



## Freedom Greenhouse Assembly Instructions: 8x8, 8x12, 12x12 sizes

The Freedom Greenhouse is built in a woodworking workshop in Maine using the highest quality Eastern Maine Cedar and other premium components. Experienced carpenters and woodworkers assemble each greenhouse in modular sections that are crated and shipped to you. The on-site assembly process starts before the greenhouse is even uncrated with the groundwork and base preparation.



**Caution:** – Before beginning, make sure there are no overhead power lines that could come in contact with you or the greenhouse nor any underground power, water, or gas lines where you intend to anchor the base.

### Groundwork

The ground that the Freedom house sits on does not have to be level, but the base for the greenhouse does need to be **both square and level**. The other requirement of the base is that it provides a method of anchoring the greenhouse against strong winds. Any form of base is acceptable provided it has the three requirements of being square, level, and provide a method of anchoring the greenhouse. The bottom of each greenhouse has a 1"x 4" cedar board on all sides. The simplest base is made of rot resistant wood or plastic and forms a perimeter framework the same size as the greenhouse. It is anchored to the ground with steel rods or some other means and the greenhouse is attached to the base with wood screws (included). A concrete slab is another base option that also provides a heat sink that holds the heat of the sun into the night. On sloped ground a level wood deck could be built and the greenhouse attached to the deck. (photo above) There is no limit to the kind of base and floor surface you use, providing the greenhouse walls are square, level, and are anchored.

**Tips** – If this is your first experience with leveling a building, here are some tips:  
1. Use any 18" or longer bubble level or laser level.

### MAINE GARDEN PRODUCTS, INC

576 CUSHING ROAD, FRIENDSHIP, ME 04547

PHONE: (207)236-2600 • (877)764-9365 • FAX: (207)236-2006

WWW.MAINEGARDEN.COM • INFO@MAINEGARDEN.COM

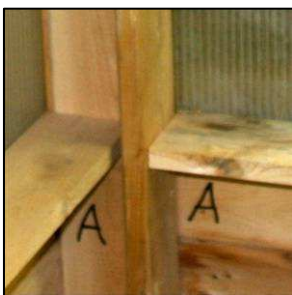


2. Check the ground along the four sides of the site where the greenhouse is being placed and determine if the highest points can be lowered by removing sod, soil, or rocks. If it can then use a spade and remove the high spots and if it makes sense put that material in the low spots.
3. When the ground is leveled to within  $\frac{1}{2}$ " or so, the boards or blocks that are to be the base can be placed and squared. To fine tune the leveling tamp down the high spots with a sledge hammer or raise up the low spots with shims or sand or gravel under the base.
4. Re-check for squareness by using a tape and measuring from corner to diagonal corner and then the opposite two corners. Adjust for square until the two different diagonal measurements are within  $\frac{1}{4}$ " of each other.
5. Anchor the base with any type of anchor that will withstand the expected winds for your area.

## Assembly

**Tools required:** Although it is possible to assemble the Freedom greenhouse alone, it is highly advised you have a helper. Some greenhouses have gable (peaked) ends that are one piece, and some are built in two halves; left and right. Tools required are: a level, tape measure, short stepladder, cordless drill with #2 phillips bit and #2 sq bit, 7/16" nut-driver or 7/16" socket with extension and ratchet,

**Site selection:** The natural ventilation design of the opening roof is most efficient when the opening side of the roof faces in the direction of the prevailing summer breeze, normally south. Choose a location where trees and high buildings will not block sunlight during early spring and late fall when the sun angle is lower.



Once a location has been determined carefully unpack the panel sections. The corners of each panel are marked with a letter. There are two panel edges that have the letter "A". The 2 A's go together and form a corner. A helper may be needed to hold the panels together until some screws are holding them together Each corner joint should have 3-4 screws installed as shown in the photo at right. Now is a good time to anchor one wall to the base. Only one side should be anchored at this point. The 2 "B"s are the next ones to be connected, followed by the "C"s and "D"s.



## MAINE GARDEN PRODUCTS, INC

576 CUSHING ROAD, FRIENDSHIP, ME 04547  
PHONE: (207)236-2600 • (877)764-9365 • FAX: (207)236-2006  
WWW.MAINEGARDEN.COM • INFO@MAINEGARDEN.COM

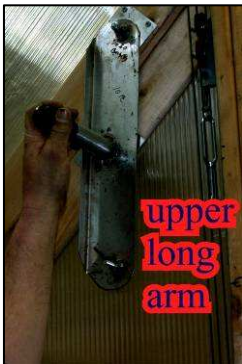


Once the corners are fastened together it's time to square the greenhouse to the base and check for level. Check all four sides for level and make sure the rear center stud and the door frame are plumb. Shim as necessary. Now place a tape measure from one corner of the inside to the other. Check it against the other diagonal. Remember that one side or end is anchored and it will be the opposite side or end that needs to be moved until the diagonal measurements match. Screw the other 3 sides to the base with 4 or more screws per side.



The moving roof panel has galvanized brackets on the inside of the ends. Take the other (stationary) roof panel and slide it up the gable ends until the top of the roof (very top vertical edge) is lined up directly at the center of the gable ends. Have your helper stand outside and at one end hold the roof rafter firmly against the gable end. Go inside the house and install a few screws to hold the roof to the frame as shown. Angle the screws slightly so they don't go out thru the side of the roof boards and don't over tighten them. A powerful drill will pull the screw heads through the soft cedar.

Find the 4 swing arms for the moveable side of the roof. They are labeled 1 thru 4 and the brackets on the roof are also labeled 1 thru 4. Place the bottom two (see photo) on the bolts as shown. The other two will be installed after the roof is in place.



The next step is to slide the moveable roof section into its closed position on the "V" shaped side of the greenhouse end walls. Working alone, you will need a method of holding it into position while you then move



inside and install the hinge arms. The top of the roof will have to be lifted into position over the studs at the gable end peaks. It will not slide fully into place without lifting the top. Now install the swing arms as shown to hold the roof in place. The two arms without large tubes welded onto them are the lower arms. The studs they slide over are of two different lengths and the short small tube goes over the longer stud. The long arm goes over the opening mechanism

## MAINE GARDEN PRODUCTS, INC

576 CUSHING ROAD, FRIENDSHIP, ME 04547

PHONE: (207)236-2600 • (877)764-9365 • FAX: (207)236-2006

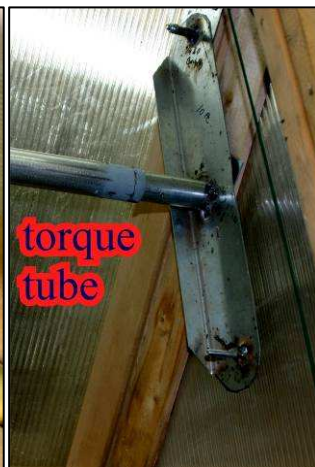
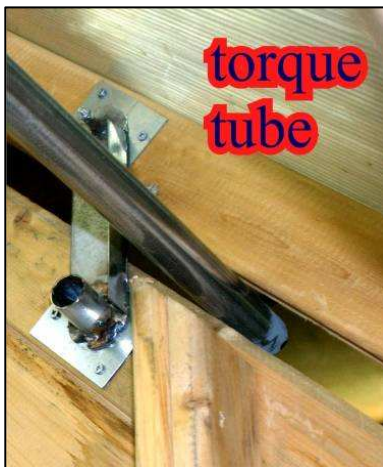
WWW.MAINEGARDEN.COM • INFO@MAINEGARDEN.COM



with the small tube at the top and the end with a stud welded to it at the bottom. You will need a 7/16" nutdriver or 7/16" socket with extension to install the locknut in the 4" long tube. After the swing arms are all slid onto the bolts at all four corners slide the loops of the shock cord over the upper end sleeve as shown.

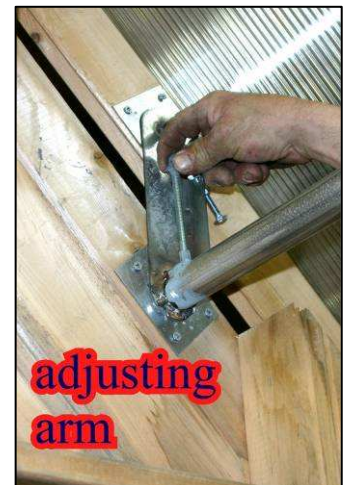
Once all four arms are installed and the shock cord loops are attached the roof should stay in the closed position without holding it in place. Do not attempt to open it unless you move both ends at the same time.

Install and tighten the locknuts on all 8 bolts, tightening them fully, then loosening them about 1 turn to allow them to swing.



**Installing and adjusting the torque tube:** find the torque tube and bring it into the greenhouse so that the end that has a nut welded on to it is at the entrance end of the greenhouse.

Using a short stepladder placed near the door opening inside the greenhouse, open the roof enough to slide the end of the torque tube



out thru the slot between the roof and the gable end a few inches and position it against the upper swing arm over the door. Slide the other end onto the 4" long tube of the long arm as far as it will go. You should now be able to slide the opposite end (over the doorway) onto



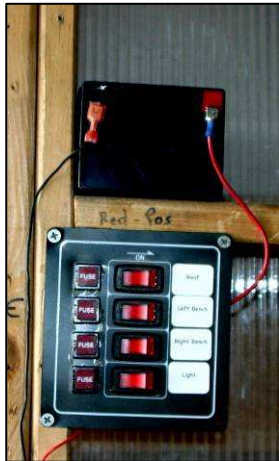
the 2" long tube. Swing the tube so the welded nut is positioned as shown at the right and thread the adjusting bolt (carriage bolt with nut welded on the head) into the nut. Thread it about 5-6 full turns, or until it is finger tight and wont' thread further. Now back it off until it will line up with the adjusting bolt that is already installed into the swing arm. Thread the adjusting bolt into the nut (see photo at left) a few turns. There are two nuts on the adjusting bolt – leave them backed away from the swing arm for now, they will be adjusted later.

## MAINE GARDEN PRODUCTS, INC

576 CUSHING ROAD, FRIENDSHIP, ME 04547

PHONE: (207)236-2600 • (877)764-9365 • FAX: (207)236-2006

WWW.MAINEGARDEN.COM • INFO@MAINEGARDEN.COM



Install the battery on the shelf above the switch panel and connect the two leads, red-to-red, and black-to-black. Check to see that the green cable is tight and wrapped around all the pulleys as shown on the right. Check to see that the turnbuckle on the traveling car is free to move. The car should be at or near the bottom of the track – this is the closed roof position. Slide the loose end of the turnbuckle over the stud in the bottom of the long swing arm and install the locknut.



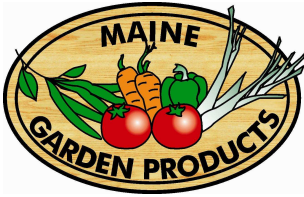
Make sure both ends of the roof are closed. Make sure the torque tube is positioned so the adjusting arm and adjusting bolt (entrance end) can be moved freely and are lined up squarely. Install 2 Tek screws in the torque tube to secure it to the 4" sleeve in the long arm. There may be a hole predrilled in the torque tube. Use them and the Tek screws will drill thru the inner sleeve.

Move to the entrance end and tighten the two nuts up against the plate of the swing arm. The function of these nuts and the adjusting bolt and adjusting arm are to make sure both ends of the roof close in the same motion.

Turn the roof switch on at the switch panel. The roof may or may not move depending on the position of the thermostat. Turn the thermostat down (lower temperature) to make the roof open. Let the roof open completely and stop. Turn the thermostat up (higher temperature) and the roof will close. If you turn the thermostat while the roof is moving it will stop in mid cycle and will not start again until the thermostat is moved again OR until the limit switch behind the switch cover is moved up or down to its opposite position. The limit switch is actuated by the adjustable stops on the green cable. The bottom stop adjusts the closed position, the top one adjusts how far the roof will open. It should not be adjusted so the roof swing arms are beyond

## MAINE GARDEN PRODUCTS, INC

576 CUSHING ROAD, FRIENDSHIP, ME 04547  
PHONE: (207)236-2600 • (877)764-9365 • FAX: (207)236-2006  
WWW.MAINEGARDEN.COM • INFO@MAINEGARDEN.COM



a 90-degree angle to the roof rafters. Adjusting the turnbuckle will also determine how far the roof opens or closes.



Hang the door and attach with screws so the top of the door is  $\frac{1}{4}$ " below the top of the opening. Now close the door and place the level in the vertical position against the hinge side of the door opening. Move the bottom of the 2 halves of the gable end side to side until the 2 sides of the doorway are plumb and parallel. The door should open and close freely with a small but even gap along the non-hinge side. Once you are satisfied with the door fit in the opening, fasten the bottom of the greenhouse to the base on all the sides that are still not anchored to the base.

Install the four corner trim pieces. They are all marked on the back side with "right front", "left front", etc. Use the small screws provided and only install 3 or 4 per corner.



### Installing the solar panel:



Install the solar panel in whatever position gets the best sunlight without blocking the sunlight on the plants in the greenhouse. Usually over the doorway or the opposite gable end is the best location. Attach the wires to the solar panel to the two right sides positions that say "solar". This will require a very small blade screwdriver.



## MAINE GARDEN PRODUCTS, INC

576 CUSHING ROAD, FRIENDSHIP, ME 04547

PHONE: (207)236-2600 • (877)764-9365 • FAX: (207)236-2006

WWW.MAINEGARDEN.COM • INFO@MAINEGARDEN.COM



For assistance or help with missing parts, please call 207-354-0138 or email [info@bbwire.com](mailto:info@bbwire.com)

## MAINE GARDEN PRODUCTS, INC

576 CUSHING ROAD, FRIENDSHIP, ME 04547

PHONE: (207)236-2600 • (877)764-9365 • FAX: (207)236-2006

WWW.MAINEGARDEN.COM • INFO@MAINEGARDEN.COM