PAT. 3766573
Installation of Sun Domes for in-ground pool

GENERAL INSTRUCTIONS:

Read thru the entire instructional materials before beginning any installation. You will find that the installation of a Sun Dome over a in-ground pool is relatively simple but it is important to follow all instructions carefully.

Three power tools are needed. First is a rotary hammer. A rotary hammer is an electrical tool that drills holes in concrete with both a drilling and hammering action. You will need a ¾" bit with this tool and it should be equipped with a depth gauge to properly install the lead anchors used to hold down the foundation.

Next you will need a small electric drill and a 5/8" speed bore bit with a ¼" shank. And third, an electric screwdriver. You could do without the power screwdriver but it will do the job much quicker and easier than any hand tool.
Note: Two other items are needed to install the enclosure that are not furnished. 3/8" machine bolts are not supplied since lengths of these bolts cannot be determined until shims have been applied to the foundation. Shims are not furnished since shim requirements might be different for each installation. See Step 6 of Installing the Foundation.

Painting:
It's recommended that the 2x4 foundation be treated prior to installation.
Installing the 2x4 Foundation:
It's assumed that the entire foundation will be installed on a concrete deck. If there is not sufficient concrete surrounding the pool, it will be necessary to secure the 2x4 board in some manner other than that described in this booklet. Care should be used to safeguard the enclosure against the effect of wind when other methods are used. Consult with an engineer or contractor if you need advice on alternate methods of securing the 2x4 boards. The deck should be reasonably level and true. If the deck has wide variations of ups and down, additional shims may be necessary.(Shims aren't furnished).

STEP 1.

Lay out the location of the enclosure and mark it clearly with a chalk line according to dimensions on the drawing corresponding with the unit.

STEP 2.
Lay out all 2x4 foundation pieces along the chalk line to make sure everything fits properly. Be sure that the edge of the board that holds the extrusion is turned out or away from the pool. It is essential that the side boards are placed in proper sequence.

STEP 3.
Mark locations of brackets(part 060052) and the end board(part 060072). One bracket should be flush with each end of the 2x4 and the remaining brackets should be equally spaced as shown (see figure 2).

Fig.2-allow part 060052 to rest on 2x4

STEP 4.
Mark location of brackets(part# 060052) on the side boards. Working from the left to right mark the location of the first bracket flush with the left end of the 2x4 foundation board. Next, using the spacing dimensions on the drawing mark the remaining locations of the brackets. The last bracket(right hand end) of each 2x4 board will center over the end of the plate. That is, it will actually rest on two boards- it will cover the joint. See figure 3.

Fig. 3. Notice that all hold down plates(part#060072) are flush with inner edge of foundation. Take care not to hit the locking extrusion with the fastening screws.

STEP 5.
Continue marking all boards for proper locations of part #060052.

STEP 6.
Concrete anchoring holes, one 3/8" machine belt should be used next to each part# 060052 to secure the 2x4 to the concrete deck. (These bolts are not furnished because the length of the bolts will depend upon how much shim material is used under the plates). Drill 5/8" holes thru the boards. These holes should be approximately 3 inches from the bracket Location and centered on the plate. See figure 3. No anchors are required for the short angle cut 2x4 boards. Only one anchor is required where two boards are joined. See figure 3.

STEP 7.
Turn all boards upside down and fasten shim of redwood or cedar(not furnished) to the underside of the plates at each bolt hole location. See figure 2 and 3. These shims are readily cut from a redwood or cedar 2x4. Their dimensions are 1.5"x 3.5"x .25" thick or thicker if more shim is necessary. The shims should be fastened with galvanized nails or screws (not furnished). A minimum ¼" shim should be used under all plates to permit drainage and air circulation around the plates.

STEP 8.

Place all 2x4 in exact position along the chalk lines. Carefully mark the locations of all lead anchors on concrete deck. No anchors are used for the short, angle cut 2x4 boards. Using the rotary hammer, drill ¾" diameter holes to receive the lead anchors. Great care must be taken to insure accuracy. The lead anchors should be slightly(1/8") recessed from the surface of the deck.

STEP 9.
Flush cement dust from all drilled holes with or clean with a vacuum cleaner. Set all anchors with the setting tool provided.(Fig4)

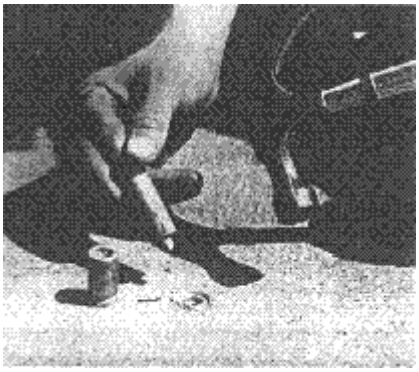

Fig. 4. Installing the lead anchor. The flared end goes down.

STEP 10. (See figure 3)
Fasten all 2x4 boards using the proper length 3/8" machine bolt(not provided). A flat washer should be used with these bolts. These washers are provided. Make sure that all extrusions are on the outside edge.

STEP 11.
Assemble and fasten all hold down plates and brackets (parts #060052 and #060072). Fasten with six 1 ½" #10 screws provided-see figure 3. The short angle cut 2x4 is held in place in this step. Only two screws are used in the mitered 2x4. The excess metal or part#060072 is then cut off with a hack saw and the edges should be filed smooth -see figure 2. Plate #060072 should be flush to the inside edge of the 2x4. Be sure that part #060052 is completely under part #060072-tight to the bend.

The foundation for the Sun Dome is now complete. With respect to time of installation, you are now about 60 to 70 percent finished with the entire job.

INSTALLING ALUMINUM FRAMEWORK
STEP 1.
Lay out all aluminum tubing and group according to length. Familiarize yourself with the various lengths.
STEP 2.
Lay out all aluminum castings and determine where each Casting is to be used. Casting part #061705 has a right and left hand application. This application is made simply by installing one right side up and other upside down.
STEP 3.
Take any short piece of aluminum tubing. Check both ends to make sure there is no interior burr left by the factory cutting operations. If some burr is present, take a sharp pocket knife and cut-don't scrape-the burr away. The inside of the tube should be smooth and free of anything that would interfere with the joining of two pieces. With this piece of tubing, check the fit over all the aluminum castings. All connections between tubing and castings should be free of any forcing or binding. If some castings will not readily engage the tubing, a course metal file or wood bastard file can be used to remove excess material from the casting so that a good fit is obtained.
STEP 4.
Upper roof brace assembly. With the exception of the first and last arch over the pool, all the other arches have a brace assembly at the ridge of the roof structure. Each such assembly consists of two sections of aluminum tubing 66 3/8" in length and having one pre-drilled hole, one brace with crimped and drilled ends, one aluminum casting(part#061701) and two ¾" x #14 pan head screws. See figure 5. Assemble all upper roof brace assemblies.
STEP 5.
If you have laid out all the aluminum tubing according to length As instructed in Step 1, you have noticed that you have two Different types of curved pieces. One is longer than the other and the longer one is quite heavy. It has a steel insert inside the tube for greater strength. Attach one curved piece with the steel insert to each of the upper roof brace assemblies(Step 4). After all have been assembled, you are now ready to begin setting up the framework. Take one complete arch and install it along the sides of the pool in the second from either end position. After this is in place, take another complete arch and add a ridge beam, (50 7/8") aluminum tube to the casting. Carry this second section to its' position next to the standing section. After this connection has been made, seat the lower ends of the arch in their proper positions. Always make sure that the lower ends of the tube are seated completely to the bottom of the bracket #060052 fig. 3. Repeat this procedure until all arches and Ridge pieces have been set up.

Figure 5

STEP 6.
End arches. The end arches are a combination tubing and several aluminum castings. Each end is identical. Remember, the castings are right hand or left hand simply by turning one way or the other.

STEP 7.
Sway brace assembly. The sway braces along both sides of the enclosure are fastened approximately 6 inches below the bend of the tubing. See figure 7 and 8. Use square nuts, Allen screws, and aluminum clamps for this installation. The screws should be turned snug but avoid over tightening or you will bend or otherwise distort the fitting. Before tightening the sway braces, make sure that the aluminum framework is standing reasonably straight in all respects. Remember, this is not a rigid structure. It must roll with the wind. But it should be reasonably straight and true upon installation.

Fig. 7

Fig. 8

STEP 8.
You might notice that the ridge of the framework is not perfectly straight or level. Any imperfection in the ridge line is due to improper seating of the tubing in the #060052 bracket (figure 3) or it is due to the imperfection in the concrete deck. It will hardly be noticed when the cover is applied. If it is objectionable and must be corrected, then the boards will have to be shimmed perfectly straight, level, and parallel.

STEP 9.
Check to see that all screws, nuts, bolts, and Allen screws are properly tightened. Make sure that all tubing is completely and firmly seated in the #060052 brackets. Check all sliding connections in the aluminum tubing to make sure they are all tight. Check all connections where tubing meet aluminum castings to be sure they are all secure. You are now ready to install the covering.

ENCLOSURE COVER INSTALLATION:

STEP 1.
The cover can be installed from either side or either end. If there is some wind present it can greatly assist in the installation. Determine the side or end from which you will apply the cover. Pull it up and over framework aligning the welded seams of the cover over aluminum tubing. Cover needs equal amount of overlap at bottom.

STEP 2.
Unroll the black vinyl lock material around the entire enclosure. Beginning at any point, attach the cover to the extrusions and hold in place with the vinyl lock (black cord). After you have inserted about 4 or 5 feet of vinyl lock, move down about six feet and apply a slight amount of tension or stretch to the cord. Then tuck it into the extrusion so that it will hold. Now move another five or six feet and repeat this procedure all around the perimeter of the enclosure. Then follow up and tuck the remainder of the vinyl lock into place. See figure 9. DO NOT use any sharp instruments such as a screwdriver to assist in this operation. You should be able to do this with your fingers. If you need some assistance, a wooden paint stirring stick or something similar can be used-but be careful not to puncture or tear the cover. If the weather is cold, pour some very warm to hot water on the vinyl cover edge and the vinyl lock material. This will soften the materials and make the job much easier. Do not stretch the vinyl lock. Stretching its length decreases its diameter and will consequently lessen its holding power.

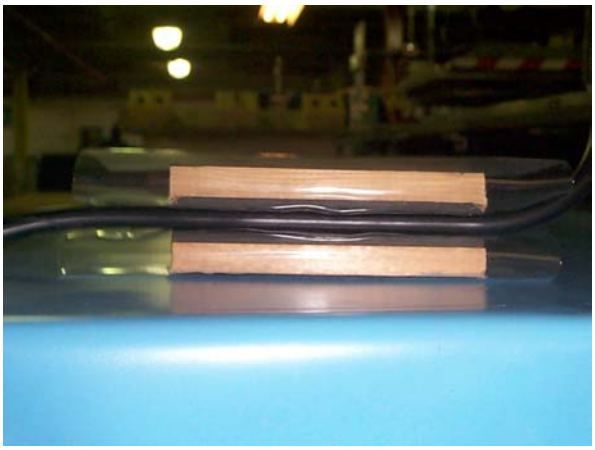

Fig. 9- Pull vinyl covering down as tightly as possible. Press vinyl lock over cover and into channel. Use no sharp or metal objects.

STEP 3.
After all the vinyl lock has been inserted into the PVC extrusion, the installation is complete. There will be many wrinkles in the cover when it is first applied to the framework. These will disappear in a few days of warm weather. It might be found

STEP 3.-Continued
that the cover fits rather loosely after it has been in place for a few days. If this is true, it is advisable to remove the vinyl lock where appropriate, tighten the cover and re-install the lock.

CONCLUSION:
The vinyl covering may be cleaned with mild soap or detergent and water. Do not allow the cover to remain on a lawn in bright sun for more than a few minutes or lawn will burn. When cleaning, use only a soft brush or cloth to avoid scratching the vinyl. Never drag the vinyl covering on concrete or other rough surfaces.

When the cover is to be removed from the framework, be sure it is thoroughly dry before storage. It is best stored at room temperature- never in the sun. The best way to dry a cover is to have it on the framework with all doors and windows open. If the cover is to be folded on the lawn, do so after all moisture has gone. Do the folding quickly so that moisture will not accumulate from being in contact with the ground.

In a relatively short period of time the cover might show black marks where it makes contact with the aluminum tubing. This is black aluminum oxide and is an unavoidable happening. If you want to prevent this darkening of the vinyl where it makes contact with the tubing you can effectively do so by using our vinyl rafter sleeves . These are placed over all the tubing in order to protect it. It must be done before you place the cover on. Also make sure that the tubes are clean and dry before placing the sleeves on. Sleeves **don't** come with the Sun Dome unit. Spraying the tubing with clear protective materials is only a temporary solution because the clear materials wear off in time.

A repair kit is supplied in the event punctures or cuts should occur. The kit contains instructions for its use.