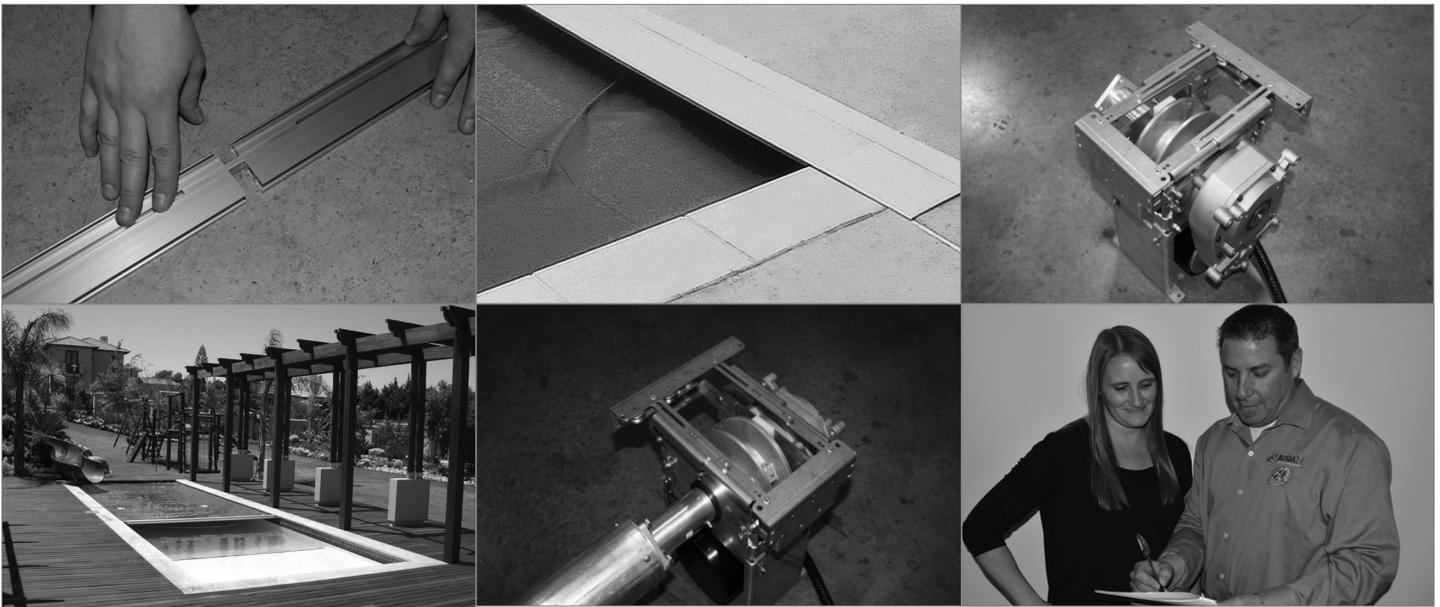




Mini Infinity 2
Automatic Safety Pool Cover
Under Track Installation Guide



The Mini Infinity 2 Auto Spa cover is a system that can be installed in cover boxes that have a width between 10-14 inches, including our polymer housing. It also offers lower offsets than the full sized Infinity 4000™ system. This mechanism is designed to cover spas and small pools up to 16 x 32. It can be used in Under Track, Deck Mount, or Recessed Top Track applications. Be sure to read through all of the system requirements in regards to the pool construction, cover box, drainage, and electrical BEFORE you install this system.

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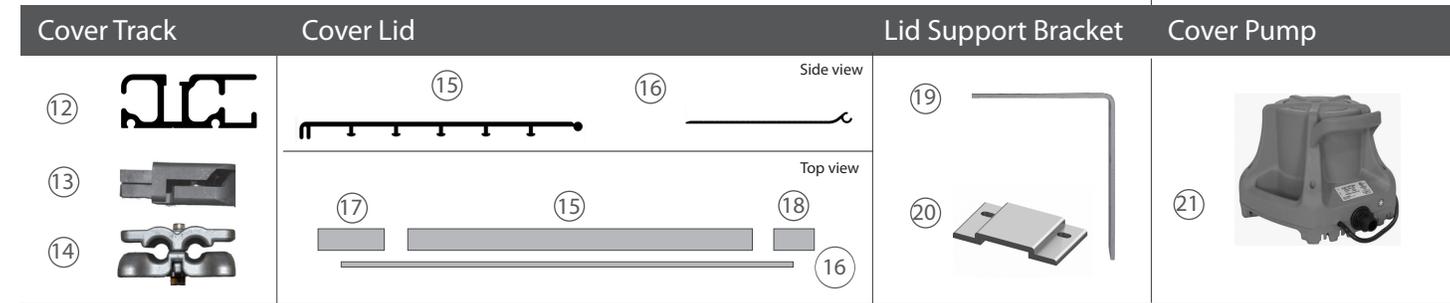
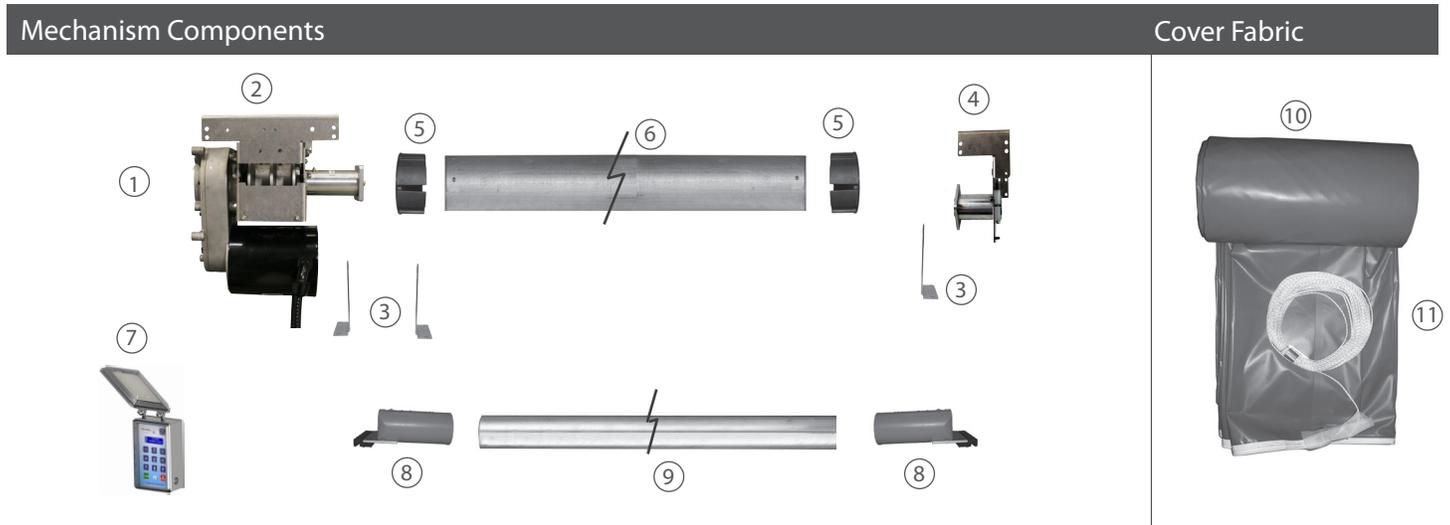
Tools Required

- | | |
|---|--|
| 1. Hammer drill or rotary hammer | 18. Crescent wrench |
| 2. Masonry drill bit 1/4 x 6" (1/4 x 12" bit) | 19. 100' & 25' tape measure |
| 3. Extension cords | 20. Chalk line (use white chalk) |
| 4. #2 and #3 Phillips & standard screw drivers | 21. Nut drivers - 5/16", 3/8", 7/16", 1/2" |
| 5. Ratchet with 5/16 - 3/4" sockets | 22. Chisel (wood & concrete) |
| 6. Hacksaw | 23. Scissors |
| 7. String line | 24. Wire strippers |
| 8. Utility knife | 25. Set of box/open end wrenches 5/16 - 3/4" |
| 9. Broom | 26. 6" level |
| 10. Hammer & rubber mallet | 27. Set of allen wrenches |
| 11. Pliers - standard, needle nose & channel lock | 28. Wire |
| 12. Files - round, triangular & flat | 29. Electrical tape |
| 13. Lighter | 30. Small sledgehammer |
| 14. Carpenter's square | 31. Vice grips |
| 15. 5/16" hex head driver bit with 12" extension | 32. #2 #3 Phillips drill bits |
| 16. Drill (cordless or corded) | 33. Pencil or marker |
| 17. Set of drill bits (1/4" down to 1/16") | 34. 6 - 8 clamps |

Optional Power tools

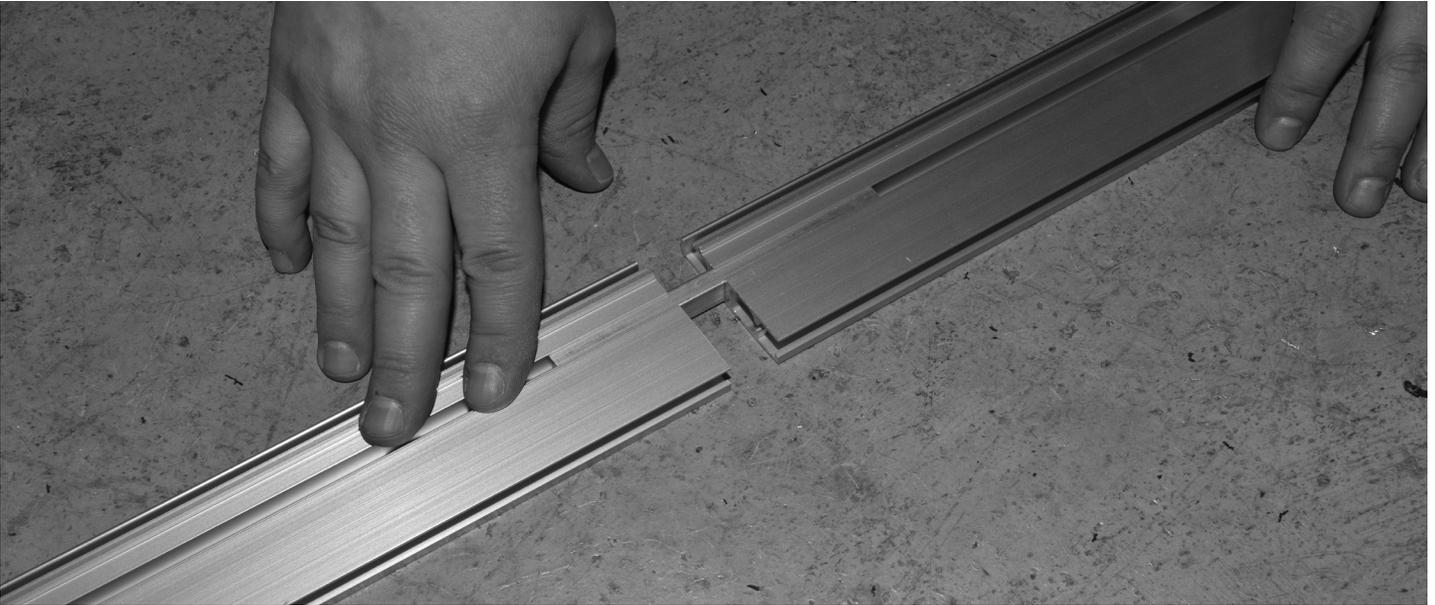
Skill saw with carbide tipped blade
Sawzall, Grinder, Angle drill

Parts Reference



Parts List			Misc. Hardware		
1. 10160	Gear motor 3/4 HP Tuck Under Mini	25. 33600	#10 x 1" Red Holob Anchor	22.	22
2. MI2016-ME-R	Infinity ME Right	26. H0294	Carriage bolt 1/4-20 x 3/4"	23.	23
MI2016-ME-L	Mini Infinity ME Left	27. H0276	Nut Nylock 1/4-20"	24.	24
3.	Mechanism Mounting Feet Mini Infinity	28. H0501	Bolt HHMS 5/16-18 x 1"	25.	25
4. MI2016-OE-R	Opposite End Right Mini Infinity	29. 33226	5/16" Lock Washer	26.	26
MI2016-OE-L	Opposite End Left	30. 33356	1/4 - 20 x 5/8" Phillips Pan Head	27.	27
5. M9682	Tube Insert - 6"	31. H0002	1/4 x 5/8" Washer	28.	28
6. X0673	Roll-up Tube 6 " extruded anodized 20'	32. H0152	Screw PPMS 10-32 x 1/2"	29.	29
7. A2469-B	Touch Pad Switch Assembly	33. H0313	Screw HHWSM tek 10 x 1/2" SS	30.	30
8. A3525	Slider Assembly for 2-1/2" LE403Track	34. E1086	Bonding Lug Copper L35	31.	31
9. 54806-20	Extruded Leading Edge Tube	35. H0512	Nut 5/16" - 18	32.	32
10. Cover	Cover fabric	36. 33248	#12 x 1-1/2" Phillips Pan Head Screw	33.	33
11. CS0114	Rope Diamond w/ Silver Tracer	37. H0310	Screw PPSM 10 x 1/2" SS41	34.	34
12. X0614	UT 403 for Detachable Rope 21'	38. H0176	#10-32 Nylock Nut	35.	35
13. UTO1800	Under Track Pulley Cartridge	39. 33250	#10 X 5/8" Phillips Pan Head Screw	36.	36
14. UT1010	Under Track SS Speed Guide Kit			37.	37
15. X0004	Main Lid			38.	38
16. X0951	8" Lid Hinge			39.	39
17. X0121	Standard 34" MotorLidEnd				
18. X0659	Standard 18" OppositeLidEnd				
19. M4105	Standard UT Lid Bracket				
20. LD2103	Drop-in Anchor Plate Kit				
21. MH232	Little Giant cover pump				
22. A1923	Splice Kit for 403 UT				
23. H0075	Rope Loop Black Plastic				
24. 33314	Ring Pin				

The parts list above is typical for most pools up to 16' x 32' and includes all parts necessary to install the PCS system. However, parts will vary for longer or wider pools and according to your specific order.



STANDARD UNDER TRACK

Step By Step Instructions

Numbers in parenthesis refer to parts shown on page 3.

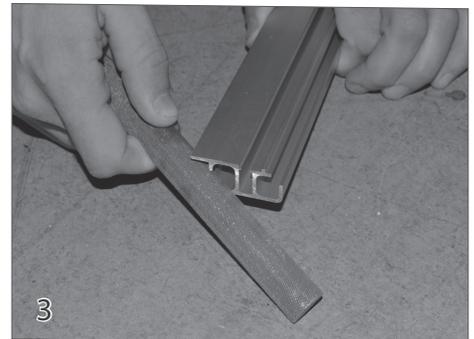


To determine if the cover system was ordered correctly for the pool, the length of the roll-up tube should be 6 inches shorter than the track space.

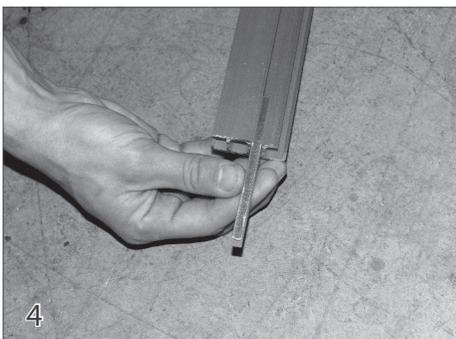
For example, for a 16 ft track space, the correct length of roll-up tube is 15 ft 6 in.



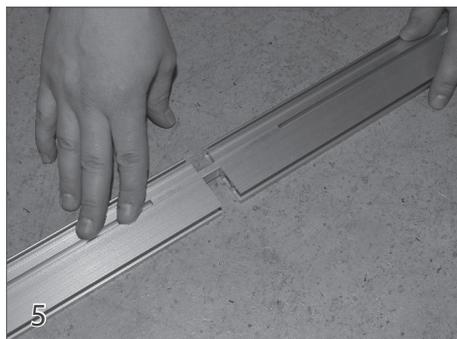
Cut the length of the track on each side of the pool so it will extend 1 inch past the end of the retainer and into the cover box.



Before splicing the sections of track together, file all track ends thoroughly, rounding all edges and removing all burrs. Clean metal shavings from the track. This step is extremely important! If the track isn't filed smooth, damage can occur to the ropes, slider and cover.



Slide the center splice (22) into the center channel of the track.



Lay the sections of track on the deck and tap them together using a rubber mallet so the center splice interlocks with each section of track.



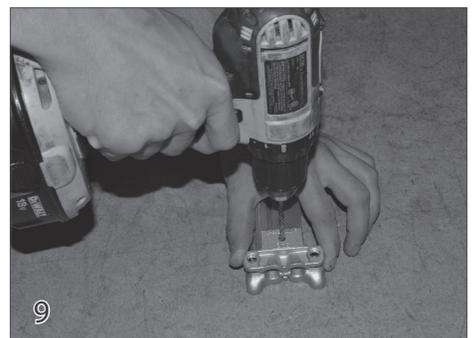
Continue tapping the end of the track until the two sections of track are tight together so there is no gap between the lengths of track.



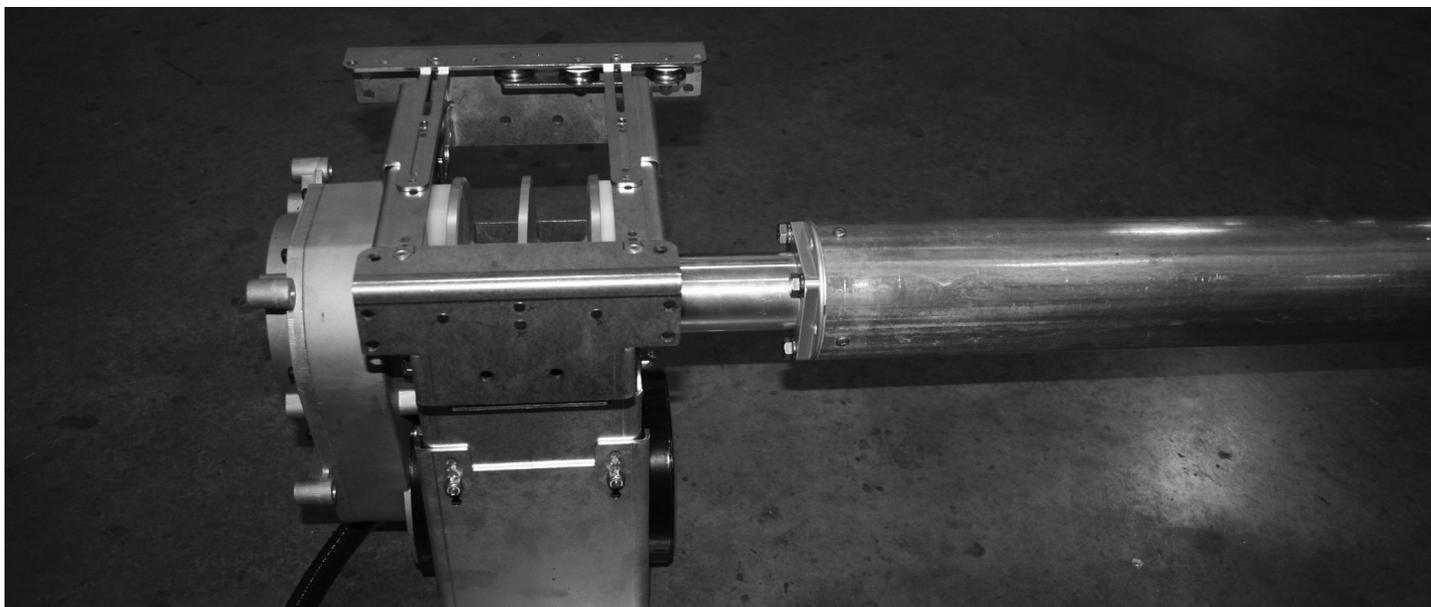
When retainer is being used, the track is normally installed during the cover installation. With the track installed, make sure it is flush with the end wall at the shallow end.



Using a 5/32" allen wrench, loosen the screw on the top of the guide (14). Insert the guide on the end of the track that will extend into the housing.

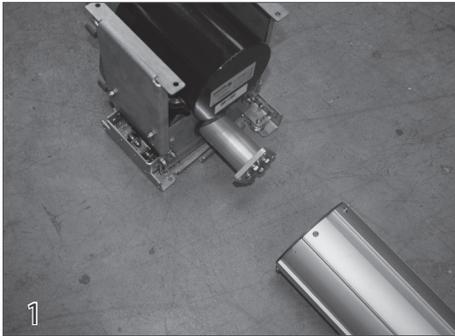


While holding the guide firmly, use a drill with a 3/16" bit to drill through the hole in the guide and through the track. Remove the guide. Do this for the track on both sides of the pool.

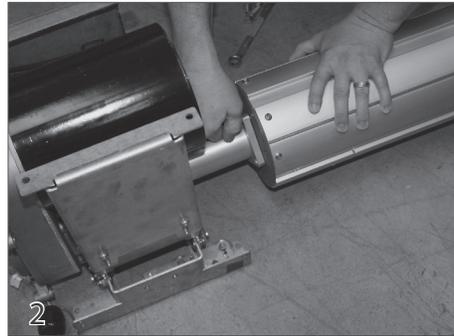


MECHANISM

Step By Step Instructions	Page/Step
Assembling the mechanism	7/1
Installing the mechanism in the cover box.....	7/6
Wiring the touch pad control.....	9
Electrical wiring and bonding	9



1
Assembling the mechanism
 Turn the motor and non-motor end upside down. This is done to appropriately attach the roll-up tube and the mechanism mounting feet.



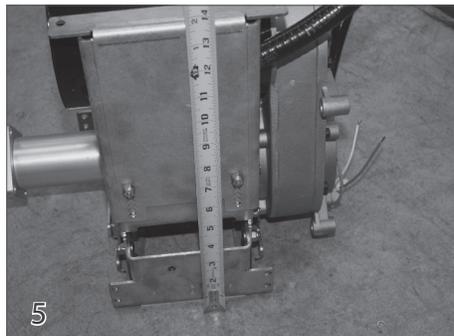
2
 Attach the roll-up tube to the motor end of the mechanism using the 3/8" x 1-1/4" bolts (28) and lock washers (29) provided.



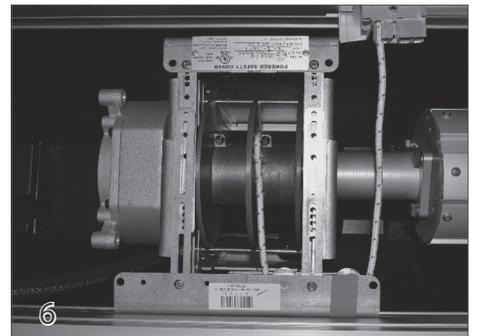
3
 Attach the roll-up tube to the non-motor end of the mechanism using the 3/8" x 1-1/4" bolts (28) and lock washers (29) provided.



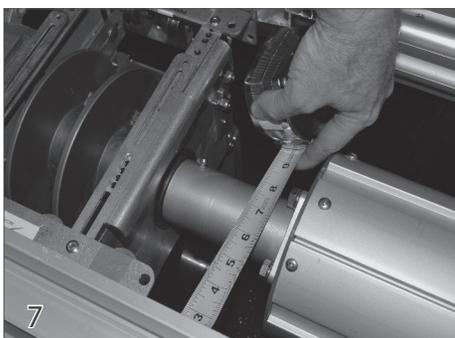
4
 To attach the feet, first measure the distance from the bottom of the cover box to the top of the track/retainer (This will determine the height of the mechanism.)



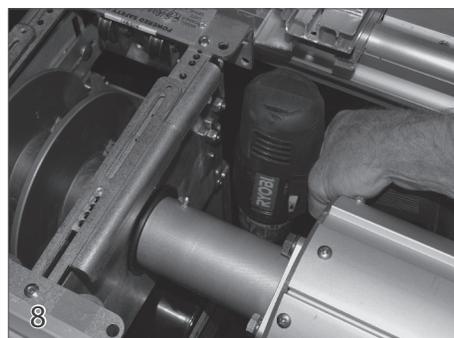
5
 Attach the mechanism feet to the mechanism approximately 1 inch less than the distance from the bottom of the cover box to the top of the track/retainer. Use a 7/16 inch ratchet to tighten bolts.
 Tip: The roll-up tube should be set as high as possible without allowing the cover rub on the lid brackets.



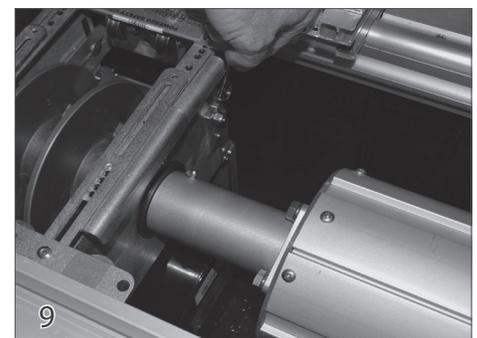
6
Installing the Mechanism in the Cover Box
 Line up the mechanism with the track so the rope will come straight out and around the motor end pulley.



7
 Center the tube in the cover box.
 Tip: If the pool is not square, square up the mechanism with the track.



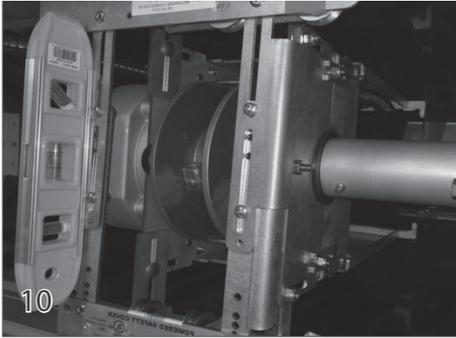
8
 Attach the mechanism feet to the floor of the cover box. Use the mounting hardware provided.



9
 Loosen the four nylock nuts on the pulley brackets. Raise the pulley brackets and the water side brackets level with the top of the retainer.

Step By Step Instructions

Numbers in parenthesis refer to hardware shown on page 3.



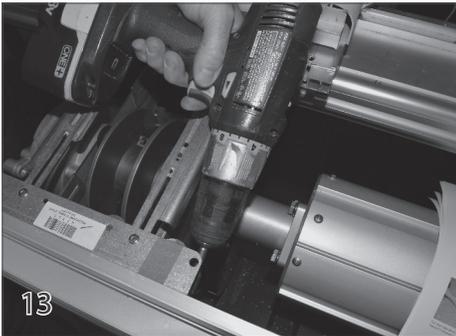
With the brackets in position, place a small level across them to make sure they are level. Tighten the four nuts on the adjustable motor end brackets.



Loosen the bolts on the adjustable brackets on the non-motor end of the mechanism. Spread the pulley brackets outward against the walls of the cover box.



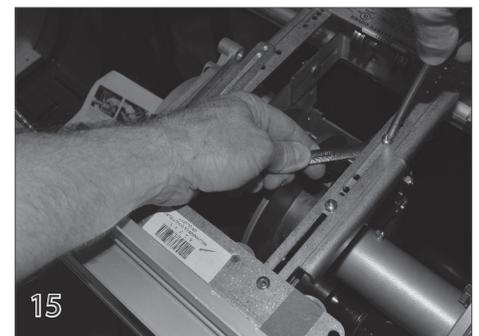
With the brackets on the non-motor end in position, place a small level across the brackets to make sure they are level. Tighten the nylock nuts on the adjustable brackets.



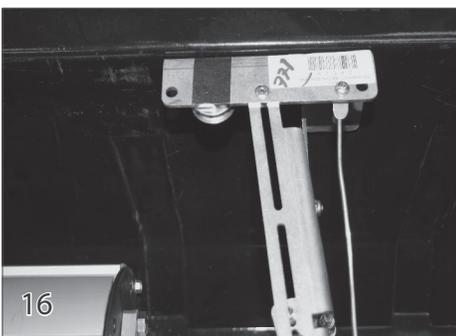
Anchoring The Pulley Brackets
Anchor the motor mechanism brackets into the cover box in as many places as possible. Use the appropriate screws and anchors depending on the type of cover box being used.



Anchor the non-motor side of the mechanism into the cover box in as many places as possible. Use the appropriate screws and anchors depending on the type of cover box being used.



On the motor and non-motor side, use the half inch screws (32) and nylock nuts (38) provided and secure the cross braces together.



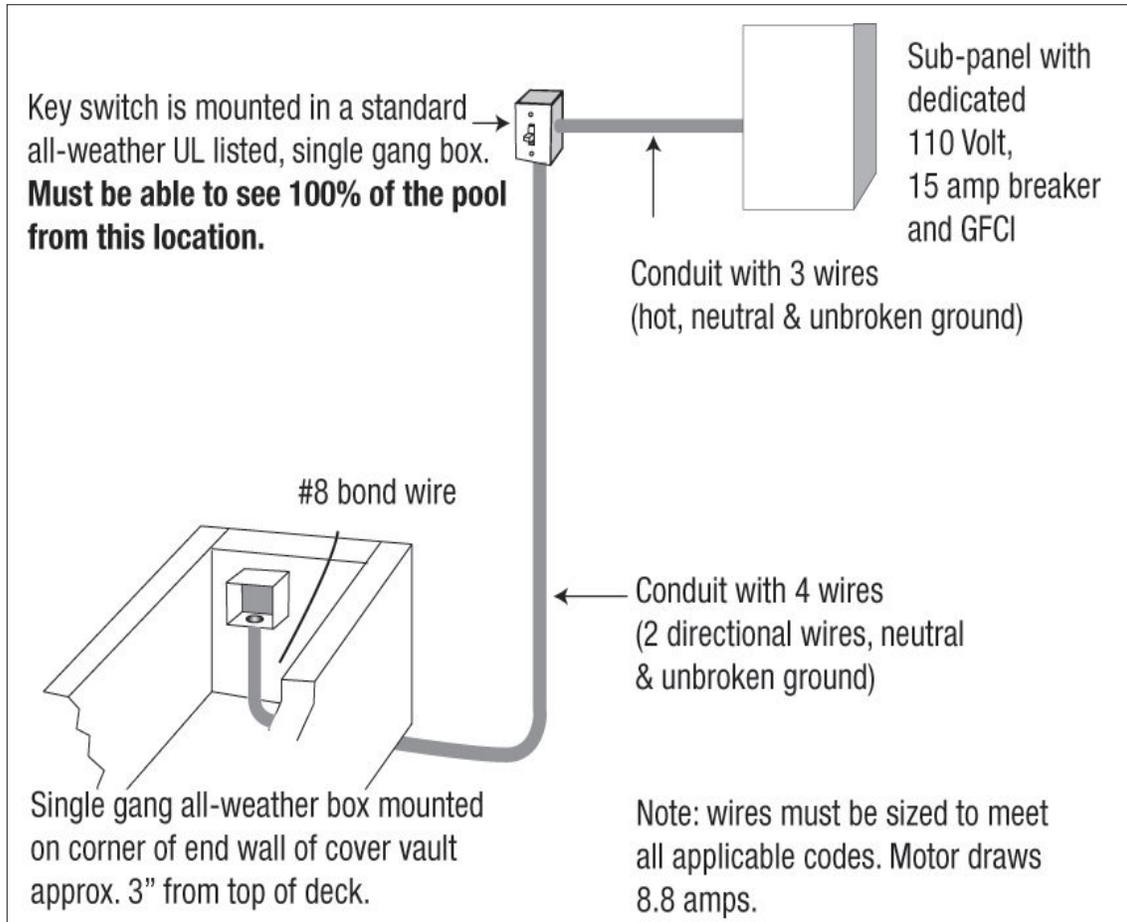
Attach the #8 copper bond wire that is stubbed into the cover box to the bonding lug on the motor end of the mechanism.



Make the same connection with the #8 copper bond wire that is in the cover box on the non-motor end of the mechanism.

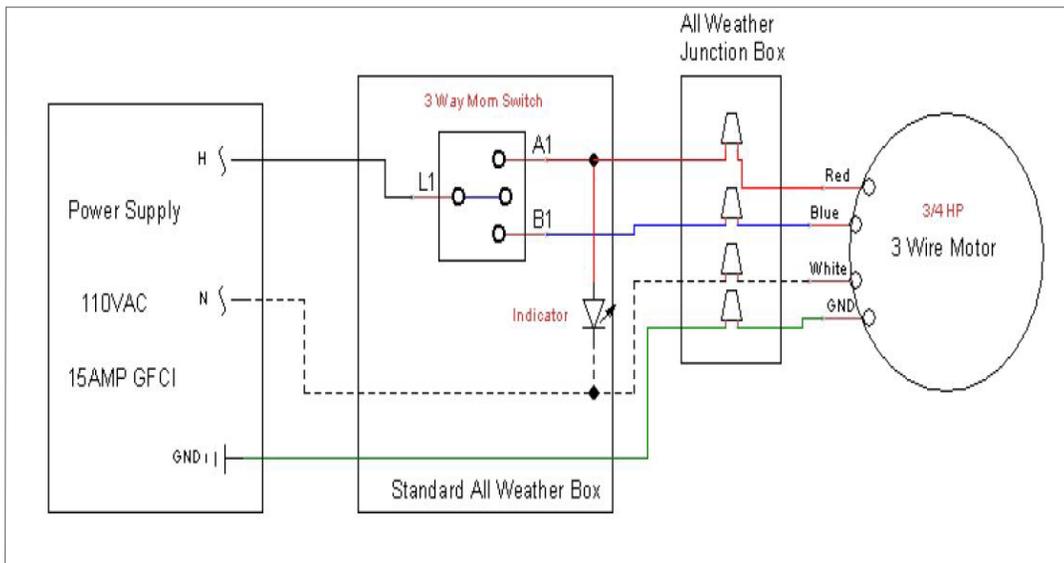
Electrical Wiring & Bonding

The system must be bonded to meet the National Electrical Code. Bond both tracks to the mechanism by attaching a bonding lug to the track screw and running a #8 solid copper bond wire to the mechanism. Bond the lid to the mechanism by drilling a hole in the lid at either end of the lid and attaching a bonding lug in each position and bonding it to the mechanism. All brackets and any other metal over 4" long should likewise be bonded to the mechanism. There should be a bond wire from the equipment pad inside the cover box. Attach this bond wire to the mechanism to complete the bonding requirement. Note: Builder is responsible to bring proper electrical lines, conduit and bonding to the mechanism. Electrical wiring diagram and details are shown above with instructions on the right.



Wiring The Electrical Switch

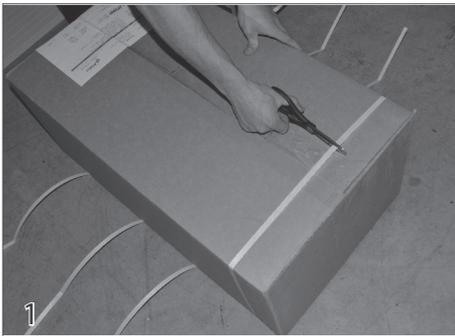
The control switch must be mounted in an all-weather box, in a location where 100% of the pool is visible. Connect the control switch according to the diagram below.





COVER FABRIC

Step by Step Instructions	Page/Step
Opening the cover box	11/1
Running the rope through the track	11/4
Installing track in retainer.....	11/9
Running rope through mechanism	12/10
Track retainer	12/15
Attaching the leading edge.....	12/18
Attaching the ropes to the reels.....	14/28
Pinning the cover to the tube.....	14/32



Opening the Cover Box

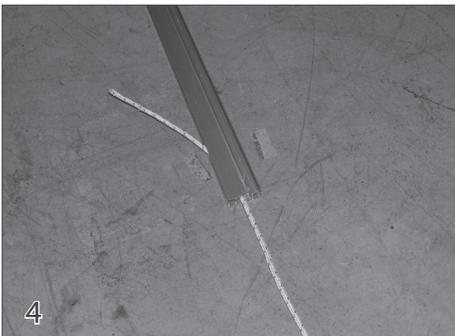
To open the cover box, use scissors to cut the bands that hold the two halves of the box together. Never cut the top of the box open. Doing this could easily damage the cover inside. This kind of damage is not covered under the fabric warranty. With the bands cut, lift and remove the top of the box.



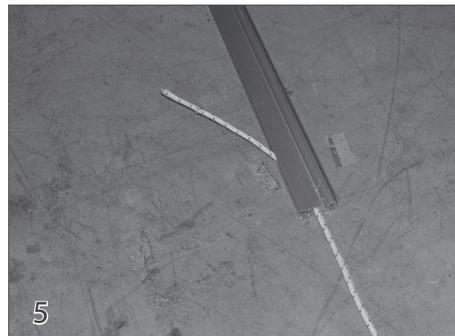
While standing behind the housing looking over the pool, unroll the cover from left to right. This will ensure the cover will be right side up when it is unrolled.



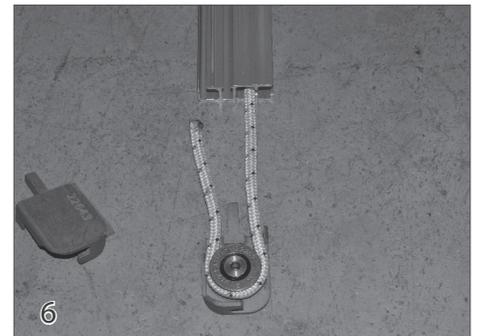
Uncoil the ropes to remove twists and kinks. Run the ropes through the tracks. There are two methods that can be used.



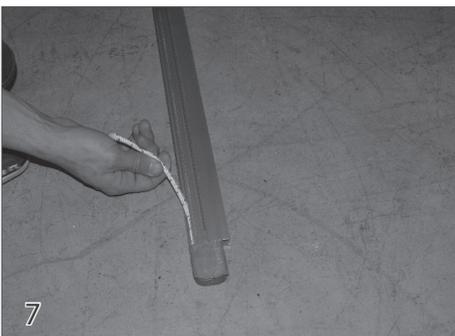
Running Ropes In The Tracks The preferred method of running the rope is to allow a short length of the rope to extend outside of the track. The portion of rope outside the track will be pulled as the rope is ran in the track.



Hold the rope outside the track and pull the rope along the length of track toward the end of the pool.



Feed the rope through the pulley cartridge assembly (13). Insert the pulley with the rope onto the end of the track.



Pull the rope down the back side of the track toward the cover box.

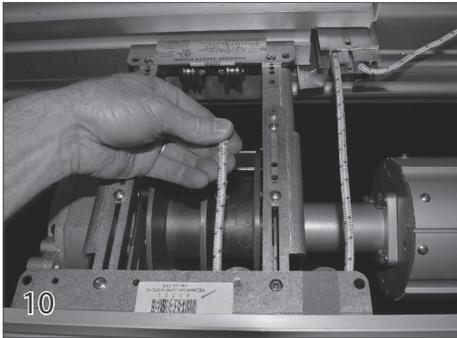


Alternate Rope Feeding Method Another common method of running rope in the track is to pierce the rope with a small piece of wire. This wire then becomes the pulling handle as you feed the rope into the end of the track. This is especially useful if retainer isn't being used and the tracks are already installed.



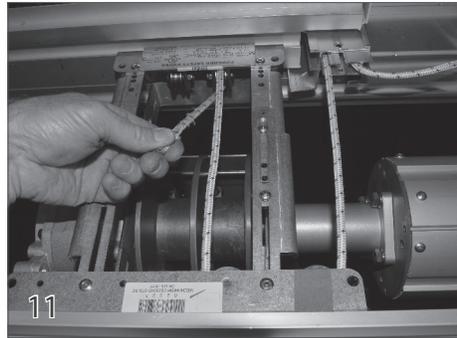
Install Track in the Retainer

Begin at the shallow end of the pool and insert the track into the retainer. Lift the track so the tongue and groove between the track and retainer will interlock. Make sure the track is flush with the end wall of the pool. Make sure track at the mechanism end extends 1" past the retainer into the cover box.



Running the Rope Through the Mechanism

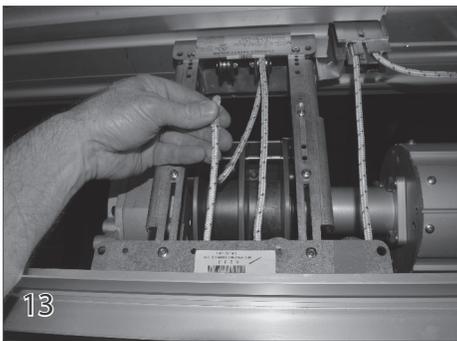
On the motor end, feed the rope around the first and second horizontal pulleys on the back wall of the cover box.



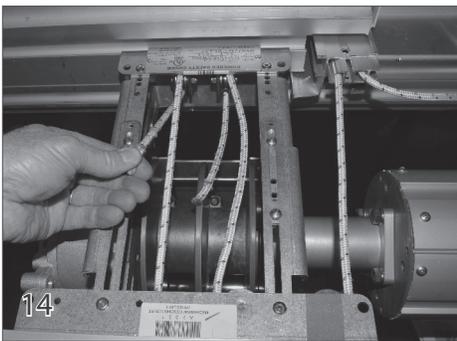
Pull the rope around the vertical pulley on the front wall of the cover box.



On the non-motor end, feed the rope around the pulley of the non-motor end pulley bracket. Pull the rope through to the motor end.



Feed the non-motor end rope behind the first and second and third horizontal pulleys.

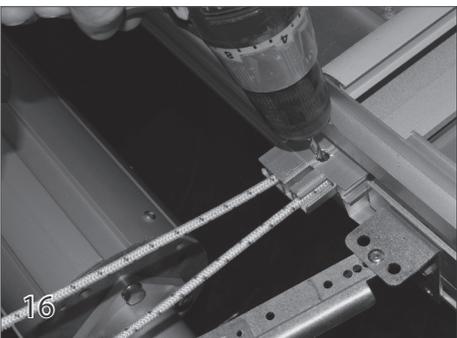


Pull the rope around the vertical pulley on the front wall of the cover box.

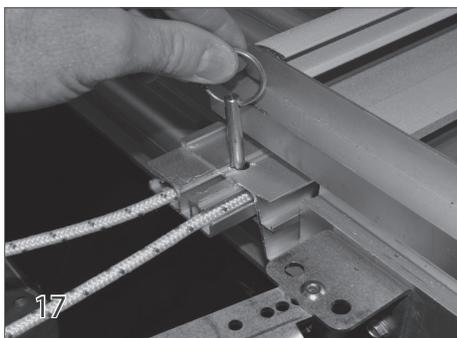


Track Retainer

With retainer installed on the pool, and extended one inch into the cover box, it is used to keep the track from being pulled into the cover box.



Drill through the center of the retainer and track using a 1/4" drill bit.



Insert the locking ring pin (24) through the retainer and the track. This will lock the track into the retainer so it can't slide into the cover box as the cover system is operating.

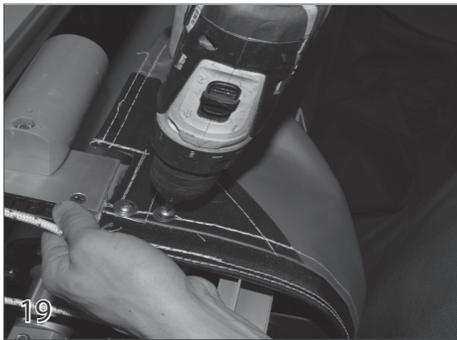


Attaching the Leading Edge Tube

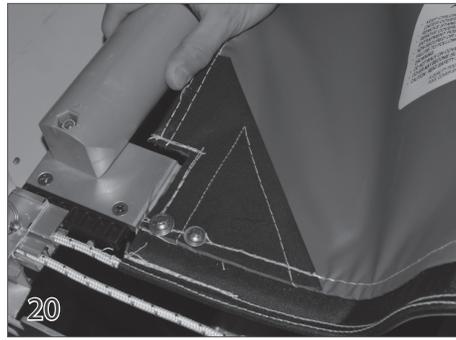
File the edges of the rope channel before sliding it onto the rope hem of the cover. If the leading edge tube will remain exposed, slide the tube on to the bead on the front of the cover.

Step By Step Instructions

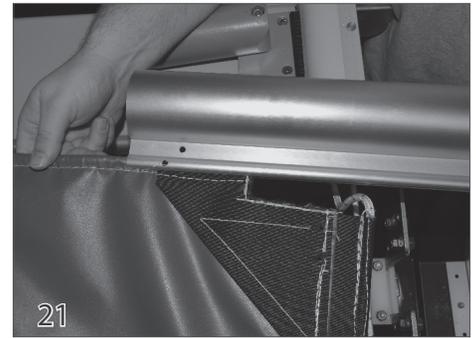
Numbers in parenthesis refer to hardware shown on page 3.



Attach the leading edge insert and slider plate to the cover by threading (2) 4-20 x 5/8" two screws (30) and the 1/4 x 5/8" washers (31) that come pre-attached to the slider plate, through the pre-punched holes in the cover and into the slider plate. Repeat this on both sides of the cover. Use caution if using a drill to attach these screws.



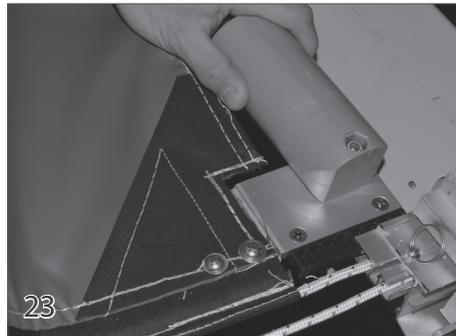
On one side of the cover, pull the rope as it comes out of the track as you feed the slider and cover into the track. Keep pulling until the slider is in the track a few inches. Having the slider on one side of the cover in the track will help with the installation of the leading edge bar.



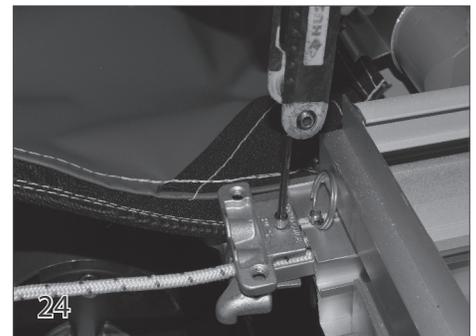
On the opposite side of the cover that hasn't been pulled in the track yet, slide the leading edge tube on the rope hem along the front edge of the cover. Pull tight on the cover to help slide the leading edge bar onto the cover.



Slide the nylon leading edge inserts into the ends of the leading edge tube. Note, one of these insert assemblies is in the track while the other is outside of the track. Make sure the inserts can slide freely inside the leading edge tube. If they don't, clean off any burrs that may be causing them to bind.



Insert the side of the cover that isn't in the track yet. Pull the rope as it comes out of the cover track.

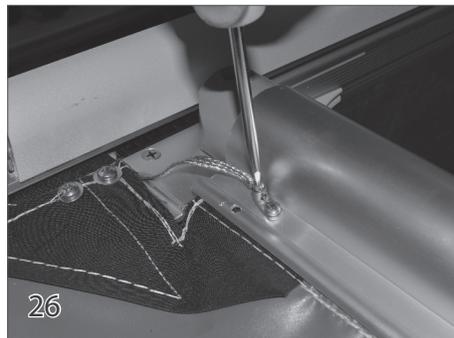


With the cover and slider in the track, insert the guide on the end of the track. Use an 5/32" allen wrench to tighten the screw that connects the two sections of guide together.

Tip: To prevent the screw and nut from seizing, get it wet before tightening.



Drill a second hole using a 3/16" bit in the flat section of the leading edge just behind the rope channel. This is where a bonding lug will be attached. Do this on both ends of the leading edge tube.



Connect the bonding wire that is attached to the front corner of the cover to the leading edge tube by first securing a bonding lug to the bar, using the 10-32 x 1" screw (33) and 10-32 nylock nut provided (40). Then, insert and tighten the bond wire in the bonding lug. Do this on both sides of the leading edge tube.



Position the fabric on the leading edge so it is in line with the edge of the rope C-channel. Pin the rope hem to the leading edge by placing a #10 x 5/8" pinning screw (41) in the drilled hole and through the rope hem.

Do this on both ends of the leading edge bar.

Step By Step Instructions

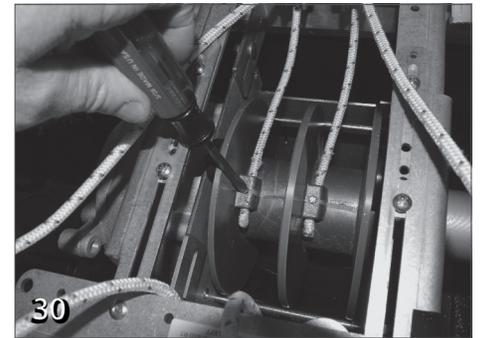
Numbers in parenthesis refer to hardware shown on page 3.



28
Attaching the Ropes to the Reels
The cover must be open when cutting and attaching the ropes. Pull the cover back until the sliders are against the guides. Pull the ropes tight as they come off the pulleys on the mechanism to eliminate the slack in the rope.

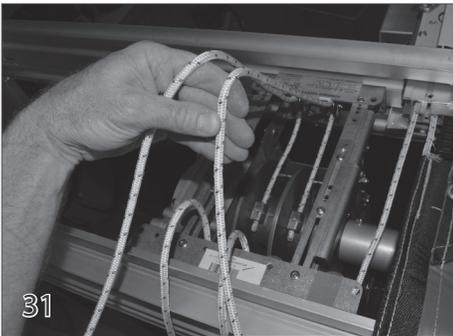


29
While pulling both ropes tight, use a lighter or torch to burn the rope in the location it will be cut. This will help them not fray after they have been cut. Cut the ropes so they are at least 8 ft long. Use the lighter to reburn the cut ends of the rope if needed.



30
Attaching the Ropes to the Rope Reel

Attach the rope to the rope reel. Guide the ropes onto the rope reel while operating the key switch in the cover position.



31
Tip: The rope for the non-motor side should be attached approximately 1 inch further down than the motor side rope depending on the width of the pool. Use the switch and operate the cover in the "Closed" position to cover the pool.



32
Pinning the cover to the roll-up tube

Using a self tapping screw (33), line the cover up straight as it comes out of the track and pin the cover to the roll up-tube on both sides.



Find the center of the slack and pin directly to the tube (DO NOT FOLD THE SLACK). Repeat this step several times along the tube.

Tip: Use the weld line on the tube to help pin the cover straight on the tube.



33
Using a self-tapping screw (33), attach the bonding wire on both sides of the roll-up tube.

Make sure that the cover and the webbing roll up nice and even around the roll-up tube. Operate the cover several times to and make any adjustments to the rope reel brake and roll-up tube brake if necessary.

The Mini Infinity 2 installation is complete.

Calibrate Touch Pad Control Switch

The touch pad can be calibrated for the specific pool it is installed on. This calibration will teach the touch pad what the electrical current consumption is (for retrofit models) and what the transit operation time will be in normal operation. The touch pad utilizes this information to determine over currents and cycle calculations.

1. Access the service menu using the service passcode (5991).
2. Press the Service button. The display will alternate between showing the “service contract information” and “Press Select (5) for Menu”.
3. Press Select (5).
4. Press the down arrow (8) until “Calibrate Pool” is visible. Press the Select (5) button to select this option.
5. Operate the cover until it is in its fully uncovered position.
6. Press Select (5) to confirm that the pool is completely uncovered.
7. Operate the cover until it is in its fully covered position.
8. Press Select (5) to confirm that the pool is completely covered.
9. Operate the cover until it is in its fully uncovered position.
10. Press Select (5) to confirm that the pool is completely uncovered.
11. The display will show the amp draw and time of operation for both covering and uncovering the pool. Press Select (5) to accept these measurements.
Press the service button at any time to cancel the process.

Adjust Current Limits

The touch pad retrofit model supports electronic current limiting. The default current settings are 7.5 Amps. The system will actively monitor operation of the cover and stop the system if current exceed 150% of the above value. To adjust these settings do the following:

1. Access the service menu using the service passcode (5991).
2. Press the Service button. The display will alternate between showing the “service contact information” and “Press Select (5) for Menu”.
3. Press Select (5).
4. Press the down arrow (8) until “Current Limits” is shown. Press the Select (5) button to select this option.
5. The display will show the average amp readings while opening the cover and the current limit setting for opening the cover.
6. To change the average amp reading, press the up arrow (2) or down arrow (8) buttons. Press Select (5) to advance the cursor to the limit setting.
7. To adjust the limit setting, press the up arrow (2) or the down arrow (8) buttons. Press Select (5) to save the new settings.
8. Make the same adjustments for the settings for closing the cover.
9. Press Select (5) to save the new amp and torque settings and return to the service screen. Press the service button at any time to cancel the process.



HOMEOWNER CHECKLIST

After the cover system is installed, it is critically important to instruct the homeowner on how to operate the cover system safely and do routine maintenance. Use the following check list and the homeowner guide as your primary instruction sources.

Installation Checklist

Tracks

- Does the track space measurement match how the cover system was ordered?
- All track ends filed. This is extremely important.
- Cover goes through the track joints smoothly.
- All track screws are tight and flush.
- Pulleys are flush against the end of the track.
- The guides are snug against the track.
- Guides bolted in and are tight to the track.
- Stops installed.
- Alignment splices used when joining the tracks.

Mechanism

- Mechanism installed level in the box.
- Roll-up Tube level in cover box.
- Tube centered between the tracks.
- Enough clearance top, bottom, sides for the fabric. No rubbing of webbing on sides or bottom of box.
- Tube at the right height? The ideal location is to install the cover in the box so that the cover is coming off at as small an angle as possible. This reduces stress on the mechanism and reduces wear on cover tracks at the end of the track.
- Tube either centered in the box or positioned slightly more towards the back of the box, so that the cover is unlikely to rub on the front of the box.
- System mounted at right angle to the track.
- Ropes coming back straight out of the track. An excessive angle will cause wear on the cover tracks at the end of the track.
- Ropes are not rubbing on any brackets or the deck.
- Ropes are run correctly.
- 8 feet of rope left on rope reel.
- System bonded according to electrical code. Cover bonded to leading edge and roll-up tube.
- Make sure the system is electrically bonded to meet the National Electrical Code.
- Make sure there is adequate drainage from the cover box.

Cover

- Fabric pinned to the roll-up tube without pinned folds.
- Cover runs smoothly.
- Cover properly aligned when it closes or retracts. Note: An inch or two out of square is not uncommon and is not a concern as it will not effect the operation of the cover. Because of the size of the fabric roll, and changes in operating conditions the cover may vary slightly in alignment as it is run.
- The leading edge inserts move in and out freely the whole length of the pool.
- Fabric is pinned to the leading edge flush with the ends of the tube.
- Cover not rubbing in the cover box as it rolls up.

Cover Lid

- All sharp edges have been filed.
- All areas where the lid is not flat on the deck been screwed down to eliminate any potential hazards.
- There is enough clearance between the lid brackets and the cover to avoid rubbing.

Misc.

- Key switch is in full view of the pool.
- Cover pump tested by putting it in the water and operate it in front of homeowner.
- The cover box is clean and clear of debris so that the drains are not easily clogged.
- Pool area cleaned up.
- Homeowner has been instructed on the operation of the automatic safety cover system.

POOL COVER SPECIALISTS®

QUESTIONS?

For questions about this installation guide,
contact your local Distributor.

latham

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