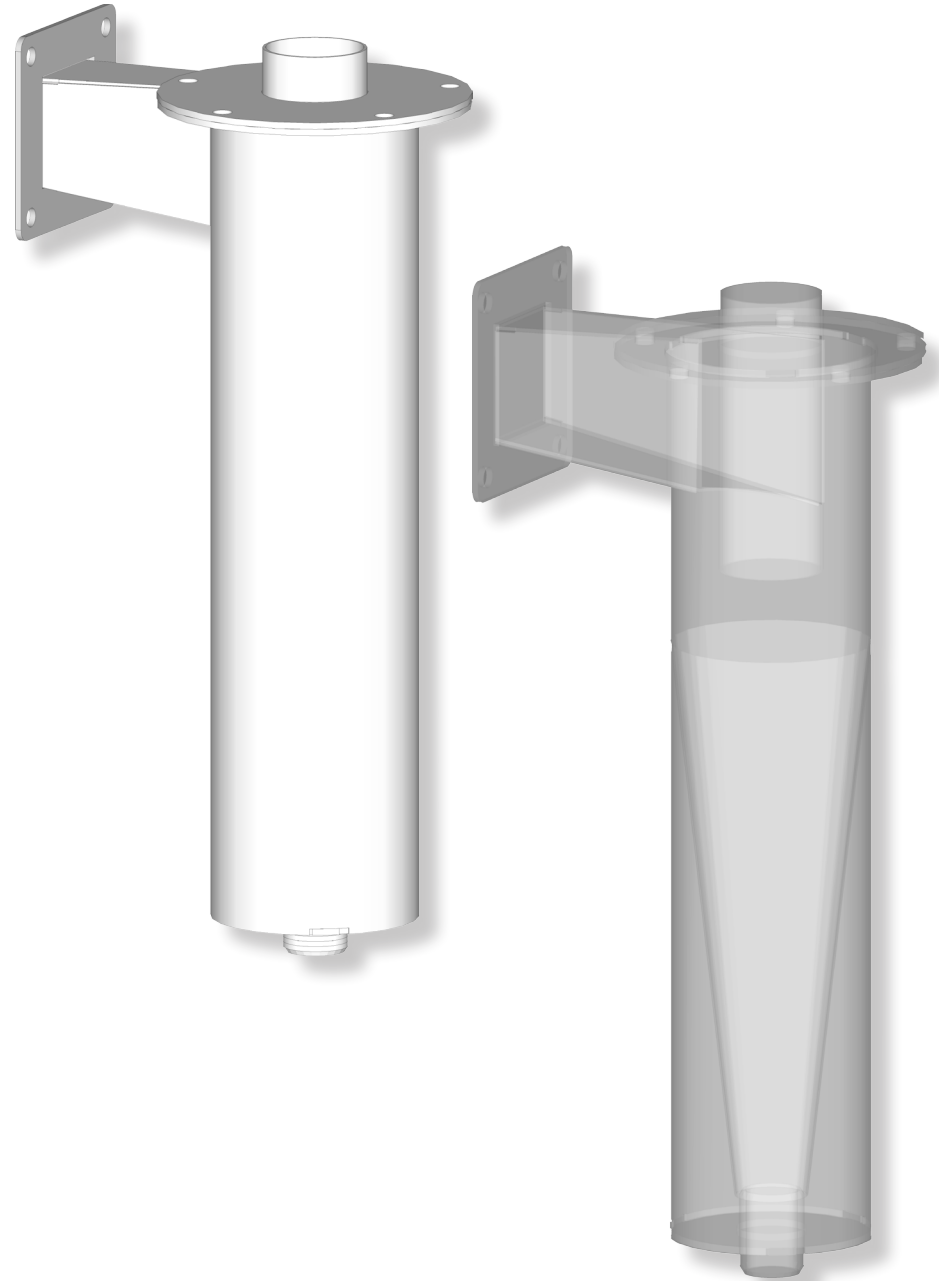
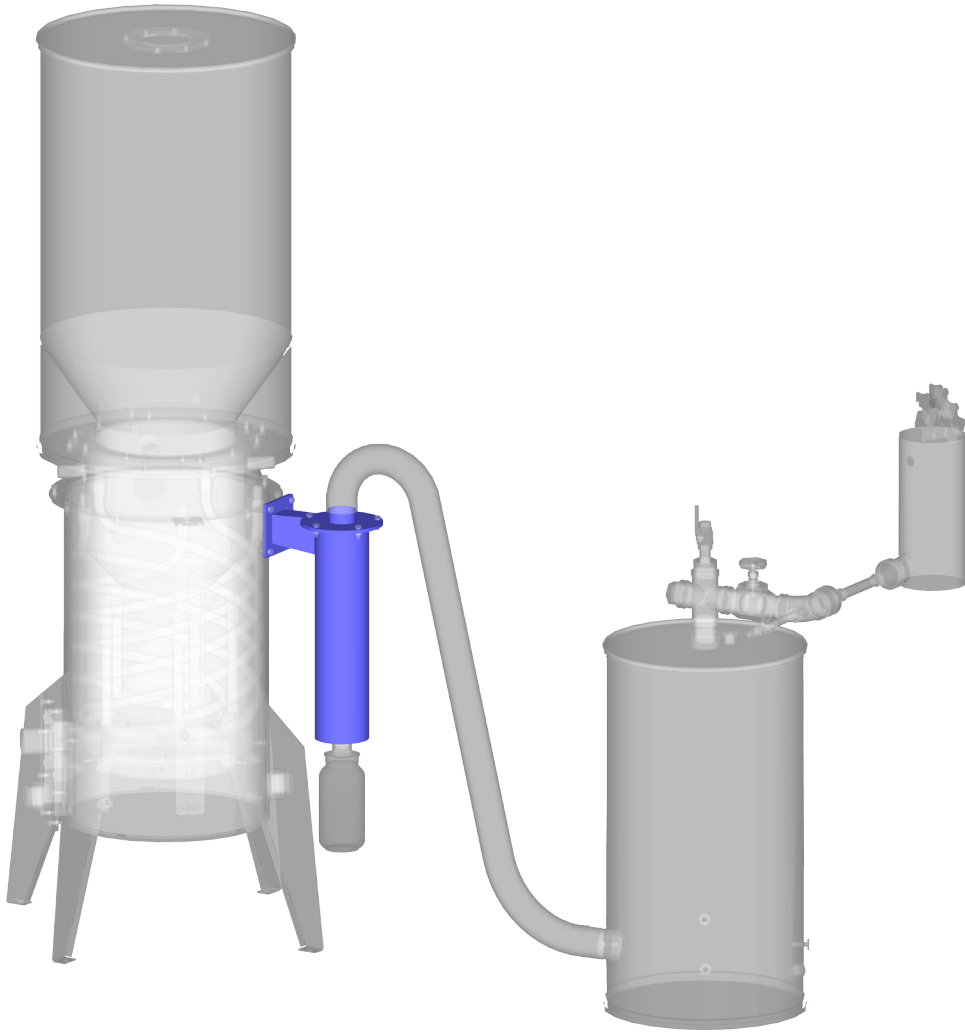


17 CYCLONE

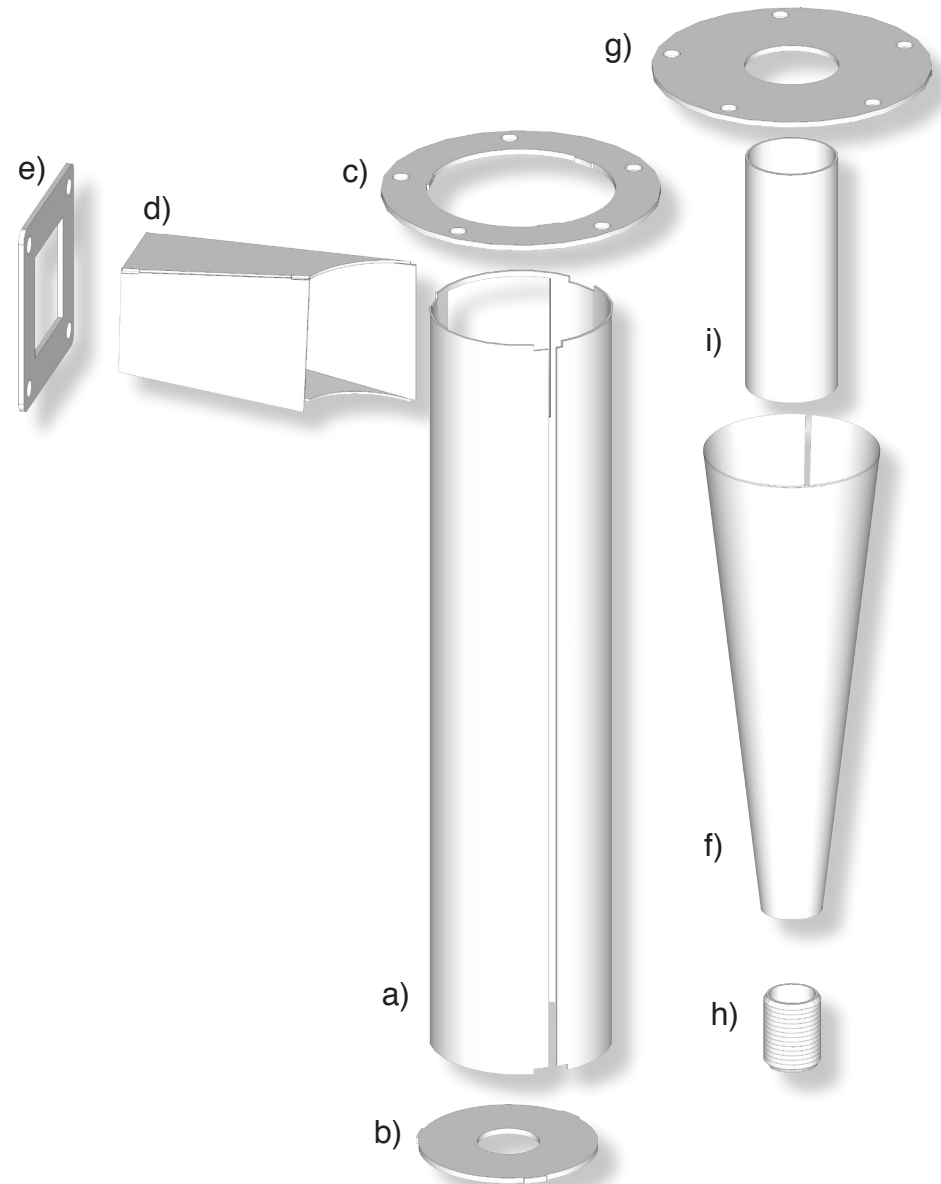




- a) Cyclone Vessel Tube (SM2003)
- b) Cyclone Base Plate (SM1017-b-2)
- c) Cyclone Top Flange (SM1016-b-2)
- d) Cyclone Square Inlet Tube (SM2007-b)
- e) Square Two Inch Flange (SM1012-2)
- f) Cyclone Taper Insert (SM2051)
- g) Cyclone Out Top Cap (SM1015-b-2)
- h) 1" Close Nipple
- i) 6" Long 2" Tube

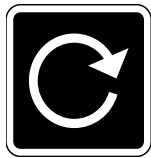
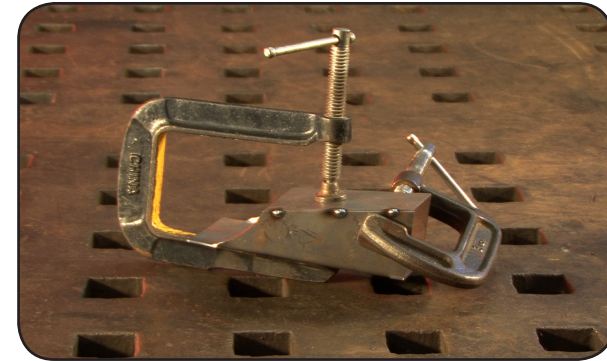


- 2-3X: Clamps
- Plier Clamp
- Speed Square
- 9" Level (magnetic preferred)



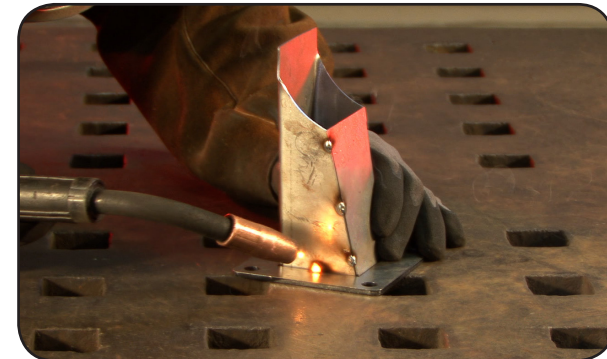
I. Assemble Cyclone Square Inlet Tube

1. Clamp the wall of the cyclone square inlet tube such that the seam is closed and edges are flush. Once the seam is in position, tack weld the seam at least 1/2" from the ends of the seam.



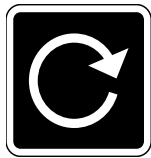
Positioning: Place 4" square flange on the table.

2. Place the square end of the cyclone square tube in the opening of the the 4" square flange and tack into position.

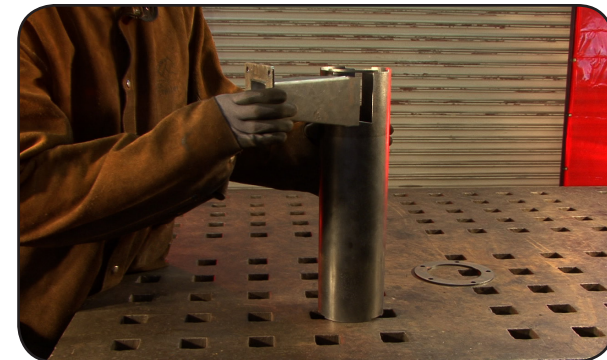


II. Attach the Top Flange to the Cyclone Vessel

1. Place the large open end of the square inlet tube into the side opening of the cyclone vessel wall.



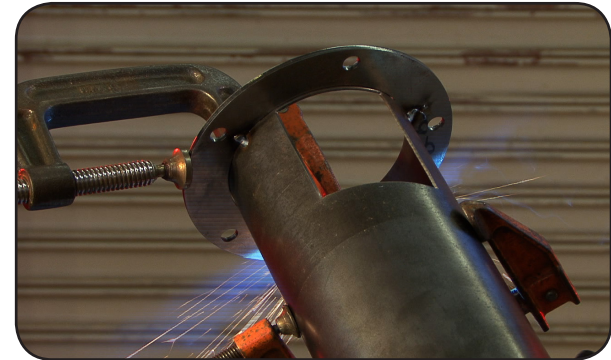
Positioning: If the cyclone vessel is sitting upright and the opening in the cyclone wall is towards the top, the seam for the square inlet tube should be on the bottom right corner.



2. With the cyclone vessel in this orientation, position the top flange on the top of the vessel such that the tab and slots are align and bolt holes are not sitting directly over the square inlet tube.
3. Remove the square inlet tube.

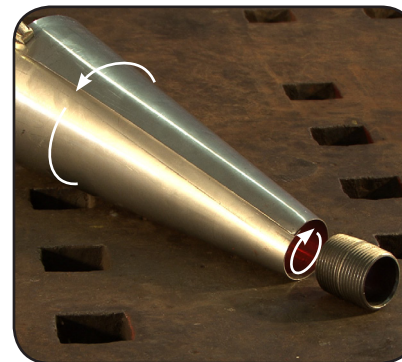


3. In the case that the cyclone vessel is a rolled piece of sheet metal (not a cut tube), clamps may be needed to squeeze the vessel til the top flange fits. Use a plier clamp to secure the overlap towards the bottom of the vessel.
4. Tack the top flange in position once it is flush and even with the top of the cyclone vessel wall. Do NOT tack the square inlet tube.



III. Assemble the Stainless Steel Taper

1. Use a pair of plier clamps to secure a 1/2" overlap on the large opening of the stainless steel taper. See adjacent picture for proper overlap. Squeeze the smaller opening such that the 1" close nipple sits upright from the taper. It is important that the nipple does NOT sit on the taper opening at an angle.
2. The ID of the close nipple and taper opening should be as close as possible to minimize a shelf that may be created from the nipple. Once in position, tack weld the close nipple to the taper.

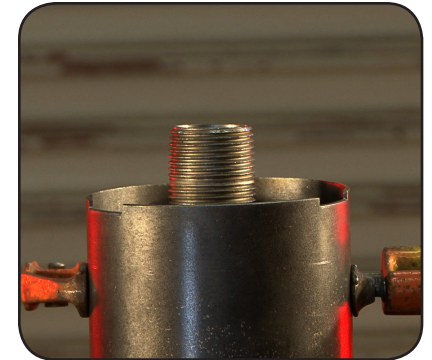


IV. Position the Stainless Steel Taper Inside the Cyclone Vessel



Positioning: Place the cyclone vessel upside down on the table such that the top flange is at the bottom.

1. Slide the large opening end of the taper into the vessel and slide down till approximately half of the close nipple extends from the cyclone.

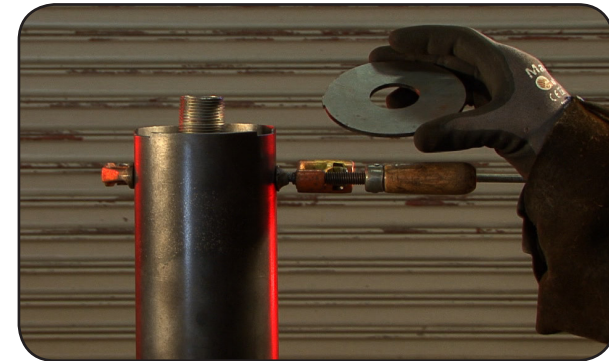


V. Attach the Bottom Flange to the Cyclone Vessel

1. Slide the bottom flange over the 1" close nipple and position such that the bottom flange tabs align with the vessel slots.

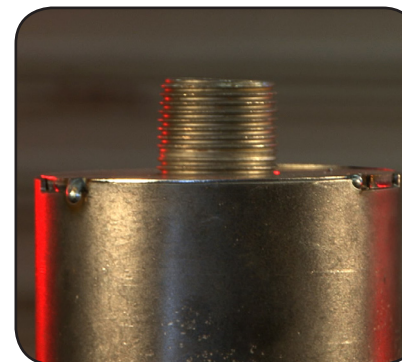


Tip: In the case that the cyclone vessel is rolled sheet metal, clamps may be needed to squeeze the vessel till the bottom flange fits.



Tip: Make sure 1/2 of the 1" close nipple is extending out past the bottom flange.

2. Once the bottom flange is tight and flush to the cyclone vessel, tack weld in position.

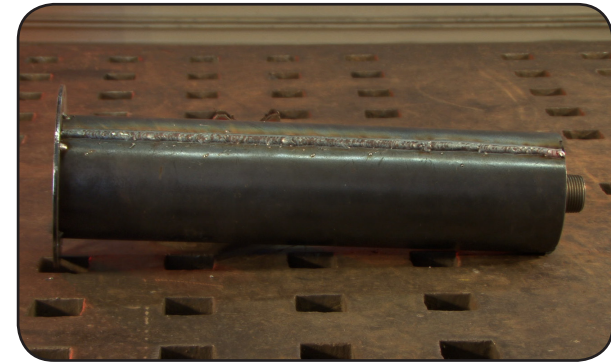


VI. Weld the Cyclone Vessel Seams

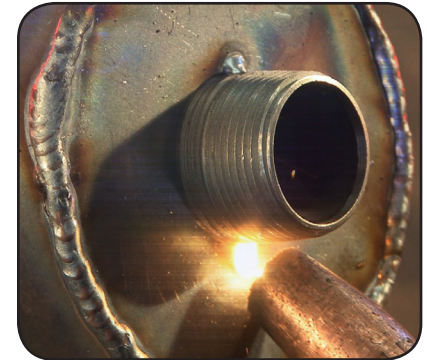
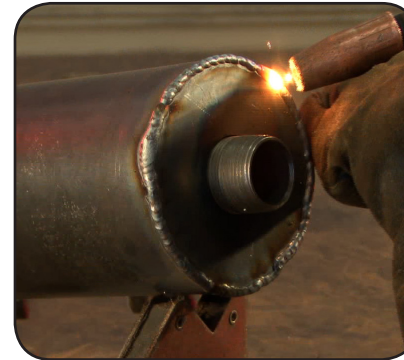


Tip: In the case that the cyclone vessel is rolled sheet metal, tack the vessel seam in thirds or quarters. This makes sure the vessel seam does not open up when it is getting welded.

1. Finish welding the cyclone vessel seam.



2. Finish welding the bottom plate to the cyclone vessel.
3. Completely weld the 1" close nipple to the bottom plate.



VII. Attach the Square Inlet Tube to the Cyclone Vessel

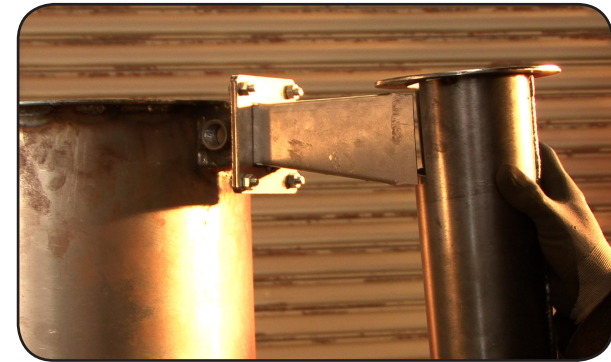


Tip: The assembled gas cowling will be needed in the following steps. Grind flat both the 4" square flange attached to the gas cowling and the 4" square flange attached to the square inlet tube.



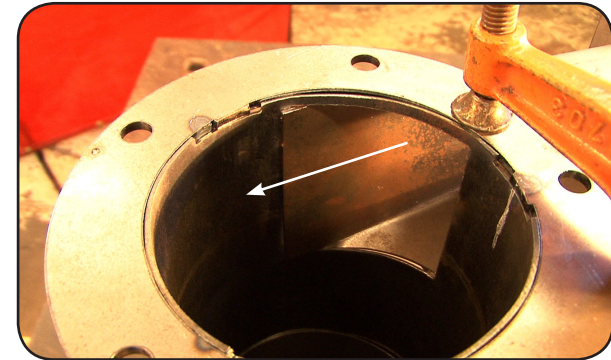
1. Bolt the 4" square flange of the square inlet tube to the 4" square flange extending from the gas cowling such that the square inlet tube seam is positioned on the bottom left corner. Make sure the 4" square flanges are flush and even with each other.

2. Slide the cyclone vessel onto the square inlet tube such that the cyclone top flange sits on top of the square inlet tube.



3. Make sure the bolt holes of the top flange are not positioned right on top of the square inlet tube. If they are, the top flange is tacked on in the wrong position and needs to be removed and tacked on in the correct position. Double check steps outlined under [Section II. Attach Top Flange to the Cyclone Vessel.](#)

4. Secure the cyclone vessel in position by clamping the top flange to the square inlet tube.



5. Use a level to check all vertical and horizontal alignment of the cyclone vessel in relation to the cowling. It is very important that it is as level as possible before welding.

6. Once the cyclone is in a plum/level position, tack weld the cyclone to the square inlet tube such that it's position is secure.

7. Recheck level and finish tacking the square inlet tube to the 4" square flange. Finish welding the square inlet tube to the 4" square flange such that it is air tight.



9. Completely weld around the intersection of the square inlet tube with the cyclone vessel and top flange.
10. Remove the cyclone from the gas cowl and finish welding the square inlet tube and the top flange.



VIII. Assemble the Cyclone Top Plate

1. Place the cyclone top plate, slag side up on a couple 3/4" standoffs, such as a 1/2" weld coupler or 1/2" nipple.
2. Slide the 6" long 2" tube into the 2" hole of the top plate.
3. Tack weld the tube to the top plate.
4. Finish welding the tube to the top plate

