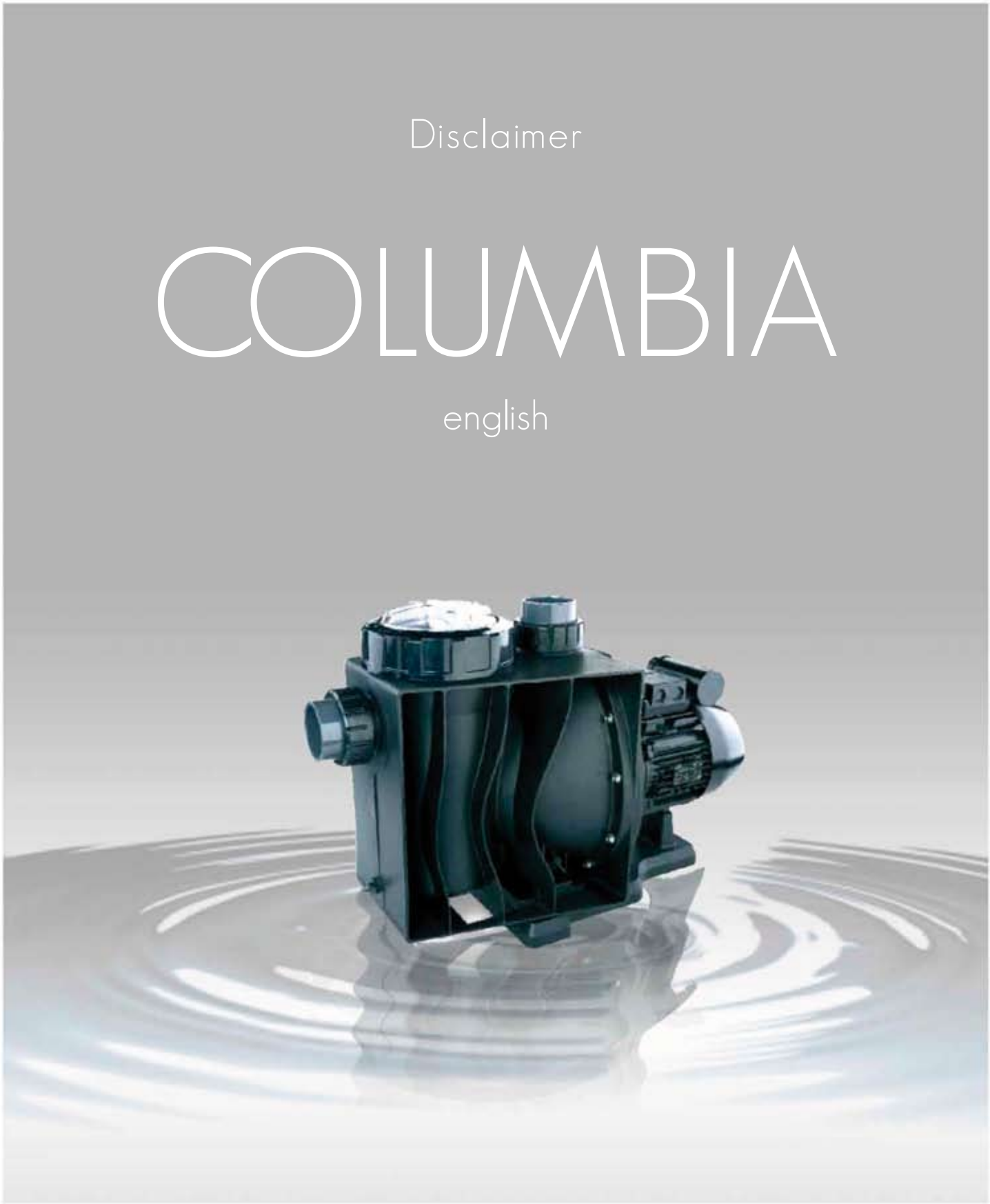
Disclaimer

COLUMBIA

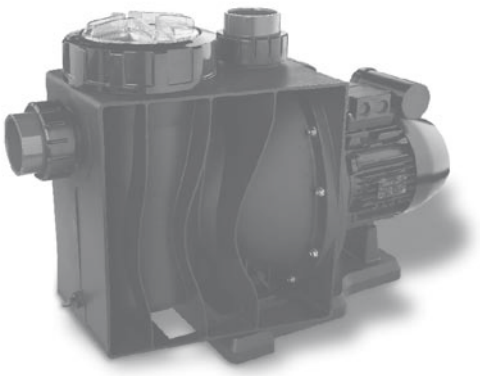
english



Our commitment: excellence

ASTRALPOOL
SIGNATURE

INDEX



1. Product sheet and technical specifications

COLUMBIA PUMP

Astralpool's most silent pump, now with an ATB motor.

- High performance pump for residential swimming pools, with high hydraulic and electric performance features, very quiet and highly versatile.
- Simple assembly; easily opened body with stand with clips, possibility of separating the motor assembly without touching the hydraulics of the installation and easy opening of the pre-filter cover locking ring system.
- Low noise level within the range of air-cooled pumps.
- Pump with little tendency to cavitation.
- Top quality components; AISI-316 stainless steel and silicon carbide mechanical closure, 2RS C3 type double-cap bearings, latest-generation plastics (types such as Noryl, Hostacom, etc.)
- Dual motor insulation due to the plastic reed impeller design.
- **Novelty:** All models come with an ATB motor (motors widely recognised and with high performance features).
- Available from 0,75 HP to 3 HP, with mono-phase and three-phase motors, both with PTC heat protector.

HP / CV	230V (II) 50Hz	230/400V (III) 50Hz
0,75	32770	32771
1	32772	32773
1,5	32774	32775
2	32776	32777
3	32778	32779

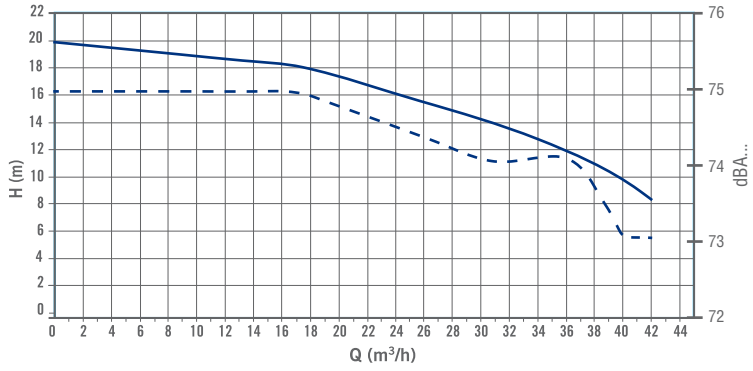
1.1. Characteristics table

230 V Ⅱ 50 Hz	230/400 V Ⅲ 50 Hz	A			P1(KW)		P2(KW)		HP	2"F	H(m)							
		230V Ⅱ	230V Ⅲ	400V Ⅲ	Ⅱ	Ⅲ	Ⅱ	Ⅲ			6	8	10	12	14	16	18	20
											Q(m³)							
32770	32771	3,8	2,4	1,4	0,86	0,82	0,6	0,6	0,75	16	17,5	15	12	8,8	0			
32772	32773	5	3,1	1,8	1,08	1,02	0,78	0,77	1	20	21	19,5	17,5	15	12	9	0	
32774	32775	7	4,2	2,4	1,5	1,4	1,1	1,1	1,5	30	28,5	26	24	21	18	15	0	
32776	32777	8,1	5,4	3,1	1,8	1,78	1,5	1,5	2	40	34	30	27	24	20	16	0	
32778	32779	13	8,3	4,9	2,75	2,7	2,2	2,2	3	50	43,5	42	40	35	31	24	17	0

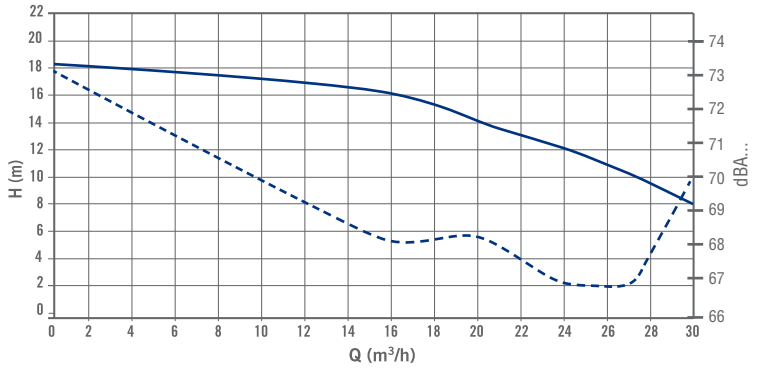
Performance charts

MOTOR	HP	230 V	230/400 V
ATB	0,75	32770	32771
ATB	1	32772	32773
ATB	1,5	32774	32775
ATB	2	32776	32777
ATB	3	32778	32779

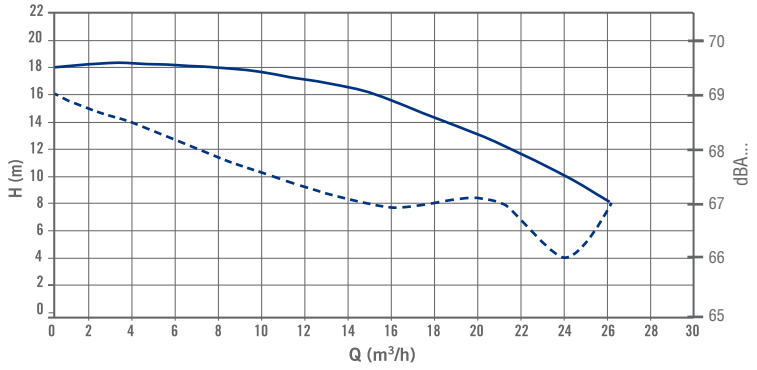
Columbia 3 HP (32779, 32778) H-Q ; dBA-Q



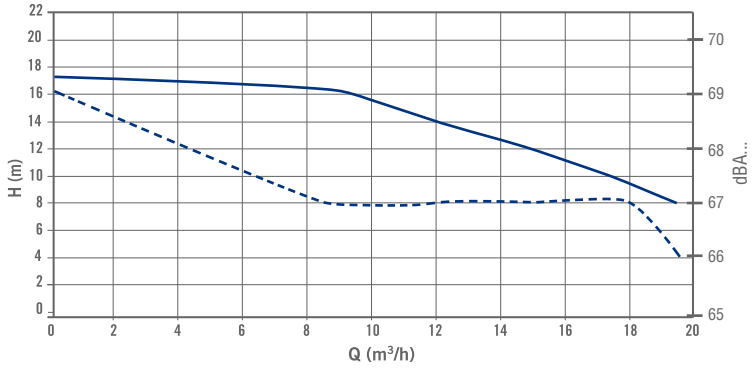
Columbia 2 HP (32777, 32776) H-Q ; dBA-Q



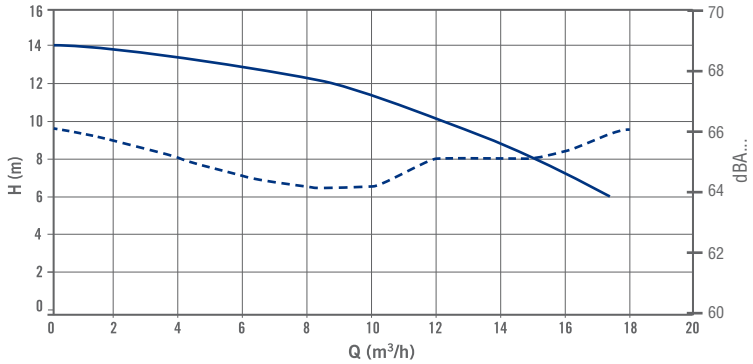
Columbia 1,5 HP (32775, 32774) H-Q ; dBA-Q



Columbia 1 HP (32773, 32772) H-Q ; dBA-Q



Columbia 3/4 HP (32770, 32771) H-Q ; dBA-Q



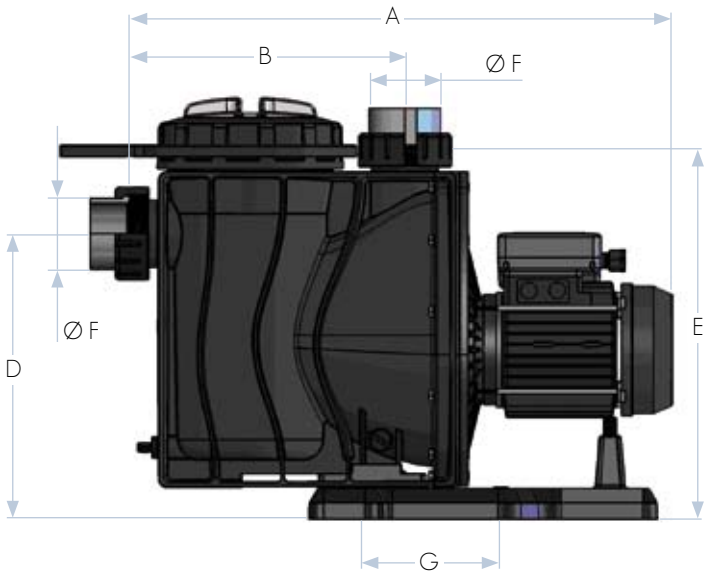
- The continuous line displays the pump's hydraulic curve.
- The discontinuous line displays the pump's noise level.

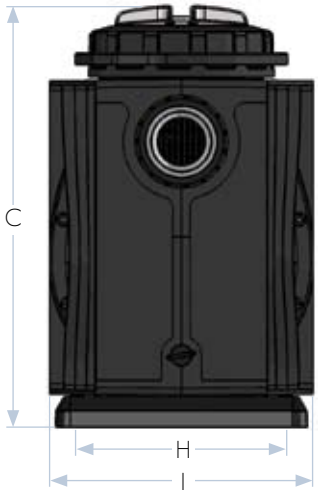
CODE	DESCRIPTION	MAX. NOISE LEVEL (dB)
32770	3/4 HP II Columbia pump	66 dB
32771	3/4 HP III Columbia pump	
32772	1 HP II Columbia pump	66 dB
32773	1 HP III Columbia pump	
32774	1,5 HP II Columbia pump	70 dB
32775	1,5 HP III Columbia pump	
32776	2 HP II Columbia pump	75 dB
32777	2 HP III Columbia pump	
32778	3 HP II Columbia pump	75 dB
32779	3 HP III Columbia pump	

1.2. Packaging

HP / CV	230V (II) 50 Hz	230/400 V (III) 50 Hz	Box dimension (mm)	Volume (m^3)
0,75	32770	32771	683x303x485	0,100
1	32772	32773		
1,2	32774	32775		
2	32776	32777		
3	32778	32779		

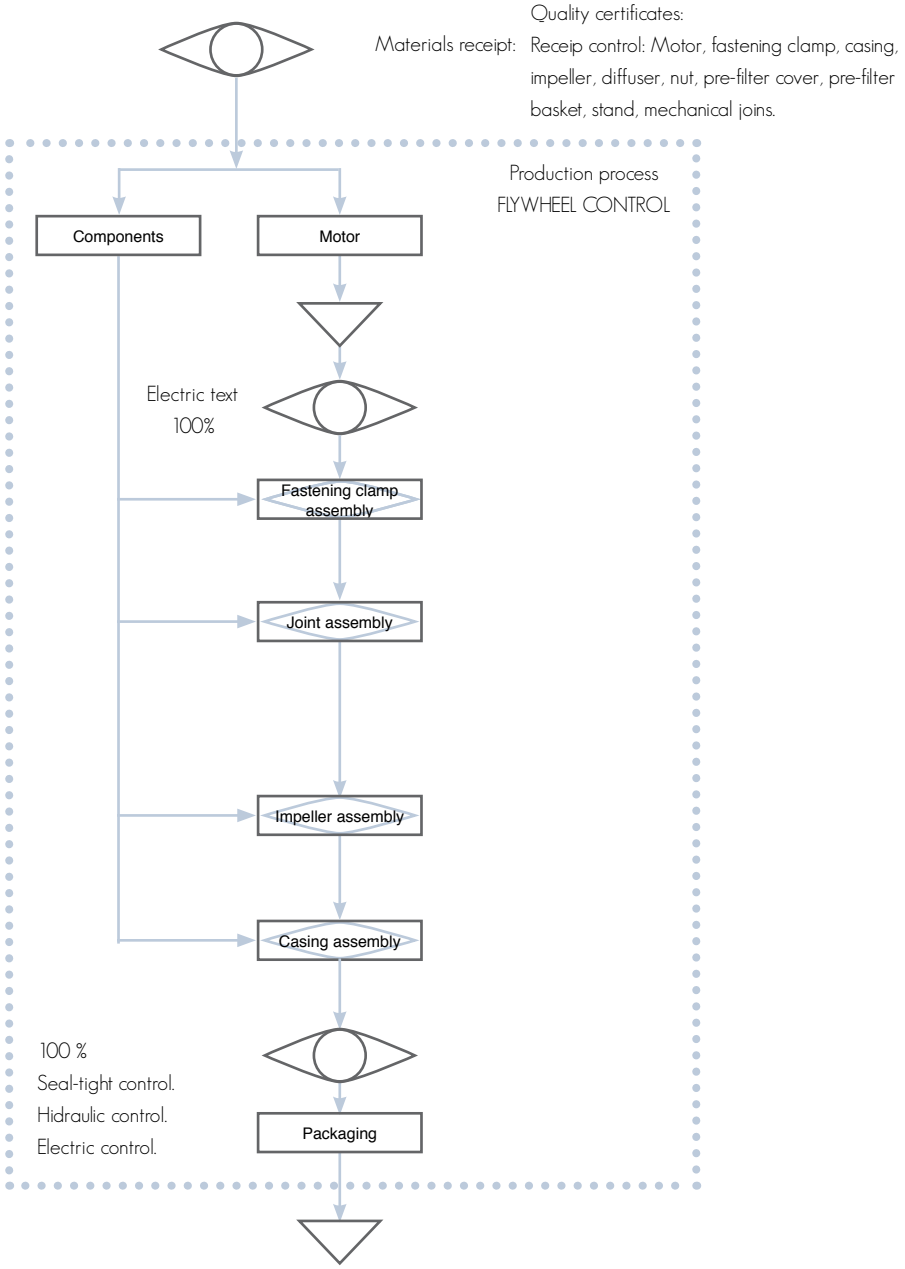
1.3. General dimensions





CODE		A	B	C	D	E	Ø F	G	H	I
32770	0,75 HP II	570	284,50	435	295	383,50	50	146,50	216	272
32771	0,75 HP III	570	284,50	435	295	383,50	50	146,50	216	272
32772	1 HP II	610	284,50	435	295	383,50	50	146,50	216	272
32773	1 HP III	610	284,50	435	295	383,50	50	146,50	216	272
32774	1,5 HP II	610	284,50	435	295	383,50	63	146,50	216	272
32775	1,5 HP III	610	284,50	435	295	383,50	63	146,50	216	272
32776	2 HP II	610	284,50	435	295	383,50	63	146,50	216	272
32777	2 HP III	610	284,50	435	295	383,50	63	146,50	216	272
32778	3 HP II	651	284,50	435	295	383,50	75	146,50	216	272
32779	3 HP III	626	284,50	435	295	383,50	75	146,50	216	272

2. Quality controls passed checklist



	Operación of the process
	Control
	Operación in self-control
	Stock

METALAST. SAU. CERTIFIES THAT:

The Columbia pumps manufactured by METALAST, SAU, have been designed in accordance with the following European Regulations and Directives:

- Machines safety Directive 89/392/CEE, amended by Directive 91/368/CEE.
- Electromagnetic compatibility Directive 89/336/CEE, amended by Directives 91/263 CEE and 92/31/CEE.
- Low tension equipment Directive 73/23/CEE, amended by Directive 93/68/CEE.
- Sound emission Directive 2000/14/EC.
- EN 60335-2-41/A1:2004.
- NSF International Standard:
    - Hydrostatic pressure at 1.5 times the maximum working pressure for 5 minutes.
    - 20,000 consecutive cycles at 0 to 0.6 times the maximum working pressure.
    - Hydrostatic pressure equal to 2 times the maximum working pressure for 1 minute.

Each assembled pump is tested at its nominal working level and at a maximum pressure of 3 bars.

Metalast, S.A.U. Quality Manager

3. Certificates available on the product, the production process and the systems implemented within the company

ZERTIFIKAT ◆ CERTIFICATE ◆ ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV Iberia

CERTIFICADO

El organismo de certificación
TÜV SÜD Iberia, S. L.
certifica que la empresa

Metalast S.A.U.
Paseo Sanllehy, 25
E - 8213 Polinyà
y
C/ Andorra, parcela 49, 11ª
Pol. Ind. Pla de Llerona
E- 08520 Les Franqueses del Vallés (Barcelona)

ha implantado y aplica
un Sistema de Gestión de la Calidad para el área

Diseño, fabricación y comercialización de equipos y componentes para piscina e instalaciones acuáticas de ocio; (accesorios en acero inoxidable, bombas y filtros)

Mediante auditoria realizada con nº de informe **520**

se verificó el cumplimiento de las exigencias
recogidas en la norma

ISO 9001: 2000

Este certificado es válido hasta el **04-02-2010**
Nº de registro del certificado **07 100 22725 TMS**

TÜV SÜD

Barcelona, 05-02-2007

ENAC
CERTIFICACIÓN
Nº 27/SC038
Nº 27/C-SG014
Nº 16/C-MA021

4. Guarantee certificate

GENERAL TERMS

1.1. In accordance with this provisions, the seller guarantees that the Astral Product corresponding to this guarantee (“The Product”) doesn’t have any default in conformity at this time of delivery.

1.2. The Guarantee Period is two (2) years and is counted from the time that it is delivered to the buyer. The buyer is understood to be Astralpool’s direct client.
In an exclusive manner, the Guarantee Period for the pump’s Body is five (5) years.

1.3. In the event of any default in conformity of the product and the purchaser notifies the seller of such default during the guarantee period, the seller is obliged to repair o replace the Product at its own cost in the place that he consider convenient, unless it is impossible or disproportionate.

1.4. When it is not possible to repair or replace , the purchaser may request a proportional reduction in the price, or, if the default in conformity is sufficient significant , the termination of the contract.

1.5. The parts replaced or repaired under this guarantee will not extend the guarantee term of the Product, although will have their own guarantee.

1.6. In order for this guarantee to come into effect, the purchaser must prove the date of acquisition and delivery of the Product.

1.7. If after six months from the delivery of the Product to the purchaser , a default of the conformity of the product is notified, the purchaser must prove the origin and existence of said defect.

1.8. This Guarantee Certificate does not limit or prejudge the rights corresponding to the consumers by virtue of national compulsory standards.

INDIVIDUAL TERMS

2.1. This Guarantee covers the following AstralPool products and product ranges: “Filtration Pumps”.

2.2. In order for this guarantee to be effective the purchaser must strictly follow the manufacturer’s instructions included in the documentation accompanying the Product, if said documentation is applicable depending on the range and model of the Product.

2.3. When a schedule is given to replace, maintain or clean certain parts or components of the Product, the guarantee will only be valid if this schedule has been followed correctly.

LIMITATIONS

3.1. This guarantee will apply exclusively to sales made to consumers. A “consumer”, is understood to be the person who acquires the Product for purposes not connected with his professional activity.

3.2. No guarantee is given for the normal wear through using the product. With regard to parts, components and/or expendable equipment such as mechanical seals, bearings and water tightness, the documentation accompanying the product will be applicable, as the case may be.

3.3. The guarantee does not cover accessory elements of the product “ Filtration pump” not explicitly included on it, such as panel board, converter, protection devices, etc.

3.4. The guarantee covers Product’s failures originated only and exclusively by materials defect and/or performance works. The guarantee doesn’t cover cases such us the Product : (i) has been object of an incorrect handling; (ii) has been installed, repaired, maintained or manipulated for an non-authorized person or (iii) has been repaired or maintained with non original spares. It’s out of the present guarantee the slight damages originated by accidental tears or inadequate as:

- Pump working without water.
- Incorrect dosification of chemical products on the swimming pool.
- Water damage originate in external elements to the pumping conditions.
- Inadequate ventilation.
- Use in different applications of swimming pool water filtration.

3.5. The guarantee does not cover cases of incorrect installation or start-up unless said installation or start-up is included in the sales contract of the Product and has performed by the seller or under his responsibility. This cases are covered by the installer or the seller who installed the product.

3.6. The three phase motors include thermistor protection (PTC). They should be connected to a PTC control module (with the connection diagram depending on the control module chosen by the installer in each case). Omitting to connect the PTC protection or an error in this connection invalidates the guarantee in any aspect related to the motor, understanding that it has been connected incorrectly.

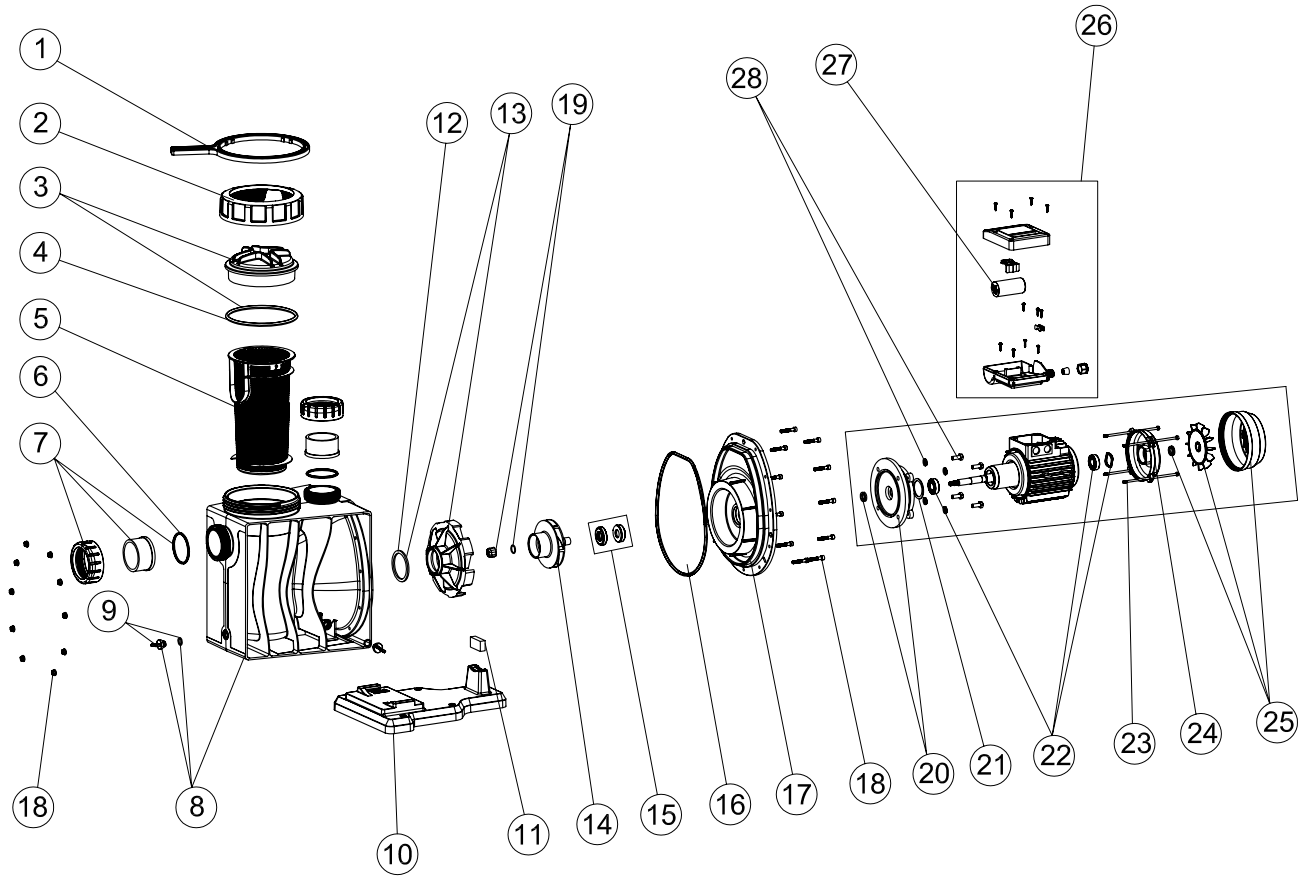
5. Standard design and general characteristics

The pump's standard operation has been designed based on the NSF International Standard, for 2 bars of maximum working pressure.The pump is only designed to be used for swimming pools at a maximum temperature of 35ºC with the pH and disinfectant levels within the limits set by the related Regulations.
As a reference:

pH	6,8 - 8
Free residual chloride	0,4 - 1,5mg/litre
Bromide	1-3 mg/litre

The pump is suited for use in salt water swimming pools with a maximum concentration of 4%, and for swimming pools with salt electrolysis, insofar as the equipotential is taken correctly.
The pump IS NOT SUITED for use with ozone.

6. Parts description of the pump



POS.	CODE	DESCRIPTION	POS.	CODE	DESCRIPTION
1	4404130103	LID SPANNER	17	4405011028	MOTOR CLAMP ATB
2	4404130101	PRE-FILTER COVER NUT	18	4405010936	FLANGE SCREWS
3	4405010903	PRE-FILTER COVER WITH GASKET	19	4405010134	IMPELLER COVER M8 LEFT
4	4405010178	O' RING D 151,7x6,99	20	4405011035	MOTOR CLAMP ATB (1 - 1,5 - 2 HP)
5	4405010905	PRE-FILTER BASKET	20	4405011036	MOTOR CLAMP (3 II-3,5 HP III)
6	4405010907	O' RING D 63x4	21	4405011052	TOLERANCE WASHER (1-1,5-2 HP)
7	4405010908	UNION FITTINGS SUCTION D 63 (1/2, 3/4, 1 HP)	21	4405011053	TOLERANCE WASHER (3 HP)
7	4405010909	UNION FITTINGS SUCTION D 63 (1,5-2-3,5 HP)	22	4405011032	MOTOR BEARINGS (1 - 1,5 - 2 - HP)
8	4405010906	PUMP HOUSING	22	4405011033	MOTOR BEARINGS (3 HP II)
9	4405010910	DRAINING PLUG 1/4"	22	4405011034	MOTOR BEARINGS (3 HP III)
10	4405010911	PUMP BASE	23	4405011037	MOTOR TIES (1-1,5-2 HP)
11	4405010409	SILENTBLOCK (16x45x13)	23	4405011038	MOTOR TIES (3 HP II)
11	4405010410	SILENTBLOCK (9x45x13)	23	4405011041	MOTOR TIES (3 HP III)
12	4405010915	O' RING	24	4405011039	REAR MOTOR COVER (1-1,5-2 HP)
13	4405010916	DIFFUSOR (1/2-3/4-1 HP)	24	4405011040	REAR MOTOR COVER (3 HP)
13	4405010917	DIFFUSOR (1,5-2 HP)	25	4405011042	FAN COVER ASSEMBLY (1-1,5-2 HP)
13	4405010918	DIFFUSOR (3-3,5 HP)	25	4405011043	FAN COVER ASSEMBLY (3 HP)
14	4405010919	IMPELLER (1 HP III)	26	4405011044	TERMINAL BOX ASSEMBLY ATB (1-1,5-2 HP II)
14	4405010920	IMPELLER (3,5 HP III)	26	4405011045	TERMINAL BOX ASSEMBLY ATB (3 HP III)
14	4405010922	IMPELLER (1,5 HP III)	26	4405011046	TERMINAL BOX ASSEMBLY ATB (3 HP II)
14	4405010925	IMPELLER (3 HP II)	26	4405011047	TERMINAL BOX ASSEMBLY ATB (1-1,5-2 HP II)
14	4405010926	IMPELLER (2 HP II)	27	4405011048	CONDENSER 20 uf
14	4405010927	IMPELLER (1,5 HP II)	27	4405011049	CONDENSER 50 uF
14	4405010928	IMPELLER (1 HP II)	27	4405011050	CONDENSER 30 uf
14	4405010931	IMPELLER (2 HP III)	27	4405011051	CONDENSER 40 uF
15	4405010932	MECHANICAL SEAL	28	4401041605	SHOWER ANCHOR BOLTS
16	4405010933	GASKET 237x7,5			

7. Recommendations

7.1. PACKAGING:

The Columbia pump is supplied properly packaged and sealed in a cardboard box, which mentions the required logistics placement and stacking information, in order to properly warehouse the pump.
Any breach of the storage information may cause damage to the product.

7.2. STORAGE:

Store the Columbia pump under cover with a level of humidity that is not very high.

Do not store the cardboard packaging under high humidity conditions for a prolonged period of time as this may cause deformities to the lower layers of the pallets.

7.3. TRANSPORT:

Transport the Columbia pump boxes on pallets that are properly bundled.

Unpack the pump once it arrives at its final destination. If for outside reasons it is not possible to do it in this manner, the pump should be handled with the utmost of care. Any scrape, blow or contact with rough surfaces may cause damage to the outside finish.

7.4. LOCATION:

Install the pump below the water level of the swimming pool or pond to improve performance.

In the event that a self-priming pump is to be installed above the water level, the height difference should not exceed 2 metres (Fig. 4), trying to ensure that the suction pipe is as short as possible, as a longer pipe increases the suction time and the load losses to the installation.

Ensure that the pump is safeguarded from possible flooding and that it receives a dry type of ventilation.

Leave sufficient space around the pump in order to be able to perform the required inspections and maintenance during its useful life.

7.5. GENERAL SAFETY REGULATIONS

7.5.1. GENERAL SAFETY INSTRUCTIONS

These symbols indicate the possibility of danger where the corresponding instructions are not followed.

DANGER. Risk of electrocution.
Failure to abide by these instructions may lead to the risk of electrocution.

DANGER
Failure to abide by these instructions may lead to the risk of injury or damage.

WARNING
Failure to abide by these instructions may lead to the risk of damage to the pump or the installation.

7.5.2. GENERAL

- The machines indicated in this Manual are especially designed for the pre-filtering and recirculation of water in swimming pools.
- They are designed to work with clean water at temperatures not exceeding 35ºC.
- Install them in line with the specific instructions for each installation.
- Respect current regulations regarding accident prevention.
- All modifications to the pump require prior authorisation from the manufacturer. Original spare parts and accessories authorised by the manufacturer ensure greater safety. The pump manufacturer is exempt from all liability regarding any damage caused by unauthorised spare parts or accessories.
- When working on each machine or on the units linked to them, disconnect the unit from the power supply and the start-up devices, as the electrical parts of the pump are live during operation.
- All assembly and maintenance work must be carried out by qualified and authorised personnel who have carefully read the installation and service instructions.
- To guarantee safety when operating the machine, you must comply with that set out in the installation and service instructions.
- LIn the event of defective operation or faults, contact your supplier or nearest representative.

7.6. INSTALLATION AND ASSEMBLY

7.6.1. GENERAL

- Our pumps may only be assembled and installed in pools or ponds that are compliant with HD 384.7.702. Should you have any doubts, please consult your specialist.

- Fit the pump horizontally due to the pre-filter. The pumps are fitted with a pre-filter with a basket inside to collect any large particles, as they may damage the hydraulic part inside the pump.

- All pumps are fitted with a foot with two holes in it to anchor it to the ground (Fig. 1).

7.6.2. PIPING

- To connect the piping, glue the pipes and the connectors, supplied together with the pump; the fitting connections to the suction and return ports on the pump are threaded and include seals to prevent water loss (Fig. 2).

- Fit the return pipes completely perpendicular and centred in relation to the port to be connected to prevent the pump and the pipe from being subjected to external stress that, apart from making fitting difficult, could break them (Fig. 2).

- Fit the suction piping on a slight 2% slope towards the pump to avoid the formation of air pockets (Fig. 2).

- To ensure the pump works correctly, prime the pump pre-filter until water rises up through the suction pipe (Fig. 3).

7.6.3. LOCATION

- Fit the pump underneath the water level in the pool to improve pump performance.

- Where a self-priming pump is to be fitted above the water level, the difference in height must be no more than 2 metres (Fig. 4), ensuring that the suction pipe is as short as possible as a long pipe would increase drainage times and load losses in the installation.

- Make sure that the pump is safe from possible flooding and receives dry ventilation.

7.6.4. ELECTRICAL INSTALLATION

- The electrical installation must include a multiple separation system with contact openings of at least 3 mm.

- Use a rigid cable to connect to the mains. If you use a flexible cable to connect to the mains, it must have cable lugs to connect to the terminals of the pump motor.

- With any type of pump, 0.03 A differential protection must be fitted for electricity leakage protection (indicated on the diagrams).

- Adjust the value of the thermal relay appropriately depending on the pump current.

For pumps with a single-phase motor:

- Thermal protection is incorporated. Installation with a switch is sufficient, in line with the “Mains connections” diagram.

- Use a motor guard with magneto-thermal protection.

- The adjustment data for the thermal relay is to be used as a guideline, as the motor is already fitted with protection.

- For 230 V, use a H07 RN-F3 type connection sleeve with a cable section that adapts to the power of the motor and to the length of the cable.

For pumps with a three-phase motor:

- The three phase motors include thermistor protection (PTC). They should be connected to a PTC control module (with the connection diagram depending on the control module chosen by the installer in each case). Omitting to connect the PTC protection or an error in this connection invalidates the guarantee in any aspect related to the motor, understanding that it has been connected incorrectly.
-
- Use a motor guard with magneto-thermal protection.

- Protect the pump against overloads with a cut-off switch for the motor.

- Adjust the thermal value according to the thermal protection table. For the connection D (3 x 230 V network), use the protection with the highest indicated value. For the connection U (3 x 400 V network), use the protection with the lowest indicated value.

- Connect the lowest voltage at D and the highest at U for voltage intervals other than 230/400 V; 400/690 V.

- For AC, use a H07 RN-F3 type connection sleeve with a cable section that adapts to the power of the motor and the length of the cable.

- The mains cable may only be connected by skilled, authorised personnel.

- Before connecting the motor, check the type of fuse required.

- Check the correct layout and connection of the earthing cable in the equipment.

- Respect the electrical installation and connection conditions. Failure to do so may lead to the pump manufacturer declining all responsibility and rendering the guarantee null and void.
- The motors are subject to the EEC standards with IP-55 protection.
- Special regulations may exist for the installation.
- Unsuitable mains connections involve the risk of death.

7.6.5. WARNINGS DURING INSTALLATION AND ASSEMBLY WORK

- When connecting the electrical wiring to the machine motor, check the layout inside the connection box and make sure there are no pieces of wiring inside after it has been closed and that the earthing conductor is correctly connected. Connect the motor in line with the wiring diagram attached to the machine.
- Make sure that the electrical wiring connections to the machine terminal box are well mounted and screwed tight to the connection terminals.
- The electrical installation of the pump must include differential protection of a value no greater than 30 mA.
- Correctly use the seal of the terminal box for the electrical motor to prevent water getting in. Likewise, position and tighten the gland inside the cable duct of the terminal box.

- Make sure that water is unable to enter the motor or the live electrical parts.
- Where the intended use is not as indicated, additional technical adaptations and regulations may be required.

7.6.6. WARNINGS DURING ASSEMBLY AND MAINTENANCE WORK

- Take into account national installation regulations when assembling and installing the pumps.

- Make sure that water is unable to enter the motor or the live electrical parts.

- Avoid contact at all times - even accidentally - with moving machine parts while the machine is running and/or before it comes to a complete standstill.

- Wait for the machine to come to a halt before handling it.

- Before any electrical or mechanical maintenance operation, disconnect the unit from the power supply and block the start-up devices.
- Follow the steps below before handling the machine:


1. Disconnect the machine from the mains.
2. Block all start-up devices.
3. Check that there is no voltage in the circuits, even in the auxiliary circuits and additional services.
4. Wait for the impeller to come to a complete standstill.

The list indicated must be used as a guideline and is not binding for safety purposes. There may be particular safety regulations in specific standards.

- For regular control:

  - Check that the mechanical parts are tightly secured and check the condition of the screws supporting the machine.
  - Check that the power conductors and isolating parts are in their correct position, are secure and in a good state of repair.
  - Check the temperature of the machine and the electric motor. In the event of a fault, stop the machine immediately and repair.
  - Check for machine vibrations. In the event of a fault, stop the machine immediately and repair.

Due to the complex nature of the cases treated, the installation, user and maintenance instructions contained in this manual do not seek to examine all possible and imaginable cases of service and maintenance. Should you require additional instruction or have specific problems, please do not hesitate to contact the distributor or the machine manufacturer directly.

7.7. START-UP INSTRUCTIONS

7.7.1. PRIOR TO START-UP

- Carry out the following operations before starting the pump:

  1. Remove the pre-filter cap by unscrewing the nut holding it in place (Fig. 5).
  2. Fill the pump with water through the pre-filter until it rises up through the suction pipe.
  3. Should the basket be removed during these operations, do not forget to replace it to prevent large particles from entering the pump that could block it.
  4. Check that the mains voltage and power correspond with those indicated on the pump characteristics plate.

- Fit the pre-filter cap and screw on tight, not forgetting to fit the seal in its housing (Fig. 5).

- The pumps must not be run without the pre-filter having first been filled with water. Where this is not the case, the mechanical gasket may be damaged, leading to a loss of water.

- Check that the motor rotates in the correct direction by means of the fan located at the back of the motor that can be seen through the view hole on the fan cover (Fig. 6).

- Check that the pump shaft turns freely.

7.7.2. START-UP

- Open all the valves and connect the motor.

- Activate the self-priming and wait a reasonable time for this to be completed.

7.7.3. WARNINGS DURING START-UP

Before starting the machine, check the calibration of the electric protection devices on the motor and that the protection against electrical and mechanical contacts is correctly positioned and secure.

NOTE

The pool should not be used while the pumping equipment is running.
Do not use the pump if anyone is in contact with the water.

8. Maintenance and disassembly

8.1. MAINTENANCE

- Clean the pre-filter basket regularly to avoid drops in pressure. To prevent the basket from breaking, do not hit it during the cleaning process.

- Should the pump stop, check that consumption of the running motor in amperes is equal to or below that indicated on the manufacturer's characteristics plate. If this information is available, contact the nearest Technical Assistance Service.

- Where the amperage is higher, consult the manufacturer.

- Empty the pump if it is to remain at a standstill for a certain length of time, especially in cold countries where there is a risk of freezing.

- Remove the purge cap (10) to empty the pump.

- Every time the pre-filter is opened, clean the seal and its seating of any impurities to ensure airtightness when the cap is closed (Fig. 5).

- Pump components that, due to their normal use, suffer wear and/or tear must be regularly replaced to ensure good pump performance. The following table shows the perishables and/or consumables used in the pump and their estimated working life.

COMPONENT DESCRIPTION	ESTIMATED WORKING LIFE
O rings and general seals	1 year
Mechanical seal	1 year
Bearings	1 year

The estimated working life of the parts above has been established according to normal product use and installation conditions.
Follow the instructions in the installation manual to maintain the working life of the pump.

8.2. REMOVAL

- The motor unit can be removed from the pump body without having to disconnect the pump's suction and return pipes.

- To remove the Motor unit from the pump body, remove the screws joining them together.

9. Troubleshooting

1. The pump is not primed
2. The pump releases only a small flow of water
3. The pump makes a noise
4. The pump will not start
5. The motor is making a noise but will not start
6. The motor is stopped

1	2	3	4	5	6	CAUSES	SOLUTIONS
●	●					Air entering the suction pipe	Check the condition of connections and seals on the suction pipe
●						Filter cap badly sealed	Invert 2 power phases
●	●					Inverted motor turning	Check the voltage on the characteristics plate and that of the mains
●	●		●			Wrong voltage	Compruebe el voltaje de la placa característica y el de la red
	●					Pre-filter blocked	Clean the filter
	●					Load loss in drainage	Prevent parts from causing load loss wherever possible
		●				Pump incorrectly secured	Secure the pump correctly
				●		Motor blocked	Contact the technical service
					●	Increased temperature in the terminal box due to electric arc	Check the terminal box connections
					●	The thermal protection trips	Connect the cables correctly to the terminal boxes
					●	Incorrect terminal box connections	Tighten the cable correctly to the terminal / Adapt the size of the cable connection to the terminal box

ANCHOR DETAIL

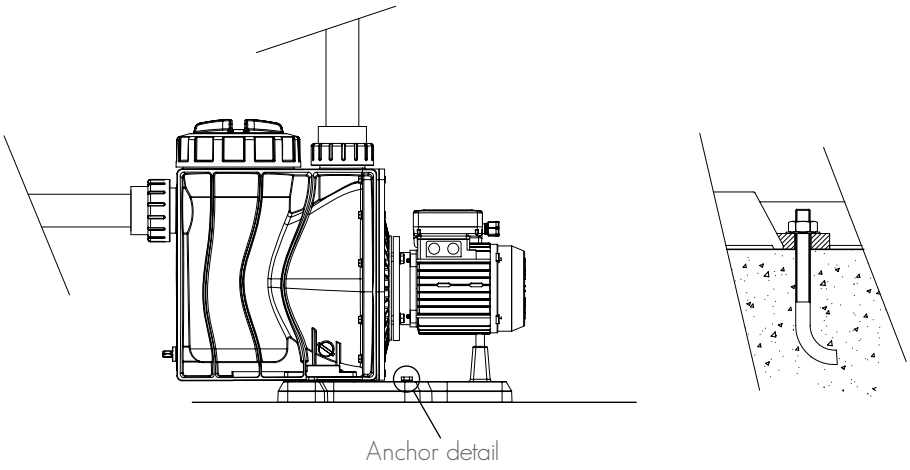
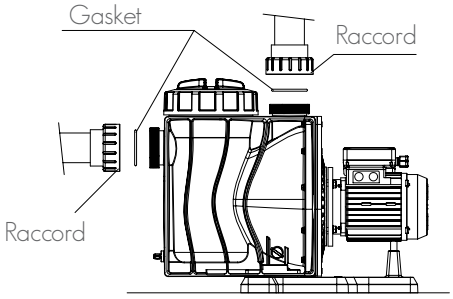


Fig 1

CORRECT



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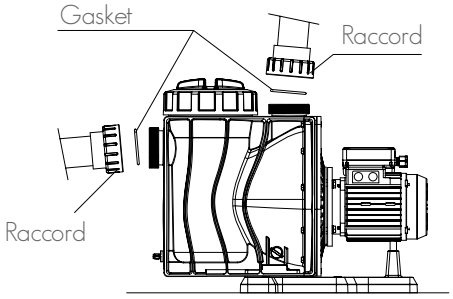


Fig 2

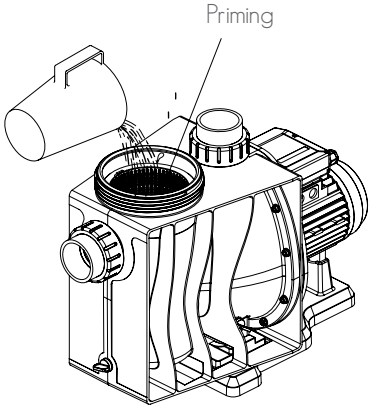


Fig 3

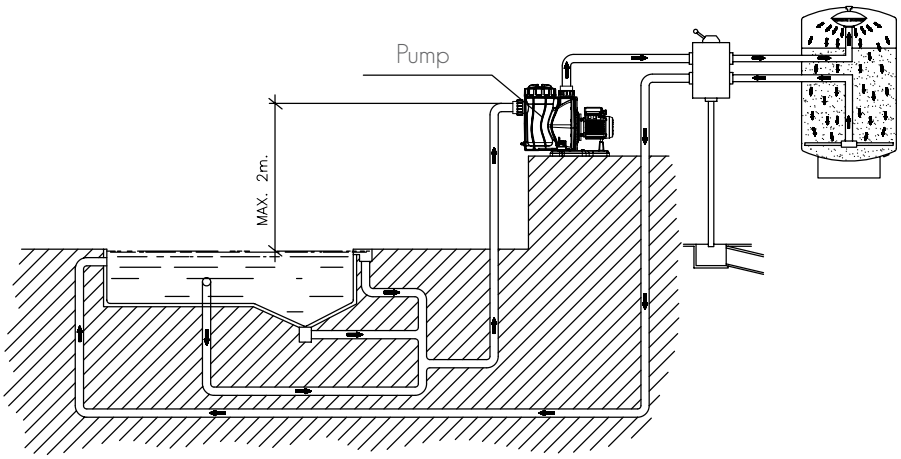


Fig 4

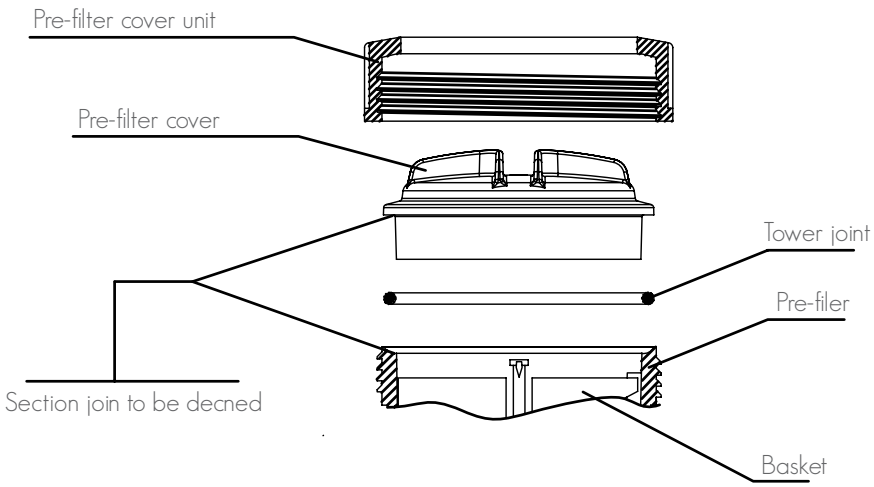


Fig 5

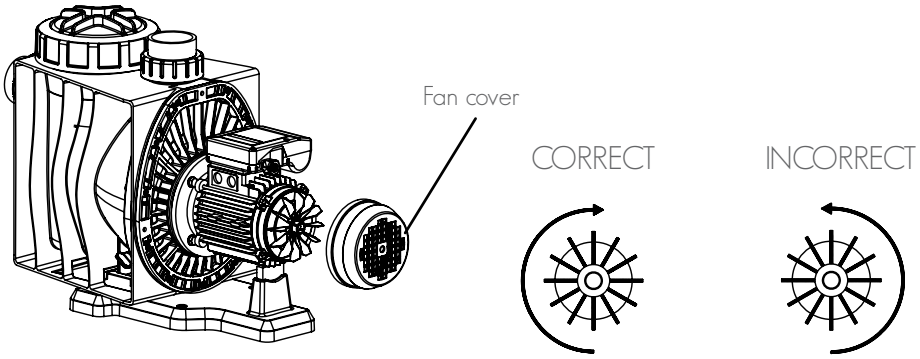
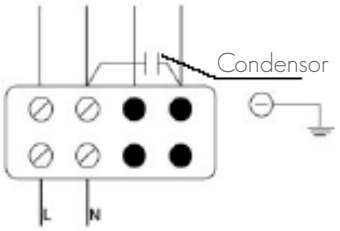
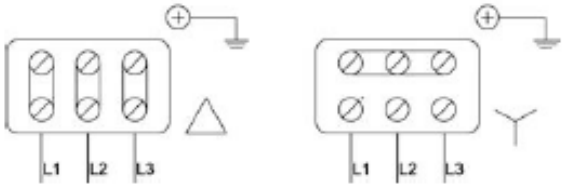


Fig 6

SINGLE PHASE MOTORS



THREE PHASE MOTORS



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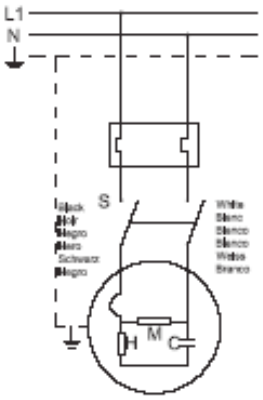

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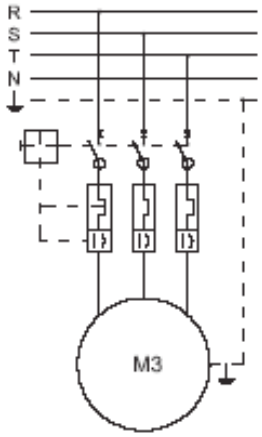

10. DO AND DO NOT

	DO	DO NOT
Transport and storage	Verify the state of the packaging and compliance with the stacking instructions. Always transport the pump in the box.	Leave the box outdoors or in very damp places. Drag the pump.
Installation	Install on a completely flat surface. Install below the water level of the swimming pool or at a maximum height of 2m (Fig. 4). Leave space behind the fan cover to facilitate ventilation of the pump and allow easy access for subsequent maintenance.	Use metal pipes or joints. Connect the pump directly to the mains water supply, as the pressure may be very high and exceed the maximum working pressure.
Start-up	Follow the steps described in the Pump Installation Manual (prime the pump, verify that the rotation direction, the power tension and the intensity are correct, (Fig. 5 and Fig. 6).	Operate the pump without water. Manipulate the pump without having disconnected it from the mains power supply. Manipulate the selector valve with the pump on.
Operation	Clean the pre-filter basket regularly. Regularly clean the dirt from joints and their seatings in order to ensure that there is a proper seal. If the pump does not operate properly, review the troubleshooting table, for possible causes and solutions.	Exceed the pump's maximum working pressure. Use highly concentrated chemical products as the may damage the pump's components.

We reserve the right to change all or some of the characteristics of our products or also the content of this document without notice.