INSTALLATION MANUAL

For the HYDRAMATIC

TOP TRACK MECHANISM AUTOMATIC POOL COVER SYSTEM



Exclusive Manufacturer of the Hydramatic Hydraulic Swimming Pool Covers 2006

AQUAMATIC COVER SYSTEMS 200 Mayock Rd, Gilroy, CA 95020 Ph. 1.800.262.4044 Fax. 408.846.1060

www.aquamatic.com

For your safety and ease of installation, be sure to read this manual completely. This cover is one of the most advanced designs in automatic covers and has one of the best warranties in the industry. However, improper installation and operation may severely limit the warranty and life of the system.

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INTRODUCTION

The Hydramatic, All Fluid Drive automatic safety cover system, is a unique patented system powered by two compact interconnected hydraulic motors. One motor drives the cover drum that pulls the cover fabric off the pool, and the other motor drives the rope take-up reels that pull the cover fabric onto the pool.

The Powerpack is a pump which is powered by an electric motor. This pump supplies pressurized hydraulic fluid to the drive unit via two hydraulic hoses. It's about the size of a standard swimming pool filter pump and is generally located at the equipment pad, but may also be located in the bench housing.

Each hydraulic line alternates as a pressure line to the manifold or a return line back to the Powerpack reservoir, depending on the direction of the cover travel. The direction of travel is controlled at the Powerpack by a key-operated electric control switch. Turning the key to the open direction starts the Powerpack, supplying pressurized fluid to one line which causes the cover drum motor to turn. Turning the key to the closed position pressurizes the other line and causes the rope reel motor to turn.

The system has an operating pressure of between 400-600 psi. (fairly low for hydraulic standards), although the system is rated for 4000-6000 psi.

If you have some familiarity with similar electric systems, most of what follows will be fairly straightforward. In fact, the Hydramatic systems are in some ways much easier to install. An experienced installer should be able to complete an installation in a single day.



Preliminary Pre-site Checks

- 1 If so equipped, make sure that the 2" I.D. polyethylene hydraulic hose "chase" from the equipment pad to the drive mechanism is clear and ready to accept the two hydraulic hoses.
- 2 Check for any obstructions that may be in the way of the cover tracks or mechanism. Diving boards, ladders and/or handrails should be removed if needed. Make sure that the tracks and drive unit won't obstruct access to any skimmers or the like. Hinges for the ladder may be used if the ladder is outside of the track. Hinges may be ordered from Aquamatic for an additional cost.
- 3 Ensure that the track will go past the end of the swimming pool on both ends so that the fabric will cover the pool completely.
- 4 The typical setback for the drive unit is 1' from the pool edge. The unit can go further back but no more than 3' from the edge of the swimming pool.
- 5 Check to see if the drive unit, bench housing and/or the tracks are going across any area not covered with concrete or similar decking material. If this is the case, then these areas must be filled in with the appropriate material.
- 6 If the deck has a greater than normal sloping away from the pool, then there may be a chance that the drive unit may have to be raised off the deck. This will ensure that the fabric has enough clearance at the bottom of the cover roll-up drum.
- 7 Keep in mind that the track must always maintain the same angle as it lies across the deck surface. This only applies to the horizontal plane of the track as viewed from the end. If there are any spots in the track that are at a lesser or greater angle than the rest of the track, these areas may have to be shimmed in order for the cover to operate properly.



Parts List

The equipment generally comes in two bundles. The first is a shrink-wrapped pallet containing several boxes and the cover fabric. The second is a wooden crate approximately 22' long by 12" by 12" and containing the long extruded aluminum pieces.

The pallet contents are as follows:

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- 2 A box containing the hydraulic Powerpack with the key switch.
- 3 A box containing the cover pump (not supplied for indoor pools).
- 4 A box containing hydraulic hose with fittings (may have been packed with drive unit).
- 5 A box containing polymer panels for the bench (if type being used).
- 6 A box containing stainless steel bench brackets (if being used).
- 7 A box containing the bench end plates (if being used).
- 8 A box containing the cover fabric.

The wooden crate contents are as follows:

- 1 Track extrusions.
- 2 Edge bar (3" or 4" as needed).
- 3 Cover roll-up drum (6" or 8" as needed).
- 4 Aluminum extrusions for polymer bench (if being used).

Installation of the Hydraulic Hose

If the Powerpack is going to be located in a remote location such as at the equipment pad, then the hoses should be installed at this time. If the Powerpack is going to be located in the bench housing, the hoses will be installed later.

The hydraulic hoses should be taped off at both ends to ensure that no water or debris enters the hose.

Generally, the hoses can be pushed through the "chase" with little or no difficulty. A little bit of electrician's wire pulling lube works well for lubrication. The hoses may be pushed from either end of the chase.

An electrician's fish tape can be used if there is difficulty in pushing the hoses through. As a rule of thumb, if the "chase run length is over 50', a fish tape will probably be needed.

Once the hoses are pulled and/or pushed through the "chase", be sure that there is at least two feet of slack coming out at the motor side to attach to the drive unit. At the equipment pad, there should be enough hose to reach and connect to the Powerpack.

If need be, the hydraulic hoses can run along the top of the bench from one end to the other. In this case, be sure to secure the hoses every 3' to 4' inside the bench housing with conduit clamp or equivalent.

The hydraulic hose specifications are as follows:

3/8 inch I.D. (inside diameter) non-conductive poly-braided hydraulic hose.

Working pressure of 1250 to 2250 psi. (pounds per square inch).

#6 - JIC 37 female swivel fittings

Unless requested otherwise, the hoses will come with the fittings already attached at both ends. A portable swaging tool, complete with the proper dies and pusher is available from the factory for

Assembly of the Drive Unit

Take the drive mechanism end of the drive and place it in the intended location. If the unit is a right hand unit, then the mechanism goes on the right hand side of the pool as standing behind the drive unit facing the pool the pool. Be sure to place some cardboard or rags under the mechanism to catch any oil that may leak from the manifold (red plastic caps). Place the bearing side of the drive unit at the opposite side of the pool. The pulleys on the mechanism and bearing plate always face away from the pool.

Take the cover drum and place the shaft end into the bearing on the bearing plate. The bearing should slide onto the shaft with relative ease. If this is not the case, then check the shaft for any raised spots and file down as needed.

The other end of the cover drum has four fine thread 3/8" holes which will line up with the four holes in the flange on the drive mechanism. Insert the four fine thread 3/8" bolts (small parts bag) through the flange holes and start each one into the cover drum end. Tighten with a 9/16" wrench.

In some cases the motor-mounting bolts are in-line with the flange holes and won't allow room for the bolts to be inserted into the flange. If this is the case, a pair of large channel-lock pliers can be used to manually turn the flange to a proper position.

Place the assembled drive unit in the intended location without fastening it to the deck. **Keep in mind that the cover drum must be within three feet of the edge of the pool.** Also, make sure that if used, that the hydraulic hose "chase" outlet is not covered by the drive unit and that it will be contained inside the bench.

See pictures below for details.







Toptrack Track Layout

It is extremely important not to deviate from the track to track measurements of the ordered cover.

Track to track measurement is taken from the inside open slot of the track extrusions from one side of the pool to the other. The measurement is used at the factory to size the Leading Edge bar and the cover drum as well as the cover fabric. Whereas the <u>length</u> of the fabric may vary 4" to 6", it is important that the <u>width</u> be accurate. A fabric too tight will limit the life of the fabric - a cover to wide will result in excess wrinkles and poor control.

Lay the tracks along the slides of the swimming pool with the open slot towards the pool. Take the track closest to the drive unit and place the end of it over the tongue of the track guide (black delrin piece). Mark hole in the track so that it lines up with the tongue of the guide. **Be sure to keep the track butted up against the guide.** The track will protrude 3/4" into the pit. Drill a 1/4" hole in the track at the marked location and attach the track to the guide stud using the 3/16" nylox nut. Repeat for other side of the drive unit.

Using the supplied track joint connectors, connect the other pieces of tract to the first pieces of track. Be sure to leave a 1/16" gap between the sections of track for expansion.

See following pictures for details.



At the opposite end of the pool, the tracks should extend approximately 12" beyond the end. Measure from the track guide to this point. The measurement should be within about 6" of the length of the cover ordered. **This is the track length, not the length of the fabric.** Cut the track off at this point

and repeat for the other side of the pool. Once the track is cut to length, the last hole in the track needs to be between 2" and 6" away from the end of the track. If this is not the case, you must drill and countersink a new hole in the appropriate location. Be sure to file down the end of the track. Keep in mind that the track along both sides of the swimming pool \should be the same length.

Take a measurement at the point where the tracks attach to the drive unit. Measure from the open slot to the open slot of the other track. This measurement should be the same as the track to track measurement of your order. Move the bearing plate in or out on the shaft to obtain proper measurement. Take the same measurements in several spots along the length of the tracks. Move the tracks accordingly to equal the same measurement as the track to track. Try to make certain that the tracks are parallel with the swimming pool, if all possible. Mark the correct track locations with a pencil in case of any movement.

Take the diagonal measurements of the tracks. These should be equal. By moving one side of the drive unit forward or backwards, you can make these measurements equal. When the track is in the proper location, mark it with a pencil in case of movement.

After all the track measurements are taken, you should have a true rectangle over the swimming pool.

Use the drawing on the following page for details on measurement points.



Track - Track Dimensions



^{*}Make sure to file and ream all openings of the track ends*

Anchoring of the Track

Before drilling any holes, make sure that the track has not moved out of the correct position.

Using a hammer drill and a 1/4" masonry drill bit, drill a hole about 2" deep. Start at one end of the track and place a spent drill bit or something similar in the drilled hole. This keeps the track from moving while drilling the other holes. Repeat at the end and center of each piece of track.

Drill the remaining holes through the track; making certain that the track remains straight.

After all the holes are drilled, remove the spent drill bits. Remove the guide. Move the track off the drilled holes so that they are exposed. Insert the 1/4" plastic anchors into the holes and tap them down flush with the deck.

Before the tracks are put back in place, the "end pulley assembly" must be attached to the end of the tracks. Leaving the pulley cap hold down screw in place, loosen the bottom screw till the retaining plate is backed off enough so that the upper and lower plates will slide into the track. Tighten down the retaining plate so that they squeeze down on the groves in the track. Once tightened down, the pulley assembly should not pull out of the track.

See drawing and picture below for details:



Reposition the track over the holes. Insert, and partially screw down a 2" track screw in each hole. Leave approximately 3/8" of screw sticking up above the track. These screws should be tightened down after fabric and rope have been installed.

Repeat for track on other side of pool.

Before drilling any holes, make sure that the track has not moved out of the correct position.

Using a hammer drill and a 1/4" masonary drill bit, drill a hole about 2" deep. Start at one end of the track and place a spent drill bit or something similar in the drilled hole. This keeps the track from moving while drilling the other holes. Repeat at the end and center of each piece of track.

Drill the remaining holes through the track; making certain that the track remains straight.

After all the holes are drilled, remove the spent drill bits. Remove the guide. Move the track off the drilled holes so that they are exposed. Insert the 1/4" plastic anchors into the holes and tap them down flush with the deck.

Flush Track

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Track - Track Dimensions



Preparation for Flush Track

Aquamatic Cover Systems Flush Track which is mounted flush with the pool deck surface, requires some additional preparation to provide for a recess for the track.

For installations where the drive unit is recessed, refer to the recess preparation Specification sheet. (15" deep and 13" wide, with extensions of 30" past track on the drive end and 12" past the track on the non-drive end.

In addition, provide for a form board (3/4) deep and 2 1/4 wide) to be staked. These form boards will be pulled out after the concrete has set, therefore it will be easier to remove those forms if they have been greased.

• Take great care in making sure these forms are square and parallel, as the only way to correct an error will be to saw cut the track grove.



As specified, make sure the track recesses are the same width and length and that the track recess extends beyond the end of the pool a minimum of 12" and terminate into the cover recess.

In between the tracks on the pool side of the recess, slope (45) degree the deck edge to reduce the drag of the cover from the transition off of the roller to the pool during the closing mode.









Flush Track with Recess Drive and Composite Lid

Electrical Hook-Up

Temporary Hook-Up for Installation Purposes

The Powerpack, if not already installed by the electrician, is supplied from the factory with a short, temporary drop cord (pigtail). **This is only temporary.** The system must be hardwired.

The pigtail allows the installer to use the Powerpack during installation by plugging it directly into an outlet. The Pigtail has two separate circuits connected to it. One circuit is the control switch (black and white wires). The other is the motor circuit (red, brown and green wires).

Plug the pigtail into an outlet; use the shortest extension cord possible if needed. Test the Powerpack for proper wiring by bumping the key switch in both directions. The Powerpack should engage each time.

If the system being installed requires a 1.5HP Powerpack, it must be hooked up to 220v. See below for wiring instructions.

Permanent Hook-Up of the Powerpack (by qualified electrician only).

As is shown in the electrical schematic, wiring for the Powerpack requires two circuits. One circuit powers the key switch and the other powers the motor. Dividing the power supply in this way allows you to have the key switch a reasonable distance away from the Powerpack on a 14 gauge electrical run without affecting performance. Notes: The key switch must always be placed in a location that allows full view of the cover while operating.

The Powerpack is currently supplied with the lastest style of GE motor, which features an easy-to-use 110v to 220v dial switch (all 3/4HPs are set at 110v and all 1.5HPs are set at 220v at the factory). The 3/4HP Powerpack can be hooked up either 110v or 220v, but we suggest always hooking up to 220v. When wiring 220v, the key switch must always remain on a 110v circuit or the solenoid on the Powepack will be damaged.

The Powerpack comes factory pre-wired with a 5' of conduit and a connector, ready for connection to the electrical panel. Simply remove one of the "knock-outs" at the bottom of the panel and install the connector supplied. The wires may now be connected to the appropriate breakers.

It is preferred to have the motor circuit wired at 220v single phase. Generally, the motor circuit may be connected to the filter pump breaker, which is usually wired at 220v single phase (be sure to check). At this higher voltage, the current draw is between 4 and 5 amps. Please note that the brown wire now becomes the other "hot leg", instead of the neutral for the 110v-wiring scenario.

The control circuit must remain wired at 110v. The Powerpack comes prewired with the key control switch ready for operation. If the switch is to remain at the equipment pad, then all that needs to be done is mount it to the wall.

If the switch is going to be remotely located, the pool cover must be completely visible at all times. Run an extra conduit from the equipment pad to the remote location. Pull four colored wires (red, blue, black, and yellow) and a green ground wire through the conduit. Remove the switch housing and replace it with a junction box. Place the switch in the new location.

As the wiring diagram shows, you may also run parallel wired in several locations. Contact Aquamatic Cover Systems for extra switches.



Hydraulic Hose Hook-Up

Each end of the hose should have the # 6 JIC female swivel fitting swaged to it. These fitting should have been or can be supplied with the hose. Always make sure that the correct fittings are used with the hose. Check with Aquamatic if you are not sure.

At the mechansim, attach one of the hoses to the bottom manifold fitting and tighten. Take the second hose, attach the upper manifold fittings, and tighten. These are flared fittings, so do not over tighten.

It does not matter which hose connects to which port. Both hoses alternate between pressure and return, depending on the direction of the fluid flow.

Hook up hoses at the Powerpack. Again, it does not matter which hose attaches to which port.

Be sure to check that all the fittings are tight. **Note:** The 90-degree female swivel fittings. which the hoses were connected to, must be tight. The swivel is only for positioning and once tight, must not move.

If the Powerpack is going to be placed inside the bench housing, be sure that the hoses are ran so they will not be rubbed on by any moving parts, as this could rub a hole in the hose and cause a leak.





Filling the System with Hydraulic Fluid

The Powerpack may be filled with one of the following types of fluids:

Dexron 111 Automatic Transmission Fluid (preferred by Aquamatic)

Regular Hydraulic Fluid (usually 2 to 3 times the cost of the above)

You will need a small funnel and rags available to fill the reservoir of the Powerpack.

The reservoir will hold approximately 3 1/2 quarts of fluid with the fluid with the hydraulic hoses holding an additional one-quart per each 35ft. of hose.

Be sure to check for any loose fittings before continuing.

Remove the vent cap from reservoir and pour in 3 1/2 quarts of fluid using the funnel. Replace the vent cap. Engage the key switch to **open** position for 15 seconds and stop. Remove the vent cap and check the fluid level. Fill the reservoir up to within 1" of the top, and replace the vent cap. Again, turn the key to the **open** position for 15 seconds. Check the fluid level and repeat filling until reservoir will not take any more fluid.

After the reservoir is completely full within 1" of the top, you may run the switch in the closed position. Hold the switch in this position for approximately one minute. **Only turn the key switch in the opposite direction after the reservoir and hoses are completely full of fluid.** This will ensure that the least bit of air as possible gets into the system.

Check the system for any leaks and fix if needed.

Check for proper switch direction. When the switch is engaged in the "open" position, the cover drum should be turning towards the swimming pool. When the switch is engaged in the "closed position, the rope reels should be turning away from the swimming pool. If the open and closed positions are effecting the opposite equipment, then all that is needed to correct the problem is to interchange the red and the blue wires at the key switch.

The reservoir must be filled any more than one inch from the top. This allows for fluid expansion.

Any air that is still in the system after filing will bleed out through the vent cap. Following the steps above will eliminate most of the air from getting into the system. You are pushing the fluid and air in one direction from the reservoir to the drive unit and then back to the reservoir.

Do not adjust the pressure at this time.

It is better to leave the pressure at its lowest factory setting until the fabric has started moving over the pool.



Stringing Up the Ropes

String up the Ropes

Unpack the cover fabric, making sure not to drag the fabric across the deck surface as this could cause damage to the fabric. Untie the rope binding the fabric. Do not pull the rope out from underneath the fabric, as this tends to put a burn mark across the fabric. Position the fabric behind the drive unit and unfold it so that the front beaded edge of the cover is at the top and towards the end of the pool. You can also tell the top of the cover by the stitching and by the look of the fabric itself. The underside of the fabric is glossy and the top correct side of the fabric is dull.

Standing behind the behind the fabric facing the swimming pool, take the bundle of rope in your hands and unfurl it, throwing the rope behind you and away from the pool. This is meant to untangle the ropes and eliminate any knots.

Upon reaching the end of the rope, take the rope in both hands at a point about four feet from the end. Feed the end of the rope underneath the cover rollup. With your hands about 12" apart, position the rope at the inside edge of the track and work it back and forth until it starts into the track.

See diagram below for details.



Continue to pull the rope towards the far end of the swimming pool. <u>Take caution at the track joint so</u> that the rope feeds into the next piece of track. The rope should pull relatively easy. If it does not, then it either has come out of the track or is knotted at the start of the track. When the end of the track is reached, stop. Do not continue pulling the rope slack out of the end of the track.

Remove the pulley cap at the end of the track and feed the rope around the pulley to the outside edge of the track. Start the rope into the underside edge of the track with the same starting motion as before.

Pull the rope into the track until the rope slack is tight around the pulley. There should be approximately two feet of rope started into the underside edge of the track. Replace the pulley cap and tighten down the last screw in the track. Continue pulling rope down the track and tighten down the screw in the track. Continue pulling the rope down the track until you are two feet past the track joint. **Be sure that the rope starts into the next piece of track.** Tighten down the screws on each side of the track joint. Continue pulling the rope until the end of the track is reached. If the track is still attached at the guide, it must be removed at this time. **Do not pull the rope out of the track at this time.**

Grab the rope at the point where it feeds into the track and at the point where it comes out of the track and pull back and forth. There should be little to no resistance. This that the rope is properly run through the track and is not out at some point.

Leave the three or so of rope sticking of the of the track and tighten down the remaining track screws, loose at the drive mechanism.

You will next string up the ropes through the pulleys.

These instructions are for a left-hand drive unit. For right-hand units, the rope stringing will be the same except that you will start with the left side rope.

Right-hand side:

Take the end of the right-hand rope and feed it through the pulley that is in line with the end of the track. Feed it through the pulley in the direction towards the drive mechanism. At the drive mechanism, you will next run the rope through the lowest pulley by the rope reels (do not use eyebolt pulleys). Run it from the back, towards the front and around towards the floating compensation pulley.

Feed the rope up through the compensating pulley. Pull up a little slack and run the rope through the lower **eyebolt pulley** towards the rope reels. Pull all of the rope slack over the rope reels, towards the far end of the swimming pool.

Go back to where the rope feeds into the track and feed the slider and about 6" of fabric into the track. You will have to pull on the rope coming out of the track as you are feeding the slider and the cover into the track. The slider has two small screws going through the tubular part into the neck. Sometimes these screws flare out the plastic and will not allow the slider to enter the track. If this is the case, these flared areas may be filed down for smoother operation.

Left-hand side:

Take the left-hand rope in your hand and feed the end of it through the pulley that is in line with the end of the track. Feed it through the pulley towards the compensating pulley.

Feed the rope up through the center of the compensating pulley. Pull up the slack and run the rope through the pulley that is closest to the track and at a higher level than any of the previously used pulleys.

Pull up a little slack and run the rope through the higher **eyebolt pulley.** This pulley is also the furthest one away from the last pulley that you ran through. Pull all the slack over the rope reel towards the far end of the swimming pool.

Go back to where the rope feeds into the track and feed the slider and about 6" of fabric into the track. You will have to pull on the rope coming out of the track as you are feeding the slider cover into the track. Again the slider may have to be filed down.

See pictures on next page for details.



ROPE ALIGNMENT, TOP MOUNT



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Leading Edge Installation

Before installing the leading edge, you must first decide from which side of the cover it will be installed. It may be installed from either side. The only deciding factor is the surrounding environment. The leading edge must extend into the yard and/or deck area in order to slide onto the front of the cover.

After the installation side has been determined, remove that side of the fabric from the track so that the slider and approximately two feet of rope are sticking out of the track. **The fabric should remain feeding under the cover drum.** Lay the leading edge bar out so that the slotted edge is towards the fabric and so that the brackets are down. Spray a small amount of silicone or the equivalent down the slotted edge of the leading edge. This will help ease the installation process.

Grab the front of the cover fabric below the slider and start the leading edge onto the beaded edge of fabric. While holding the fabric taut, slide the leading edge across the length of the fabric until the opposite end of the fabric is reached. Slide the leading edge past the end of the fabric so that about 1 1/2" of fabric is sticking out of both ends of the leading edge. Be sure to hold on to the fabric while sliding the leading edge. Do not merely hold onto the white tape edging, as this could pull the stitching loose. In addition, you may want to tape around the leading edge bracket so it does not scratch the deck as it slides across.

Grab the fabric near the end of the leading edge and pull towards the center until approximately 1" of fabric is sticking out of the end. Insert a small panhead screw into the predrilled hole. Repeat for other end of leading edge. Gather the excess fabric more or less evenly towards the center of the leading edge.

Next, feed the slider and approximately 6" of fabric back into the track. Check the other side of the cover and make sure that 6" of fabric is also inserted into the track.

Reinstall the track guides, making sure that the orientation is correct and that the beaded edge of the cover moves freely through the slotted edge of the guide. Make sure that all three 3/16" nylox nuts are tightened. Tighten the remaining track screws.

Gently lift up on the slider until it stops. The leading edge bracket should be at this same angle. If this is not the case, then the bracket may have to be bent slightly. Gently place the leading edge bracket on top of the sliders. You should have approximately 1" of space between the end of the bracket and the track on each end of the leading edge. If this is not the case, flip the leading edge over and adjust the brackets using the slots to obtain the proper spacing.

After the spacing is correct, set the leading edge brackets back on the sliders. Fasten the slider to the leading edge bracket using the 5/16° x 1° long, stainless steel hex head bolt and the nylox nut and washer. The bolt with washer will come up through the bottom of the slider through the middle hole of the leading edge bracket. Tighten down the nylox nut so that it is just snug against the bracket and then back it off from 1/4 to 1/2 a turn. This bolt must remain loose so that the leading edge may float back and forth. This allows for any variances in track parallels.

Fabric Installation

If this is your first installation or your are unsure of the installation, please us the following procedure to pull the fabric across the pool.

This procedure is much easier if two people are available.

Grab the ropes coming out of the backside of the tracks and pull. This will start the cover feeding into the track. If you are doing this by yourself, you will have to pull on one side at a time. Repeat this until the leading edge reaches the end of the pool.

Follow the directions below for pinning the fabric to the drum and for hooking up the ropes reels.

If you have some previous experience with the Aquamatic Cover Systems, then you may want to pull the cover on by using the drive unit.

Standing in front of the rope reels with your back towards the end of the pool, take a rope in each hand. Make sure that the ropes are not crossed and pull the ropes taut (do not pull hard as to pull the fabric further into the tracks). By pulling on one of the ropes, you will pull the compensating pulley all the way over to the limit of its slide travel. Then by pulling on the opposite rope, you will pull the compensating pulley the opposite way to the limit of its slide travel. Even up your hands so that the compensating pulley is in the center of its slide travel. This is where the compensating pulley must remain for proper operation.

With the cover in the completely open position (off the pool), all the rope that is needed for the take up reels between 3 and 4 feet in length. Keeping the compensating pulley centered in its slide, run your hands down the length of the ropes about 4' from the take up reels and cut off the excess rope. Be sure that you understand this procedure completely before cutting the ropes. Always remember that there must be between 3' and 4' of rope that goes past the leading edge of the cover. This applies no matter where the leading edge is positioned down the tracks.

Take the rope ends and put them through their corresponding holes in the rope reels. Tie a knot at the end of the rope and pull it up tight against the hole. With your hands, you should be able to turn the rope reels in the direction away from the pool so that when the ropes are completely wound up they are feeding onto the rope reels from the bottom. Be sure that you keep the ropes tight and even as you are wrapping them up, or the center of the compensating pulley could be compromised. **Never allow someone to operate the control switch while the ropes are being fed onto the rope reels, as this could result in serious injury.**

At the control switch, turn the key to the **open** position. The fabric will start to pull out over the swimming pool. Watch the fabric to ensure that it is pulling square across the pool. Periodically, you may have to straighten out the fabric at the point where it feeds into the track. Run the control switch until the cover reaches the end of the pool. **See the Pressure Adjustment section if the cover will not pull across the swimming pool.**

After the fabric is completely pulled across the swimming pool, there should be about three feet of fabric sticking out of the track. This extra fabric will be used to attach the cover to the drum and should not be cut off.

Attaching the Fabric to the Cover Drum

Locate the predrilled holes along the length of the cover drum. Using the holes in the end castings, you may need to use a large screwdriver to turn the drum so that the holes are at the top of the drum.

Starting at one end of the cover, bring the fabric up to the top of the drum. Remove the panhead screw that is in the casting. This screw will be in-line with the predrilled holes and should not have tape covering it. Attach the edge of the fabric to the drum at this point by inserting the screw through the cover fabric at the stitch line and about 1" from the end of the fabric. Repeat for the opposite end of the cover drum.

Find the center of the fabric and attach it to the drum by inserting a screw into the center hole in the drum. This hole is generally marked with a circle or a "c". Be sure to place a screw about 1" from the end of the fabric. It does not matter have far into the fabric you go, as long as you maintain that distance the entire length of the cover drum.

Continue attaching the fabric to the cover drum, working you way from the center towards the ends of the drum. Be sure to pull the fabric taut as you work your way to the ends. When you reach the last hole in the cover drum, you will have some slack in your fabric. Simply fold the fabric over and attach it to the drum using the last hole. You will usually have about 2" fold one each end of the drum.

With a large screwdriver inserted into the holes in the drum castings, turn the drum towards the pools so that the fabric wraps up on to the drum. Be sure that the edge of the fabric is wrapping up straight and that it is not folding over on itself.

Once the fabric is wrapped up on the cover drum you can turn the control switch to the **open** position. If the cover will not turn back off the pool then **see the Pressure Adjustment section.** Run the cover all the way back off the swimming pool and then **close** again several times. Check for cover alignment with the cover all the way opened. See the Cover Adjustment section to correct.

Your unit should be finished and ready for normal operation.



Pressure Adjustment

The amount of pressure that the Powerpack (hydraulic pump) supplies to the hydraulic motors is more or less directly related to the amount of torque or turning power that the motor can then produce. Less pressure-less torque, more pressure-more torque. Since you are using the pressure as a sensor to stop the cover when it reaches the end of travel or meets an obstruction, you want to set the pressure just high enough to make the cover move, but low enough so that it will stop when it meets an obstruction.

At the Powerpack, there is an adjustable pressure relief valve. It is spring-loaded screw valve which will allow hydraulic fluid to bypass back to the reservoir above a certain pressure setting. If the pressure needs to be adjusted, refer to the following.

The pressure can be adjusted with a minimum amount of effort. The adjustment valve is located at the three o'clock position, mid pack (looking from the tank end). Loosen the nut using 9/16" socket. While holding down the nut, screw the 3/16" Allen set screw in, to increase the pressure. This can be done by inserting the Allen wrench through the end of the socket. Tighten the nut to reseal the adjustment. Make only small adjustments at a time, 1/2 to 3/4turns. Check to see if the cover operates both directions without hesitations. When this is so, turn the pressure up 1/2 a turn more. This will be helpful when the cover gets water on top of it.





Skew Adjustment

To adjust for skewness, the Hydraumatic Cover System has a provision for allowing the cover drum to be adjusted. Moving the cover drum allows the fabric edges to roll up on a larger or smaller diameter part of the drum, therefore making the cover roll up faster and slower.

Run the fabric out over the pool. This will make the adjustment easier, since you will not have to be moving the weight of the fabric on the cover drum. Locate the two large wing nuts and loosen slightly (about one turn). Using a flat head screwdriver, move the cover drum in the required direction by leveraging against the tab and slots. This action will move the cover drum lengthwise in the recess housing. Only move 1/4" and tighten. Run the cover back off the swimming pool and then out again several times to check for new alignment position before making another adjustment if needed.

Always move the cover drum towards the side of the pool that is not retracting far enough. This action will make the side of the cover roll up faster. Larger diameter = More fabric is wound up per



Composite Bench Assembly

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The Polymer Composite benches are shipped to you with the front and back panels of the benches already pre-built for easy installation. This patented structural box-beam assembly system is not only attractive, but also strong and rigid, if assembled correctly. It is very important to carefully follow the instructions. All the panels must be securely screwed down for the "box beam" to have its full strength.

Tools Required

Power drill Hammer drill with 1/4" masonary bit #2 & # 3 Phillips screwdriver bit 17/64" drill bit 3/8" drill bit 7/16" open end or adjustable wrench Marker (pencil or felt tip) String



Step # 1

Lay the front section (face down) across the track & cover so the vertical edge of the cut-out is spaced evenly with the tracks.

<u>Step # 2</u>

With the front panel in proper position, take each end plate and mark its location on the deck in respect to the ends of the front panel. Position each end panel centered to the cover drum. Mark the four mounting holes on the deck and drill with the 1/4" masonry bit. Using the supplied plastic anchors and # $12 \times 1 - 3/4$ " stainless steel Philips oval head screws, secure each end plate to the deck. Each mounting foot is adjustable in case the end plate needs to be raised to accommodate for any deck slope if the back panel needs to be raised.

<u>Step # 3</u>

With the end plates mounted, set the back panel into the end plate (there are small receivers that will guide placement). Using the supplied # 10-1" Philips Pan head, temporarily attach the back panel to the end plate with one screw only at this time. This step allows you to properly position the 2" stainless steel "U" support brackets. Either visually or with a string, hold the end panel straight and place the "U" support brackets equidistant within the length on the bench, and mark their position of the deck. Remove the two screws holding the back panel to allow you clear access to mount the two "U" support brackets. Depending on the deck surface, two # $12 \times 1 - 3/4$ " should Composite panel be adequate.







Frontal View of Front panel and End Plates



Interior View of Front panel and End Plates

<u>Step # 4</u>

With the brackets secure, re-position the back panel and attach into each end plate using four $\# 10 \ge 10^{\circ}$ screws on each side.

<u>Step # 5</u>

To mount the front panel, set panel into the receiver and mount with the four screws in step # 4.

<u>Step # 6</u>

You will need to secure the front and back header into each "U" support bracket. To ensure proper width spacing, place a loose top panel into the top of the bench by each bracket, pull together (clamp or hold), and use a 3/8" bit, drill through the aluminum extrusion and attach each panel to the bracket using a 5/16" x 3/4" bolt, nut and washer.



<u>Step # 7</u>

With both the front and back panels secured, lay all of the remaining loose panels into the top of the bench. Each panel has been pre-drilled, using a 17/64" bit, drill through each hole and secure panel to extrusions using # $10 \times 1 1/2$ " stainless steel Philips oval head screw. These will self tap into the aluminum extrusion. As you reach the end plate, there are four screws that need to be installed as you did with the front and back panel. Be sure to file or replace any screw heads that may have sharp points, as this bench can serve as a seating area.

Important

- You may need to re-string the rope that feeds from the non-drive side so it is routed through the gusset of the two support brackets.
- On wider benches with considerable deck slope, the end plate height can be raised by loosening the four adjusting bolts near the bottom of the slotted end plate foot.

See pictures below





