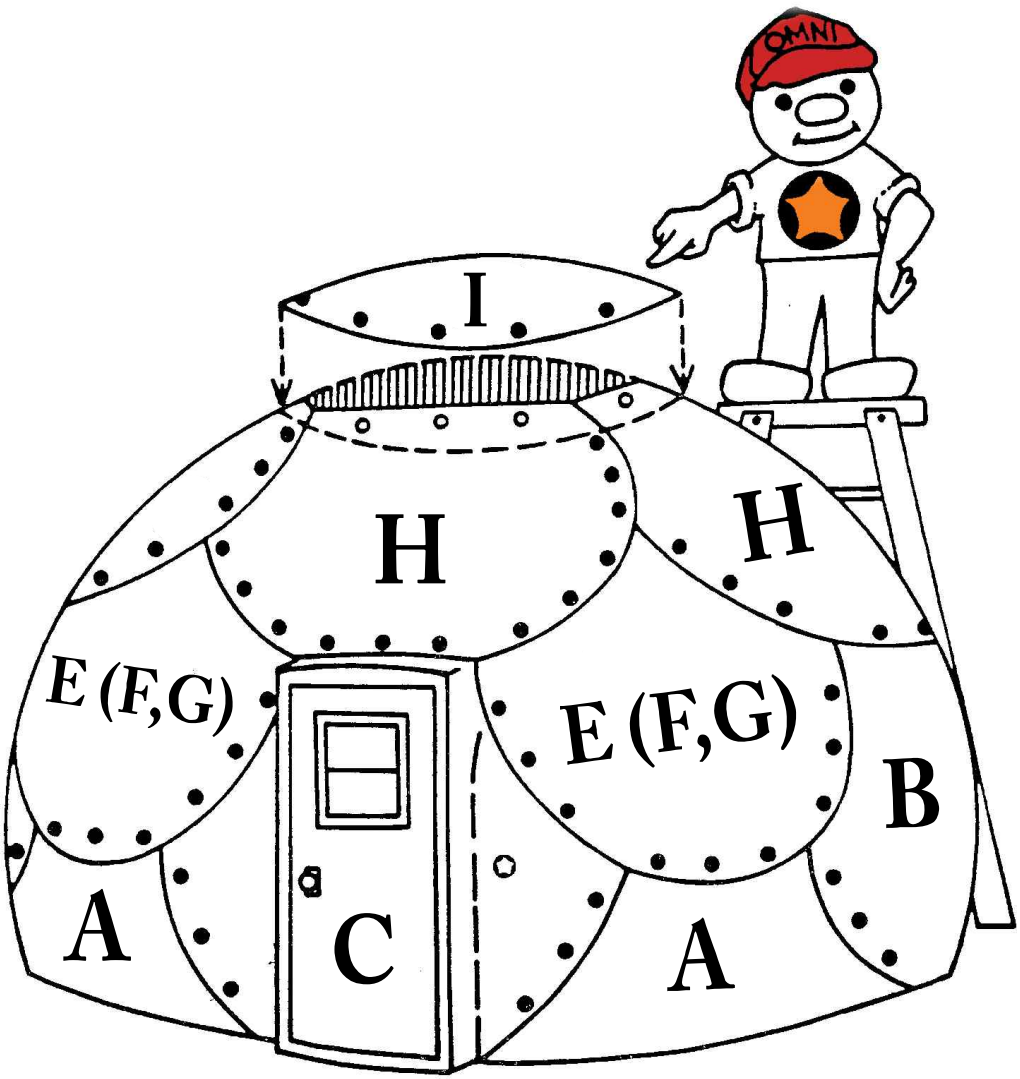
HUMAN & SPACE

www.omnidome.co.kr

Omni-Domehouse®
Assembly Manual

< Updated on NOV 2009 >



HUMAN & SPACE

#5 DASOM Bldg, 90-10 PANPO4-DONG,
SEOCHO-GU, SEOUL, KOREA
TEL (82) 10 3468 2123, FAX (82) 2 537 420
WWW.OMNIDOMEHOUSE.COM

HUMAN & SPACE
www.omnidome.co.kr

Omni-Domehouse®
Assembly Manual

GETTING READY

1. SITE LOCATION

〈 Assembly is permitted only when 100% complete horizontal condition is provided. 〉

If you are not using a pre-built flooring system such as a wooden deck or concrete slab, choose as level a location as possible and remove all debris. We do not recommend erecting the Omni-Domehouse® on a surface with more than a 10 degree slope or grade without a foundation.

2. UNPACKING

The panels come from our factory, pre-drilled and ready for assembly. Each panels is marked with a 4cm diameter COLOR KEY LABEL. This label will be either green, yellow or red and will have printed identification. When unpacking, sort panels by color key label.

3. FLOORING

The Omni-Domehouse® is self-supporting without a flooring system or foundation. For long term use, a wooden deck or concrete flooring system is recommended. For short term use, soft marine vinyl flooring is recommended. If you are using the vinyl flooring, select your location, fold out the floor and use the outside diameter as a reference line to install the first tier (green color key labels).

4. TOOLS REQUIRED

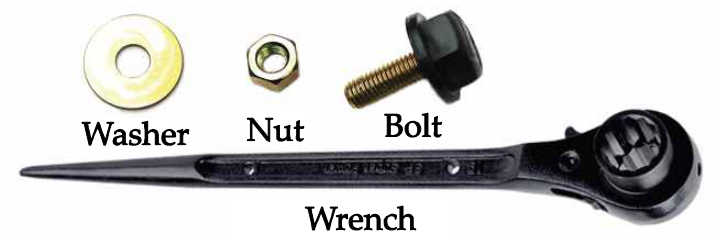
The Omni-Domehouse® is required one 11/16" combination wrench and one standard slotted screwdriver. At least a 6' high step ladder is needed in the assembly process. Listed below are the power drill and accessories recommended by Human&Space, which make the assembly and the disassembly much easier.

5. BOLT INSTALLATION

Each panel has a series of 5/16" threaded holes and 1/2" oversized holes. Start with panels marked with green color key labels. First, make sure a neoprene washer is installed on each bolt. Thread bolts into all threaded holes. If you are using a power drill you need only turn the bolt until the threads start, because you will later tighten them with the power screwdriver. If the power drill has a torque setting, set it to a low range so it ratchets as the bolt becomes snug. Insert bolts in all panels including those with yellow or red color key labels, and the H panel which is not marked with a color key label.

COMPONENT CONFIRMATION.

In order to fabricate one unit of dome, each 21 numbers of panel, 150 numbers of bolt, nut and washer should be prepared.



SUGGESTIONS AND TIPS

HUMAN & SPACE recommends using three people in the assembly process.

1. Two people should be on the outside of the dome during the assembly process to stabilize and balance the panels. The person on the inside actually aligns the bolts with the holes and threads nuts to bolt.

2. To make sure your first tier is a true circle, use a rope 1/2 the length of the dome diameter to mark off a 20' or 17' diameter circle from the center of your location to use as a reference line.

3. The 20' dimension is located approximately 2' off of the floor because the Omni-Domehouse® is a 5/8 sphere. The diameter measurement at the lowest point of the erected dome will be approximately. 19'x7". This measurement may change due to tightening techniques or expansion and contraction.

4. Each bolt must be tightened in the panel before assembly, if not bolt will unscrew when tightening nut after assembly is complete. Never tighten nuts until assembly of your dome is complete.

5. Always keep the bottom of each panel against the outside wall while the person on the inside aligns the bolt. The people on the outside must avoid the tendency to pull the bottom of the panel out and look inside, which makes installation more difficult.

6. If a few bolts do not line up during assembly, skip them and come back later. They will align themselves while locating other panels. Do not hit or pound bolts through holes. These bolts will align with sight movement of the panel.

7. Always start by inserting highest bolt on either side of each panel, then move to the highest bolt on the opposite side of that panel. If lower bolts pop through, pop them back out and start installing the top bolts left and right, gravity will help line up bottom bolts. If you start with the bottom bolts you will struggle to get the top bolts in.

8. In windy areas be sure to anchor the Omni-Domehouse®. We recommend tent stakes or our tie-down systems. Do not attempt to assemble the Omni-Domehouse® in high winds.

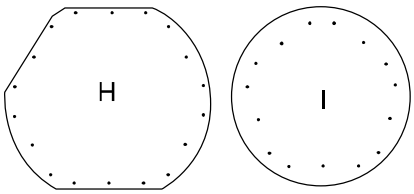
ASSEMBLY OF DOME

< A NOTE > Assemble green labeled panels 1st, yellow 2nd, and red 3rd. All labels should point straight up. The next tier will cover the color labels so they will not be seen.

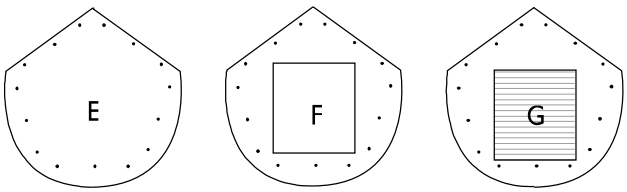
[Explanation for panel structure]

A	This is a basic panel structure placed between B and C or B and D.
B	This is a plane, plain panel structure placed between C and D.
C	This is a door panel being surrounded for decorating access door or power source window.
D	This is structurally identical with door panel C but closed door panel.
E	This is a plane, plain structured panel placed on behalf of F and G.
F	This is a window panel being surrounded for decorating windows.
G	This is a closed window panel though it is identical with window panel F structurally.
H	This is a plain panel connecting second floor and top floor.
I	This is a circle structured panel being placed on the highest position finally after 20 numbers of panel being positioned.

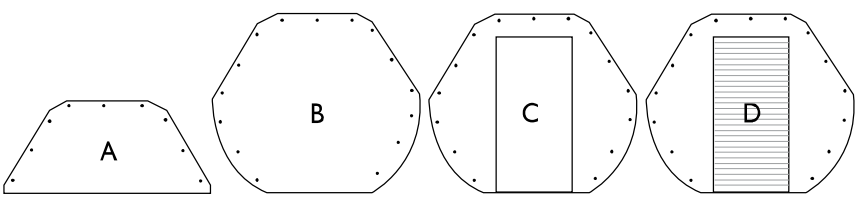
3rd TIER



2nd TIER

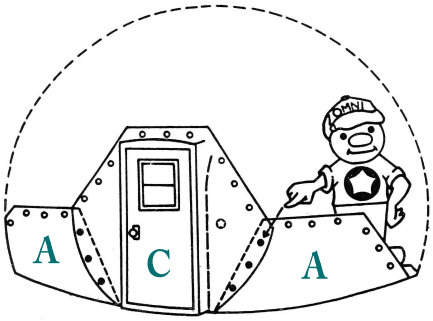


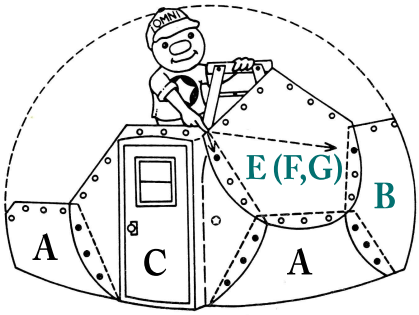
1st TIER



STEP ONE

The first tier(GREEN) has a total of 10 panels. Position the B door panel at the desired location. Attach the A panels to each side of the door panel by allowing the bolt from (B) panel to go through the larger holes in the (A) panels, inserting the top bolt first, Hand tighten a 11/16" nut, do not tighten snug. Continue attaching and bolting panels in a clockwise sequence, alternating one (A) panel between a (B) or (C) panel until you have a total of ten (10) panels to complete the first tier.





STEP TWO

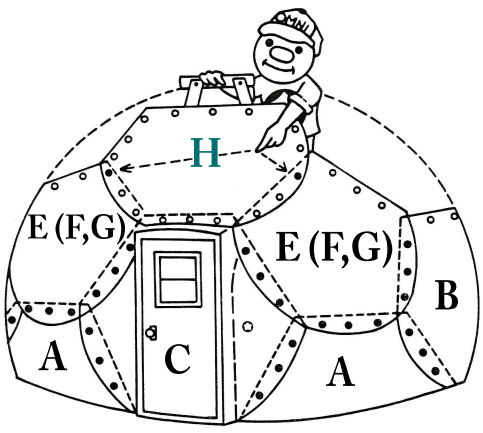
The second tier (YELLOW) has a total of 5 panels. Choose the location of the E window panel(s). The D panels will go in the remaining locations. To position the D and E panels, you should have three people; two on the outside - one on each side of the panel and one on the inside. The person on the inside will insert the top bolt on the left and right into the oversized holes of the first tier panel, then continue with the lower bolts. Continue panel assembly in a clockwise direction until all five (5) located panels are complete.

STEP THREE

The third tier (RED), has a total of 5 panels consisting of F and G panels. The F panel has a straight cut at the bottom to accommodate the top of the door. Place it above the door panel (B) by having two people slide it up to the person on the step ladder inside the dome to position the panel to the appropriate bolt location. The two persons on the outside will stabilize and balance the panel. Once you have the panel secured with nine (9) nuts you may let the panel sag. With the person on the inside facing the F panel, the three bolts showing at the top left will be used to connect the last panel of the red tier.

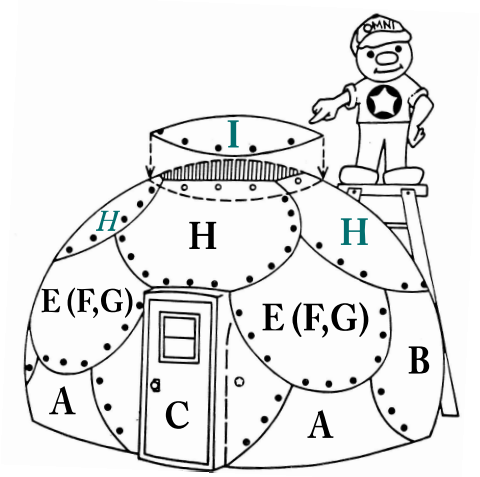
Now, you are ready to complete the installation in a clockwise direction with G or F panels. Remember, F panels only go above door panel B or door block out panel I. G panels go directly above C panels.

< NOTE > The last panel on this tier will overlap to the left and underlap to the right. (As determined by standing on the inside of the dome, and looking up). F panels may substitute G panels in certain situations.



STEP FOUR

This is the last panel (H). The panel will have all fifteen (15) holes threaded with bolts installed, it overlaps every panel it connects to. Two people will slide the panel up to the person on the ladder on the inside. The person on the inside will grab the panel and position it over the top. One other method that can be used is, lean the H panel against the Omni-Domehouse®, tie rope to bolt & nut assembly, run rope over and through the center and the person on inside uses rope to pull and guide the panel. Once (H) panel is over top, rotate until bolts begin to line-up and pop through. Once you have two bolts secure, pull and push gently and the remaining bolts will begin to pop through. Secure all nuts.



FINAL STEP

Go back and secure any bolts that you were unable to secure earlier. The bolts should be easier to align and secure. If not, gently kick the bottom of the interior wall until it is truly round. Once all bolts are secure, you are ready to tighten the nuts. If you are using the cordless Makita drill, set torque rating to a medium range so the drill ratchets once nuts are snug. If the torque is set too high, it will break the bolts as they are tightened. Start tightening the bolts at the top and work your way down.

FLOORING

Once the dome is completely installed, apply the Velcro stripping to the inside wall, approximately 8.5" up from the bottom. The Velcro has adhesive tape that will stick to the dome's interior surface. Once applied, you are ready to attach the top of the floor to the wall. In front of the door, roll the excess vinyl flooring and tuck it inside the dome.

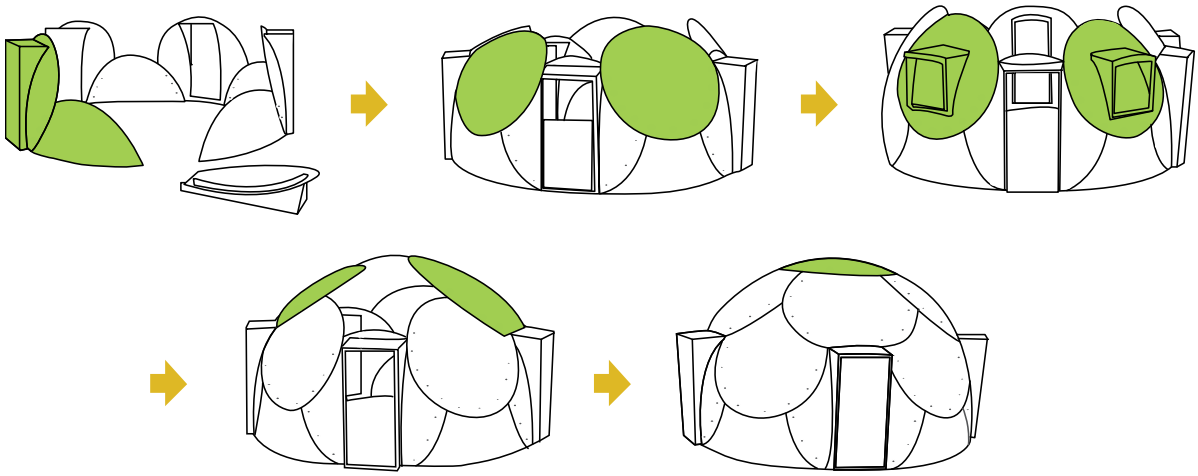
THE DOWN

In case, you put the Omni-Domehouse® without any flooring systems, even though the Omni-Domehouse® will withstand high winds, HUMAN & SPACE recommends that it be anchored. We recommend replacing the middle bolt, which attaches the A panel to the B, C, or I panel, with a 3/8" x 4" eye bolt, one nut and fender washer on each side. The eye bolts should be evenly spaced in five (5) locations around the outside diameter. These eye bolts act as tie down hooks to link rope or cable to a reasonable tent-type stake.

DIS - ASSEMBLY

Start with top panel (H). Loosen nuts only on the panel you are currently working on. Continue to dis-assemble one panel at a time.

< NOTE > DO NOT remove all nuts prior to dis-assembly; only the nuts on the panel you are currently working with.



PROBLEMS AND SOLUTIONS

Q1. In case that bolt is not inserted into nut hole properly?

➔ When penetrating hole by using drill or tap, do not forget that angle of panel hole should be a right angle. (90 degree) (In case of using tap with slant angle, it may not be usable due to wear of original nut hole.)

Q2. In case that bolt alignment does not work due to failure of matching with nut hole of other panel.

➔ It should be matched with round (circumference) of bottom diameter in its exact circle in advance. If diameter should show an oval shape of which diameter is twisted, nut hole alignment may not work.

Q3. In case that bolt fails to penetrate out holes while diameter is correct.

➔ In case that bolt is 1/4inch or near to its value, bolting work could be performed more easily than expected when repeating the motion of pull and push from the opposite direction directly rather than depending on a personal intuition.

Q4. In case that door opening does not work properly.

➔ If possible, lower part of door frame including bottom is required to be pushed and pulled until door opening/closing function become smoothly operable. If required, a wedge may be driven to the lower part of door but if door closing function is not operable still, frame itself is required to be loosened by adjustment.

IMPORTANT POINTS TO RECOGNIZED

- ✓ Be sure to fasten washer at both ends before starting bolting works!
- ✓ Be sure to fasten panel nuts tightly without fail!
- ✓ Be sure to inject silicon into every panel connection parts at the place where strong wind is blowing!

☎ For further informations, please feel free to email to domendome@naver.com Please make a first contact via email.

HUMAN & SPACE

#5 DASOM Bldg, 90-10 PANPO4-DONG,
SEOCHO-GU, SEOUL, KOREA
TEL (82) 10 3468 2123, FAX (82) 2 537 420
WWW.OMNIDOMEHOUSE.COM