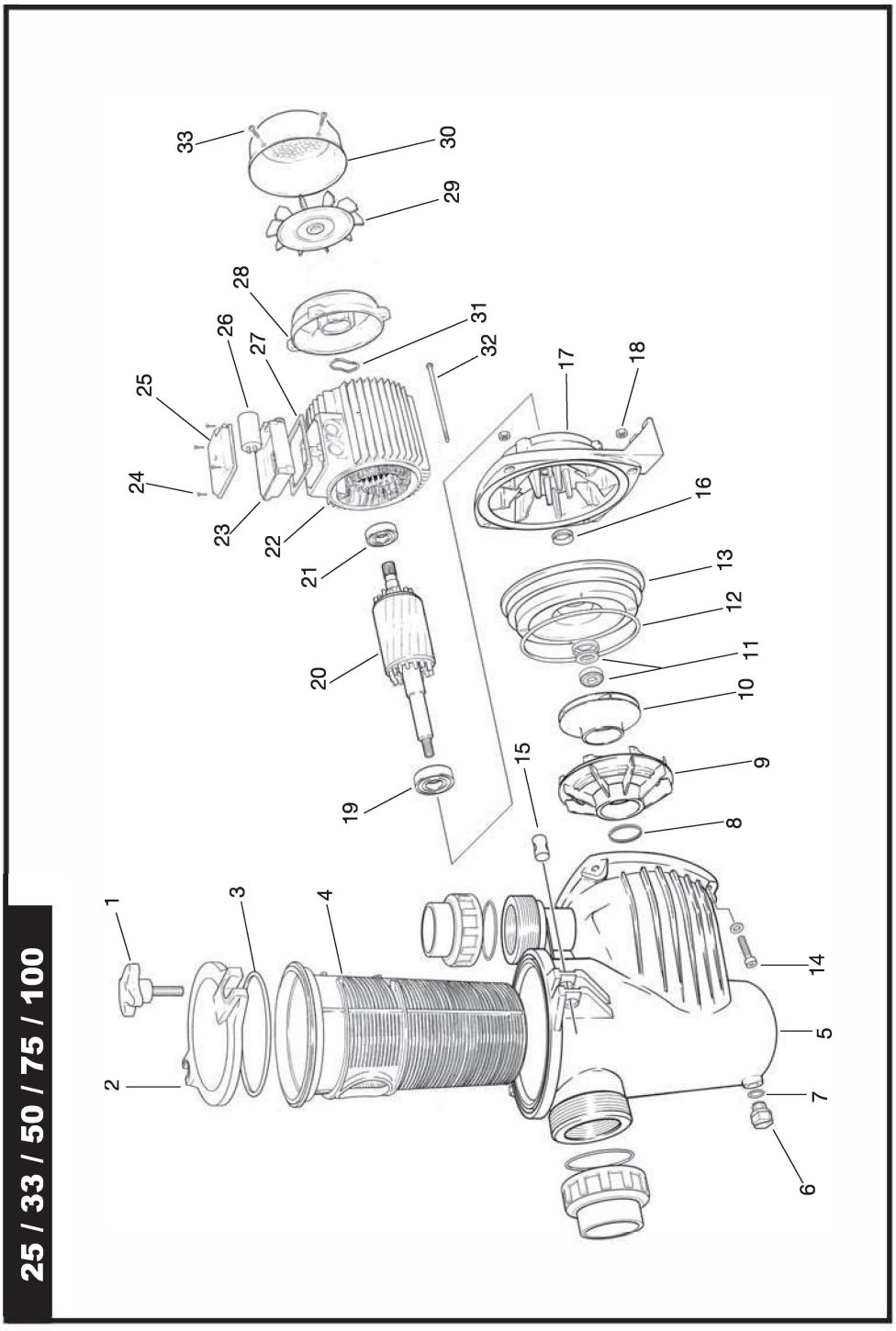
DIMENSIONI / ROZMĚRY / РАЗМЕРЫ / DIMENSÕES / BOYUTLAR



Tipo/Type	"L"	"Kg"
50 M	550	10,9
50 T	550	10,9
75 M	550	11,4
75 T	550	10,9
100 M	550	12,4
100 T	550	12,4
150 M	580	15,4
150 T	580	13,9
200 M	650	16,9
200 T	575	15,4
300 M	650	20,4
300 T	650	17,4


25 / 33 / 50 / 75 / 100
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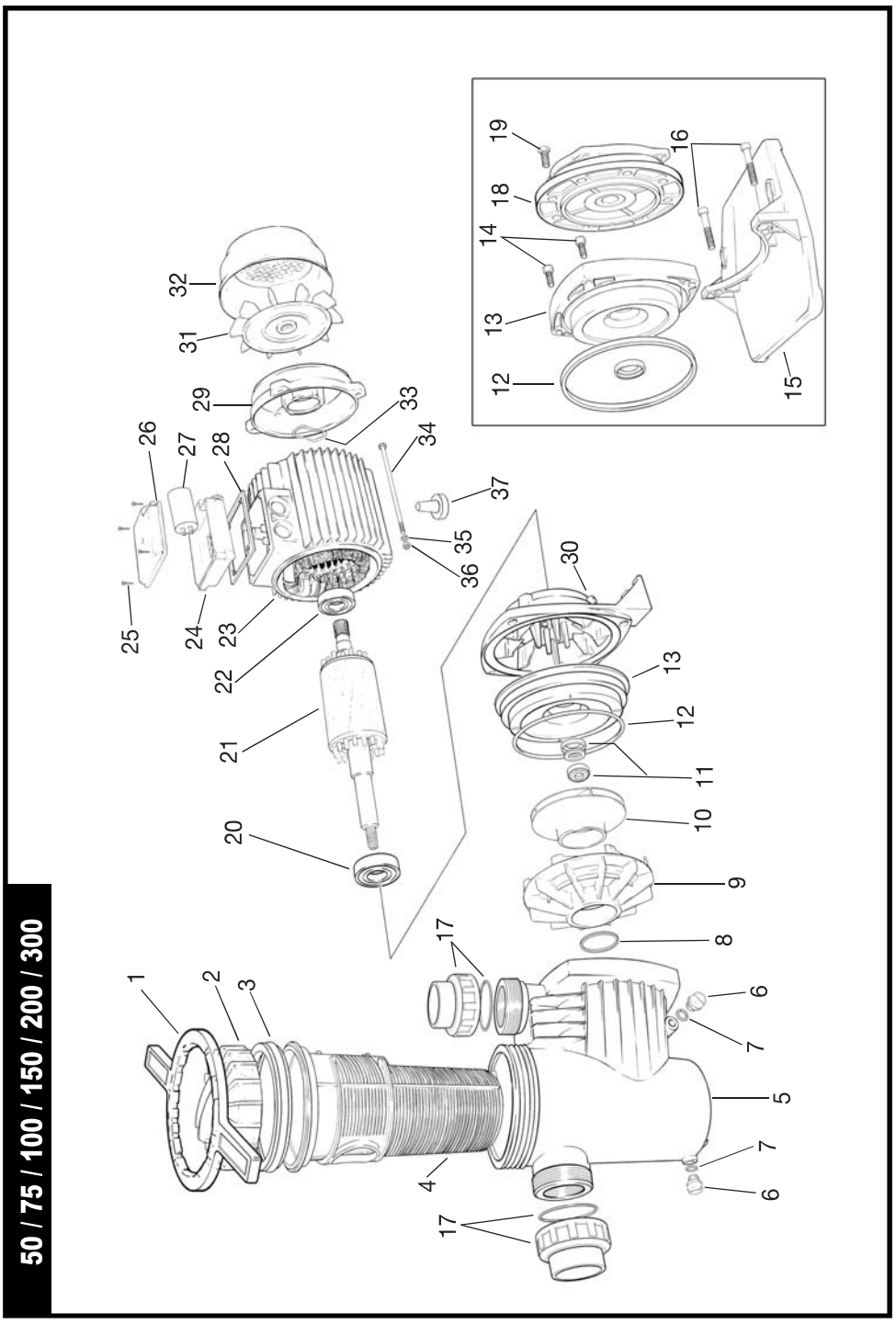
DENOMINACIÓN RECAMBIOS / SPARE-PART DESCRIPTION / DÉNOMINATION DES PIÈCES / BEZEICHNUNG DER ERSATZTEILE / DENOMINAZIONE DEI RICAMBI / ПЕРЕЧЕНЬ ДЕТАЛЕЙ / DENOMINAÇÃO PEÇAS / YEDEK PARÇALAR / NÁZVY ČÁSTÍ

	POMO	PRE-FILTER HANDLE	PODKÉPREFILTRE	KNOPFVORFILTER	POMELLO	Замок	POMO PRÉ-FILTRO	ÖN-FILTRE KULPU	ŠROUB VÍKA PŘEDFILTRU
2-	TAPAPREFILTRO	PRE-FILTER COVER	COUVERCLE PRÉFILTRE	VORFILTERDECKEL	COPERCHIO PRE FILTRO	Крышка фильтра предварительной очистки	TAMPA PRÉ-FILTRO	ÖN-FILTRE KAPAĞI	VÍKO PŘEDFILTRU
3-	JUNTAPREFILTRO	PRE-FILTER JOINT	JOINTPRÉFILTRE	VORFILTERDICHTUNG	SCHEDA DI PRE FILTRO	Прокладка фильтра предварительной очистки	JUNTAPRÉ-FILTRO	ÖN-FILTRE CONTASI	TĚSNĚNÍ VÍKA PŘEDFILTRU
4-	CESTOPREFILTRO	PRE-FILTER BASKET	PANIERPRÉFILTRE	VORFILTERKORB	CESTINO DI PRE FILTRO	Сетка фильтра предварительной очистки	CESTO PRÉ-FILTRO	ÖN-FILTRE SEPETI	KOŠÍK PŘEDFILTRU
5-	CUERPO BOMBA	PUMP BODY	CORPSPOMPE	PUMPENKÖRPER	CORPO POMPA	Корпус насоса	CORPO BOMBA	POMPA GOVDESI	TĚLO PŘEDFILTRU
6-	TAPÓN DESAGÜE	DRAINING PLUG	BOUCHONVIDANGE	ENTLEERUNGSSCHRAUBE	TAPPO DI SCARICO	Пробка сливного отверстия	TAMPÃO DESCARGA	BOŞALTMA VIDASI	VYPOUŠTĚCÍ ŠROUB
7-	JUNTATAPÓN DESAGÜE	DRAINING PLUG O-RING	JOINT BOUCHONVIDANGE	DICHTUNG ENTLEERUNGSSCHRAUBE	GUARNIZIONE TAPPO DI SCARICO	Прокладка пробки сливного отверстия	JUNTA TAMPÃO DESCARGA	BOŞ MDAO-RING	TĚSNĚNÍ VYPOUŠTĚCÍHO ŠROUBU
8-	JUNTADIFUSOR	DIFFUSER JOINT	JOINTDIFFUSEUR	VERTEILERDICHTUNG	GUARNIZIONE DIFFUSORE	Прокладка диффузора	JUNTA DIFUSOR	DIFUZOR CONTASI	TĚSNĚNÍ DIFUSORU
9-	DIFUSOR	DIFFUSER	DIFFUSEUR	VERTEILER	DIFFUSORE	Диффузор	DIFUSOR	DIFUZOR	DIFUSOR
10-	TURBINA	IMPELLER	TURBINE	PUMPENLAUFRAD	GRANTE	Рабочее колесо	TURBINA	PERVANE	TURBÍNA
11-	CIERRE MECÁNICO	MECHANICAL SEAL	FERMETURE MÉCANIQUE	MECHANISCHE ABDICHTUNG	TENUTA MECCANICA	Механический затвор	FECHO MECÂNICO	MEKANİK SALMASTRA	TĚSNÍCÍ SEGMENT
12-	JUNTA CUERPO BOMBA	PUMP BODY LID O-RING	JOINT CORPS POMPE	PUMPENKÖRPERDICHTUNG	O-RING CORPO POMPA	Прокладка корпуса насоса	JUNTA CORPO BOMBA	GOVDE KAPAK O-RINGI	TĚSNĚNÍ TĚLA PŘEDFILTRU
13-	DISCO PORTASELLO	PUMP BODY LID	COUVERCLE CORPS POMPE	PUMPENKÖRPERDECKEL	COPERCHIO PORTA TENUTTA	Крышка корпуса насоса	TAMPA CORPO BOMBA	GOVDE KAPAĞI	ČELO ČERPADLO
14-	TORNILLO FIJACIÓN CUERPO	PUMP BODY SECURING SCREW	VIS FIXATIONCORPS	OBERE BEFESTIGUNGSSCHRAUBE	VITE DI FISSAGGIO CORPO	Закрепительный винт корпуса насоса	PARAFUSO FIXAÇÃO CORPO	POMPA GOVDE VIDASI	SROUB TĚLA PŘEDFILTRU
15-	CILINDRO PORTAPOMO	PRE-FILTER HANDLE CLINDER	PODKÉPREFILTRE CILINDRE	KNOPF VORFILTER CLIDER	CILINDRO POMELLO	Цилиндр держателя замка	CILINDRO PORTAPOMO	ÖN FILTREK ULP SILINDIRI	MATKA ŠROUBU VÍKA
16-	RETÉN DELANTERO PROTECCIÓN IP-55	FRONT IP55 PROTECTION SEAL	JOINT AVANT PROTECTION IP-55	VORDERERDICHTRING SCHUTZGRAD IP-55	FERMOIP-55	Передняя гидроизолятельная защита IP-55	RETÉN DIANTERO PROTECÇÃO IP-55	IP-55 KORUMA CONTASI	PŘEDNÍ OCHRANNÉ TĚSNĚNÍ
17-	SOPORTE BOMBA	PUMP SUPPORT	SUPPORT POMPE	HALTERUNGKÖRPER PUMPE	SUPPORTO POMPA	Опора насоса	SUPORTE BOMBA	POMPA DESTEĞI	PŘÍRUBA MOTORU - PŘEDNÍ ČELO
18-	TUERCA FIJACIÓN CUERPO	PUMP BODY SECURING NUT	ÉCROU FIXATIONCORPS	SCHRAUBENMUTTERKÖRPER	DADO FISSAGGIO CORPO	Закрепительная гайка корпуса насоса	PORTA FIXAÇÃO CORPO	POMPA GOVDE VIDASI	MATKA
19-	RODAMIENTO DELANTERO	FRONT BALL BEARING	ROULEMENT AVANT	VORDERES LAGER	CUSCINETTO ANTERIORE	Передний подшипник	ROLAMENTO DIANTEIRO	ÖN RULMAN	LOŽISKO 6202
20-	ROTOR CONEJE	SHAFT WITH ROTOR	ROTOR AVEC AXE	ROTORMITWELLE	ALBERO ROTORE	Ротор с валом	ROTOR COM EIXO	MOTOR SAFT VE KOLLETOR	ROTOR
21-	RODAMIENTO TRASERO	BACK BALL BEARING	ROULEMENT ARRIERE	HINTERES LAGER	CUSCINETTO POSTERIORE	Задний подшипник	ROLAMENTO TRASEIRO	ARKA RULMAN	LOŽISKO 6202
22-	ES STATOR MOTOR + CARCASA	MOTOR CASING	STATOR MOTEUR + CARCASSE	STATOR MOTOR +GEHÄUSE	STATORE	Статор двигателя + рама	ESTATOR MOTOR + CARCAÇA	MOTOR GOVDESI	STATOR
23-	CAJA BORNES	TERMINAL BOX	BOITE BORNES	KLEMMENKASTEN	MORSETTIERA	Задняя коробка	CAIXA BORNES	ELEKTRİK KUTUSU	KRYT SVORKOVNICE
24-	TORNILLO TAPA CAJA BORNES	TERMINAL BOX SCREW	VIS COUVERCLE BOITE BORNES	SCHRAUBEN LEMMENKASTENDECKEL	VITE COPERCHIO SCATOLA MORSETTIERA	Винт крышки задней коробки	PARAFUSO TAMPA CAIXA BORNES	ELEKTRİK KUTUSU VIDASI	VRUT
25-	TAPA CAJA BORNES	TERMINAL BOX COVER	COUVERCLE BOITE BORNES	KLEMMENKASTENDECKEL	COPERCHIO SCATOLA	Крышка задней коробки	TAMPA CAIXA BORNES	ELEKTRİK KUTUSU KAPAĞI	VÍKO KRYTU SVORKOVNICE
26-	CONDENSADOR	CAPACITOR	CONDENSATEUR	KONDENSATOR	MORSETTIERA	Конденсатор	CONDENSADOR	KONDANSATOR	KONDENZÁTOR
27-	JUNTA CAJA BORNES	TERMINAL BOX GASKET	JOINT BOITE BORNES	KLEMMENKASTENDICHTUNG	CONDENSATORE	Прокладка задней коробки	JUNTA CAIXA BORNES	ELEKTRİK KUTUSU CONTASI	TĚSNĚNÍ KRYTU SVORKOVNICE
28-	TAPA TRASERA MOTOR	BACK MOTOR COVER	COUVERCLE ARRIERE MOTEUR	HINTERER MOTORDECKEL	GUARNIZIONE MORSETTIERA	Задняя крышка двигателя	TAMPA TRASEIRA MOTOR	MOTOR ARKA KAPAK	ZADNÍ ČELO MOTORU
29-	VENTILADOR	FAN	VENTILATEUR	LÜFTER	COPERCHIO POSTERIORE MOTORE VENTOLA	Вентилятор	VENTOINHA	FAN	VENTILÁTOR
30-	TAPA VENTILADOR	FAN COVER	COUVERCLE VENTILATEUR	LÜFTERDECKEL	COPRIVENTOLA	Крышка вентилятора	TAMPA VENTOINHA	FANKAPAĞI	KRYT VENTILÁTORU
31-	ARANDELA JASAJE	THRUST WASHER	RONDELLE DE BUTEE	SICHERUNGSSCHEIBE	RONDELLA LASAJE	Упорная шайба	ANILHA LASAJE	ARKAN FAN PULU	PODLOŽKA
32-	ESPARRAGO MOTOR	TIE ROD	GOUJON FILETE MOTEUR	MOTORBOLZEN	TIRANTI MOTORE	Шпифт двигателя	CAVILHA MOTOR	BAĞLANTI ÇUBUĞU	STAHOVACÍ ŠROUB
33-	TORNILLO TAPA VENTILADOR	FAN COVER SCREW	VIS COUVERCLE VENTILATEUR	LÜFTERDECKEL SCHRAUBE	VITE COPERCHIO VENTOLA	Винт крышки вентилятора	ANILHA CAVILHA	FANKAPAK VIDASI	SROUB KRYTU VENTILÁTORU

AES
Automated Environmental Systems



DENOMINACIÓN RECAMBIOS	SPARE-PART DESCRIPTION	DÈNOMINATION DES PIÈCES	BEZEICHNUNG DER ERSATZTEILE	DENOMINAZIONE DEI RICAMBI	ПЕРЕЧЕНЬ ДЕТАЛЕЙ	DENOMINAÇÃO PEÇAS	YEDEK PARÇALAR	NÁZVY ČÁSTÍ
1- LLAVE	KEY	CLÉ DU COUVERCLE	ÖFFNUNGSSCHLÜSSEL	CHIAVE	Замок	LLAVE PRÉ-FILTRO	KLÍČ	ANAHTAR
2- TAPA PREFILTRO	PRE-FILTER COVER	COUVERCLE PRÉFILTRE	VORFILTERDECKEL	COPERCHIO PRE FILTRO	Крышка фильтра предварительной очистки	TAMPA PRÉ-FILTRO	VÍKO PŘEDFILTRU	ÖN-FILTRE KAPAĞI
3- JUNTA PREFILTRO	PRE-FILTER JOINT	JOINT PRÉFILTRE	VORFILTERDICHTUNG	SCHEDA DI PRE FILTRO	Прокладка фильтра предварительной очистки	JUNTA PRÉ-FILTRO	TĚSNĚNÍ VÍKA PŘEDFILTRU	ÖN-FILTRE CONTASI
4- CESTO PREFILTRO	PRE-FILTER BASKET	PANIER PRÉFILTRE	VORFILTERKORB	CESTINO DI PRE FILTRO	Сетка фильтра предварительной очистки	CESTO PRÉ-FILTRO	KOŠÍK PŘEDFILTRU	ÖN-FILTRE SEPETI
5- CUERPO BOMBA	PUMP BODY	CORPS POMPE	PUMPENKÖRPER	CORPO POMPA	Корпус насоса	CORPO BOMBA	TĚLO PŘEDFILTRU	PLASTIK GOVDE
6- TAPÓN DESAGÜE	DRAINING PLUG	BOUCHON VIDANGE	ENTLEERUNGSSCHRAUBE	TAPPO DI SCARICO	Пробка сливного отверстия	TAMPÃO DESCARGA	VYPOUŠTĚCÍ ŠROUB	BOŞALTMA VIDASI
7- JUNTA TAPÓN DESAGÜE	DRAINING PLUG O-RING	JOINT BOUCHON VIDANGE	DICHTUNG ENTLEERUNGSSCHRAUBE	GUARNIZIONE TAPPO DI SCARICO	Прокладка пробки сливного отверстия	JUNTA TAMPÃO DESCARGA	TĚSNĚNÍ VYPOUŠTĚCÍHO ŠROUBU	BOŞ VIDA O-RINGI
8- JUNTA DIFUSOR	DIFFUSER JOINT	JOINT DIFFUSEUR	VERTEILERDICHTUNG	GUARNIZIONE DIFFUSORE	Прокладка диффузора	JUNTA DIFUSOR	TĚSNĚNÍ DIFUSORU	DIFUZOR CONTASI
9- DIFUSOR	DIFFUSER	DIFFUSEUR	VERTEILER	DIFFUSORE	Диффузор	DIFUSOR	DIFUSOR	DIFUZOR
10- TURBINA	IMPELLER	TURBINE	PUMPENLAUFRAD	GIRANTE	Рабочее колесо	TURBINA	TURBÍNA	PERVANE
11- CIERRE MECÁNICO	MECHANICAL SEAL	FERMETURE MÉCANIQUE	MECHANISCHE ABDICHTUNG	TENUTA MECCANICA	Механический затвор	FECHO MECÂNICO	TĚSNÍCÍ SEGMENT	MEKANIK SALMASTRA
12- JUNTA CUERPO BOMBA	PUMP BODY LID O-RING	JOINT CORPS POMPE	PUMPENKÖRPERDICHTUNG	O-RING CORPO POMPA	Прокладка корпуса насоса	JUNTA CORPO BOMBA	TĚSNĚNÍ TĚLA PŘEDFILTRU	GOVDE KAPAK O-RİNGİ
13- DISCO PORTASELLO	PUMP BODY LID	COUVERCLE CORPS POMPE	PUMPENKÖRPERDECKEL	COPERCHIO PORTA TENUTTA	Крышка корпуса насоса	TAMPA CORPO BOMBA	ČELO ČERPADLO	GOVDE KAPAK
14- TORNILLO SUPERIOR FIJACIÓN CUERPO	SUPERIOR PUMP BODY SECURING SCREW	VIS SUPÉRIEURE FIXATION CORPS	OBERE BEFESTIGUNGSSCHRAUBE	VITE DI FISSAGIO CORPO SUPERIORE	Верхний закрепительный винт корпуса насоса	PARAFUSO SUPERIOR FIXAÇÃO CORPO	SROUB TĚLA PŘEDFILTRU	POMPA GOVDE VIDASI
15- BASE BOMBA	PUMP BASE	BASE POMPE	PUMPENFUSS	BASE POMPA	Станина насоса	BASE BOMBA	ČERPADLO ZÁKLADNA	POMPA TABANI
16- TORNILLO FIJACIÓN BASE	PUMP BASE SECURING SCREW	VIS FIXATION BASE	BEFESTIGUNGSSCHRAUBE PUMPENFUSS	VITE DI FISSAGIO BASE	Закрепительный винт станины	PARAFUSO FIXAÇÃO BASE	PŘIŠROUBUJTE FIXAČNÍ ZÁKLAD	TABAN VIDASI
17- KIT RACORES	COUPLINGS KIT	KIT ACCOUPLEMENTS	KIT KUPPLUNGEN	KIT RACORDI	СОЕДИНИТЕЛЬНЫЕ МУФТЫ КОМПЛЕКТ	KIT ACOPLAMENTOS	SPOJKY KIT	KAPLINLER KITI
18- TAPA DELANTERA MOTOR	FRONT MOTOR COVER	COUVERCLE AVANT MOTEUR	VORDERER MOTORDECKEL	FLANGIA MOTORE	Передняя крышка двигателя	TAMPA DIANTEIRA MOTOR	PŘEDNÍ KRYT MOTORU	MOTOR ÖN KAPAĞI
19- TORNILLO FIJACIÓN MOTOR	MOTOR SECURING SCREW	VIS FIXATION MOTEUR	BEFESTIGUNGSSCHRAUBE MOTOR	VITE DI FISSAGIO MOTORE	Закрепительный винт двигателя	PARAFUSO FIXAÇÃO MOTOR	PŘIŠROUBUJTE FIXAČNÍ MOTORU	ÖN KAPAK VIDASI
20- RODAMIENTO DELANTERO	FRONT BALL BEARING	ROULEMENT AVANT	VORDERES LAGER	CUSCINETTO ANTERIORE	Передний подшипник	ROLAMENTO DIANTEIRO	LOŽISKO 6202	ÖN RULMAN
21- ROTOR CON EJE	SHAFT WITH ROTOR	ROTOR AVEC AXE	ROTOR MIT WELLE	ALBERO ROTORE	Ротор с валом	ROTOR COM EIXO	ROTOR	MOTOR GAFT VE KOLLETOR
22- RODAMIENTO TRASERO	BACK BALL BEARING	ROULEMENT ARRIÈRE	HINTERES LAGER	CUSCINETTO POSTERIORE	Задний подшипник	ROLAMENTO TRASEIRO	LOŽISKO 6202	ARKA RULMAN
23- ESTATOR MOTOR + CARCASA	MOTOR CASING	STATOR MOTEUR + CARCASSE	STATOR MOTOR + GEHÄUSE	STATORE	Статор двигателя + рама	ESTATOR MOTOR + CARCAÇA	STATOR	MOTOR GOVDESI
24- CAJA BORNES	TERMINAL BOX	BOÎTE BORNES	KLEMMENKASTEN	MORSETTIERA	Зажимная коробка	CAIXA BORNES	KRYT SVORKOVNICE	ELEKTRİK KUTUSU
25- TORNILLO TAPA CAJA BORNES	TERMINAL BOX SCREW	VIS COUVERCLE BOÎTE BORNES	SCHRAUBEN KLEMMENKASTENDECKEL	VITE COPERCHIO SCATOLA MORSETTIERA	Винт крышки зажимной коробки	PARAFUSO TAMPA CAIXA BORNES	VRUT	ELEKTRİK KUTUSU VIDASI
26- TAPA CAJA BORNES	TERMINAL BOX COVER	COUVERCLE BOÎTE BORNES	KLEMMENKASTENDECKEL	COPERCHIO SCATOLA MORSETTIERA	Крышка зажимной коробки	TAMPA CAIXA BORNES	VÍKO KRYTU SVORKOVNICE	ELEKTRİK KUTUSU KAPAĞI
27- CONDENSADOR	CAPACITOR	CONDENSATEUR	KONDENSATOR	CONDENSATORE	Конденсатор	CONDENSADOR	KONDENZÁTOR	KONDANSATOR
28- JUNTA CAJA BORNES	TERMINAL BOX GASKET	JOINT BOÎTE BORNES	KLEMMENKASTENDICHTUNG	GUARNIZIONE MORSETTIERA	Прокладка зажимной коробки	JUNTA CAIXA BORNES	TĚSNĚNÍ KRYTU SVORKOVNICE	ELEKTRİK KUTUSU CONTASI
29- TAPA TRASERA MOTOR	BACK MOTOR COVER	COUVERCLE ARRIÈRE MOTEUR	HINTERER MOTORDECKEL	COPERCHIO POSTERIORE MOTORE	Задняя крышка мотора	TAMPA TRASEIRA MOTOR	ZADNÍ ČELO MOTORU	MOTOR ARKA KAPAK
30- SOPORTE BOMBA	PUMP SUPPORT	SUPPORT POMPE	HALTERUNG KÖRPER PUMPE	SUPPORTO POMPA	Опора насоса	SUPORTE BOMBA	ČERPADLO PODPORU	POMPA DESTE
31- VENTILADOR	FAN	VENTILATEUR	LÜFTER	VENTOLA	Вентилятор	VENTOINHA	VENTILÁTOR	FAN
32- TAPA VENTILADOR	FAN COVER	COUVERCLE VENTILATEUR	LÜFTERDECKEL	COPRIVENTOLA	Крышка вентилятора	TAMPA VENTOINHA	KRYT VENTILÁTORU	FAN KAPAĞI
33- ARANDELA LASAJE	THRUST WASHER	RONDELLE DE BUTÉE	SICHERUNGSSCHEIBE	RONDELLA LASAJE	Упорная шайба	ANILHA LASAJE	PODLOŽKA	ARKAN FAN PULU
34- ESPÁRRAGO MOTOR	TIE ROD	GOUJON FILETÉ MOTEUR	MOTORBOLZEN	TIRANTI MOTORE	Штифт двигателя	CAVILHA MOTOR	STAHOVACÍ ŠROUB	BAĞLANTI ÇUBUĞU
35- ARANDELA ESPÁRRAGO	TIE ROD WASHER	RONDELLE GOUJON FILETÉ	SCHEIBE FÜR BOLZEN	RONDELLA TIRANTI	Шайба штифта	ANILHA CAVILHA	PODLOŽKA STUD	ARKAN BAĞLANTI
36- TUERCA ESPÁRRAGO	TIE ROD NUT	ÉCROU GOUJON FILETÉ	MUTTER FÜR BOLZEN	DADO TIRANTI	Гайка штифта	PORCA CAVILHA	NUT STUD	SOMUN BAĞLANTI
37- PIE MOTOR	FOOT MOTOR	PIED MOTEUR	MOTOR FOOT	PIEDE MOTORE	ДВИГАТЕЛЬ НОГ	PÉ MOTOR	NOHA MOTORU	AYAK MOTOR

AES
Automated Environmental Systems

saci bombas

VALORES NOMINALES / RATINGS / ÉVALUATION / BEWERTUNGEN
RATING / HODNOCENÍ / РЕЙТИНГИ / CLASSIFICAÇÕES / RATINGS

POTENCIA/POWER	Q		H		H max	H min
0.25 HP	0,5	10	12	4	12,5	3
0.33 HP	2	12	12	4	13	3
0.5 HP	5	14	12	4	14,5	3
0.75 HP	4,2	16	14	4	14,5	3
1 HP	7,6	18	14	4	15,5	3

POTENCIA/POWER	Q		H		H max	H min
0.5 HP	8,4	17,5	12	4	14,9	3
0.75 HP	7,9	19,5	14	4	16,1	3
1 HP	8,7	23,2	16	4	16,3	3
1.5 HP	10	27,7	18	4	20	3
2 HP	12	29	18	6	20	5
3 HP	12	33	21	6	24	5

PROTECCION EN AMPERIOS / AMP PROTECTION / AMP PROTECTION / VERSTÄRKERSCHUTZSCHALTUNG
AMP PROTEZIONE / AMP OCHRANA / AMP ЗАЩИТЫ / AMP PROTEÇÃO / AMP KORUMA

POTENCIA/POWER	II 230 V 50/60 Hz	III 230 V 50/60 Hz	III 400 V 50/60 Hz
0.25 HP	4	–	–
0.33 HP	4	–	–
0.5 HP	4	–	–
0.75 HP	6	4	2
1 HP	6	4	4

POTENCIA/POWER	II 230 V 50/60 Hz	III 230 V 50/60 Hz	III 400 V 50/60 Hz
0.5 HP	4	4	2
0.75 HP	6	4	2
1 HP	6	4	4
1.5 HP	8	6	4
2 HP	10	8	4
3 HP	16	10	6

14 – CERTIFICATO

Tutte le nostre pompe passare un rigido controllo di qualità, in modo da garantire prestazioni ottimali ed elevata affidabilità.
Assolutamente tutte le pompe sono testati nelle nostre linee di assemblaggio, con acqua in condizioni normali di lavoro e testati con i più moderni sistemi di misura. La prova di questo, dare a questo manuale insieme ad un "test Cerificado" sticker, dove vi mostriamo i dati più rilevanti del test.

Per tutti questi motivi, se si potesse osservare qualsiasi difetto o guasto, è molto importante che noi comunicare il tipo di carenza di dati, modello e numero di serie al fine di trovare la fonte del problema, e garantendo in tal modo è possibile continuare la massima qualità.

14 – TEST CERTIFIKÁT

Všechny naše cerpadla projít prísnou kontrolou kvality, a tak mužeme zajistit optimální výkon a vysokou spolehlivost.
Absolutne všechna cerpadla jsou testovány v našich montážních linek, s vodou za normálních pracovních podmínek a testovány s nejmodernejšími mericích systému. Dukazem toho, aby tento návod spolu se štítkem "testu Cerificado", kde vám ukážeme nejduležitejší údaje o zkoušce.

Ze všech techto duvodu, pokud byste mohli jakoukoli závadu nebo selhání, to je velmi duležité, abychom sdelit typ datového deficitu cerpadla modelu a sériové císlo s cílem najít prícinu problému a a zajistit tak mužete pokracovat v nejvyšší kvalite.

14 – Сертификат испытаний

Все наши насосы проходят строгий контроль качества, поэтому мы можем обеспечить оптимальную производительность и высокую надежность. Абсолютно все насосы проходят в наших производственных линиях с водой в нормальных рабочих условиях и протестированы с современными измерительными системами. Подтверждением этого, мы поставляем вместе с клейкой этикетки ручной "тест сертификат", где мы указываем наиболее важные тестовые данные. По всем этим причинам, если вы могли наблюдать любой дефект или неудачу, это очень важно, чтобы мы связывались тип данных дефицита, модели насоса и серийный номер для того, чтобы выяснить источник проблемы и, таким образом власти по-прежнему обеспечивая самое высокое качество.

14 – TEST BELGESI

Tüm pompalar siki bir kalite kontrol geçmek, bu nedenle optimum performans ve yüksek güvenilirlik saglayabilirsiniz.
Kesinlikle tüm pompalar normal çalisma kosullarinda su ile, bizim montaj hatlarinda test edilmis ve en modern ölçüm sistemleri ile test edilir. Size testin en alakali verileri gösterin Bunun kaniti, bir etiket "Cerificado testi" ile birlikte bu el vermek.

Herhangi bir kusur ya da hata gözlemlemek olursa, tüm bu nedenlerden dolayi, biz sorunun kaynagini bulmak için veri eksikligi, pompa modeli ve seri numarasi türü iletisim çok önemlidir ve böylece en yüksek kalitede devam edebilirsiniz saglamak.

14 – CERTIFICADO DE ENSAIO

Todas as nossas bombas passam por um rigoroso controlo de qualidade, pelo qual podemos garantir um óptimo funcionamento e uma grande fiabilidade.
Absolutamente TODAS as bombas são testadas nas nossas linhas de montagem com água em condições de trabalho normal e ensaiadas com os mais modernos sistemas de medição. Como prova disso, entregamos com o presente manual uma etiqueta autocolante "Certificado de ensaio".

No caso de observar alguma anomalia ou deficiência, por favor comunique-nos os dados relativos ao Tipo de deficiência, Modelo da bomba e Nº de série, a fim de que possamos averiguar a origem do problema e desta forma poder continuar a garantir a máxima qualidade.

14 - CERTIFICADO DE PRUEBAS:

Todas nuestras bombas pasan un estricto control de calidad, por lo cual podemos garantizar un óptimo funcionamiento y una gran fiabilidad. Absolutamente TODAS las bombas son probadas en nuestras lineas de montaje con agua en condiciones de trabajo normal y ensayadas con los más modernos sistemas de medición. Muestra de ello, entregamos junto con el presente manual una etiqueta adhesiva "Cerificado de pruebas", donde le indicamos los datos más relevantes de la prueva.

Por todo lo cual, en caso de que Uds. pudieran observar alguna anomaliá o deficiencia es muy importante nos comuniquen los datos de Tipo de deficiencia, Modelo bomba y Nº de serie a fin de averiguar el origen del problema y de esta forma poder seguir asegurandoles la máxima calidad.

14 - TEST CERTIFICATE

All of our pumps pass strict quality control, so we are able to guarantee their optimal operation and reliability.
Absolutely ALL of the pumps are tested on out assembly lines with water under normal working conditions and with the most modern measurement systems. As a sign of this, along with the present manual, we attach a "Test certificate" adhesive label.

If you should note any fault or shortcoming, you must report the details of the type of fault, the pump model and the serial no. so that we can check the cause of the problem and thus be able to continue offering you the best quality.

14 - CERTIFICAT D'ESSAIS

Toutes nos pompes passent un strict contrôle de qualité qui nous permettent de garantir un fonctionnement optimal et une grande fiabilité. Absolument TOUTES nos pompes sont testées sur nos lignes de montage avec de l'eau dans des conditions de fonctionnement normal de travail et testées avec les systèmes de mesurage les plus modernes. Preuve en est l'étiquette adhésive "Certificat d'essais" que nous remettons avec le présent manuel.

C'est pourquoi, dans le cas où vous observeriez une quelconque anomalie ou un défaut, il est très important que vous nous communiquiez les informations concernant le Type de défaut, le Modèle de pompe et le Nº de série afin de vérifier l'origine du problème et pouvoir ainsi continuer à vous assurer la qualité maximale.

14 – PRÜFURKUNDE

Alle unsere Pumpen werden einer strengen Qualitätskontrolle, so können wir eine optimale Leistung und hohe Zuverlässigkeit zu gewährleisten. Absolut alle Pumpen in unserer Montagelinien getestet, mit Wasser unter normalen Betriebsbedingungen getestet und mit den modernsten Mess-Systeme. Ein Beweis dafür, geben Sie dieses Handbuch zusammen mit einem Aufkleber "Cerificado Test", wo wir Ihnen die wichtigsten Daten des Tests zeigen.

Aus all diesen Gründen, wenn Sie irgendeinen Defekt oder Ausfall beobachten konnte, ist es sehr wichtig, dass wir die Art der Daten-Mangel, Pumpe Modell-und Seriennummer zu kommunizieren, um die Quelle des Problems zu finden, und damit die Gewährleistung können Sie die höchste Qualität fortzusetzen.