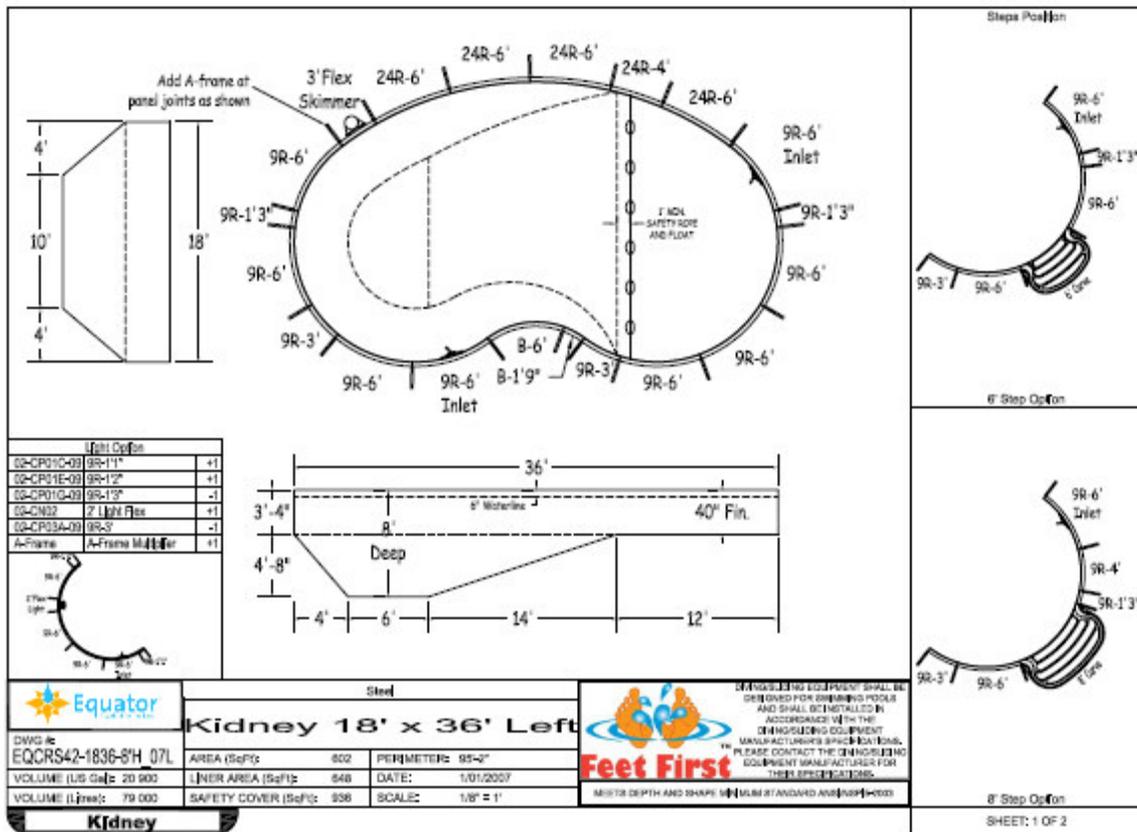




**Equator**<sup>®</sup>  
A World of Pool Products.

# INGROUND POOL INSTALLATION INSTRUCTIONS



# STEEL PANELS IN-GROUND POOL INSTALLATION

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NOTICE: The manufacturer makes only those representations which are stated in its Liner warranty. Any other representations, statements, or contracts made by the dealer and/or the contractor to the customer regarding any materials produced by the manufacturer are attributable to the dealer and/or the contractor only. The dealer or contractor who sells or installs your pool is an independent contractor and not an agent or employee of the manufacturer. The specifications and design subject to change without notice. The manufacturer maintains a policy of continuous improvement and therefore reserves the right to change specifications without notice. Not all features shown and/or described are standard. Be sure features and equipment required are listed in Dealer's contract.

# SERIES 5 INGROUND POOL INSTALLATION

## INTRODUCTION

Please read right through the instructions in order to get an overall picture of what is required, which will avoid the possibility of mistakes, particularly on the excavation, at the early stages. Check to ensure that existing services, e.g. electricity and water are adequate. Also check with the hydro & telephone companies for underground cables before excavating. Check with local city or township office to see what size and shape of fencing will be required. A building permit is required before starting, which can be obtained from the local city or township office.

## PRELIMINARIES

In selecting the site for the pool, choose an open sunny area with no underground pipes or wires and away from septic tanks, etc. The pool should be located so that the surface water tends to drain away from the pool deck. Another factor to consider when locating the pool, is that pipes running to and from the filter should be kept as short as possible.

## TOOLS REQUIRED

*(AVAILABLE AT RENT-ALL OUTLETS)*

Utility or sight Level Rod or Transit	Shovel
4' level	Pick
Small level	9/64" Drill Bit
Wheelbarrow	9/16" Drill Bit
Rake	Screw Drivers: Slot 6",Phillips #2&3
3/8" Drill (variable speed)	Hammers: 1 Light (1 6 oz), 1 Heavy (2 Lb.)
Magnetic Bit	50'Tape Measure
9/16" Open End Wrench	Propane Torch
9/16" Socket and ratchet handle	Cement Trowels (2) 12" to 14"
1/2"Open End Socket and Wrench	1 Hand Wood Saw
50' - 75' Extension Cord	Broom
Industrial Shop Vacuum	Hose with Spray Nozzle
Hacksaw	String - Line
1 Plumb Bob	Square
Cement Mixer (if you are mixing your own cement)	Miter Box
File	Small Rubber Mallet
15 Foot Extension Ladder	Knife
	Lime or Spray Paint
	Pliers
	Stakes

## MATERIALS REQUIRED

### CONCRETE FOR A-FRAMES AND POOL WALLS

Type - 3/4 stone - no air 3,000 PSI

Quantity - It is recommended that a concrete collar is poured around the perimeter of the pool wall approximately 8" deep and 24" wide.

Each A-Frame should be covered to a depth of 12"

A 16X32 Bahama requires approximately 3 1/2 cubic yards.

Method to calculate cement -  $.038 \times \text{linear footage of pool} = \text{cubic yards of cement required}$ .

**Example** -  $16 \times 32 = 96 \text{ linear feet} \times .038 = 3.6 \text{ yards}$ .

### HARD BOTTOM MIX

Method to calculate quantity of hard bottom mix required  $-.014 \times \text{surface square footage of pool} = \text{cubic yards required}$ .

**Example** -  $16 \times 32 = 512 \text{ square feet} \times .014 = 7.2 \text{ cubic yards}$

Type - It is recommended that a hard bottom mix be used for the bottom of the pool. There are different methods and materials which can be used for the hard bottom.

- a) One method is to pour a concrete shell and after the concrete is set, a finished coat is applied.
- b) Another method is to pour a hard mix, provided by your local ready mix company which can be finished to a smooth surface.

One mix to ask for is as follows: 4 mason / 1 portland cement / 6% air / 3000 P.S.I.

Your local ready mix company may have other recommendations

### BACK FILLING

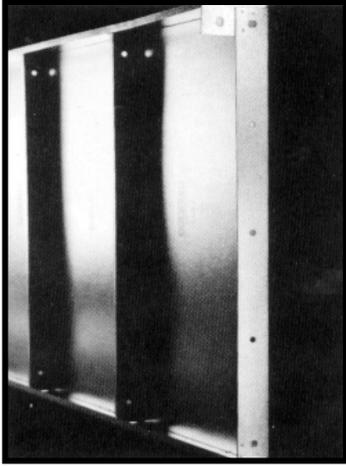
Quantity  $.25 \times \text{linear footage of pool} = \text{cubic yards required}$ .

**Example** -  $16 \times 32 = 96 \text{ linear feet} \times 25 = 24 \text{ cubic yards}$

3/8" crushed stone or clear sand  
16 X 32 requires approximately 24 cubic yards

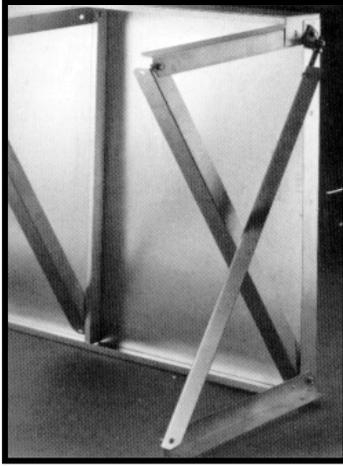
## PARTS IDENTIFICATION

STEEL WALL



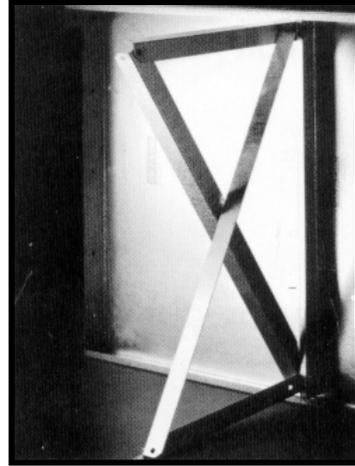
Both straight and curved wall steel panels have strategically located holes (pre-drilled) at both ends. Adjoining panels are then securely fastened together using corrosion resistant hardware supplied, ensuring positive and accurate alignment.

ADJUSTABLE "A" FRAME

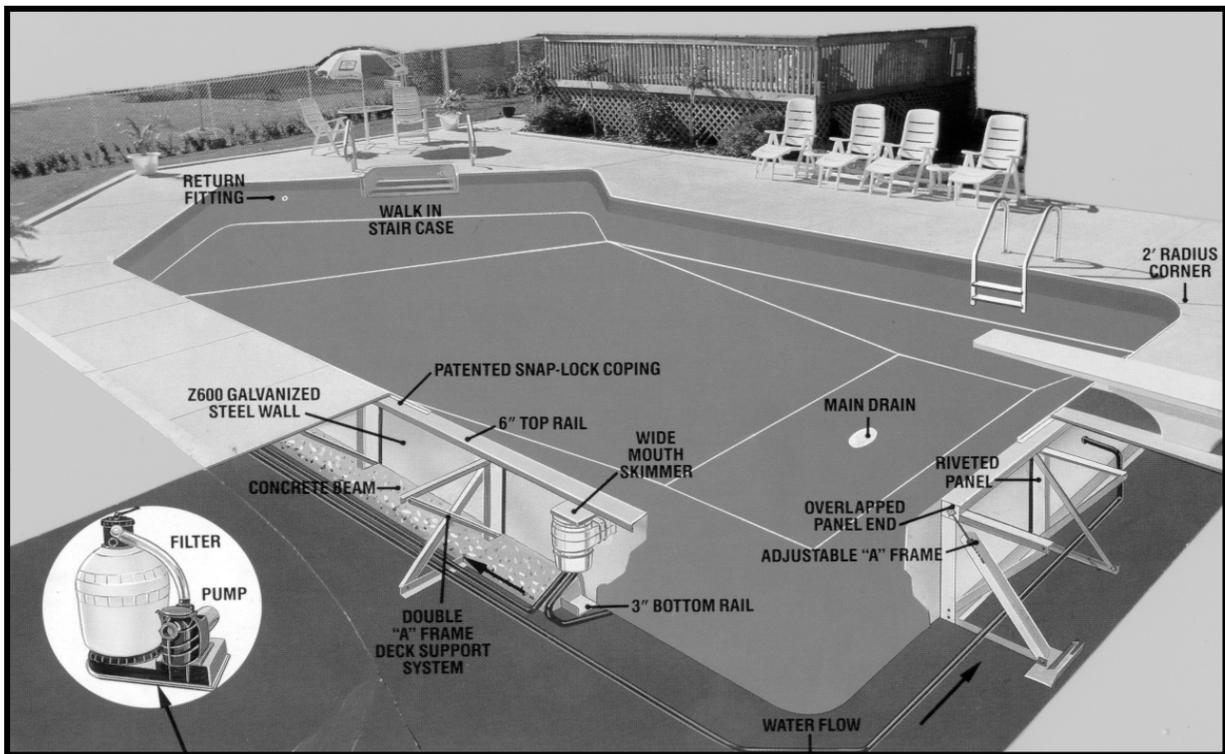


Our engineers have designed a unique heavy duty adjustable "A" frame that ensures perfect alignment.

DECK SUPPORT SYSTEM



The single and double "A" deck support systems were engineered to support the deck around the pool. This system also adds additional rigidity to the pool walls.



# POOL LAYOUT

Wall Depth Only:

To provide space for the "A" Frames and for working around the pool later on, the initial excavation to wall depth only is made 2' greater all around, e.g. a 12' X 24' pool will have an initial excavation to wall depth only of 16' X 28'. If you are installing an in-wall step, be sure to stake out an over dig to accommodate step.

Refer to the chart diagram #1. Drive two stakes into the ground the appropriate distance apart. (Line No. 1)

Lay out line no.2 and diagonal A and drive a stake into the ground where they meet.

Lay out line no.3 and diagonal B, and drive a stake where they meet.

Check line no.4 for length which should be equal to line no.2

Recheck all other lines in accordance with diagram. Diagonal lines A & B must be equal or pool will not be rectangular in shape.



PHOTO 1

DIAGRAM # 1	FIGURE NO 1				
	Pool size Dimensions de la piscine				
	12' x 24'	14' x 28'	16' x 32'	18' x 36'	20' x 40'
Line no. 1	28'	32'	36'	40'	44'
Ligne no. 1					
Line no. 2	16'	18'	20'	22'	24'
Ligne no. 2					
Line no. 3	28'	32'	36'	40'	44'
Ligne no. 3					
Line no. 4	16'	18'	20'	22'	24'
Ligne no. 4					
Diagonal/ Diagonales					
A	32'-3"	36'-8"	41'-2"	45'-8"	50'-1"
B	32'-3"	36'-8"	41'-2"	45'-8"	50'-1"

Diagram 1

FULL POOL DEPTH See diagram #2

To mark the actual pool size start with stake A, 2 feet inside the initial excavation lines.

From stake A mark off the distance of one side of pool to Stake B (Line no.1).

Lay out line no.2 and no.6 and drive a stake in the ground where they meet (stake C).

Lay out line no.3 and no.5 and drive a stake in the ground where they meet (stake D).

Check line no.4 for length which should be equal to line no.2

Recheck all other lines in accordance with diagram #2. Lines no.6 and no.5 must be equal.

After the pool is staked out, put in an additional 8 stakes in line with stakes A,B,C, & D, 6' to 10' away from the pool (see diagram 2 stakes E). If the original stakes are removed during excavation string lines can be run from stakes E to relocate the pool's position. The string lines can also be used to position the pool wall panels as described in Section 7. Under no circumstances must walls be erected on recently excavated material. The depth of excavation and other dimensions are shown in the Digging Specification Manual, all of which are finished dimensions, so that an extra 3" - 4" of excavation should be allowed for the hard bottom.

Run a string line between stakes and use chalk or spray paint to mark out lines.

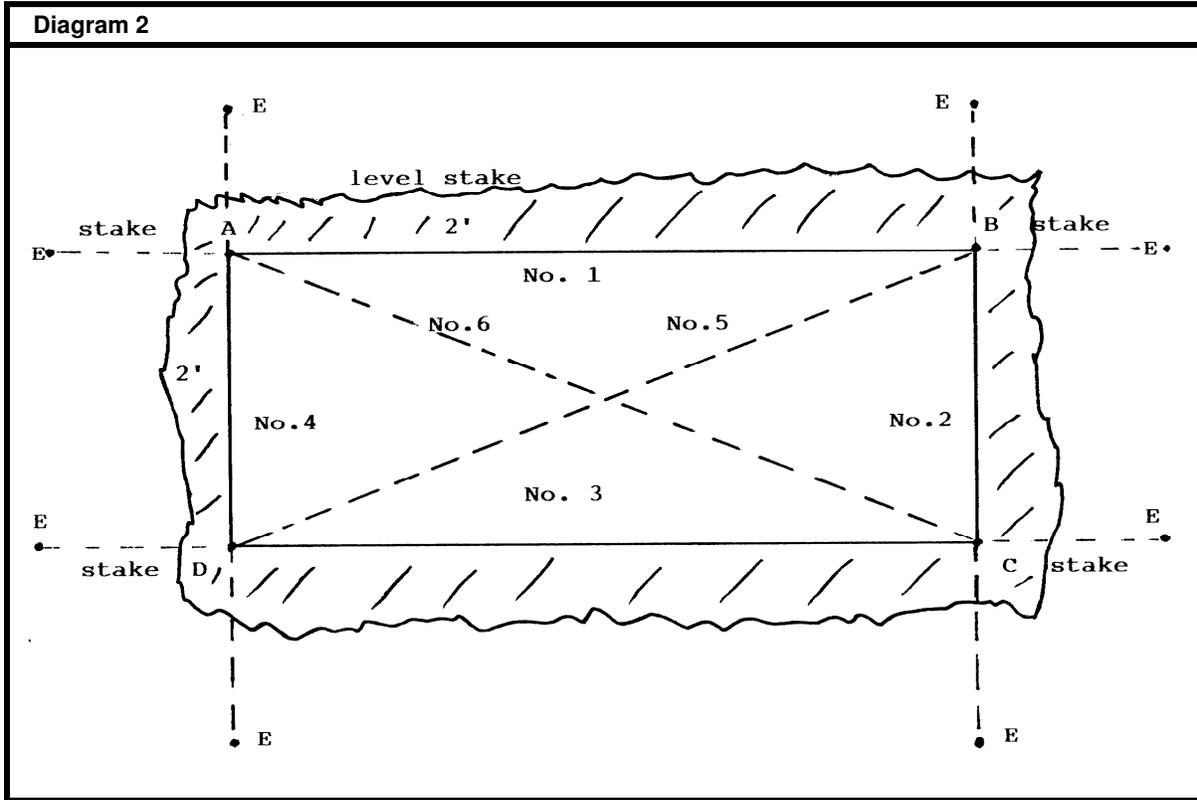
The shaded area is to be excavated to a maximum depth of 42" (See Diagram 2 on Level Stake).

The same method is used to stake out shaped pools. Refer to excavation drawings for details on squaring shaped pools. Note that all excavation drawings show finished dimensions.



PHOTO 2

Diagram 2



Sample Pool Sizes:	12'x24'	14'x28'	16'x32'	18'x36'	20'x40'
Line no.1	24'	28'	32'	36'	40'
Line no.2	12'	14'	16'	18'	20'
Line no.3	24'	28'	32'	36'	40'
Line no.4	12'	14'	16'	18'	20'
Line no.5	26'10"	31'3"	35'9"	40'3"	44'9"
Line no.6	26'10"	31'3"	35'9"	40'3"	44'9"

**LEVEL STAKE**

Drive a stake in the ground approximately 4 feet away from the pool. The height of this stake should be set at the height the top of the steel walls are to be at.

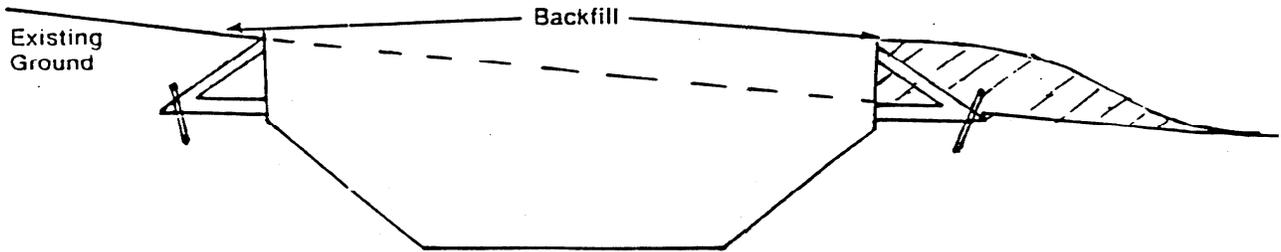
The depth of the initial excavation will depend on how deep the pool walls are to be in the ground.

# EXCAVATION

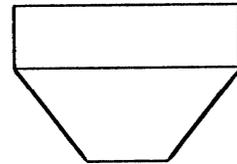
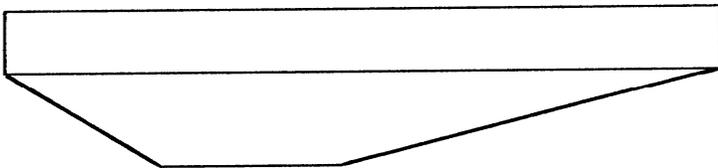
Before starting to excavate, be sure to have a dump site lined up to dump the excavated material.

Get the excavator operator to study the drawing of your particular size pool and stress the importance of the fairly close tolerances for the walls and inside finish. In particular, ensure that the width and length of the deep part of the excavation is not too great, since it is better to have a little extra hand trimming after the walls are firmly in position, than to find that you are trying to install the walls on thin air.

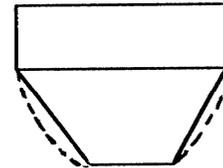
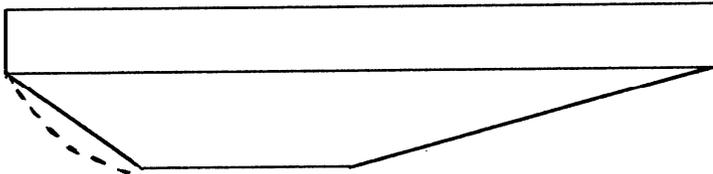
The depth of the initial excavation will depend on how deep you intend the pool walls to be in the ground. The best way to tackle a sloping site is illustrated below.



While the hole is being dug, a man with a shovel should work in the hole, grading and making periodic checks on all measurements to ensure accuracy and avoid unnecessary hand digging later.



All installation drawings show finished dimensions as show in the following drawings.



The hole can now be shaped to a bowl in the deep end, if so desired.



PHOTO 3



PHOTO 4

## POOL WALL ERECTION

A level foundation of undisturbed earth should be provided where the wall sections will be installed. A level area where the "A" frames will be placed should also be provided at this time.

As final hand trimmings of the excavation is being made, the wall panels should be lowered onto the working border and leaned against the side of the excavation. Photo #5. Make a final check to see that the skimmer panel, both return panels are in their desired positions. If the panels have been correctly placed, the next step is to bolt them together.

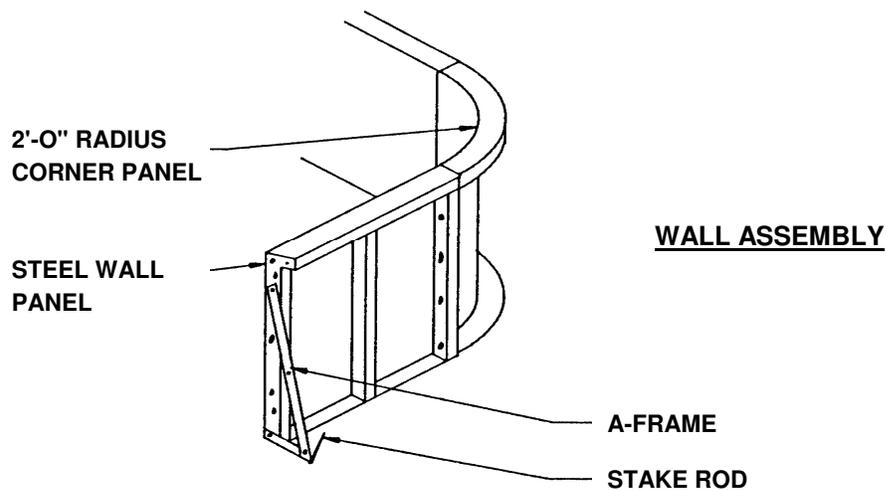


PHOTO 5

**Bolt panels and A-frames together. One A-frame is required at each panel joint.\***

**\*Except on 2' and 4' Radius corners**



PHOTO 6

### DECK SUPPORTS

If deck supports are to be used, they should be installed at the same time as the A-frames.

Deck supports can be installed at each panel joint and corner and on every wall brace.

Deck support consists of 2 A-frame uprights and 2 horizontal braces.

**NOTE:** Deck supports are designed to help support decks less than 3' wide.  
Larger decks requiring extra support



PHOTO 7

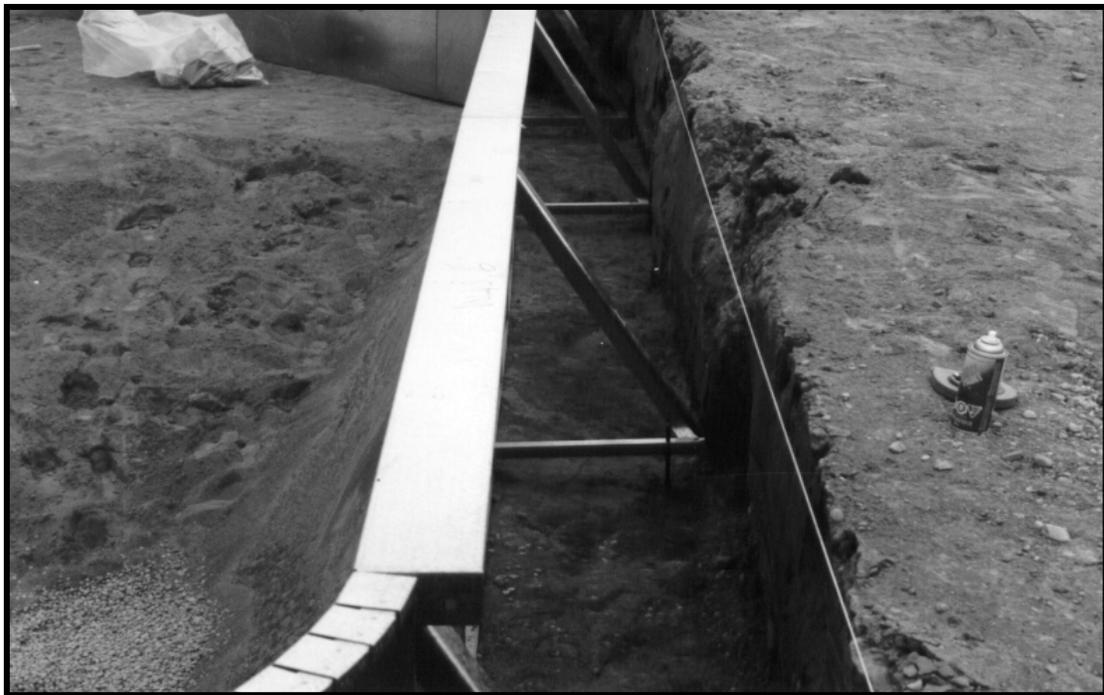


PHOTO 8



PHOTO 9

**Bolt inwall step in place. One a-frame is required on both sides of the step. Use blocks or step supports to level the step.**



PHOTO 10



PHOTO 11

**Square the pool making all measurements match pool layout diagram.**



PHOTO 12

**Level panels using a 4' level or sight level. Check level of panels at panel joints.**

**Shim panel to level.** *Note: Check the level of curved panels at the center of the panel. After panels are leveled, double check the pool to be sure it is still square.*



**PHOTO 13**

**Secure panels in place with stake rod and or anchor pin & plate. If the ground is soft, also drive wooden stakes down in front of the panels to hold them in place.**



**PHOTO 14**

**A string line can be used to align panels. Once aligned tighten all nuts and bolts on panels and A-frames.**

## IN-WALL STEP INSTALLATION

There are a variety of walk in step packages available. The pool can be ordered to accommodate a 4'/6'/8' straight or curved wall step depending on the shape and size. The step can be installed in different positions as shown in the step position chart. If the pool is ordered with a step position the panel mix will be changed to suit the step position.

Review the step manufacturers instructions for proper installation. Instructions will vary from different manufacturers. **Cantilever steps will require special mounting.**

*Here are some basic guide lines to follow:*

- Bolt the step in between two steel wall panels making sure the top of the step will be leveled with the top of the coping (not the top of the steel wall)
- The back of the step must be supported, and these supports can be used to level the step. Adjustable metal step supports can be ordered with the pool kit. If you do not have adjustable step supports, concrete blocks can be used.
- The step should be leveled to the same slope as the deck which will slope away from the pool.
- When pouring concrete around the pool, be sure to pour concrete behind the step.
- The step should be backfilled in the same manner the rest of the pool is backfilled. (crushed stone or clear sand)

**NOTE:** See special instructions on step liner installation found on page 34. Step positions are found on pages 17 & 18.

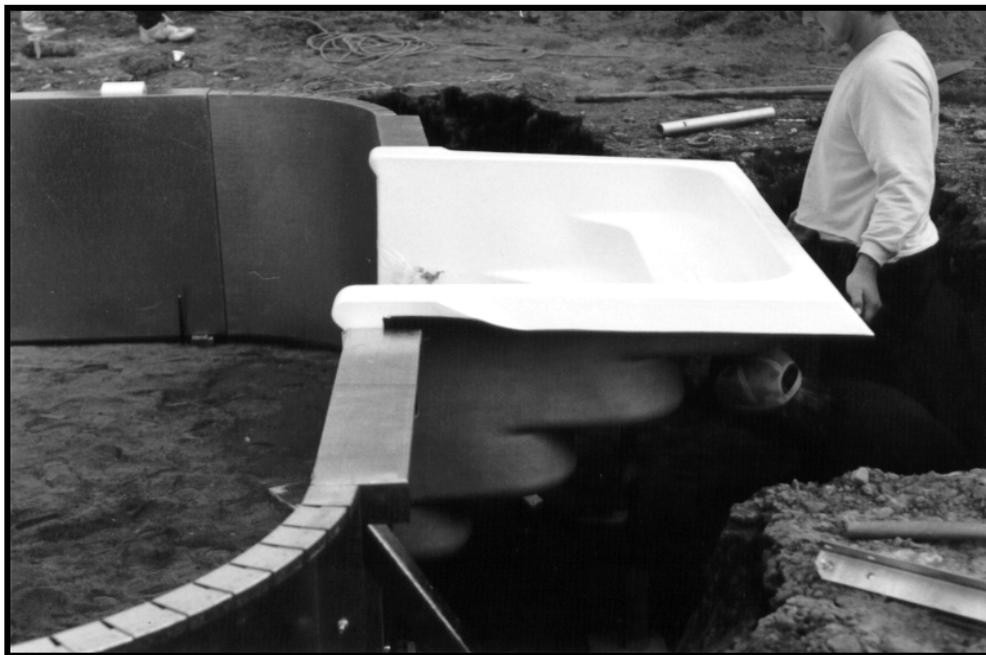
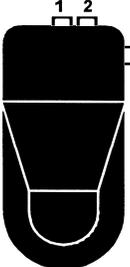
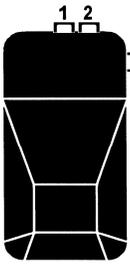
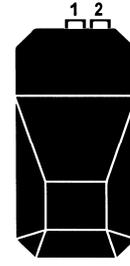
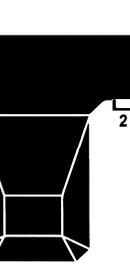
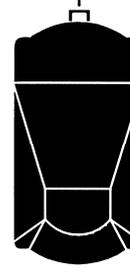


PHOTO 15

# SHAPES, SIZES AND STEP POSIT

## QUALITY IN-GROUND SWIMMING P

SIZES, NAMES, AND SHAPES MAY VARY. PLEASE ASK FOR YOUR EXACT DRAWING BEFORE DIGGII  
Shapes available in

<p><b>OVAL</b></p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p>2' Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	 <p><b>Sizes:</b> 20'x34' 22'x36' 24'x40'</p>	
<p><b>RECTANGLE</b></p> <p>6" Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p>2' Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p>2'10" 45 Deg. Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p>4' R</p> 
<p><b>KIDNEY</b></p>  <p><b>Sizes:</b> 14'x28' 16'x28' 16'x32' 16'x34' 18'x34' 18'x36' 20'x40'</p>	 <p><b>Sizes:</b> 16'x28' 16'x30' 16'x32' 18'x31' 18'x33' 20'x35' 20'x37' 22'x39' 22'x41'</p>	<p>2' Radius Corners</p>  <p><b>Sizes:</b> 14'x31' 16'x38' 18'x40' 20'x41'</p>	<p>4' R</p> 
<p><b>BAHAMA FULL-L</b></p> <p>2' Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 16'x38' 18'x36' 18'x38' 20'x40' 20'x42'</p>	<p>2'10" 45 Deg. Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 16'x38' 18'x36' 18'x38' 20'x40' 20'x42'</p>	<p><b>ROMAN I</b></p> <p>1' Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p><b>ROMAN II</b></p> <p>6" R</p> 

---

**4' ~ 6' ~ 8' ~ WALK-IN STAIRCASES AVAILABLE FOR MOST POOLS**

---

# IONS POOLS

**NG!**

Left or Right

**Sizes:**

20'x34'

22'x36'

24'x40'

adius Corners

**Sizes:**

14'x28'

16'x32'

16'x34'

16'x36'

18'x36'

20'x40'

adius Corners

**Sizes:**

14'x30'

16'x37'

18'x39'

20'x40'

**N VI**

adius Corners

**Sizes:**

14'x28'

16'x32'

16'x34'

16'x36'

18'x36'

20'x40'

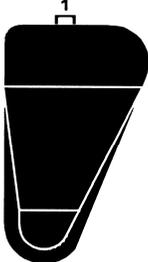
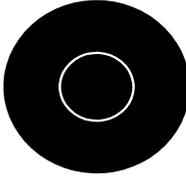
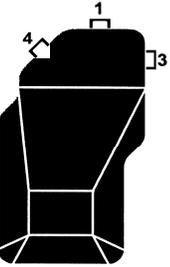
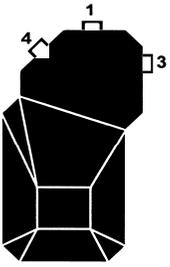
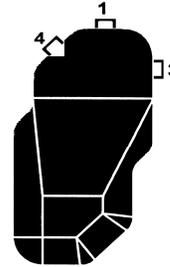
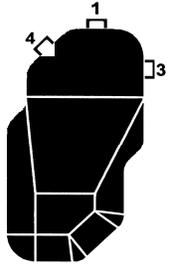
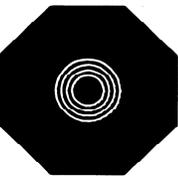
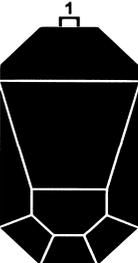
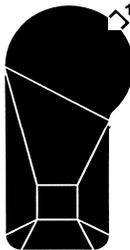
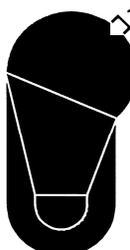


# SHAPES, SIZES AND STEP POSITIONS

## QUALITY IN-GROUND SWIMMING POOLS

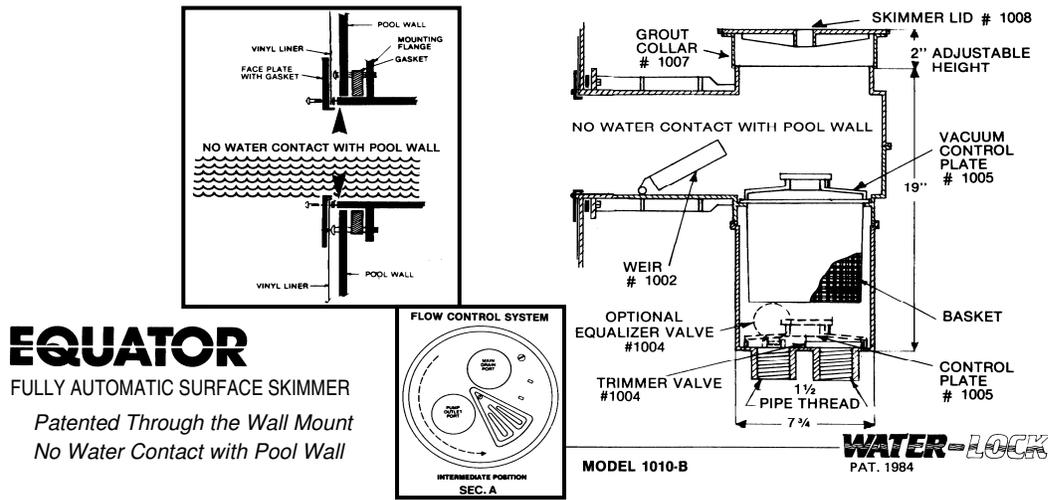
SIZES, NAMES, AND SHAPES MAY VARY. PLEASE ASK FOR YOUR EXACT DRAWING BEFORE DIGGING!

Shapes available in Left or Right

 <p><b>Sizes:</b> 14'x28' 16'x30' 16'x32' 16'x34' 18'x36' 20'x40'</p>	<p><b>DIAMOND II</b></p>  <p><b>Sizes:</b> 26'x36' 28'x40' 30'x44'</p>	<p><b>ROUND</b></p>  <p><b>Sizes:</b> 18' 20' 22' 24'</p>	 <p><b>Sizes:</b> 24'x24'</p>
<p>2' Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p>2'10" 45 Deg. Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p>2' Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>	<p>4' Radius Corners</p>  <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 16'x36' 18'x36' 20'x40'</p>
<p><b>OCTAGON</b></p>  <p><b>Sizes:</b> 15' 17' 19' 22' 24'</p>	<p><b>GRECIAN</b></p>  <p><b>Sizes:</b> 14'6"x28'6" 17'x31' 17'x34' 18'x37' 18'x40' 18'6"x40'6" 20'x40'</p>	 <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 18'x36' 20'x38' 20'x40' 22'x43'</p>	 <p><b>Sizes:</b> 14'x28' 16'x32' 16'x34' 18'x36' 20'x38' 20'x40' 22'x43'</p>
<p><b>BAHAMA LAZY-L IV</b></p>  <p><b>Sizes:</b> 14'x28' 16'x32' 18'x34' 21'x36' 21'x40'</p>	<p>2' Radius Corners</p>  <p><b>Sizes:</b> 14'x31' 16'x38' 18'x40' 20'x41'</p>	<p>2'10" 45 Deg. Corners</p>  <p><b>Sizes:</b> 14'x30' 16'x38' 18'x39' 20'x40'</p>	<p><b>FLORIDA LAZY-L II</b></p>  <p><b>Sizes:</b> 14'x30' 16'x37' 18'x39' 20'x40'</p>

4' ~ 6' ~ 8' ~ WALK-IN STAIRCASES AVAILABLE FOR MOST POOLS

## SKIMMER INSTALLATION



The Equator water lock-design features a through the wall mount eliminating any water contact with the steel panel.

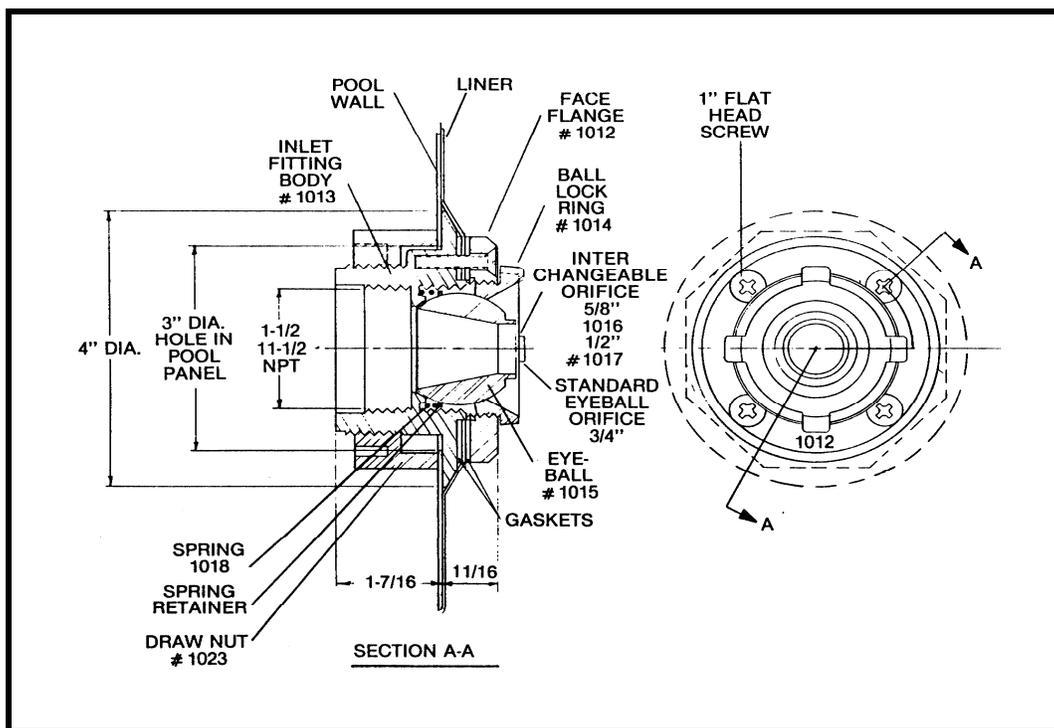
**Multiple skimmer types and styles from different manufacturers are available. SEE MANUFACTURERS INSTRUCTIONS FOR CORRECT INSTALLATION.**

- A) Locate the skimmer in the pool so that the prevailing winds and water recirculation promotes drift of surface debris towards the skimmer.
- B) The Skimmer Face Flange mounts through the pool wall opening. A gasket must be installed between the Skimmer mounting flange and the pool wall. Align the Skimmer with the six mounting holes in the pool panel and fasten in place with the (6) 1 " Phillips screws into brass skimmer inserts. See Diagram #3
- C) Tape the exposed heads of mounting screws and bolts with duct tape.
- D) Support the Skimmer by bracing it behind the pool wall with a skimmer support which is included in the skimmer pack.
- E) When the vinyl liner is installed and the water level has reached the Skimmer, proceed with installation of the face flange.
- F) Gaskets are required on both sides of the liner, one on the Skimmer Throat and one on the Face Flange. Installation of the face flange - begin by placing the Face Flange and the Gasket in position and pierce holes through the Face Flange holes, one at a time, prior to inserting each of the 16 - 1 " flat head screws. See Diagram #3. Tighten the screws to make a water tight assembly.
- G) Cut out the liner material along the inside edges of the Face Flange.

**NOTE:** When connecting plumbing, use Teflon tape or peratex 2 - do not use pipe caulking of any kind as this will attack the ABS material that the skimmer is made of causing cracking.

**WINTERIZING** - See operations manual supplied with the skimmer  
**SKIMMER OPERATION** - See operations manual supplied with skimmer.

## RETURN FITTING INSTALLATION



**Multiple Return types and styles from different manufacturers are available. SEE MANUFACTURERS INSTRUCTIONS FOR CORRECT INSTALLATION.**

A minimum of 2 returns are provided for all pools with some models designed with 3 returns. Inlet panels are pre punched and should be placed as per the installation drawing or in such a way as to take full advantage of the prevailing winds. (See skimmer installation directions)

**IMPORTANT** - a gasket must be between the face flange and the liner. The gasket is factory cemented to the face flange). Place face flange in position and pierce holes in the liner for the 4 screws (1" long). Install the screws using a #3 Phillips screw driver. Tighten screws evenly to make a water tight assembly.

### INSTALLATION

- A) Insert the body of the fitting through the precut hole in the panel from the inside of the pool. (Part #1013).
- B) Screw the draw nut (Part # 1023) on the back of the fitting. The draw nut can be put on smooth flange first. (Do not over tight)
- C) When the pool liner is installed and after the water level has reached the return fittings, install the face flange (Part # 1012).
- D) Cut out the liner along the inside edge of the face flange.
- E) Insert spring retainer, (beveled edge facing eyeball), spring, and eyeball into the return fitting and thread ball lock ring (Part #1014) in place.
- F) Adjust eyeballs in the desired direction.

*WINTERIZING* - See operations manual supplied with the skimmer package.

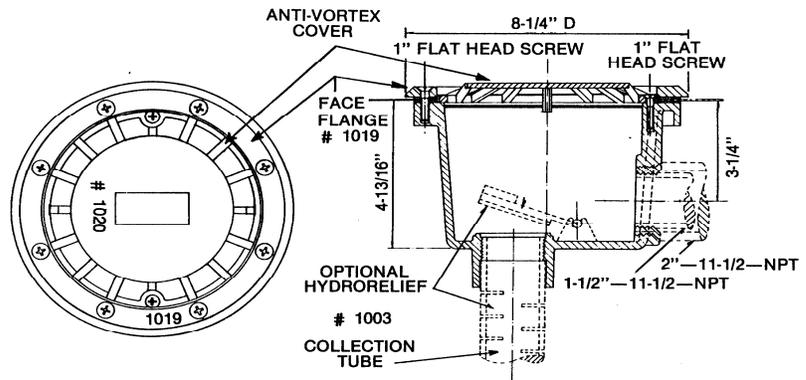
## MAIN DRAIN INSTALLATION

The Main Drain is molded out of high technology thermoplastic materials. It is designed to be used for liner pool installations. It features a 1-1/2" side port for residential installations.

**Multiple Main Drain types and styles from different manufacturers are available.  
SEE MANUFACTURERS INSTRUCTIONS FOR CORRECT INSTALLATION.**

### ANTI-VORTEX COVER #1020

This cover is standard equipment on the Main Drain. It snaps into place and for added safety, it can be fastened with the 2 screws supplied (1" long).



### INSTALLATION

- A) Dig a hole in the center of the deep end of your pool, approximately 18" X 18" square by 18" deep. Dig a trench to the side of the pool to accommodate the pipe to the skimmer. (Main drain can also be connected directly to the pump and filter)
- B) Install the Collection Tube in the bottom port of the Main Drain and solvent cement it in place with ABS cement.
- C) Install the Hydro Relief Valve Flapper Valve (#1003) in the bottom of the Main Drain Body over the bottom port where the Collection Tube is installed (Gasket side down). This valve is installed by snapping it into the two U brackets.
- D) Install a 1-1/2" threaded adaptor in the side port of the Main Drain, using Teflon tape on the threads. Do not over tighten.
- E) Connect the pipe going to the skimmer.
- F) Install the Main Drain Body in the 18" x 18" x 18" hole, packing 3/4" of crushed stone around the drain and Collection Tube.
- G) Pour a concrete pad around the Main Drain. Bring the concrete even with the top of the Main Drain. NOTE: You must put tape over the screw holes and so that cement does not plug the screw holes. (This operation can be done when you pour the hard bottom). NOTE: Remove the tape used to protect the screw holes before installing the liner.
- H) Install the liner in the pool, ensuring there is a gasket between the Main Drain Body and the liner.
- I) Once the vinyl liner is installed and vacuumed into proper position, install the face flange (#1019). Important: A gasket must be installed between the Face Flange and the liner. This gasket is factory cemented to the Face Flange. Line the Face Flange screw holes up with the Main Drain Body screw holes. Pierce in the liner for the 8 flat head screws (1" long). Insert and tighten the screws using a #3 Phillips screw driver to make a water tight assembly.
- J) Cut out the liner along the edge of the Face Flange.
- K) Install the Anti-Vortex Cover, fasten with two screws supplied with the Drain (1" long) for added safety

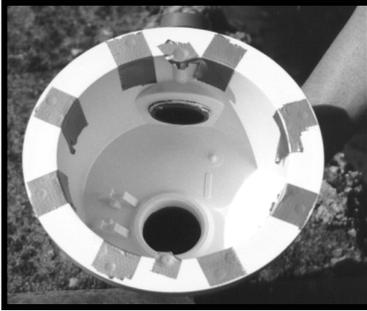


PHOTO 16

Glue hydro relief tube in place with ABS cement

Tape screw holes to protect from cement.

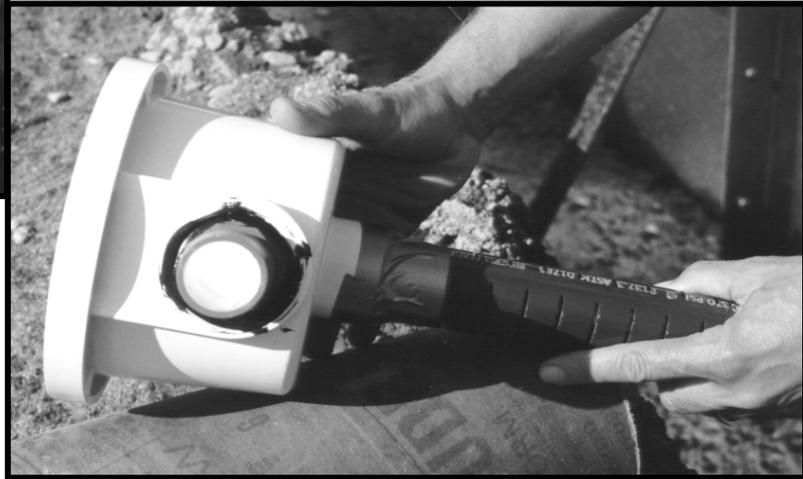
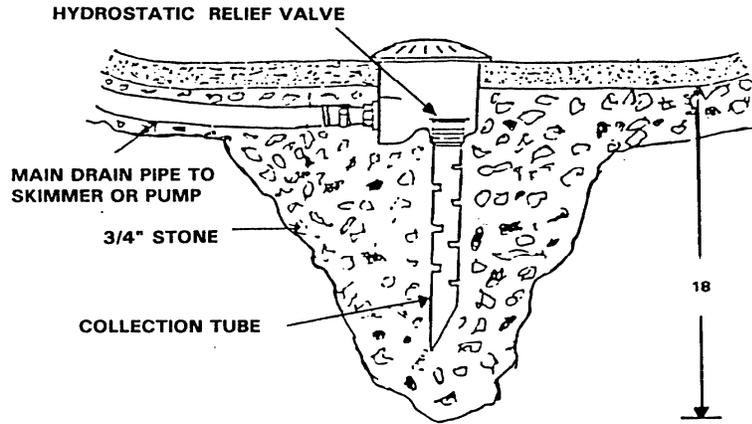


PHOTO 17

**MAIN DRAIN  
INSTALLATION**



Check for proper depth.

PHOTO 18

Install gasket on main drain before installing liner.



PHOTO 19

## CEMENTING THE POOL WALLS AND A-FRAMES IN PLACE

*Pour concrete around the total perimeter of the pool forming a concrete beam*



**PHOTO 20**

Before pouring concrete, be sure the pool walls are level and square. The main drain line is connected to the skimmer, A-frames, deck supports, skimmer support and ladder supports are all installed and level.

Pour concrete behind the panels around the total perimeter of the pool including the area behind any walk in stair cases. The concrete should be 8" deep by 24" wide which should fill the width of the excavation, this will form your concrete beam. Extra concrete should be poured at each A-frame to a depth of 12" to 14".



**PHOTO 21**



**PHOTO 22**

## GROUNDING

In some areas pools are required to be grounded (most states) check with your local electrical utility for requirements. All pools having a light installed must be grounded. All metallic parts must be grounded with copper grounding wire.

Metal parts include: steel panels, A-frames, aluminum coping, under water lights, ladders, hand rails, diving board supports, pump and motor.

The local hydro inspector must be contacted for approval before the pool is backfilled and decked.

## PIPE & FITTINGS INSTALLATION

Semi-flexible PVC 75 PSI piping is suitable for the pool circulating pipework, it is less liable to fracture than rigid pipe. Rigid pipe can be used in areas where frost conditions do not exist.

- A) Ensure piping and fittings are supported, bring piping down to excavation level. (Photo 26)
- B) Each fitting connection will require a 1 1/2" adapter with a threaded end for connection to the fitting. The adaptor is screwed into the fitting. (Photo 23 & 24) Use Teflon tape on thread. The pipe is then fitted over the other end. Use two stainless steel clamps to fasten the pipe to the adaptor. Make sure the clamp tighteners are opposite to each other for even pressure. (Photo 25) Rigid pipe is glued together and clamps are not required.
- C) All pipework should slope uniformly in one direction without any kinks or dips to avoid possible air locks. This is particularly important for the suction pipe from the skimmer to the suction connection the filter pump; if an air lock exists it is unlikely that the pump will work. Be sure plumbing does not come in contact with sharp edges such as the pool wall or A-frame. (Photo 30)
- D) Connect the skimmer to the filter pump.
- E) Connect the return fittings to the return side of the filter tank. By using a tee you can connect the two return fittings to one return line. (Photo 26)
- F) Pressure test all lines before pouring concrete (Photo 29)

### PLUMBING LAYOUT

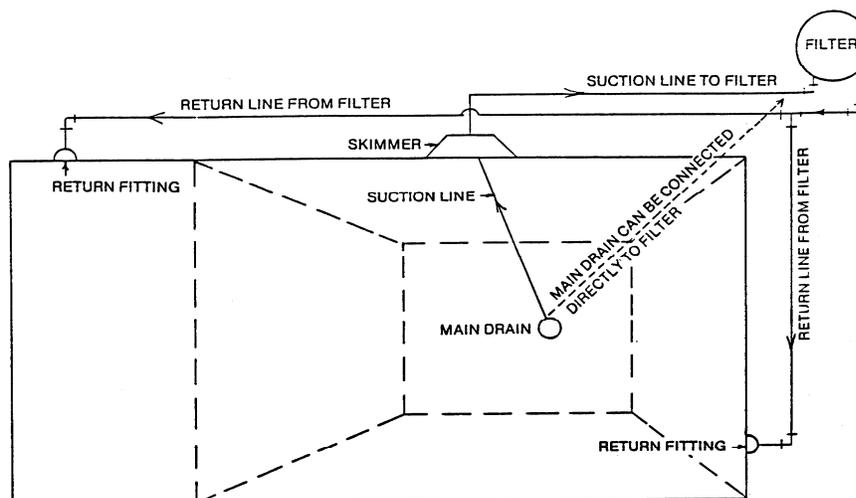




PHOTO 23



Thread the pipe adapters into the fittings.

PHOTO 24



Double Clamp all Fittings.

PHOTO 25



Run piping to bottom of excavation for support.

PHOTO 26

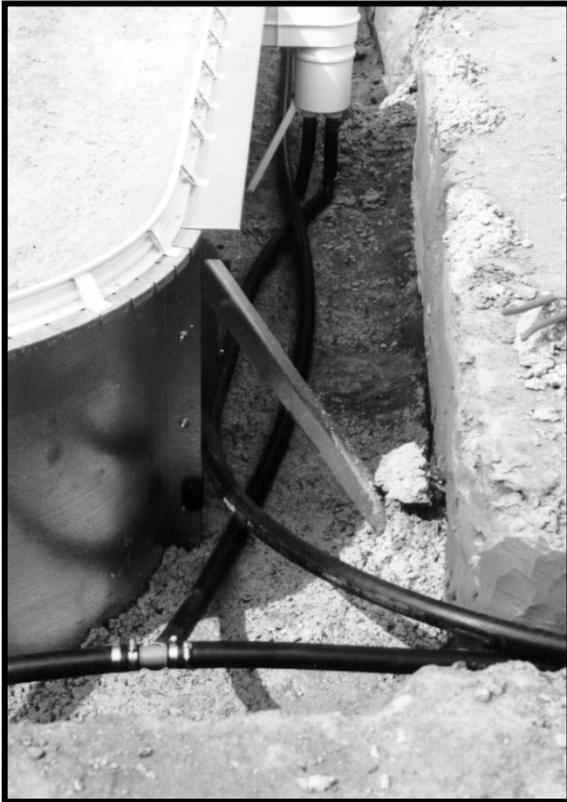


PHOTO 27



PHOTO 28



Pressure test all lines  
before backfilling.

PHOTO 29



Run piping to bottom of  
excavation for support.

PHOTO 30

## BACKFILLING



PHOTO 31

Sono tubes can be used in place of deck supports to support the deck.

- A) If using sono tubes in place of deck supports they must be in place before backfilling. (See Photo 31)
- B) When using deck supports you will require sono tubes at the corners of 2' and 4' radius corner pools and around walk in stair cases. (See Photo #33)
- C) In areas where ground water is apt to run to the pool area, it is recommended that drainage tile be installed in excavated area before backfilling.
- D) Test all plumbing before backfilling
- E) Back fill with 3/8" crushed stone or clear sand.

**NOTE:** Do not allow any heavy equipment near the pool to back fill.

Example -(trucks, backhoe, bulldozer etc)

Sono tubes installed to support the deck.

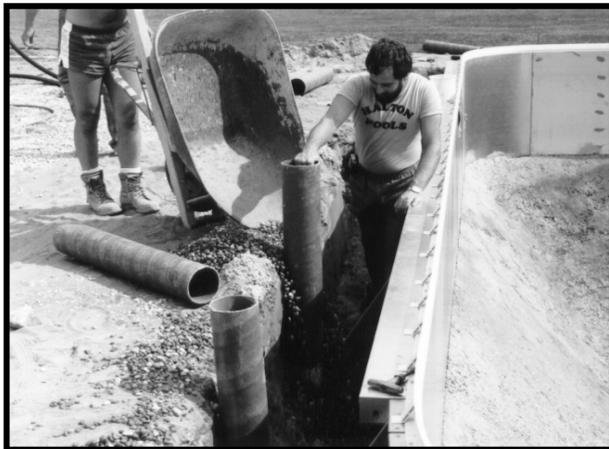


PHOTO 32



PHOTO 33

## POOL BOTTOM PREPARATION

- A) Check the depth in various sections of the pool bottom in relation to the top of the walls. If the excavation has been done carefully, only a small amount of hand trimming will be necessary. Depths may be 2" or 3" deeper than the dimensions shown for your particular pool depending on the thickness you plan to make the hard bottom, but may not be less, since the liner would not fit smoothly in the pool bottom. In the bottom of the shallow end put 2" of hard bottom mix so the finished depth is 40".
- B) Remove all loose dirt before installing finished bottom.
- C) If the excavated hole is a dry hole, i.e. does not need to be continuously pumped out to keep the water out, then the hard bottom mix can be applied directly on the firm earth approximately 2" to 3" thick; if the hole is a wet hole, the bottom of the deep end should be dug out a further 6". This 6" extra depth should be filled with 3/4" stone. A concrete shell 3" thick should now be laid over the entire bottom and rough trowelled. When this has set, a 1/2" thick layer of hard bottom mix should be spread over the concrete to give you a smooth finish on which the liner will rest. It should be noted that the above is a guide and judgement on the condition of the hole plays an important part in deciding just how wet or dry a given hole is. A concrete shell can also be used if the hole is dry.
- D) Materials Required - See Page 3
- E) Pre mix hard bottom mixes can be used such as vermiculite - cement pool base which can be mixed on site or pre mixed bases are available from most ready mix concrete supply companies which delivers to the job site pre mixed.

*SEE PHOTOS 34, 35, 36*



PHOTO 34



1/2" Smooth hard bottom mix.

PHOTO 35



Finished bottom

PHOTO 36

## COPING INSTALLATION

**There are various types of coping available both in PVC & aluminum. The following are instructions for installing 1 style of S/L PVC & aluminum concrete receptor type copings.**

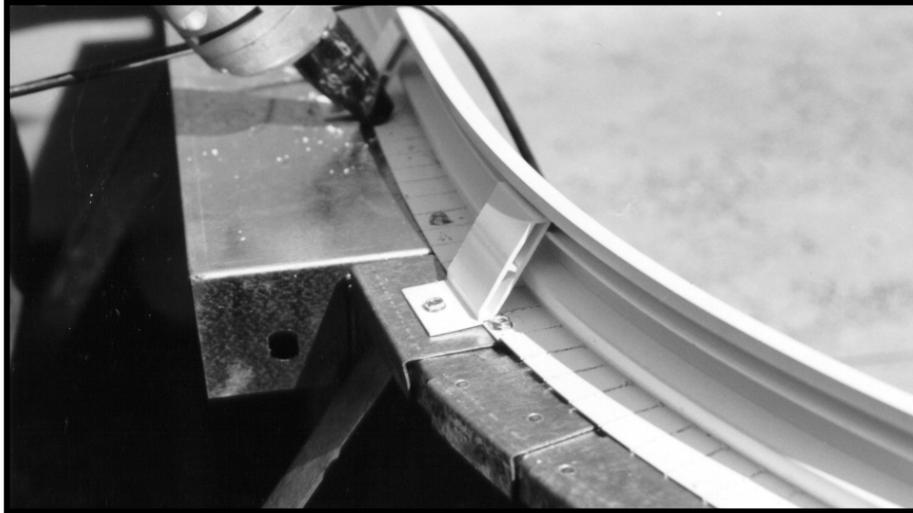
### ALUMINUM / PVC CONCRETE RECEPTOR COPING

- A) On rectangle pools place the 6"/2'4" radius snap-lock coping corners on all four corners and fasten with self drilling/self tapping by means of a magnetic bit (Photo 37)
- B) The aluminum coping is then fitted and fastened with self drilling/ self tapping screws every 9". Be sure the coping alignment lip is flush against the front of the steel wall panel. (Photo 38)
- C) On Snap-Lock coping, couplings are placed on the backside of the coping at the joints. This aligns each subsequent coping section. Self drilling / self tapping screw secures the coupling.
- D) Couplings should then be placed a minimum of one (1) foot apart ensuring the coping will be straight up and down. Self drilling / self tapping screw secures the coupling. (Photo 40)
- E) On PVC coping, couplings are referred to as retainers.



Install all four corners.

PHOTO 37



Install retainer clips every 8"1/2" and on either side of coping joint.

PHOTO 38

When installing Snap-Lock coping on curve shaped pools, carefully cut slots on the base of the coping when bending the coping around an inside curve and cut "V" notches in the base of the coping when bending around a convex (reverse) curve. The sharper the curve the move "V" notches or slots e.g. 2' radius corner slot every 2" -normal curves approximately every 4" - 5" -reverse curves "V" notch every 2". (Photo #6, 7, & 8)

Aluminum coping comes in pre radius lengths or can be bent on site as outlined above.

- NOTE:**
- After liner is installed the snap-lock clip is the last piece of the coping to be installed locking the liner in place.
  - Only if necessary, use a fine file to make the joints of each coping section match. (FLUSH).
  - Miter box may be used to make nice coping joints.

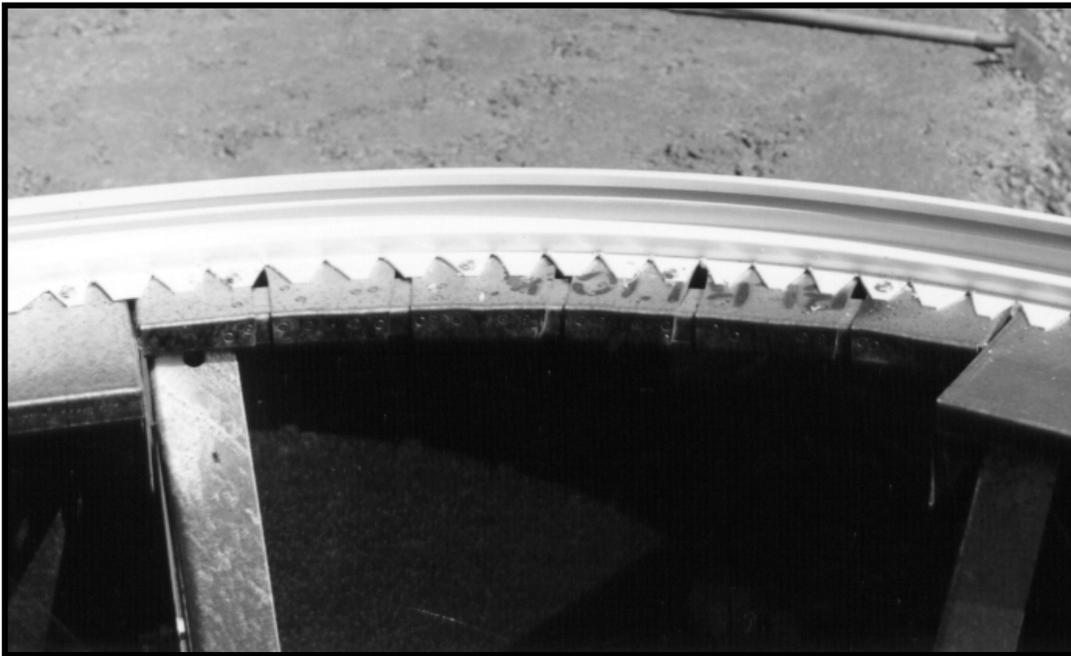


PHOTO 39



V notch coping for reverse curves.

PHOTO 40



Coping installed on reverse curved panel.

PHOTO 41

## ALUMINUM COPING

- On rectangle 6", 2' and 4' radius pools fit the preformed radius corners and fasten by means of self drilling / self tapping screws using a magnetic bit. Ensure alignment lip of the coping is flush against the steel panel.
- The aluminum coping is then fitted and fastened with self drilling / self tapping screws every 12". Ensure alignment is tight against the face of the steel panel.
- An aluminum coupling may be installed at every coping joint. Ensure the base lip of the coupling fits tightly against the base of the coping. Secure with a self drilling / self tapping screw.
- For shaped (curved) pools, preformed aluminum coping is available for inside or convex (reverse) curved panels, or you can form on site using the same methods used for PVC. When installing aluminum coping on a Kidney pool, start by installing the reverse section of the coping first.
- *MAKE SURE WHEN PUTTING THE COPING JOINTS TOGETHER, YOU HAVE A CLEAN, TIDY JOINT!* A small file might be helpful (or miter box). The preformed aluminum coping has all 9' radius pieces 10' long. To adjust for different radius, slotting of "V" notching might be necessary.
- On Snap Lock coping, after liner is installed the snap-lock clip is installed locking in the liner.
- Front mount track is used when a wooden deck or flag stone is being installed to the front edge of the pool. Front mount track is also used to repair older pools with decks.
- For rectangle 6", 2' and 4' radius corners, fasten the preformed radius snap-lock front mount corners to the inside of the pool wall by means of heavy duty self drilling / self tapping screws.
- A small channel is provided where the self drilling / self tapping screws are fastened into the face of the steel panel every 4".
- With Kidney Pools, start in center of reverse panel and let the self drilling / self tapping screws form the bending.

## INSTALLING THE LINER

Vinyl liners are best installed in warm weather. The liner can be handled better and the packaging wrinkles will disappear more readily. If the liner is to be installed in cool weather, store in a heated room for a day or two prior to installation.

- A) Before installing the liner, double check the bottom to be sure there are no stones or sharp objects that might damage the liner. Also make sure any cement splashed on the steel walls is removed. The steel walls should be dry before installing the liner. Tape panel joints and corners and coping before installing the liner.
- B) At this point the main drain gasket must be put in place (see main drain installation)

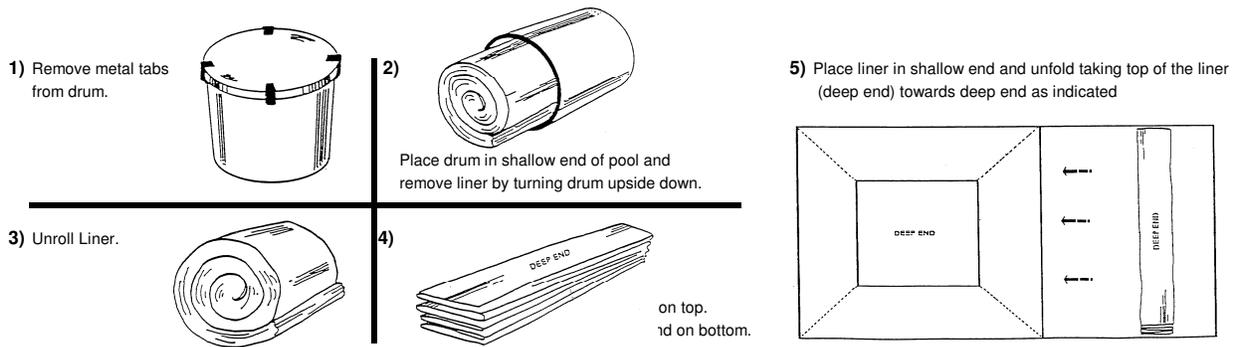
**Each liner has a home owner package included which consist of the following:**

*Be sure to give this to the pool owner*

- 1) Warranty Registration Card
- 2) Safety Book
- 3) Liner Material Manufacturers Care Guide
- 4) No Diving Safety Stickers

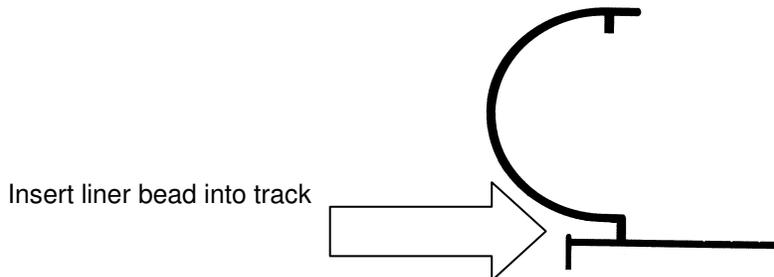


## CONTAINER LINER REMOVAL INSTRUCTIONS



C) Unroll liner crossways at shallow end of pool. Make sure edges and corners of liner are accessible. Place two people at each end of the unrolled liner. One person at each end should take hold of the liner corner that will be positioned at the deep end of the pool, the other two people should hold the liner corners for the shallow end. The two people holding the deep end corners then walk down their respective sides of the pool, unfolding the liner like an accordion. The liner will then be suspended over the excavation with all sections in the relative positions. *SEE ABOVE*

D) Take the top edge of the liner, and starting from the corners, insert the liner bead into the coping track at several spots to temporarily hold the liner in place. Now finish inserting the liner bead around the rest of the pool. *SEE BELOW*



E) When you are satisfied that the liner is in its proper position, remove 6" of the liner bead from the extrusion near the drop off to the deep end. In this opening, insert a vacuum cleaner hose to about 30" below the top of the wall. It is best to use an industrial type vacuum rated for continuous use. Where the hose is inserted between the liner and wall, seal with duct tape. Also seal off the pipes from the skimmer and inlets. A wet/dry type vac should be used.

**NOTE:** You may choose to run the vacuum hose through the skimmer, but make sure the opening is sealed to insure good suction. If the deck is not yet in place, put duct tape along the back edge of the coping. This will help the vacuum work better.

F) When used, the opening for walk-in steps needs to be sealed to prevent suction loss. You may tape the backside of the liner to the step, or lay a sheet of plywood across the top of the steps, taping the liner bead to the plywood. Good suction is important for proper liner installation.

**NOTE:** Refer to step manufacturers instructions for proper installation of gaskets and flanges.

- G)** Start the vacuum cleaner. In about 15/20 minutes, the liner will be drawn against the pool excavation and side walls and you will see if the liner bottom is seated correctly in the excavation or if it needs repositioning. Make adjustments where necessary (if possible with vacuum still running) by pulling liner into place.

**NOTE:** ● Do not cut any fittings or add water if the liner does not fit properly. Water will not remove wrinkles.  
● Be careful with tools and wear stocking feet, not boots or shoes to avoid damaging the liner.

- H)** Once the vinyl liner is installed and vacuumed into proper position, install the face flange. A gasket must be installed between the Face Flange and the liner. This gasket is factory cemented to the Face Flange. Line the Face Flange screw holes up with the Main Drain Body screw holes. Pierce in the liner for the Main Drain Body screw holes. Pierce in the liner for the 8 flat head screws (1 " long). Insert and tighten the screws (using a #3 Phillips screw driver) to make a water tight assembly.

- I)** Cut out the liner along the inside edge of the Face Flange.

- J)** Install the Anti-Vortex Cover and for added safety, fasten with the two screws supplied with the Drain (1 " long).

- K)** If a walk in step has been installed, use water bags to hold the liner against the shallow end wall.

- L)** You can now start filling the pool with water while the vacuum is still running.



**PHOTO 42**



**PHOTO 43**



PHOTO 44



PHOTO 45



PHOTO 46



PHOTO 47



PHOTO 48



PHOTO 49



PHOTO 50



PHOTO 51



PHOTO 52



PHOTO 53



PHOTO 54



PHOTO 55

## N) WALK IN STEPS

Normal installation of walk in steps would be as follows but it is recommended you refer to step manufacturers installation.

- 1) Install face flanges on the step when the water reaches the shallow end.
- 2) Install the 2 side flanges fastening the top 3 screws only.
- 3) Cut the liner in the center of the step in the shape of a smile. This will allow the tension to be taken off the liner under the bottom step.
- 4) Install the bottom flange and finish putting the screws inside flange. Be sure there is a gasket between the step and the liner and the face flange and the liner.

O) When installing Kidney liners, start at the shallow end and make sure it fits properly. The shallow end line seam and the panel joints should line up. Then distribute the rest of the liner evenly around the rest of the perimeter.

P) When installing Roman end pools - 2 vacuums must be used. Sandbags or waterbags are recommended to avoid the liner shifting and causing wrinkles. **WATER WILL NOT REMOVE THESE WRINKLES!**

**NOTE:** With most shaped pools again sandbag or waterbag the shallow end.

Q) When there is 6" of water in the shallow end, shut off the vacuum cleaner and remove the vacuum hose. Walk in steps may be cut at this time.

*If for any reason larger size screws are used on step flanges, make sure to redrill face flange so that the larger screws slides through face flange and screws only into step, and does not thread on the face flange or leaks will develop.*



PHOTO 56



PHOTO 57



PHOTO 58

### INSTALLING THE RETURN FACE PLATES

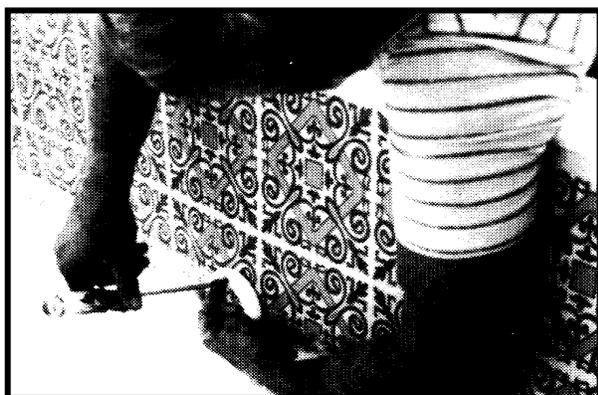


PHOTO 59

When the water level reaches the return fitting, install the face plate as shown in Photo 1. (See manufacturer's instructions for more details)



PHOTO 60

After the face plate is fastened in place, cut out the liner material in the center, using a small blade.



PHOTO 61

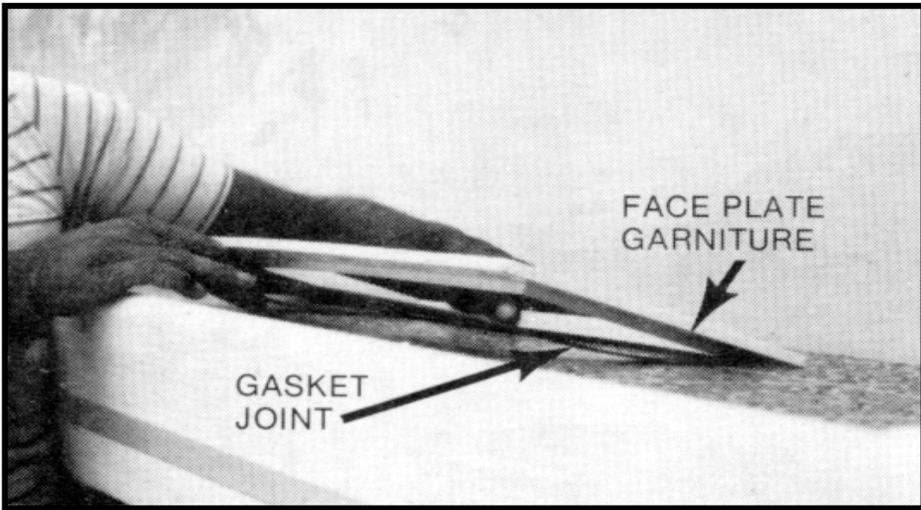


PHOTO 62

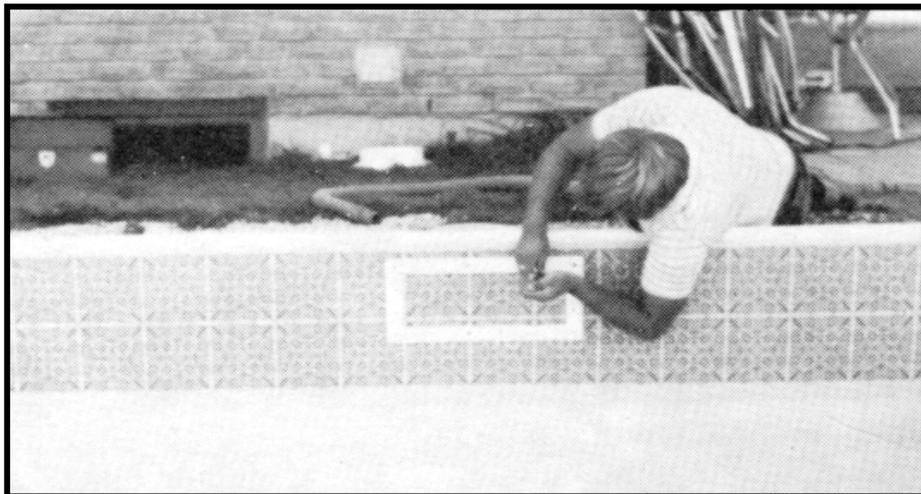


PHOTO 63

## COMPLETING THE JOB

### CONCRETE DECK

Before pouring a concrete deck, laying interlocking stones or installing a wooden deck, be sure all deck supports and sauna tubes are in place.

If a deck is to be poured against a solid wall such as a house or retaining wall, be sure a space is left for expansion. It is also a good idea to use drain tile to avoid ponding against the wall.

All concrete decks should have expansion joints to limit cracking caused by deck expansion or frost.

### LIGHTS

If an electrical light is being installed, the pool must be grounded and Hydro inspected before back-filling the pool. In some areas all pools must be grounded even if there is no light.

### SERVICES

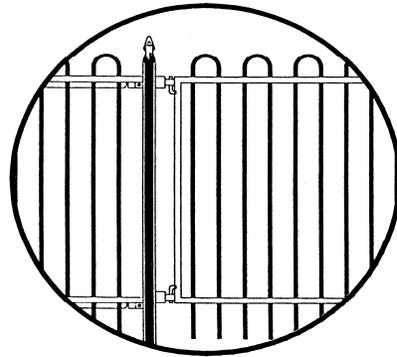
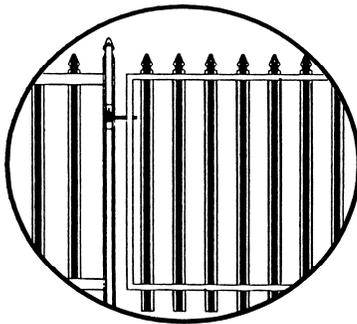
All electrical/gas services should be inspected before using.

### FENCE

All pools should be fenced for safety reasons. Most areas require a fence to be installed around the pool or around the yard. Different rules apply regarding height and construction. Check the local By Laws.

The Kafko Decorative Metal Fence Systems conform to most By Laws when installed with a self closing/locking gate.

*Kafko Decorative Metal Fence is available in 2 styles. Picket and Loop-Top.*



**PICKET AND LOOP-TOP  
DECORATIVE METAL FENCING**

## WARRANTY

Included in home owners package:

The pool kit warranty registration card is packed in the liner drum/box.

The warranty registration should be filled out and mailed to ensure warranty coverage. Warranties for equipment such as filters, pumps, lights, heaters, pool cleaner, steps, etc.. are supplied by the manufacturer of these products, separate from the pool kit warranty.

## WINTERIZING

Refer to manufacturers winterizing manual for proper winterizing of the pool and pool equipment.

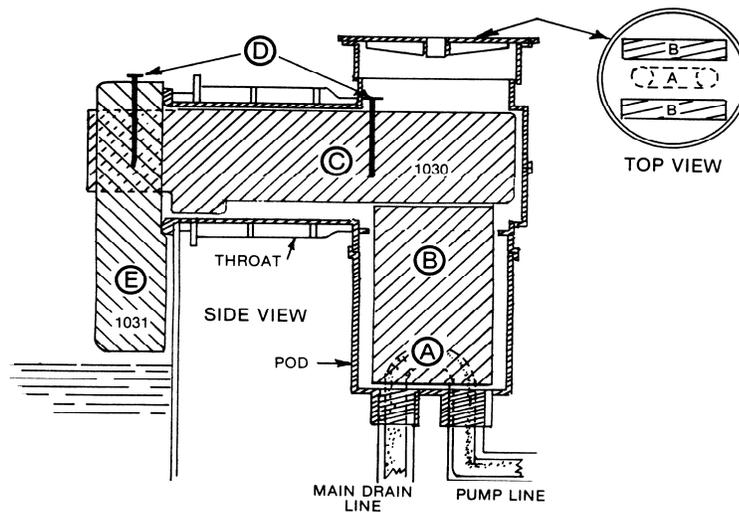
Instructions for winterizing the pool will vary depending on frost conditions.

Equipment - Refer to equipment manufacturers instructions for winterizing.

## WINTERIZING KIT

*The Winterizing Kit is designed to protect the skimmer from ice damage. All skimmers that are installed in pools where winter freezing occurs should have this kit installed when the pool is winterized.*

**\*NO WARRANTY CLAIMS  
WILL BE ACCEPTED UNLESS  
A WINTERIZING KIT  
HAS BEEN INSTALLED.**



## PROTECT YOUR SKIMMER



## **SAFETY BEGINS WITH YOU!**

**Always refer to diving boards manufacturer's specs before installing any size diving board.**

When it comes to safety it is up to the installer of the pool to ensure all possible efforts are made to construct the pool to safe standards and to ensure equipment such as diving boards/slides/steps/etc.. are only installed on pools designed for this equipment. If in doubt do not install the equipment. The company provides non diving stickers with all pools. These stickers are packed in the liner drum in the home owners package.

These stickers must be installed in the shallow end or in the case of shallow depth pools, they are to be installed at both ends and sides of the pool.

Questions on safety can be directed to the company, the equipment manufacturer, or The Association of Pool and Spa Professionals.