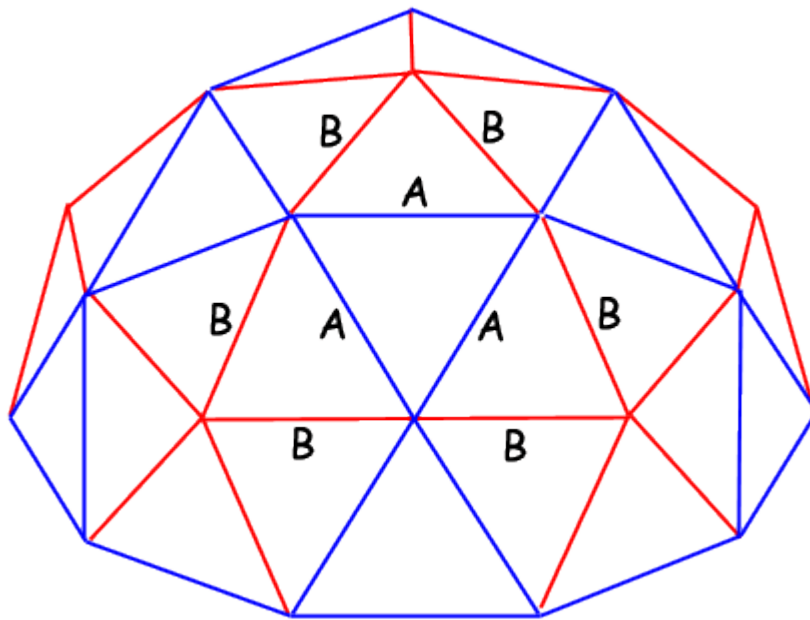


Zip Tie Domes

2 Frequency Geodesic Dome Assembly Manual



Poultry Version

(c) 2019 Zip Tie Domes
1857 Brindley Hollow Rd
Buffalo Valley, TN 38548
(931) 858-6892

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Instructions for Assembling the 2V Frequency Geodesic Dome



Tools Needed: 8 foot Step Ladder, Wire Cutters

SAFETY RULES: Do Not Climb On the Dome. It is not designed for climbing.

Step 1. Find a level area wide enough to assemble the dome.



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Step 2. Unpack the dome materials and place them in a convenient spot outside the area where the dome will be constructed. Use wire cutters or manually unwind the wire for releasing the struts from the restraining wires.

The package will include:

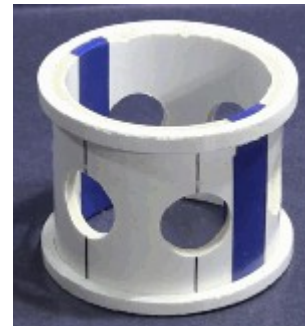
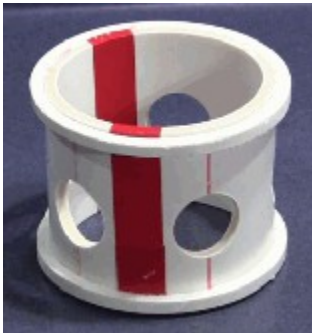
35 Blue Struts – marked with blue tape.

30 Red Struts – marked with red tape.



6 Red 5-way Hubs, marked with red tape.

20 Blue 6-way Hubs, marked with blue tape.



26 Center Hubs 2"

200 Extra Heavy Duty Black Zip Ties (125 lbs)



NOTE: The 8" Extra Heavy Duty Zip Ties are rated at 125 lbs, and are black to resist ultraviolet light degradation. These 8" Heavy Duty Ties are suitable for a permanent installation.

If you are building the dome for a temporary purpose, the standard 75lb white 8" Zip Ties from your local hardware store can be used.

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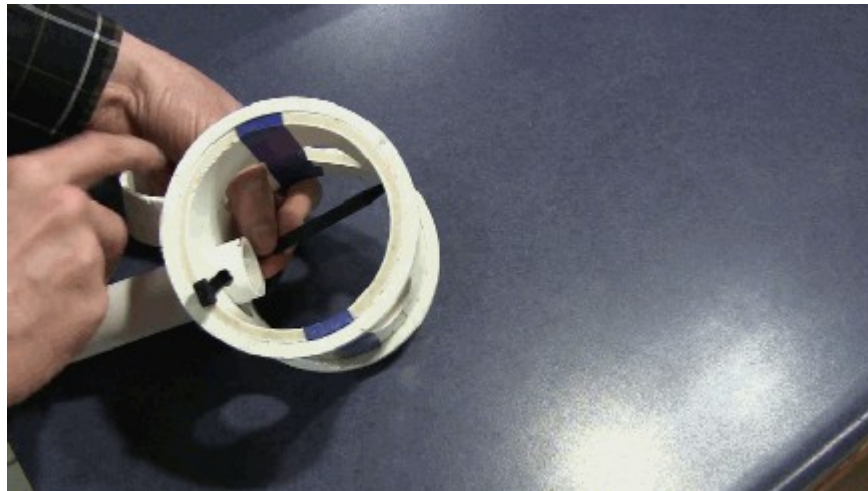
Step 3. Build the Foundation Ring.

Select 10 Blue Struts, 10 Blue Hubs, 10 Center Rings, and 10 Zip Ties.

Put the end of the Blue Strut into the opening on the Blue Hub.



Insert a Zip Tie into the end of the Blue Strut.



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Place a Center Ring on the end of the Blue Strut.

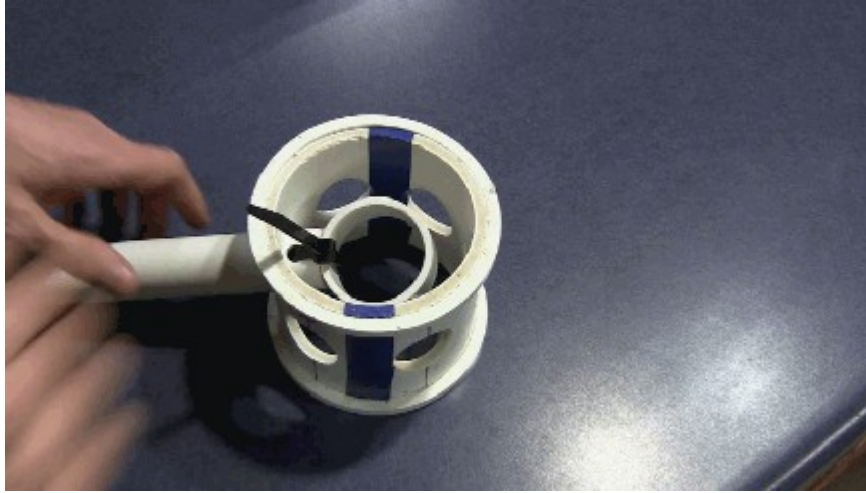


Loop the Zip Tie through the Center Ring.



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Tighten the Zip Tie to Secure the Center Ring to the Strut.



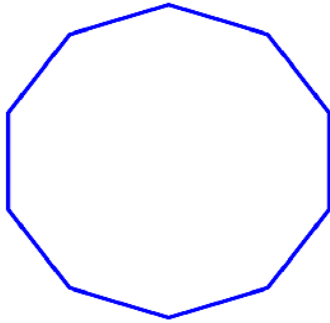
Repeat to attach all 10 Blue Hubs to 10 Blue Struts, and lay the Struts in a stack.



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Step 4. Assemble the Foundation Ring:

Lay the 10 Blue Struts with Blue Hubs in a circle, with one Hub between every two Struts.



Step 5. Connect each Strut to the next Hub.

Before connecting, make sure each Hub is pointing upwards, with one of the large openings laid flat on the ground, and with the smaller openings for the struts in a horizontal position.

The second Strut should be inserted into the Hub opening that is on the opposite side (180 degrees) of the first Strut, and secured to the Center Ring with a Zip Tie.



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After the Zip Tie has secured the strut to the Center Ring, move the strut to where it locks in a 36 degree angle to form the circle of the foundation ring.

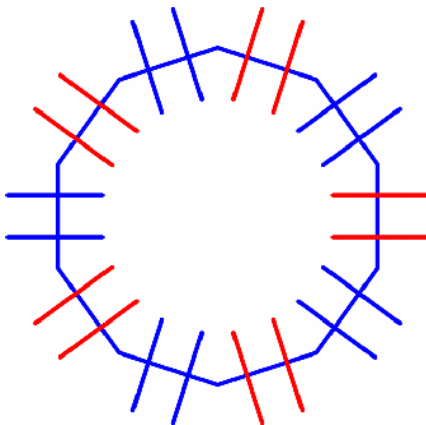
Repeat for all 10 struts to complete the Foundation Ring.



Step 6. Assemble the First Tier Supports

Select 10 Red Struts and 10 Blue Struts.

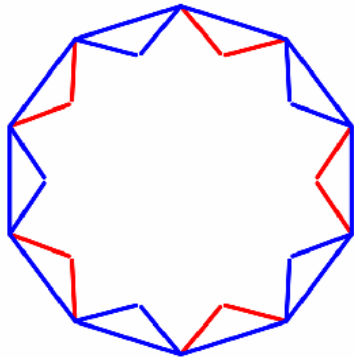
Lay alternate pairs of Red and Blue Struts on top of the Foundation Ring.



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Spread each of the two struts to make a triangle.

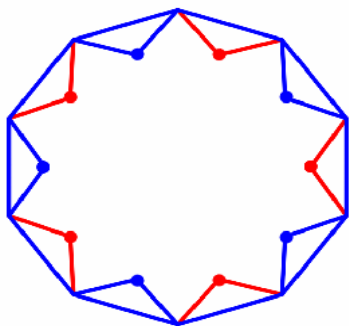
Attach the Struts to the Foundation Hubs with Zip Ties to make alternating Red and Blue triangles.



Select 5 Red Hubs, 5 Blue Hubs, and 10 Center Rings.

Attach the 5 **Red Hubs** to the **Red Struts** with Zip Ties to complete the Red Triangles.

Attach the 5 **Blue Hubs** to the **Blue Struts** with Zip Ties to complete the Blue Triangles .

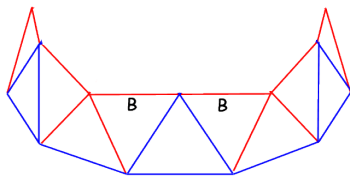
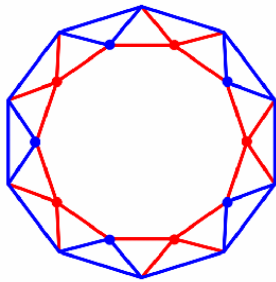


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Step 7. Raise the First Tier

Select 10 Red Struts.

Raise the Triangles up from the ground to insert the Red Struts between the hubs.



Secure with Zip Ties.

Continue until the First Tier is complete

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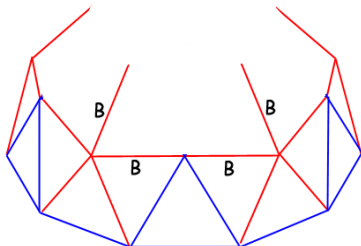
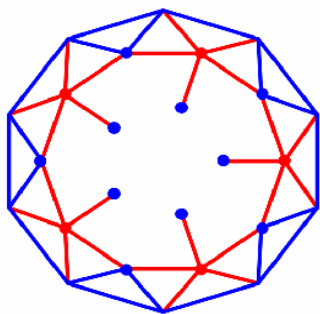
Step 8. Assemble the Second Tier – Part 1.

Select 5 Blue Hubs, 5 Red Struts, and 5 Center Rings.

Attach the 5 Blue Hubs to the 5 Red Struts. Lay the Red Struts with Blue Hubs in a stack.



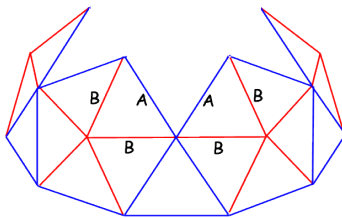
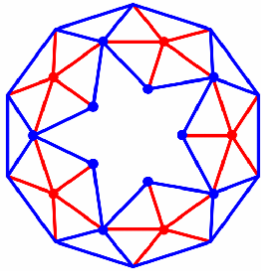
Next, attach the other end of the 5 Red Struts into the 5 Red Hubs on the First Tier.



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Step 9. Assemble the Second Tier – Part 2.

Select 10 Blue Struts. Attach the 10 Blue Struts to the Hubs in the First Tier.



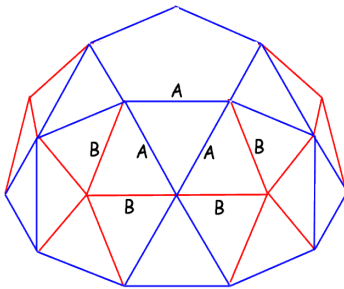
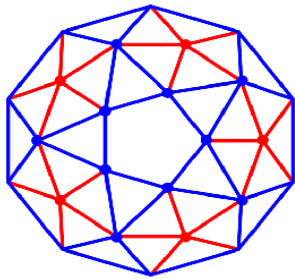
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Step 10. Complete the Second Tier

Select 5 Blue Struts.

Using a stepladder for each hub, secure the two Blue Struts from Step 9 to the Blue 6-way hub at the top of the Second Tier.

Next, attach a Blue Strut to the hub to connect the hubs together at the top of the Second Tier.



The Second Tier is complete.

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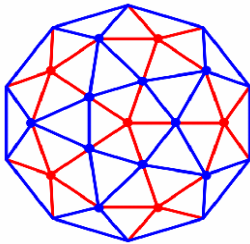
Step 11. Complete The Dome!

Attach a Red Strut to the remaining Red Hub.

Insert the other end of the Red Strut into a hub on the Second Tier.



Insert the other 4 Red Struts into the hubs on the Second Tier.



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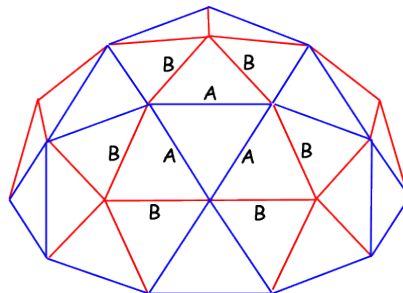
Using a stepladder, move the Top Red Hub up and down to insert the Struts into the Hub.



This will be a tight fit as the last pieces will lock the dome together. You may have to stand near the top of the ladder to apply force.



Secure the Struts with Zip Ties. The Dome is Complete!



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How to Cut Your Own Struts

Use the Dome Calculator at www.ZipTieDomes.com to determine your strut lengths. The Blue struts on the calculator are always the longest struts, and this is the place to enter your data. For maximum strength, the longest struts should not be greater than 5 feet in length.

The hubs are designed for 1" PVC pipe with 1.315" OD. If you want to use 3/4" or 1" EMT conduit, upon request we will drill the hubs with the correct apertures for these ODs as a special order.

The Dome Calculator Material Utilization Chart will indicate the number of pipes that you will need to purchase.

Common sizes for **10'** pipe material are:

16' 2V Dome:	35 Blue Struts – 5' length
	30 Red Struts – 4' 5" length
Total pieces of 10' Pipe needed:	33

10' 2V Dome:	35 Blue Struts – 3' 4" length
	30 Red Struts – 2' 11 3/8" length
Total pieces of 10' Pipe needed:	22

24' 3V Dome:	80 Blue Struts – 5' length
	55 Yellow Struts – 4' 10 3/4" length
	30 Red Struts – 4' 2 3/4" length
Total pieces of 10' Pipe needed:	83

16' 3V Dome:	80 Blue Struts – 3' 4" length
	55 Yellow Struts – 3' 3-1/8" length

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Total pieces of 10' Pipe needed: 30 Red Struts - 2' 9-7/8" length
56

Common sizes for **20'** pipe material are:

13' 2V Dome: 35 Blue Struts – 4' length
30 Red Struts - 3' 6-1/2" length
Total pieces of 20' Pipe needed: 13

19' 3V Dome: 80 Blue Struts – 4' length
55 Yellow Struts – 3' 11" length
30 Red Struts - 3' 4-5/8" length
Total pieces of 20' Pipe needed: 33

How to Cut the Struts:

Mark the pipe using a tape measure or a jig.

Cut the pipe to length using a pipe cutter or chop saw.

Drill a 5/16" or 3/8" hole across each of the ends of the pipe, about 3/8" to 1/2" from the pipe ends. Use a drill press if possible.

Drill slowly so you won't crack the pipe. The holes on each end of the pipe have to be drilled parallel to each other. If they are 90 degrees off, you won't be able to attach the end of the strut to the center ring. Try to drill through the lettering on the outside of the pipe, that will help you line up the holes on each end of the strut so they are parallel to each other.

Mark the pipe with Blue, Red, or Yellow colored tape to help you distinguish them during setup.

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How to Build A Door

After you finish building the Geodesic Dome, you will find 2 extra Blue struts.

We have provided these struts to help you build a door for your Geodesic Dome.

Here is how you build a door:

Step 1.

Tie a Heavy Duty Zip tie through the end of one of the Blue Struts, leaving a large loop in the Zip Tie.

Loop a second Zip Tie through the Zip Tie loop on the first strut, and through the end of the second strut, making a loosely connected “V” with the 2 struts.



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Step 2.

Attach one of the free ends of the struts to a Blue 6-way Hub on the top of the first Tier.

To do this, loosely tie a Zip Tie around the Hub's center ring or around one of the Zip Ties holding the struts to the center ring.

Then loop a Zip Tie through this loop and through the free end of one of struts connected as a “V” in Step 1.



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Step 3.

Attach the other free end of the strut to the hub on the bottom of the Geodesic Dome.

Loop a Zip Tie through the Center Ring of the hub, or through one of the Zip Ties inside the hub.

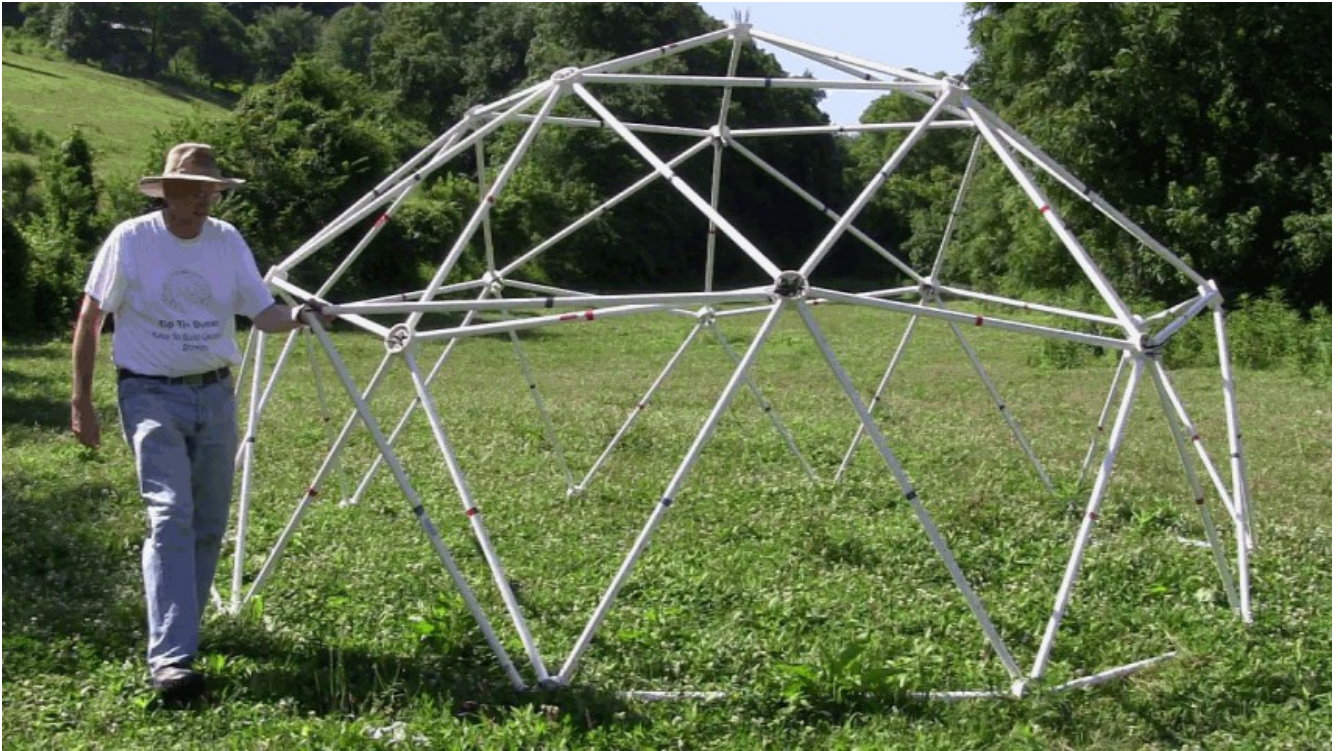
Loop a second Zip Tie through this loop, and through the end of the strut.



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Step 4.

Check to make sure the door can swing freely.



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Step 5.

After you cover the dome, use a bungee cord to secure the door.



If you have any questions, please call us at (931) 858-6892

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How to Attach Chicken Wire

Due to the weight and high shipping cost for Chicken wire, we have not included it in your Geodesic Dome package.

Chicken wire can be purchased at any Building/Hardware store, or your Farmer's Co-op.

The amount of Chicken Wire for each dome is:

The 16' Dome requires a 4' by 150' roll of chicken wire.

The 16' dome is 16' wide, 8' tall, with 205 square feet of floor space for 50-100 chickens.

The 13' Dome requires a 3' by 150' roll of chicken wire.

The 13' dome is 13' wide, 6.5' tall, with 131 square feet of floor space for 35-65 chickens.

The 10' Dome requires a 3' by 100' roll of chicken wire.

The 10' dome is 10' wide, 5' tall, with 91 square feet of floor space for 20-45 chickens.

Note:

Before you attach the Chicken wire, be sure to build the door first, so that the Chicken wire can be attached later to the door to let the door swing freely.

Also:

You will need wire cutters or snips to cut the chicken wire.

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Step 1.

Open the door of the dome so that you can start attaching the chicken wire to the other side of the door entrance (and not to the door itself – the door will be covered later).



Unroll some of the chicken wire, and attach the wire to the struts along the edge of the door opening using the smaller 50 lb zip ties.

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The wire should be attached as a “skirt” to the dome, with one edge of the wire overlapping the bottom hubs.

The wire needs to overlap the bottom hubs, and be tucked under the bottom hubs and drawn tight to work correctly.

This will allow the wire to overlap and lay at least one inch on the ground.

If you don't secure the wire slightly below the bottom hubs, you will have a loose gap that will let smaller animals go under the bottom struts on the dome.



Use at least 4 Zip Ties on each strut to secure the wire to the struts.

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Step 2.

Unroll the wire on the ground, and attach it in a circle that overlaps the door.



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Step 3.

Since you are applying a mostly flat netting to the rounded dome surface, you will have loose areas of netting that need to be tightened.



To tighten the chicken wire, overlap it and secure by threading a zip tie through the overlapped layers of mesh, and then tighten the zip tie.

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Step 4.

Run 2 parallel sections of chicken wire over the top of the dome.



Cover the remaining openings with large sections of chicken wire.

Attaching the chicken wire will take 3 man-hours or more. It is better to have several people helping you if possible. However, once it is complete, you will have a movable chicken coop that will not rot or rust.

To provide shade for your chickens, a small tarp can be laid over the dome and attached to the chicken wire with zip ties.

If you have any questions, please call us at (931) 858-6892.

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How to Install Handles

Our handles are made from a 7" section of 1" PVC pipe, with holes in each end of the handle for attaching to the dome using four (4) heavy-duty zip ties. Install the handles after you attach the chicken wire to the dome, as the chicken wire keeps the handles from sliding on the strut.



Loosely attach a Zip Tie just above the blue or red tape on the strut.



Loop a second Zip Tie through the handle, and then through the Zip Tie on the strut.
Attach the Zip Ties very loosely, leaving a lot of slack.

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Let the handle hang down so that you can see where the bottom of the handle meets the strut.

Then loosely attach a Zip Tie around the strut near the bottom of the handle.



And finish the installation by using a second Zip Tie to secure the bottom of the handle to the Zip Tie on the strut.

If you have any questions, please call us at (931) 858-6892.