O&M MANUAL
F-GIANT SERIES

1 DESCRIPTION

EN

These pumps have been designed to recirculate clean slightly treated water, in private and public swimming pools, without abrasive or aggressive products against the materials of the pump.

Since its volutes are made of polypropylene + 30% glass fiber, it makes them very suitable for seawater use.

1.2 Technical characteristics

Motor:

- Power, Voltage, Amperage, Hz, Consumption, Efficiency and nominal RPM: see motor characteristics details.
- Insulation: class F.
- Continuous service.
- Waterproof: IP55.
- Ambient temperature: 4ºC / 40ºC.

Pump:

- Liquid density: 1 kg / l.
- Liquid temperature: 4ºC / 40ºC.
- Shaft: AISI 316L stainless steel.
- Mechanical seal: carbon + resin - ceramic.
- Impeller: one-piece plastic or bronze.
- Pump body: PP + 30% fiberglass.
- Prefilter body: PP + 30% fiberglass.

3 GENERAL INSTRUCTIONS RELATED TO USER SAFETY

EN

The enclosed safety recommendations are based on our experience and on normal use of the equipment.

The equipment security can only be guaranteed if their use corresponds to what is indicated in the information and diagrams supplied by the manufacturer. It is mandatory to meet what is legislated by the Safety Standards in force in each country.

Be sure equipment is properly selected the application for which it was intended and that their status, installation, commissioning and subsequent use are correct .

Before starting up the pump, all its elements, especially those relating to security, must be properly installed and secured. Never operate the pump with non-authorized people in the area.

⚠The installation, repair and maintenance operations will always be done with the equipment disconnected from the power supply.

⚠While the equipment is working, it can't be moved or its position corrected. These operations will always be done with the equipment disconnected.

⚠Never use the cord or the discharge pipe to raise or support the pump. It must be placed a rope, wire rope or chain, appropriate to the weight attached to the handle or hook intended for it.

⚠The activation of the electrical elements (connection-disconnection) or safety elements can't be done with the presence of humidity, paying special attention to any that may exist in the hands of the operator, in his footwear or contact surfaces.

⚠The equipment elements that during its operation are in movement, or can reach dangerous temperatures, will be protected with grids or carcasses that prevent accidental contact with them.

⚠Electrical conductors, or parts that may be under tension, will have adequate insulation. Other metal parts of the equipment will be ground connected.

Close checks the condition of the installation. If your state is not safe, the equipment must be stopped and proceed to repair. The necessary spare parts will be the original manufacturer or recommended by him. The use of other spare parts from another source, or original spare parts rectified by third parties is not allowed and exempt the manufacturer or supplier of all its responsibilities.

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4 PACKING, TRANSPORT AND STORAGE

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The manufacturer supplies the equipment protected with proper packaging, so that when transporting or storing will not be damaged preventing proper installation and / or operation.

The user, upon receipt of the equipment, shall check the state of the external packaging. If signs of major damage this must be stated formally to whom it delivers. Also shall check the state of content; if the defect presumably would prevent proper operation, it shall be submitted, also formally, to the provider within 8 days from receipt.

When stored humid environments should be avoided. Due to temperature changes condensation may occur, also, in order to avoid dilatation misalignments, avoid the sun exposure.

5 INSTALLATION

5.1 Location

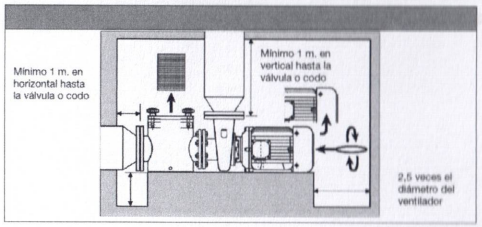
Access to the pump or installation should be restricted, so that anyone can access it inadvertently and specially must have secure items to prevent access by children that should never stay in the equipment location while the pump works.

The location must be dry. Must always be a sufficient size drain in the bottom ground to prevent flooding. If the pump is installed in a wet room a ventilation system must be provided to prevent from condensation water.

Motor pump is cooled by means of air, installing the pump in tight spaces, or in very hot climes may become in air cooling being not enough or null if necessary aeration (forced ventilation) should be provide in order not to exceed the ambient temperature of 40°C.

It is important to avoid obstacles that may avoid a correct air cooling of the engine and provide enough space for the regular inspections and maintenance. It is also important to reserve enough space to remove the engine block horizontally for repair and also enough space to remove the pre-filter vertically for cleaning and maintenance.

Do not run the pump with the valves keys locked, this would increase the temperature of the liquid and steam bubbles inside the pump.



5.2 Connection

The pump equipment, has to be installed as close as possible to the pool. This distance should not exceed 5 m from surface jacks (skimmer / overflow), (for greater distances, consider the pressure drop of the pipes).

In the under load normal operation of the pump, a distance - 0.5 m - 3 m from the water level to the pump shaft height must be respected. The union of the pipes with the pump body will be preferably of a PVC material. The diameter of the pipes depends on the flow.

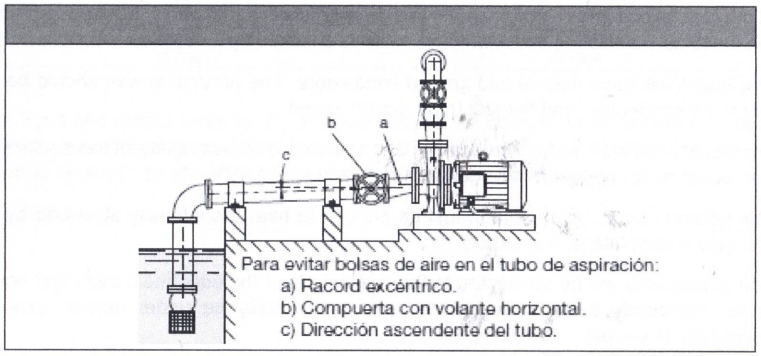
Provide pipe Ø so that the maximum speed of the water does not exceed 1 m/s at the inlet and 2.5 m/s on the drive mouth. In any case, the diameter of the suction pipe must not be less than the diameter of the drive pipe.

The suction pipe must be perfectly sealed and must be installed with an upward slope in the direction of water direction (not less than 1/100), thus preventing the formation of air bubbles.

In all under load installations, a suction valve and a drive valve should be placed. If the suction valve is not a gate one, it has to be assembled with the wheel shaft horizontally. To connect the pump suction with the pipes, if it is diameter is bigger than mouth suction diameter, you should use an eccentric coupling.

The impulsion valve will be used to regulate the flow, pressure and consumption of the motor, in order to obtain the best hydraulic performance possible.

When the geodesic drive level is greater than 15 meters, a stopper valve between the pump and the closing valve on the drive mouth must be inserted to protect the pump from the "water hammer" effect.



5.3 Pipes

Do not use the pump as a support for the pipes. Pipes have to be anchored on its own support. Take into account the weight of the water filled pipes. The position of connecting pipes must match perfectly without deviations and efforts with the suction and discharge mouth of the pump. Thus avoiding that tensions may cause pipes misalignments between the body and the motor shaft, reducing the life of the mechanical seal and an also an unnecessary torque effort in the connecting screws of the two scrolls and of these with the engine.

It is recommended to install elastic sleeves to absorb the vibrations of the pump and the expansion of the pipes installation at the suction and the discharge port of the pump.

To join the pipes to the pump nozzles, use PN10 standard ØDN10 circular flanges. If the pump has a pre-filter, check if the Ø of the suction mouth is DNA100 or DNA125 (depending on the model). During assembly, check that the gaskets between the flanges do not protrude inside the pipes, before joining the pipes, make sure they are internally cleaned.

5.4 Electrical connection ⚠

Before removing the connection box cover and before any transport or disassembly of the pump, make sure that the power supply is disconnected.

In general, the electrical installation has to be done in accordance with the requirements of the regulations and complementary technical provisions that apply. It is necessary that the electrical installation and wiring the pump is checked by a licensed electrician.

The mains will have neutral and ground conductors. The grounding wire should be the first to be connected, and the last to be disconnected.

The supply voltage must correspond to that shown on the nameplate of the equipment. The pump motor supports maximum voltage variations ± 10%.

The section of conductors used must be enough to bear the intensity absorbed by the unit (see nameplate on the motor).

The ground wire will be connected to the metal parts of the equipment that must not be under electrically tension, but which could accidentally be under tension and are accessible to people.

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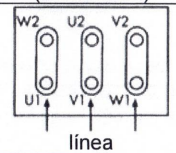
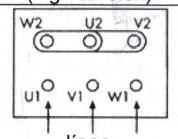
It is mandatory to install an electrical protection and control box where all the elements required and other recommended are located, which generally will have:

A. General omnipolar switch.
B. Protection devices against circuit breakers and overloads in motors.
C. High sensitivity differential switch, 30mA.
D. Others command and control elements. The electrical characteristics of the protection and regulation devices, should be in accordance with those of the motors to be protected and with the service conditions provided for them, and the instructions given by the manufacturer shall be followed (see nameplate on the motor).
E. In the equipment, the interconnection bridges of the motor windings must be properly positioned.

The electrical characteristics of protective devices and regulation, will agree to protect motors under the intended service conditions, and with the instructions provided by the manufacturer listed on the nameplate.

The bridges that interconnect the motor windings should be correctly positioned according to the following scheme and to what is indicated on the nameplate of the motor.

Connection drawing (backwards detail, clockwise direction)	
THREE PHASE Triangle connection (low tension)	MONO PHASE Star connection (high tension)
 línea	 línea

The input and output wires to the terminal box will be connected by means of a cable gland to ensure tightness, lack of moisture and dirt. The wires will be equipped with the suitable terminals to allow a secure connection to the terminal box.

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6 START UP

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Before connecting the equipment to the power supply, the following checks must be made:

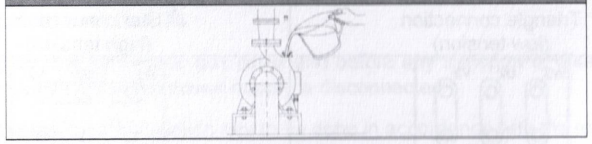
- Verify that the electrical conditions are correct.
- Check, manually, that the motor pump is not jammed.

6.1 Pump priming and purging

⚠ Before starting the pump, the pump must be primed with water. The water cools and lubricates the mechanical seal. The arrows on the pump body indicate the correct direction of rotation. Avoid dry operation of the electric pump for more than 30 seconds, the mechanical seal could be scratched.

With the pump in charge, it is not necessary to prime it. With the pump in suction or with insufficient load (above the water level of the pool, maximum 4 meters), the side drain plug of the pump must be removed, and proceed to fill it until you make sure that the entire suction circuit is Full of water as shown in the drawing.

Cebado de bomba



Make sure that the suction valve is open.

If pump does not operate properly after 5 minutes, stop pump and check water level in suction pipe and pump.

6.2 Motor working direction

In the first connection, the rotation direction of the pump should be particularly monitored. Continued reverse rotation can damage the mechanical seal. For proper connection, switch the pump for a few seconds and check if the rotating direction is according to what is indicated on the arrow on the fan cover.

Check that the motor, once it's running, doesn't exceed the amperage indicated on the nameplate.

6.3 Locked motor

If the pump has been idle for a long period of time, the engine could be slightly stiff. Check with a screwdriver that the motor is not locked; ensure that the motor shaft turns freely, if the engine is seized attempt to release by means of a reasonable force through the fan. Do not switch on if it is locked.

7 MAINTENANCE

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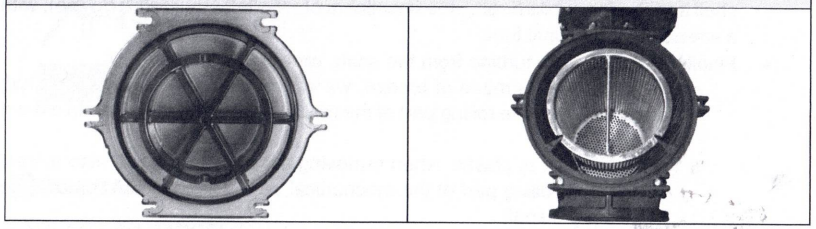
Disconnect the pump from the mains before any manipulation.

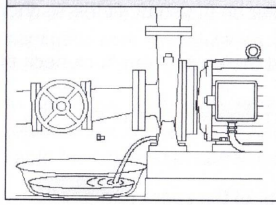
With the pump stopped, regularly check and clean the pre-filter basket. To extract the basket, place the suction and discharge valves in position "closed". Release the pre-filter cover, remove the basket and clean it under a tap. Cleaning with high pressure water is not allowed. Do not place chemical products in the prefilter basket. In order to avoid damaging, do not hit it.

To relocate the basket again, insert it gently until it is in its initial position Place the seal in the lid and greased with vaseline. Do not forget that the changes in position of the valves should always be made with the pump stopped



Before starting the pump again, replace the plug with its seal. Fill prefilter with water and check with a screwdriver that the motor is not locked. If the shaft is blocked, contact an authorized technician. Do not switch on if blocked.

In case of engine flooding, do not attempt to start it, contact an authorized technician and the engine will be disassembled to dry it.



If the pump is shut down for long periods, or if there is danger of frost, it should be emptied through the drain plug.

8 DISASSEMBLY

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1. Disconnect the electrical main switch and circuit breaker
2. All valves keys have to be closed
3. Loosen and remove the power cables from the terminal box
4. Drain the pump. Use the drain plug
5. Release the suction and discharge pipes

8.1 Disassembling the pump and the impeller

- Unscrew the screws that connect the pump body to the back cover (support) of the pump body.
- Remove the motor-shaft-impeller assembly by pulling it backwards.
- Block the impeller or the motor shaft from backwards, after having removed the shell and the fan, while turning the impeller nut to the left (counterclockwise), with a wrench of hexagonal tube.
- Finally, to remove the turbine from the shaft, we will use an extractor:
    - If the impeller is made of bronze, we will remove the key from the shaft and in this way the rolling part of the mechanical seal will be free to extract it.
    - If the impeller is plastic, when removing the impeller we will also extract directly the rolling part of the mechanical seal. Then we can remove the key from the shaft.

9 ASSEMBLY

Before assembling check that all parts are clean and in perfect conditions.

- Lubricate the mechanical seal gasket with vaseline, never with oil or fat (this could damage the gasket and thus not sealing).
- Assemble the mechanical seal. Press it down onto its seat.
    - If the pump is with a bronze impeller, mount the seal on the shaft. Place the key in its shaft housing. Slide the impeller on the shaft, fit the washer and tighten the nut.
    - If the pump is with a plastic impeller, mount the seal on the back neck of the impeller.
- Proceed to the relocation on the pump casing and retighten the screws.

To apply for any spare parts, specify the name and number of the spare part position in the exploded drawing and the data from the nameplate on the motor.

The technical data are expressed in this manual are approximate. Our pumps and equipments are subject to a process of continuous improvement and data is continuously updated on our WEB. Be advised to consult the latest available information at

WARNINGS:

- All repairs performed on equipment should be made by the official or authorized PSH service; otherwise, you will lose any warranty and responsibility.
- If the equipment is used in a different use or way that the specified by the manufacturer, the equipment can be damaged, and the warranty lost.

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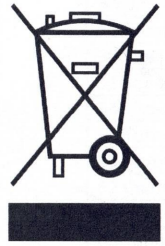
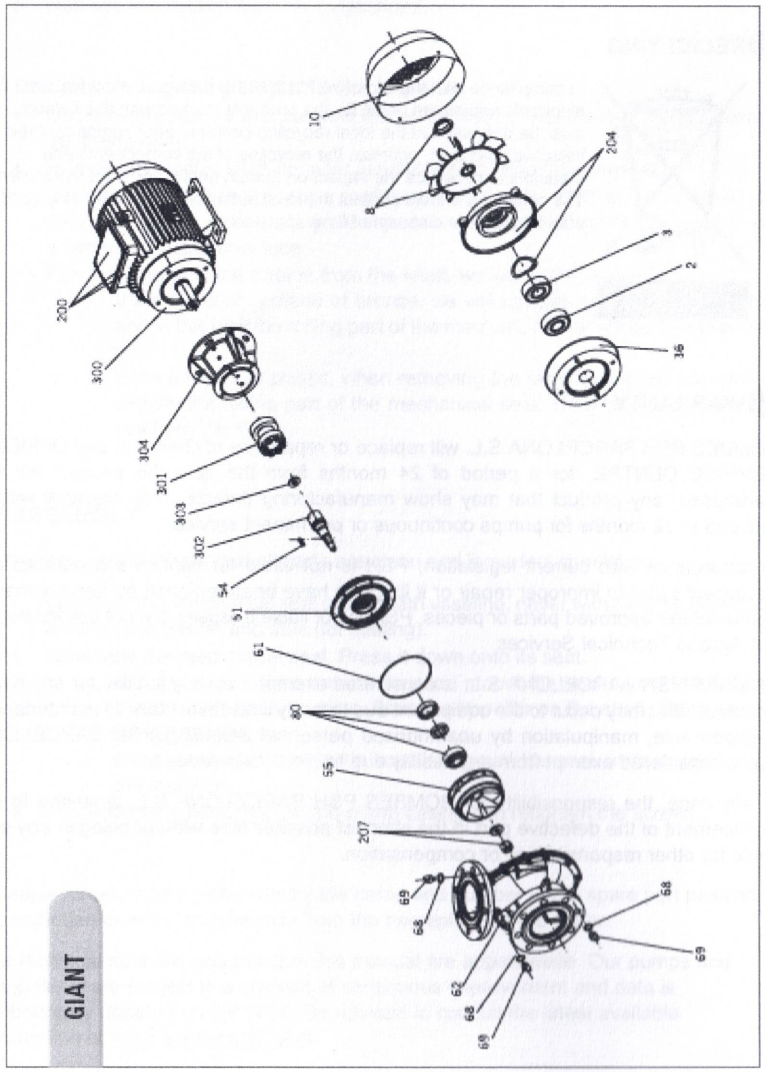
10 RECICLYING



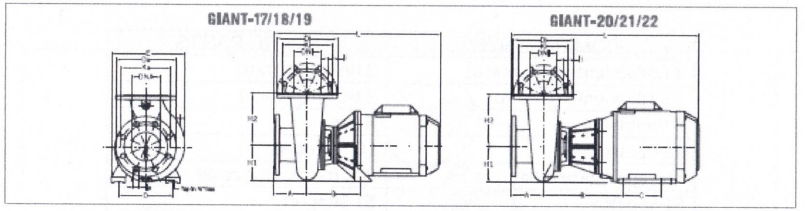
In compliance with the Directive 2012/19/EU for waste electrical and electronic equipment (WEEE), the products marked with this symbol must be deposited at the local recycling center in each region for their selective collection, optimize the recycling of the components and materials and, reduce the impact on human health and the environment. The consumer should contact the local authority or the seller to inquire about the proper disposal of their appliance.

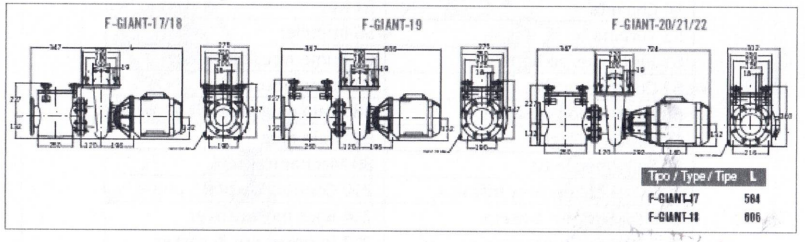


Componentes/Components

COMPONENTES	SPARE PARTS
2 Rodamiento (delantero)	2 Bearing (front)
3 Rodamiento (trasero)	3 Bearing (back)
8 Ventilador	8 Fan
10 Coraza	10 Fan cover
36 Tapa motor delantera	36 Front motor cover
51 Soporte	51 Support
54 Chaveta	54 Key
55 Turbina	55 Impeller
61 Junta cuerpo bomba	61 Pump housing gasket
62 Cuerpo bomba	62 Pump housing
68 Junta tapón desagüe	68 Drain plug gasket
69 Tapón desagüe	69 Drain plug
80 Sello mecánico	80 Mechanical seal
200 Caja conexiones trifásica	200 Connection box 3 phase
204 Tapa motor trasera	204 Back motor cover
207 Tuerca y junta turbina	207 Impeller nut & gasket
300 Motor completo	300 Motor
301 Buje motor	301 Motor hub
302 Eje mecha	302 Shaft adapter
303 Arandela eje	303 Shaft washer
304 Brida cuello	304 Connection flange

Dimensiones/Dimensions





Tipo / Type / Tipe	L
F-GIANT-17	504
F-GIANT-18	606

BOMBA SIN PREFILTRO		
Tipo Type	Bocas/Mouths DNA	DNI
GIANT-17	100	100
GIANT-18	100	100
GIANT-19	100	100
GIANT-20	100	100
GIANT-21	100	100
GIANT-22	100	100

BOMBA CON PREFILTRO		
Tipo Type	Bocas/Mouths DNA	DNI
F-GIANT-17	100	100
F-GIANT-18	100	100
F-GIANT-19	125	100
F-GIANT-20	125	100
F-GIANT-21	125	100
F-GIANT-22	125	100