INSTALLATION AND MAINTENANCE MANUAL

CONTENTS page

Chapter 1

INSTALLATION DRAFT

The location where the pool will be placed must be established according to the best conditions of sunlight, privacy, wind protection and integration on your property.

Consider also the working conditions for the assembly and make sure that no electrical, telephone or heating network is crossing the area.

Before performing the excavation, the ground must be cleaned and levelled, especially when it is uneven.

In order to draw the dimensions of the pit, get stakes, rope and a bag of lime. Look for the most possible log squaring of the digging, by applying the Pythagorean Theorem (3 – 4 - 5).

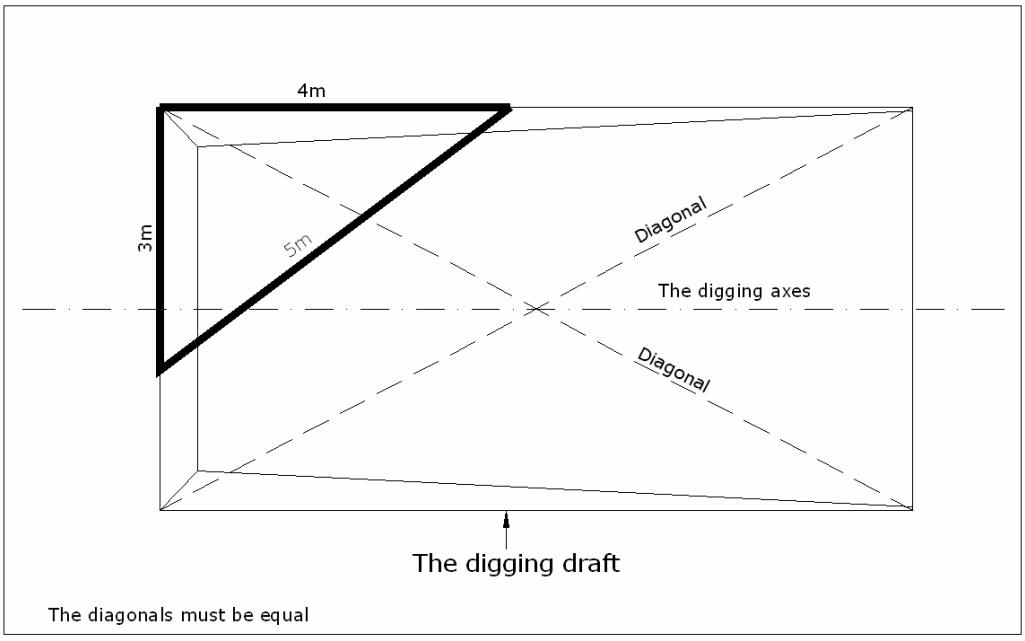


Fig. 1

For the installation on an inclined plane, you have several options:

1. Take the highest point as the final level:
It is necessary that this level is reached using stable materials (e.g.: gravel) or that you compensate by filling if the variation in level is important (Fig. 2)

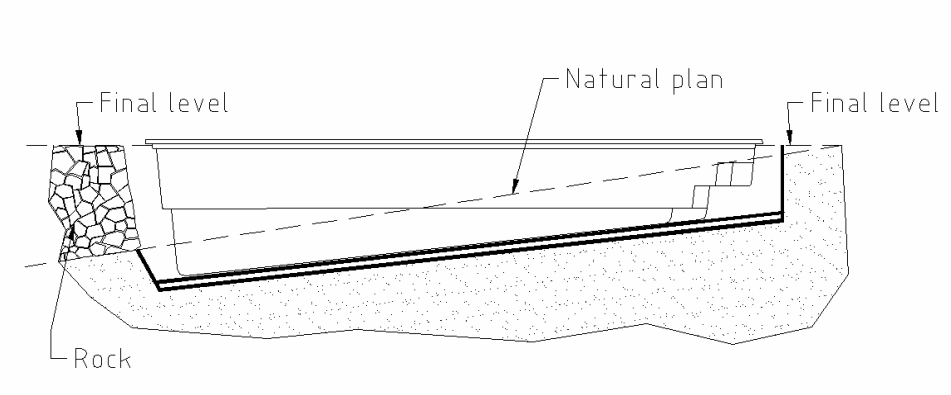


Fig. 2

2. Take the lowest plan as the final level:
Then it's necessary to level or smooth the place before performing the digging.

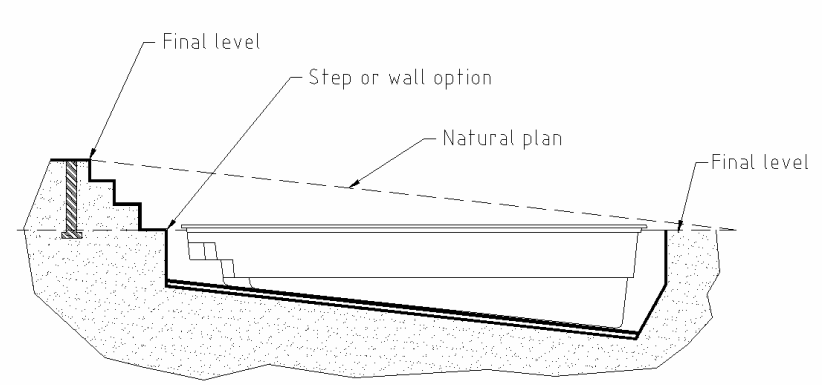


Fig. 3

If you have an access stair to the pool, consider a minimum distance of two meters before the pool.

3. **Take an intermediate point as the final level in order to reduce the height of the compensation works.**

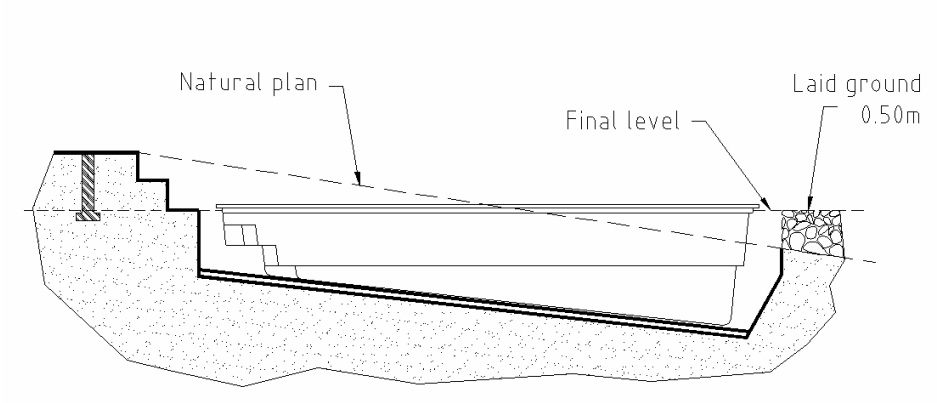


Fig. 4

Chapter 2

EXCAVATION OF THE GROUND

The excavation works must be performed with the equipment best suited for the access, facilitating the works, the nature of the soil and the possible problems regarding the land levelling/transportation.

The excavation is thus a very important operation, generally performed by a specialist using the adequate equipment.

He must work accurately, following the specified draft.

After finishing the excavation, the pit and the pyramidal parts must be cleaned and the unstable ground balls on the edges of the pit will be removed.

If there is a hollow deeper than the base, under no circumstances it must be compensated with displaced ground, even if it's mechanically compacted.

These corrections must be made by using inert material such as: moraine, a type of gravel whose granulation may vary depending on the height that must be reached.

In order to avoid all the important manual corrections, verify the dimensions of the digging in the presence of the specialist.

Don't forget to dig the duct allowing the passage of the pipes to the technical tank. For the assembly of the swimming pool you need gravel type ø 7 – 16 mm.

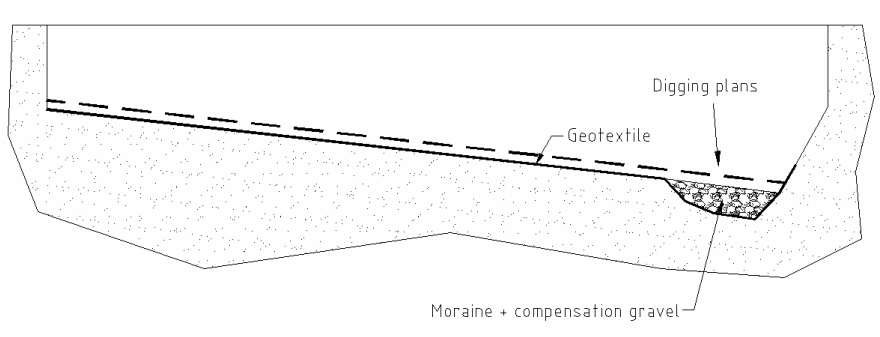


Fig. 5

Chapter 3

DRAINAGE OF THE PLACING AREA (if it is necessary)

Placing the swimming pool on a clayey ground needs a special attention. It's necessary to install a draining system which will help to evacuate rapidly the infiltration waters of pluvial origin or coming from a network, thus avoiding the formation of a water bag under the pool, which leads to counter pressure that can lift an empty pool (fig. 6).

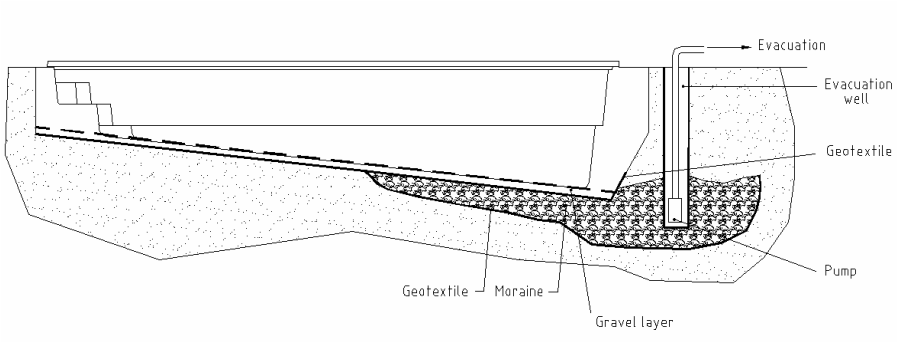


Fig. 6

If the location doesn't allow the natural draining (evacuation by gravity), the draining system must be completed by creating a well where an immersion pump will be installed. For a good recovery of the water, the draining pipe of this well must be mounted deep and built starting from the middle of the area where the pool will be placed to the final level of the pool.

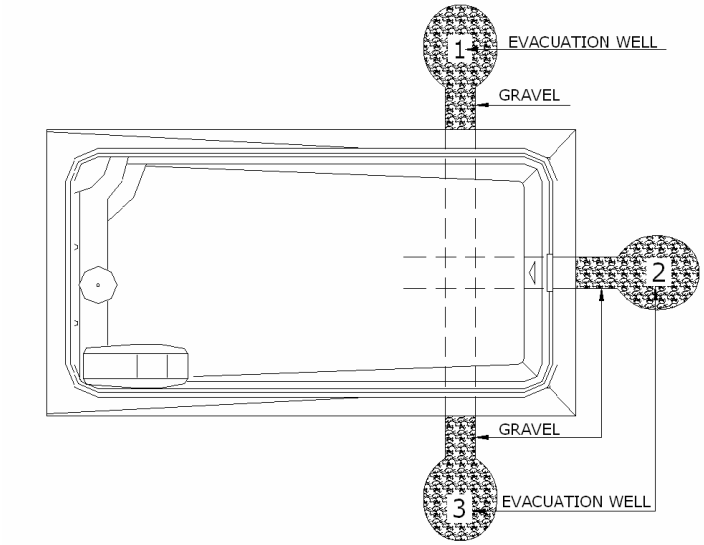


Fig. 7

The lower surface of the drainage system and of the well must be covered with an anti – contamination tissue (geo textile), made out of gravel, rock or similar materials.

The pipe of the well whose inferior part must be pierced and situated at 1m deep under the lowest level of the pool, is made out of PVC and is vertically positioned. A height of 3 meter and a 0, 30 m diameter allows the passage of an immersion pump of high capacity. This device allows in the presence of a water valve:

- the drainage of the building site when stopping;
- to evacuate the waters gathered under the pool (before unloading it);
- thus to avoid a counter pressure, which can lift an empty pool;
- to create a depression area, temporary for the filtration waters;

Chapter 4

PREPARATION OF THE PLACING AREA – ARRANGEMENT OF THE SWIMMING POOL

After finishing the excavation works, the next task is raking the bottom of the pit and the pyramidal parts in order to obtain a precise ground, without displaced or mobile land.

IMPORTANT:

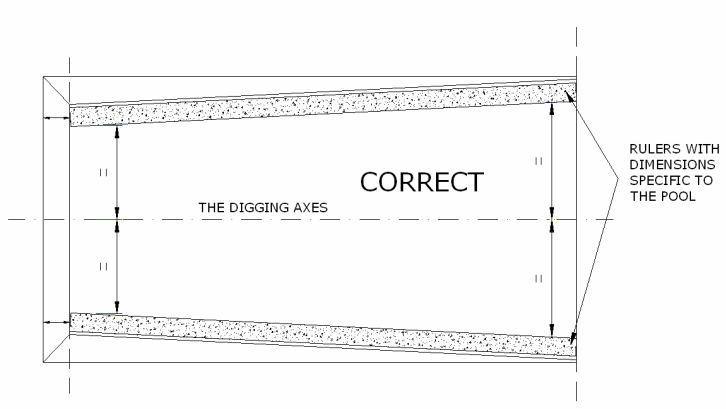
In the presence of clay, sand or of a ground with tendency to humidification, you must cover the bottom of the pit with an “anti – contamination” geo textile tissue in order to prevent all the dangers of even smaller collapses on the bottom of the pit.

This very robust tissue of polyester prevents the rise of the clay, thus preventing the gravel from penetrating the wet soil under the effect of the pressure exercised during the operation of arrangement of the swimming pool.

For the preparation of the location where the pool will be placed, it is necessary to draw the axis of the pit. Use rulers of well determined length and follow exactly the dimensions and the inclinations of the excavation draft supplied by the producer.

The horizontal positioning of the bottom rulers

After drawing the axis of the pit, the two rulers will be placed symmetrically to this axis following the distances between the level of the lower part and the level of the higher part of the pool (fig. 8 and 9).



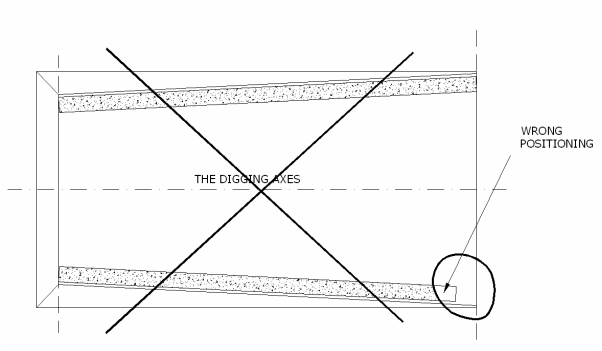


Fig. 8

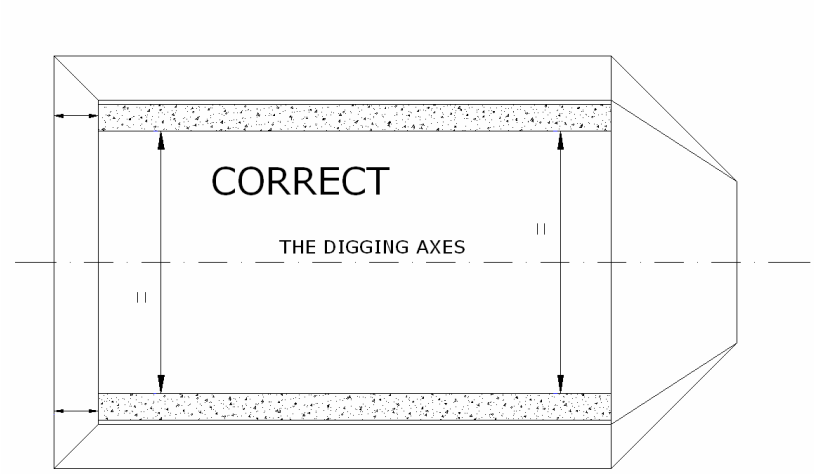


Fig. 9

THE POSITIONING OF THE RULERS ON THE BOTTOM OF THE PIT

The vertical positioning of the rulers on the base of the pit:

The rulers must be correctly positioned on the bottom of the pit; they must be adjusted, their level referring to the final level determined during the installation.

Block the extremities and their centre with a small amount of gravel up to the given level, thus avoiding any other flexion.

In order to avoid the possible hit caused by a stone, make sure that there is a minimum height of 5cm between the ground and the upper part of the rulers. After a final check, disperse brittle gravel with a minimum granulation of 7/16.

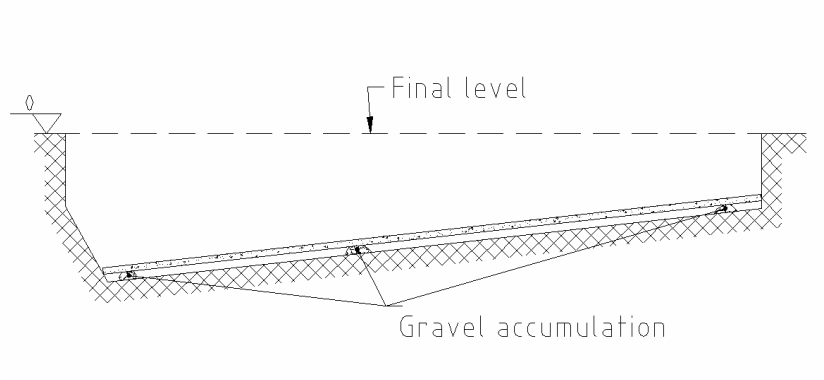


Fig. 10

Using a third aluminium ruler, lean the two previous rulers and starting from the top, **level the gravel on the entire length of the pit.**

The layer thus obtained must be compact, even and with no protuberances or gaps.

A pit correctly obtained ensures a fast and safe levelling

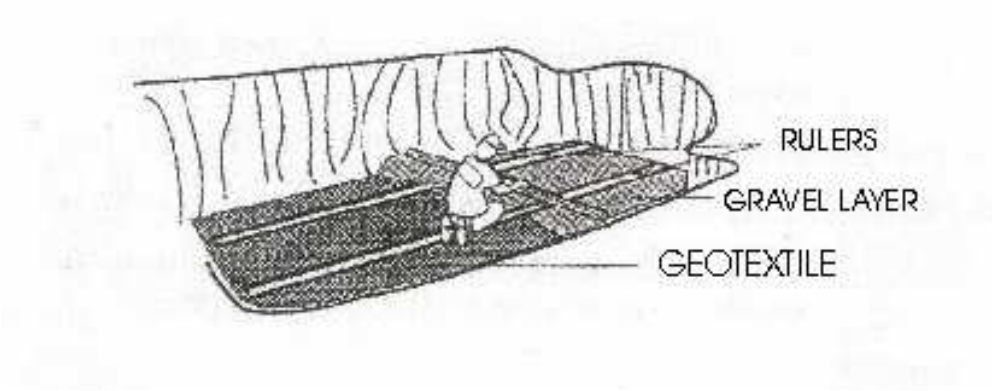


Fig. 11

Chapter 5

MANIPULATION – POSITIONING OF THE POOL

Important tips: during the unloading of the pool from the trailer it's absolutely indispensable to follow the next rules:

- **it is forbidden to work without wearing a protection helmet**

- in order to lift the pool from the trailer:

    1. climb the stairs
    2. hang the pulley by the arm
    3. adjust the arm in working position

- **it's not allowed to walk in the working area of the pool**

- **the belts must be mounted in order to guide the pool in case of air working.**

The AVI swimming pools are equipped when they are manufactured with four steel plugs, which allow the manipulation.

Placing of the pool must be done as follows:

- Unload from the trailer and place the swimming pool on an even surface, as close as possible to the pit;

- Connect the system of pipes to a plug of evacuation of the pool;

- Perform one last check of the gravel layer and remove the rulers from the pit;

- Anchor the pool in four points, lifting it horizontally using a pulley in order to avoid an excessive effort of the walls;

- Lower the pool in the pit carefully

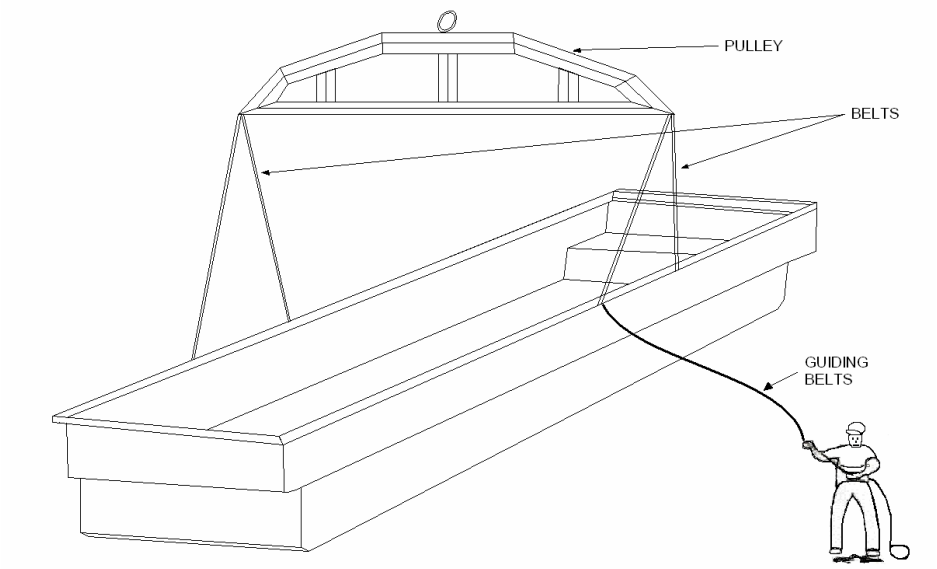


Fig. 12

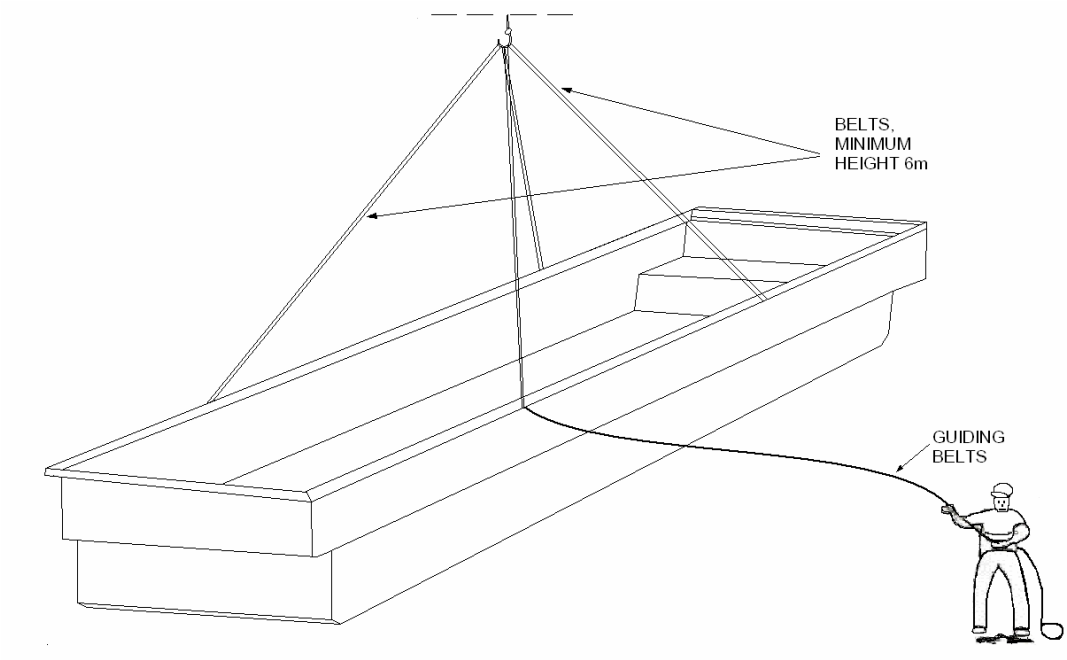


Fig. 13

During this procedure the axis of the pool must be in line with the axis of the draft in order to prevent all the dangers of crumbling or deterioration of the bottom pipe of the main drain.

Once the pool is positioned and the plugs are completely spread, descend into the pool and check if there is a good contact between the bottom of the pool's carcase and the gravel bottom: this one must adhere regularly and uniformly to the base of the walls and to their centre: sometimes it's necessary to make the pool slide easily in order to obtain this result.

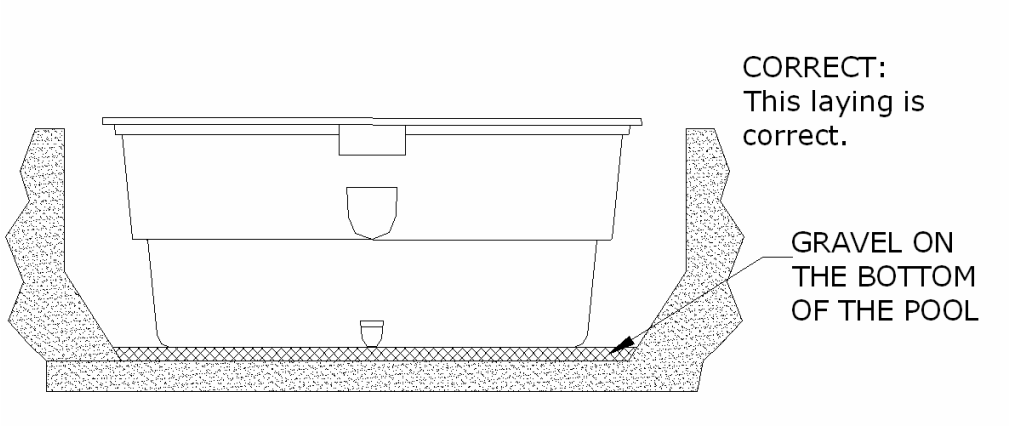


Fig. 14

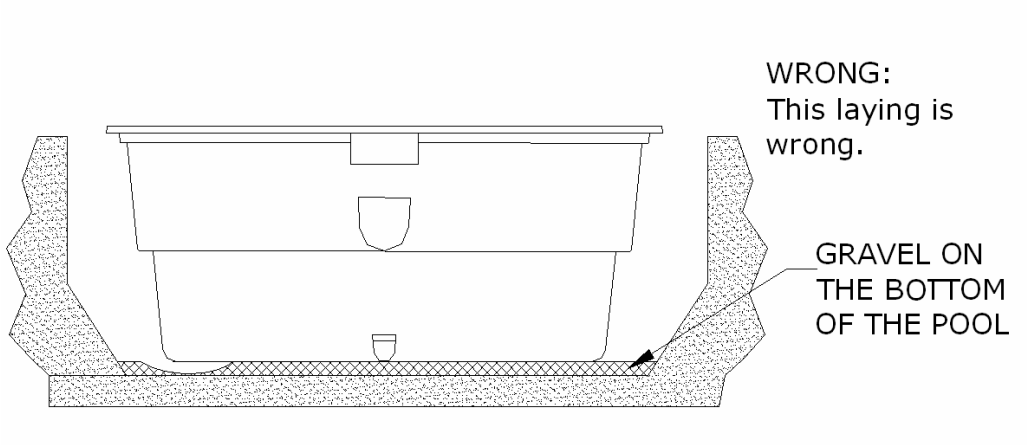


Fig. 15

Before uncoupling the pulley, verify if:

1. The axis of the carcase and of the pit coincides.
2. The pool leans uniformly and comfortably on its gravel layer.
3. Due to the adequate positioning one can obtain around the pool some regular spaces for blocking the walls.
4. The bottom plug doesn't lean on the soil and is entirely free.

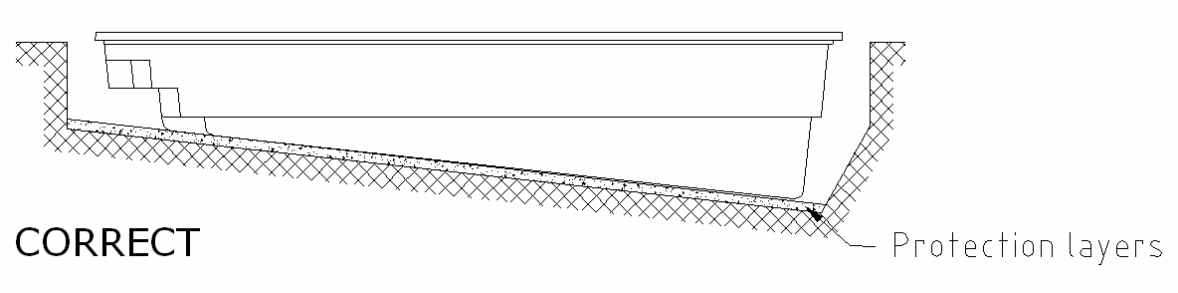


Fig. 16

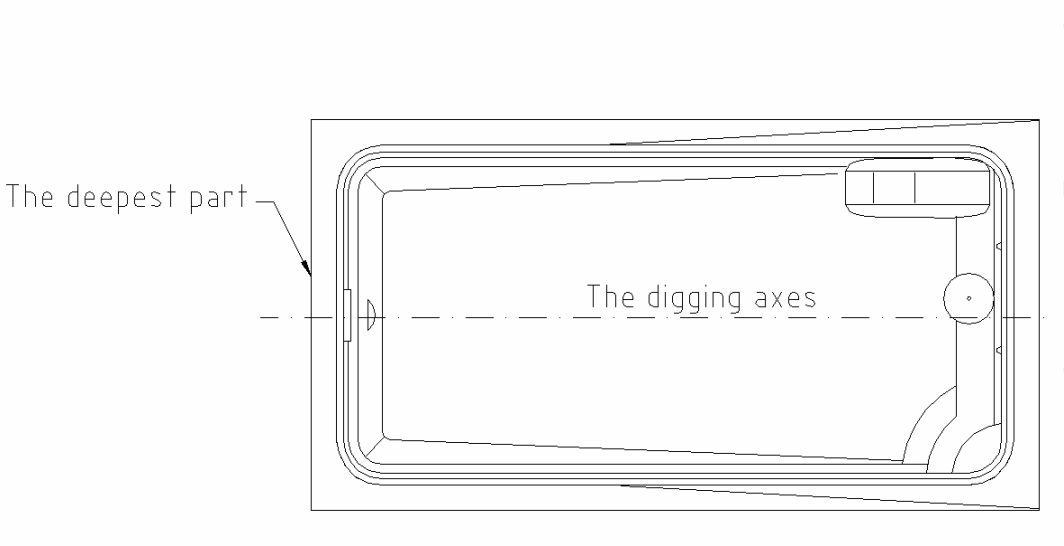


Fig. 17

THE PLACEMENT ON THE PLAN – ADJUSTMENT

After these final check ups, make the first control of the levels.

In order to have a correct reading and a fast check up of the levels, get yourself a theodolite**,** (the water level of the topographer), if it is possible.

The reading is made at corners or at symmetric signs for the elliptical pools.

If you do not have it, use a water level and a mason ruler for a checking crossing the flanks.

Below you can find some examples of deficiencies or flaws that may appear:

If there is a big deficiency of level, it is always preferably to pull out gently the basin in order to remake the gravel layer.

For a smaller deficiency of level, less than 3 mm, the corrections can be done intervening only on the pool determining first the flaw point.

1) **Deficiency:** wrong level in 2 corners diagonally opposed because of a bad adherence of the bottom, thus an irregularity of the pool may occur.

= a corner higher and other lower (fig. 18).

Cause: 1) bad position of the pool on the bottom.

2) good placement of the pool, but the bad digging draft in one of these corners that thus can cause a fake plan in the diametrically opposed corner.

Corrections:

1) replace the swimming pool considering to the axis of the pit, trying to raise it and not to drag it in order to avoid the ruining of the plan of the swimming pool.

2) direct interventions on the corners with flaws:

a) 1st possibility: to raise mm by mm the lowest corner presenting the flaw using a steel bar and to put underneath some shovels of gravel so that the higher corner diametrically opposed would drop slowly.

b) 2nd possibility: drop very slowly the higher corner presenting the flaws, making a lever on this one, both jumping inside and raising simultaneously mm by mm the lower corner presenting the flaw using a steel bar and put underneath some shovels of gravel.

D good level
A higher by 2 cm
B good level
C lower by 2 cm

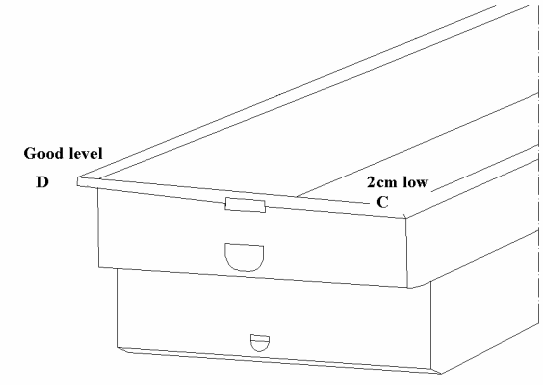


Fig. 18

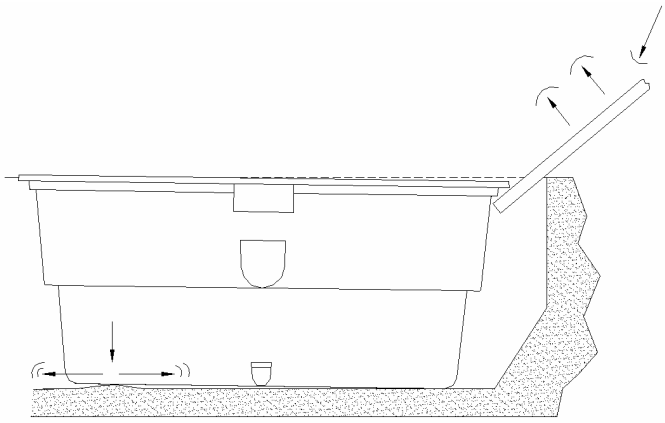
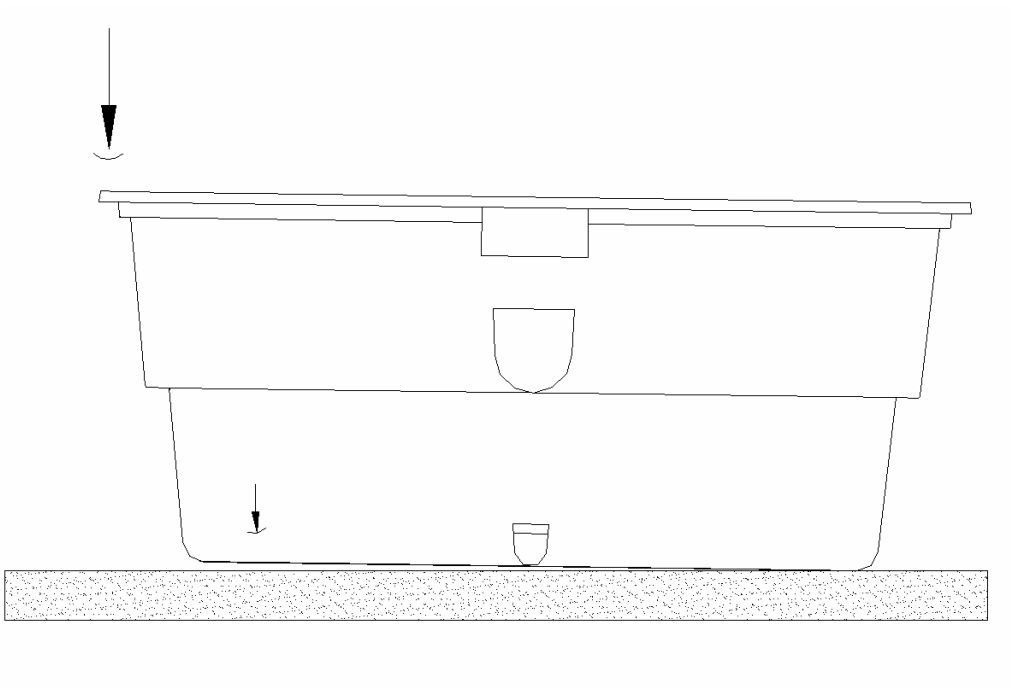


Fig. 20

2) Deficiency: Wrong placement on the level in one corner.

Cause: Wrong placement of the basin of the swimming pool.

Correction: The positioning of the basin considering the axis. Lift up the opposite corner, making a lever on the highest corner, moving gently the basin from right to left, forwards
or backwards so that the bottom of the swimming pool would come in perfect contact with the layer of gravel.



F

ig. 19

3) **Deficiency:** small level error, less than 2 cm, with a good adherence on the bottom, but having a swelling at the bottom of the wall in a corner.

Cause: 1) bad preparation of the plan having too much gravel.

2) bottom broken by the placement of the pool.

Corrections: jump on the bottom in well determined places in order to compress the small quantity of gravel underneath the pool.

If necessary, use a trowel to remove the exceeding material taking care of the plan on the bottom.

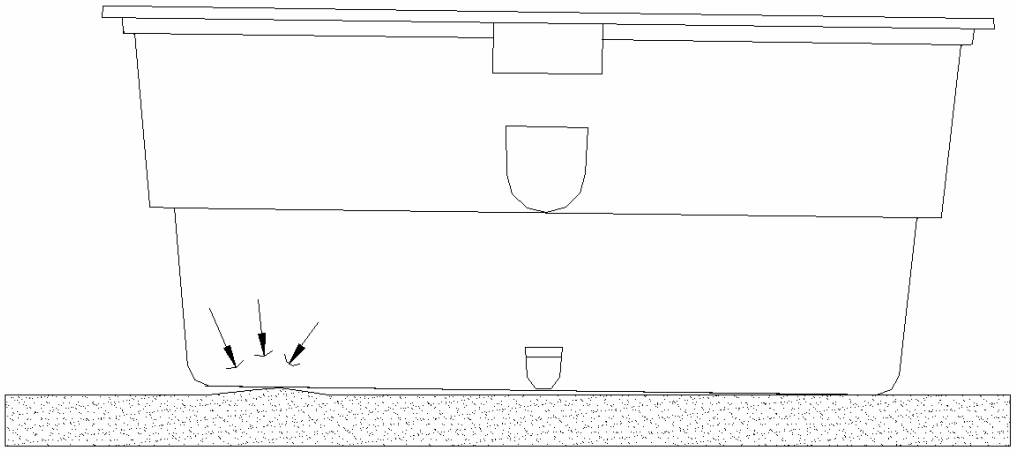


Fig. 21

4) **Deficiency:** small level error, less than 2 cm, with a good adherence on the bottom, but having a lack of gravel in a corner on the bottom of the wall.

Cause: 1) bad preparation of the plan caused by a gravel deficiency

2) broken bottom caused by the operations of placement of the pool.

Corrections: drop a few wheelbarrows of gravel in the corner which presents the deficiency in order to get a partial blockage (1/3 from the maximum height).

Then keep rising very slowly the pool mm by mm in order to allow the gravel enters underneath the wall. Use all the necessary precautions in order to avoid an excess.

Take back to the initial position of the basin and press the gravel that was brought only in the pool.

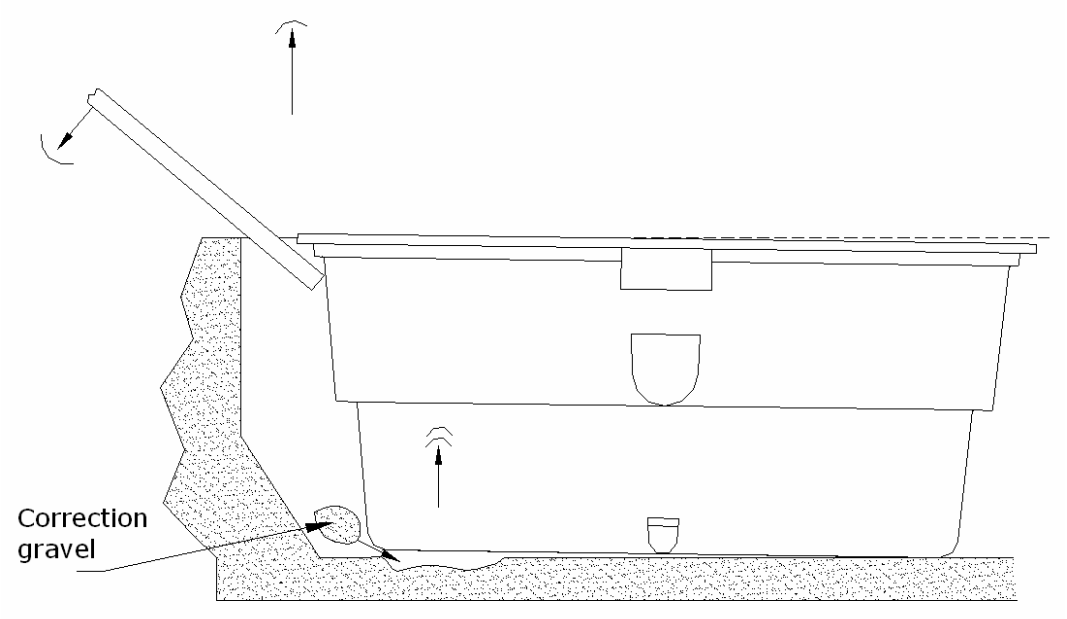


Fig. 22

IMPORTANT: IT IS ADVISABLE TO MAKE ALL THE NECESSARY CORRECTIONS BY AVOIDING RAISING THE BASIN.

By moving the basin from its place is avoided the creation of a hollow.

THE PLACEMENT AT THE LEVEL OF THE STAIR IS POSSIBLE ONLY AFTER THE COMPLETE PLACEMENT OF THE SWIMMING POOL AND ITS FILLING WITH WATER AT ONE THIRD.

FILLING UP THE LATERAL SIDES

Before filling up the lateral sides be careful to assembly the main drain, the under water lights, the skimmer and the inlets.

A. FILLING THE SIDES OF A RECTANGULAR SWIMMING POOL

After the final check up if the placement and the levels are correct, begin the filling up to one third of its height. Using a pole begin the pressing of the gravel and then pass to the less deep corners.

This operation prevents the swimming pool from moving in some other directions.

For the rectangular swimming pools with a constant bottom, start the filling up of the lateral sides from the diagonal corners. (Fig. 23)

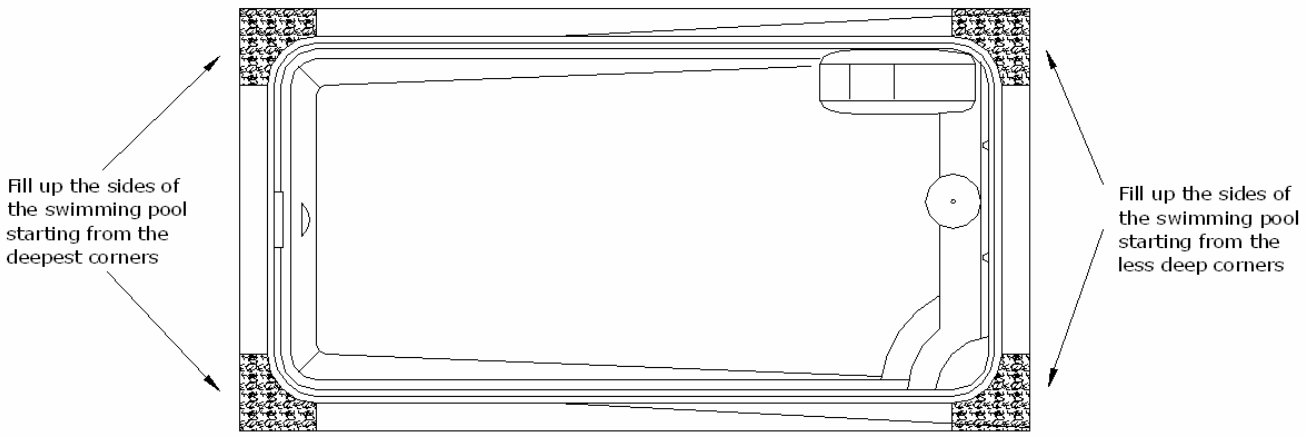


Fig. 23

For the rectangular swimming pools with a variable bottom, follow the next steps:

1. Fill up the sides of the swimming pool starting from the deepest corners.
2. Fill up the sides of the swimming pool starting from the deepest corners.

Control permanently the placement and the level before continuing the filling of the sides.

ATTENTION! During the filling of the pit, in order not to unbalance the basin the height of the filling must be identical on each deeper side of the swimming pool. In order to do so, start the filling with gravel surrounding the basin each time by 30cm.

Press the gravel efficiently in order to do a homogeneous and compact filling.

Parallel to the filling up with gravel of the lateral sides it is necessary to fill up the basin with water with the purpose of equilibrating the pressure and thus avoiding the deformation of the walls (the rectitude of the walls). (Fig. 24)

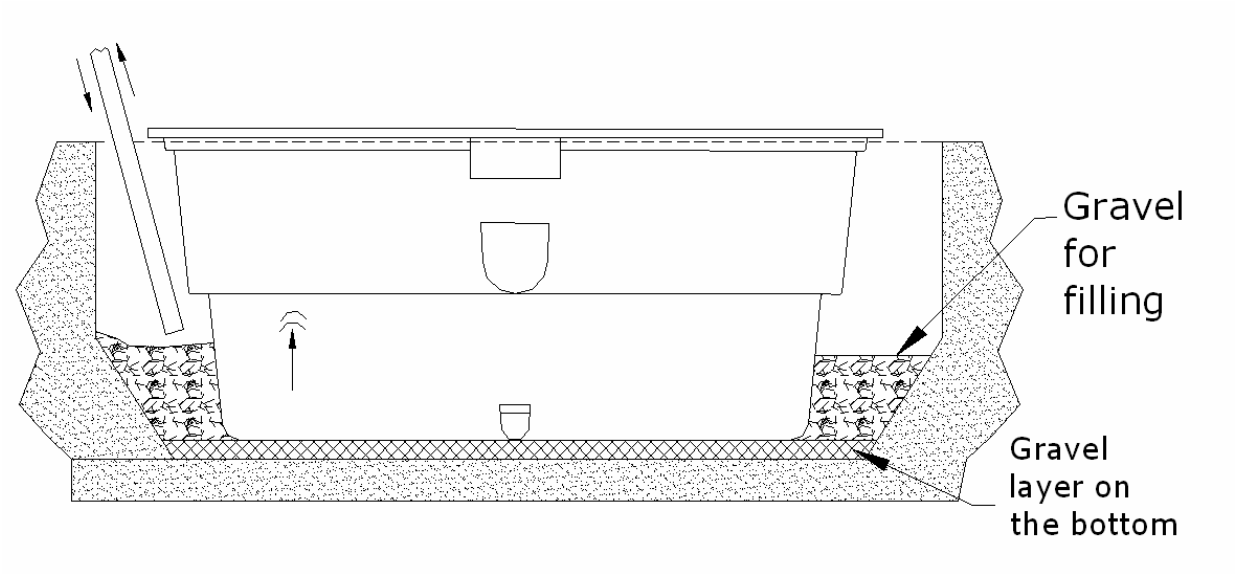


Fig. 24

Gravel for filling
Gravel layer on the bottom

B. FILLING THE SIDES OF AN ELLIPTICAL SWIMMING POOL

For the swimming pools having an elliptical shape the way of filling differs in certain ways.

After having checked one last time if the placement and the level are correct **for the elliptical swimming pools with a constant bottom,** chose 4 points equally distributed on the perimeter of the swimming pool and start filling up simultaneously with gravel for on third of its height.

For the elliptical swimming pools with a variable bottom after checking if the placement and the level are correct chose, 4 points equally distributed on the perimeter of the swimming pool and start filling up simultaneously with gravel the deepest corners for on third of its height, passing to the shallow corners.

For the professional installers of swimming pools we recommend the installation of props within the walls, placed horizontally to each third of the length (Fig. 25).

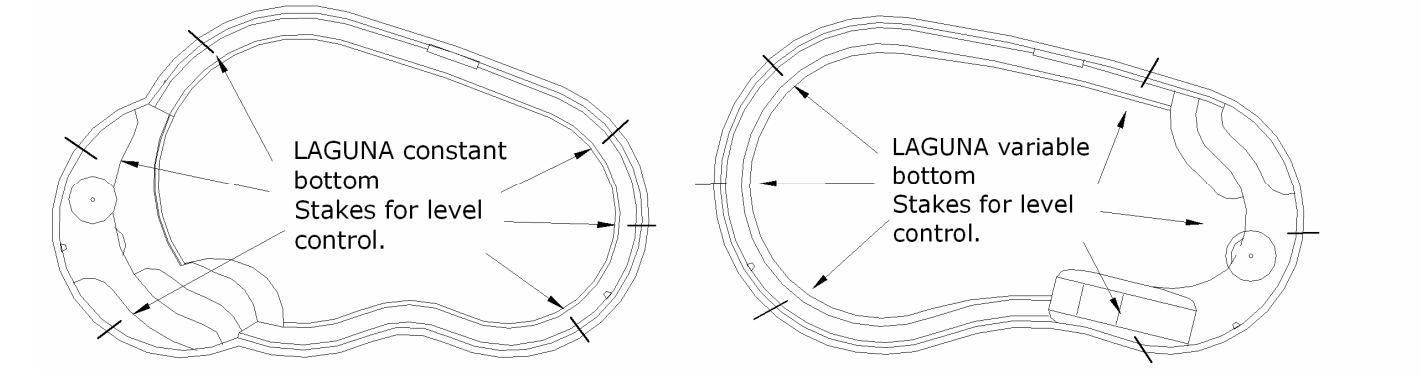


Fig. 25

Level control: Control as shown in the drafts.

Laguna constant bottom: stakes for level control.
Laguna variable bottom: stakes for level control.

Continue the filling works progressively, filling the spaces between the different points of blockage and continuing the pressing in order to obtain a compact and homogeneous ground. Continue to fill so up to 2 thirds of the height, checking that the basin is well settled on the level and that its shapes are respected. Simultaneously with the filling up of the gravel, fill up with water the basin in order to avoid the possible deformations.

If the pit is too large or the filling is done in a mechanical way it is sometimes necessary to reinforce the basin against all risks of deformation. In order to do so, tie the hooks especially placed on the edge of the swimming pool with a steel thread, securing it to a stake in the ground. This method allows the sustaining of the walls.

IMPORTANT! After finishing the works of positioning and placement, the filling up with gravel and water, a concrete belt must be cast around the swimming pool with a maximum thickness of 10cm. This concrete belt must be reinforced and it must be tied to the edges of the swimming pool. This belt has the function of sustaining the walls of the swimming pool when it is emptied for the purpose of cleaning it. It is also very important for the contact with the kerbing stones.
After a final check up, do the following:

PLACEMENT ON THE LEVEL OF THE STEPS If there is the risk of submitting its own weight, for its rectification it is better to keep it straight, filling the hollow beneath it with gravel, thus blocking it. Adjust this placement on the level by pressing thoroughly, leaving enough space for the tubes of the inlets positioned on the steps.

In order to correct an important movement it is advised that the swimming pool is filled with water up to the level of the steps, with the aim of preventing the risk of raising the lower side.

Chapter 6

ASSEMBLY OF THE INSTALLATION OF THE SWIMMING POOL

The installation of the filtration group is performed using elements and PVC pipes with 50 mm diameter for a pressure of 16 bar. For the assembly of the aspiration collector, the valves are placed at sufficient distance so that they can be opened and closed correctly.

When installing the pump, it's advisable to have demountable entrance and exit connections, for an easier dismantling. Connect the exit at the valve with six ways on the exit named "pump". Provide drainage towards the duct or a flow, by connecting a 50 mm pipe to the valve with 6 ways on the exit named **"waste"** and equipped with a view finder.

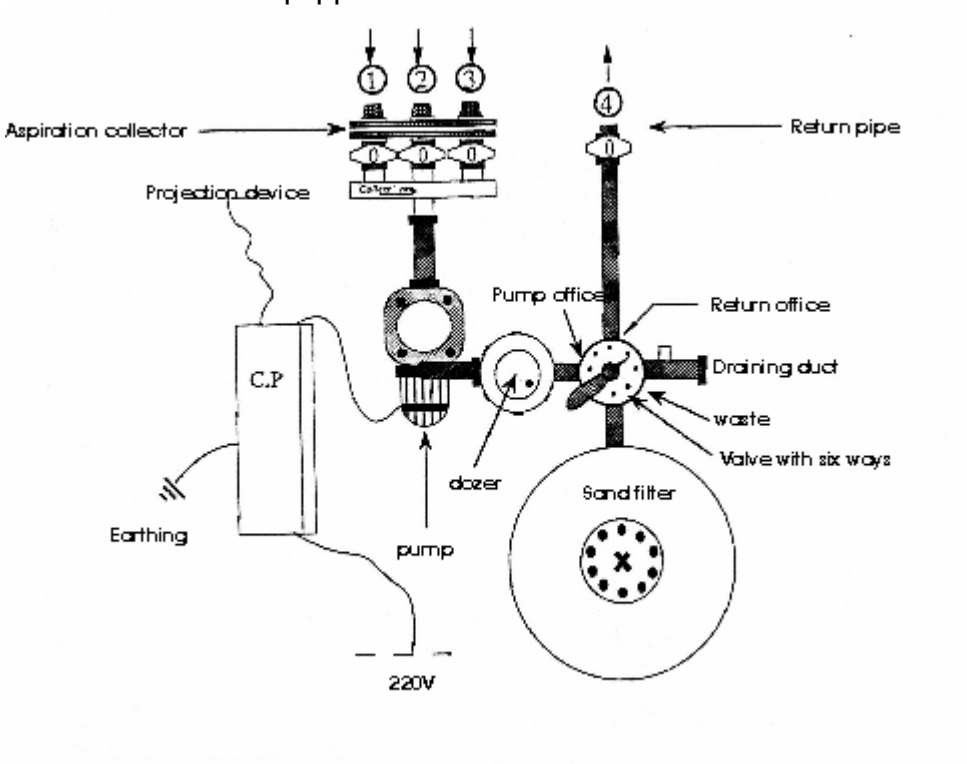


Fig. 26

6.1. Technical tank

The electrical part gathers all the filtration material: the pump, the aspiration collector, the filter, the electrical panel.

For the latter it is sometimes possible to use an already existing place: the garage, a shelter in the garden, located at a maximum distance of 6 m from the swimming pool. Otherwise the installer has the following options: to build one or to buy a technical prefab tank made out of glassfibre reinforced plastic.

a) Reinforced cement tank

For the swimming pools whose water volume is close to 50/60 m^3, the technical house must have the following minimum dimensions: 1, 50 m length, 1, 50 m width, 1, 70 m height with an opening of the door of at least 0,75m.

It must be:

- perfectly waterproof
- well drained in order to avoid the water infiltration and humidity
- ventilated and illuminated

If the place where it is built allows it, it's recommended to position the base of this tank at a level inferior to that of the kerb stone, approximately from 40 to 50 cm, thus allowing the filter to be in charge.

b) Technical prefabricated tank

When the installer doesn't have a construction that can contain the filtration group or even when the area doesn't allow such a construction: place restrictions, installation difficulties AVI proposes the technical prefabricated tank made out of glassfibre reinforced plastic. This tank has a parallelipipedic form, different heights, the closing being provided by a hinged lid.

6.2. Sand Filter

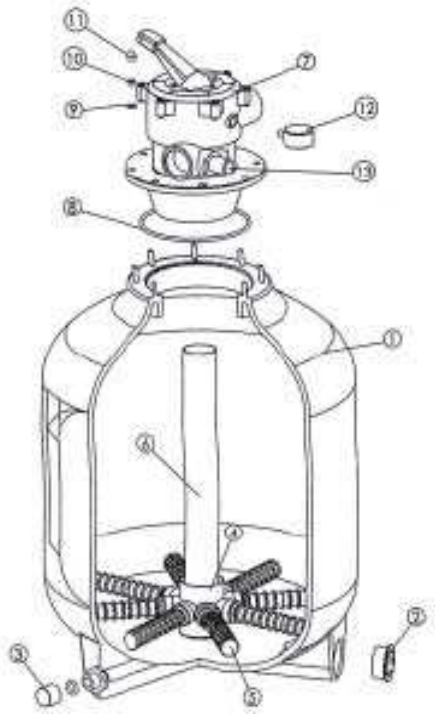
Technical information:

Maximum running pressure: 2 bars.

Loading pressure: 3, 5 bars.

6.2.1. The version with six positions on top

Reference	Ø exterior (mm)	Filtration surface m^2	Filtration flow* m^3/h	Quantity** of sand kg	Zeeoster quantity kg	Ø couplings
COCOONS10	520	0,20	10	100	75	1"1/2
COCOONS15	650	0,30	15	150	110	1"1/2
COCOONS22	780	0,44	22	250	190	2"



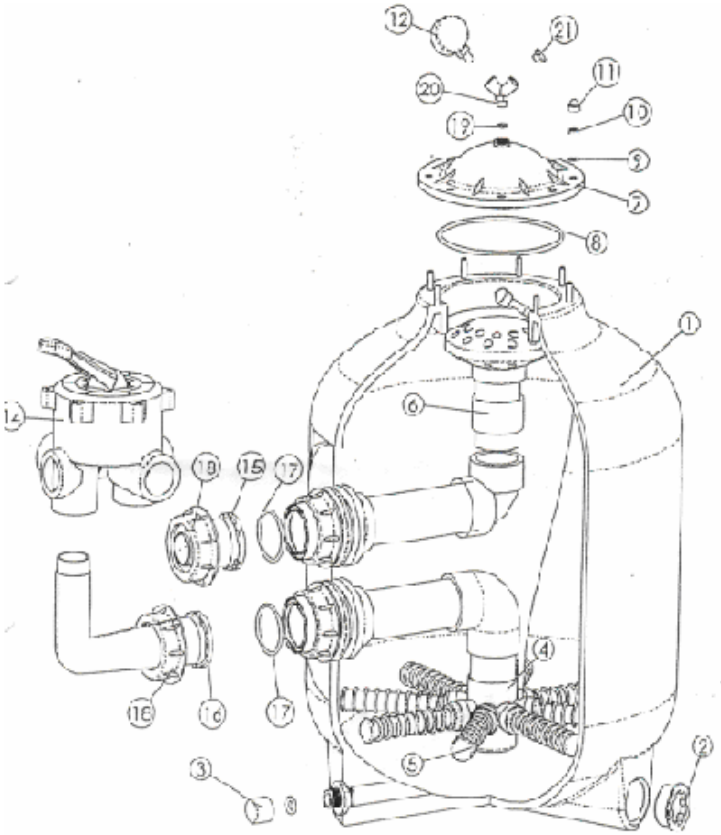
1. Filtrating basins
2. Stopper for sand evacuation
3. Stopper for water evacuation
4. Collector
5. Strainer
6. Central pipe
7. Valve with six positions
8. Fittings
9. Washer
10. Screw nut
11. Camuflage lid
12. Pressure gauge
13. Evacuation sight

Fig. 27

6.2.2 The version with the valve with six lateral positions

Reference	Ø exterior	Filtrating Surface M^2	Filtration Flow* M^3/h	Quantity** Of sand kg	Zeeoster quantity kg	Ø couplings
COCOONT06	400	0,11	6	50	35	1”1/2
COCOONT10	520	0,20	10	100	75	1”1/2
COCOONT15	650	0,30	15	150	110	1”1/2
COCOONT22	780	0,44	22	250	190	2”

*Flow given for passing speeds of 50m^3/h/m^2
** Granulation of sand 0.5 – 1, 25 mm filtrating layer
*** For filters of 22 m^3/h, it's best to establish the filtration charge in two layers
- upper layer: coarse sand of 2 to 4 mm: 50 kg on the bottom of the tub.
- filtrating layer: sand of 0,5 up to 1.25 mm: 200 kg

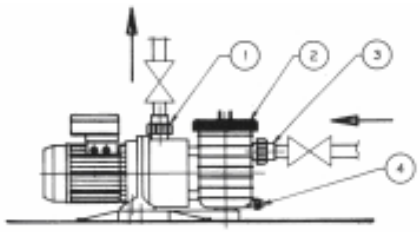


1. Filter basin
2. Stopper for sand evacuation
3. Stopper for water evacuation
4. Collector
5. Strainers
6. Loudspeaker
7. Lid
8. Fittings
9. Washer
10. Screw nut
11. Camouflage lid
12. Pressure gauge
14. Valve with six positions
15. Right coupling
16. Bend coupling
17. Fittings

Fig. 28

6.3 THE PUMP

(Installation and operation instructions)



Description:

1. Exit muzzle
2. Filter lid
3. Entrance muzzle
4. Drainage plug

Fig. 29

Cleaning pump for pools with built-in pre-filter and the drive isolated from water (protection class IP X5)

6.3.1 APPLICATION

The series of pumps for pools was designed for a continuous work, for pumping clean water at a maximum temperature of 60^0 C. All the parts coming in contact with the water are built of techno-polymer material that apart from ensuring a double electrical isolation, make the pump immune to rust. Avoid operating an empty pump.

Before operating the pump, fill the filtration body up to the maximum point, turn the transparent lid provided with the pump. Make sure that the energy source suits the data on the board.

For the pumps installed under the water level, fill through the valve slowly while the evacuation valve is kept open to eliminate the air. For the pumps with three-phase engine, get the engine started to make some rotations, the rotating direction being clockwise (look at the engine from behind). If the rotation is counter-clockwise, change the collector of the two phases. The operating rate depends on one to five minutes for a height difference of 2 – 3 meters, under normal conditions of functioning. The section pipe has an interior DN diameter 50 mm, the water temperature of 20^0C and the energy source 50 Hz. In order to achieve the conditions of functioning, make sure that the connections with the fittings are tight.

6.3.2 Service

Turn off the power before intervening.
Inspect and clean the pre-filter.
In order to clean the transparent lid, use water and neutral soap. Don’t use solvents.
Place the filter back in its place, close the lid and follow the procedure of functioning.

When the pump is not used and it there may exist the risk of freezing, empty it through the draining plug. The following parts should be manually tightened: the entrance coupling, the exit coupling the standard connections at the articulate joining – don't use pinchers, keys or other tools.

- The first procedure is filling the installation with agent;
- Place the valve in the washing position;
- Operate the pump for a few minutes to ensure that the water flows normally and that the pump functions normally;
- Stop the pump;
- Place the valve in the rinsing position;
- Operate again the pump for approximately 20 seconds;
- The filtration group is ready to function.

ATTENTION! Don't move the valve while the filter is under pressure. Don't dismantle the accessories while the filter is under pressure.

6.3.3 Using the filter

The valve on the filtrating position.

Operate the pump.

The water flows through the filtration charge, being cleaned of impurities.

ATTENTION! When it's first used, increase the value of the pressure to Po (kg/cm^2 – indicated on the pressure gauge) with the pump functioning and the valves closed.

6.3.4 Washing the filter

While the service pressure P is superior to that of Po + 0, 5 (kg/cm^2) (P > Po + 0, 5) it's necessary to perform a washing procedure to cleanse the filtrating charge.

- Stop the pump

- The valve on the washing position

Note: certain installations have a special valve for which the draining duct needs to be open. Don't forget to close it when you get to the filtration mode again.

- Operate the pump until you obtain clean water in the evacuation glass.

- Stop the pump
- The valve on RINSING position
- Operate the pump for twenty seconds

6.3.5 Reflow

The “reflow” mode allows the flowing of the water without filtering through the filter. This procedure can be used for a fast diffusion of the shock treatment.

6.3.6 Evacuation

The evacuation mode allows a direct drainage of the swimming pool without it going through the filter.

6.3.7 Closed

The closed mode stops any water flow. **Never operate the pump** in this position. This procedure is necessary for the cleaning of the pump’s pre-filter. During this procedure it’s also indicated to close the aspiration valves (don’t forget to open them when the procedure is finished).

- After performing all the procedures using the valve with six ways, replace the valve on the filtration position

6.3.8 Indicated filtration time

Before and after season	October – March 4 – 6 hours/day and 2 hours/night if it’s not covered
Pre – season	April – May 6 – 8 hours/day and 2 hours/night if it’s not covered
During the season	June 10 – 12 hours/day and 2 hours/night if it’s not covered

The duration of filtration must be adapted according to the weather conditions and the frequency of APPLICATION of the swimming pool.
- control repeatedly the water level in the pool and the pressure of the hydraulic set;
- clean on a regular basis the basket of the skimmer and of the pump;
- remember to renew the filtrating charge once every five years.

6.3.9 Using the vacuum cleaner

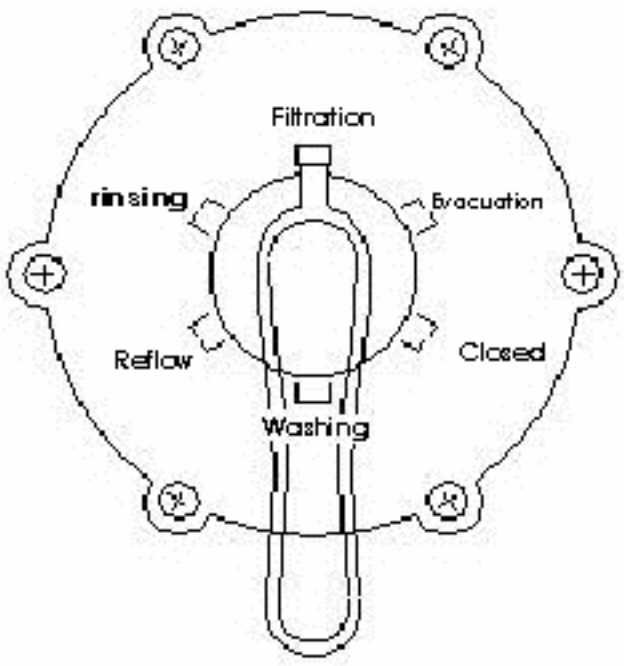


Fig. 30

- The valve on the filtrating position

Filling the floating hose of the vacuum with water

- Coupling to the plug of the vacuum (the skimmer's basket);
- Coupling to the brush of the vacuum.

- Operate the pump

- Keep the tap of the vacuum's plug is open;
- Keep the tap of the bottom trap open for about five minutes

The aspiration is performed with slow moves.

- After every aspiration (cleaning) of the pool it's necessary to perform a procedure of washing and rinsing of the filter.

- Attention! Check the pressure on the pressure gauge!

6.4. Instructions for using the valve with six positions

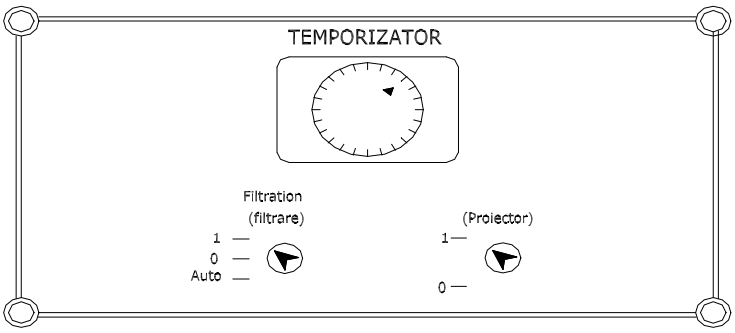
*** The CLOSED mode**: the valve closes all the circuits found on the backwater of the pump; RECOMMENDED for changing the sand in the filters
*** The FILTRATION mode**: performing the filtration of the water. Circuit: pump-valve with six positions -filter with normal direction-heating + pool-chlorination circuit.
* **The REFLOW mode**: using a pump, perform a simple water flow in the pool with no filtration. Pump – valve with six positions – heating – pool – chlorination circuit.
* **The EVACUATION mode**: evacuating the pool through the pump only through the main drain (the taps on the circuit of the skimmers or on the peripheral duct must be closed if it's necessary). It's used when the bottom of the pool is lower than the sewage and the natural evacuation can't occur. Circuit: pump – valve with six positions – filter with opposite direction (washing) – sewerage.
* **The WASHING mode**: is used for washing the filter with the water in the pool, when observing dirt on the valve sight. The washing lasts 5- 10 minutes until observing through the view finder that is clean. Circuit: pump – valve with six positions – filter with opposite direction (washing) – sewerage.
* **The RINSING mode**: is used for laying sand in the sand filters after the washing procedure. The rinsing procedure lasts 1 – 2 minutes. Circuit: pump – valve with six positions – filter with normal direction – sewerage. After finishing the washing and rinsing procedures, the next task is filling the basin to bring the gathering level to the skimmers.

ATTENTION! MOVING THE VALVE WITH SIX POSITIONS IS PERFORMED ONLY WITH THE PUMP TURNED OFF.

6.5 The control panel

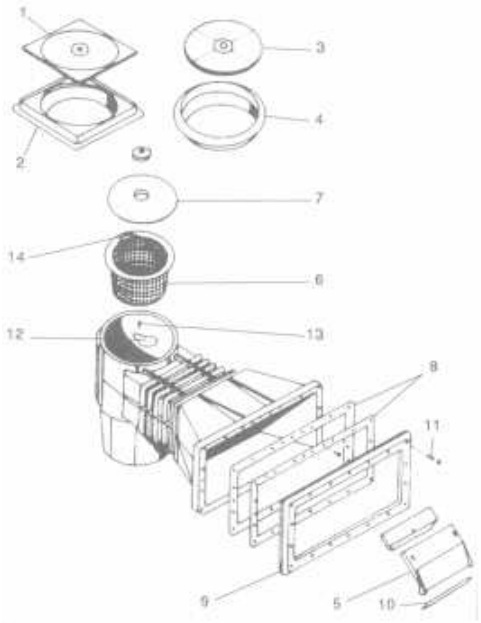
From the control panel, by operating the switch with three positions, perform the filtration procedure:
- position 0 – the filtrating installation is turned off;
- position 1 – the filtrating installation is turned on;
- Auto position – the filtrating installation functions in the period of time selected by moving the reglets from the temporizing device (1 reglet – 15 minutes). After finishing the filtrating program, the installation stops and will start again according to the selected program.

By operating the projection switch, the underwater switch is controlled. The board is provided with two wire fuse (one for the projector and the other for the pump) and a push-in fuse which is at the entrance in the board.



6.6 Skimmer

It's used to clean the shining of the water, the chlorination of the water (for the installation with no chlorination devices)

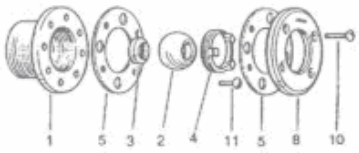


1. Lid of the skimmer
2. ??? of the skimmer
3. Temporary lid
4. Reducing socket
5. Direction clack
6. Basket
7. Basket lid
8. Fittings
9. Frame
10. Rod
11. Frame
12. Skimmer

Fig. 31

6.7 INLETS

The inlets are used to introduce the filtrated or reflowing water in the swimming pool.



1. Threading body
2. Evacuation spray which can be oriented
3. Interior screw nut
4. Exterior screw nut
5. Fittings
6. Face of connecting piece of introduction which can be oriented
7. Screw for front fixation
8. Screw for body fixation

Fig. 32

6.8 MAIN DRAIN

It's used to empty the water from the pool at the end of the season or when the service is done.

Chapter 7

INSTRUCTIONS FOR THE TREATMENT OF THE WATER OF THE SWIMMING POOL

7.1. The initial treatment of the pool

7.1.1 THE Ph CONTROL:

The comfort of the pool and the quality of the water are directly related to the pH of the water. The level of the pH is measured with the help of the control case and must be between 7 – 7.5. Bringing the level of the pH within the normal limits it is possible by using the corrector of the pH (pH Plus; pH Minus).

1.1. pH MINUS – POWDER FOR CORRECTING THE pH OF THE WATER

This product is a powder with fast dissolving capacity, reducing the pH of the water from your pool.

INSTRUCTIONS OF APPLICATION: Dissolve the powder in a container with water and then put the solution along the inlets, having the filtration system in function.

DOSAGE: In order to reduce the pH with one unit: 1 kg / 100m ^{3} of water.

1.2. Ph PLUS – POWDER FOR CORRECTING THE pH AND THE ALKALINITY.

The corrector pH is a powder with fast dissolving capacity that has as result the increase of the pH, and of the alkalinity. Every time the pH of the water from the pool drops under 7 or the alkalinity is under 10º f, you must use this product.

INSTRUCTIONS OF APPLICATION: It is recommended to dissolve the powder in a container and then put the solution along the inlets with the filtration system on.

DOSAGE: In order to increase the pH with 1 unit: 0, 6 kg/100m of water. In order to increase the alkalinity with 1 units: 1, 5 kg / 100 m^3 of water.

7.1.2. THE CHLORINE TREATEMENT

Using the control case concentration of chlorine is controlled (pap). The initial treatment is done with chlorine shock.

1. EFEVERSCENT PELLETS FOR SHOCK CHLORINATION

The 50/20 chlorine pill is an effervescent tablet that releases rapidly the chlorine, destroying the bacteria and other micro – organisms present in the pool.

APPLICATION:

Check and maintain the pH between 7 – 7, 5.

The shock treatment: 50–70 pellets/100 m^3 of water. Mix up the pellets in some water and then pour the composition all over the surface of the water.

Weekly treatment: 25 pellets/100 m^3 of water. Put the pellets in the skimmers having the filtration system on. Don’t put the pellets directly in the pool. Preferably proceed with the shock chlorine after sunset and avoid the utilisation of the swimming pool.

7.1.3. MEASUREMENT OF THE WATER HARDNESS

The ideal domain for the glassfibre reinforced swimming pools is of 175-225 ppm CaCO3.

ANTICHALK + ANTI DEPOSITS INHIBITOR (anti-metal)

This product has a permanent and curative action, being efficient against the caulk, inhibiting the deposits on the walls and on the bottom of the swimming pool. In addition, it increases the resistance in time of the swimming pools heaters and prevents the corrosion of the metal elements from the basin.

The product is recommended to be used in the initial treatment and particularly when the water from the fountains and wells is used.

APPLICATION: spill the composition along the inlets with the filtration system on. It is not recommended the utilisation of this product simultaneously with another algaecide.

DOSAGE: - initial treatment: 1 l / 100 m^3 of water

- Weekly treatment 1 l / 100 m^3 of water.

7.2. Treatment for maintenance of the swimming pool

7.2.1. LONG PERIOD CHLORINATION

1. SLIDING BLOCKS STABILIZATERS FOR PERMANENT CHLORINATION

The 90 / 200 chlorine sliding blocks ensure a permanent chlorination of the water from your swimming pool during 2 weeks. His disinfecting action maintains and eliminates: bacteria, viruses, fungus and organic impurities of the water.

Under normal conditions of employment, these sliding blocks have no action over the pH.

In order to obtain a shock-chlorination we recommend you the product shock-chlorine.

This sliding block does not contain chalk and it prevents the pollution of the water caused by organics reasons.

APPLICATION: check and maintain the value of the pH between 7, 0-7, and 4.

In order to have long period disinfection: introduce in the chlorinator or in the skimmer basket 1 sliding block of chlorine weekly / 25 m³ of water.

The content of active chlorine must be kept under control and maintained between the values 0, 4-1, 5 mg/l.

a. THE PREVENTION OR THE APPEARANCE AND DEVELOPMENT OF THE ALGAE

The algae are a vegetal form of life that develop in all the still waters exposed to the sun light, their appearance causing the green colour of the water and representing a possible source of infection. Against them we are using algaecides substances that complete the active-chlorine treatment.

2.1. STAR – MIX multifunction algaecide: flocculent - clarifying -anti-chalk.

This product acts in successive periods on the water from the pool.

Firstly, the algaecide acts on the algae from the water, then the flocculent permits the deposit of the suspensions from the water and clarifies it, and the anti-chalk prevents the appearance and the development of the chalk deposits.

APPLICATION: pour the product along the inlets with the filtration system on.

- Initial treatment 0, 2 l/10m³
- Weekly treatment 0, 2 l/50 m³ of water.

3. MULTI – FUNCTIONS PELLETS (500 g)

The multi-functions pellets make possible a fast and complete maintenance of your swimming pool. The result of one pellet is:

- it disinfects the water with chlorine;
- it clears the water;
- it precipitates the micro organisms;
- fight against algae.

The multi-functions pellets act efficiently and rapidly and they make possible for you to use the water of the swimming pool for a long period of time.

APPLICATION: Put the pellets in the basket of the skimmers or in the chlorinators.

Initial treatment:

- regulate the pH of the water between the values 7, 0 – 7, 4
- make sock – chlorine treatment
- every week put a multi – functions pill for 50 m^3 of water

Weekly maintenance:

- check and maintain the value of the pH between 7, 0 – 7, 4;
- every week put a multi-functions pill for 50 m^3 of water.

If the clarity of the water is modified by the external temperature or frequent use, make a treatment with shock-chlorine before introducing the multi-functions pellets.

If there are algae make an algaecide treatment. This substance is compatible with all types of filters excepting the diatomic filters and zeolite filters.

4. CLEARING THE WATER

Frequently the water can lose her clarity due of some particles that are too small to be retained by the filters. In this case put a clarifying agent that coagulates all the solid particles in suspension in order to be retained by the filtration system, as a consequence the water becomes clear and transparent.

5. THE FLOCULTANT LIQUID (2 LITRES)

This product eliminates the small particles found in suspension in the water of your swimming pool.

The flocculant can be used for any type of filter (sand, cartridge, and diatomite)

Steps of APPLICATION:

- the flocculation is always made during the evening, at sunset,
- fill the swimming pool at maximum capacity.
- spread the product all over the surface of the swimming pool, directly or diluted,
- leave it time to act during the night,
- in the morning clean the deposits from the bottom of the basin with the vacuum cleaner, with the valve on the position of filtration; after that wash the filter.

6. KIT FOR MAINTENANCE OF THE SWIMMING POOL (WITH A VOLUME BETWEEN 90 AND 120 m³ OF WATER)

The specific composition of this kit allows the treatment of your swimming pool once a week.

Composition:

- 2 litters of multi- active liquid:
  - ALGICID
  - ANTI-CHALK
  - ANTI-METAL
  - FLOCULANT
- disinfecting package with double action:
  - SHOK CHLORINE
  - SLOW ACTION CHLORINE

APPLICATION: the pellets are introduced in the skimmer basket.

Initial and permanent treatment (weekly):

- drop a quarter from the liquid along the inlets, with the filtration system on for the acceleration of the mixture (follow the gradation of the can);

- place a disinfecting package (for less than 90 m³ of water) or two (for more than 90 m³ of water) in the skimmer basket (the plastic packing of the package must be removed before).

ATTENTION! THE SLOW ACTION CHLORINE PELLETS AND THE SHOK CHLORINE PELLETS MUST BE INTRODUCED ONLY IN THE SKIMMERS OR IN THE CHLORINATORS.

NEVER PUT THE PELLETS DIRECTLY IN THE POOL.

Chapter 8

INDICATIONS FOR THE PRESERVATION OF THE SWIMMING POOL DURING THE WINTER TIME

For the preservation of the pool during the cold period it is recommended to:

- clean the filter;
- reduce the water level from the pool;
- protect the hydraulic circuit and the equipment from the technical tank;
- put the winter floats, if the water can freeze;
- cover the pool with winter tarpaulin.

8.1 CLEANING THE FILTRE

Before stopping the filtration system for the cold period it is recommended to clean the filter. The sand must be removed from the filter in order to avoid the possible stoning of the sand along with the possible deposits and the destroying of the air intakes inside the filter. Inside the filter a special product will be introduced for the chemical pickling of the sand and to remove the scale, the grease, and hairs from the season that could not be removed by the water when washing the filter. If the sand hadn't been replaced for some time it is good to take advantage of this period to change it.

8.2. REDUCING THE LEVEL OF THE WATER FROM THE POOL.

Having a clean and clear water and after you did a last cleaning of the swimming pool, using the vacuum cleaner (manual or automatically), pass to the reducing of the level of the water from the swimming pool until the plastic pieces inside the walls of the pool are released (skimmer, inlets, vacuum plug-cleaner etc) then close them.

ATTENTION: Remove all the water from the filtering system, from the plugs and recirculation hoses. Before doing these operations it is recommended to make a water treatment with the specific substances for the cold time and their thorough mixture all over the water using the filtering system.

Concerning the reducing of the water level of the swimming pool, the operation will take place taking into consideration the possible rainfalls or the waters that result from the melting of the snow (it is recommended that the water level of the swimming pool to be under the skimmer level) it is also recommended that the stairs, the diving board or the possible elements that can be dismantled, like the installation of swimming against – current to be removed and kept properly and then reassembled at the beginning of the next season.

8.3. TREATEMENT OF THE WATER DURING THE WINTER TIME

The substances for the winter will be chosen according to the products used during the summer (take in consideration the advice from your substance supplier).

Pay attention to the possible incompatibilities between the water contents and the winter treatment used. Before the winter treatment, it is recommended to make first a disinfecting shock treatment (chlorine or bromine), in order to eliminate all the micro-organisms and impurities.

In certain places it is also necessary to neutralise the chalk in order to prevent the scale from deposing on the walls and on the bottom of the swimming pool. The winter products contain an inhibitor that stops the calcium ions from the water, but in the places with a higher calcium percentage in the water it is also recommended to use a chalk stabilizer with the winter treatment. Anyway, at the beginning of the season, the cleaning of the pool will be easier, as the absence of the chalk hinders the deposit of the impurities gathered during the wintertime.

It is forbidden, for the preservation during the winter time, to use substances containing copper sulphate. The absence of the filtration and therefore of the circuit of the water, encourages a long period contact with the finishing of the pool, causing deterioration.

It is recommended to check from time to time the condition of the water, even if it is equipped with a winter cover, especially if you have a cover that it is not sealed where the light and the micro-organisms can disturb the clarity of the water.

8.4. THE WINTER COVER

1. Sealed covers - are pretty heavy (therefore more difficult to manipulate) and have at the upper side a residual layer of water. The swimming pool will be emptied in spring with the help of the main drain or the pomp. The advantages of this solution are: the great solidity and robustness, total security, opacity (this thing preventing the development of the algae). Even the small micro – organisms are stopped. When removing the cover, the swimming pool is theoretically flawless.

In this case the swimming pool must be filled at maximum, the water serving as a support for the cover, reducing in this way, the volume of the water with which the cover must be filled.

2. The permeable covers – are easier to be used, their application being possible even during the season and from one week-end to another. Does not create a water film at the superior side. The disadvantage of this solution is that the closing of the swimming pool is not complete, making possible the passing of the micro-organisms, the role of lighting screen being incomplete, needing an anti-algae treatment. The permeable covers are very easy, being used for the protection against leaves, branches, etc. In this case the swimming pool must be provided with the possibility to evacuate the water (resulted from the rain and melting of the snow), through overflow or an opening in the skimmer.

8.5. THE WINTER FLOATS

It is recommended to use winter floats special for the swimming pool, excepting the case of the swimming pool situated in an area where there is no danger of freezing. They have the role to break the ice and to take over the lateral pressures resulted from the dilatation of the ice formed in the swimming pool. The flats are placed along the diagonal of the swimming pool. Anti-freezing devices must be placed in the skimmers.

8.6 THE TECHNICAL TANK

In order to protect de filtration equipments during the winter time (only if the equipments are not placed in a heated tank) the following operations are to be done:

- to empty the pomp and the filter
- to clean the pre filter of the pump and to use it for the deposit of the orientable inlets, inlets, etc (the lid of the pre filter, will be left open during the winter)
- to place the valve with 6 ways in between 2 positions
- to empty the heating circuit of the pump from the swimming against-current installation, the over-pressure pump from the automatic vacuum-cleaner, the system of automatic treatment, etc.
- if the risk of flooding may appear due to the infiltrations of the water from the ground, the pumps will be placed in a proper location;
- the electrical circuits will be disconnected (underwater lights, pumps, etc)
- the pipes that cannot be emptied will be isolated with glass wool.

The vacuum-cleaner, the stairs, the diving pool, etc will be dismantled, cleaned and deposited.

Chapter 9

NEVER LEAVE A POOL EMPTY!

RULES FOR USING THE POOL:

- **IT IS NECESSARY THAT IN THE PRESENCE OF A CLAYISH EARTH TO REALISE A DRAINAGE SYSTEM.**
- **NEVER EMPTY THE POOL BEFORE CHECKING BOTH THE LEVEL OF THE WATER FROM THE WELL AND BEFORE REMOVING THE INFILTRATED WATER.**
- **DO NOT HIT THE POOL WITH HARD OBJECTS.**
- **USE ONLY THE SUBSTANCES RECOMMENDED IN THE SWIMMING POOL MANUAL.**
- **RESPECT THE EMPLOYMENT WAY OF USING THE VALVE WITH 6 WAYS.**
- **IN CASE THE FILTRATING INSTALATION OF THE SWIMMING POOL GETS OUT OF ORDER DO NOT INTERFERE, ASK FOR THE HELP OF OUR SPECIALISTS.**
- **DURING WINTER RESPECT THE INSTRUCTIONS OF PRESERVATION.**

IN CASE YOU DO NOT RESPECT OUR RECOMANDATIONS, THE PRODUCER IS NOT TO BLAME FOR THE DEFICIENCIES THAT MIGHT APPAER.

MANAGEMENT OF AVI LTD.

No._____/ _____

DECLARATION OF ACCORDANCE

We, SC AVI LTD., declare on our own responsibility that the product subject to this declaration is in accordance with the technical and quality documentation.

PRODUCT		Drawing no.	
Quantity :		Technical agreement :	
X fabrication:		Material:	
Beneficiary:		Trade Mark:	
Contract / order:		Package:	

Compartment I.C. Department Manager

Quality

No._____/ _____

CERTIFICATE OF GUARANTEE

The present certificate of guarantee is for the product _____, sold by S.C. AVI LTD. Craiova, ROMANIA accompanied by the invoice no. _____ dated _____.

The guarantee term is for: _____ from the day of selling (delivering) the product.

The buyer has the obligation to know and to respect the maintenance and application instructions that accompany the product**.**

AVI LTD. does not provide guaranty for the flaws caused due to the user.

Any reparation/intervention done during the guarantee period will be noted in an intervention report, drawn by our company.

The product corresponds from a technical and a quality point of view and has been accompanied by the following documents:

- Invoice no. _____/ _____
- Declaration of concordance no. _____/ _____;
- Reception report no. _____

Seller: Buyer:

AVI LTD CRAIOVA

_____

SERVICE REPORT

DATE	DEFICIENCY/ FLAW	CAUSE OF DEFICIENCY	SOLUTION OF DEFICIENCY	OBSERVER	SIGNATURE	OBSERVATIONS

RECEPTION REPORT

Drawn today _____ for the delivery of the product _____ made on the basis of the contract no. _____ between S.C. AVI LTD. as supplier and _____ as beneficiary.

The reception group is formed by:

_____

_____

_____

_____

checked the quality of the product, the accomplishment of the conditions imposed by the contractual and technical documentation and declare the reception report complete.

The following remarks were made at the end :

_____

_____

_____

_____

and the present report was drawn in two copies.

Signatures:

SUPPLIER BENEFICIARY

S.C. AVI LTD.