

# Section VI

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## Assembly of Pool

## SWIMEX TOOL LIST

The following tools and equipment will be required for the assembly of the SwimEx pool -  
- all models.

1. Hand Tools:

- \* Ratchet and socket sets (2-4)  
(2) ratchets and (2) 9/16" sockets required
- \* Torque wrench
- \* Open end wrenches (set)
- \* Adjustable wrenches
- \* Pliers
- \* Screwdrivers (set)
- \* Utility knife
- \* Putty knife
- \* Allen wrenches (set)

2. Caulking gun

3. Large "C" clamps (6" - 8") -- 9 minimum

4. Supports and support bases assembly

- \* Two 4" x 4" timbers x 14' long (or 4 timbers - 8' long)
- \* Concrete or wooden blocks - 6 minimum

5. Jacks (hydraulic, screw type, etc.) -- 4 recommended; 2 minimum

6. Masking tape -- minimum 1" (2 rolls)

7. Clean/dry rags

## ASSEMBLY OF MIDSECTION (U2 & U3)

1.1 Sections U2 & U3 should be set on the assembly platform (blocks or planks) to facilitate installing and tightening the bottom row of flange fasteners. Make certain, when preparing the platform, that all flange bolt holes are accessible. These holes are predrilled at the factory. The pallets the SwimEx was shipped on can be used as assembly platforms. 4" x 4" timbers on blocks (wood or concrete) can be used to make a platform. The 4" x 4" timbers should project at least one foot (up to a total length of 14') from the ends of Sections U2 & U3, to provide a lip on which to set the end caps (Sections U1 & U4) when joining them to assembled Sections U2 and U3.

1.2 Sections U2 & U3 are positioned so that the mating flanges will line up. The mating flanges must be clean and brushed free of any debris.

Before assembling the sections, SwimEx recommends applying 1" masking tape onto the inside walls of the unit just before the seams (approximately 1/8" from the ends of section). Apply the tape from the bottom of the inside walls up to and across the top lip and down the outside 2" lip. Do not silicone the false floor seams on Model SX400.

1.3 Apply a 1/2" wide bead of supplied marine grade silicone sealant in the groove that the round rubber gasket will fit into (See diagrams at the end of this section). Also, apply a 1/4" bead of silicone along each side of the rubber gasket cord. When applying the silicone bead nearest the inside of the pool wall, extend the bead of silicone up to 1/2" below the top of the flange, turn the bead 90° and continue the bead along the top of the flange (1/2" from the top) to the end of the top lip. The sections must now be pushed together and will self-align by virtue of the built-in alignment socket system. The sections must be pushed together and tightly clamped with large "C" clamps **immediately** after applying the silicone. Work carefully and quickly, as the silicone sealant begins to gel after approximately 20 minutes. Use nine (9) "C" clamps, equally spaced, on **each** of the flanges (3 on each of the sides and 3 on the bottom). The flange fasteners (lock-nuts, bolts & washers) must also be installed and tightened before the silicone gels (within 20 minutes). SwimEx recommends using 4 people to ensure the sections are securely bolted within the 20 minutes.

**NOTE: IF USING IMPACT WRENCHES - Call SwimEx for proper instructions.**

1.4 The flanges are held together with stainless steel hexhead nuts, bolts, and washers tightened with hand tools **only to 30-35 ft.lbs.** Make sure washers are on both sides of the flange: between the nut and flange, and between the bolt head and flange.

### **IMPORTANT: TO PROPERLY TIGHTEN THE FLANGE BOLTS:**

First start on the inside row of bolts. Do not tighten all the way to 30-35 ft.lbs. Tighten until snug (approximately 20 ft.lbs.) Next, install and tighten the outside row of bolts in the same manner. Then, go back to the inside row of bolts and tighten them a bit more snugly (approximately 25-30 ft.lbs). Repeat the process with outside row of

bolts. Now, the inside row of bolts can be tightened to approximately 30-35 ft.lbs. (You may have to repeat this process 3-5 times before reaching 30-35 ft.lbs.)

**Reminder:** This process must be done carefully and quickly, as the silicone sets in approximately 20 minutes. Again, SwimEx recommends having 4 people working this process. See the diagram at the end of this section for the flange seal system.

**Note:** There are 2" and 2 1/2" bolts supplied. The 2 1/2" bolts are for the flange seams towards the top of the pool, as the thickness of the flanges increases towards the top. As you are tightening the bolts, you may hear a "cracking" noise. This sound is the gel coat expanding on the outside of the pool's flanges. This sound is normal.

**WARNING:** All section assembly bolts must be tightened to a minimum of 30 feet/pounds of torque and a maximum of 35 feet/pounds of torque. Over-tightening could result in premature or eventual bolt failure, resulting in leaks or separation of the sections. As a reminder, after the assembled unit is lowered into place and filled with water, the bottom row of bolts will not be accessible unless the unit is elevated. Be certain that all bolts are in place using washers under both the bolt heads and nuts, and be sure that they are all tightened properly. The unit must **never** be elevated with water in it.

- 1.5 If, after the sections are bolted together, the silicone sealant extrudes into the interior of the unit, it should be wiped down to form a smooth joint between the sections. If sufficient amounts of silicone did not extrude, apply a 1/4" bead of silicone to this inside seam. Run your finger, or proper tool, along the seam groove to make sure silicone is totally inside the seam. Make sure to keep your finger wet during this procedure. Remove the masking tape, and you will have a perfect seam.

**IMPORTANT:** Coat all assembly bolts with Never Seeze before installing.

## ASSEMBLY OF FRONT SECTION (U4)

- 2.1 Section U4 is assembled to attached Sections U2 & U3 using the same procedures and techniques outlined in 1.1-1.5 of this section. **The front grille is shipped in place and should not be removed. If for any reason it is removed from the receiver pockets, it must be installed before attaching Section U4 to Sections U2 & U3 (being careful to not damage the surrounding surfaces).** The grille is held in place by the grounding bolt assembly. After Section U4 is bolted to the Midsections (U2 and U3), the grille is permanently secured in place by the front side walls of Section U3.
- 2.2 Install both sets of swimmer control air buttons per manufacturer's instruction in the predrilled holes in the front lip of Section U4. Place a small bead of silicone around the back of the button face plate flange, press unit into holes, secure with screws provided, and wipe off any excess silicone. Discard the face plates supplied in the packing, and replace them with the face plates supplied by SwimEx ("Slow/Fast" and "Stop/Start").

**NOTE:** If your installation is in a tight area, or if you are building a deck around the pool which will block access to the buttons, attach the air hoses to the buttons at this time and secure them out of the way for easy access later on. The air hose is shipped in two lengths of 100 feet and 20 feet. Cut the 100' length into four 25' lengths for the air buttons on the front of the pool. (The 20 foot length is for the rear stop bar connection.) Remember to position your AC-Tech controller within reach of the air tubes when connected and secured. See the "Electrical" section for proper location of the AC-Tech controller. Also, be sure to mark and label each air line: fast, slow, start, and stop.

**NOTE:** When installing and tightening the bolts on this flange (U4 to Midsections U2 & U3), and the next section (U1 to Midsections U2 + U3), be sure to install the bolts so that the bolt threads are pointing away from the center of the unit. This will prevent the bolts from getting caught up on the foam pads.

## ASSEMBLY OF PADDLEWHEEL SECTION (U1)

3.1 The Paddlewheel Section (U1) is assembled to Sections U2, U3, and U4 using the same techniques and procedures outlined in 1.1-1.5 of this section. Before attaching this section, make sure you check under the false-bottom floor (water channel) for any debris, etc., and wipe off the surface. Once this last section (U1) is attached, access to the underneath water channel is very limited. We recommend, especially on Models SX500 & SX600, crawling up inside the channels to wipe the surfaces clean, and to smooth out the silicone that has extruded up at the seams.

3.2 After U1 is assembled, the rear grate is to be placed into the receiver pockets built into U1 and U2. The ground wire plates are pre-installed and attached to Section U1. Secure the grate to the grounding brackets with the stainless steel bolts provided. On Model SX400 also secure the grate to the bottom lip of the receiver pocket using the stainless steel screws.

**NOTE:** When installed properly, the narrow, closely-spaced vertical grate bars face towards the swim area.

**IMPORTANT:** THIS GRATE MUST BE INSTALLED ACCORDING TO THE ABOVE STEPS FOR PROPER OPERATION AND FOR SAFETY REASONS. DO NOT FILL THE POOL WITH WATER UNTIL THIS GRATE IS SECURELY IN PLACE.

3.3 **IMPORTANT:** The assembled SwimEx must now "set" for a minimum of 12 hours, after which all flange nuts and bolts must be rechecked and tightened as needed. This is due to the compression force on the silicone and rubber seal. **DO NOT** lower the assembled unit onto the foam pads until you let the unit "set" for 12 hours and have re-tightened all assembly nuts and bolts.

Before building your deck/flooring - the pool must first be water-tested. See the "Water Test" section of this manual for instructions.

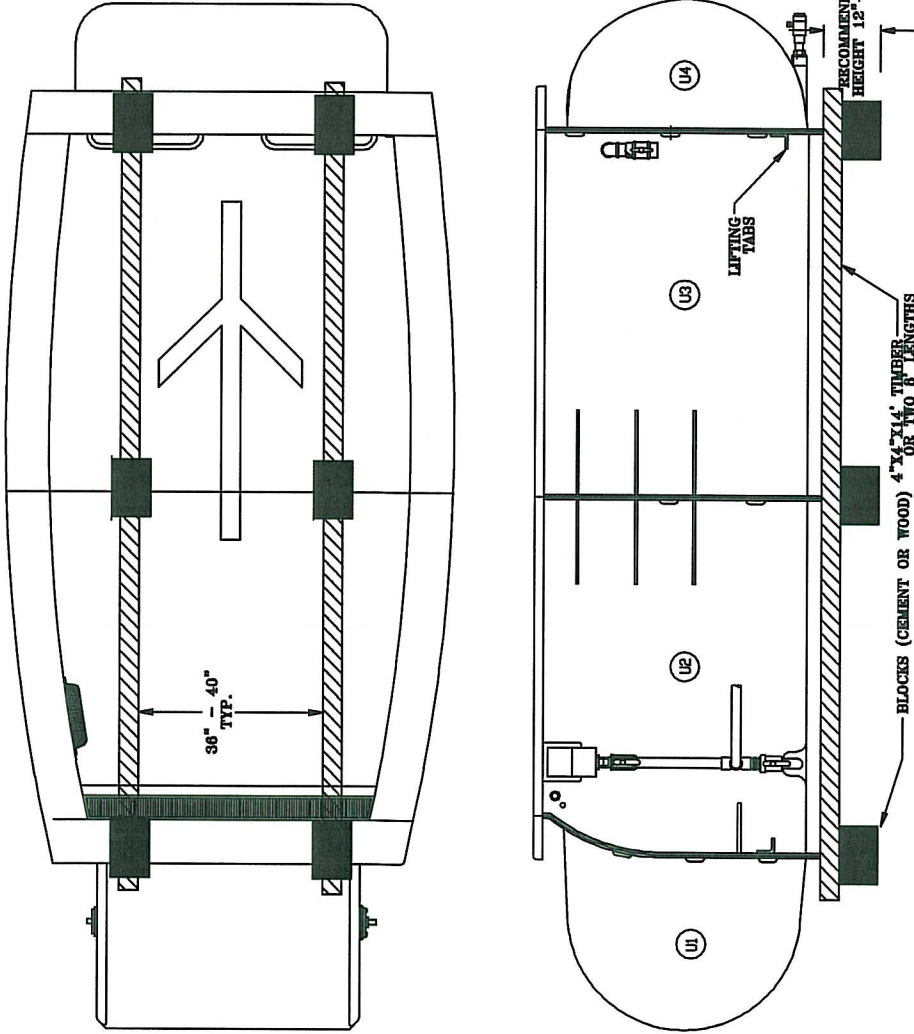
## LIFTING TABS ASSEMBLY

3.4 Attach the four lifting tabs (See "Blueprints") to the four bottom corners of the outer flanges. There are pre-drilled holes for easy identification and alignment. Tighten all bolts securely. These tabs should be left in place for future use. These tabs can also be rotated 180° to make more room for the lifting jacks.

DWG NO.  
SUPPORT

REV DESCRIPTION BY APPR. DATE

# REMOVABLE ASSEMBLY SUPPORTS



NO.	PART NO.	DESCRIPTION	QTY
PARTS LIST			
PROJECT: <b>SWIMEX, INC</b>			
TITLE: <b>REMOVABLE ASSEMBLY SUPPORTS</b>			
DRAWING NO.: <b>SWIMEX INC ASSEMBLY MANUAL</b>			
REV: <b>A</b>			
PART # <b>N/A</b>			
DR BY: <b>M.P.F.</b>			
DATE: _____			
SCALE: _____			
FILE: <b>OWHMAN</b>			
SHEET: <b>1 OF 1</b>			

NO.	PART NO.	DESCRIPTION	QTY
PROJECT: <b>SWIMEX, INC</b>			
TITLE: <b>REMOVABLE ASSEMBLY SUPPORTS</b>			
DRAWING NO.: <b>SWIMEX INC ASSEMBLY MANUAL</b>			
REV: <b>A</b>			
PART # <b>N/A</b>			
DR BY: <b>M.P.F.</b>			
DATE: _____			
SCALE: _____			
FILE: <b>OWHMAN</b>			
SHEET: <b>1 OF 1</b>			

NO.	PART NO.	DESCRIPTION	QTY
PROJECT: <b>SWIMEX, INC</b>			
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REV: <b>A</b>			
PART # <b>N/A</b>			
DR BY: <b>M.P.F.</b>			
DATE: _____			
SCALE: _____			
FILE: <b>OWHMAN</b>			
SHEET: <b>1 OF 1</b>			

USED ON

APPLICATION

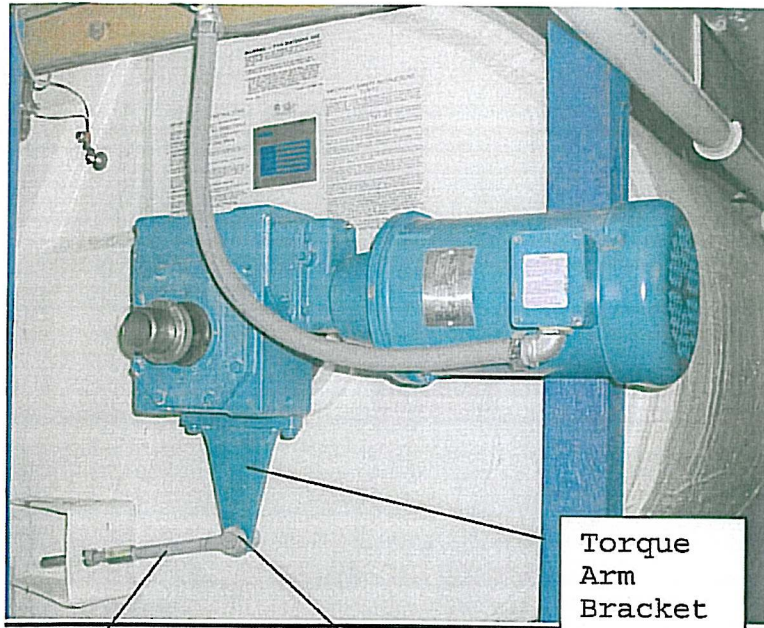
## INSTALLING THE PADDLEWHEEL MOTOR/GEAR BOX ONTO THE PADDLEWHEEL SHAFT

- 3.5 The drive end of the paddlewheel shaft is rotated so that the key slot is facing up. The brass key (1/2" for the 5 HP, 5/8" for the 7.5 HP) is set into the key slot and fits firmly into place. The Jaw-End Fitting is mounted into the hole provided in the U1/U2 flange assembly using the Jaw-End Fastener Set. One nut and one washer go on each side of the flange assembly. The jaw-end cross pin is centered directly beneath the paddlewheel shaft with the pin parallel to the shaft, and the nuts are then secured. Remove the cross pin and retain. See Photo next page.
- 3.6 The gear box and electric motor are now ready to be installed on the shaft. The bore of the gear box is to be cleaned and coated with a lubricant. The gear/motor combination (referred to as gear motor) can be lifted and slid onto the shaft making sure that the key enters the key-way in the bore of the gear box without binding. If the gear motor binds, simply remove the gear motor and file down the key until the gear motor slides on without binding. The gear motor unit is slid up against the end of the bearing, and in doing so the unit must be rotated so that the torque arm will clear the jaw-end fitting and be allowed to slide between the jaws. The jaw-end fitting must be adjusted for final positioning. **IMPORTANT - IT MAY BE NECESSARY TO SLIGHTLY TAP THE GEARBOX ONTO THE SHAFT WITH A WOODEN OBJECT - MAKING SURE TO CONTACT THE GEARBOX "ON CENTER" OF THE SHAFT. IF LIGHT TAPPING DOES NOT HELP IN SLIDING THE GEARBOX ON THE SHAFT, REMOVE THE GEARBOX AND FOLLOW THE STEPS ABOVE. NEVER USE FORCE OR METAL OBJECTS (HAMMER, SLEDGE, ETC.) TO DRIVE THE GEARBOX ONTO THE SHAFT - THIS WILL VOID BOTH THE MOTOR/GEARBOX WARRANTY AND THE PADDLEWHEEL DRIVE SYSTEMS WARRANTY (SEALS, BEARINGS, SHAFT, ETC.).**

If it is not installed, put the rubber bushing into the torque arm hole. The cross pin can now be tapped through the jaw-end fitting and torque arm rubber bushing. The cotter pin is installed and locked. When properly aligned, the motor will be in a horizontal position above and to the left of the shaft. The jaw-end fitting can be adjusted to bring the motor into horizontal position (level). The nuts can now be tightened again.

- 3.6 Once installed, the fluid level of the gear box should be checked and brought to the proper level in accordance with the manufacturer's instructions (continuous oil level). The manufacturer's instructions are on a yellow card shipped with the gear motor.
- 3.8 Mount aluminum one-piece collars to each end of the paddlewheel shaft. This collar must be securely in place before locking.





Jaw End  
Fitting

Rubber  
Bushing  
here

Torque  
Arm  
Bracket

## INSTALLATION OF HANDRAILS AND LADDER RAILS

**3.9** The pool entry ladder is built into the pool. Mount the handrails by placing them into the pre-drilled holes on the top lip of the pool. Secure with supplied fasteners. Both rail sides of the ladder must be grounded (See “Electrical” Section.) Fasteners should be attached to rails.

**3.10** The two side handrails are mounted on the top flange of Sections U2 & U3 (or inside wall if requested by owner). There are four pre-drilled holes on each side. Carefully push the four bolt ends of the railings into the pre-drilled holes. After the bolt ends are partially through the holes, lay a small bead of silicone around each opening. After the silicone is applied, push the railing all the way into the holes. Using nuts and washers, tighten down on the railing from underneath the top flange. After all three bolts are secured, wipe off the excess silicone around each of the three mounting holes. Bolts are to be grounded properly. (Refer to “Electrical” Section.) Repeat process for the other railing.

## ASSEMBLY OF PADDLEWHEEL SHAFT, SEAL, & BEARING SYSTEM

**Note:** This section of the manual need only be followed if, by request, the paddlewheel system was shipped unassembled. If the paddlewheel was shipped assembled, skip to "Pool Assembly Section."

- 1.1 Assembly of the Paddlewheel system is to include seals, shaft, bearings, and paddlewheel. The paddlewheel system is shipped preassembled unless otherwise requested. When assembled, the paddlewheel (Section U1) requires an access opening of 48", and when shipped unassembled, by request, the section will pass through a 38" opening.
- 1.2 The fiberglass rotor housing, U1, is positioned on the floor with its flanges facing up. The preassembled paddlewheel assembly is installed in the rotor housing U1. Slide the shaft (Item 23) through the side hole of the rotor housing, through the rotors of the paddlewheel assembly, and out the opposite housing side hole. A soft cloth should be placed between the shaft and the fiberglass housing to prevent damage to the seal areas on the shaft. **Note:** The large key-way end of the shaft must project out of the drive side of the rotor housing.
- 1.3 Position the shaft so that the four short key-slots are exposed and facing up. Now set the four keys (Item 24) in place, tapping them with a mallet if necessary. Slide the shaft so that the keys enter the key-ways in the spider clamps (Item 15) and are no longer projecting beyond the clamp sides.
- 1.4 Prepare the 2 stainless steel two-piece collars (Item 25) by coating the inside of each half with Never Seeze NSWT-14™. Also coat the socket screws with the compound. Mount the collars to the shaft so they butt against the inside clamps of the outside spiders. Tighten and wipe off excess compound.
- 1.5 The clamp mounting bolts (Item 19) should now be made snug.
- 1.6 The clamp squeeze-bolts (Item 20) should now be firmly tightened using hand tools. Pneumatic tools should not be used.
- 1.7 The clamp mounting bolts (Item 19), which were previously secured, should now be firmly tightened at all four places on all four spiders.
- 1.8 The shaft seal kit (Item 26) is now installed on the idler end, or short end, of the shaft (no key slot).
- 1.9 First, wipe the shaft down with a clean soft cloth and apply a thin film of Never Seeze NSWT-14™.

**1.10** Slide the spring and cup washer assembly (Item 26a) onto the shaft so that the cup washer contacts the plastic clamp. With water, slightly lubricate the inside of the rubber seal that incorporates the carbon face (Item 26b), being careful to keep dust off the face. The face is lapped and must not be chipped or scratched. Slide the seal onto the shaft so that it fits into the spring. To permit passage of the spring and seal, the shaft must be lifted and centralized in the housing side holes.

**1.11** Press the stainless steel mating ring (Item 26a) into the Delrin bearing housing (white plastic, Item 49). Install the seal master bearing into the bearing housing. Coat the bore of the bearing and its set screws with Never Seeze NSW-14™.

Place a bead of black polysulfide sealant (Boatlife) in the sealant groove of the bearing housing. Slide the bearing housing over the shaft and onto the S.S. studs. Once the bearing housing is slid up to the side of the tank, install the bearing set fasteners (Item 33) immediately so the sealant is not disturbed. Secure with hand tools only.

**1.12** Step 1.11 must now be repeated for the drive side of the shaft.

**1.13** The paddlewheel rotor should now be able to rotate freely and should be centralized within the rotor housing, U1. The set screws on both bearings are now coated with Never Seeze NSW-14™ and firmly locked in place. The paddlewheel should be rotated several turns by hand to be sure of smooth, free rotations. Slide an aluminum locking collar (Item 32) onto the idler end of shaft (short side) and tighten.

**1.14** After the paddlewheel section is completed, prop up the section so you are able to fill it with water. After filling it, rotate the shaft manually several times, checking the seals for leaks. If leaks occur, contact SwimEx at (800) 877- 7946.