Kafko

its what dreams are made of

4/5ft DIY Swimming Pool Installation Manual

D.I.Y CD-VIDEO

STAGE INDEX

A useful 'Interactive CD' or 'Video' film guide is available from your swimming pool dealer. The CD &Video is designed to help and guide you throughout the various stages of a Kafko D.I.Y Panel Pool Installation. The CD &Video has been filmed and edited to have the same Stage Index numbers as listed below.

VIDEO STAGE		KAFKO INSTALLATION MANUAL PAGE NUMBER
	INTRODUCTION - LOCATION & MATERIALS	3
STAGE 1 -	MARKING OUT EXCAVATION	4
	DIG DIMENSIONS	
STAGE 2 -	EXCAVATION 4FT DEPTH	6
	EXCAVATION 5FT DEPTH	7
STAGE 3 -	INSTALLING THE POOL PANELS & OPTIONAL STEP UNIT	8
STAGE 4 -	SECURING POOL WALL PANELS	10
STAGE 5 -	INSTALLING ALUMINIUM COPING RECEPTOR	11
STAGE 6 -	THE CONCRETE RINGBEAM	12
STAGE 7 -	THE FLOOR SCREED	13
STAGE 8 -	INSTALLING THE CIRCULATION FITTINGS & OPTIONAL U.W. LIGHT	14
STAGE 9 -	LINER INSTALLATION	16
STAGE 10 -	PLUMBING	20
STAGE 11 -	BACKFILLING	22
STAGE 12 -	CONCRETE RING BEAM	20

*WARNING - Do not use this Installation Manual, CD-Video as guide for any other type of panel pool system as recommended installation methods will differ and compromise the warranty, safety and structural integrity of the pool structure.

SECTION 1
PRELIMINARY PREPARATIONS:-

LOCATION

It is extremely important to give due consideration to the pool location. Remember that once installed a pool cannot be moved without very high cost. Before deciding on a site it is advisable to draw a scale plan of your garden on graph paper, marking the position of fences, buildings, footpaths, water pipes etc., cutting a template of the proposed pool (ideally of different coloured paper) you can then superimpose this on your plan until the ideal position is found.

The following points should be borne in mind when deciding on the right position.

1. Ensure that no electric cables water pipes gas or drainage pipes run under the proposed site. Moving any of these is time consuming and costly.

2. Keep away from trees and shaded areas.

3. It is advisable to choose a location with a fair degree of privacy.

4. Installation of electric cables and gas pipes is costly, therefore, the shorter the run from your electric and gas meters to the pump and heat source, the cheaper it is.

5. The pool has to be level, therefore, either choose a level site or be prepared to extend the level by using some of the excavated earth. It is a mistake to cut into the slope or to have the pool absolutely level with the garden. The pool should be raised by at least 4" - 6" to enable the paving to slope away from the pool, taking splashed water and rain water away from it.

It is often preferable to raise the pool by as much as 18" using the soil to build a patio around it, finished with either a retaining wall or gradually sloping turf. This may be done to save on the cost of earth removal and the time and effort involved in excavation, especially when hand digging is involved or when the water table is high enough to interfere with the installation.

TOOLS YOU WILL REQUIRE

This checklist has been compiled assuming that the normal handyman's tools are available, i.e. an electric drill and an extension lead to reach the pool site, obviously ten men hand digging a pool will require more shovels and wheelbarrows.

Wood float and Steel Float
Cowley or water level*
Club hammer
Adjustable spanners
Phillips screwdriver
Shovels/Forks
Spades/Rake
Pick
Soft Broom
Wheelbarrow
Industrial vacuum cleaner*
Ball of string and stakes
Stanley knife
Garden Hose
Chain wrench or Stilsons to tighten 1½"
Hacksaw
Tape measure - 50' +
2" masking or packing tape
Electric drill
'G' Clamps
Angle Grinder*

*(may be hired)

BUILDING MATERIALS TO BUY

This checklist is only approximate and depends on individual siting arrangements, soil conditions etc. and is intended as a guide only.

Pool Size	Soft Sand	Ballast	Cement	40mm Shingle
	cubic metres	cubic metres	25 Kg Bags	cubic metres
20 x 12	2	4	40	11
24 x 12	2	4	40	13
28 x 12	3	5	55	14
30 x 14	3	5	55	15
Amount required for optional 5' depth pool				
	cubic metres	cubic metres	50 Kg Bags	cubic metres
20 x 12	2.5	4	45	11
24 x 12	2.5	4	45	13
28 x 12	3.5	5	60	14
30 x 14	3.5	5	60	15

PLANT EQUIPMENT TO HIRE

Excavator
Concrete Mixer
Dumper Truck
Tipper Lorries (if spoil being removed from site)

Please read all of the Installation Manual before commencing the installation. A few minutes spent reviewing each stage of the manual could save you time and money!

MARKING OUT FOR EXCAVATION:-

STAGE 1

Pool Size	Length A - B	Width A - C B - D	Diagonal A - D B - C
20 x 12	20	12	23' - 4"
24 x 12	24	12	26' - 10"
28 x 12	28	12	30' - 5 1/2"
30 x 14	30	14	33' - 1 1/4"

Using the ball of string and the stakes.

1. Mark line A - B representing the length of the pool.
(Marking a line on grass can be achieved by using 'floor marking spray paint' along the line of the string).

2. At points A & B mark 2 arcs in the positions shown using pool *width measurement.* **See fig 1.**

3. Again using points A & B mark 2 further arcs as shown using the *diagonal measurements listed,* where the arcs cross determine points C & D, points A,B,C & D form a true rectangle. **See fig 1.**

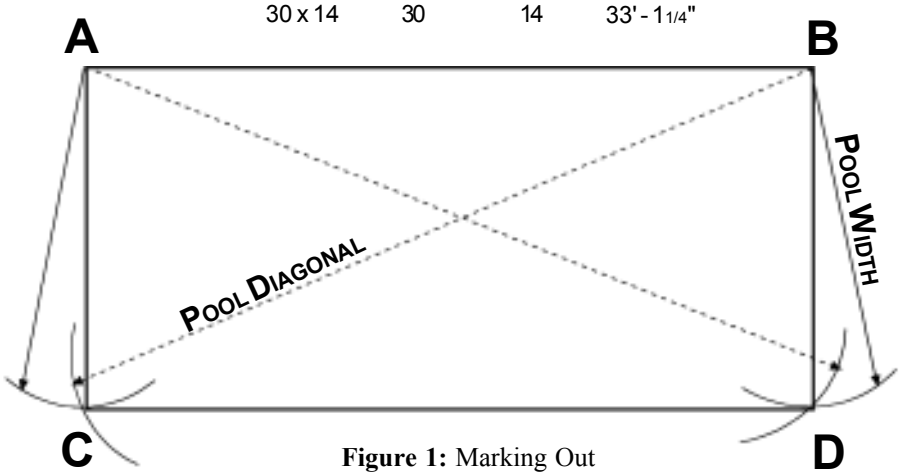


Figure 1: Marking Out

4. The rectangle you have marked out represents the *actual* pool size. Now create the 24" radius corners.

To do this simply place a mark 24" from each corner along the length and width of the pool . From each mark, mark a line 24" in towards the middle of the pool from each point. You should now have formed a square. **See fig 2.**

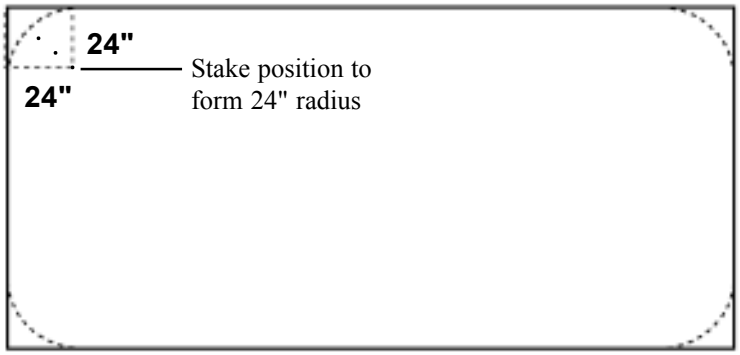


Figure 2: Creating 24" radius corners

5. Using a string line 24" long and a stake, position the stake in the corner of the square and using the string line create an arc to form the 24" radius corner (see fig 2). Repeat on the other three corners.

6. You will now have marked out a rectangle with 24" radius corners. Now mark another rectangle ***4' longer and wider*** than the pool to allow for an 24" working trench that will enable the support braces to be fitted to the pool structure and plumbing to be installed etc**. See fig 3.**

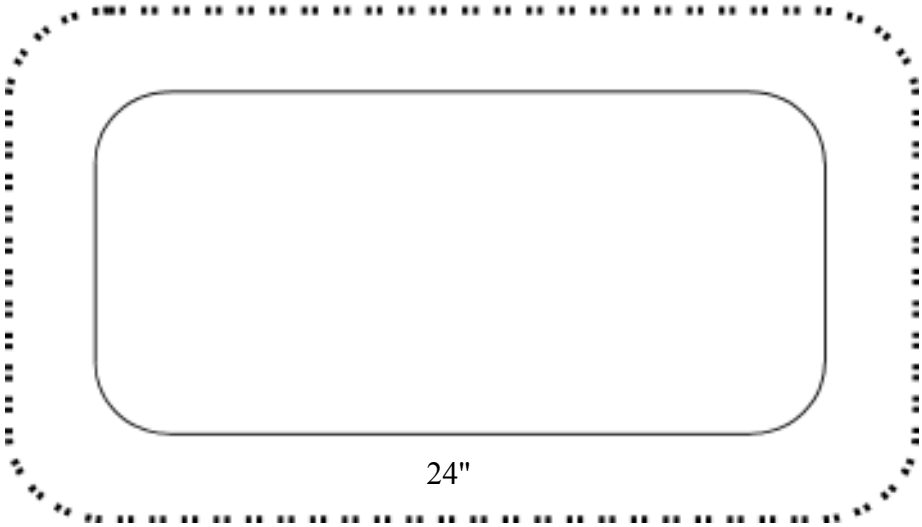
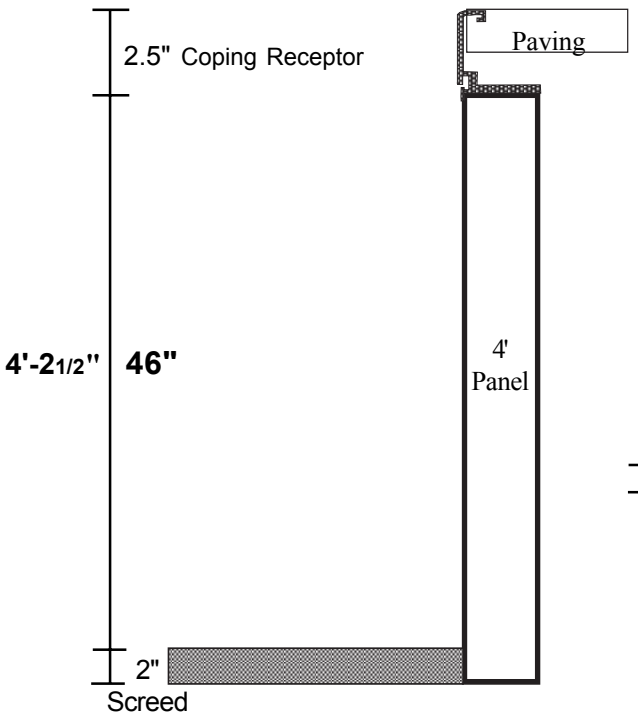


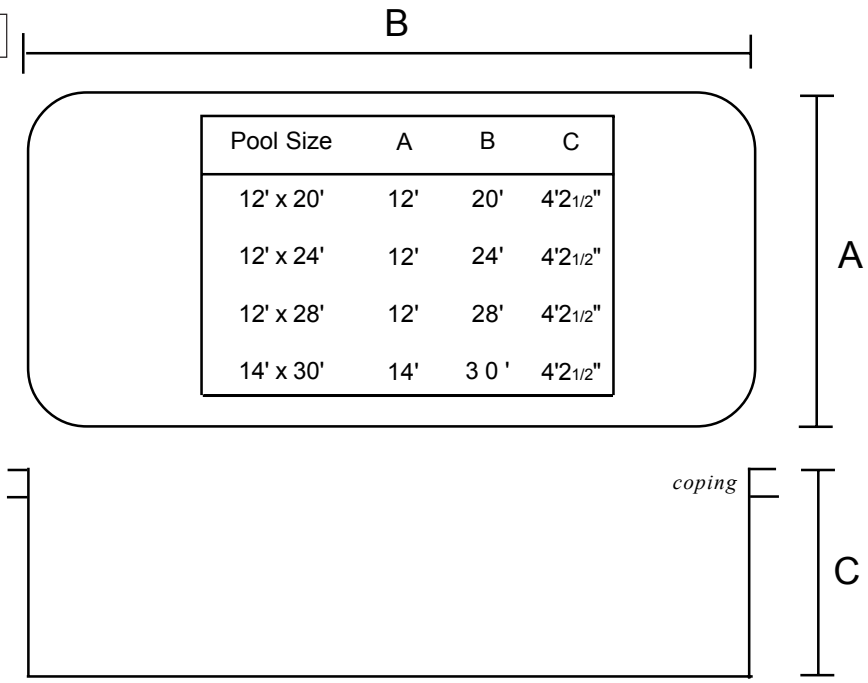
Figure 3: Pool size showing working trench

Tip

When you have marked the out the working trench as fig.3 it is a good idea to mark another rectangle 4' longer and wider ***than the working trench****. Insert a Steel Pin into each corner of the marked area. You will now be able to run string lines at a later stage in the installation that will help you to check alignment when the pool walls are installed.*

EXCAVATION:- DIG DIMENSIONS





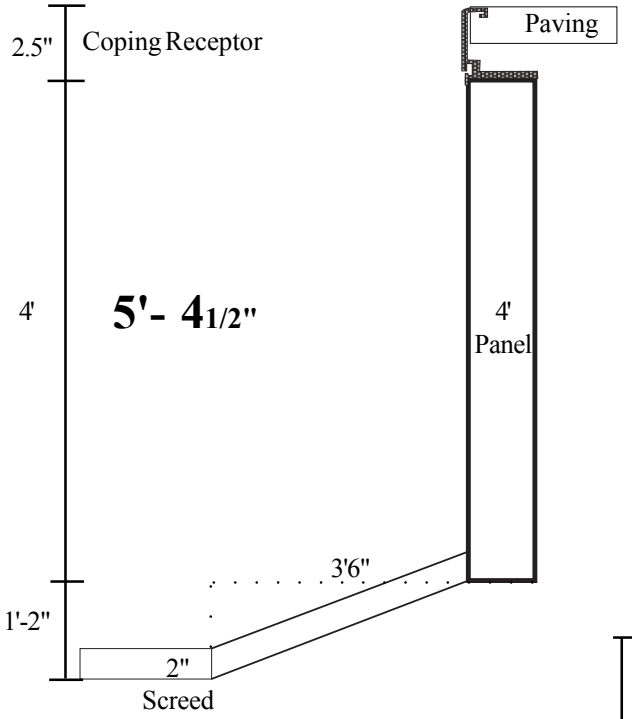
Pool Size	A	B	C
12' x 20'	12'	20'	4'2 1/2"
12' x 24'	12'	24'	4'2 1/2"
12' x 28'	12'	28'	4'2 1/2"
14' x 30'	14'	3 0 '	4'2 1/2"

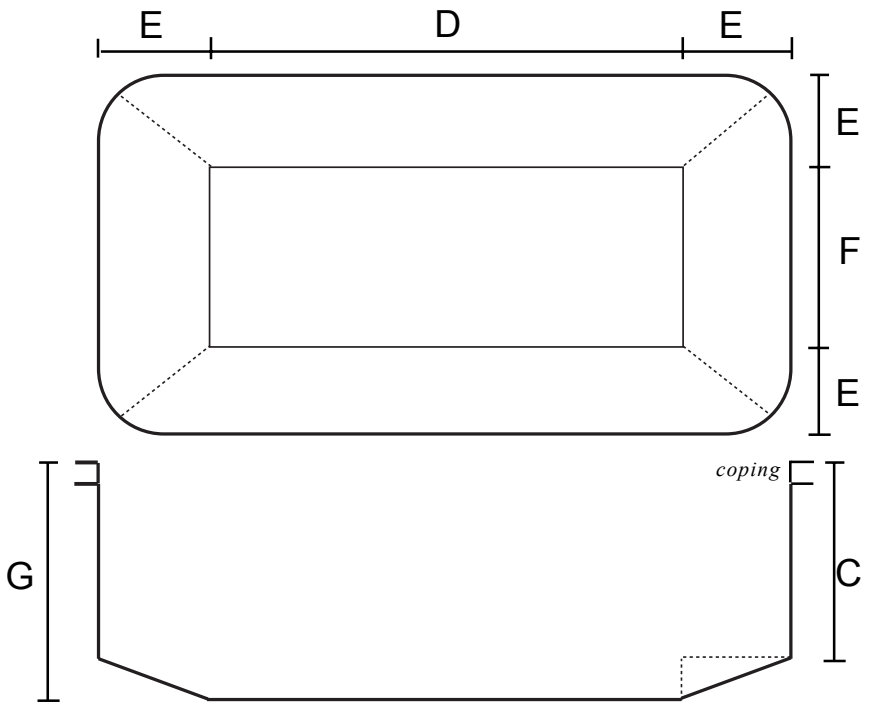
ALTERNATIVE 5' POOL DEPTH

An optional 5' pool depth is also available at no extra cost. The same liner that is used for a 4' depth pool can also be used for a 5' depth pool. The liner material is expandable and will stretch into position as long as the excavation is carried out to the dimensions specified below.

Please make sure your dealer is aware of your intentions to increase the depth of the pool as this may alter plumbing configuration and heater sizing that is required for your pool.

Pool Size	C	D	E	F	G
12' x 20'	4'2 1/2"	13'	3'6"	5'	5'4 1/2"
12' x 24'	4'2 1/2"	17'	3'6"	5'	5'4 1/2"
12' x 28'	4'2 1/2"	21'	3'6"	5'	5'4 1/2"
14' x 30'	4'2 1/2"	23'	3'6"	7'	5'4 1/2"





EXCAVATION:- STAGE 2 (SEE PAGE 7 FOR 5' DEPTH EXCAVATION)

Drawing fig.4 below shows the finished excavation. To reach this stage proceed as follows:-

1. Fix a level string line to stakes **at a height equal to top of Wall panels and Coping Receptor (i.e finished pool & surround level)** around the marked out area.

2. Using back-hoe of the excavator start digging to the **depth of 4'2 1/2" from the intended top level of the pool surround**. This height and level is most important, thus check your levels frequently using either an optical builders level or water level. (It is unlikely that sufficiently good results could be obtained with a spirit level). If earth is to be removed, leave it on the side easiest for removal. *At this stage the whole area is to be excavated to a constant depth of* **4'2 1/2"**.

Remember ! The pool has been marked out allowing for a 24" overdig. This area is also to be excavated, it will act as a working trench and will receive the Polymer Braces.

Excavation should be undertaken extremely carefully, especially underneath the walls, since any over digging will have to be made up with bricks and cement. One hours careful work at this stage with the machine can count for half to a whole days manual work after the excavator has left.

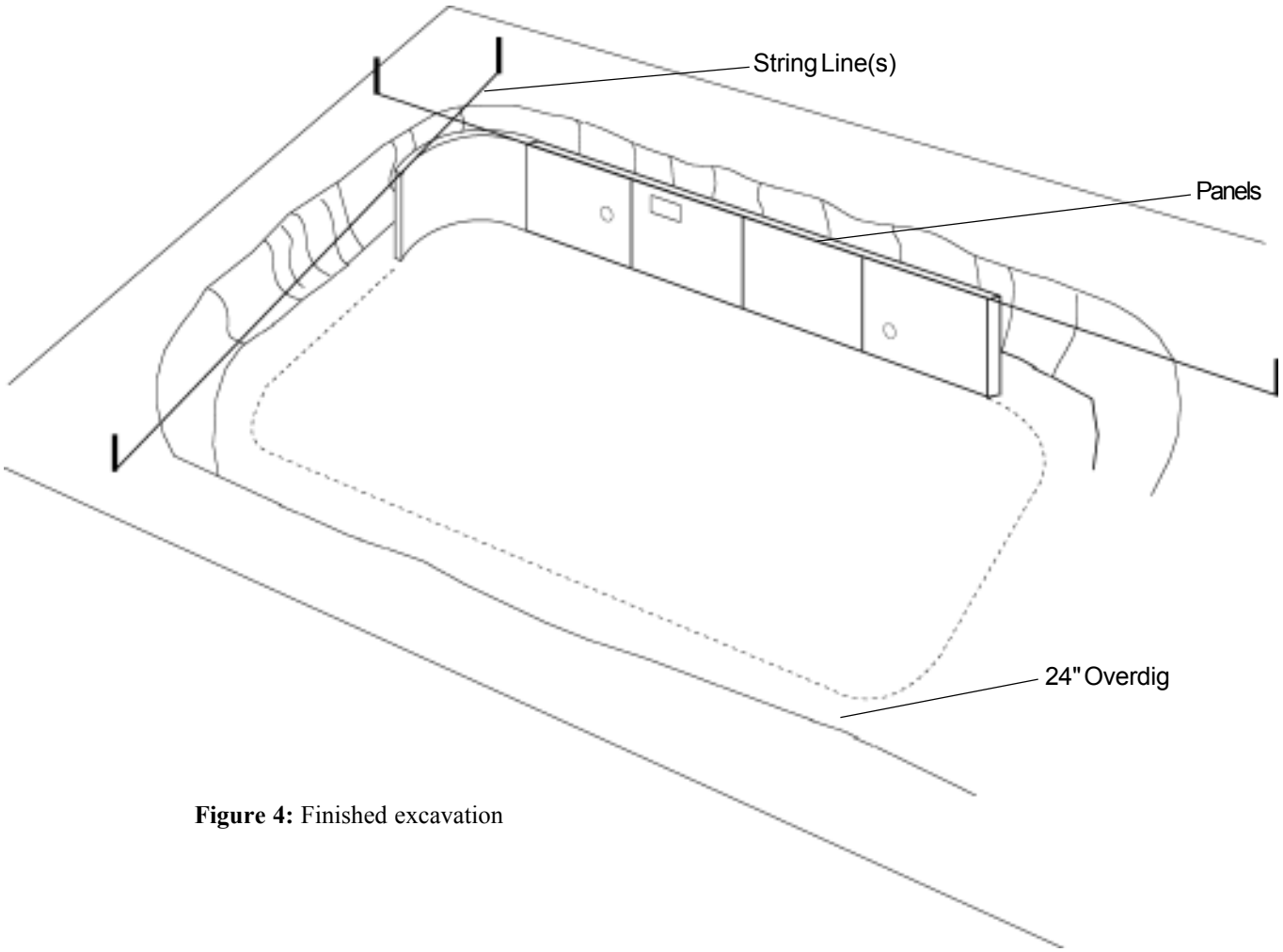


Figure 4: Finished excavation

See page 8 if installing a step unit

EXCAVATION:- STAGE 2 FOR 5' DEPTH EXCAVATION

Sketch Drawing fig.5 below shows the finished excavation. To reach this stage proceed as follows:-

1. Fix a level string line to stakes **at a height equal to top of Wall panels and Coping Receptor (i.e finished pool & surround level)** around the marked out area.

2. Using back-hoe of the excavator start digging to the **depth of 4'2 1/2" from the intended top level of the pool surround**. This height and level is most important, thus check your levels frequently using either an optical builders level or water level. (It is unlikely that sufficiently good results could be obtained with a spirit level). If earth is to be removed, leave it on the side easiest for removal. *At this stage the whole area is to be excavated to a constant depth of* **4'2 1/2"**.

Remember ! The pool has been marked out allowing for a 24" overdig. This area is also to be excavated, it will act as a working trench and will receive the Polymer Braces.

3. To shape the excavation below **4'2 1/2"** depth proceed as follows:-

a. **Using string lines, mark on the floor of the excavation** across the width and length of the pool the 3'6" banks that will form the shape and depth as per excavation drawing below. **See fig.5 & 6.**

b. Start at one end of the pool and excavate to dimensions shown in the dig dimension table on page 4.

Excavation should be undertaken extremely carefully, especially underneath the walls, since any over digging will have to be made up with bricks and cement. One hours careful work at this stage with the machine can count for half to a whole days manual work after the excavator has left.

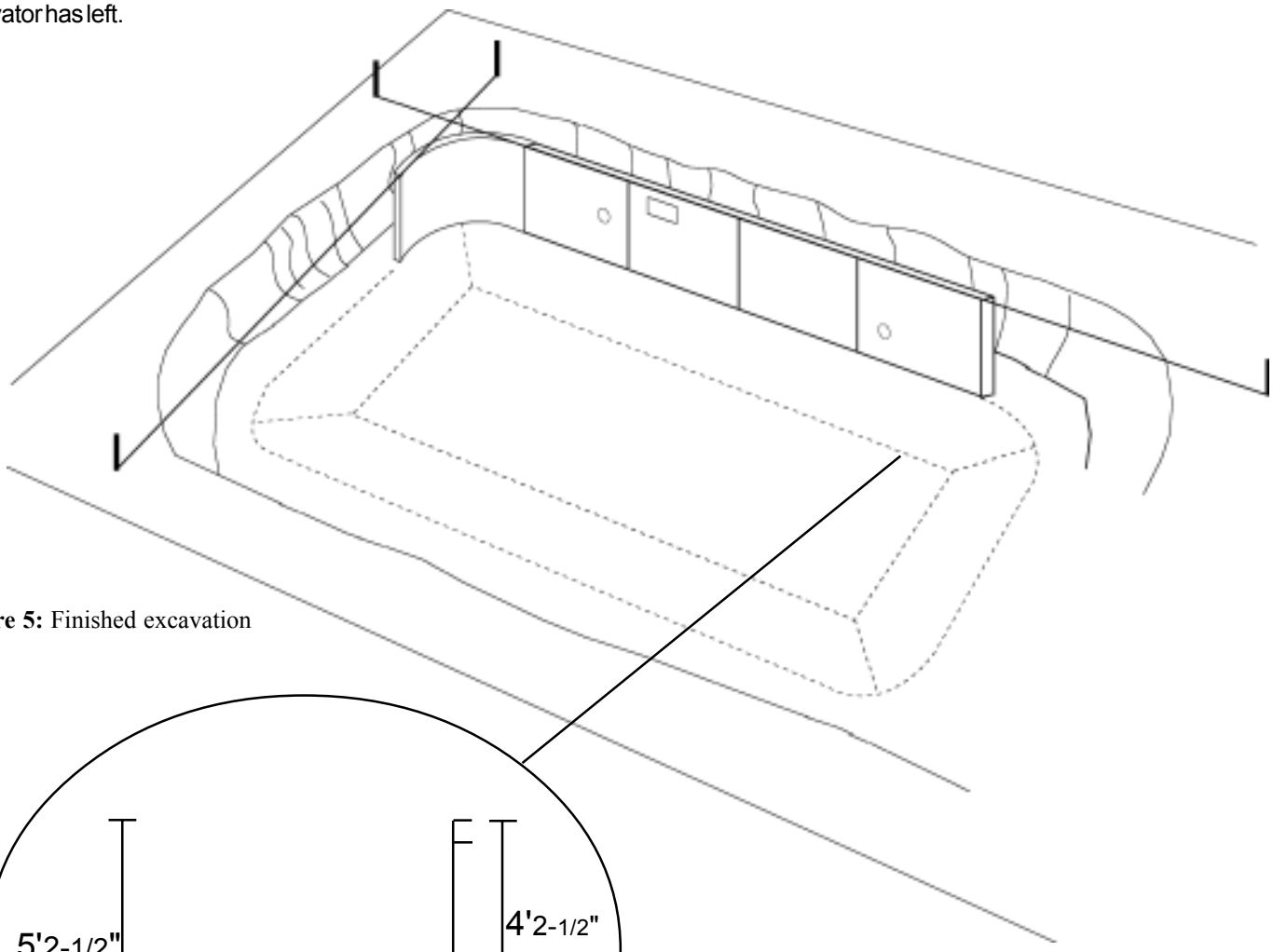


Figure 5: Finished excavation

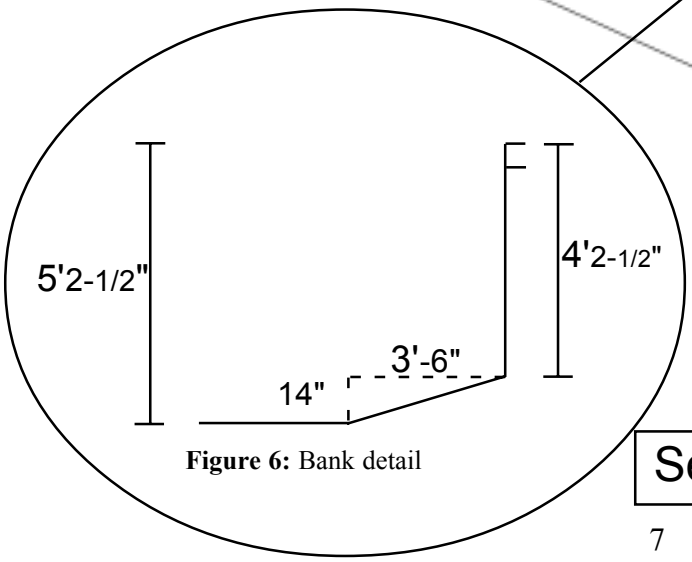
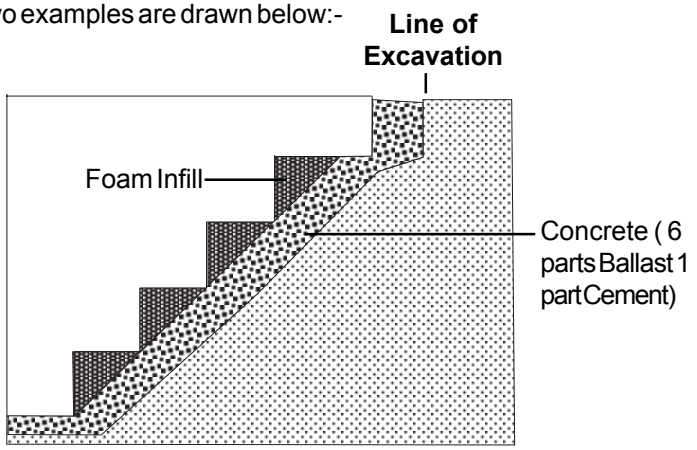


Figure 6: Bank detail

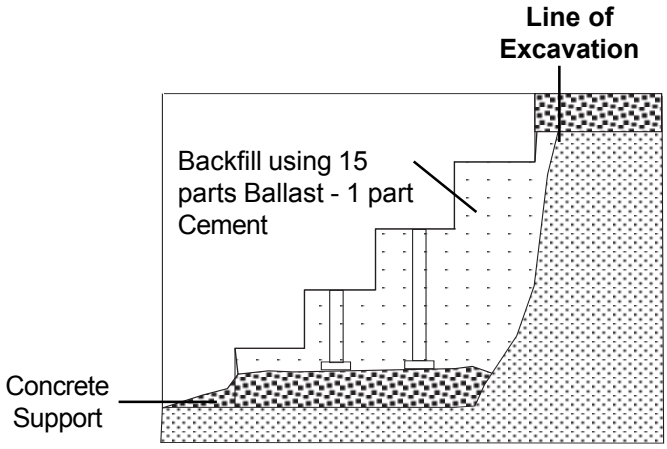
See page 8 if installing a step unit

EXCAVATION FOR OPTIONAL STEP UNIT

Make sure that you have excavated the right amount of soil to allow access for installation of the Step Unit.
Two examples are drawn below:-



Foam Backed Step Unit

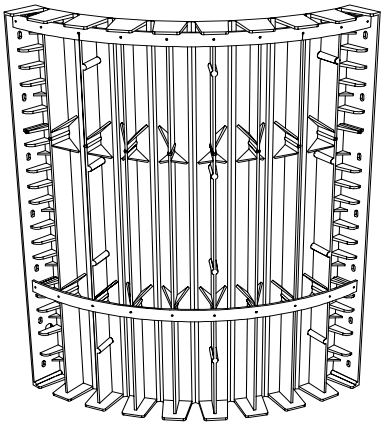


Step Unit with Leg Support System

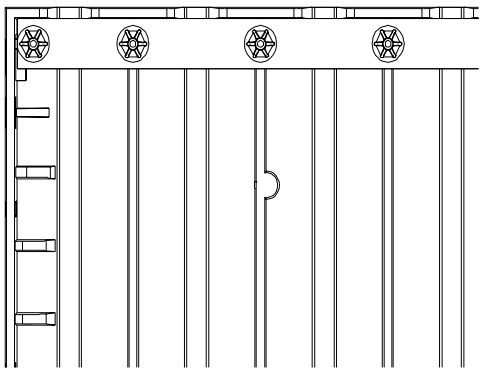
ERECTION OF POOL WALLS AND OPTIONAL STEP UNIT:- STAGE 3

Start by creating the four 24" radius corners:-

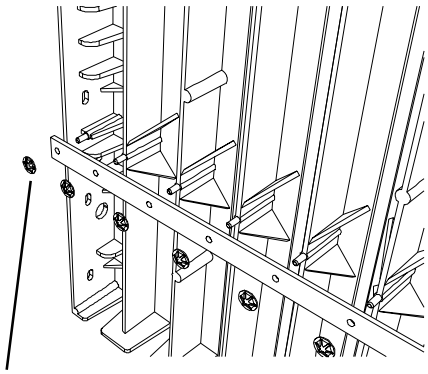
To create a radius corner a 'Multiflex Panel is used. A 3' Multiflex Panel has been designed so that it can be flexed to create a internal radius.
To make sure that the right radius is applied when flexing the panel a 'Strap Set' is used.
The Straps are marked and pre-drilled by a computer at the factory to determine the correct radius, an identification sticker showing radius dimension is applied to each individual strap.
Each panel will require 2 straps. Each strap is simply pushed onto the panel by hand and is fixed to the top and bottom of the panel, **not in the middle**.



Multi-Flex Corner Panel



Top Strap



Bottom Strap

Erection of pool wall panels:-

1. Place the panels around the excavation as per drawing supplied at time of pool delivery. You may alter the positions of inlets and outlets if desired.

Make sure that the appropriate panels are located in a position to enable the plumbing lines to take the shortest run possible back to where the filtration plant is to be housed.

One panel will have a rectangular hole cut into the face of the panel to accommodate a surface skimmer.
Two panels will have a small round hole cut for a high and a low return fitting.

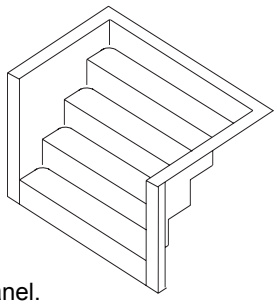
2. Start by bolting one side of pool panels together that form either the length or the width of the pool including the radius corners (multiflex) using 3 no. Nuts & Bolts and placing them into the **front three round holes**:- these will temporarily fix the panels together while lowering the wall sections into the hole and also enable extra joint tightening where required.

NOTE:- Some Multi-flex Panels MAY NOT have pre-drilled location holes for temporary fixing. Either install the Polymer Braces at this time or using a 10mm drill piece, drill the location holes.

A 1" Polymer Insert must be inserted on each side of radius corner panel before attaching the straight panels. **These require 2.5" Long Fixing Bolts (provided). 3.5" bolts maybe required where a corner, brace, 12" panel are required!**

3. Lower panel assembly into excavation and position on shelf. Continue erecting all wall sections.

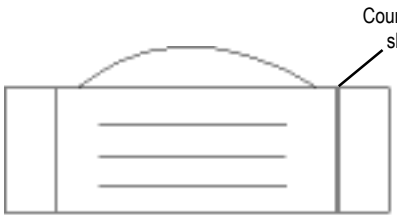
INSTALLING OPTIONAL STEP UNITS



A Step Unit takes the place of a Polymer Panel, and is simply bolted to the panel structure. Steps may be supported by a Leg Bracing System (KAFKO) or have a Reinforced Foam Backing (COUNTRY LEISURE) utilising the shape of ground to give support. Either way, make sure that you have excavated the right amount of soil to allow access for installation of the Step Unit. **Two examples are drawn below**:-

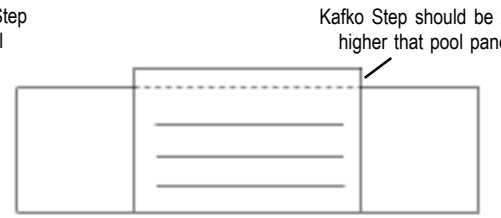
Step Units are manufactured for all types of pool construction and therefore, will be not predrilled to accept Polymer panels. Line up the Step Unit against the panels and depending on what type of step you have bought (either Kafko or Country Leisure) will pre-determine what level you set the step to - see diagram below. Fix temporarily into position using 'G' Clamps. Mark the Step Unit through the holes that are already located in the panel. Remove panel and drill Step Unit.

Level front and back of Step Unit and concrete into position (please note- Step units are made of Glass Fibre, when the step is released from the mould slight contraction/shrinkage arises therefore the step unit may not be exactly level from front to back to start with). Polymer or Galvanised Bracing is required either side of the Step Unit to prevent the Step being pushed forward when concrete support is poured.



Country Leisure
Roman End Step Unit

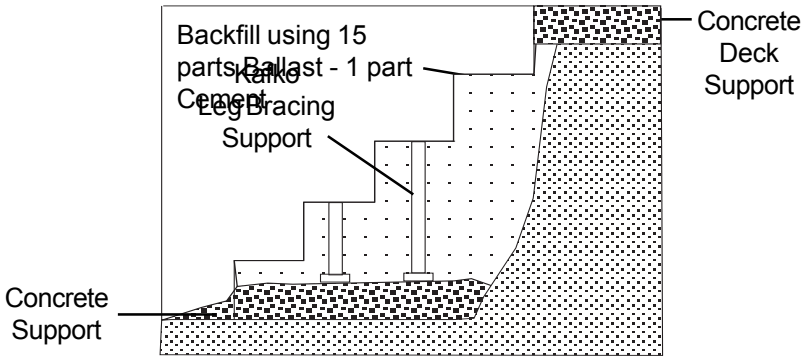
Country Leisure
Square Step Unit



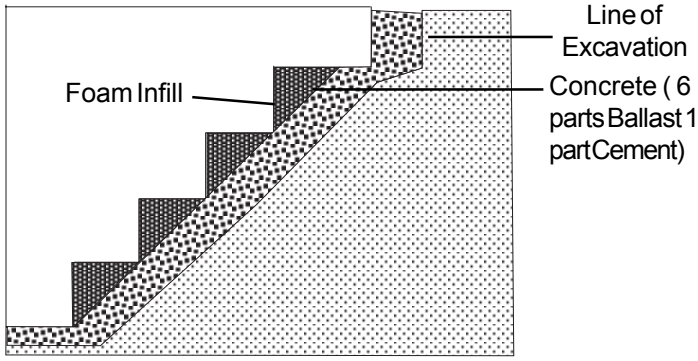
Kafko
Square Step Unit

Install Country Leisure steps level with the top of the polymer panel to enable coping trim to run along rear of step unit.

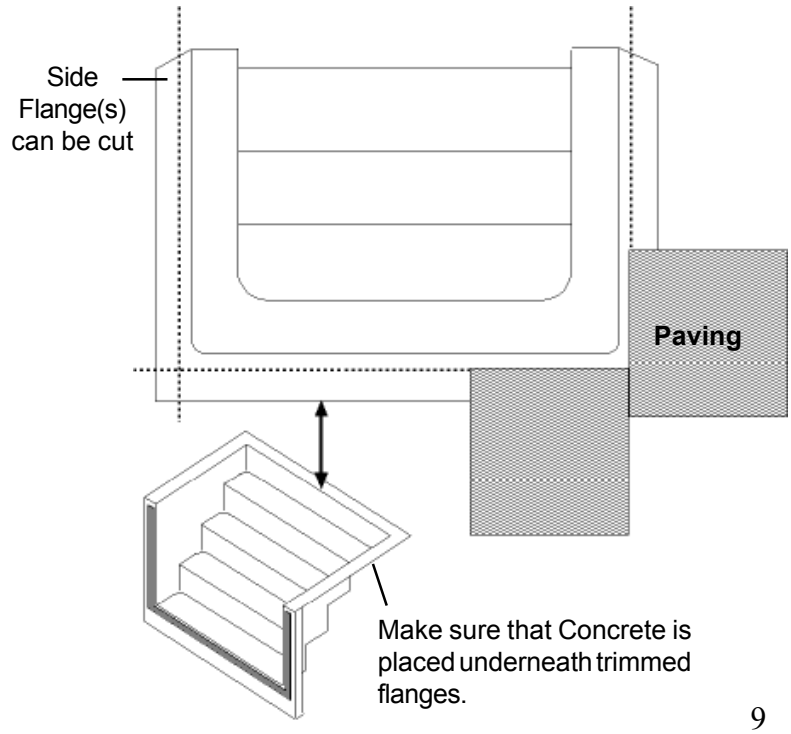
A Kafko step is 2.5" higher than a Country Leisure step. This is to allow the coping trim to butt up against the step.



Kafko Step Unit with Leg Support System



Country Leisure Foam Backed Step Unit



Note. Installation notes for 6ft Kafko Square Step Unit Only

To prevent a large mortar joint when laying paving slabs/decking against a Kafko Square Step, the 'side flanges' may be trimmed. Make sure that adequate concrete is placed under flanges after they have been trimmed to fully support top of step unit.

SECURING POOL WALL PANELS:- STAGE 4

1. When all wall sections are temporarily in place, 7 No. Bolts are to be placed through the pre drilled rectangular holes on each panel joint and brace. Polymer Braces are to be fixed every PANEL JOINT . ***Braces are NOT placed in between panel joints but at the side.***

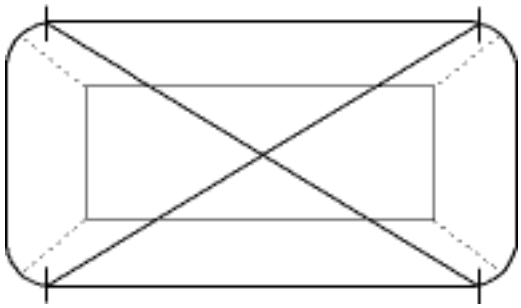
If 5' & 6' panels have been supplied intermediate Braces (supplied) must be placed in the middle of the panel

Where a 1' or 2' panel is required for an infill (i.e. between a step unit and corner) these panels have to be cut manually by the manufacture. If when joining the panels together you experience a incorrect alignment or gaps appear, you may find that you either have to plane down the side of the panel or fill a gap using a car body filler. If you are unsure what to do - please contact your dealer.

Due to the manufacturing process using injection moulding, some pool panels may not be manufactured to an exact size. Your pool build is not an exact science so do not be too concerned if the overall pool size is not exact 0.5" - 1.00" tolerance is not uncommon! Like any DIY project work to the best of your ability. If you have any doubts - call your dealer.

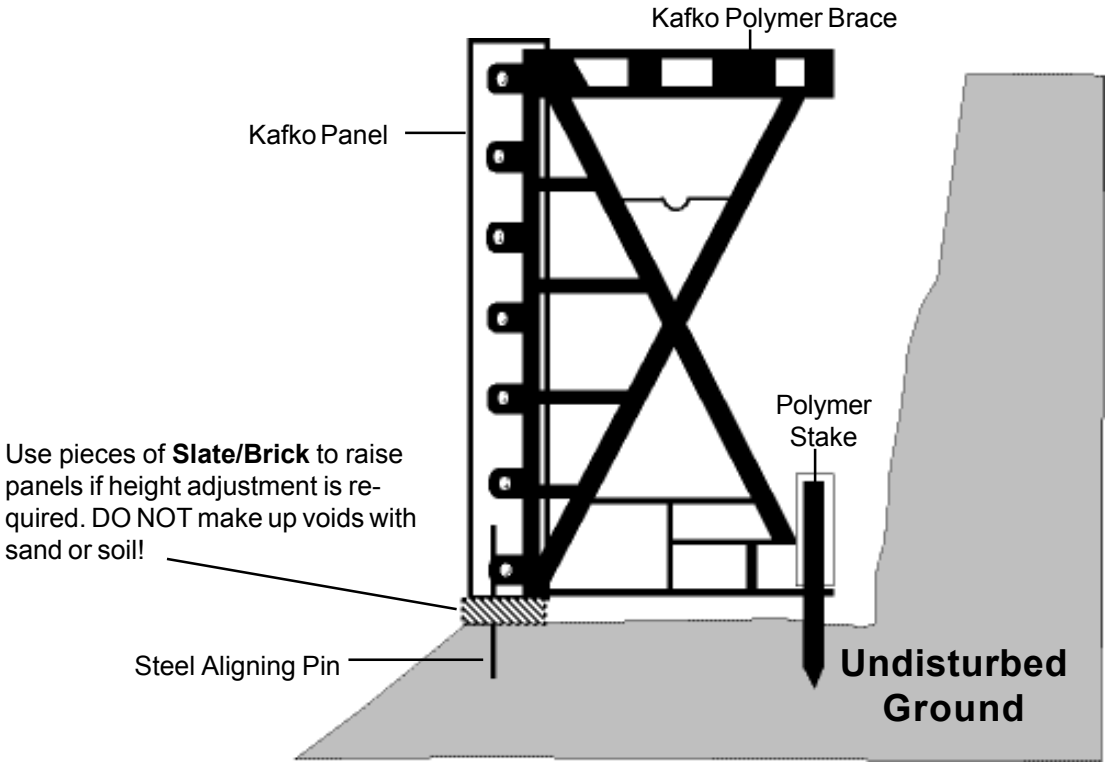
2. When all braces have been fixed **it is important to make sure that the pool construction is put in level and square.** To do this run string lines along length and width of pool construction (panels) for alignment and set to correct height. Check diagonal measurements are equal.

Check Diagonals!



3. Making sure that the pool is correctly aligned, drive the Steel Aligning Pins provide through the holes in the bottom flange of the panels leaving approx. 6" exposed. If it is necessary to raise some of the panels they should be packed underneath with odd pieces of slate, tile brick etc. **DO NOT ATTEMPT TO MAKE UP ANY VOIDS WITH SAND OR SOIL.**

4. Drive the Polymer Stake (*attached to Polymer brace*) through bottom of the Brace into the ground as far as you are able. (In the event that the ground conditions do not allow the brace to be inserted easily, Steel Aligning Pins should be used leaving approx. 3" of steel exposed. When the Stake has been driven home CHECK the panel is upright using a Spirit Level. If adjustment is required, tap the top of the brace to align the panel. **The pool structure is now to ready to receive the Aluminium Coping Receptor.**



INSTALLING ALUMINIUM COPING RECEPTOR **Stage 5**

Snap Aluminium Coping onto top of pool panels and secure with Liner Lock Screws provided at intervals of approximately 6-8" apart.

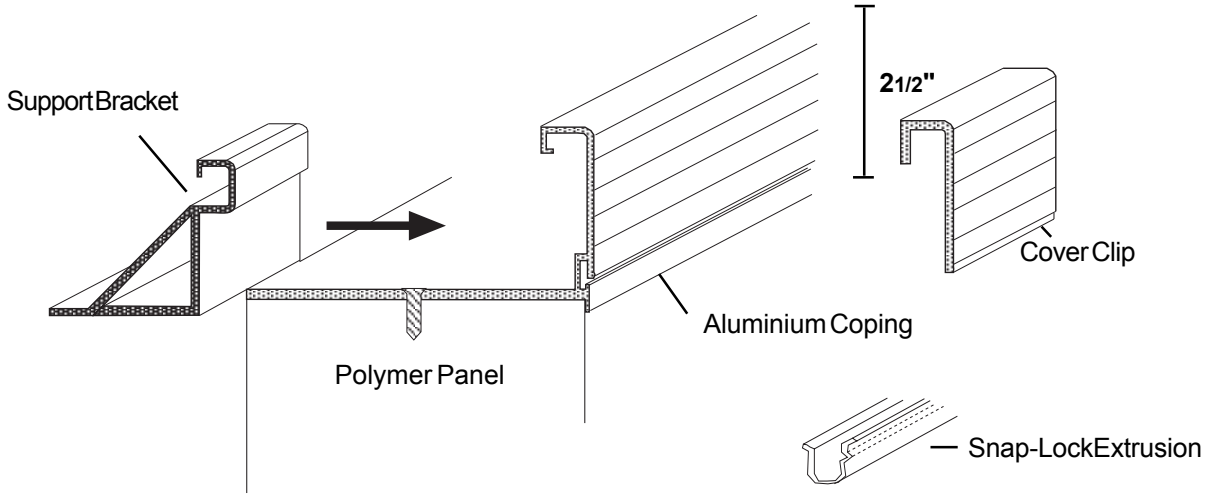
The extrusion will help with alignment prior to pouring the bottom concrete ring beam and also acts as a receptor to receive the liner beading that is attached to the liner. Coping for radius corners are preformed and may need slight adjustment when securing.

In the middle of every Coping straight and joint, an Aluminium Support Bracket should be inserted approximately every 4'. **Note:- Support Brackets may have to be removed when paving surround is laid.**

Front facia Cover Clips are also provided to cover Coping Joints.

Kafko use a patented 'Snap Lock System' to prevent the liner from coming out of the Liner Lock extrusion. **Set aside** Snap Lock extrusion and fit when liner has been fully installed.

APPLY PROTECTIVE SHEETING TO COPING WHERE ACCESS IS REQUIRED TO POOL STRUCTURE



TIP :- It is a good idea to leave one section of Aluminium Coping off the pool surround to enable access for building materials i.e. Floor Screed

GRP Trim for Roman Steps only.

For Roman Step units a GRP trim is supplied in place of an Aluminium extrusion. It is supplied in two sections. Fix each section to the top of step unit as per the diagram.

The (return straight) trim will have to be cut down to make sure that is in-line with the inside of the plastic faceplate.

Butt the Aluminium coping up to the plastic trim.

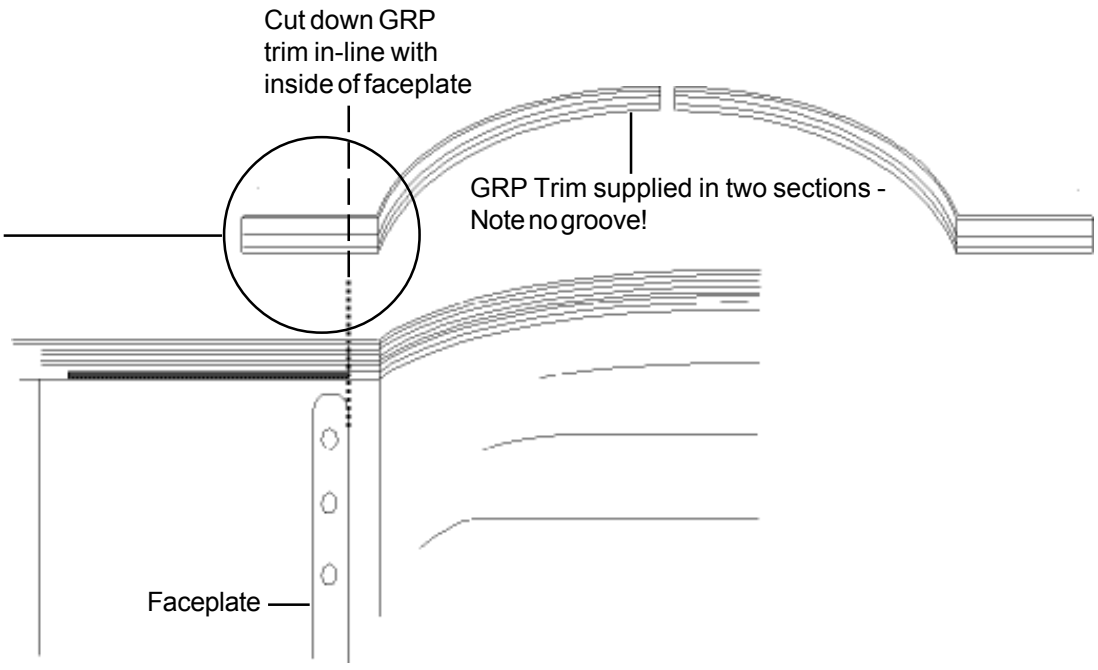
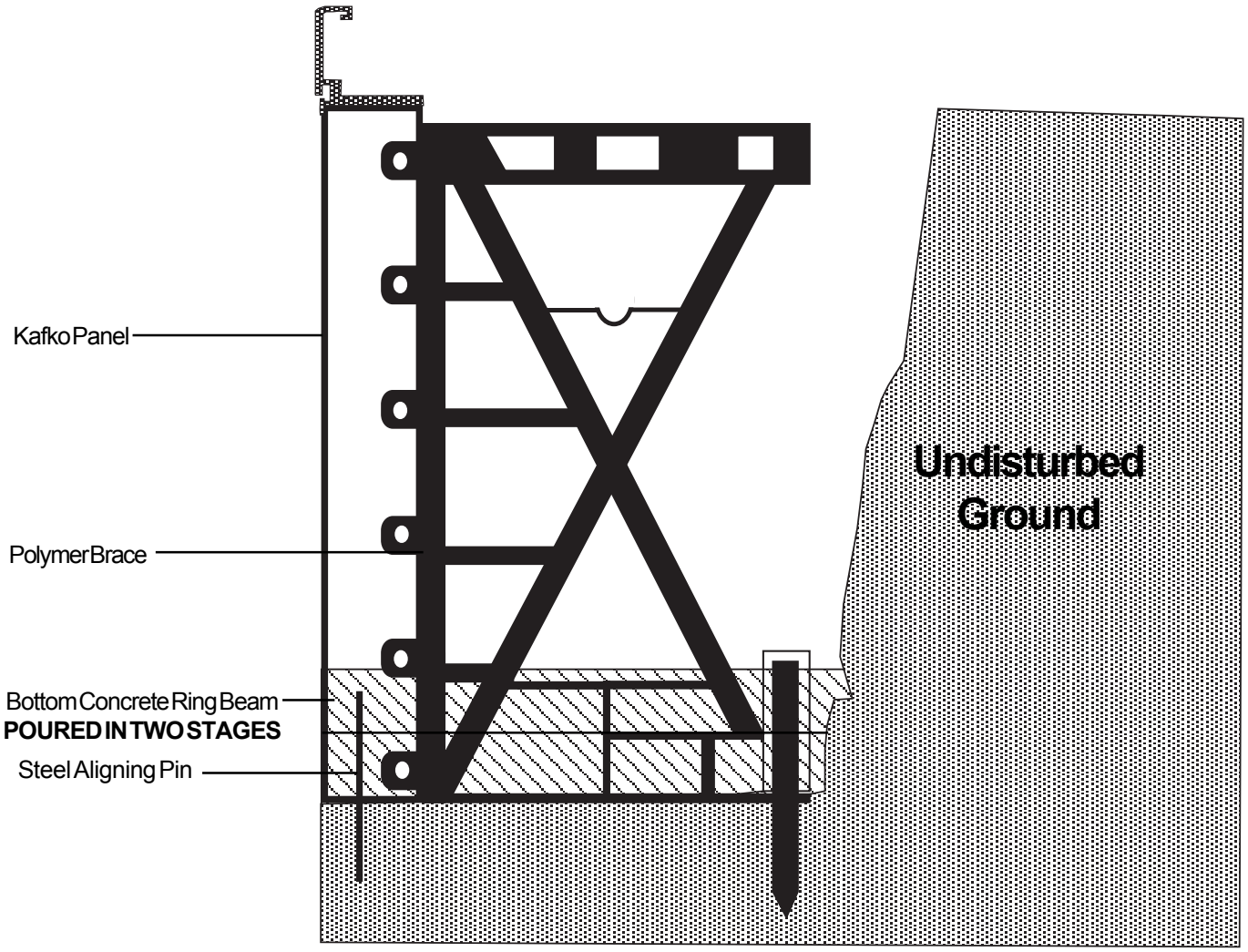


Diagram of Panel Pool Construction



POURING BOTTOM CONCRETE RING BEAM:- Stage 6

IMPORTANT NOTE:- ***due to the nature of the product, if the polymer panels are exposed to extreme heat or sunlight, panels may begin to distort or bulge. Therefore we recommend that a protective white sheeting is used to reflect the suns rays or wait until a cooler climate arises.***

DO NOT POUR CONCRETE RINGBEAM OR BACKFILL IF PANELS ARE DISTORTED

As Polymer has a structural memory, in general all panels will be shrink back to their original shape or size once they have cooled - as long as a concrete ringbeam or backfill has commenced.

To avoid disturbing panel alignment the concrete should be PLACED rather than poured into position. A concrete mix of 6 parts ballast 1 part cement is required.

Two concrete pours are required for a bottom ring beam.

1st Pour:- Approximately 3" of concrete, this enables the panels to be secured into position. LEAVE 24 HOURS and check panel alignment.

2nd Pour:- Approximately 6" of concrete.

SCREEDING OF POOL BASE:- STAGE 7 (see also page 14 for 5' depth option)

A STRONG Screed mixture is required, 4 parts sand to 1 part cement. The consistency required should allow you to squeeze a ball of screed in your hand and when released, the screed should stay together in a ball and not crumble.

The sand **MUST** be builders soft sand - **DO NOT USE SHARP SAND (liners are microporous and will still allow a very small amount of water through the liner over a 7-10 year period. If sharp sand is used, the chemicals that are contained in the water may break down the screed and expose the aggergrate that can cause damage to the liner) .**

This is probably the most difficult stage for the amateur builder. If you are apprehensive about this stage there are two alternatives,

1) You can employ a local plasterer to carry out the work for you or,

2) You can lay the screed to the best of your ability and then purchase from your pool supplier some special pool liner foam/felt underlay which will iron out any trowel marks and roughness in the screed.

Note: an all patterned liner is supplied with your pool kit. The benefit to having an all pattern liner material is that it will cover most imperfections i.e. Trowel marks etc. in the finished screed application.

The recommended method for laying the screed is as follows:-

1. A 2" screed depth is required for the pool floor. To help you achieve this, it is a good idea to use a 'chalk line' to mark a line all around the pool structure 2" up from the bottom of the panel. (Some panels will have a score line already marked on the panel).

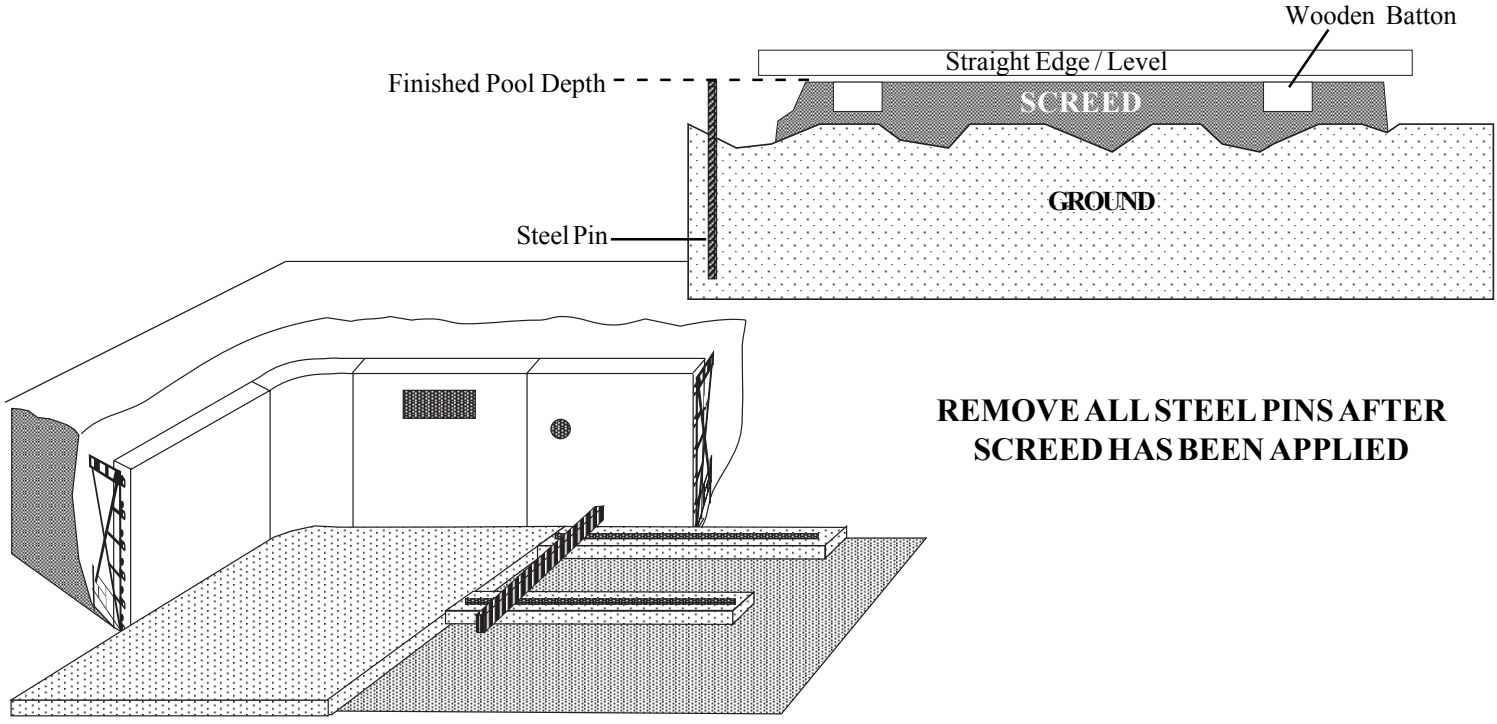
The finished pool depth after screeding should be 2" less than dimensions 'C' in the Schedule of Dimensions (page 4) and should cover the bottom of the panels by 2". You may find that if you were to run a string line across the pool from the '2" mark line that the depth will vary from 2" - 4" in places. This is quite acceptable, as some soil conditions will not enable you to achieve a perfect level floor when excavating using a mechanical digger.

2. Start by placing a line approximately 3' of screed material on one side of the pool structure and another line approximately 4' apart' (see dia. below) Insert a steel pin to the finished depth of your pool in all four corners of the floor area if you have decided to have the 5ft depth option.

It is a good idea to level in 2" x 1" wooden battons across the pool floor in sections to act as a guide and to maintain the correct depth (see dia. below). The screed should be **firmly tamped i**nto place using a **Wooden or Plastic float** and finished to a semi-smooth level surface. **It is advisable to work in small amounts at a time. Remove Wooden Battons as you progress along the length of the pool.**

You should now be able to put a spirit level across the two screed lines. The liner is not tailor made to the exact size of your pool dimensions. Therefore, a tolerance level of 1/2" in the finished screed is acceptable. As with all construction, it is advisable to obtain the best results as possible.

3. Immediately you have finished screeding a small area a Steel Float is used to obtain a 'plaster's trowel finish'. Applying firm pressure to the Steel Float use a forward and backward motion to make the screed into a smooth polished finish.



REMOVE ALL STEEL PINS AFTER SCREED HAS BEEN APPLIED

5' DEPTH OPTION - 24" RADIUS CORNERS

For 5' flat bottom pool depth you will have to screed the banks first. Mark 2" from the bottom of the panel and insert a Steel Pin into each corner of the pool floor at the finished floor depth.

Run a String Line to each corner pin, this will be your finished pool depth guide.

Using short pieces of battoning as a guide, apply screed material to the banks of the pool making sure that the screed does not finish higher than the String line guide or the 2" chalk line marked on the bottom of the panel .

The 24" radius corners should be formed as per fig. 7.

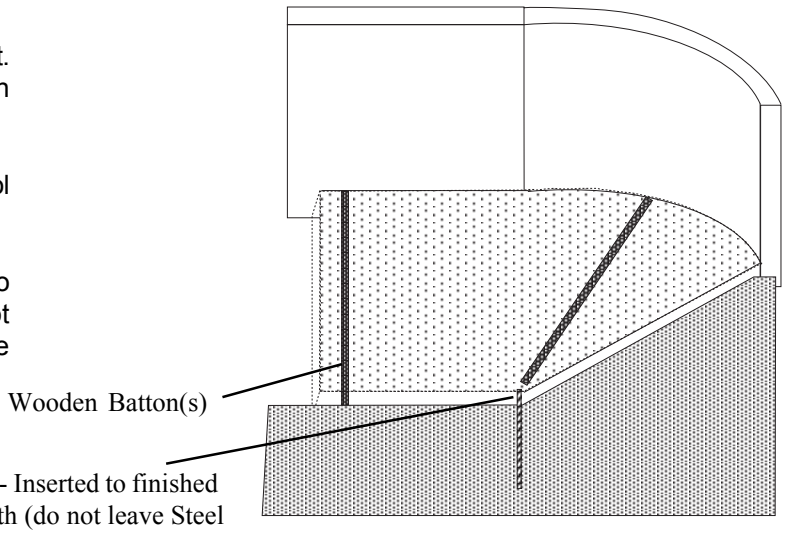


Figure 7: 24" Radius Corners

INSTALLING CIRCULATION FITTING(S):- & OPTIONAL U.W. LIGHT Stage 8

The skimmer is supplied in two parts 1:- Skimmer Body
2:- Skimmer Extension Throat

2 No. Gaskets are also supplied. Only 1 x Gasket is required, put aside for the liner installation.

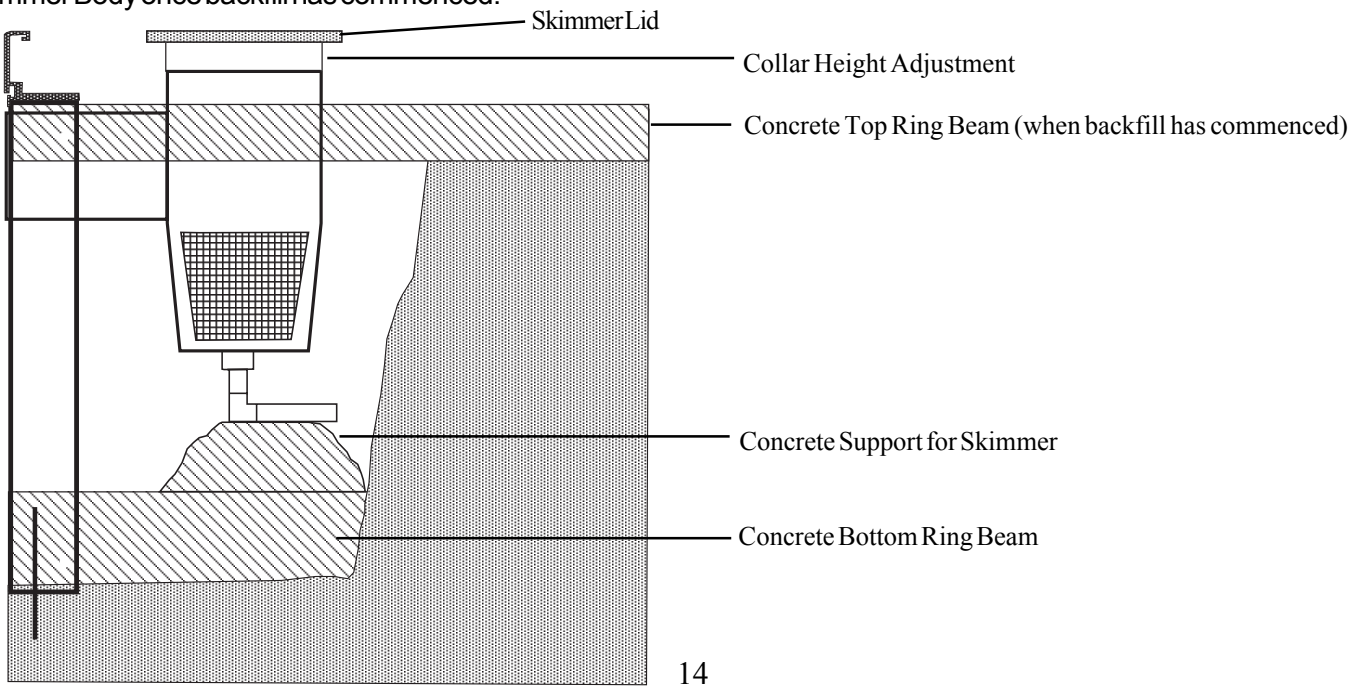
To install a Skimmer, carry out the following :-Check that a Skimmer opening has been cut out of a pool panel that will receive the Wide Extension Throat and that 6 No. Locating holes have been pre drilled. (This would be carried out prior to delivery). Place W/Mouth **Skimmer Throat** into opening (MAKE SURE THAT THE SKIMMER BODY WILL SLIDE DOWN ONTO THE SKIMMER THROAT) . Place 6 No. Bolt fixings through Extension Throat and Polymer Panel and apply Nut fixing.

Remove **Skimmer Body** from packaging. The Skimmer Body has an option of using Imperial or Metric pipe fittings apply correct stop plug (supplied) into correct socket that is not required.

Apply ABS Glue (not PVC) **LIBERALLY** to Skimmer Body and Extension Throat. Slide Skimmer Body onto Extension Throat. Once in position **be careful not to disturb Skimmer until glue has fully set (24Hrs).**

Using necessary plumbing fittings plumb skimmer line back to plant room. **GLUE fittings into Skimmer Body.**

When plumbing has been completed, place a mix of concrete under **(not around)** 90 deg. elbow that is plumbed into bottom of Skimmer Body. Good support is required to prevent the Skimmer Body from subsiding. Concrete will also surround and support top of Skimmer Body once backfill has commenced.



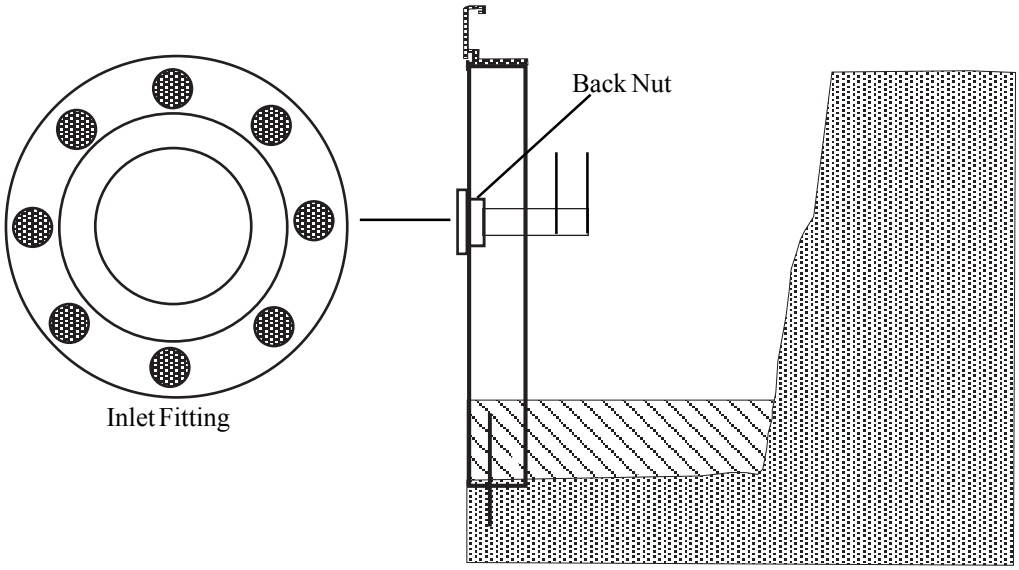
INLET FITTINGS

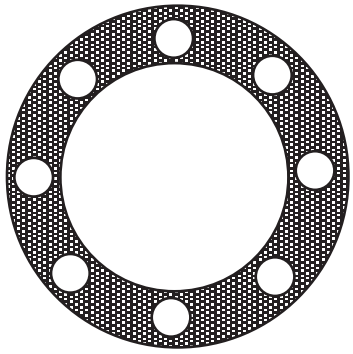
Push each Inlet fitting into the predrilled holes in the Polymer panels. Apply the Backnut onto fitting and hand tighten the back nut. Use a wrench to tighten one additional full turn (there is no need to over tighten, no water can leak throughout this fitting).

NOTE: Put aside the Faceplate, Clamp plate, 4no. Screws and 1 x self adhesive gasket until you are ready to instal the liner.

IMPORTANT: when installing the plumbing line, utilise the Polymer Braces by placing the pipework through each brace, this will prevent any pipe movement when backfill commences.

When Backfilling commences, make sure that the inlet fittings are supported by concrete. Apply concrete underneath (not around) the inlet fitting.




Inlet Gasket (1 x required only)

CERTIKIN UNDERWATER LIGHT (IF SUPPLIED)

The **main body or niche** of the underwater light is installed in the same way as the inlet fittings.

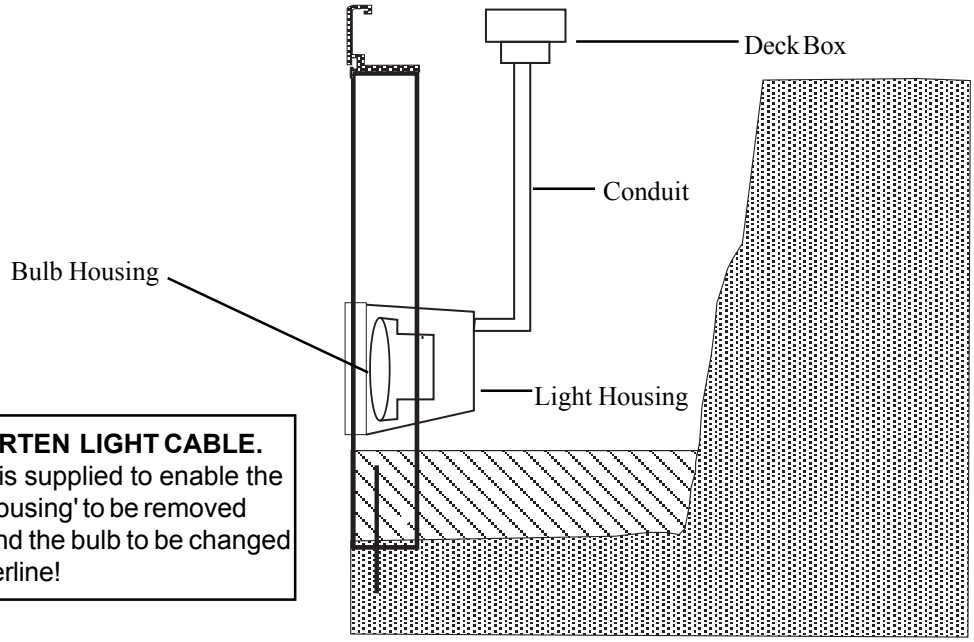
Install the Light Housing into the precut hole using the four locating screws.

Connect Cable Conduit to Light Housing and Deck Box (electric junction box). Temporarily tape the Deck box to the top of the pool structure. (Deck Box is to be installed level with the paving surround, this cannot be done until backfilling and concrete top ringbeam has commenced).

The 'Bulb Housing' can also be installed at this time threading the electric cable through the Conduit to the Deck Box.

IMPORTANT:- Use a qualified electrician to carry out all electrical connections.

NOTE: Put aside the Faceplate, Clamp plate, Screws and 1x self adhesive gaskets until you are ready to instal the liner.



DO NOT SHORTEN LIGHT CABLE.
Excess cable is supplied to enable the sealed Bulb Housing' to be removed under water and the bulb to be changed above the waterline!

INSTALLATION OF THE LINER:- STAGE 9 - IF THE TEMPERATURE IS BELOW 50 DEG.F WE RECOMMEND THAT THE FITTING IS POSTPONED UNTIL WARMER WEATHER PREVAILS.

IF A STEP UNIT IS INSTALLED SEE PAGE 19 PRIOR TO LINER INSTALLATION.

. 1. At least two people and preferably more are needed to install your liner efficiently.

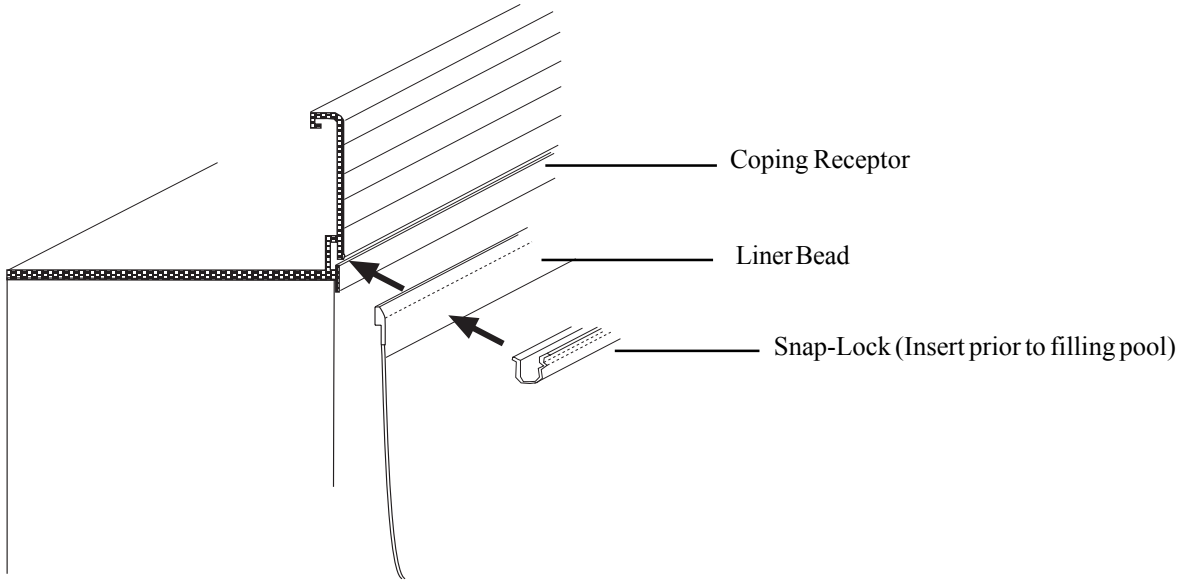
2. IMPORTANT apply packing tape provided to all panel joints, Also, seal 'Inlet Fitting' plumbing line with tape and anywhere else that **air can be sucked in behind the liner and cause loss of suction power. If the vacuum is not very powerful you may need to apply tape to the bottom of the Coping Receptor and pool wall.**

3. Thoroughly Vacuum and sweep the floor structure removing as many fine particles as possible.

4. **Now fit one gasket to the Skimmer, Inlet fittings and Underwater Light, if fitted. If gaskets are not self adhesive use a small amount of silicone sealant or tape to apply with.**

EXTREME CAUTION must be used at all times when handling the liner. Take utmost care to avoid rips tears and punctures. **DO NOT SMOKE.** Keep clear of all sharp objects including rose bushes, brambles etc. **DO NOT WEAR ANY FOOTWEAR, BARE FEET ONLY**. Leave the liner in the box when lifting into the pool.

5. Unfold the liner in the pool structure. **NEVER DRAG THE LINER ACROSS THE POOL FLOOR**. Starting at the one corner of the pool insert the white beading that is attached to the liner into the coping receptor (see dia. below). Continue inserting the beading **along the width of the pool** to the other corner. It is important at this stage to make sure that the liner is installed squarely into the two corners. Make sure that the pattern material is also vertical and not diagonal.



6. Insert the remaining beading to the two remaining corners. The liner is **not** tailor made to the exact size of the pool structure, therefore, you may find that when you are trying to insert the liner into the last corner that you may be short of material. If this happens, you will need to stretch the liner evenly along the length and width of the pool of the pool sides to gather more liner material, to enable you to insert the liner.

Tip

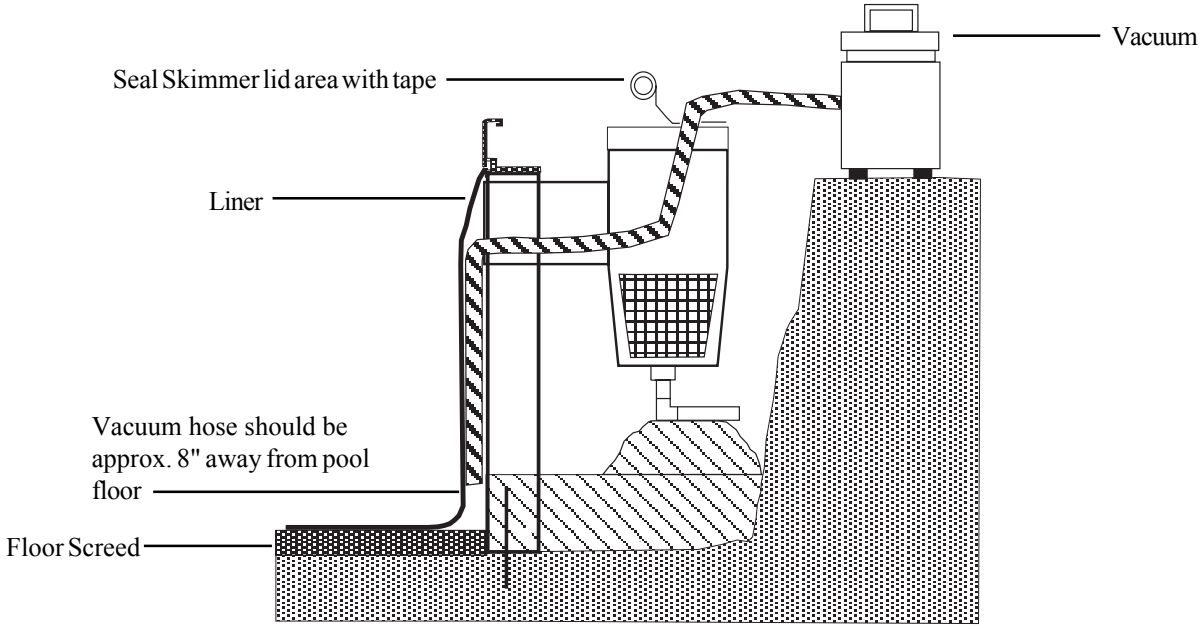
*If required, the beading and liner can be made more pliable by pouring a small quantity of hot **NOT** boiling, water on it.*

7. When the liner is completely inserted, most of the material should hang vertically along the sides of the pool structure. Any obvious diagonal folds should be adjusted by moving the liner bead in the opposite direction to the diagonal, you made find that the whole liner may have to be repositioned.

THE LINER AT THIS STAGE WILL HAVE SHALLOW CREASES THROUGHOUT THE POOL. A VACUUM IS REQUIRED TO SUCK THE LINER BACK INTO A CREASE FREE FIT.

8. Place a 'Wet & Dry' vacuum cleaner such as a 'VAX' or 'HENRY' next to the skimmer. Remove all filters in the vacuum cleaner. Check flexible suction hose for any sharp edges that might damage the liner and tape over them if necessary. Then shake the hose to remove all grit and dust.

Slide the vacuum hose through the top opening of the skimmer, guiding it along the throat of the skimmer and down between the wall panel and liner, ensuring the bottom of the hose terminates approx. 8" above the screed level. Apply tape to skimmer lid and hose preventing any suction loss. See dia. below.



9. Switch on vacuum cleaner - after about 10 - 15 minutes the liner should be vacuumed into the correct position. 95% of the creases should disappear by the suction of the vacuum. Any remaining creases should be smoothed out by adjusting manually or with the aid of a long handled soft broom. Packing creases may also be visible for up to two weeks, but will disappear.

In the event that there are still creases visible, switch off vacuum and reposition liner. The liner does not have to be pulled out of the Coping Receptor to be repositioned. Simply remove the corners and pull the liner along in the Coping Receptor.

IF YOU ARE NOT HAPPY WITH THE FIT OF THE LINER, DO NOT PROCEED ANY FURTHER, CONTACT YOUR DEALER FOR ADVICE

10. Insert Snap-Lock, this is a locking extrusion that is designed to prevent the liner ever coming out of the Coping Receptor. Always insert Snap-Lock either side of a Step Unit, if installed.

11. Now you are ready to commence filling the pool. Allow the vacuum to run continuously until the water level has risen to 3" above the pool floor. At this stage the vacuum **MUST be turned off** and the hose removed from behind the liner, otherwise it will become trapped by the water pressure. (FOR 5' DEPTH INSTALLATIONS, TURN VACUUM OFF WHEN WATER LEVEL REACHES THE POOL WALLS)

12. When vacuum hose has been removed, commence filling until water has risen **to the underside of the first pool fitting i.e. Under Water Light or Inlet Fitting.**

Tip

There are Vacuum hoovers specifically designed to vacuum in pool liners. Ask your pool dealer if they have one that you may hire, apart from having more suction power that a conventional hoover, they are also considerably quieter!

FIXING THE GASKETS TO THE FOLLOWING:-

UNDER WATER LIGHT (Fig. 8) - Make sure that the water line is just under the light and that the liner has stretched firmly onto the floor of the pool. With your finger tips feel through the liner to **locate two of the 12 holes** and make a small hole with one of the screws (it will be easier to do this in the pool).

Now align 'Clamp Plate' with the two holes you have just marked in the liner. Insert the two screws and tighten halfway. Insert and tighten the remaining screws. Start by tightening one screw at 12 o'clock then one at 6 o'clock to enable the Clamp Plate to secure evenly. Using a **sharp 'Stanley Knife'** cut the liner **inside** the Clamp Plate. Push on light 'Face Plate' to cover screw holes.

INLET FITTINGS (Fig. 9) - Make sure that the water line is just under each Inlet Fitting and that the liner has stretched firmly onto the floor of the pool. With your finger tips feel through the liner to locate one of the 8 holes. Make a small hole with one of the screws (it will be easier to do this in the pool).

Using a sharp 'Stanley Knife' make a star incision into the middle of the fitting. Now align the inlet 'Clamp Plate' with the hole you have just marked in the liner. Insert the three remaining screws and tighten evenly. The incision will allow the Clamp Plate to fit securely into the inlet fitting. Now screw on the directional 'eye ball plate'. The skimmer can now also be cut.

SKIMMER FITTINGS (Fig.10) - With your finger tips feel through the liner to locate two of the 16 holes and make a small hole with one of the screws (it will be easier to do this in the pool).

Now align the Skimmer 'Clamp Plate' with the holes you have just marked in the liner. Insert the remaining screws and tighten. Start by tightening the Clamp Plate evenly.

Using a sharp 'Stanley Knife' cut the liner inside the Skimmer Clamp Plate. Push on light 'Face Plate' to cover screw holes.

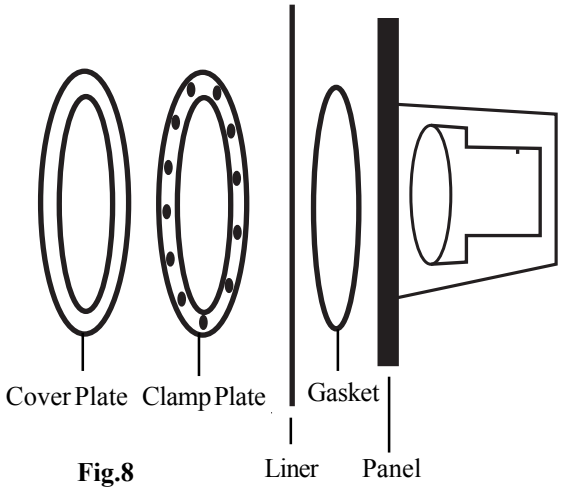


Fig.8

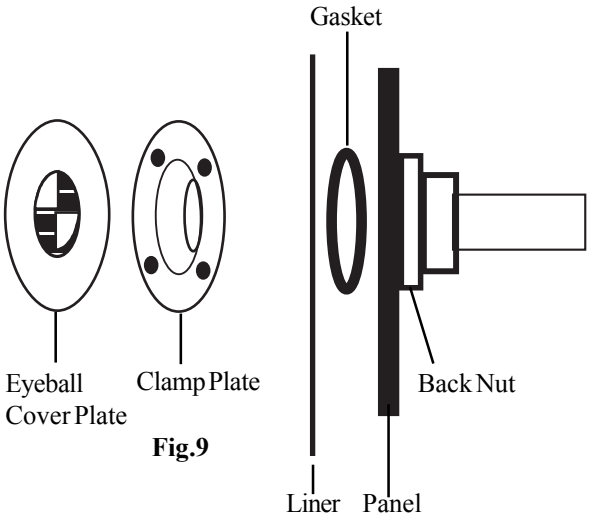


Fig.9

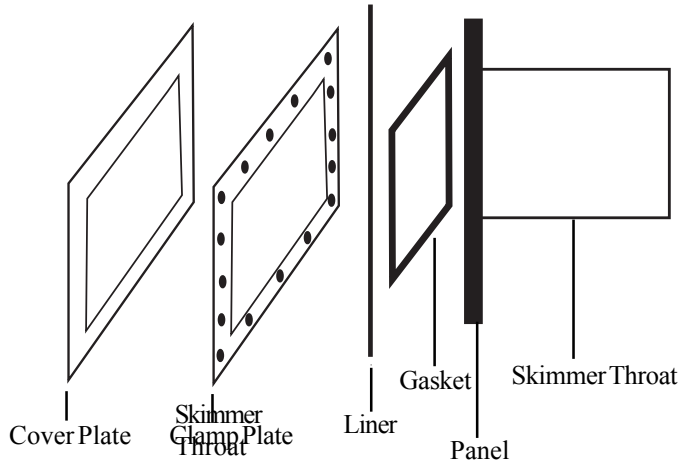


Fig.10

See page 19 if a Step Unit is Installed.

STEP UNIT- A Step Unit can be supplied with two methods of fixing the 'Clamp Plate'.

1. Bolt-on Clamp Plate. **The 'Bolt-on Clamp Plate must be removed prior to installing the liner.**
2. Screw-fix Clamp Plate. **The 'Screw-Fix' Clamp Plate must be removed prior to installing the liner.**

Construct a temporary 'T'- Shape Frame Section' out of wood and attach a strip of 'Liner Lock' approximately 5ft long. Make sure that when the 'T' section is located in the Step Unit that the Liner Lock is level with the extruded receptor in the Aluminium Coping (i.e. where liner beading is inserted). The idea of the 'T' Section is to allow the liner to be temporarily fixed into position in the Square Step. Use 'G' Clamps to secure timber framework to the Step Unit.

You should now be able to insert the liner all the way around the perimeter of the pool structure and along the opening of the Square Step. When the liner has been installed into the correct position (as per the instructions on page 13) apply a sheet of polythene over the top of the Step Unit using packing tape. This will seal the top of Step Unit and prevent any air escaping when the vacuum is switched on.

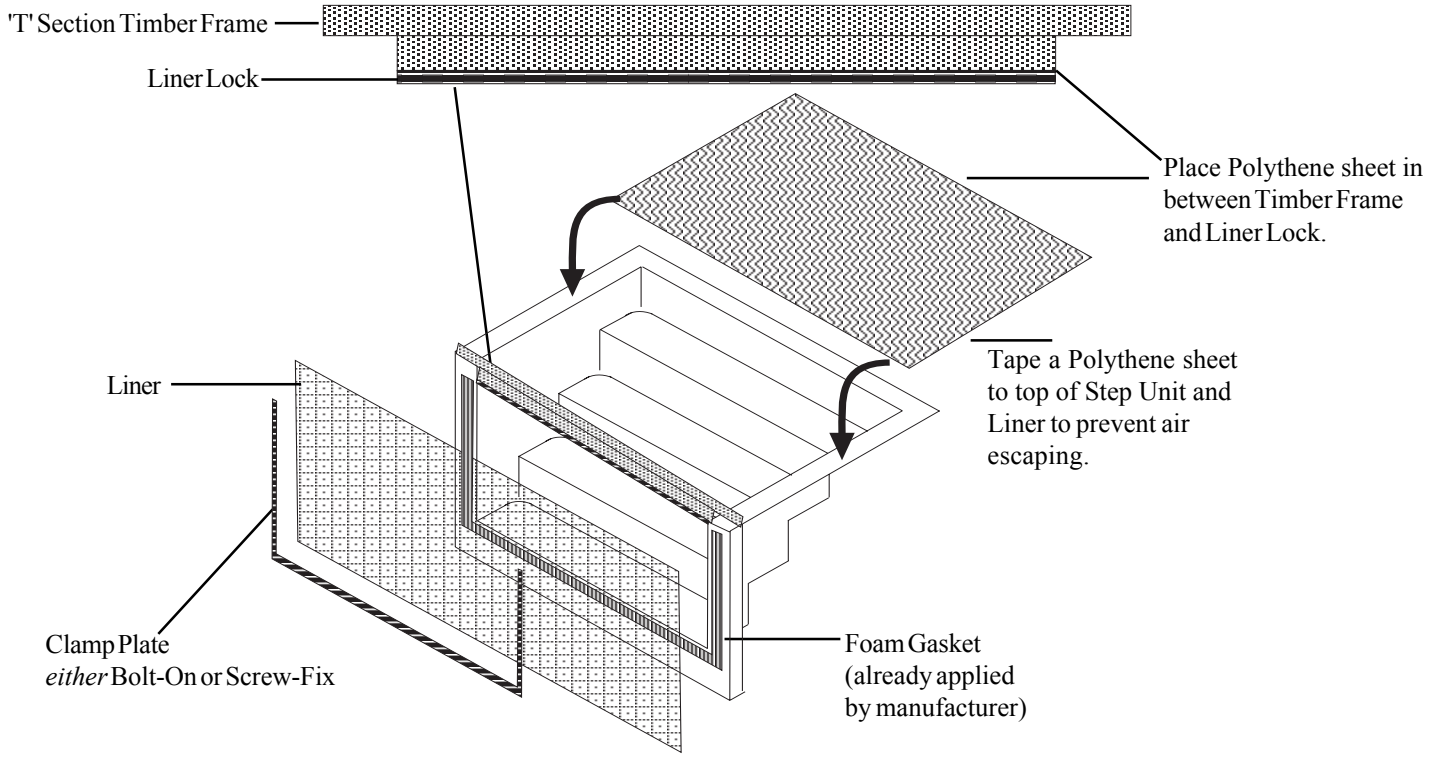
BOLT- ON CLAMP PLATE - When the liner is installed take great care not to puncture the liner when positioning around the step area.

Once the vacuum has removed all the creases and the water level is up to the underside of the 'Clamp Plate' use a sharp 'Stanley Knife' and very carefully make a small incision over each protruding bolt. Apply the Clamp Plate over the bolts, starting at the top. Tighten with a socket wrench.

Cut and remove liner in the step area. Any excess 'Foam Gasket' is best left on as this will naturally peel off when the pool is up and running

SCREW-FIX CLAMP PLATE -
Make sure that the vacuum has removed all the liner creases and the water level is up to the underside of the 'Clamp Plate'.

Using your finger tips feel through the liner to locate the top two holes on one side of the Step Unit and make a small hole with one of the screws (it will be easier to do this in the pool). Now align the 'Clamp Plate' with the holes you have just marked in the liner. Insert the remaining screws and tighten, working your way down and around the Clamp Plate one screw at a time.



POOL PLUMBING STAGE 10

Prior to installing the filter and pump, please study the plumbing layout plan as shown on page 21. Included in the pool kit is a small amount of plumbing fittings and pipework (see list below) to enable you to site the filtration unit approximately 3 metres away from the pool. However, plumbing configurations may vary in accordance with site conditions, ancillary equipment etc. Therefore, extra plumbing may be required and purchased from your dealer.

Your pool plumbing consists of a simple circulating system drawing water from the pool at one point, the Skimmer. This is the suction side of the system. The suction is provided by an electric pool pump which passes the pool water under pressure to the filtration unit to cleanse the water before returning back to the pool, via the two Return Inlet Fittings.

All pool plumbing pipes are maufactured in A.B.S or P.V.C and are 1.5" in diameter. **DO NOT** USE WASTE OR OSMA PIPE.
When using the pipe and fitting adhesive make sure that both pipe and fitting are absolutely clean and dry. All plumbings lines to and from the pools **should ideally be laid 18" below ground level to protect from frost.** It is also advisable to cover pipework with a layer of building sand to protect from sharp stones etc when backfilling.

The majority of joints are a push fit. Cut all pipework with a Hacksaw. Clean and de-bur edges with sand paper prior to applying glue. Apply liberally the A.B.S/ P.V.C adhesive to the inside of the pipe fitting and the pipe, push together and hold securely for twenty seconds while the glue fuses the pipe to the fitting.
Apart from the **fittings in the wall**, do not glue threaded fittings.

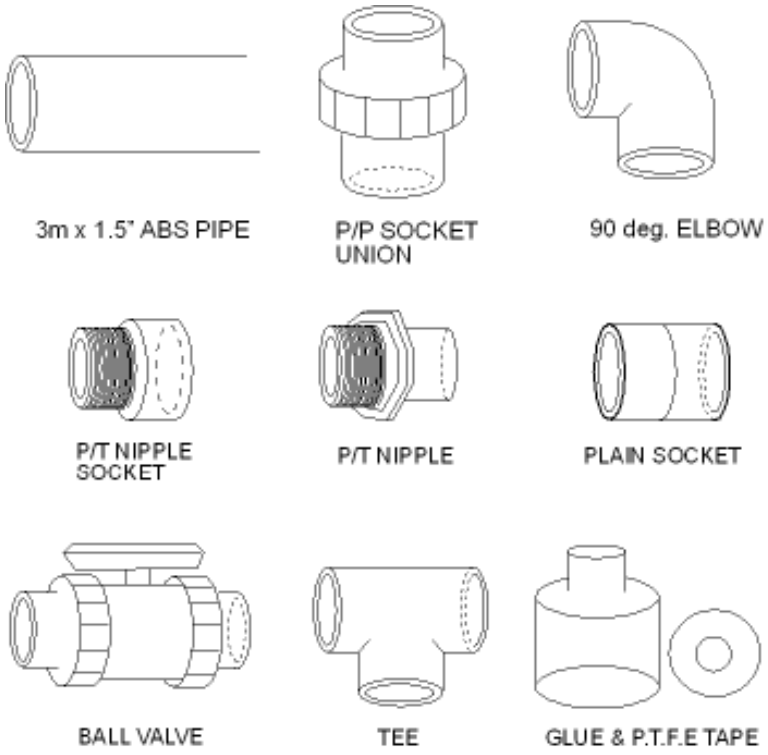
All threaded fittings must have P.T.F.E (supplied) applied to them. Apply a minimum of 20 wraps of P.T.F.E onto a threaded fitting in a clockwise direction. As an extra precaution. it is a good idea to apply a thin film of Silicone Sealant prior to screwing the fitting into a threaded socket.

Make sure that all pipework enters all the fittings correctly i.e. at least 3/4” of pipe should enter fitting.

It is a good idea to water test all plumbing lines prior to backfilling etc. Any water or air leaks that appear when filtration has started will require glued or threaded fittings to be re-made.

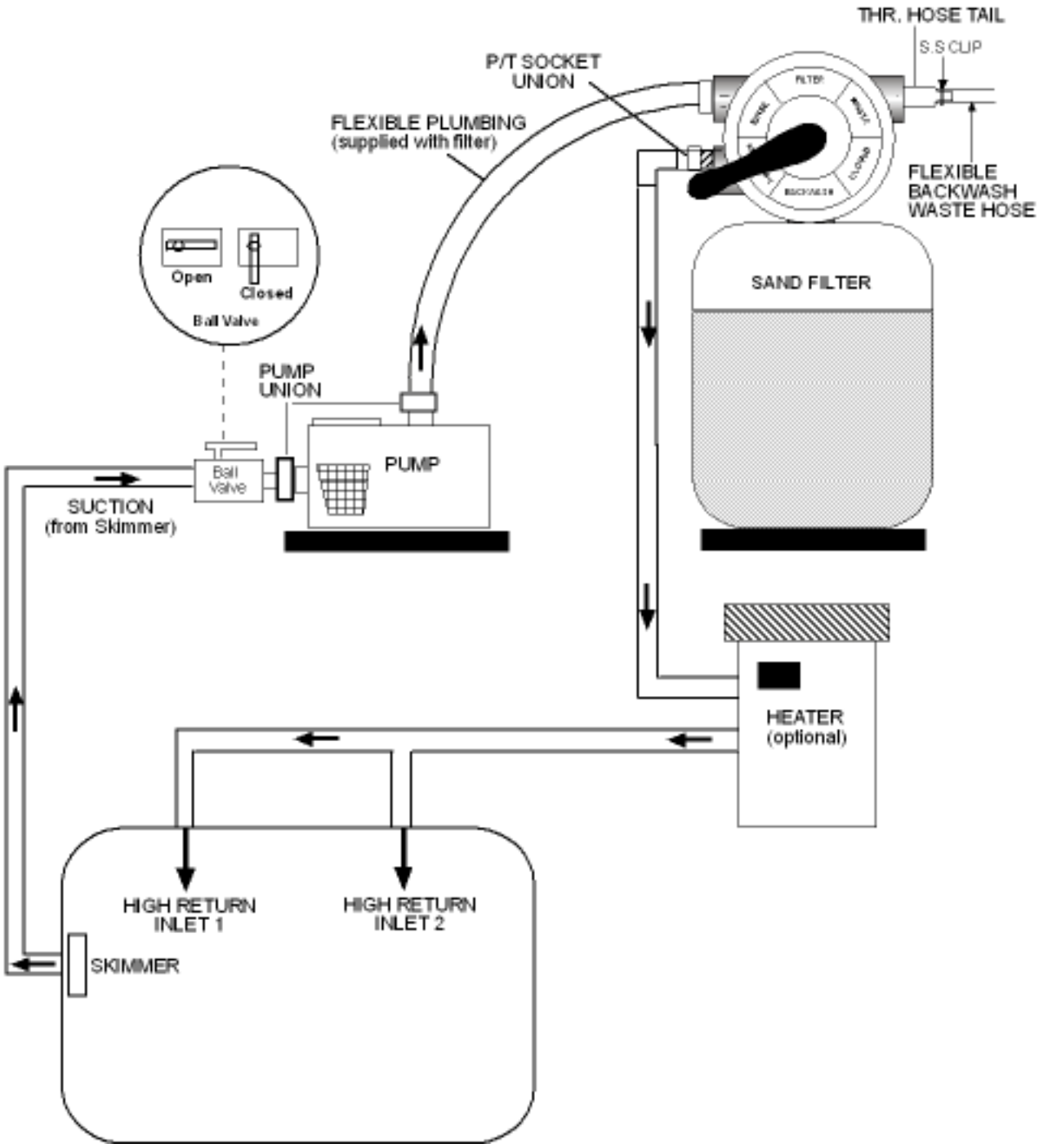
STANDARD 1.5" PLUMBING KIT

8 X 3m white pipe
1 X PT Socket Union
10 X 90 deg.elbows
2 X nipple socket
3 X p/t nipple
3 X plain socket
1 X Ball valve
1 X tee
4 X PTFE thread seal tape
1 X adhesive



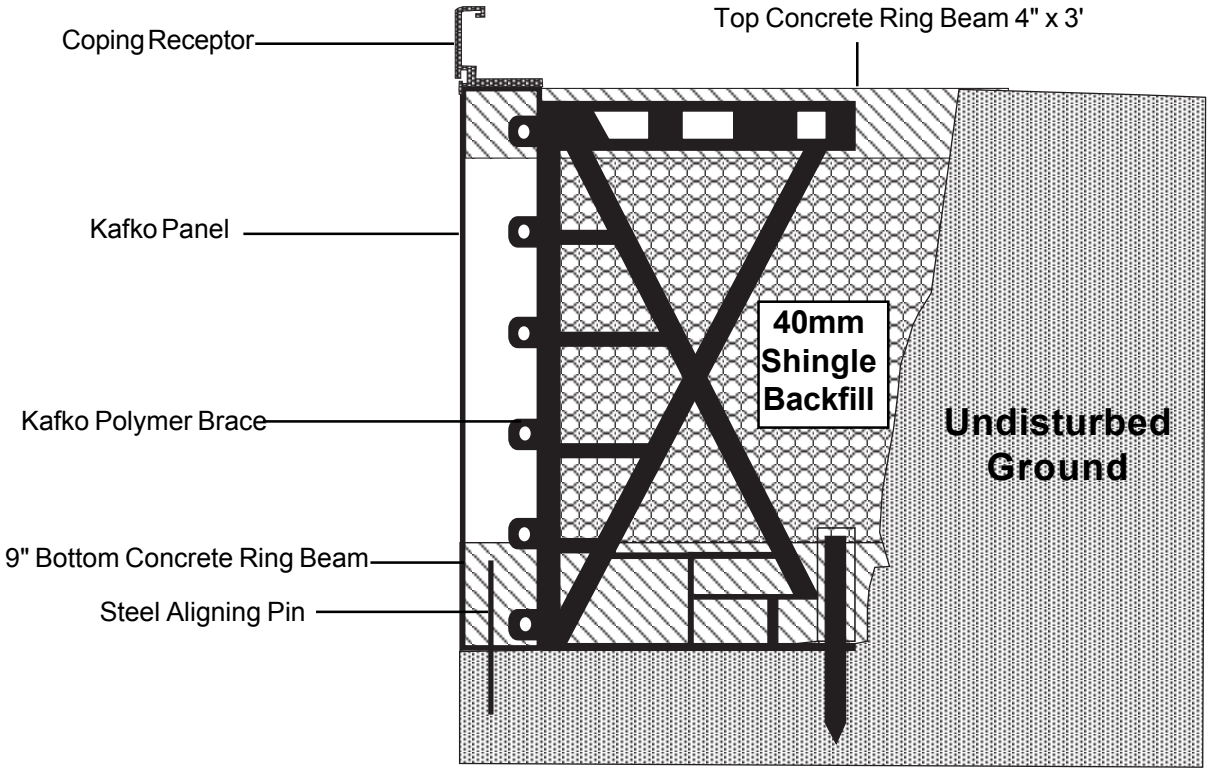
POOL PLUMBING LAYOUT

WHEN THE FILTER SAND HAS BEEN PLACED INTO THE FILTER YOU MUST BACKWASH THE FILTER FOR 90 SECONDS BEFORE LETTING THE WATER GO BACK TO THE POOL



TIP!
Dry fit all fittings together prior to gluing fittings. Once glue has been applied it will be impossible to remove any fittings! Ideally allow 24 hrs for glue to fully cure.

FINISHED POOL CONSTRUCTION



BACKFILLING:- Stage 11

Once all the liner fittings have been installed it now time to start backfilling. Backfill using 40 mm shingle up to the level of the water line. As the water level rises continue to backfill, keeping in step with the water level and NOT exceeding it. Terminate backfilling approximately 4" below top of panel (allowing enough depth for a Top Concrete Ring Beam).

You will find that the water level rises very slowly and may, therefore, carry out your plumbing sequence and finalise your fittings.

TOP CONCRETE RING BEAM:- Stage 12

When backfilling has been completed pour a concrete ring around perimeter of pool structure. Minimum depth required is 4", minimum width required is 24" but in most cases it is desirable to pour a 3' oversite to cater for paving slabs.

Make sure that concrete is applied around Skimmer Body and Extension Throat for support.

Apply desired deck surround.

FITTING LADDER OR GRAB RAILS STAGE 13

1. Assemble ladder rails and treads.
2. Bolt Ladder to paving, concrete ringbeam.
3. If Wedge Anchors have been supplied these must installed when pouring the Concrete Ringbeam see manufacturers instruction.

ELECTRICAL CONNECTIONS STAGE 14

AN EARTH LEAKAGE CIRCUIT BREAKER (ELCB) SHOULD BE INCLUDED IN YOUR ELECTRICAL SYSTEM AND WE STRONGLY RECOMMEND THAT ALL ELECTRICAL WORK IS CARRIED OUT BY A QUALIFIED ELECTRICIAN.

It is advised that a electric control panel is used that will contain a pump contactor, 24hr time clock and 3 switch type fuses (Micro Circuit Breakers).

Swim & Enjoy Kafko *You deserve it*

QUICK GUIDE THROUGH YOUR EQUIPMENT

Surface Skimmer- the skimmer draws water and surface debris off the pool over a floating weir; debris is caught in the skimmer basket with the water being filtered. The skimmer basket will need to be checked and cleaned of debris on a regular basis. The water level must be maintained at least half way up the skimmer opening. Be aware that when the pool is in good use and heated evaporation can account for water loss of between 2" to 3" per week, even with the summer 'bubble' cover in place when the pool is not in use!

Return Inlet- Found in the wall about 12" underwater. This returns filtered water back to the pool.
Circulation Pump- A self-priming continuous rated pump with a pre-filter strainer pot draws the pool water from the skimmer and delivers it to the filter. The strainer pot basket will need cleaning on a regular basis. To carry this out, ensure the pump is switched off, close the suction valve in front of the pump and turn the multiport valve to 'closed', remove the pump lid, usually held on with two thumb knobs or a clamp band. Remove the basket and clean out, replace basket, top strainer pot up with water if required, replace lid ensuring that lid 'O' ring is in place and tighten, open valve and return multiport valve handle to 'filter' and switch pump on.

Pump- A pump is 'primed' when the strainer pot is full of water. If the water level in the pool drops below the skimmer opening or you take an attached vacuum head out of the water you will loose prime.

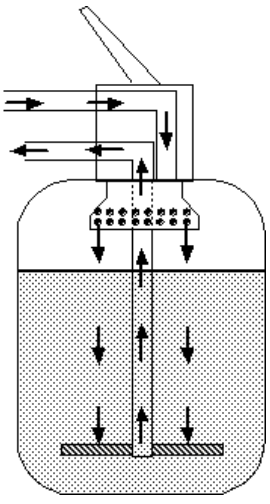
To 'prime' the pump. Ensure the pump is switched off, close the suction valve in front of the pump and turn the multiport valve to 'closed', remove the pump lid, fill strainer pot up with water, replace lid ensuring that lid 'O' ring is in place and tighten, open valve and return multiport valve handle to 'filter' and switch the pump on. The pump should prime within a few minutes, if not- repeat the above process, if this still fails call your pool supplier.

Filter & 6-Way Multiport Valve- The **filter** (sand unit) is placed by the side of the circulation pump. The **multiport valve** will found on top of the filter, easily identified by a black selector valve 'handle'.

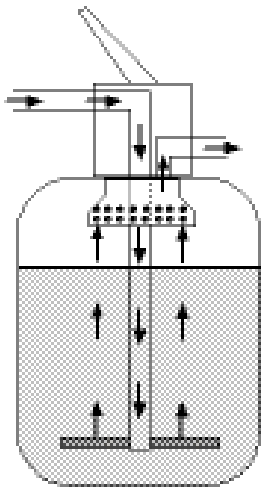
The sand filter takes soiled water from the pump and under pressure enters the top of the filter, this is then forced down through the sand, the sand traps debris and fine particles within it, allowing clean filtered water out of the bottom of the filter back to the pool - see dia. below.

The pressure gauge found on the multiport valve records the back pressure on the sand thus,as the sand becomes dirty the pressure will increase. When the pressure gauge has increased by approximately 20-30% a backwash cycle is required see dia. 2 below.

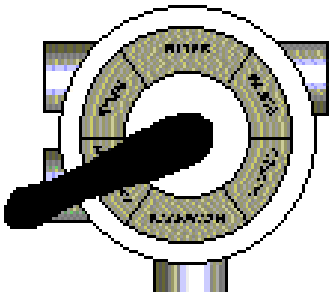
REGARDLESS WHETHER YOUR FILTER IS DIRTY OR CLEAN IT IS IMPERATIVE THAT YOU BACK-WASH AT LEAST ONCE A WEEK TO REMOVE CHEMICAL RESIDUE.



Filter cycle



Backwash cycle



6-Way Multiport Valve