Halls Greenhouses BC
A DIVISION OF RUSSELL NURSERY

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YouTube Channel: Halls Greenhouses BC

Greenhouse Site Prep and Foundation Assembly

Overview:

- The greenhouse foundation consists of 4 by 4 pressure-treated lumber held together with galvanized 6" x ½" lag bolts with washers.
- The 4 by 4's will be nestled into a pad of crushed rock, which in most cases acts as the greenhouse floor. Sometimes people will install pavers either over the whole floor or just in the centre as a walkway.
- Plan for a pad that is about 18" larger on all sides than the greenhouse. You will need access to all sides both during installation and later for maintenance.

Materials Needed:

- Landscape fabric to cover excavated area, overlap joins by 6 inches
- Enough ½" to ¾" **clear crushed gravel** to fill the space

Preparing the Site:

Measure out the space, making sure to add extra width on all sides. For example, an 86 greenhouse (8 ft long by 6 feet wide) would require a pad of 11 ft by 9 ft; a 128 greenhouse would have a pad about 15 by 11 ft and a 148 greenhouse needs a pad about 17 ft long by 11 ft wide.

Be sure that the site is level. If it isn't, you may need to use landscape ties or allan blocks to build a retaining wall along the lowest side and possibly part or parts of the adjacent sides.

Once the site is level, excavate the sod and soil down to a depth of 4-6 inches.

Line the whole area with landscape fabric and fill it in with 4-6 inches of ½" to ¾" **clear crushed rock**. The finished level should be at grade or slightly higher.

How do I know how much crushed rock to order?

Bulk rock, soil and bark mulch are calculated in cubic yards. A cubic yard measures 3 ft x 3 ft x 3 ft or 27 cubic feet. If you need 4" of gravel, multiply the length of the space by the width to find the square footage, and then divide by 3 (because 4" is one third of a foot) to figure out how many cubic yards of rock to order.

Example 1: You have an 8 x 6 greenhouse and you need to fill in an area four inches deep. Adding 18" on all four sides gives you a pad size of 11 by 9 or 99 square feet. Dividing by 3 equals 33 cu ft or just a little more than a cubic yard. Get a yard and a half to have some extra, just in case.

Example 2: You have an 8 x 10 greenhouse and need to fill the area 6 inches deep. Adding 18" on all sides gives you a space 11 x 13 feet or 143 sq. feet. Dividing by 2 (because 6" is ½ a foot) gives you 71.5 cu ft or just over 2.5 cubic yards (71.5 divided by 27).

Are we installing your greenhouse? If yes, STOP HERE. Your work is done. Please note the following:

- **INSTALLATION DOES NOT INCLUDE SITE PREP,** and when we arrive to install the greenhouse, we will expect to find a level pad of ¾" or ½" **clear crushed rock**.

- The actual foundation **IS INCLUDED**, and we will be bringing all the wood and fasteners with us.

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Greenhouse Foundation Sheet

For Halls Magnum, Supreme and Popular Models

Materials list:

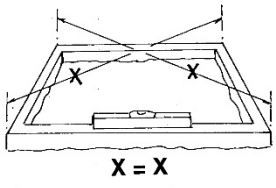
* Pressure-treated 4 by 4 lumber, See the next page for the measurements
* 4 Galvanized lag bolts 6" by ½" diameter with washers
* A handful of stainless-steel screws, 1 ½" long, pan-head (rounded head, not V-shaped)
* 4 pieces of ½" re-bar, 18" long
* Cedar strips, 9/16" thick by 1 ¼" wide, enough to go under all four sides of the greenhouse. A 1" by 2" cedar strip will work in this situation, but will not sit completely flush under the base of the frame.

A note on pressure-treated lumber:

- Choose straight 4 by 4's and make sure that at least one side is perfectly flat.
- Mark the flat side (the face) and use it as the top of the surface to which you will attach the greenhouse.

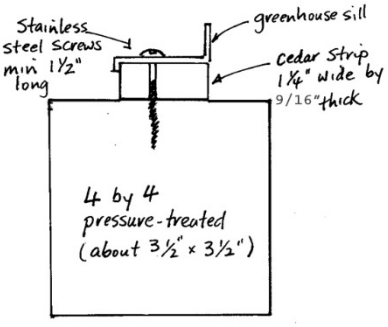
Assembling the Foundation:

- Pre-drill a 6" long pilot hole at the ends of the two long sides of the 4x4 foundation with a 3/8" drill bit lining up with the inside 4x4's.
- Then use a 1/2" diameter bit to drill through the first 4x4 only, leaving the inside 4x4 with the smaller pilot hole for the lag bolt to thread tightly.
- Treat any cut ends of the pressure-treated lumber to guard against rot.
- Once the 4 by 4's are bolted together and in place, use a 4' or 6' level to determine the lowest spot and raise or lower the foundation to ensure it is perfectly level.
    - It's best if the 4 by 4 is mostly buried in the bed of crushed rock, so that the door is just slightly above grade.
        - **It is important that the foundation be level and square.**
        - A long builder's level is useful for this, and you can see if you are out-of-square by measuring across on the diagonals, as in the diagram.
        - Corner to corner measurements should be the same.
        - If one measurement is shorter by, say 3/4", tap (rack) the longer corner by 3/8". Check again to ensure equal measurements.



Securing the Foundation to the ground:

- Once the foundation is in place, **level and square**, secure it to ground. (***Especially important in exposed, windy sites!***)
- Drill a pilot hole at a 45 degree angle, about a foot from the end of each long side piece.
- Drill another 45 degree angle hole, going in the opposite direction, about a foot from the other end.
- Drive an 18-inch piece of ½" diameter re-bar through the holes and into the ground. *An angled pin is much stronger than one that goes straight down into the ground.*
- Four pins will be enough.



Attaching the Greenhouse:

- Once the foundation is secure, place the assembled frame on it and slip the cedar strips between the frame and the 4 x 4's.
- Pre-drill through the aluminum sill and place a screw in the center of each section, but offset the holes slightly towards the outside edge, so that when you put on the glass, the panes do not sit on a screw-head.
- Screw down the gable ends first and then the sides, and make sure there is no bowing in the greenhouse sill.
- Use a long straight-edge or board along the sides to see if they are straight before you screw them to the foundation.

Note: The holes that you drill through the sill plate are the only ones you have to drill for your greenhouse installation.

What Are the Dimensions of my Foundation?

The chart shows the outside dimensions of each greenhouse. The ***outside dimensions and cut lengths of the 4 by 4 foundation are on the chart below.***

The dimensions for the foundation will allow you to place the frame more or less in the middle of the four by four, with about an inch of extra space all around.

Foundation Measurements	**Side Walls Outside Dimensions**	**Cut Length**	**Gable Ends Outside Dimensions**	**Cut Length**	**4 x 4 Lumber to Purchase**
Magnum 108	10' 8 3/4"	10' 8 3/4"	8' 7 3/16"	8'	2 x 12' + 2 x 8'
Magnum 128	12' 9 3/16"	12' 9 3/16"	8' 7 3/16"	8'	2 x 14' + 2 x 8'
Magnum 148	14' 9 9/16"	14' 9 9/16"	8' 7 3/16"	8'	2 x 16' + 2 x 8'
Popular 46	4' 5 5/8"	4' 5 5/8"	6' 6"	5' 11"	1 x 10' + 2 x 6'
Popular 86	8' 7 3/16"	8' 7 3/16"	6' 6"	5' 11"	2 x 9' + 2 x 6'
Popular 106	10' 7 5/8"	10' 7 5/8"	6' 6"	5' 11"	2 x 12' + 2 x 6'
Supreme 46	4' 6 3/8"	4' 6 3/8"	6' 6"	5' 11"	1 x 10' + 2 x 6'
Supreme 86	8' 7 3/8"	8' 7 3/8"	6' 6"	5' 11"	2 x 9' + 2 x 6'
Supreme 108	10' 8"	10' 8"	8' 6 3/8"	7' 11 3/8"	2 x 12' + 2 x 8'
Supreme 128	12' 8 3/4"	12' 8 3/4"	8' 6 3/8"	7' 11 3/8"	2 x 14' + 2 x 8'
Supreme 148	14' 9 5/8"	14' 9 5/8"	8' 6 3/8"	7' 11 3/8"	2 x 16' + 2 x 8'

PLEASE NOTE: There are several useful YouTube videos on preparing the foundation for and installing Halls Greenhouses and Accessories.

- **Search for *Halls Greenhouses BC*. (But you should still read this foundation sheet!)**

- **Disregard the section in the Halls manual about foundations and use this foundation sheet instead.**