

## The World's Finest Pool and Spa Products

MERLIN INDUSTRIES, INC.

2904 East State Street Ext. Hamilton, NJ 08619 Phone: 609-807-1000 Fax: 609-807-1001  
[www.merlinindustries.com](http://www.merlinindustries.com)



# Safety Cover Installation Instructions

## Getting Started

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Merlin Swimming Pool Safety covers are simply the best protection for your pool and family. With proper installation the cover provides worry-free protection. The special kits available with Merlin covers make just about every unusual pool configuration a cinch to cover elegantly. Make sure to completely review these instructions before and during safety cover installations. Your work will be sure to go smoothly, and you will quickly achieve excellent results.

### Required Tools

- Heavy duty hammer drill
- 3/4" Concrete drill bit
- Hammer through it.
- Tape measure

### Suggested tools

- Buckets (5 Gal. Plastic Work Well)
- 2" x 4" piece of wood with a 3/4" hole
- Chalk Line
- Chalk \* Extension Cords

We recommend a heavy-duty hammer drill, such as a Bosch 11222EVS, or a Black and Decker. Macho V. To avoid chipping the deck use a core drill with a diamond tip drill bit. When using a core drill it is helpful to use a template, made of a 2" by 4" piece of wood with a hole drilled in it, to keep the drill from skating and marring the deck.

### Safety Cover Hardware Included

- Brass threaded anchors (includes E-Z anchor shells and E-Z anchor screw inserts.)
- Stainless steel springs
- Buckles
- Notched steel installation rod
- Allen wrench/hex key
- Cover storage bag.
- Spring Covers

\*Before beginning cover installation procedures, count pop-ups and springs to make certain that they equal the number of cover straps. Refer to the enclosed work order.

### Special Hardware Available

- Anchor Flanges
- Y-Strap
- Short Springs
- Perimeter Padding
- Wood Deck Anchors
- Automatic Water Pump
- Anchor Stakes
- Step Riser Kit
- Window Mesh Drain Panel

### Raised Wall Hardware

- D-rings and Clips Sewn to Cover
- Raised Wall Gap Filler (3' and 6' lengths)
- Eyebolts
- Cable
- Turnbuckle
- Clamps
- Tubes (Aluminum)

### General Rules

1. The water level of the pool must not be more than 18" below the cover during snow season to provide support under the cover in case of a heavy snow load. Check the water level monthly. Letting the water level fall below 18" during the snow season voids the warranty.
2. Concrete decks should be a minimum of 3 inches to 4 inches deep to ensure that anchors are secured.
3. The cover must be used on the pool for which it was designed and made.
4. Water must never be allowed to build up on top of solid safety covers.

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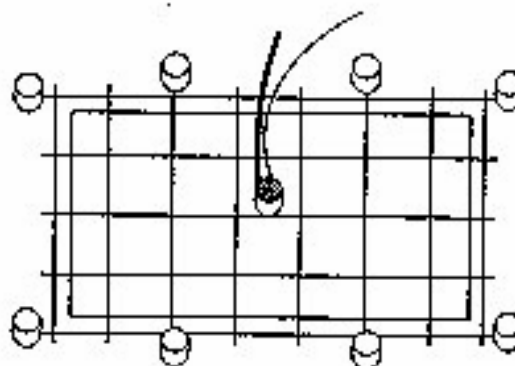
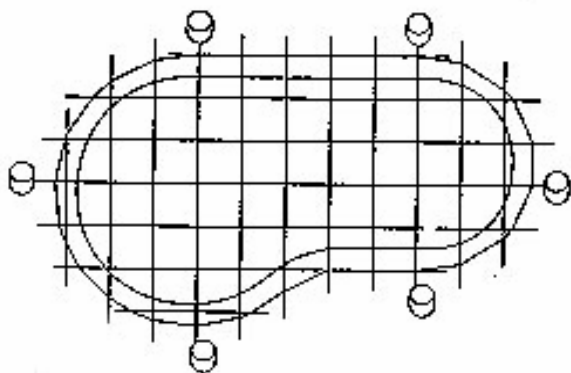
## Preparing the Safety Cover

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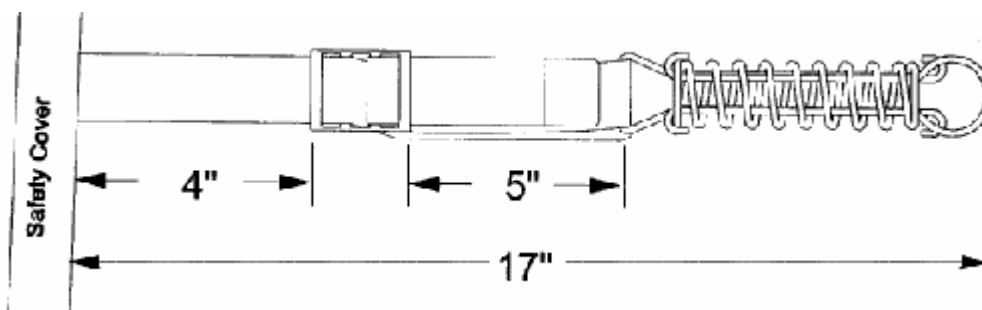


### Rectangular and Custom Pools

1. Place safety cover box on long side of pool. Remove cover from box and carefully unfold. Cover is folded lengthwise at the factory.
2. Place cover carefully on pool. (Keeping water levels up, supports the cover during installation.)
3. Temporarily secure straps with weights such as water buckets. **Place objects on straps only. Do not place weights or buckets on cover material, as damage may occur.**
4. If the cover you are installing is solid be careful to keep water from getting on top of it. If the solid cover came with a pump, set it up as soon as possible. To set up the pump, screw the base onto the pump and screw a hose to the connector on the pump. Plug the pump into an extension cord and plug the extension cord into a grounded outdoor outlet. Slide the pump out to the middle of the cover. **CAUTION:** Merlin strongly recommends that the pump is up and running at all times. Failure to do so will result in voiding the cover warranty.
5. Adjust the cover so that it overlaps the pool **evenly** on all sides and corners. Generally, rectangular covers up to 1200 square. ft. will overlap the pool by 12", rectangular covers between 1200 square. Ft and 1800 square. ft. will overlap the pool by 15", and rectangular covers over 1800 square. ft. and freeform pool covers will overlap the pool by approximately 18". Solid Covers usually have at least 15" to 18" of overlap. Overlaps may vary slightly. **CAUTION:** Be sure to check that the overlap is even on all sides of the pool, before each particular cover installation. Attach springs to all straps of the pool cover. The illustration below shows proper buckle assembly. This suggested set up, will make forward and backward adjustment possible in the least amount of time. For the cover may stretch in its first two years of use, it will be easy to adjust.



1. Carefully unfold and place safety cover on pool. Secure the cover with buckets on the straps
2. If the cover is solid without a drain panel, set up the pump.



3. Attach springs to all straps

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# Safety Cover Installation Instructions

## Marking Anchor Holes

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### Rectangular Pools

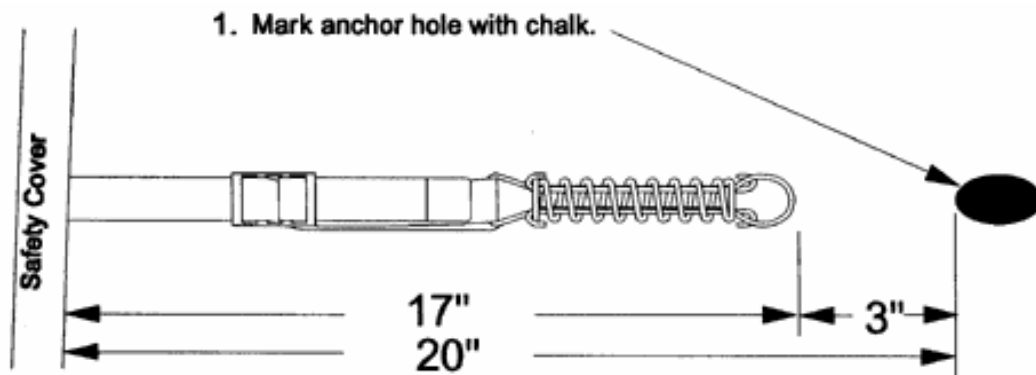
Beginning with the center straps of the length and width, mark where holes are to be drilled, approximately 20" from the pool cover edge. Once the anchor distance is confirmed snap a chalk line along the width and length of the deck to install anchors evenly and straight. (See Diag.1.) (Approximately 32"-33" from the water's edge)

### Grecian Pools

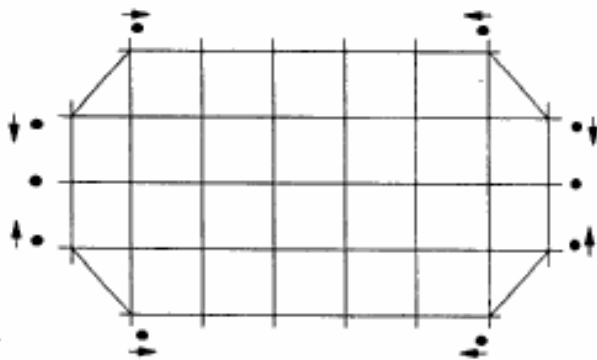
For Grecian and radius corner pool covers that have angled corners Merlin suggests the following: Mark the center and side anchors the same way that you would on a rectangular cover. Mark the holes for anchoring the straps that come off the angled corners, offset the holes slightly in towards the middle of the side of the cover. This will put the cover taut on the corner cuts, preventing wrinkles. CAUTION: take care not to offset the anchors too much, as this may cause wrinkles as well. (See Diag. 2)

### Custom Pools

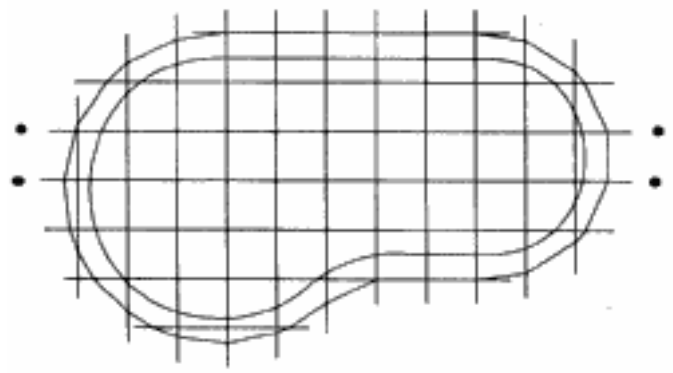
Beginning with the center straps on both ends of the pool, mark where holes are to be drilled. (Approximately 20" from the pool cover edge or providing the buckle to spring ratio looks uniform.) Pull the cover back away from the pool as evenly as possible and add about 3" back from the spring to mark the anchor point. This will then give you a 50% to 75% collapsed spring once the entire cover is installed. For Solid Covers, it's good to have a 65% to 80% collapsed spring. (See Diag.3.)



2. Angle corner straps on Grecian covers by offsetting points with arrows slightly in.



3. Initial anchor placement on Freeform covers



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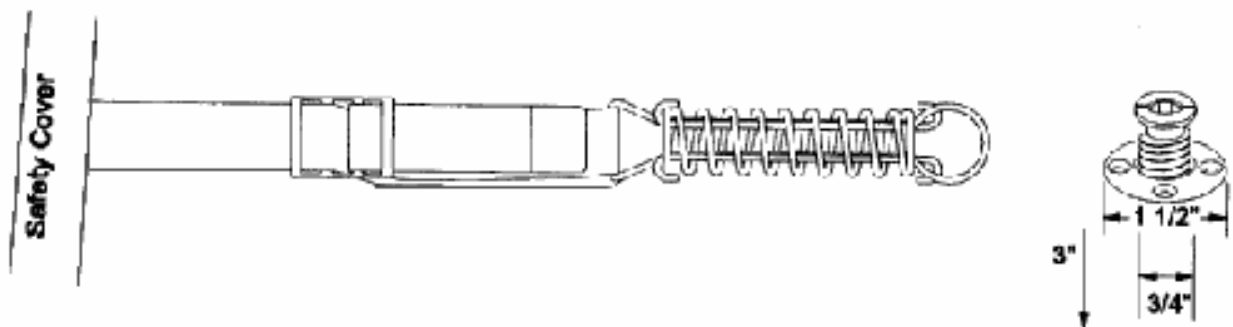
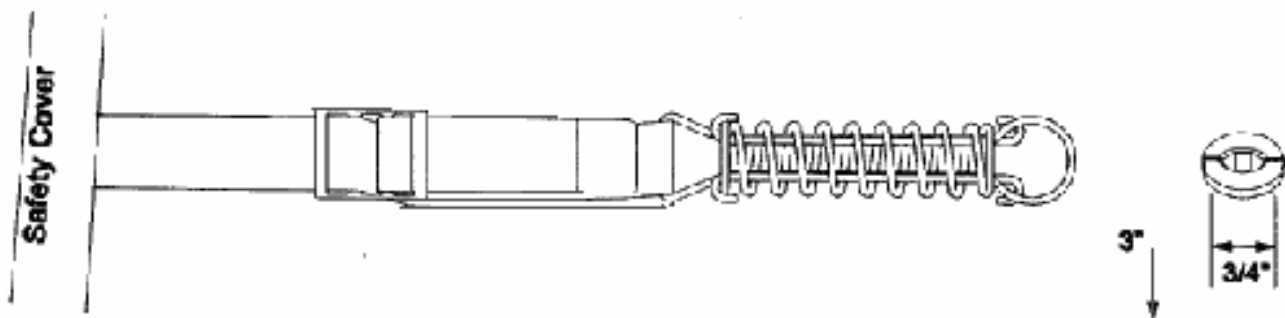


### Rectangular and Custom Pools (See Diag.1)

1. At marks for center strap anchors, drill  $\frac{3}{4}$ " diameter holes into deck to a depth of at least 3". This will allow the top of the anchor shell to sit flush with the deck.
2. Be careful to minimize the amount of dust that falls into the hole after drilling. On rare occasions, too much dust could prevent the anchor from fitting completely into the hole.
3. Insert anchor shells into holes. Thread anchor screws into shells until threads disappear and about  $\frac{1}{2}$ " of screw is visible. Tap with a hammer to fit shell firmly into place, flush with the deck.

### Pools with Wood Decks (See Diag.2)

1. At marks for center straps anchors, drill  $1\frac{1}{2}$ " diameter holes into deck, with a paddle bit, to a depth of  $\frac{1}{8}$ ". Then drill  $\frac{3}{4}$ " diameter holes at least 2" deep, or through the deck, in the centers of your original  $1\frac{1}{2}$ " holes.
2. Drop the wood deck anchors into the holes so that they fit flush with the deck.
3. Screw the anchors to the deck with the supplied Phillips head screws.
4. Thread anchor screws into shells until threads disappear and about  $\frac{1}{2}$ " of the screw is visible.

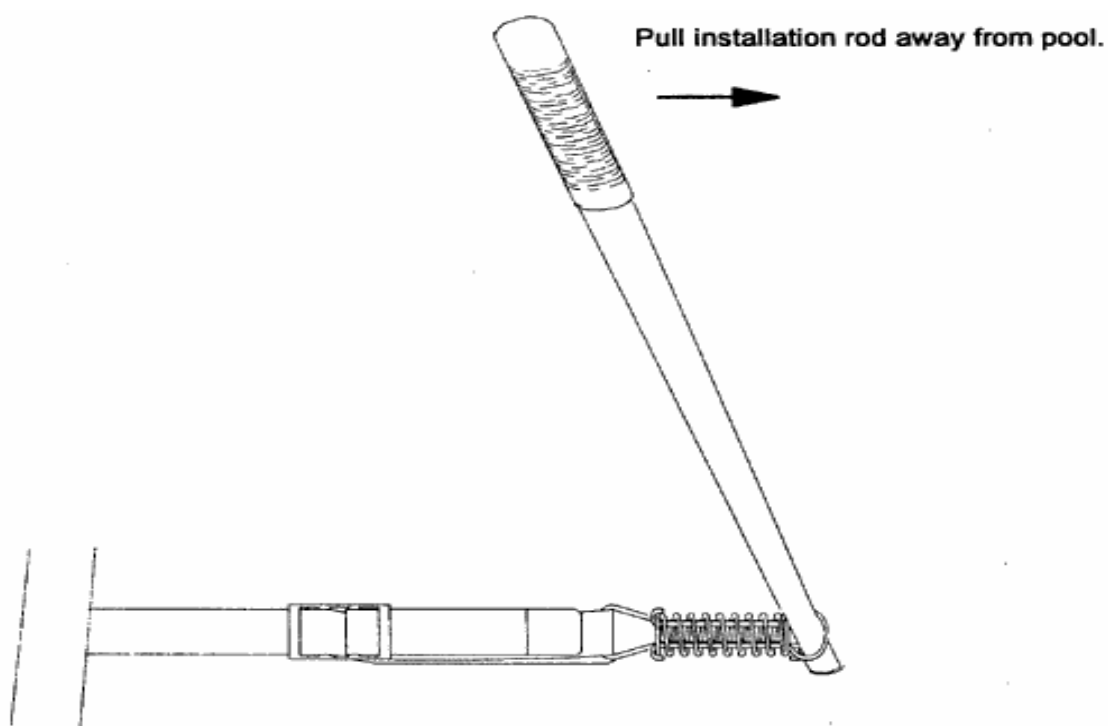




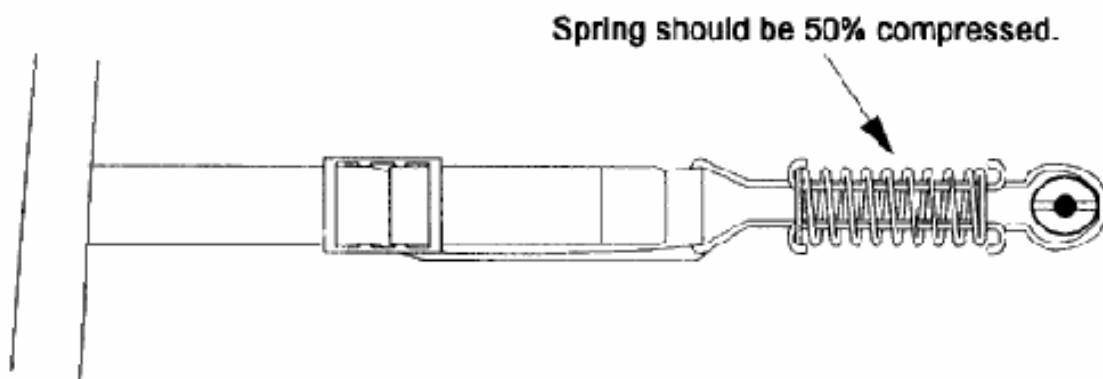
### Rectangular and Custom Pools

1. With anchors screws unthreaded  $\frac{1}{2}$ ", insert installation rod through the ring of the spring and slip the tip of the rod over the anchor.
2. Pull the rod away from the pool until the spring slides over the anchor. Turn the installation rod  $\frac{1}{2}$ " a turn to allow the spring to hook on to the anchor and then slide the rod away. For proper tension on the cover the springs should usually be compressed 50%. For very large covers and solid covers the springs should be compressed 75%.

1



2



# Safety Cover Installation Instructions

## Installation Sequence

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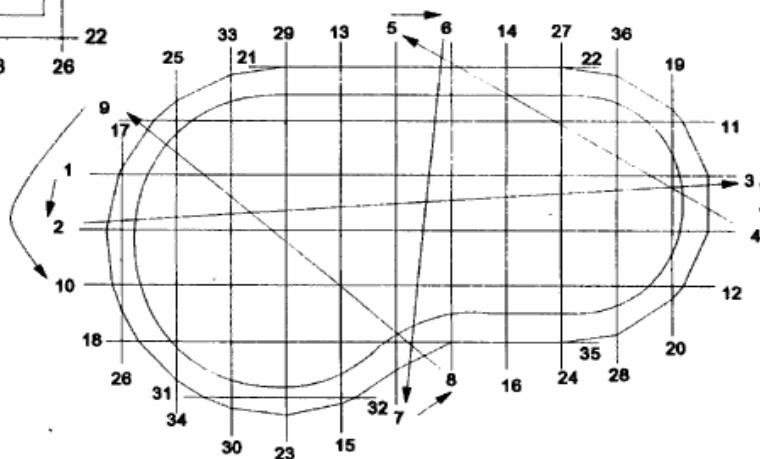
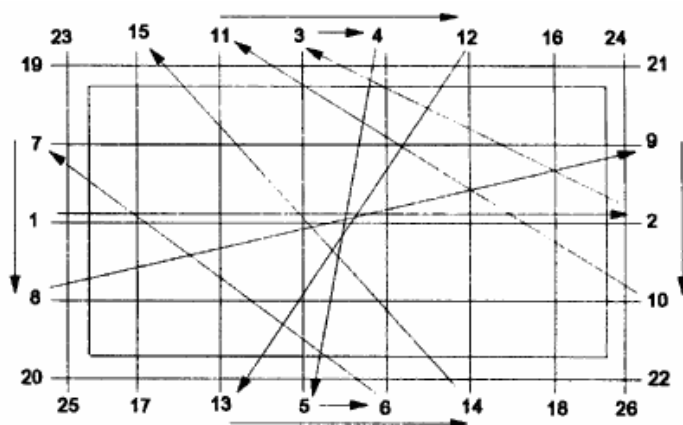
### Installation of Different Types of Safety Covers.

- For rectangular cover installation when you have finished installing the center anchors proceed to install the remaining anchors working from the center of the sides of the cover out to the corners. The cover must be taut, and all anchors should be about 20" from the edge of the cover.
- For a custom freeform installation secure the straps on the centers of the sides of the cover. When the center side straps are installed, proceed to install the remaining anchors following the steps illustrated bellow. Cover must be taut, and all anchors should be approximately 20" from the edge of the cover.
- Solid covers with window mesh drain panels may need to be adjusted to drain the water that collects on them. After the cover is installed, flood it with water. If the water forms large puddles that don't drain, loosen the straps around the area(s) of the cover that you want the water to drain towards. Tighten the straps around the area(s) that you want the water to drain away from. Be careful to keep at least 12" of overlap on all sides of the cover. The drain panel should be cleaned periodically, and when the pool is opened to insure proper drainage.

### IMPORTANT:

**The water level of the pool must not be more than 18" below the cover during snow season to provide support under the cover in case of a heavy snow load. Check the water level monthly. Letting the water level fall below 18" during snow season voids the warranty.**

To remove a safety cover, insert the installation rod between the spring and the anchor. Lower all anchors so not to drag cover over raised anchors (if not, this may cause unwanted rips and tears in the cover.) Tip the rod towards the cover to slip the ring off of the anchor screw. Carefully pull the cover off the pool, clean it, place it in mesh bag and hang it for drainage and summer storage.



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# Safety Cover Installation Instructions

## Raised Wall Installations

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### Raised Bond Beam, Waterfalls, and Rocks

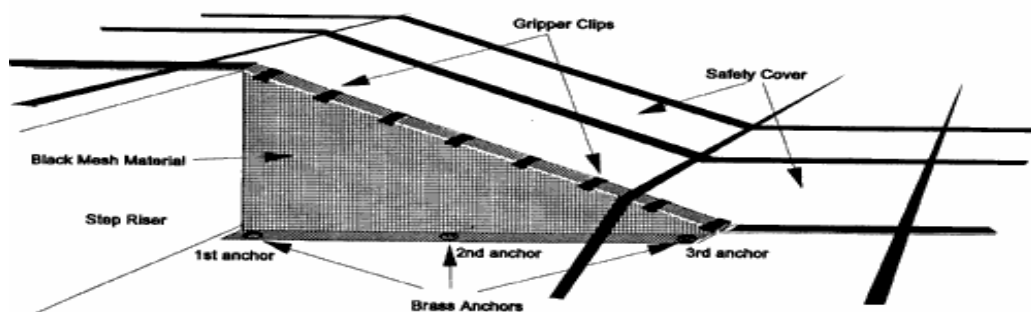
When an obstruction does not allow the pool cover to overlap the pool edge a Merlin Raised Beam Kit must be used and the pool cover must be further customized. Snap hooks are sewn to the underside of the cover and are attached to a cable that runs the length of the obstruction. The cable is held in place by eyebolts, which are screwed into the pool wall or obstruction.

1. Beginning with the obstructed side, locate eyebolt positions at about every 18" on tight radii and about every 3' on straight edges or wide radii. You need more eyebolts on outside radii than inside radii. With correct eyebolt placement, when cable is installed, there should only be, at most, about a 2" gap between the wall and the cable. (see fig. 1)
2. Use stainless steel ½" diameter eyebolts with 1" eyes. Drill ½" holes for bolt casings at normal deck level.
3. Carefully tap casings into holes.
4. Insert eyebolts into casing and secure.
5. Pass cable through the eyebolts and loop it around an anchor at one end of obstruction.
6. Fasten the looped cable with a clamp.
7. At the other end of the obstruction loop the cable through the closed end of a loosened turnbuckle and secure the cable to itself with a cable clamp. Hook the turnbuckle's open end to raised anchor.
8. Remove the cover from the box and place it on the pool as usual.
9. Adjust the cover so that it is flush with the obstruction and overlaps the pool evenly on all unobstructed sides. Line it up at normal deck level against the raised wall.
10. Fasten snap hooks under cover to cable. Experienced installers may be able to avoid using the cable on some covers, by fastening the snap hooks directly to eyebolts that have been lined up with straps. (stick with cable)
11. Pull cables tight and tighten turnbuckle
12. With obstructed area secured, mark where holes are to be drilled directly on the opposite side of the pool. Make sure that the straps are stretched straight across the pool.
13. Follow normal freeform installation sequence as is illustrated on the "Stretching the Cover" part of these instructions.
14. Clip raised wall gap filler to the edge of the cover along the raised wall, using the double gripper clips.
15. Once cover is connected to the cable System, install the cover straps that are perpendicular to the obstacle on normal decking. Keep working from the center of the obstacle outward.

**1. Install cover as usual, overlapping raised area.**



**2. Fill triangular gaps with Step Riser Kit.**







### Step Riser and Low Raised Walls

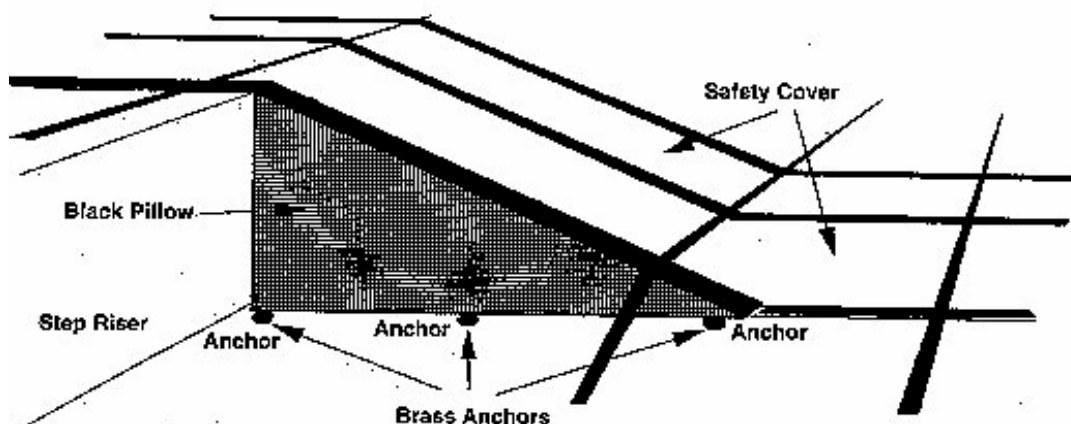
When a pool has a low raised wall (less than 24", and in 6"-8" increments) the cover can go up and over the raised wall. If the raised area is higher than 24" Merlin must approve the situation prior to the cover being made with an overlap. When the cover goes up and over a raised area triangular openings are created at the steps that go from the normal deck level to the raised area. A Merlin Step-Riser Kit can provide a superior solution to closing an exposed opening to the pool. A correctly installed step riser kit can protect the pool from blowing leaves and debris as well as help to prevent entry into the covered pool area.

1. To install a step riser kit, install the cover as you normally would.
2. Take the black step riser pillow that comes in a small or large triangular shape and place it, with the grommets on the ground, up against the triangular gap under the cover.
3. Drill in  $\frac{3}{4}$ " anchors at grommet locations.
4. Screw in anchor inserts through grommets to secure black pillow to the deck.
5. Repeat this procedure on the opposing side of the riser, with the other black pillow.

#### 1. Install cover as usual, overlapping raised area.



#### 2. Fill triangular gaps with Step Riser Kit.



## Safety Cover Installation Instructions Center Harness Strap (Y-Strap)

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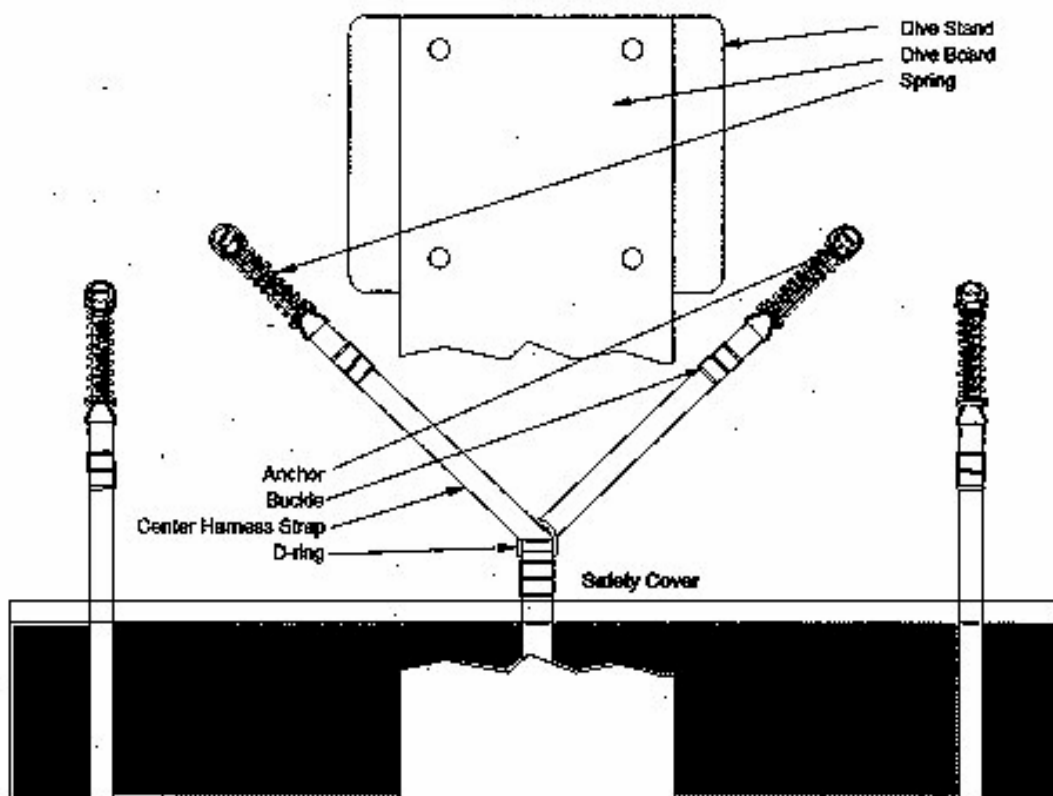


### Center Harness Strap

When a pool has a dive stand in the middle of the deep end that is closer than 30" to the water's edge, you may want to use a center harness strap kit. The kit includes one 60" strap, one D-ring, two buckles, and two brass anchors.

1. To install a center harness strap lay the cover out as you normally would (see page 2).
2. Install the initial anchor at the center of the shallow end of the pool (see page 3).
3. Pass the opposite end of the center strap through the D-ring and back again through the buckle. Tighten.
4. Pass the harness strap through the D-ring.
5. Attach the buckles and springs to the ends of the harness strap.
6. Then install two anchors on either side of the dive stand. The springs from the harness can often be doubled up over the nearest anchors to the left and right of the dive stand, if they are close enough.
7. Hook the springs from the harness strap to the anchors on either side of the dive stand.
8. Complete your cover installation in the normal sequence.

The center harness strap is a practical solution to the dive stand problem. It keeps the cover in tension while avoiding the dive stand. However, there are other solutions available for this situation. These include the use of a D-ring hooked directly to a pop-up, or a cover designed with an offset center strap.



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# Safety Cover Installation Instructions

## Tubes, Stakes, Short Springs, & D-Rings

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### Securing a Safety Cover with Special Decking Situations

Merlin Industries offers a broad array of solutions and hardware for difficult safety cover installations. The following are some practical and easy solutions to anchoring a safety cover to different types of decking.



#### Anchor Tubes

When a pool has flowerbeds, brick on sand, or loose ground around it, that is extensive enough to prevent the installation of certain anchors, anchor tubes provide a superior installation solution. Their wide stance gives them the strength they need to keep the safety cover with anchor tubes simply follow your normal installation procedures hammering, or drilling 7/8" holes if you are going into brick pavers, your anchor tubes all the way into the loose ground, as you need them. Insert your brass anchors into the tops of the anchor tubes and attach your springs and straps to them as you normally would. In situations where the ground is abnormally loose, such as new construction, you may wish to hammer a length of rebar through your anchor tube for extra holding power. We do not supply rebar. **IMPORTANT: If you do choose to use rebar be extremely careful not to rupture any underground piping or wiring lines. When in doubt, do not use rebar.**

#### Lawn Stakes

When a pool has lawn or packed soil around it, lawn stakes can provide an economical solution to securing your safety cover. Lawn stakes work in much the same fashion as anchor tubes. However, they differ in that the lawn stakes are less expensive and do not require the use of brass anchors. To install a cover with lawn stakes follow your normal installation sequence, hammering lawn stakes into the bare ground in place of anchors. Leave enough of the cover to be considered a safety cover if they comprise up to 25% of the installation. **IMPORTANT: Lawn stakes are not as good as anchor tubes at supporting a cover in loose ground type situations. Do not substitute lawn stakes for anchor tubes if the ground is loose.**



#### Short Springs

When a pool has limited decking space for anchor installation, you may wish to substitute short springs for full sized springs. The short springs are 2" shorter than full sized springs (Short springs are 4 1/2", full sized springs are 6 1/2"). It should be noted that short springs do not provide quite as much tension as full size springs, and that their use should be kept to a minimum.

#### D-Rings

When a pool has limited decking space for anchor installation, you may wish to substitute D-rings for springs. Install the D-rings as needed in the same way that you would attach a spring, and then shorten the strap all the way up to the cover. A D-ring takes up less than 3" of space when used on a strap in conjunction with a buckle. However, D-rings provide no tension for the cover, and, therefore should only be used sparingly.

#### Extension Straps

When a pool has flowerbeds between the decking and the coping extension straps can be used to go over them and to an anchor in the decking. Extension straps are a great solution to this situation because they maintain the full integrity of the safety cover no matter how many you use. To install them simply pass the extension strap up through the middle of the buckle on the regular cover strap then back down through the outside end of the buckle. Loop the other end of the extension strap through the spring and fasten in to the buckles as you normally would (see "Marking Anchor Holes").