



VIGYAN ASHRAM

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SYSTEMES**
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Akshay

Home Composter

Do It Yourself (DIY) Manual

MODEL SPECIFICATIONS:

- SHAPE: HEXAGONAL
- CAPACITY: 30 LITERS
- OPERATION: MANUAL
- LID/DOOR TYPE: SLIDING
- WITH BAFFLES FOR MIXING
- 30% OPEN AREA FOR PROPER AERATION.



Readily Available at Vigyan Ashram

FOR YOUR CONVENIENCE

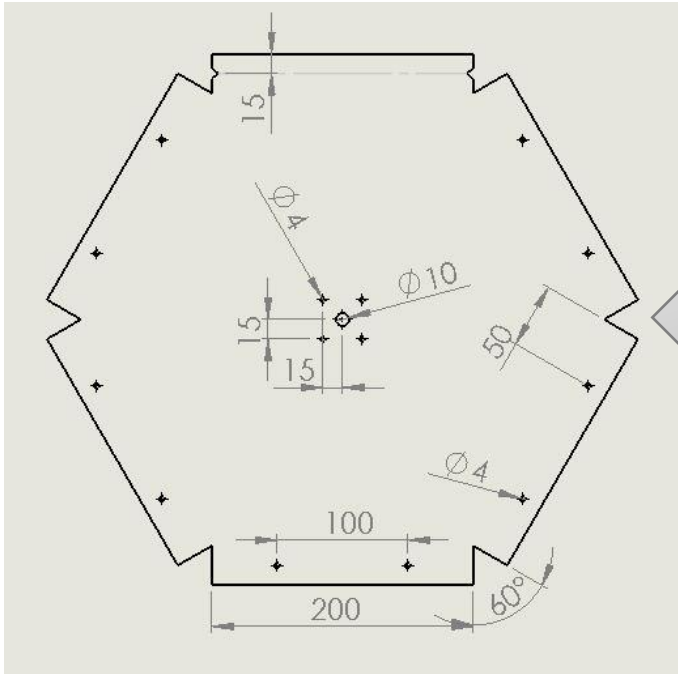
READ ENTIRE MANUAL BEFORE MANUFACTURING OF MACHINE

REQUIREMENTS

: TOTAL MATERIAL REQUIREMENT :

Sr. No.	Material Required	Specifications	Size/Quantity Required
1	MS Sheet	0.8 mm Thick	1200 mm X 500 mm Sheet
2	MS Punched Mesh	0.8 mm Thick	1080 mm X 320 mm Sheet
3	Square Tube	25.4 mm X 25.4 mm 2 mm Thick	2000 mm Long
4	Flat Plate	19.05 mm Width 3 mm Thick	430 mm Long
5	Hollow Pipe	ID 14 mm OD 16 mm	65 mm Long
6	Seamless Hollow Pipe/ Bush	ID 10 mm OD 14 mm	65 mm Long
7	Solid Rod	10 mm Diameter	440 mm Long
8	Baffles	6 mm Diameter	305 mm Long
9	Blind Rivets (Aluminum)	4 mm Diameter 10 mm Length	30 Nos
10	Welding Rods	2.5 mm Diameter 350 mm Length	3 Nos
11	Red Oxide	---	200 ml
12	Thinner	---	100 ml
13	Colour	Mint Green	200 ml

YOUR COMPOSTER CONTAINS THE FOLLOWING:



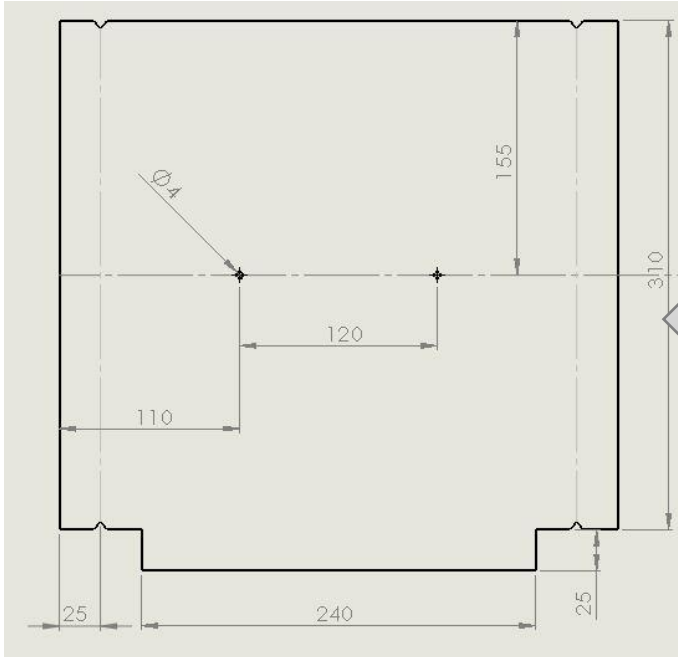
1

Hexagonal Frame (2 Nos)

Material: Mild Steel

Dimensions: As shown in figure

Thickness: 0.8 mm



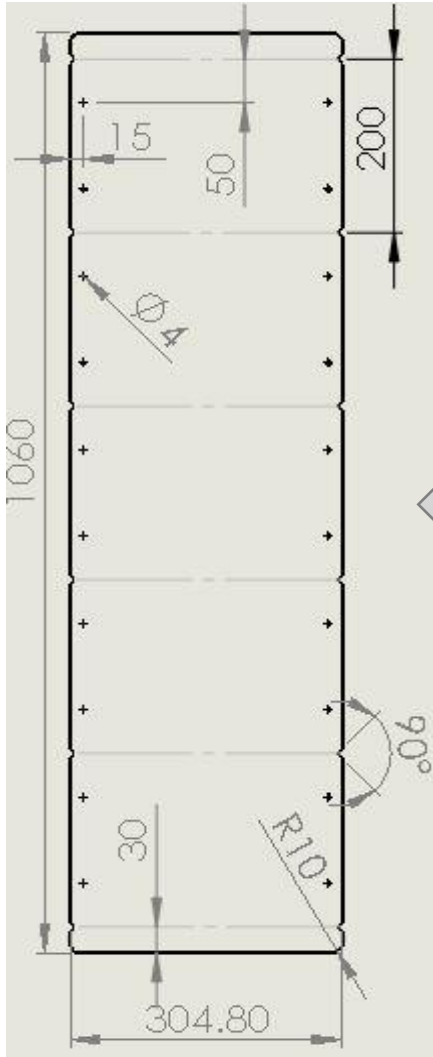
2

Lid (Sliding Door)

Material: Mild Steel

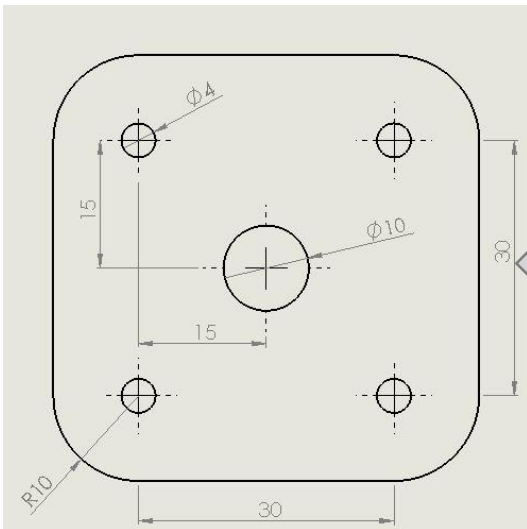
Dimensions: As shown in figure

Thickness: 0.8 mm



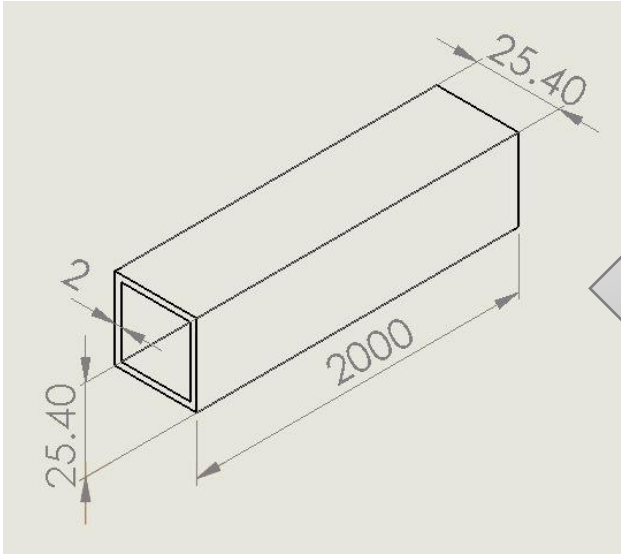
3

Flat Punched Mesh
 Material: Mild Steel
 Dimensions: As shown in figure
 Thickness: 0.8 mm



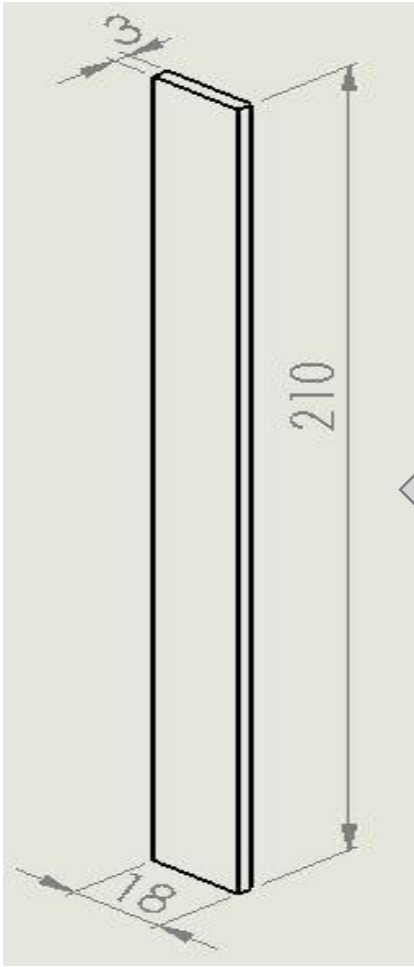
4

Flange (2 Nos)
 Material: Mild Steel
 Dimensions: As shown in figure
 Thickness: 0.8 mm



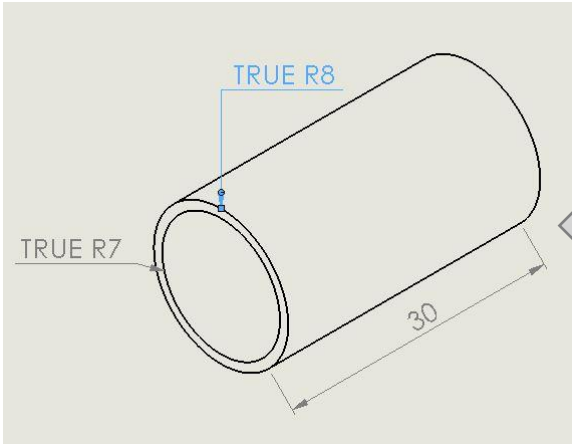
5

Square Tube
Material: Mild Steel
Dimensions: 1" x 1" x 2mm
Length: 2 m



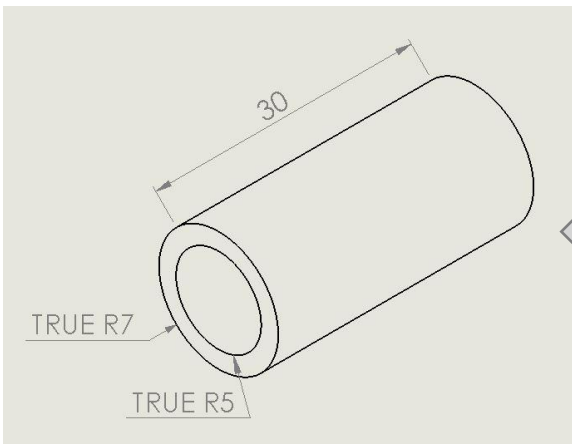
6

Flat Plate (2 Nos)
Material: Mild Steel
Dimensions: 0.75" x 3mm
Length: 210 mm



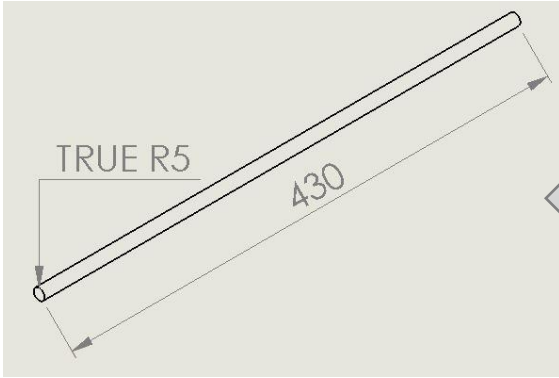
7

Hollow Pipe (2 Nos)
Material: Mild Steel
Dimensions: ID 14mm, OD 16mm
Length: 30 mm



8

Seamless Hollow Pipe/Bush (2 Nos)
Material: Mild Steel
Dimensions: ID 10 mm, OD 14 mm
Length: 30 mm



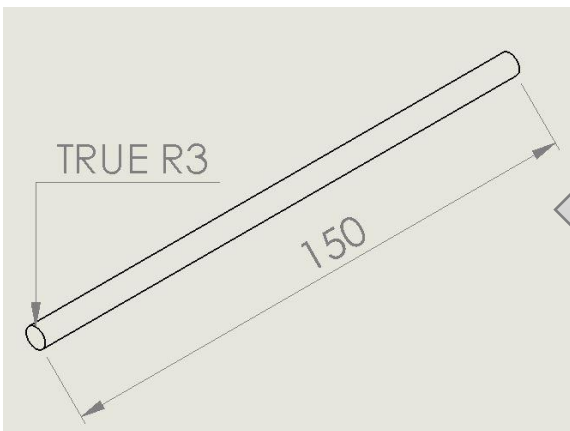
9

Center Rod (Solid)

Material: Mild Steel

Dimensions: Ø 10 mm

Length: 430 mm



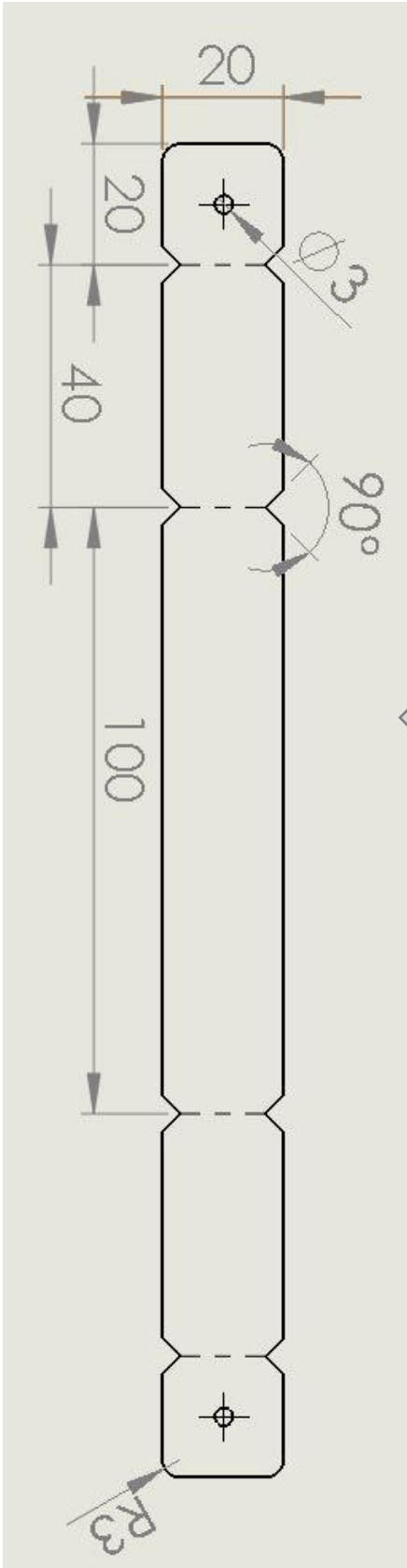
10

Baffles (2 Nos)

Material: Mild Steel

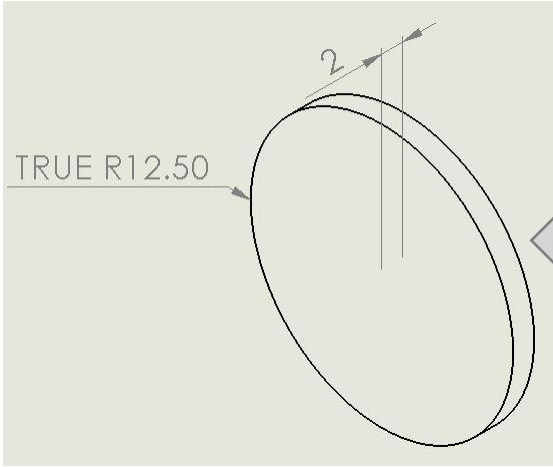
Dimensions: Ø 6 mm

Length: 150 mm



11

Handle
Material: Mild Steel
Dimensions: As shown in figure
Thickness: 0.8 mm



12

Circular Stopper (2 Nos)

Material: Mild Steel

Dimensions: Ø 25 mm

Thickness: 0.8 mm



13

Blind Rivets (30 Nos)

Material: Aluminum

Dimensions: Ø 4 mm

Length: 10 mm



14

Rivet Gun



15

Welding Rod (3 Nos)

Dimensions: 2.5 mm

Length: 350 mm



16

Trey

Material: Plastic

Dimensions: 430 mm x 310 mm

Height: 70 mm



17

Red Oxide

Quantity: 200 ml



18

Thinner
Quantity: 100 ml



19

Green Color
Quantity: 200 ml



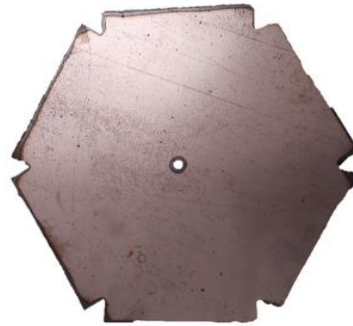
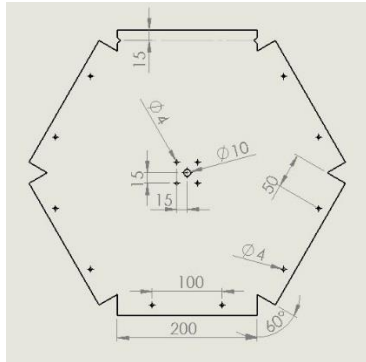
20

Spray Gun

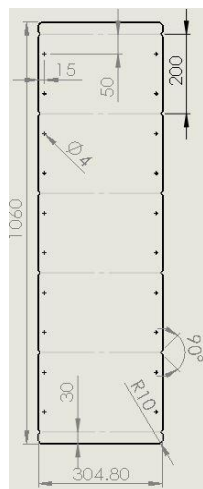
PROCEDURE:

DRUM

1. Cut the Hexagonal frames (2 Nos) and Flat punched mesh. The profile of Hexagonal frames and Flat punched mesh and its dimensions are given below.



To get SOLIDWORKS design file, DXF file and TXT file of G-Codes M-Codes (Input file for Laser cutter/Plasma cutter) of the Hexagonal frame, visit to the link:
https://drive.google.com/open?id=1WruMU_YccYXttL_6-mh1irvhW0x_t_ju



To get SOLIDWORKS Design File, DXF file and TXT file of G-Codes M-Codes (Input file for Laser cutter/Plasma cutter) of the Punched Mesh, visit to the link:
https://drive.google.com/open?id=1yveJL3POXwF_elCvIPMrVvQrB-6YKGEV

- For cutting the profiles we suggest to use Laser cutter or Plasma cutter, that will give more precise profile.
- In case of unavailability of these machines, you can cut profile by hand sheet metal cutter/snip and the holes can be drilled using hand/column drill machine.

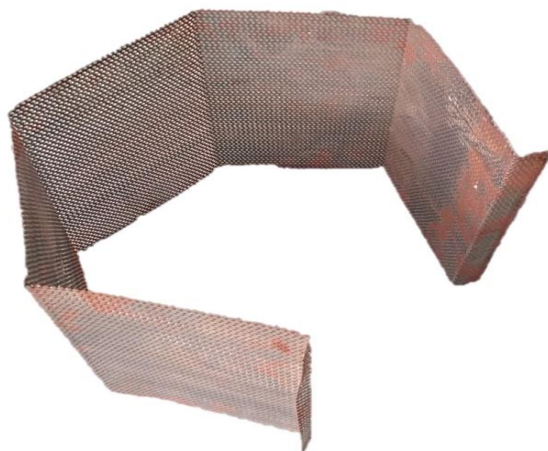
2. Bend the extended edges of hexagonal frame by 90 degrees.



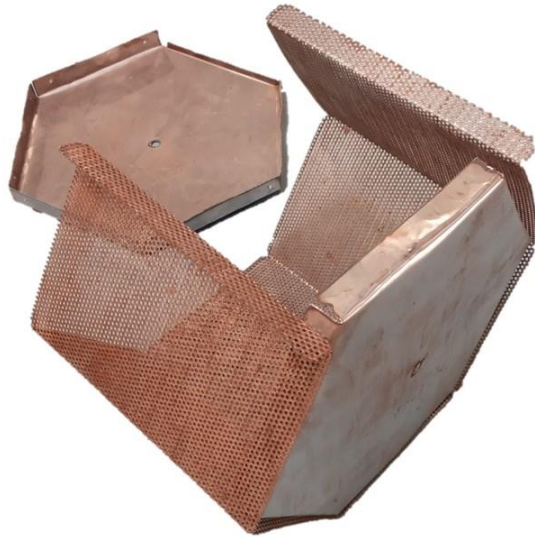
- Note that, One extended edge of both the hexagons provided with notch. Out of the two hexagonal frame, for first, you have to bend extended notched edge 90 degrees in direction opposite to the bend directions of other 5 edges and then bend the same edge (from notch provided) in the 180 degrees. (Shown in picture)



3. Take the Flat punched mesh sheet and bend it from the bending lines (Shown by dotted portion in sketch) to form a hexagon ie) The angle between successive sides will be 120 degrees.



- We had cut the punched mesh by considering only 5 sides of the hexagon because on the sixth side we have a sliding door for loading and unloading of the garbage.
 - The punched mesh sheet provided with 7 parts. Middle five sides represent the sides of hexagons and the first and last sides are given to provide sliding way for the door.
 - The first and last edges are bend in such a way that they remains parallel to the ground ie) The angle between first/last edge and side of hexagon will be 60 degrees.
4. Take the bended punched mesh and enclose it from both side with the help of hexagonal frames that we have.
- The care should be taken that, the door side of the drum should be kept on the upper side.
 - Also the notched extended edge of the hexagonal frame should be kept on upper side.





5. Rivet the side of hexagonal frame with punched mesh. The holes of 4mm diameter are provided on the edges of the hexagonal frame for riveting purpose.
 - The hexagonal frame is inscribed in the punched mesh.



6. Take MS central rod of 10 mm diameter and 430 mm length as shown below.



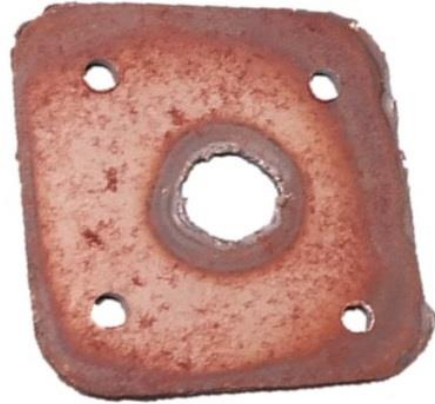
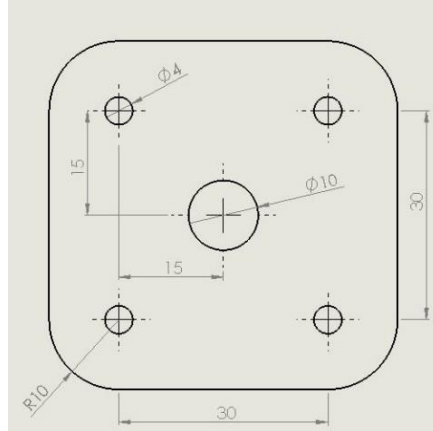
To get SOLIDWORKS design file of the Central Rod, visit to the link:

<https://drive.google.com/open?id=1uhz8frcRfzBNbukRp388i8SF1cUZHxcM>

Insert it into the hole provided at the center of the hexagonal frame such that it passes from the center hole of the both the hexagonal frame. The length of the rod outside the drum must be 65 mm on both sides.



- Take flanges as shown in point number 4. Insert it from both side in a such way that it seats on the central rod.



To get SOLIDWORKS design file, DXF file and TXT file of G-Codes M-Codes (Input file for Laser cutter/Plasma cutter) of the Flange, visit to the link:

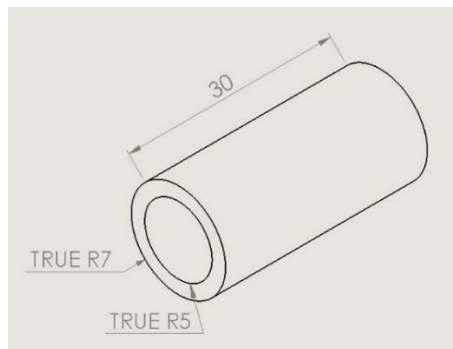
<https://drive.google.com/open?id=1U-hn8zDiYbnCOVnV3oVO4eBZZ9NMcIC7>



- Fix the flange with the drum with the help of rivets.
- In order to fix the flange on the central rod, make welding spots between flange and central rod.



7. Take bush as shown below, Insert it from both side in a such way that it seats on the central rod.

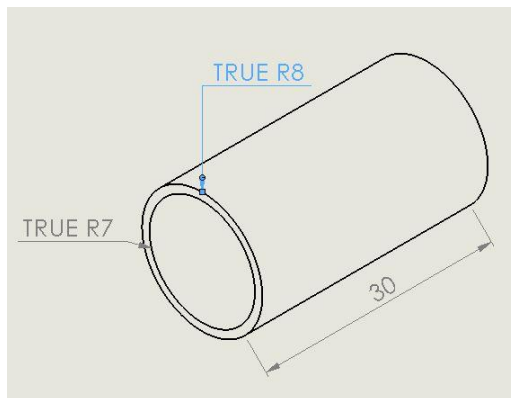


To get SOLIDWORKS design file of the Bush, visit to the link:

<https://drive.google.com/open?id=1b3gj3paOU68oNUXhzpTG0ycKxh3iZO6S>



- Take pipe as shown below. Insert it from both side in a such way that it seats on the central rod as well as on the bush.

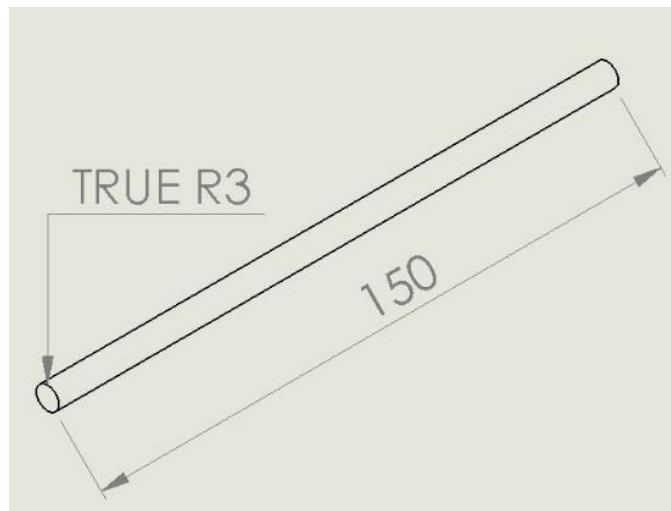


To get SOLIDWORKS design file of the Pipe, visit to the link:

https://drive.google.com/open?id=19oS7dl3Bbqml_5w4DYp9oYn20CyOVEBB



- Take internal baffles as shown below.



To get SOLIDWORKS design file of the Baffle, visit to the link:

<https://drive.google.com/open?id=1DB4IOHGRfCLnHhkfHub-Ak5ZQb8X-MUf>

Weld it on the central rod in such way that one baffle will be 100 mm from left hexagonal frame of the drum and other baffle will be 100 mm from right hexagonal frame.



- Note that both baffles must be welded in the same plane but in the opposite sides to each other.



- Weld the circular stoppers on both sides at the end of the central rod.

To get SOLIDWORKS design file of the Stopper, visit to the link:

https://drive.google.com/open?id=1DhWs8eDNRNPiI-vXtKYeTwlOAd_7yUZo

8. As we are now ready with the hexagonal drum, we will now see towards the fabrication of stand. First take square pipe of specifications shown in point 5. Cut the 4 pieces of the pipe of the length 300 mm each.
 - While cutting the pieces, the angle of cutting must be 110 degrees (From opposite side 70 degrees) as shown in picture.



- Now cut two pieces of length 400 mm each. You have to cut these pieces in 90 degrees as shown in picture.

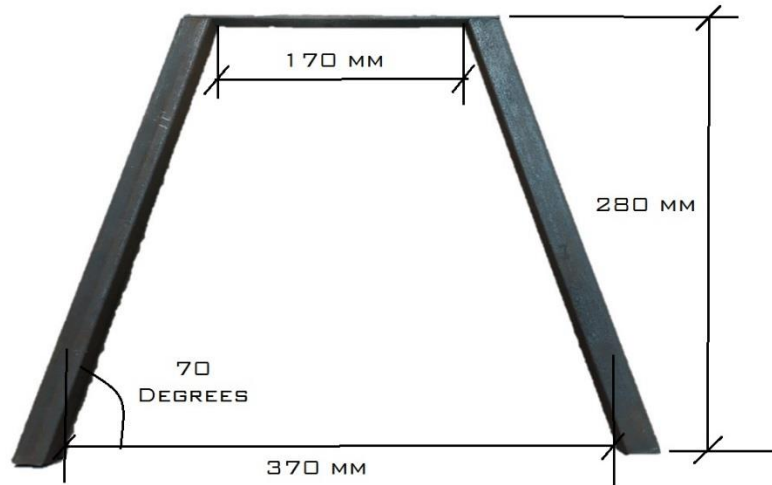


To get SOLIDWORKS design file of the Square Tube, visit to the link:

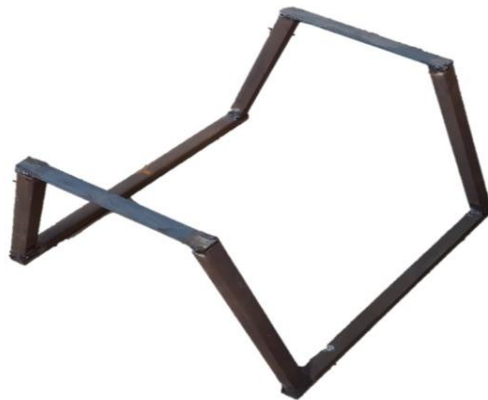
https://drive.google.com/open?id=1CaFJ3nWHKXqyL4B8u_y-MaemZuHzq_qo

- Take two pieces (out of the 4) of 300 mm and arrange in a such way that the distance between inner face of the upper end will be 170 mm and the

distance between inner face of the lower end will be 370 mm (In short, the angle made by square pipe with horizontal surface is 70 degrees.



- Weld the pieces in the same position as shown in above picture.
- Similarly do for other side.
- Now take remaining 2 pieces of 400 mm and weld the structures that we made previously at the extreme end of the 400 mm long pipes. ie) 400 mm pieces acts as the base for composter as shown in picture.



To get SOLIDWORKS design file of the Stand, visit to the link:

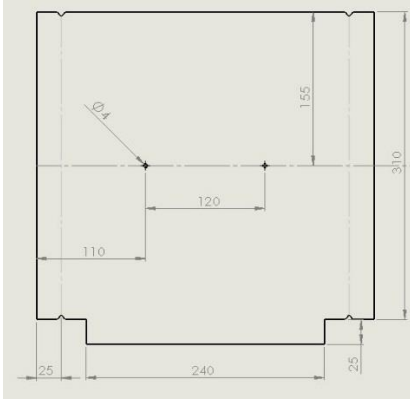
https://drive.google.com/open?id=1YQ6feVQrJFRgSTRVbk_EGeab10K2N-pL

Now we are ready with drum as well as stand for holding the drum. All we have to do is only weld the drum with the stand.

- Keep stand on the ground and place the drum assembly over the flat plate portion of the stand.
- Hold the center rod at the middle of the flat plate and weld the pipe (which is over the bush) with the flat plate.
- Please make sure that, you only have to weld the pipe with plate, you should not weld the bush along with the pipe.

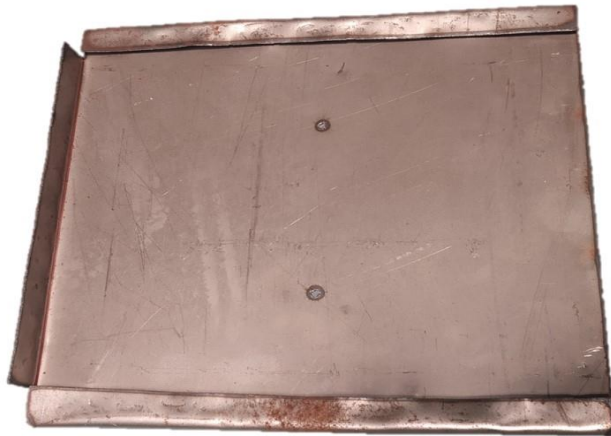


9. In order to close the drum, we need sliding door. Cut the sheet metal in the shape shown in figure number 2. At 25 mm from left and right side, we provided notch which helps us to bend the sheet. We need to bend the both sides at 180 degrees. The bending radius we prefer is 2 mm which enable the door to slide in the slide ways provided on upper surface of the drum.
 - The door is also provided with one 25 mm extended edge which we have to bend by 90 degrees. The bended edge acts as the stopper for the door.

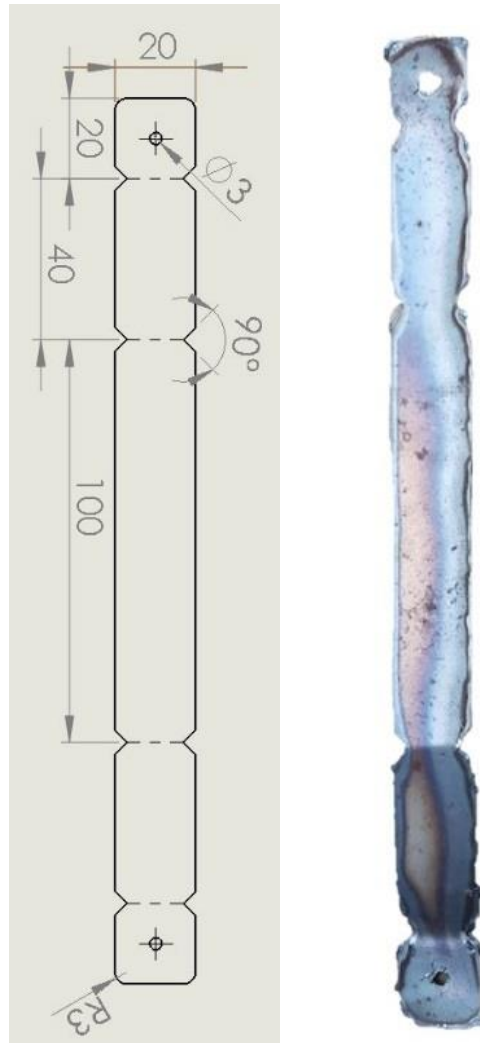


To get SOLIDWORKS design file of the Door/Lid, visit to the link:

<https://drive.google.com/open?id=1rDmKZdsCX-nUaTqIaE6jeUupv7OfIFS7>



10. In order to make handle for the door, take part as shown below.



To get SOLIDWORKS design file, DXF file and TXT file of G-Codes M-Codes (Input file for Laser cutter/Plasma cutter) of the Handle, visit to the link:

<https://drive.google.com/open?id=1pFjUSNhg9kJ9qrmHhHW-PAZSbx2Hf2kT>

We will find four notches over that part. Two notches are provided one at 20 mm from left end and other at 20 mm from right end. Two notches are provided one at 60 mm from left end and other at 60 mm from right end.

- Bend the handle in 90 degrees from notches provided at 60 mm from both sides.

- Then from notches at 20 mm from left and right end, again bend the strip but in opposite direction.



- Now place the horizontal side of the handle over the door at the place where hole are provided for the riveting.
- Rivet the handle with the door.
- You can close the hexagonal drum by simply sliding this door/lid from the slide ways provided.

Finally you are now ready with all the assembly of the domestic composter. All you have to do now is only grand the unwanted extra material arise during fabrication.

11. Take abrasive sand paper (80 number) and polish the instrument before apply the antirust coating.

- Took 200 ml Red oxide and apply over the composter. We suggest to use spray gun in order to apply the red oxide. In case of unavailability of the spray gun you can also use brush (1 inch) for painting.
- After 4 to 5 hours of the application of the red oxide, you can now go for the application of the paint.
- For painting the Domestic composter, we used “Mint Green” color.
- Took 200 ml of Mint Green color and mix it well with 100 ml of the thinner. We suggest to use spray gun in order to apply the color. In case of unavailability of the spray gun you can also use brush (1 inch) for painting.
- After application of color the machine is something looks likes:



To get SOLIDWORKS design assembly file of Akshay Home Composter, visit to the link:

<https://drive.google.com/open?id=17LQw0wCJnL3IK3Aa0SafhpTCNMS2ThuX>



“AKSHAY HOME COMPOSTER”

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