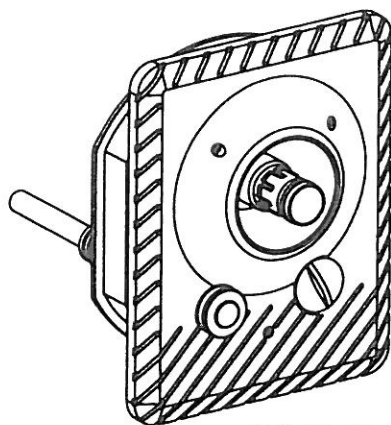
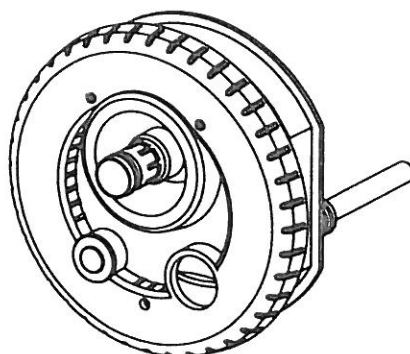


SWIM-AGAINST-THE-CURRENT EQUIPMENT

Use and maintenance instructions



NCC



NCR

 **Instruction manual**

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1. SAFETY.

Safety warning for persons and things.

The following set of symbols    alongside a text indicates a potential hazard if the appropriate instructions are not heeded.



DANGER

risk of electrocution Failure to heed this warning involves a risk of electrocution.



DANGER

Failure to heed this warning involves a risk of injury to persons.



ATTENTION

Failure to heed this warning involves a risk of damage to the equipment or the installation.

1.1. Basic safety and damage-prevention recommendations.



IMPORTANT NOTE: please read the instructions carefully.

Please read the instructions (14) carefully before installing or using this equipment.

**DANGER risk of electrocution.**

Take all precautions when working on the equipment, for it is connected to the mains and contains water (a very good conductor of electricity).

When approaching any work on the pump, it is essential to switch off the electricity supply.

**DANGER power-supply cable**

Place the power-supply cable in such a way that it cannot be walked upon, perforated or damaged by any object in its vicinity.



Carry out the installation in accordance with the safety recommendations for swimming pools and the specific instructions for the pump to be installed (not provided with the equipment).



Current safety regulations must be complied with when installing the equipment.

**FORBIDDEN to work upon or repair.**

Work or repairs must be carried out only by official technical service centres.

Users can only carry out the work described in this manual.

The manufacturer declines responsibility for any work that may be carried out by the user.

**IMPORTANT NOTE: cleaning.**

Always clean with a cloth moistened with a neutral soap solution. Do not use products containing solvents or acids.



Do not run the pump dry; the swimming pool water must cover the plate entirely.

2. GENERAL CONSIDERATIONS.**2.1. Introduction.**

The swim-against-the-current unit is a piece of equipment for swimming pools that propels a large jet of water by means of an electric pump.

It is used for practising swimming against the current.

As an option, and by using a massage hosepipe (not supplied), it can have the function of propelling, together with the water, microbubbles which in contact with the user's body provide a pleasant sensation with hydrotherapeutic effects.

It is available with a round or square plate and the possibility of fitting three different versions of wall-mounted pump-control panel, depending on the power supply or the power of the electric pump to be installed.

2.2. Main functions.

a) Propulsion of water: with built-in manual adjustment of water-jet flow and direction.

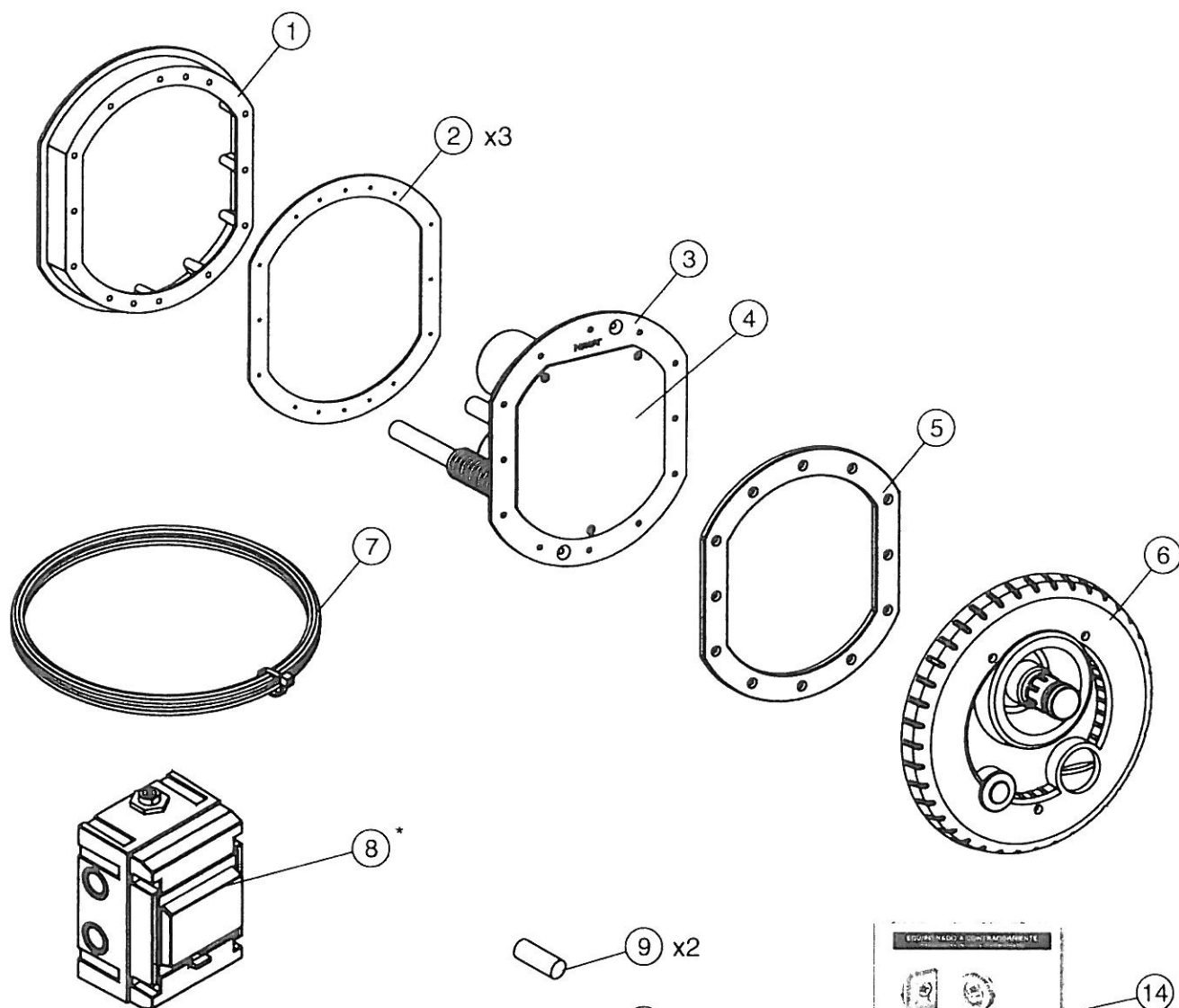
b) Propulsion of air bubbles: built-in control of bubbles by choking off the passage of air, which by venturi effect is propelled simultaneously with the water jet.

c) Pump Stop/Start switch: fitted with a pneumatic push-button, which for reasons of electrical safety remotely actuates the pneumatic switch on the control panel, thus stopping or starting the electric pump.

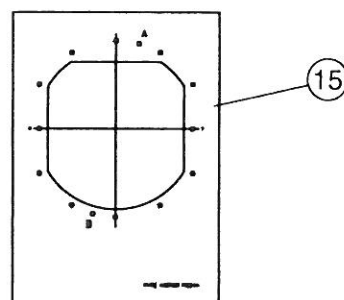
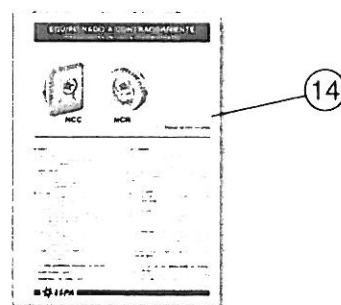
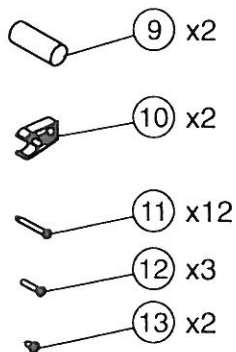
2.3. Technical specifications.

Maximum admissible flow	80 m ³ /h
Minimum recommended flow	40 m ³ /h
Hydraulic connections	interior Ø 63
Electrical connections	NC_M 1 ~ 230 V
	NC_T_3 ~ 400 V
Maximum current	NC_M 16A
	NC_T1 6.3A
	NC_T2 10A

2.4. Main components.



	PART/MODEL
1	Securing counterflange
2	Foam gasket
3	Rear body
4	Protective plate
5	Securing flange
6	Front plate
7	Capillary tube
8	Electrical panel (optional)
9	Foam filter
10	Securing staple
11	Screw DIN 7982 Ø 4.8x45
12	Screw DIN 965 M5x30
13	Screw DIN 7982 Ø 5.5x16
14	Instruction manual
15	Template



3. INSTALLATION.

According to swimming pool construction type.

3.1. Panel-structure swimming pools.

a) Cutting the panel.

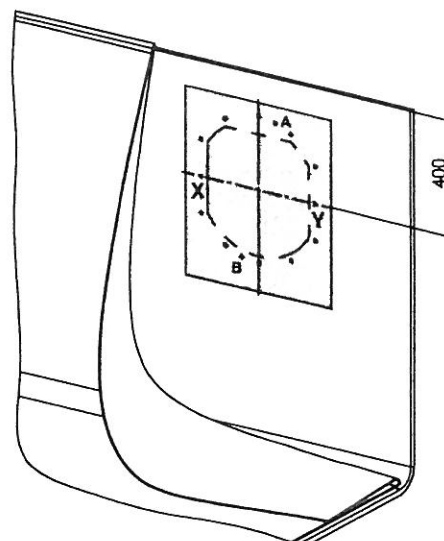
Remove the canvas from the panel.

Place the template (15) on the interior part of the swimming pool panel, such that the distance between the plane XY and the maximum height of the structure is 400 mm. The plane XY must be parallel to the maximum-height plane of the swimming pool.

Mark the 14 assembly holes and cut along the dotted-line zone of the template so as to mark the cut outline on the panel.

Cut the outline and drill the holes marked on the panel.

Take care not to damage the canvas.



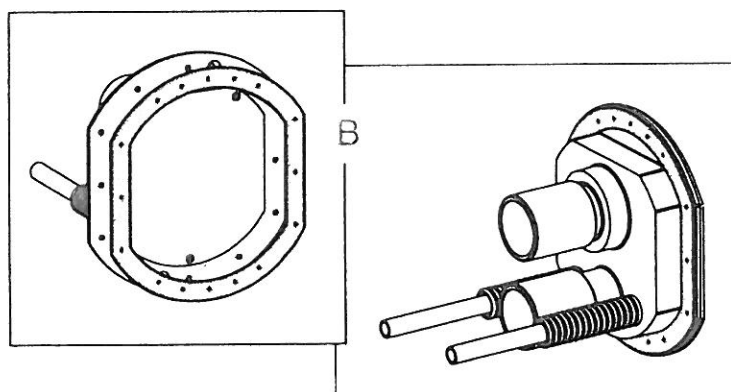
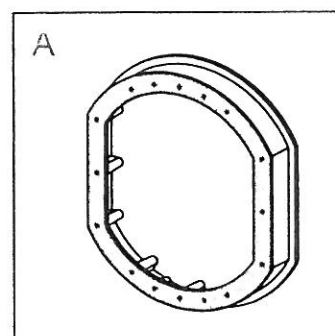
Interior part of the swimming pool

b) Pre-assembly, with the canvas removed from the panel and according to the drawing:

Clean the contact surfaces between the gaskets (2), rear body (3) and counterflange (1) and the panel of the swimming pool.

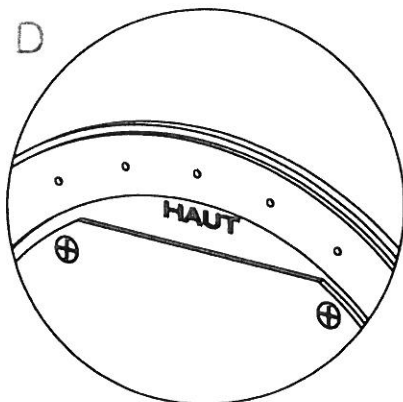
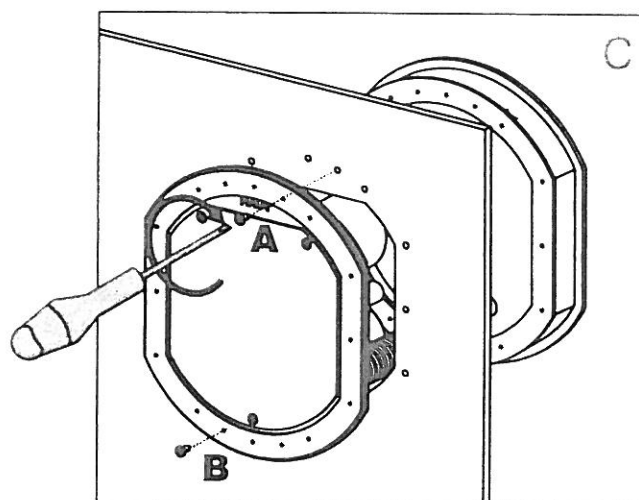
A. Stick a gasket (2) onto the counterflange (1).

B. Stick the remaining two gaskets (2) onto the rear body (3) (according to drawing).



C. Secure the counterflange (1) through the rear part of the swimming pool panel, fit the rear body (3) from the other side of the panel and hold it firmly in place while the two screws (13) are driven into the holes A and B.

D. Ensure that the rear body (3) is in correct position. The word "HAUT" must be at the top part.



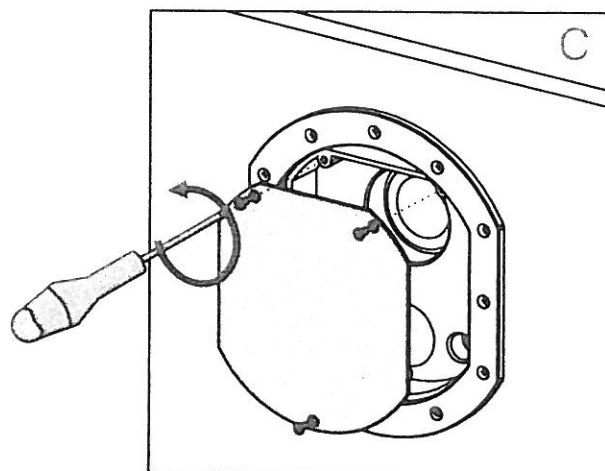
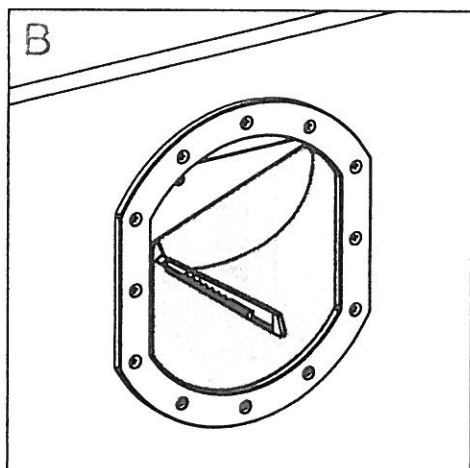
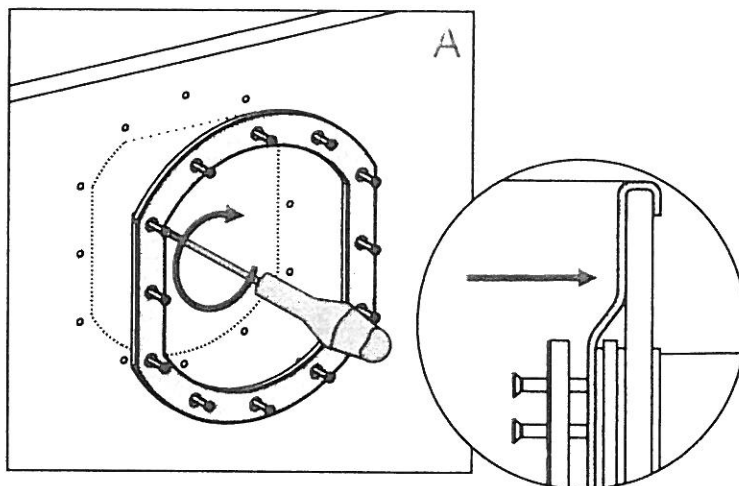
c) Assembly.

After fitting the canvas, fill the swimming pool with approximately 15 cm of water so that it is well tensioned.

A. Place the flange (5) on the canvas, seeking out the right position and making use of the lip of the protective plate (4) to position it. Insert the screws (11) so that they pierce the canvas and then drive them fully home. Avoid excessive force when driving home the screws.

B. Once all the screws are secured, cut the interior part of the canvas with a cutter.

C. Remove the protective plate (4) and stow it safely.



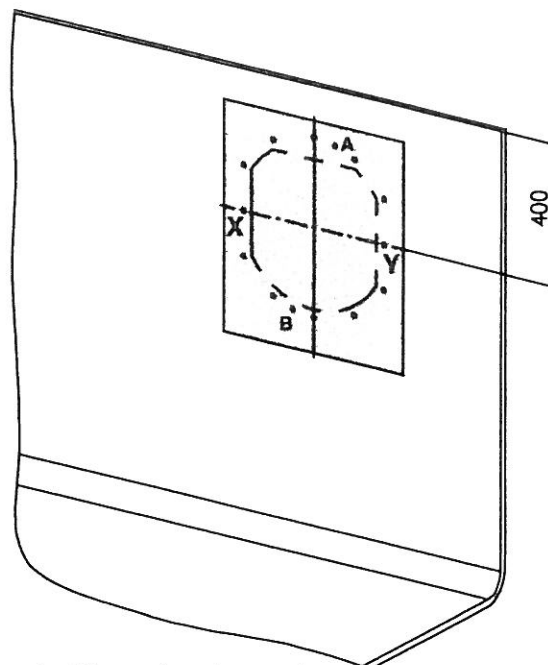
3.2. Polyester swimming pools.

a) Cutting the panel.

Place the template (15) on the interior part of the swimming pool panel, such that the distance between the plane XY and the maximum height of the structure is 400 mm. The plane XY must be parallel to the maximum-height plane of the swimming pool.

Mark the 14 assembly holes and cut along the dotted-line zone of the template so as to mark the cut outline on the panel.

Cut the outline and drill the holes marked in the panel.



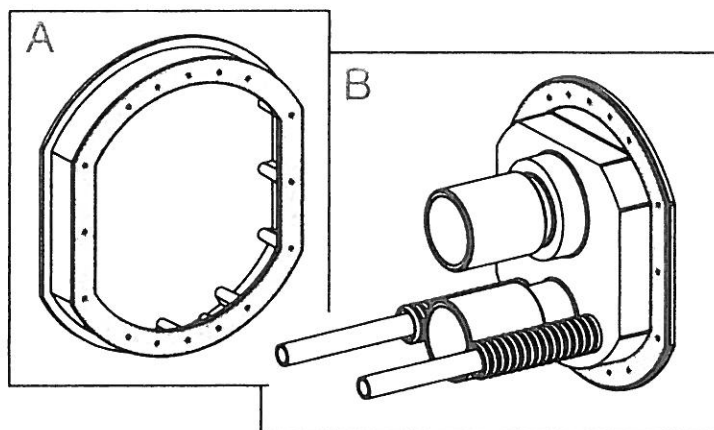
Interior part of the swimming pool

b) Pre-assembly, according to the drawing:

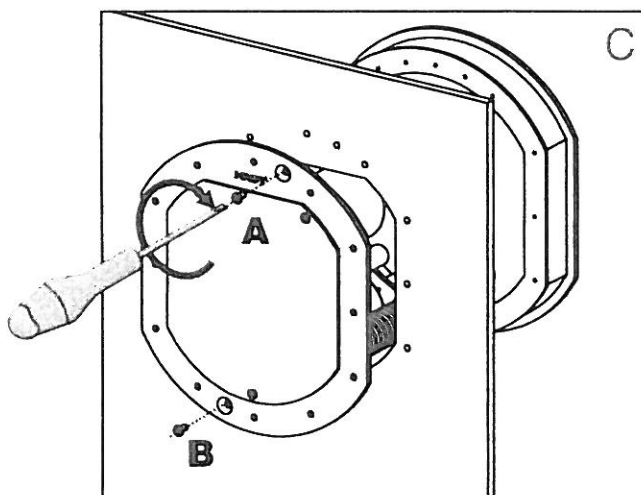
Clean the contact surfaces between the gaskets (2), rear body (3) and counterflange (1) and the panel of the swimming pool.

A. Stick a gasket (2) onto the counterflange (1).

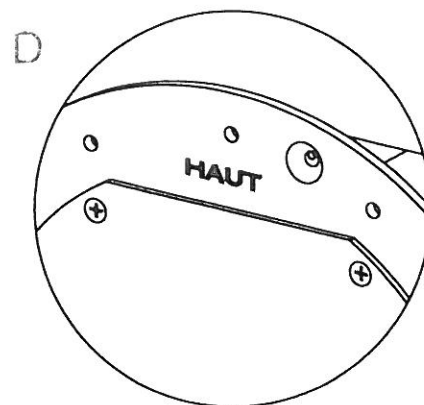
B. Stick a gasket (2) onto the rear body (3).



C. Secure the counterflange (1) through the rear part of the swimming pool panel, fit the rear body (3) from the other side of the panel and hold it firmly in place while the two screws (13) are driven into the holes A and B.



D. Ensure that the rear body (3) is in correct position.
The word "HAUT" must be at the top part.

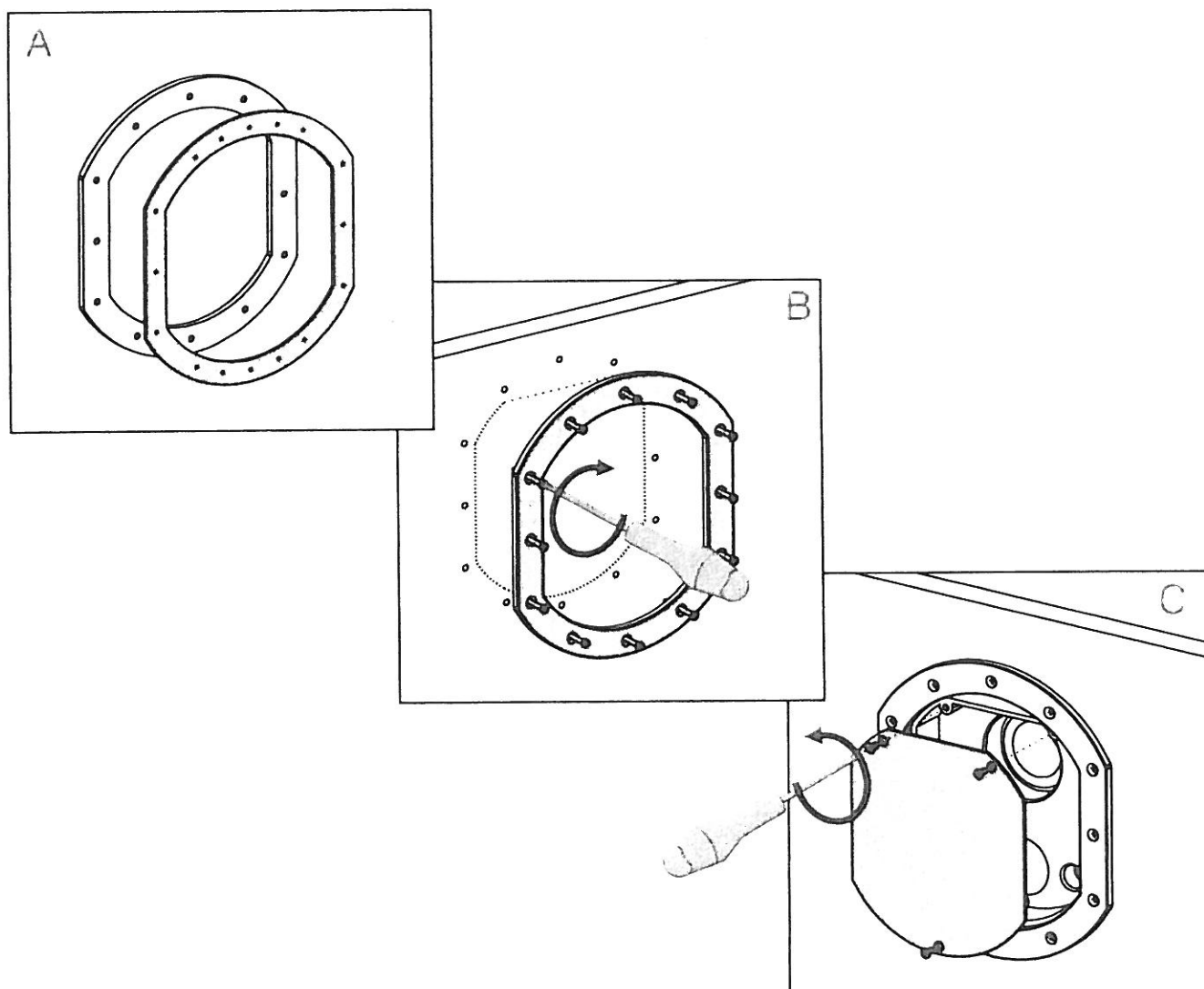


c) Assembly.

A. Stick the gasket (2) to the flange (5).

B. Place the flange (5) on the rear body (3). Drive the screws (11) fully home. Avoid excessive force when driving home the screws.

C. Withdraw the protective plate (4) and stow it safely.

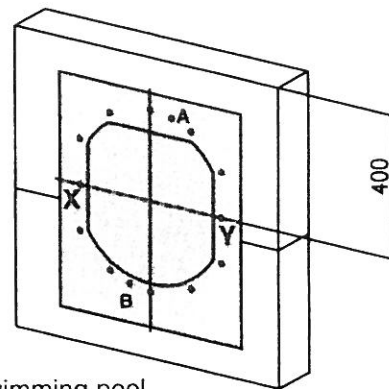


3.3. Masonry swimming pools.

a) Preparatory work.

Place the template (15) on the interior part of the swimming pool formwork, such that the distance between the plane XY and the maximum height of the structure is 400 mm. The plane XY must be parallel to the maximum-height plane of the swimming pool.

Mark out and drill holes A and B in the formwork board.



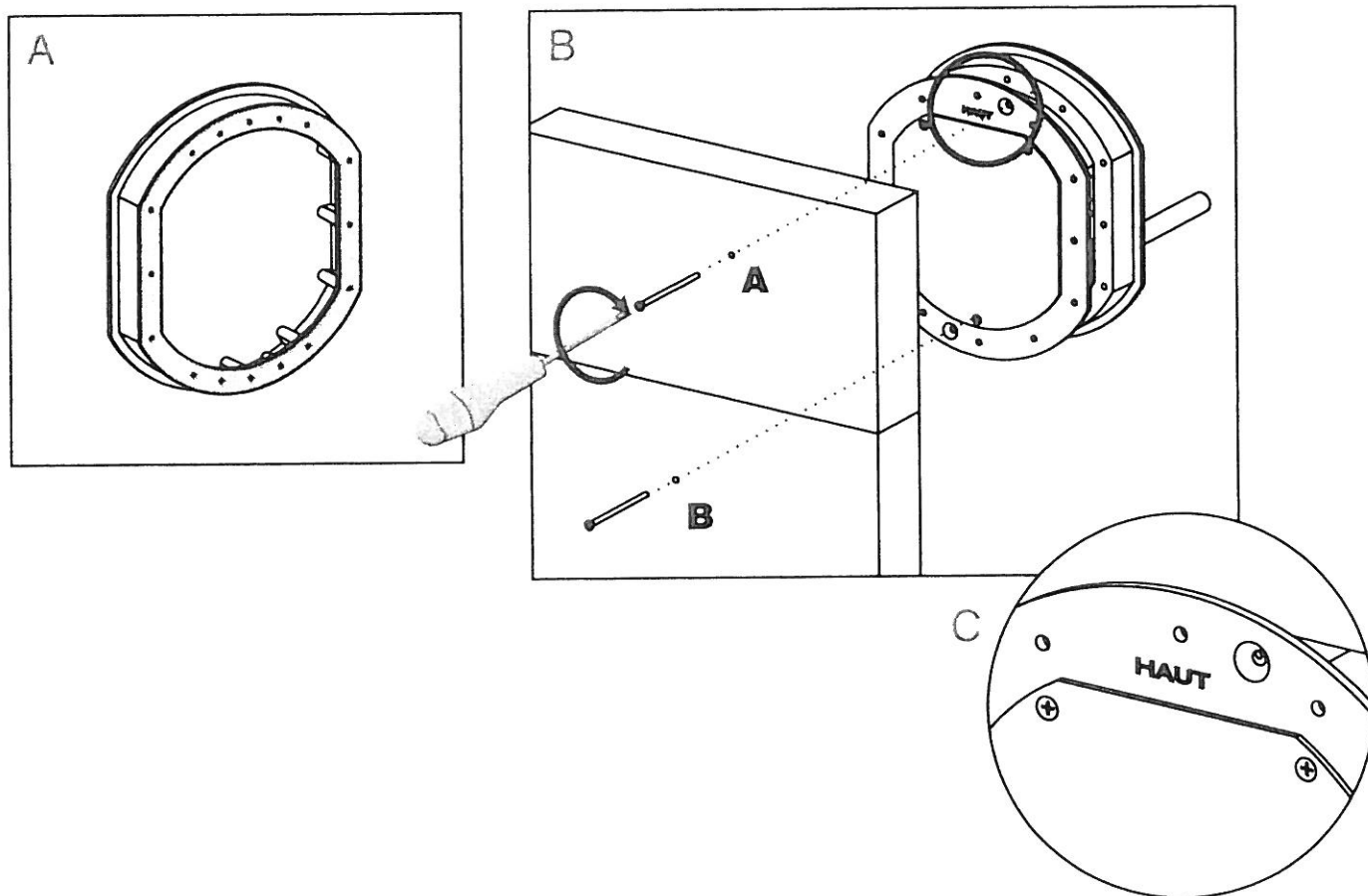
Interior part of the swimming pool

b) Assembly.

A. Clean the gluing side of the counterflange (1), then attach the gasket (2).

B. Mount the rear body (3) on the counterflange (1) and attach the assembly onto the formwork structure using two screws (DIN 7982, Ø 5.5) in positions A and B, to be provided by the installer and depending on the thickness of the formwork board.

C. Ensure that the rear body (3) is in the correct position. The work "HAUT" must be at the top part.

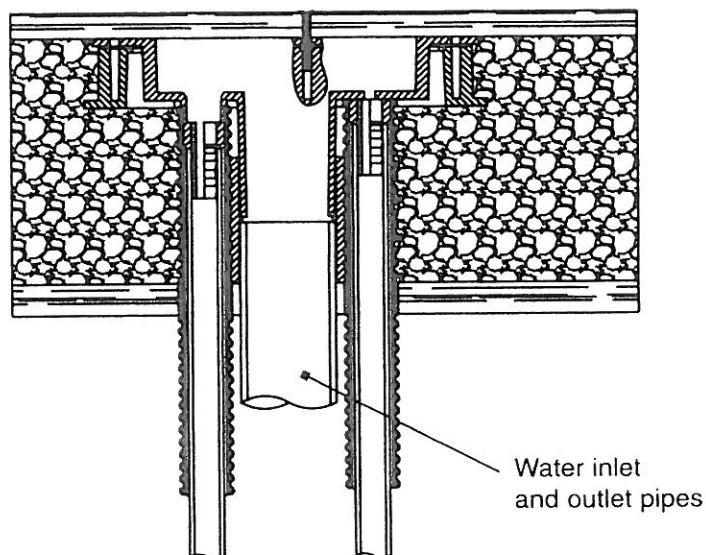


Care must be taken to ensure that no cement passes between the formwork board and the rear body (3), if necessary placing a sheet of polystyrene between them to cover up any grooves.

If the width of the formwork exceeds the width of the connecting hoses, attach and glue in place the corresponding water inlet and outlet pipes.

The outlet pipes for pneumatic switch and air inlet control must pass through the formwork board. These pipes are housed inside a corrugated casing to prevent cement adhering to the pipes.

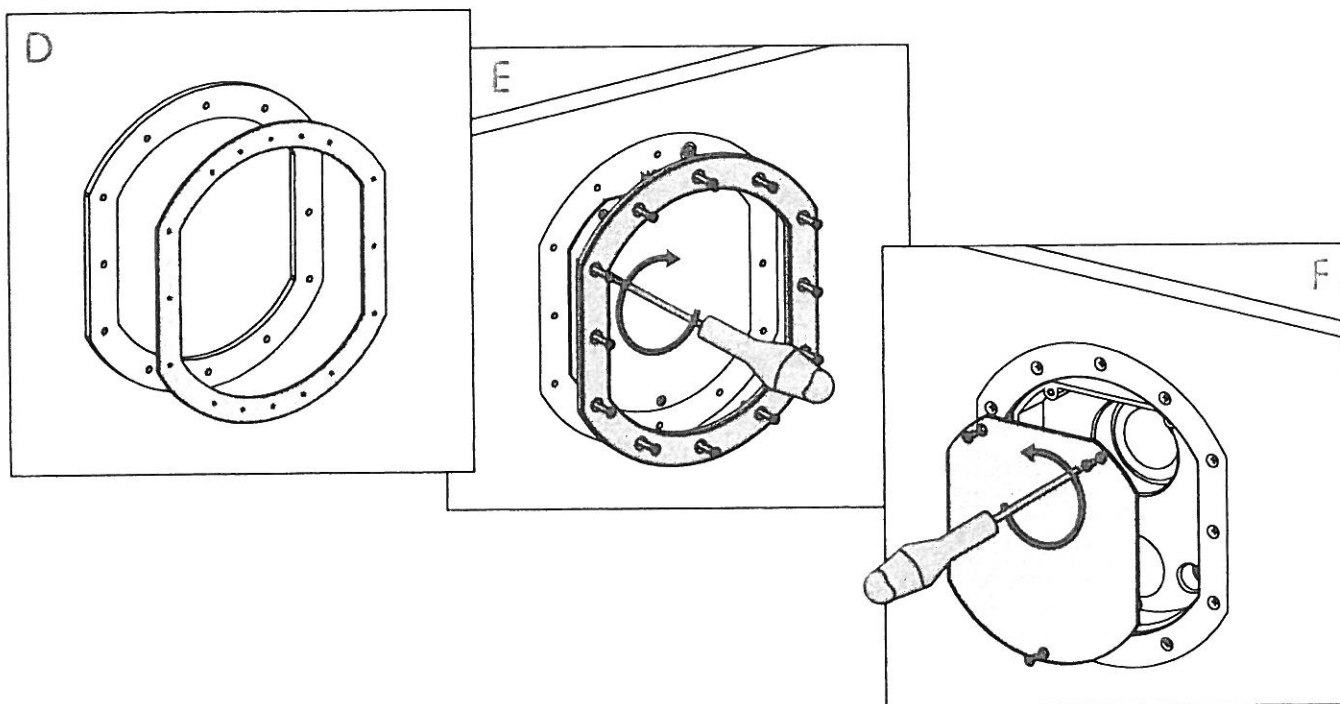
Upper view:



D. Attach the gasket (2) to the flange (5).

E. Once the formwork has been removed, locate the flange (5) on the rear body (3) in alignment with the 12 holes. Insert the screws (11). Avoid the use of excessive force when driving home the screws.

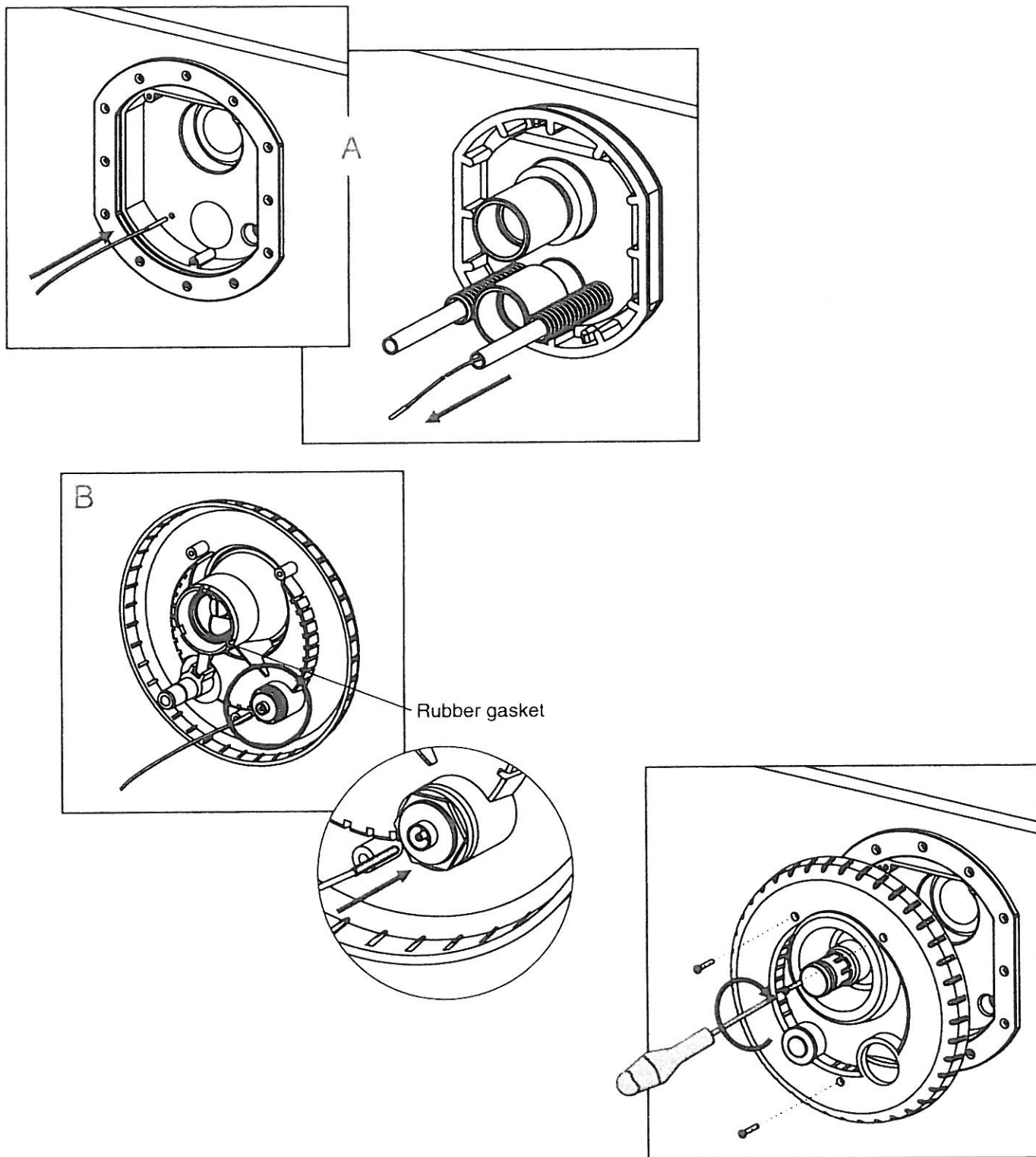
F. Withdraw the protective plate (4) and keep it safely.



3.4. Fitting front plate.

Pass the capillary pipe (7) through the hole in the rear body (3) until it emerges from the end of the hose on the side of the connections to the pump.

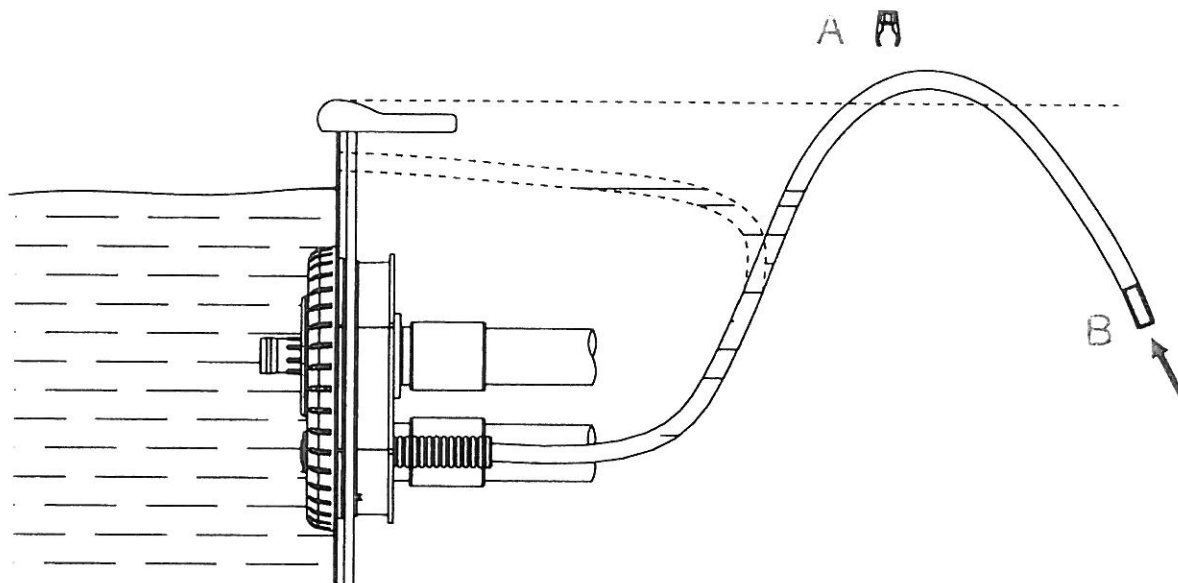
Fit the capillary pipe (7) by pressing it into the pressure switch and ensuring that it is securely connected. Offer the front plate (6) up to the rear body (3), ensuring that the rubber gasket is in place before fixing the unit with the 3 M5 screws (12).



3.5. Fitting the air hose

A. The hose must be attached to the wall to form an air trap, or at a level above the maximum height of the swimming pool, so as to avoid emptying the pool. Alternatively, it can be attached to the wall at a height between the waterline and the maximum height of the pool. Use a securing staple (10) to ensure correct fitting.

B. Mount the filter (9) on the end of the hose in order to prevent dirt entering.



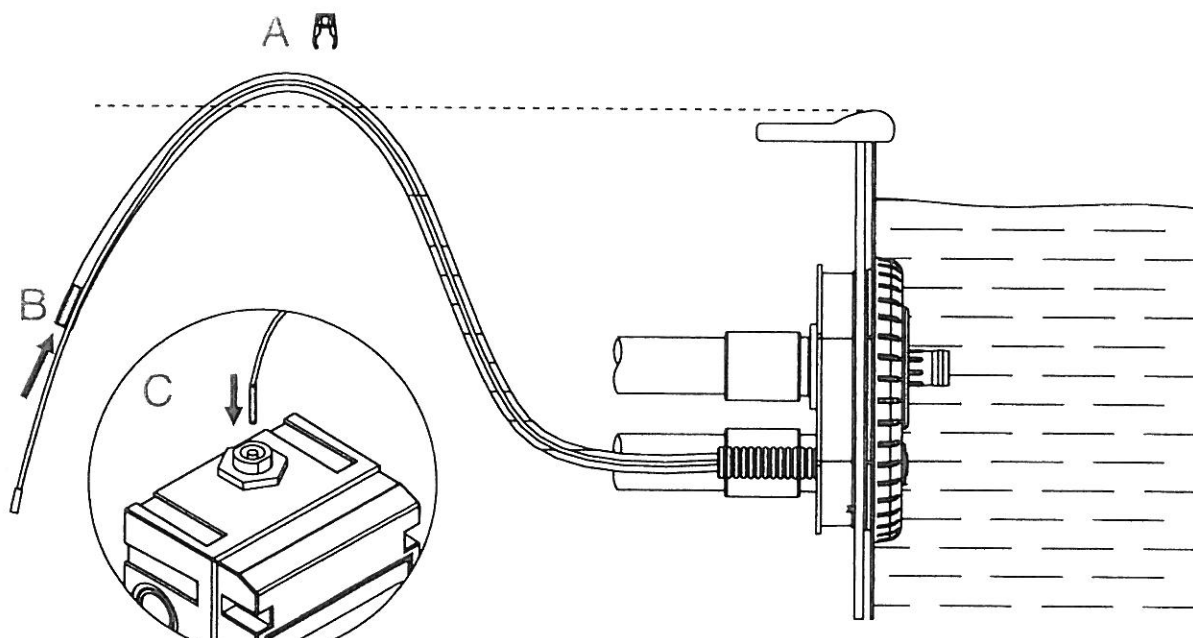
3.6. Fitting the pressure switch.

A. The hose must be attached to the wall to form an air trap, or at a level above the maximum height of the swimming pool, so as to avoid emptying the pool. Use a securing staple (10) to ensure correct fitting.

B. Cut the hose to the right length to reach the panel (8) and mount the filter (9) on the end of the hose in order to prevent dirt entering.

The maximum length to ensure correct operation of the pressure switch is 25 metres. It is advisable to cut the capillary pipe to just the right length to reach the panel (8), ensuring that the connecting pipe is passed through again.

C. Connect the capillary pipe (7) to the pressure switch, ensuring that it is firmly connected.



3.7. Fitting the pump.

Pump installation and assembly must be carried out by an authorised installer.

a) General safety warnings.



The equipment must be fitted following current safety regulations for installing swimming pools, and particularly standard IEC 60364-7-702 and the special regulations for each application.



The pump must be installed on a flat surface and attached to the floor.



To ensure the safety of persons, the pump must be installed at least 3.5 metres from the swimming pool.



The mains electricity supply must be protected by an automatic power-supply cut-out device, a residual current circuit-breaker switch (Δn) not exceeding 30 mA.



Particular care must be paid to ensure that water cannot enter the pump motor or other electrically powered parts of the installation.



The premises in which the pump is installed must comply with the complementary technical safety instructions applicable to damp or wet premises.



The premises must be provided with a drain that allows water to be evacuated in the event of flooding of the premises that might be detrimental to electrical safety and cause injury to persons.



For optimum pump operation and reliability the premises must be provided with a ventilation inlet.

b) Fitting the pipes.



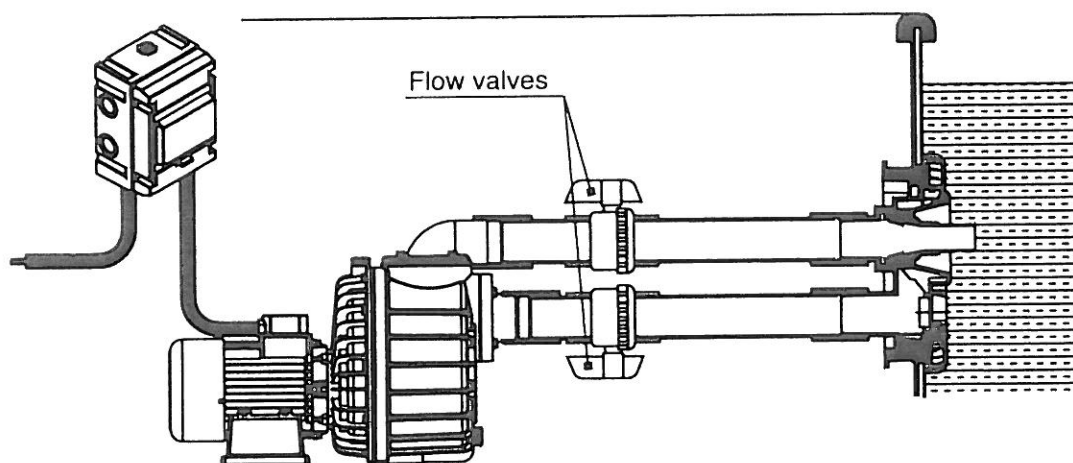
The connection pipes to the pump for distances of up to 3.5 metres must have a minimum diameter of DN63. For distances of up to 5 metres from the swimming pool piping of DN75 must be used, and DN90 piping for distances of more than 5 metres.



The installation pipes and accessories must be made of PVC. Under no circumstances must iron pipes or accessories be used, as they could damage the plastic components of the installation.



Flow valves must be fitted in the discharge and suction pipes, so that the pump can be removed for maintenance without draining the swimming pool.



c) Electrical wiring.



The wiring must be in accordance with EEC standard or of type H07 RN-F according to VDE 0250.

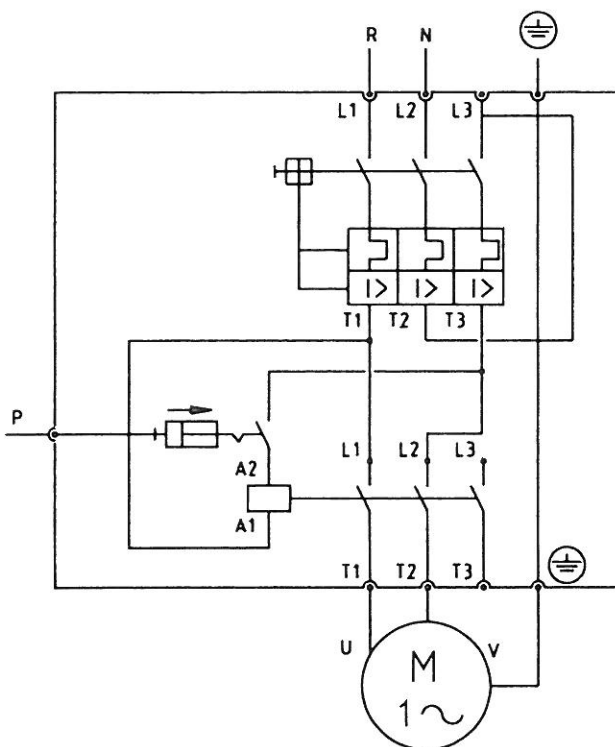


Installation and assembly must be entrusted to an authorised installer.

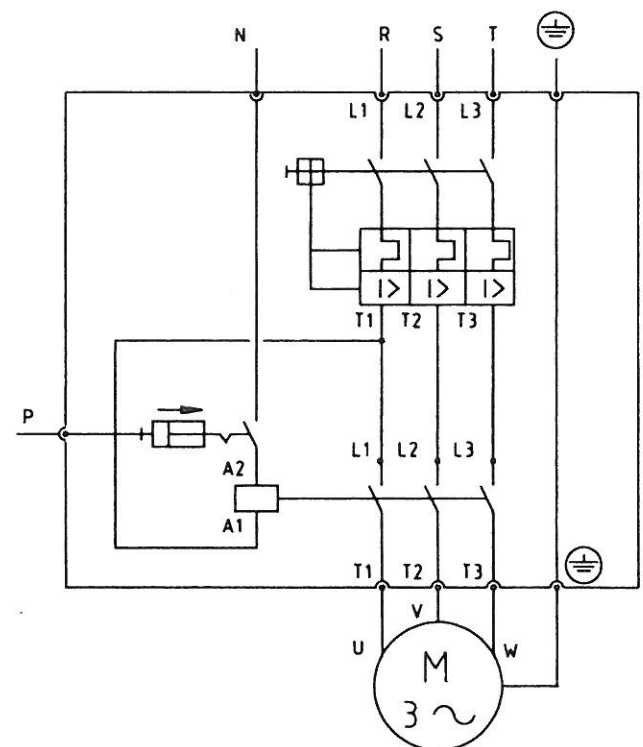


The electrical trunking must be watertight, and connections and their fittings must have a sufficient degree of protection against vertical fall of water drops. Connections, trunks and branch connections must always be housed in leaktight boxes.

Wiring diagram



Single-phase control cabinet



Three-phase control cabinet

3.8. Start-up.

Once the connections have been made and before running the pump the leaktightness of joints must be checked. Switch on the water supply to the pump and eliminate any air left inside the pump by using the bleed devices on the pump.

Start up the pump. Press "Start" on the electrical panel (8) and press the pneumatic pump-start button.



The pipe valves must be fully open during pump operation and must never be closed while it is running. Shutting off or quickly reducing the passage of water can give rise to pressure surges that could lead to equipment breakage.

Leave the pump running for a few minutes and check that the equipment has been correctly installed.

4. INSTRUCTIONS FOR USE.

4.1. Starting / Stopping the pump.

The pump will come into operation when the pneumatic pushbutton is pressed, and will stop if it is pressed again.



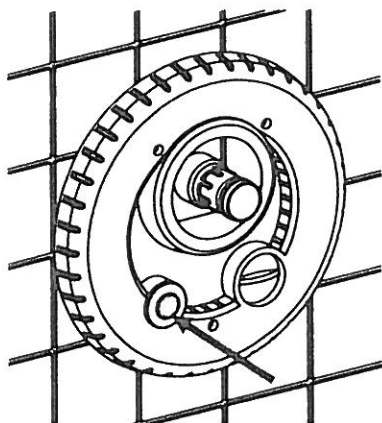
Keep air passage closed if the massage hose is not in use.

Note: The hydromassage hose is an accessory not supplied with the equipment.

4.3. Flow regulator.

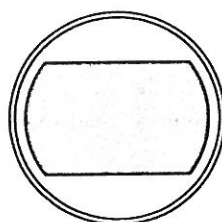
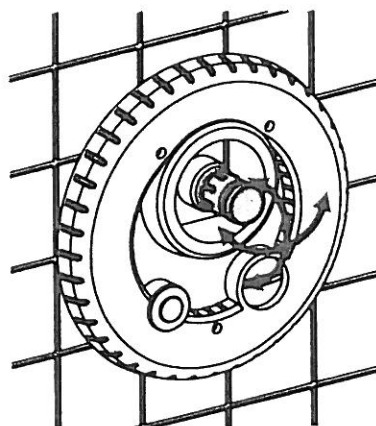
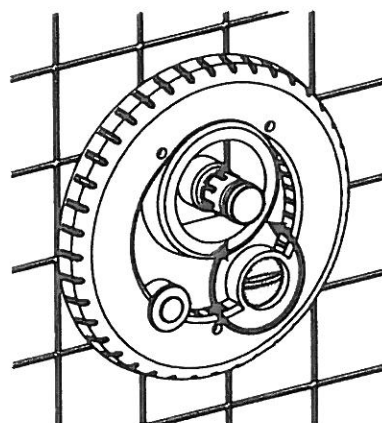
The water flow can be adjusted by turning the discharge pipe to the right or to the left.

The direction of the water jet can also be adjusted using the discharge pipe knuckle-joint system.

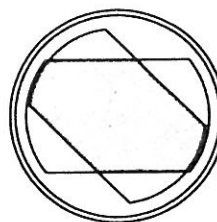


4.2. Air regulator.

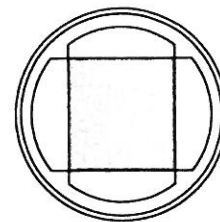
With the hydromassage hose connected, turn the regulating button to regulate the air bubbles.



Maximum



Medium
FLOW



Minimum

5. REPAIR AND MAINTENANCE.

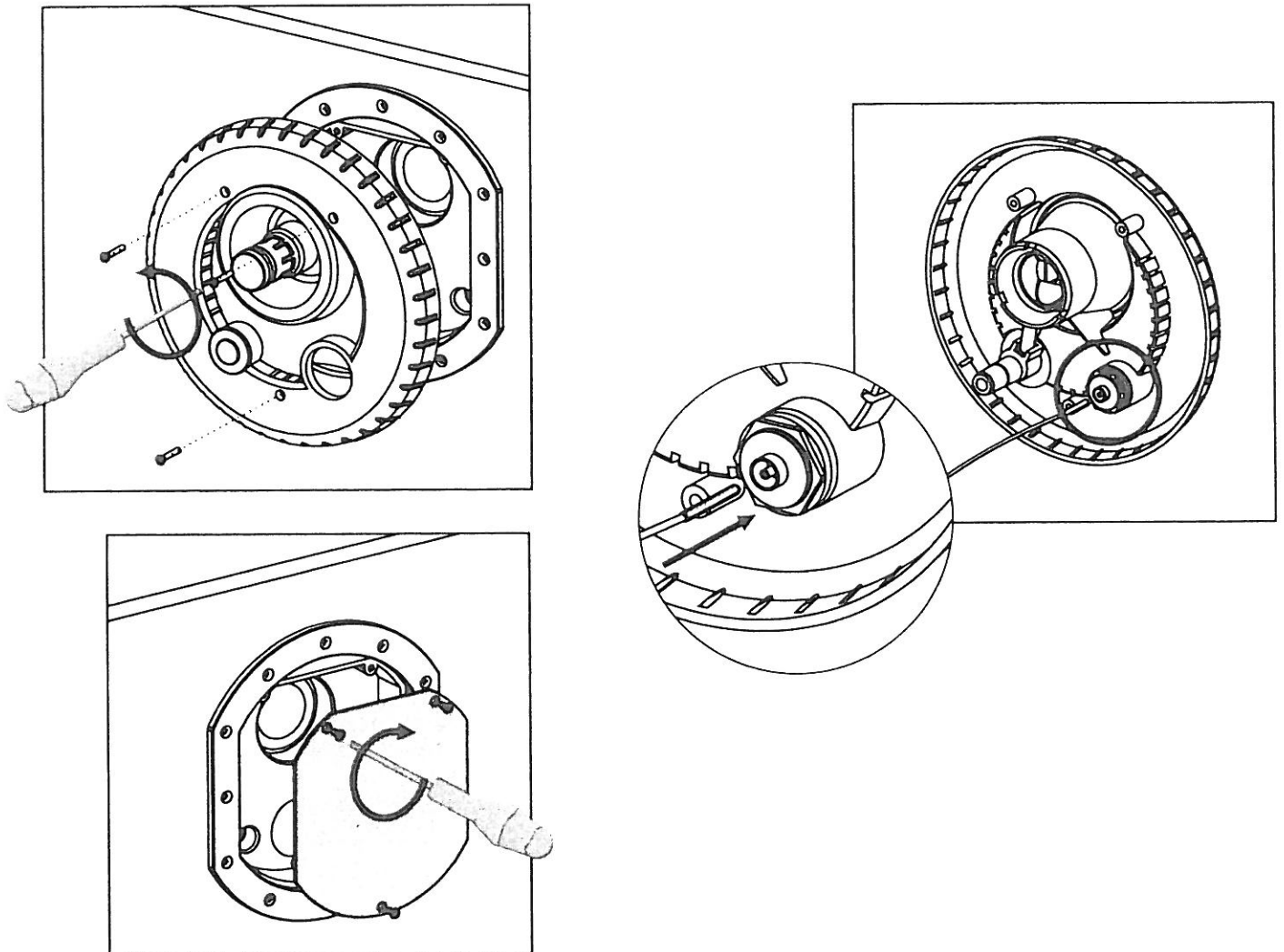
5.1. General considerations.

Check the air-passage filter (9) and if necessary clean out any dirt or insects.

5.2. Overwintering.

The installation must be protected in winter against the potential risk of freezing. The following operations will have to be carried out:

- Disconnect the pump from the electricity supply.
- Remove the front plate (6) and the capillary pipe (7) of the pressure switch and stow them away.
- Drain the water from inside the pump, using the drain plug.
- Fit the protective cover (4).



After the overwintering period refit the components removed and, before running the pump:

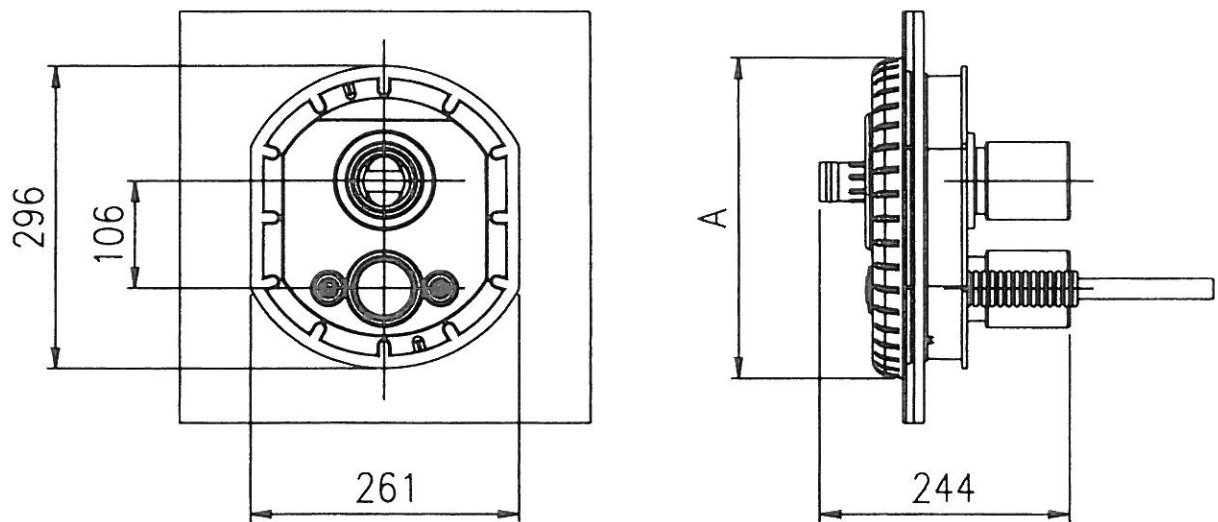
- Check manually to ensure that the pump motor shaft rotates, by rotating the fan.
- Check the connections for leaktightness.

Correct operation of the installation must be checked during the first few minutes of running.

6. POSSIBLE PROBLEMS, CAUSES AND SOLUTIONS.

PROBLEMS	CAUSES	SOLUTIONS
– Water flow is insufficient	<ul style="list-style-type: none"> – Recirculation of water. – Maximum flow of the pump is small. 	<ul style="list-style-type: none"> – Check correct fitting of components, and particularly that the gasket has been fitted. – Check correct pump dimensioning.
– No air bubbles emerge	<ul style="list-style-type: none"> – The filter (9) fitted in the hose is dirty and air does not pass. – Air passage at the front plate (6) is obstructed by insects or foreign bodies. – The air regulator is closed. 	<ul style="list-style-type: none"> – Clean the filter (9) and remove impurities. – Clean and ensure that air is passing to the discharge pipe. – When the air regulator is opened bubbles should emerge.
– The pump does not start	<ul style="list-style-type: none"> – The capillary pipe (7) is disconnected or has leaks. – There is no electricity supply to the installation. – Incorrect pressure microswitch operation. 	<ul style="list-style-type: none"> – Check that the capillary pipe (7) is correctly installed. – Wait for electricity supply to be restored. – Check electrical continuity at the pressure switch by activating and deactivating the button.
– The pump stops running	<ul style="list-style-type: none"> – The pump thermal cut-out switch activates. – The motor-protection cut-out on the panel throws. – The installation's differential circuit-breaker switch triggers – Electrical connection failure. 	<ul style="list-style-type: none"> – Check that the premises is correctly ventilated and that air passage of the pump fan is not obstructed. – Check that the pump ampere rating is less than or equal to the cut-out trigger rating. – Check for insulation or shunt-off faults. – Check that electrical connections are correct.
– The pump does not take in water	<ul style="list-style-type: none"> – The pump is not primed. – The suction pipes are not sealed and the pump takes in air. – The suction piping is long and the pump is higher than the swimming pool level. – Pool water level insufficient and air is being taken in. 	<ul style="list-style-type: none"> – Fill the suction body up to the level of the suction connection. – Repair leaks. – Bleed air from the pump. – A check valve without spring pressure must be mounted in the suction pipes to prevent water draining during suction. – Raise the water level of the pool to at least 10 cm above the plate.
– The motor protection switch triggers	<ul style="list-style-type: none"> – Condenser defective. – Pump blocked by obstruction of the turbine. 	<ul style="list-style-type: none"> – Check that the condenser is of the correct capacity. – Replace if faulty. – The motor shaft must rotate slightly. – If not, the pump must be repaired by the technical service centre.
– Noise.	<ul style="list-style-type: none"> – Air is entering the equipment. – Noise from bearings. – Foreign bodies in the pump. 	<ul style="list-style-type: none"> – Stop leaks. – The pump must be repaired by the technical service centre. – Remove them as explained in the pump maintenance manual.

7. DIMENSIONS AND WEIGHTS.



MODEL	PLATE		CONTROL CABINET		A	WEIGHT (Kg)
			1~ 230V	3~ 400V		
	ROUND	SQUARE		<2,2kW 3kW		
KIT NCR	X				314	4
KIT NCRM	X		X		314	4.7
KIT NCRT1	X			X	314	4.7
KIT NCRT2	X			X	314	4.7
KIT NCC		X			340	4
KIT NCCM		X	X		340	4.7
KIT NCCT1		X		X	340	4.7
KIT NCCT2		X		X	340	4.7

