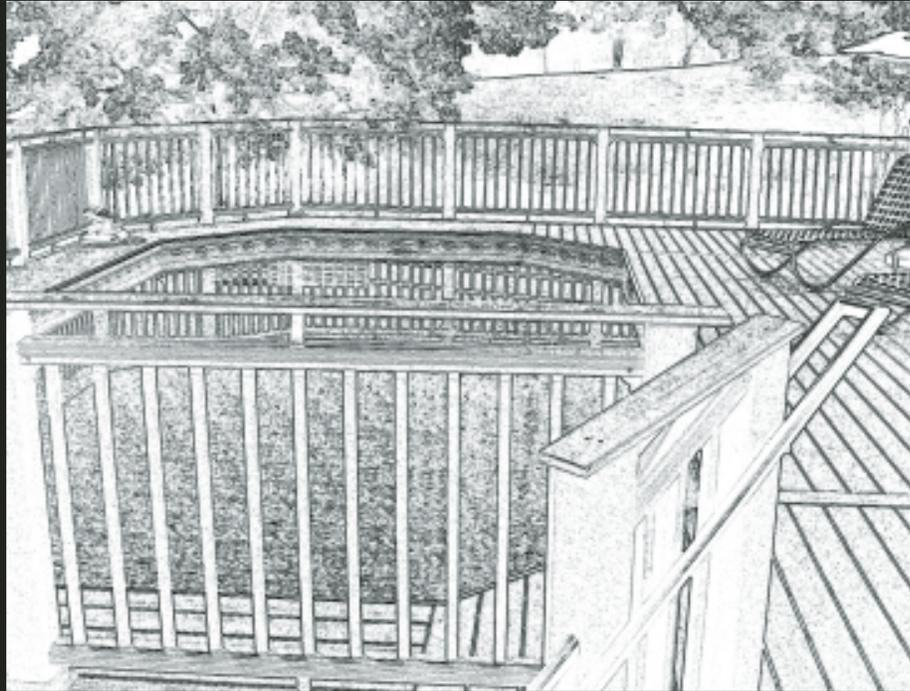


# Keystone Pool Assembly Manual



**Radiant**  
**POOLS™**



## INTRODUCTION

The Installation of the Radiant Keystone Series Semi-Inground pool is not hard, nor complicated. Although, installation conditions might differ from this guide, it is important to consult with the manufacturer before making any changes that might disturb the integrity of the pool. Failure to follow these instructions will void all warranties. Read and follow all manufacturers' instructions including accessories such as pumps, filters, skimmers prior to starting.

### **IMPORTANT: A MINIMUM OF 26" OF THE POOL WALL MUST BE BELOW THE GROUND.**

Before you start, check your packing list to confirm that you have the correct number of parts and components. The manufacturer reserves the right to revise, change or modify construction of its pools. See packing list for pool components included for your pool. If there are any missing or damaged components, please contact your retailer for replacement.

Even though this manufacturer's pools are designed to meet or exceed industry recommended safety standards, special attention must be paid to all installation procedures that the installer performs and controls. Spend time to assure that the entire pool framework is perfectly level. Unlevel pools place extreme pressures on the pool walls. An earth mound or pool cove must also be installed. This keeps the pool liner from creeping out from under the pool wall. Be sure to follow these instructions. As with any major home project, installer and/or homeowner is responsible for following all local laws, ordinances and codes. A checklist is provided below as a guide for these considerations.

With proper installation, care and maintenance, this Keystone Series Semi-Inground Residential Swimming Pool from Radiant Pools will provide a lifetime of fun and relaxation for the homeowner.

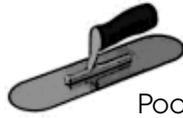
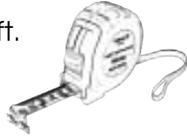
Radiant Pools offers a non-prorated, lifetime guarantee on the entire pool against manufacturing defects. Walls, coping, structural supports and channels are guaranteed against defects due to faulty workmanship or defects due to manufacturing for as long as you own your home. Compare our warranty with any other pool manufactured.

Engineering, innovation and efficiency make the difference. It's simply brilliant.

✓ <b>INSTALLER/HOMEOWNER CHECKLIST</b>	
	Obtain building permit if required.
	Local building and zoning requirements
	Electrical requirements
	Fencing requirements
	Backwash (waste water) requirements
	Check availability of utilities.
	Call before you dig ( <a href="http://www.digsafe.com">www.digsafe.com</a> ).
	If pool has steps, read the step manual.
	Disposal of excavation materials

# TOOLS NEEDED

Tape measure, 100ft.



Pool trowel



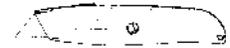
Flint File



Transit



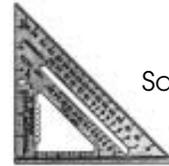
Hose with spray nozzle



Utility Knife



Level



Square



Long handled pointed shovel



Short handle square shovel

Cloth rag



Socket Set



Rubber Mallet



Coping Saw

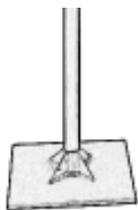
Pick or Mattock



9/16" Open End Wrench



Power Drill



Tamper,  
10 or 12 in. Square



Screwdrivers,  
Flathead and Phillips



Shop Vac

Rake



14" Channel Locks

Masonry Sand



Soft bristle broom



PVC Pipe Cutter



Wheelbarrow

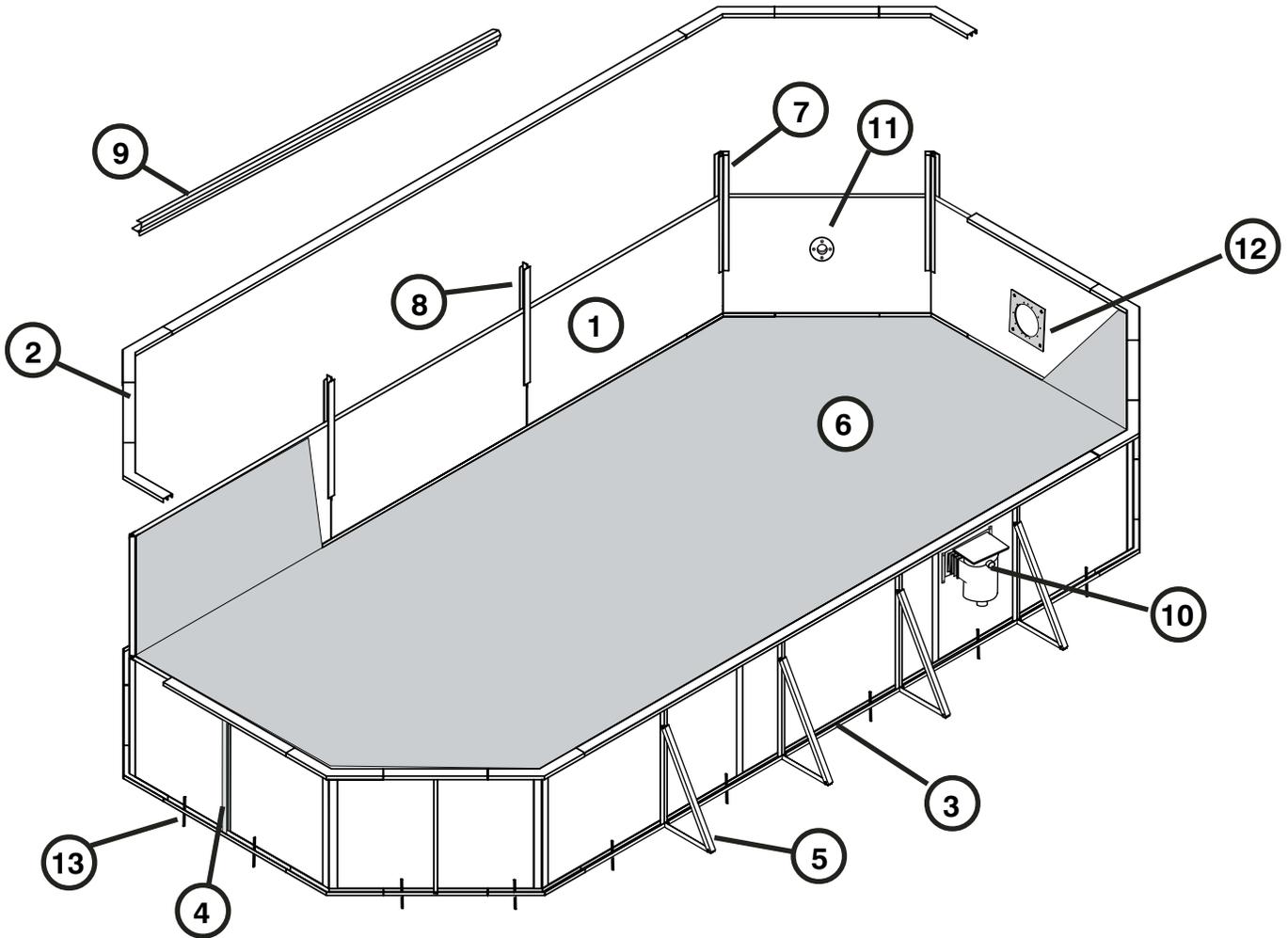


Hand Broom

Extension Cord



# KEYSTONE SERIES POOL COMPONENTS



#	COMPONENT
1	Straight Wall Panel - Form straight sides of pool.
2	Top Channel - Support top of straight walls and provide attachment for coping.
3	Bottom Channel - Provide base and structural support for straight walls.
4	Backbraces - Connects top & bottom channels together.
5	A-Frames - Fasten to backbraces & imbedded in concrete for stability.
6	Liner - Fits inside of pool to form a watertight skin.
7	45° Corner Connector - Used at corner joints to join walls together.
8	Panel Connector - Join straight panels together.
9	5/4 Wood Receptor Coping (optional) - Secures liner, receives decking
10	Skimmer Assembly
11	Return Fitting
12	Light Niche Mounting Plate (optional)
13	15" Rebar - to stabilize bottom channel

## IMPORTANT: BEFORE YOU BEGIN

The selection and preparation of the pool site is your responsibility. The manufacturer can only suggest the proper techniques, indicate the important considerations and emphasize the precautions and cannot be held responsible for damages to your pool that may result from failure to carefully follow all pool specifications.

All Radiant Pool components are engineered to provide a precise fit. It is very important to handle all components with care. Prior to assembly, all pool components should be free of sand, mud, dirt and debris of any kind.

We recommend a small broom or shop-vac to maintain a clean track system throughout the installation process. In addition we recommend a damp cloth be available in the event that any dirt or debris finds its way to the panel surface.

## CHANNEL ASSEMBLY

The bottom channel, once assembled, creates the framework for all remaining assembly and must be done first. Both top and bottom channels come with welded extensions at one end to connect tracks together.

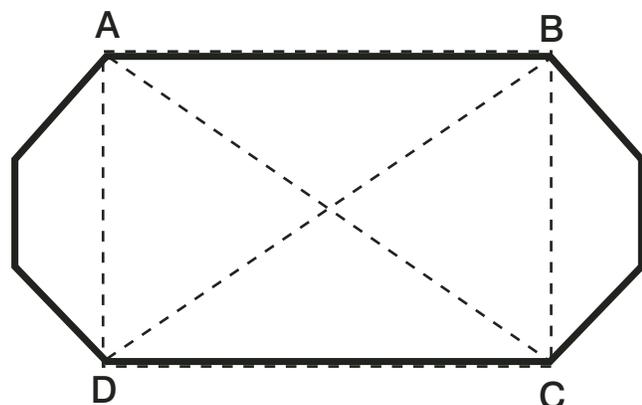
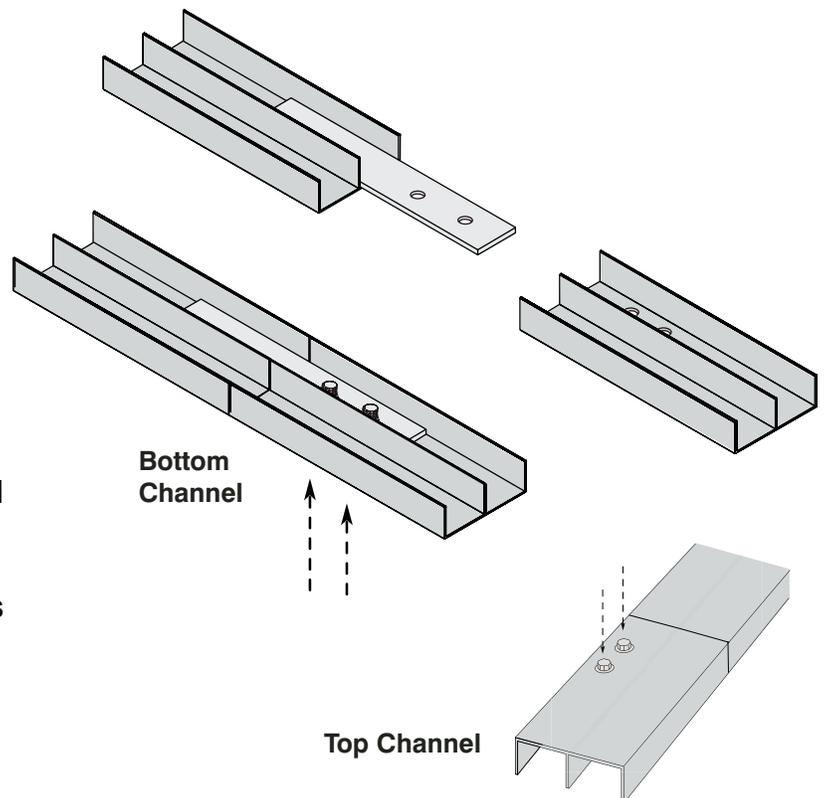
To assemble, align holes on extension over holes in channel track. Insert  $3/8$ " bolts with  $9/16$ " head with washers from beneath the bottom track using open end wrench.

For top channel, insert bolts with washers from above the channel.

### DO NOT OVERTIGHTEN!

Check bottom track for cleanliness.  
Track should be free of all dirt and debris.

Check that the bottom track is square.  
(See Dig Specifications for dimensions)  
The measurements from point "A" to point "C" and from point "B" to "D" should be the same.



## WALL PANEL ASSEMBLY

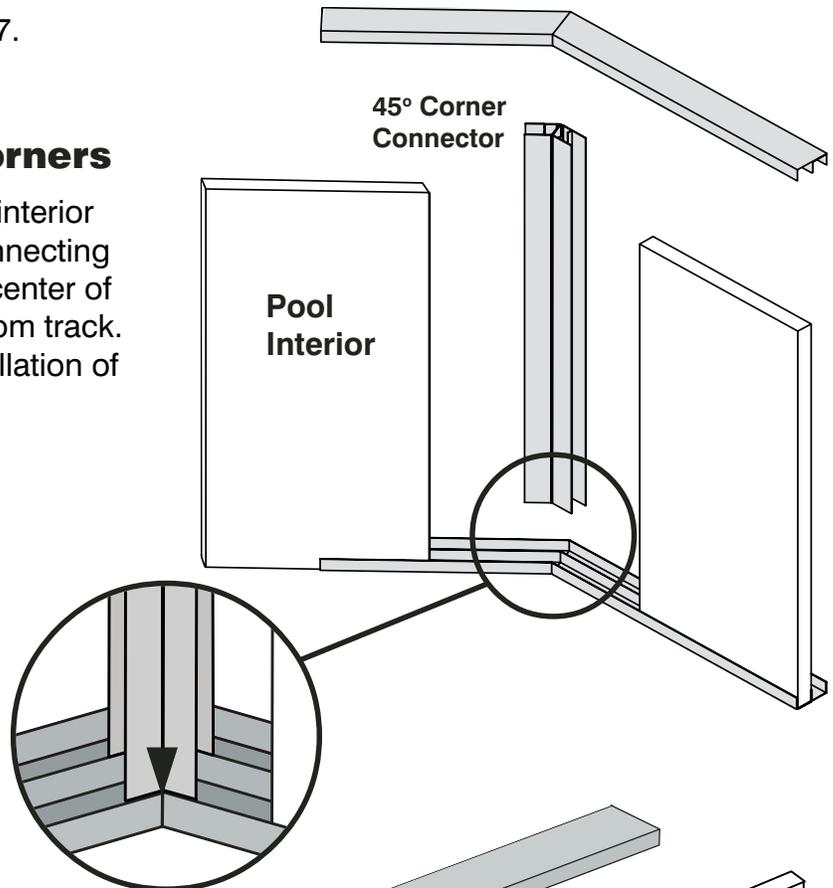
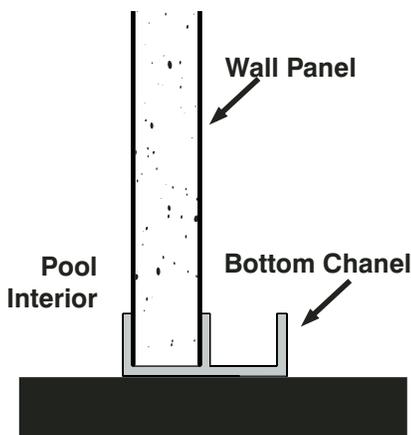
Be sure that bottom channel and wall panels are free of debris before beginning assembly.

Once bottom track is assembled, begin assembling wall panels. Always start with the end 45° corner connections first, working towards the middle as shown. It is important that the final panel assembled is a straight panel connection. As wall panels are assembled, install top channel per channel assembly instructions on page 7.



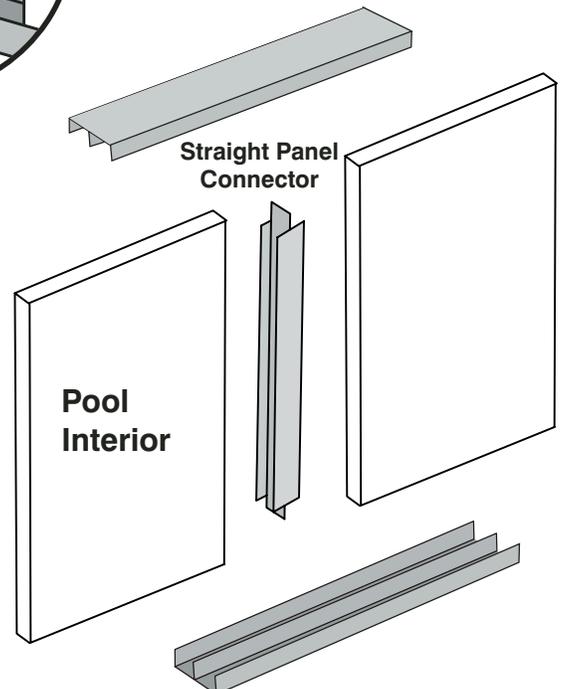
### Connecting Panels at 45° Corners

Insert panels in bottom channel in pool interior side of track as shown below. When connecting the 45° corners, make sure to align the center of the connector with the angle of the bottom track. These must be properly aligned or installation of subsequent panels will be difficult.



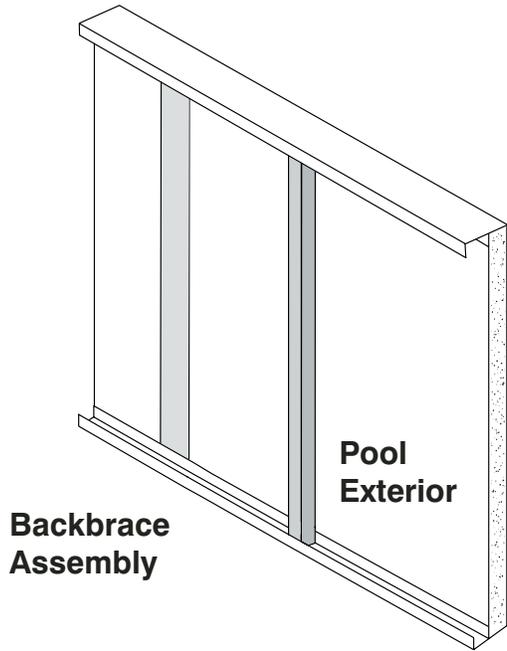
### Connecting Straight Panels

When corner panels on both ends are assembled, begin with the straight panel assembly, working towards the middle as indicated above. Slide panels into bottom track, connecting as shown at right. Continue this process with the remaining wall panels stopping before installing the final wall panel.

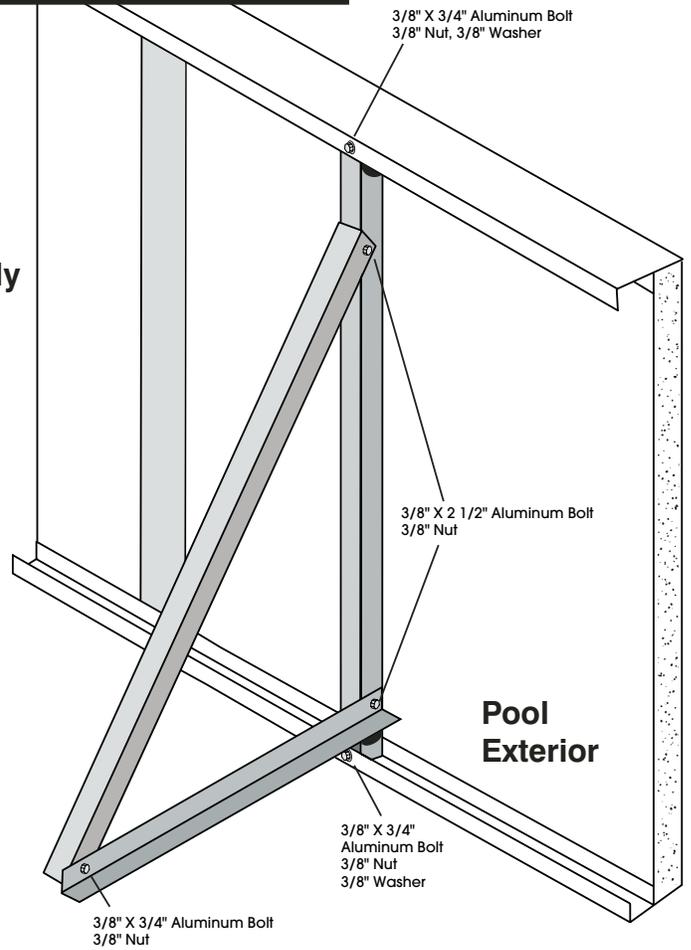


## A-FRAME & BACKBRACE ASSEMBLY

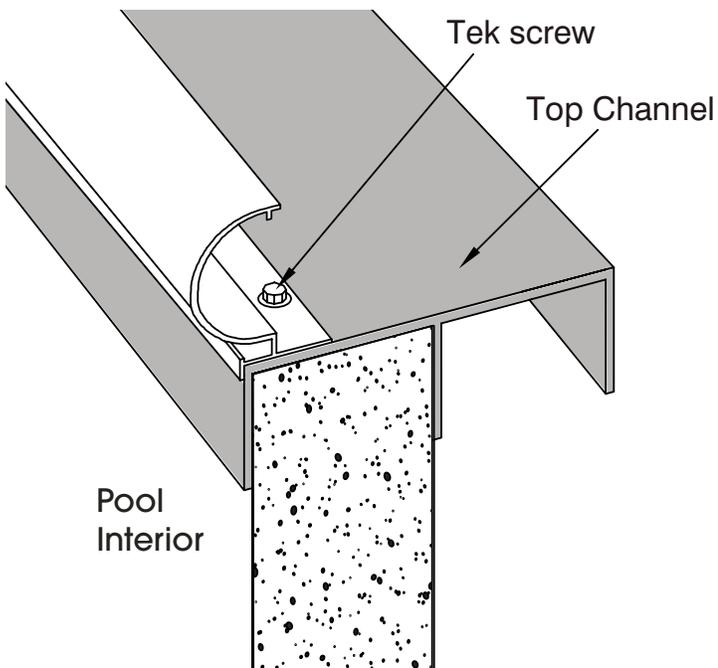
Position backbraces and attach A-Frames in their proper locations around the pool. Please refer to dig specifications for spacing and placement. Assemble as shown.



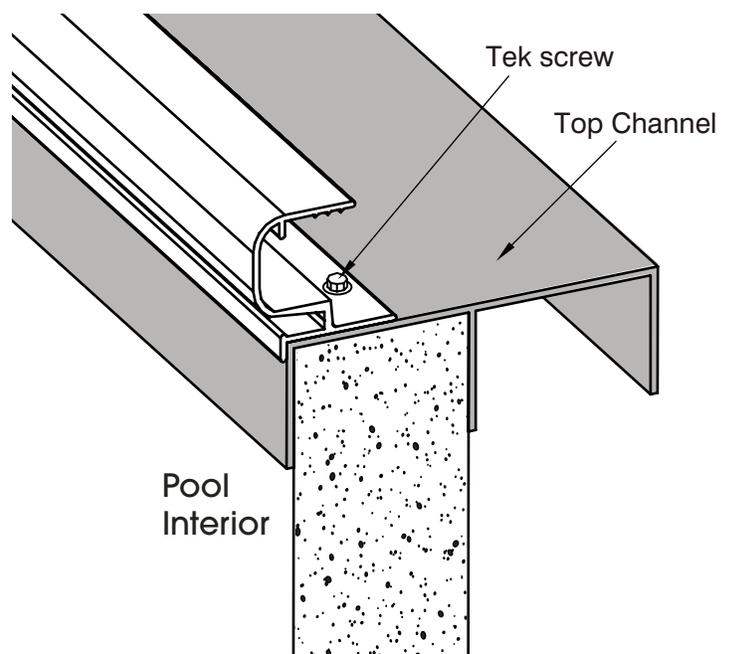
A-Frame Assembly



## COPING CONNECTION



CP-2 Concrete Receptor Coping

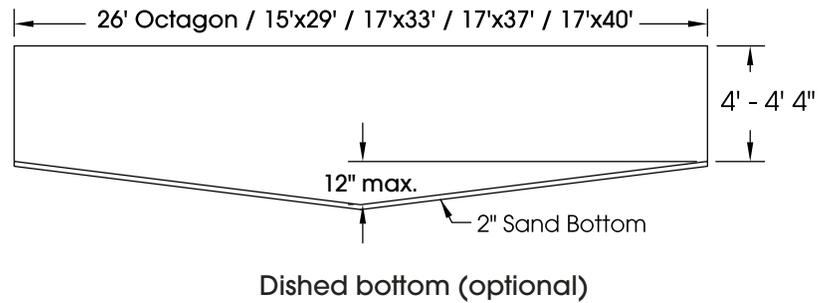


5/4 Wood Deck Coping

## PREPARING POOL FLOOR

Bring the required amount of clean and washed masonry sand into the interior of pool area at this time. Refer to the chart below for the required amount.

Pool Size	Sand Amt (cubic yds)
26' OCTAGON	4
15' x 29'	3
17' x 33'	4.5
17' x 37'	5
17' x 40'	5.5

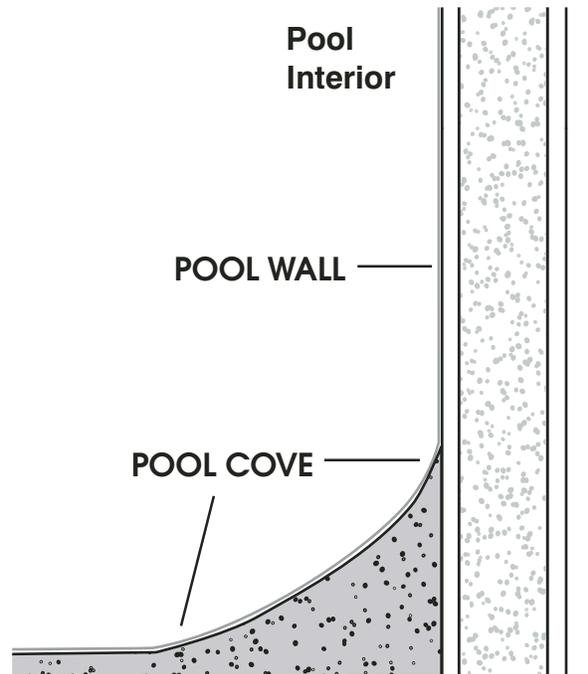


Once the sand has been placed inside the pool, install the remaining wall panel.

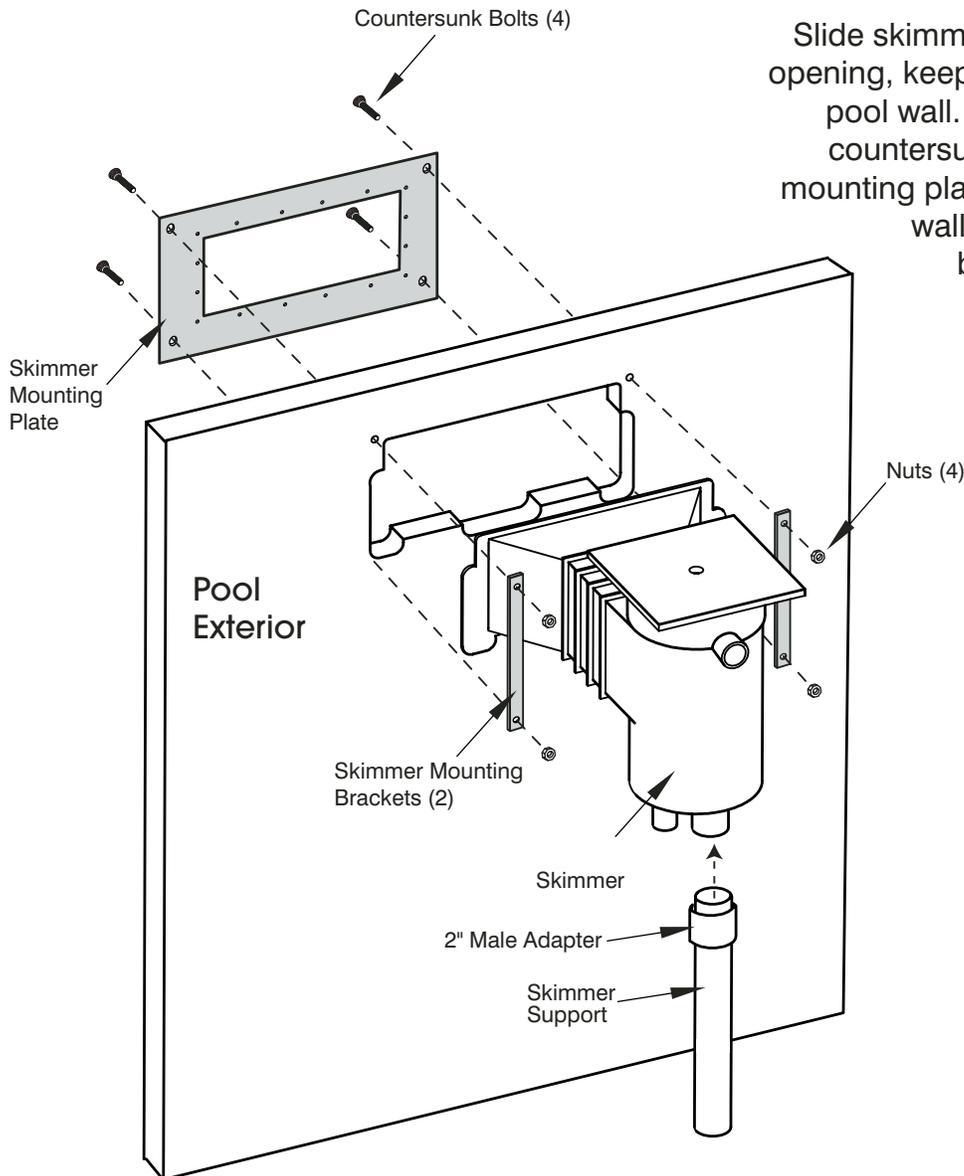
## PREPARING POOL COVE

Using the masonry sand, build a pool cove 3" to 5" high inside the wall along the entire circumference of the pool. This will prevent the liner from creeping under the wall. **This step is not optional and must be done.**

Spread the remaining sand equally across the bottom of the pool. This will give you a 2" to 3" sand base. After the cove and base are in place, rake and tamp the entire pool area. Make sure that no sand is allowed to remain on the wall above the cove. This could cause pinholes in your liner.



## SKIMMER ASSEMBLY



Slide skimmer face through pre-cut skimmer opening, keeping skimmer body on outside of pool wall. Fasten assembly by inserting 2" countersunk bolts through corner holes in mounting plate, through pre-cut holes in pool wall and through skimmer mounting brackets, securing with hex nuts. Tighten nuts to a snug fit.

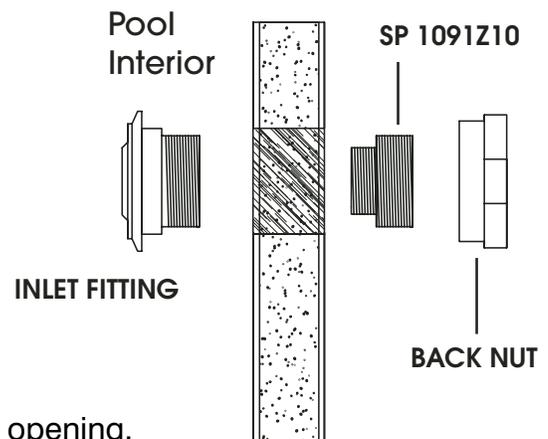
**Do not over tighten as this will damage the mounting plate.**

Install skimmer support. It is recommended that 2" PVC pipe be cut to size, depending on installation. Utilizing a 2" male adapter, attach support to bottom of skimmer as shown.

The skimmer faceplate is attached after the liner is installed.

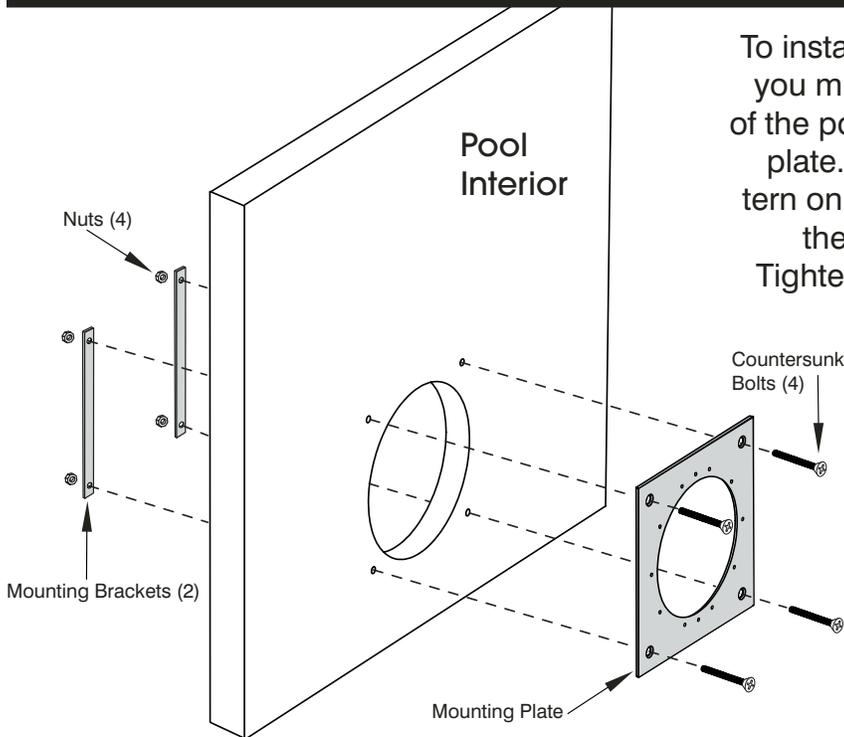
## RETURN ASSEMBLY

The return fitting is comprised of 3 pieces: inlet fitting, SP 1091Z10 and back nut. Install the return fitting by threading the SP 1091Z10 into the inlet fitting. Place the assembly into the pre-cut hole and thread the back nut onto the SP 1091Z10 fitting. All threaded connections should be prepared using a combination of Teflon tape and marine grade silicone. The return faceplate is attached after the liner is installed.



If more inlets are desired, use a hole saw to cut proper opening.

## LIGHT NICHE MOUNTING PLATE ASSEMBLY (OPTIONAL)



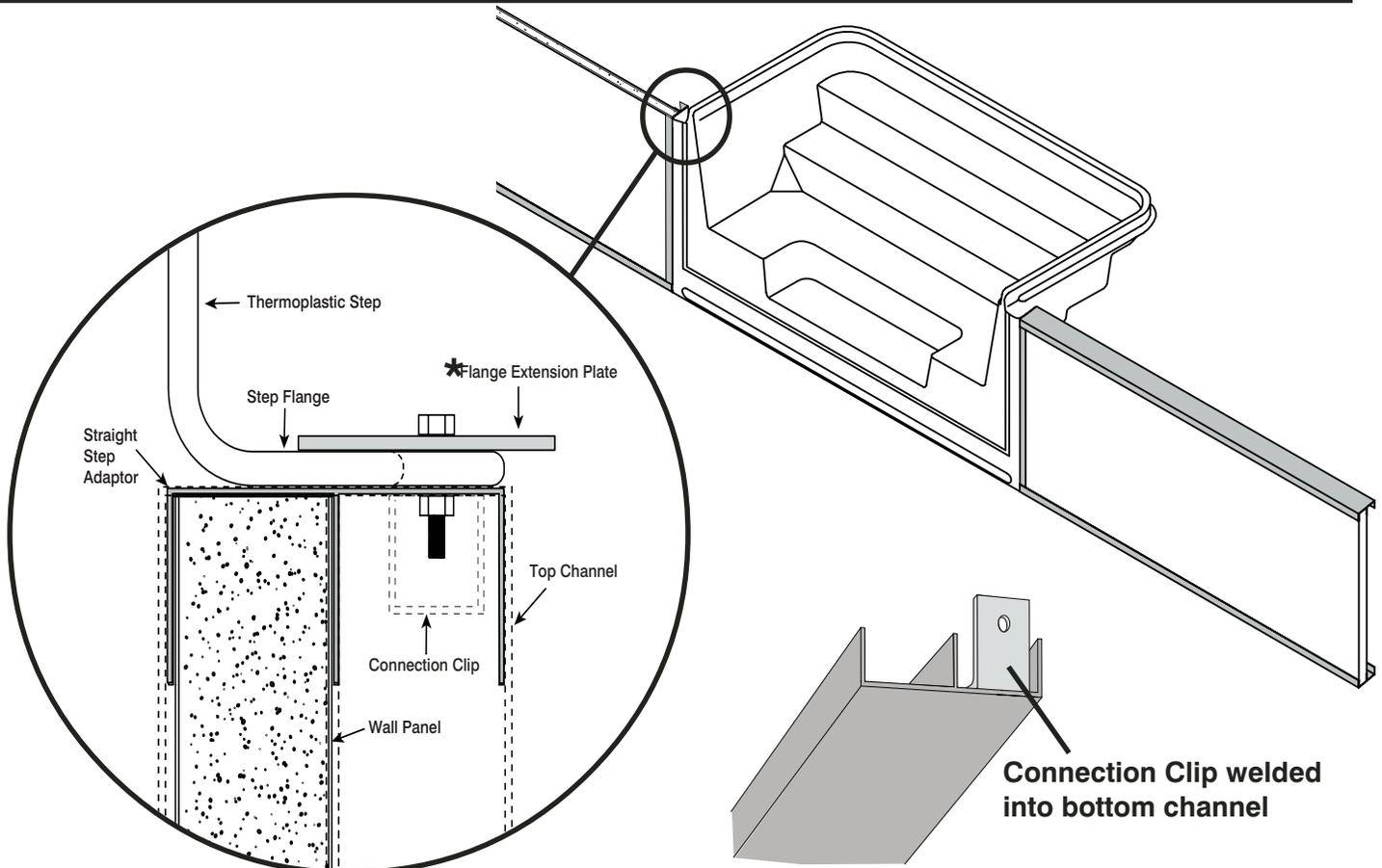
To install the light niche mounting plate assembly you must place the mounting plate on the inside of the pool. Light niche goes behind the mounting plate. Be sure to align the niche to the hole pattern on the mounting plate. Place 4 bolts through the pool and through the mounting brackets. Tighten nuts to a snug fit, but do not over tighten as this will damage the mounting plate.

Once the mounting plate assembly is complete, you can proceed to light installation.

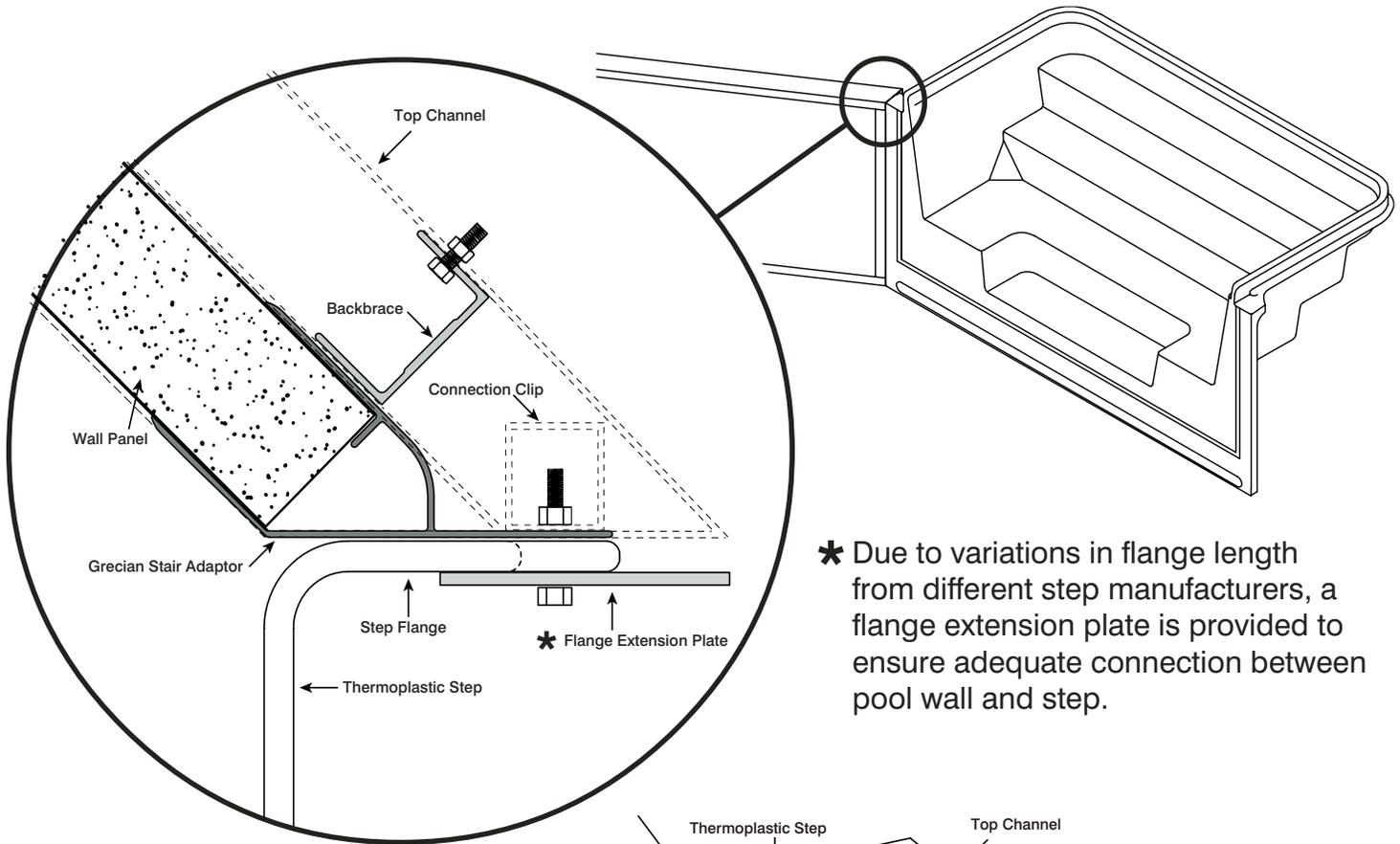
**For inground or semi-inground installation, this step must be done before you pour your concrete collar.**

Please refer to manufacturer's instructions for proper light installation.

## STRAIGHT PANEL TO STEP CONNECTION (OPTIONAL)



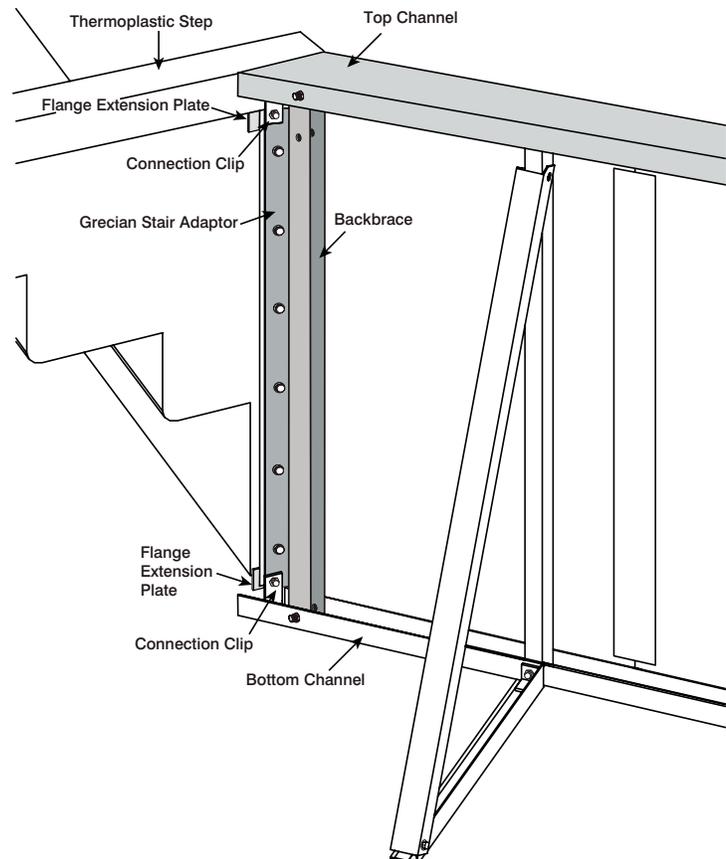
## STRAIGHT PANEL TO STEP 45° CONNECTION (OPTIONAL)



To install, temporarily clamp (using c clamp or vise grips) stair adapter to step flange. Align adaptor with front edge of step and even with the bottom of the stair flange. Use 6 pre-drilled holes in stair adaptor as a guide for drilling through step flange.

Install wall panel into bottom channel and stair adaptor. Align connection clip in bottom channel to step flange. Use hole in clip as a guide through stair adaptor and step flange. Secure with nut, bolt and flange extension plate.

Repeat with top channel for both sides of step.

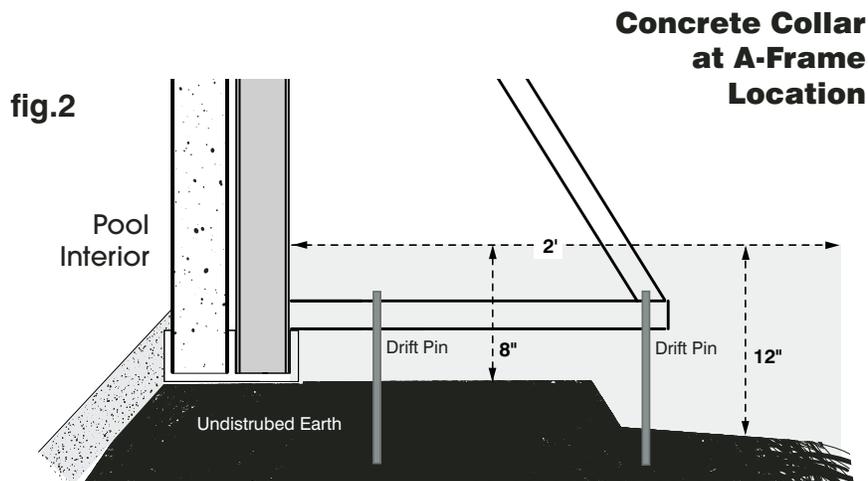
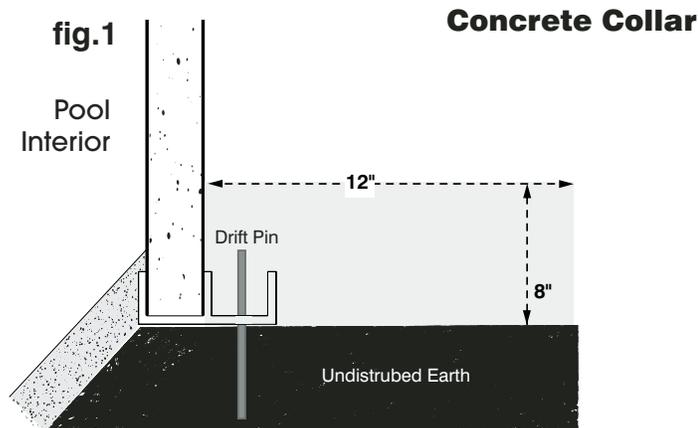


**Note: Drawings are for illustrative purposes and are not to scale. Attachment detail will vary for steps from different manufacturers.**

## CONCRETE COLLAR GUIDE

Radiant Pools recommends a 6" to 8" inch concrete collar around the entire pool (**fig.1**). It is also recommended that a thicker (8"-12") concrete collar is poured at each A-frame location (**fig.2**).

It is strongly recommended that the concrete not be poured directly on the wall or flood behind the pool wall. Exceeding 12 inches of concrete is not recommended or necessary.



### Estimating Concrete Requirements:

These are minimum estimating figures. It is recommended that estimates be on the high end as the excess can be poured around A-Frame. Combine both figures below for total yards of concrete required.

**Collar:** Pool Perimeter (ft.) x .02 = Yards required.

**A-Frames:** Approximately 1/10 (.10) yard each required.

## INSTALLING FACEPLATES

Once the water level reaches 2"-3" from the return and skimmer, install the faceplates. Carefully locate the screw holes in for each opening. Once located, carefully puncture the liner with an icepick or nail. Attach faceplate with 1" screws and hand tighten evenly till snug. Using a razor knife, carefully trim the liner out of the openings for the skimmer and return. When done, install the eyeball into the return.



Locate screw holes for faceplate.



Skimmer faceplate installed.



Trim liner from return opening.



Return faceplate installed.

## COMPLETING INSTALLATION

Please refer to manufacturers' installation instructions for all other installation components, including liner.

# IMPORTANT SAFETY INFORMATION

**WARNING: DO NOT DIVE OR JUMP. IT IS NOT DESIGNED FOR DIVING OR JUMPING. YOUR POOL IS APPROXIMATELY 4' DEEP. IF YOU DIVE OR JUMP INTO YOUR POOL YOU RUN THE RISK OF PERMANENT INJURY OR DEATH.**

Enclosed in the liner box is the safety envelope. The safety stickers must be installed as per instructions. Failure to properly install warning labels will void warranty. Alert all visitors and family of the risks associated with jumping and/or diving and point out all warning labels supplied. Failure to mount these safety labels may subject you to substantial liability in case of injury.

Your pool is designed for years of pleasurable, safe family fun. But when used incorrectly, a swimming pool can be dangerous. To insure your pool is used safely you must observe the following safety precautions:

1. Do not dive, do not jump, no rough play, no running or pushing.
2. Do not walk on the top rail. It can be slippery and is not a walkway.
3. Be sure to install all safety labels provided with your pool according to the safety instructions.
4. Keep a 50' safety rope with a flotation buoy with an outside diameter of 15" accessible in a prominent area by your pool.
5. Post near all entrances to the pool area a list of telephone numbers for the following:
  - a. Local police
  - b. Local fire department
  - c. Local rescue unit
  - d. Local ambulance service
  - e. Local hospital
  - f. 911 emergency number, if available
6. Provide fencing or an enclosure which is independent of the house as a closure around the entire pool area. The fencing must be made of durable material, a minimum of 4' high from ground level and with closures with self-latching locks to make the pool inaccessible to toddlers and uninvited guests. Make sure the gate is always closed. Be sure to follow local building code requirements for load capacity and fencing if using an aftermarket or homebuilt deck.
7. Check with your local town or municipality in regard to obtaining a building permit and/or an electrical permit. The installer shall follow the regulations for set backs, barriers, devices and other conditions.
8. All electrical outlet connections should be a minimum of 5' from the outside perimeter of the wall of the pool. From 5'-10' there should be either a fixed connection (outlet box) or twist lock connection with a GFCI. Connect power cords to a 3-wire grounding-type outlet only.
9. Severe electrical shock could result if you install your pump or filter on a deck. They could fall into the water causing severe shock or electrocution. Do not install on a deck or other surface at, above or slightly below the top ledge of the pool.
10. Do not sit, stand or climb on the pump and filter or any part of the pool structure. Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as a means of access to the pool by young children.
11. Never drink alcoholic beverages or use any intoxicants which could hinder your judgment and reflexes.
12. Never use the pool alone. All children must be supervised continuously.
13. Do not use pool if bottom is not clearly visible. At night, sufficient lighting must be available. It is the pool owners' sole responsibility to provide adequate lighting for the pool bottom, safety signs and walkways, which exceeds minimum standards of the IES of North America.
14. Be sure that all toys, chairs and tables or similar objects that a young child could climb on be at least 4' from the pool.
15. Do not use pool during electrical or rain storms.
16. See available Association of Spa and Pool Professionals (APSP) publications for more tips on pool safety.



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