

Cinderella Incinerating Toilet Installation Details Photo Guide to Details of Steps to Install the Cinderella Toilet

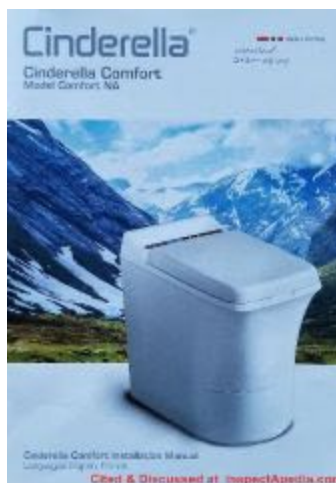
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Here we provide photos and notes giving details of a successful installation of the Cinderella Incinerating Toilet.

This article series describes the brands, properties, installation, and maintenance of incinerating toilets - a waterless system for onsite waste disposal where a septic system cannot be installed. Incinerating toilets use electricity or gas to produce heat which literally incinerates the waste.

Cinderella Incinerating Toilet Installation Details



Above: the cover of the instruction manual for the Cinderella Comfort incinerating toilet.

The manufacturer provides excellent instruction manuals for the installation of each Cinderella incinerating toilet model. Be sure to obtain and read and follow those instructions. Failure to do so could mean that your installation doesn't work properly or worse, that the installation is unsafe. Always start by reading the instructions.

In this article we provide detailed photos and notes that expand on the manufacturer's instructions to show how we implemented them in a specific case. These added "how to" details explain and illustrate exact details of every step in the installation of an incinerating toilet.

We include a few tricks of the trade that solve special problems such as how to mount a flat vent cover on a curved log exterior wall, and how to set up chimney sections to measure the correct lengths to which you should cut the material.

We also include details on adding additional chimney/vent bracing at the roof edge to solve what in our OPINION was a very wobbly and potentially problematic exterior vent installation.

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Choose & Order an Incinerating Toilet Model, Fuel or Electrical Supply & Chimney / Vent Installation Plan



Above: a sketch illustrating the third option listed below: a typical through-wall installation of a Cinderella incinerating toilet showing its air intake and exhaust piping extending outdoors and around the roof overhang.

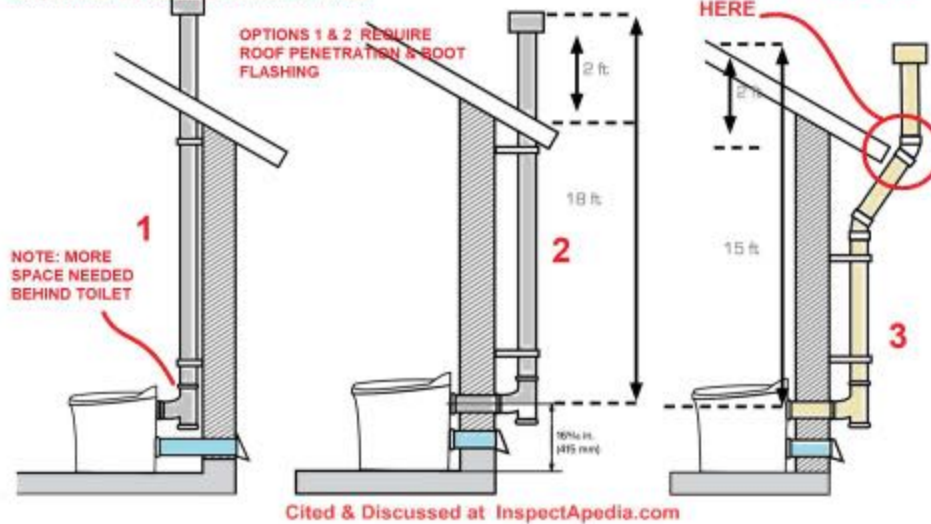
This is the installation that we illustrate in detail in this article and is appropriate for the Cinderella Comfort model electric incinerating toilet installation that we illustrate in detail on this page.

The company provides instructions for several alternative chimney installations including:

1. routing the chimney out through an exterior wall and up through the building roof overhang
2. routing the chimney up through the building interior and out through the roof (the toilet will have to be spaced further out from the wall interior surface)
3. routing the chimney out through an exterior wall and up with an angled jog to clear the roof overhang.

CINDERELLA TOILET VENTING OPTIONS

- adapted from the Cinderella Comfort IO Manual



Notice in the sketch above, adapted from the Cinderella Comfort IO manual, that to develop sufficient draft for the vertical vent to assist the power vent used in the Cinderella Comfort model toilet, the company will specify a minimum total vertical rise (8 ft). as well as specifying a minimum 2 ft. clearance above the roof surface.

At the time of ordering a Cinderella incinerating toilet, you can, and in our opinion usually should, also order the company's installation kit that includes additional parts that you will need to complete the chimney vent system for the toilet.

Be sure to review your installation plan with the company's sales department so that when Cinderella and the installation kit arrive at your home you'll have all of the installation parts needed.

For example, if you are planning to install the toilet vent as illustrated in option #3 just above you will need to add two 45 degree angled pipe elbows to your order.

Watch out: if you are installing the Cinderella Freedom (GAS) toilet model, no bends are allowed: your chimney/vent must be routed straight up from the tee attached to the toilet outlet.

The Cinderella toilet installation kit described and used here includes four chimney vent sections and three threaded rod brackets.

If your chimney installation plan is taking the vent straight up from a tee through the roof or outdoors but without a bend or jog around a soffit that may be all that's needed. To avoid having to penetrate the building roof for this installation we added two angled elbows to permit routing the chimney/vent around the roof overhang.

Cinderella Comfort Order Details

To install, use and maintain the Cinderella toilet described here, we ordered the following:

- Cinderella Comfort toilet
- Vent kit with roof feed
- Ivory electrical receptacle (240VAC)
- 45 degree elbow pair
- Bowl liner holder (steel)
- Maintenance Kit (brush and cleaning equipment including a chimney cleaning brush) illustrated just below



The order total cost was \$5,879.22. That seems quite expensive, right?

Well no, not if you compare the cost of the toilet and its installation with the cost of a traditional water-operated toilet that you can buy for under \$200. However, to that you have to add the cost of a septic tank and drainfield that typically starts at around \$15,000 and can top \$30,000 at a difficult site. In addition, you must also add a portion of the cost of a building water supply system to supply the flush toilet with water.

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Check the Cinderella Toilet Packaging and Contents On Arrival



Notice that the tight strapping used by the freight company has crushed the boxes packaged atop of the Cinderella toilet's main package.

Watch out: at the time of delivery be sure to check all of the packaging of your Cinderella toilet for damage. If you do find damage be sure to contact the company right away.



Above: a deep gouge and rip in the packaging of our Cinderella toilet raised a concern but as you can see below, when we unpacked the unit, other than a minor scuff on the toilet's face, it was undamaged.



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Unpack Toilet & Record Serial Number

One reason for taking time to record the serial number and model number of your Cinderella toilet now is that once it has been installed it is nearly impossible to read this label without first uninstalling or pulling the toilet away from the wall.



This information is on a sticker on the upper back of the toilet.

Below: contents of the Chimney Installation Package that we ordered along with the toilet itself. We recommend these parts, though you may not use all of them. For example if your chimney is going to go directly outside and up the outside of the building you won't use the chimney flashing boot.



The four straight lengths of pipe will be more than enough to provide the required minimum chimney height required for the Cinderella toilet.

Watch out: if you plan to install your chimney with a bend around a roof overhang or soffit, you'll need to request two 45 degree angle bends of the same chimney material - shown below.



Watch out: don't forget to follow the instructions to remove the plastic tie strap that secures the ash pan in place.



Simply open the cover at the front of the toilet base by pressing the buttons (under my finger).



Below: removing the plastic tie.



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We used a utility knife to cut the strapping but it was so tight that the easiest way to remove it was by tugging with a pair of pliers.



The power cord for the Cinderella toilet will be strapped to the back of the unit and will simply plug into a wall receptacle.

This is a 240VAC unit that connects to a 240VAC electrical receptacle shown below to the left of the framed-in wall opening through which we'll vent this toilet.

The wall plug is a 15-Amp 250VAC NEMA -15P wall plug. The plug can not be connected to a conventional 120VAC wall receptacle. We'll show the proper wall electrical receptacle later in this article.

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Collect Necessary Tools & Supplies for Toilet Installation

Below and throughout this article are shown all of the tools you'll need to measure the location of and then cut the round holes needed for air supply and venting for this toilet and to perform other tasks given in the installation instructions. You'll see that we've included the framing square, a try square, a box knife.



To install this toilet you'll need

- A power drill and a 4 3/8" hole saw for vent outlet and air inlet pipes, and if a wall vent is required, a 6 5/8" hole saw as well (not used in this installation).
- A hand or power saw; we used a reciprocating saw to make fast straight cuts through our pipes
- A tape measure and marking pen
- A rasp file to smooth and chamfer pipe edges



We found helpful to have on hand and also used

- A framing square and/or set square and a small C-clamp that we use to clip these together - useful if you need to extend a measurement from the floor to the inner surface of exterior wall sheathing
- Sealant to seal around the wall penetrations outside
- Spray paint if you plan to paint the chimney and vent outside
- Additional chimney brace material: steel plumbing strapping that we will describe below
- Installation kit:

While an experienced installer might purchase wall vent and chimney piping materials elsewhere, for private individuals who are skilled enough to cut holes in a wall, measure and mark cut lines, and assemble a chimney and outdoor chimney support brackets, you'll be fine if you simply add the company's chimney vent installation kit that includes lengths of 4" pipe and chimney support brackets and clamps.

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Choose Incinerating Toilet Location & Electrical Hook-Up Connection Point

Incinerating Toilet Location Considerations

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- **Location suitable for using a toilet**, such as privacy

Note: the toilet installation illustrated in this article is in a bathroom in a building that is not connected to an external water supply and where no septic system was available. The bathroom provides privacy for toilet users.

Watch out: building users should be prepared for and accept that during an incineration cycle, the toilet's power vent will make a whirring sound that can go on for an hour or longer. If installed just outside of a bedroom, some may not enjoy that noise.

- **Location where outdoor combustion air is available**

either by direct inlet for the Cinderella Classic (electric) and Freedom (gas) models, or where you can route the toilet's dedicated air inlet to an outdoor air source for the Cinderella Comfort (electric) model.

The toilet does not need to be installed in a room with an exterior wall, but if not, there must be a supply of exterior air to support the incinerating toilet's combustion process.

- **Location must provide a sound and level floor**

- **Location that provides sufficient clearance**

for sufficient chimney height to provide draft assist to the vent system (no bends allowed in chimney vent for the gas model).

- **Location where 120V or 240VAC electrical circuit is available**

for the Classic or Comfort electric incinerator toilets or where you can provide 12VDC for the gas model.

A 10A 120v/240V (depending on model) electrical receptacle must be provided for the Cinderella Classic and Comfort (electric) models while the Freedom (Gas) model toilet will require a 12V electrical power supply.

Watch out: plan the location of both the toilet and its wall receptacle so that the toilet doesn't block access to the receptacle itself or you either won't be able to plug it in or you may be forced to place the toilet further from the building wall than you wish.

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Provide Electrical Connection for the Cinderella Toilet



Electrically powered incinerating toilets might be provided in either 120VAC or 240VAC models, powering both the incinerator itself and the toilet's exhaust fan; gas powered incinerating Cinderella toilets will require a 12VDC (low voltage direct current for gas power) circuit to power the toilet exhaust fan. Here we installed a 240VAC receptacle on a dedicated circuit for this toilet.

Above in the center of the photograph you can see the electrical receptacle. The toilet itself requires a 10 Amp (2000 Watts) circuit. Often specialized 240VAC circuits wired in new construction will use wiring that can safely support 15A or 20A 240VAC.

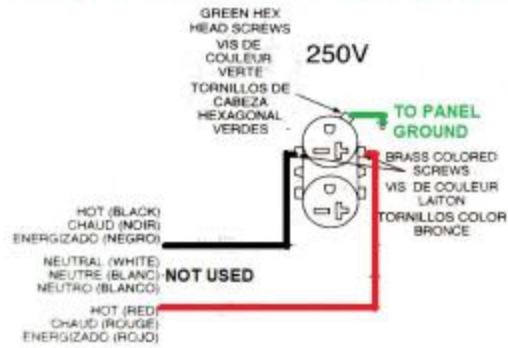
Even though the toilet only draws 10A and even though a 15A electrical circuit can be and is normally wired with #14 copper wire, it's safe to use a larger gauge wire as long as all of the electrical connections can be made properly. (A too-large wire won't fit in some electrical connectors.)

The original construction in this building had provided an unused #10 copper wire circuit that we used to power the toilet's receptacle, connected from a 15A circuit breaker and routed to the single 240V receptacle shown in our photo.

Also shown above at the right side of our photo and again below are views of the wall rough-in opening for the Cinderella toilet's through-wall piping that will provide the combustion air inlet and combustion exhaust outlet.

Below: we've excerpted from Eaton's instructions for this receptacle to show how we wired it for a 240V circuit for this Cinderella Comfort incinerating toilet hook-up.

WIRING OPTIONS for CINDERELLA COMFORT INCINERATING TOILET ELECTRICAL POWER



Below: most of the nail plates to protect electrical wiring in this wall have been installed including for wires that pass in the wall above the rough-in opening left for routing the toilet air inlet and exhaust vent pipes.



Watch out: if you are not trained in proper and safe electrical wiring, hire someone who is qualified: you could be shocked or killed or could set the building on fire.

Watch out: the company warns that this toilet can draw 2000W for extended periods of time during an incineration cycle.

Therefore you should not try to power the toilet through a power converter, nor through a solar or battery powered electrical system. If your building does not have access to sufficient electrical power, you should consider ordering the Cinderella GAS toilet model.

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Minimum Clearances Between Construction and the Cinderella Incinerating Toilet

Notice that the exterior wall rough framed opening is just a few inches from wall at the right side of the photo.

Minimum clearances from construction to the toilet are given by the manufacturer as:

- **2" (50 mm) from the toilet sides.** (We spaced the toilet about six inches from that right-hand wall).
- **2" (50 mm) from the rear of the toilet to the wall.**

If you think you need to reduce these clearances, the company refers you to NFPA-82 Standard on Incinerators and Waste and Linen Handling Systems and Equipment.

This standard presents the minimum fire protection requirements for the construction, installation, maintenance, and use of waste and recyclables storage rooms, containers, handling systems, incinerators, compactors, and linen and laundry handling systems. - NFPA

The company also cites a requirement

18" from flue pipe (see NFPA-82 "Standard on Incinerators and Water and Linen Handling Systems and Equipment" for reduced clearances) but we note that as the flue pipe is, per the company's own instructions, able to pass right through a wood-framed wall and building siding, this requirement is a bit confusing.



Above: not wanting to mark on the tiled floor surface, we made a measuring "stick" out of a scrap of left-over foam insulation onto which we measured and marked the required toilet rear clearance distance from the building framing, adding 1/2" for a wall finish drywall or wood panels.

That let us see how far into the room the front of the toilet would project and allowed us to give a bit of extra space (more than 2") behind the toilet.

You will need these measurements when placing the toilet and connecting it to its horizontal air inlet and exhaust outlet pipes that you'll then run "wild" out through the wall so that you can measure the desired cut-off length of those pipes during installation.

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Measure and Mark the Locations of Cutouts for Toilet Air Inlet & Exhaust Vent

Watch out: measure twice and cut once to be sure that the round openings for the air supply and exhaust vent for your incinerating toilet are located exactly correctly.

You will see that we check our measurements several times before actually cutting the large diameter round holes in the building wall.

Inaccurate measurements can cause you to end up with ugly over-cut openings in the building wall and a risk of unwanted leaks as well.



We used a couple of measuring methods to double check the location of the through-wall holes to be drilled. Shown above, we clamped a framing square together with a set square and a level so that we could double check the toilet vent and air intake hole center points on the inside surface of the building wall sheathing.

Below: using the same tools and measuring up from the finished floor to points on the back of the toilet, we confirmed the exact above-finish-floor height to the center of the two openings on the back of the toilet.



Below: we show the black horizontal line marking the correct above-floor height for one of the round wall cutouts to be made.



Below, measuring from the finished floor up to the correct height for the upper toilet exhaust vent.



Above we're using 16 5/16" from the finished floor to the center of the upper hole.



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Below: we're marking, again on the framing at one side of our framed-in rough opening, the height above the finish floor to the center of the lower hole. 6" in this instance.



After carefully marking the opening hole center heights above the finished floor onto the face of a stud, we use our set square to extend that line across the side of the stud and from there along the inner surface of the exterior wall sheathing (at left in the photo above).



Above: the hole center lines have been marked on the stud.



Above: we used a small level to extend the cut line across the inner face of the exterior sheathing. This will locate the proper height above the finished floor to the center of each cutout hole. We have not yet marked the horizontal or left-right distance.



If the studs are properly plumb/vertical you could also use a set square to carry the horizontal cut line height from the marking on the stud face.

Watch out: when extending marking lines around framing lumber it's too easy for error to creep in. Double check your measurements.



Above: notice that the height of the hole center-line above the wall's sill plate is of course less than the height above the finished floor.

Watch out: Take care to make all measurements from the same surface. Don't confuse height above the floor from height above the upper surface of the sill plate.

Your toilet is going to be set on the floor, at floor level, not at that the higher level of the upper surface of the wall's sill plate.



Above: with the horizontal height lines marked on the wall, we double check once more the height of the line above the finished floor surface. We used a combination of a framing square and a try square to measure accurately from the finished floor surface up to the required center of the holes to be cut through the exterior wall.

Because we're measuring into the wall cavity, this combination of tools avoids any error in placing the drill mark location.

Measure twice, cut once.

Below: let's double check the diameter of the hole saw that we will need to make the openings for these vent pipes.

Notice that Cinderella has provided two short lengths of plastic pipe intended to be used for the horizontal runs of toilet air inlet (the shorter pipe) and exhaust outlet (the longer pipe).

In the background are the contents of the toilet's installation kit including four more longer pipe sections, a Tee and tee bottom cap, and two 45 degree elbows that will form the vertical chimney assembly.



Below we measure the outside diameter of this nominal 4 inch plastic pipe. The OD of the pipe is actually about 4 1/4".



Below is a close-up of our measuring tape. Take care to adjust your tape measuring point across the end of the pipe so as to find the greatest measurement amount: that will be the widest or actual pipe diameter.



Below is the round hole saw that we purchased from Southwire. It's designed to cut a hole that is 4 3/8" in diameter, very slightly larger than the measured outer diameter of the pipes themselves.



Is this a problem? No.

The slight opening around that pipe will be closed up with the sealant you will use in a later installation step.

Below: with the horizontal lines marked to give proper height for our incinerating toilet vent openings we're ready to mark the left-to-right center point of these two holes.

After confirming that we could center the cutout openings in the rough opening framed into the wall and that that would give us the desired left-to-right position of the toilet once it was installed, we marked the left-to-right location of the center of each hole (7 1/2" from the right hand stud).



Above we mark the upper hole center line (the point of my pencil above the tape) and below the lower hole center line (pointed to by my pencil).



Watch out: take care to make the left to right centering of the hole identical for the upper and lower openings: they must be directly on the same vertical line as well as being at the proper height from the finished floor.

Otherwise you will not be able to connect the toilet to the two pipes as they pass through the wall.

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Cut the Air Inlet & Toilet Exhaust Pipe Openings

Now we're ready to start drilling the holes.



Watch out: take care to center the pilot drill bit of the hole saw on the cut line that you marked earlier, both in height and at the proper left-to-right position.



Above I'm holding the hole saw in position to show where the cut will pass. Notice that the bottom of the lower hole (in our photo) is not much above the sill plate of the framed wall rough opening.



Above: cutting the round upper hole for the exhaust vent opening for a Cinderella incinerating toilet.

Below: After just starting to cut the hole I pulled back the hole saw to see the location of the pilot hole: it was within a 16th of an inch of exact. Stopping here to check the location of the pilot hole gives you one last chance to adjust slightly the hole saw location if you didn't start it precisely on target.



Below: We have cut through the OSB exterior sheathing of the building wall and exposed the housewrap on the building's exterior.



We remove the OSB plug from our hole saw and then we can continue sawing but

Watch out: we stop before passing completely through the exterior wall. Shown in the photo below you can see the upper arc of the opening being cut by the hole saw.

As this building uses rounded log siding on its exterior, the hole saw won't come through the exterior all at once.

Once the pilot bit has penetrated all the way through the exterior wall we prefer to stop drilling from the inside.

Why stop here? If you continue cutting from just the building interior there is a danger that your cutter splits and shreds the finished surface of the exterior wall.



Below: by using the pilot bit hole as a guide we continue our hole saw cutout from the building exterior. This avoids shredding or splitting of the exterior edges of the hole.



Below: I've finished cutting the round hole in the wall through which the Cinderella toilet upper vent will pass. Notice that the edges of the hole are smooth - the outside cut matched perfectly with the cut that began inside: because we used the pilot bit hole as our starting point when making the outside cut.



Below we make a final check of the height location and left-to-right location of the Cinderella toilet's lower air inlet (combustion air) opening before making that cut.



And below we begin using our drill to cut out the lower wall opening for this toilet installation.



Tip: the OSB or plywood sheathing cutout wants to stay jammed inside the round circular hole saw bit.

That's why the manufacturer of the hole saw provides those staggered slots in the sides of the hole saw. Use a screw driver (or I'm using a pencil) to push out the plug of cutout material before continuing to cut through the wall.



Once you've tipped up one edge of the round hole saw plug it's easy enough to remove the plug entirely by hand.



Below you can see the two completed holes for this Cinderella toilet.



Before continuing we vacuum up sawdust and debris from the interior floor. This is more than just being compulsive and fussy (to which I plead guilty). It also assures that later when we're applying sealant or foam insulation we'll get good surface contact and adhesion: we've removed extraneous dust and debris.



Below are the same two incinerating toilet vent and air intake openings viewed from outside. You can see that we avoided splintering the log siding: the hole edges are neat and clean.



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Install Horizontal Air & Vent Pipes

Below: we note Cinderella's instructions for the amount by which these pipes will insert into the gasketed openings on the rear of the toilet.



Above is the air inlet pipe end and below the exhaust vent pipe end.



We marked these pipes before cutting to avoid mixing up or cutting the wrong pipe to the wrong length.

From the factory these pipe ends have been chamfered. You'll need that feature when pushing the toilet onto these pipes or the pipes into the toilet.

Below: a bit of dish soap in water is used to wet the pipe ends before assembling these pipes into the toilet or into the gasketed hubs of the tee or elbows outside.



With the pipe and hub dampened with soapy water we assemble the pipes and toilet.

Watch out: take care that the two pipes are seated fully into their respective openings in the rear of the toilet.



Notice that the in-room projection of the air intake and vent pipes allows for the future installation of the finished wall surface, such as 1/2" drywall or 2/4" paneling, plus the required clearance distance between the back of the toilet and the finished wall surface.

With the pipes connected to the toilet and fully-seated, we place the toilet at our intended distance from the interior surface of the rear wall.

(Minimum of 2"). That will allow us to mark the point on each pipe where it exits the wall.

The lower or air inlet pipe is going to be cut just slightly longer than flush with the end of the wall so that we have a good surface to which we can later apply sealant.



Special tricks of the trade when trimming the Cinderella air intake and vent pipes to fit a curved log exterior wall. Mark the point on the vent pipe where the curved log wall surface projects outwards the most.

Add to that distance the required horizontal clearance distance so that when the tee and vertical riser chimney or vent are added, the vertical chimney will be the required distance from the building's exterior wall surface.

Then having marked that cut point on the lower air inlet pipe we remove it from the toilet and wall and finish marking it so that we can cut that pipe to proper length.



Watch out: Notice that I use the set square to extend our cut line around the pipe. That guide helps keep our saw blade straight and assures that the end cut of the pipe is square, not angled.



With our cut line marked on the air inlet pipe we cut it to length.

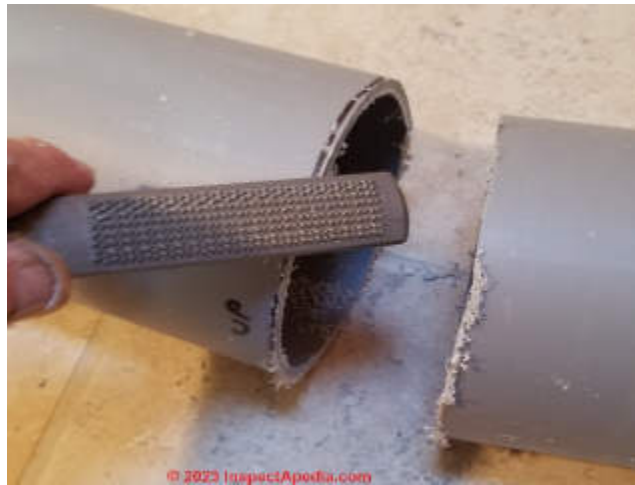


Tip: to avoid cutting into the floor (you'll be so sorry), just cut about half way through the plastic pipe, then stop and rotate it before continuing your saw cut.

Below: before chamfering the edges of our horizontal pipes for this incinerating toilet installation, we flatten and perfect the squared end of our pipe with a rasp.



Once we've cut the pipe to length, we use a wood rasp and perhaps a bit of sand paper to restore the chamfered edge to the exhaust pipe so that, as noted earlier, it will be easier to push the pipe into its gasketed opening on the rear of the Cinderella toilet or for the exhaust vent pipe, into the face of the outlet tee.



The outdoor edge of the lower air inlet pipe does not need to be chamfered. It can be left flat, but should be cleaned of burrs and loose bits of plastic.

Below: with our two horizontal pipes cut to length we assemble them fully into the rear of the toilet and pass them through the wall to the building exterior.

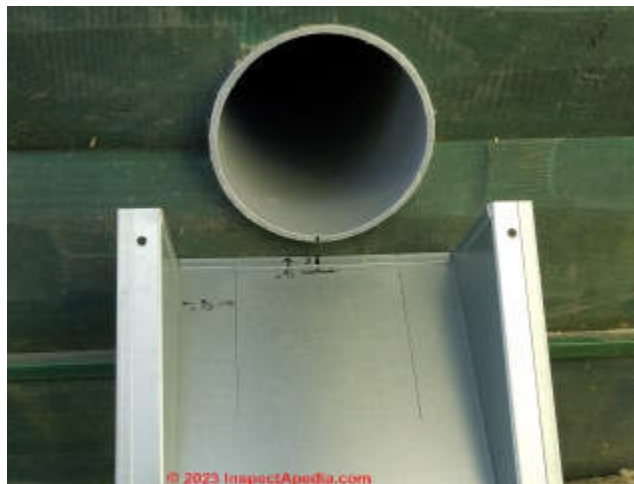


The Cinderella toilet will have to be removed to permit installation of the finished wall surface and later it will occasionally be removed to permit extra cleaning steps required by the toilet maintenance instructions.

Below: the combustion air inlet pipe shown protruding just enough through the log wall that its upper surface gives us a lip to which we can apply sealant.



Watch out: before globbing up the wall with sealant, we measure and mark the exact location of the steel cover that will mount over the air inlet pipe. That avoids messing up our caulk job and avoids getting sealant onto the cover or ourselves.



Below the two pipes, air inlet below and the longer exhaust above, seen from the building exterior.



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Seal Pipes at Exterior Wall

Below: before applying sealant to the lower air inlet pipe, we wipe away any remaining scraps of plastic from our rasp filing and pipe edge cleanup.



We took care to choose an exterior sealant that would bond well to both the wood surface and the plastic pipe material. We're using DAP Ultra Clear sealant, rated for these surfaces. Provided you've cleaned the surfaces properly, silicone sealant should work as well.

But unlike typical silicone sealants, this clear DAP sealant is also paintable.



FYI, here is the

[DAP ULTRA CLEAR Flexible All Purpose Waterproof Sealant Technical DATA SHEET \[PDF\] \(2019\) - retrieved 2023/08/25, original source: dap.com/media/4368/ultra-clear-tdb-5-0-fl-oz-final_tds_-2-25-19.pdf](#)



Above you can see our sealant applied around the lower air intake for the Cinderella toilet. Cinderella's instructions say to cut the air inlet pipe flush with the exterior wall but on a curved log wall we let the lower portion of the pipe remain square and thus protruding a bit - to be covered by the steel cover shown next.

If the pipe projects about 1/8" you may find that easier to get a reliable water seal with sealant that we've applied in this photo.

Watch out: Take care not to let the pipe extend out past the wall surface or it will interfere with the installation of the cover (shown below) and worse, it may block the in-flow of combustion air, making the installation ineffective or unsafe.

Watch out: the company also warns "do not install a mosquito net over the end of the outlet air pipe. We think they meant as well, over the combustion air inlet pipe.



We were a little worried that local rodents might climb up into the pipe to find shelter and thus block the combustion air inflow - a problem that has not yet occurred. We note that a screen is provided on the back of the toilet so rodents and pests can't enter the toilet itself (blue arrow in our photo above).

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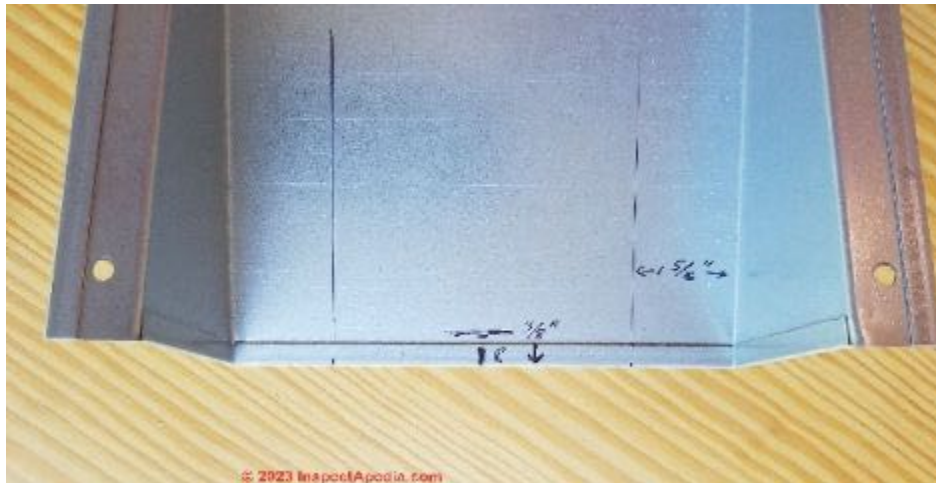
Tips for Mounting the Cinderella Air Inlet Cover on a Log Wall

Below we mark the clearances and center line of the air intake cover so that we'll be able to place it properly on the exterior wall.

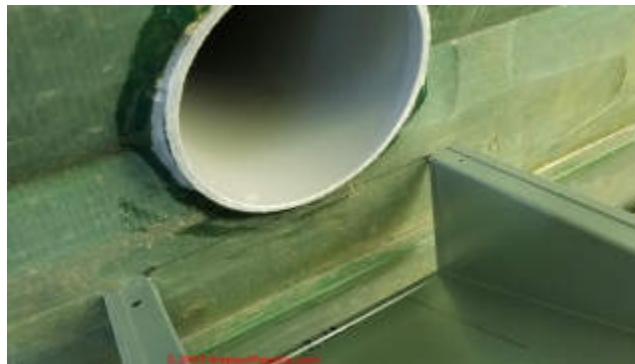


Below: centering details and alignment distances - unnecessary markings but reminding us that the cover's bottom edge should extend 3/8" below the bottom of the Cinderella toilet air inlet pipe.

Cinderella tells us to extend the bottom edge of the air inlet cover 3/8" below the bottom of the air inlet pipe itself and, of course, to center the cover over the pipe. That places the cover bent edges (not its flanges) 5/8" from the left and right vertical edges of the air inlet pipe.



Below we are holding the cover in place with the bottom edges of its flanges on a line that is 3/8" below the bottom edge of the air inlet pipe for the toilet. You can see our horizontal locating line on the wall.



Because a log wall exterior isn't flat, the air inlet cover is not going to mount nicely, nor flat, nor be sealable (without ugly blobs of sealant) unless we do something fancier. Here's how we proceed.

Below: now tipping up the air inlet cover, we mark its upper screw locating holes on the wall and we *temporarily* screw it in place using *just the two upper holes*.



Next we fabricate a pencil scribing tool that will let us mark the curvature of the wall onto a block of wood that will then be cut to fill in the curved space between the air inlet cover and the log wall surface.



Below: this is a stunningly simple tool. Key however is to choose a block of wood of adequate thickness to let us scribe the wall curve that will accommodate the deepest or most-open part of the curved surface.

Space the pencils, or a pencil and a scribe, far enough apart that the scribe can follow the surface contour of the wall and the marking pencil draw a corresponding line along your block of wood that will be cut to form the fill-in spacer.



Keep in mind that we'll need to make two of these filler blocks, for the left and right sides of the air inlet cover.



Now holding a block of wood in place edge down against the log wall exterior we simply scribe a curved line that follows the contour of the log wall exterior.

Take care to keep your scribe in uniform contact with the wall surface - don't change the angle with which you hold it while drawing the scribe line.

Below: using a jig saw I've cut my first log wall filler from a length of 1x3 common pine. (We'll later paint this for durability).

If you don't have a power jig saw an inexpensive alternative is a simple coping saw.



Next, below, I've cut off just the length of scribed arced wood necessary to fit under the air inlet cover so that it will rest perpendicular on the wall surface.



Below you can see the trimmed curved wood filler in place.

Next we mark the location of the screw hole that must pass through this wood filler.



And below we pre-drill the wood filler to the diameter of the cover mounting screw.

Watch out: if you don't pre-drill this little piece of filler wood you're probably going to split it when screwing the Cinderella air inlet cover to the wall and you'll have to make another one.



Next we apply a generous bead of our wonderful Dow sealant to both the log-side and the cover-flange side of our two wood filler strips that have been pre-drilled as well.



Below: I'm ready to insert the wood filler strip in place,



and below, holding the filler strip in place so that it doesn't rotate out of position as the air inlet cover bottom screw is installed, we screw the air inlet cover flange through the filler strip and to the low wall behind.



We used a stainless steel screw to avoid corrosion and chose a screw long enough to pass through the cover flange, the wood filler block, and about 3/4" into the wood log wall siding.

Below is an underside view of this installation. Noticing that we could see a bit of daylight at the upper edge of the flange we will apply sealant all around the flange.



Below: detail of sealant applied around the Cinderella combustion air inlet cover top and along its mounting flanges and along our wood shims.



...

Seal & Insulate the Cinderella Toilet Pipes Inside the Building



Now that we've got our toilet in place and its air inlet and horizontal exhaust pipes in place we use fire-block foam to seal around the pipes where they pass through the building wall. Later we'll add fiberglass insulating batts to this wall cavity.



An advantage of using FireBlock foam here is that it's more heat-resistant than other foam sealants and it might make our building inspector happy, too.

A more subtle advantage of the foam insulating step, lest you think I'm gilding the lily of this toilet, is that it "glues" the horizontal pipes in place, making later removal and re-installation of the Cinderella toilet easy to accomplish without disturbing the whole pipe and chimney arrangement.

If you haven't read all of Cindy's installation and maintenance instructions yet you might not have noticed that periodic maintenance of the Cinderella toilet requires that it be pulled off of its pipe connections for further cleaning.



Watch out: use paint thinner, or preferably odorless paint thinner to clean off any fire-block foam that you splashed onto the Cinderella toilet itself. Do this right away - before the foam has hardened. Otherwise you'll have a sticky mess.

Watch out: do not try using other solvents like acetone to clean spray foam off of the Cinderella toilet as doing so is likely to dissolve and damage its exterior finish.



...

Install the Vertical Chimney Vent for the Cinderella Incinerating Toilet

The chimney vent material supplied by Cinderella uses standard 4-inch polypropylene soil and waste pipe produced by Uphonor, labeled as

UPHONOR Soil & Waste PP-MD 110x3 4 SN8 BD NPG PS102, Part No. 6414904015345 (bar coded). Our piping was date stamped as having been manufactured in 2018.



These pipe sections are assembled by simply pushing them together (if you're smart, aided with a bit of dish soap). Sections are sealed by a gasket that resides in a groove in the pipe hub.



Noticing that our pipe sections supplied by Cinderella must have been stored outdoors and exposed to the weather as the hubs were contaminated with dirt.

Out of concern that the pipe joints may not seal reliably, we removed each gasket and cleaned the gasket and the hub groove with a warm water and soap.



The cleaned hub and gasket are shown below.



...

Cut a Close Nipple to Join the 45 degree Elbow to the Vertical Chimney

Below is one of two 45 degree angle double hubs needed for us to construct the chimney jog around the roof overhang.

To use this double-female elbow you'll need to cut off the hub from your angled and your final vertical pipe segments.



Above: one of our two 45 degree angled elbows needed to build the outdoor jog in the Cinderella exhaust vent as must pass the roof overhang.



Because the elbow is provided with a female hub on both ends we needed to cut a short length of vent pipe to join the elbow to the upturned hub of the vertical exhaust vent pipe extending up from the bottom tee outside the building wall.

Here we cut and test fitted our 4" pipe length that permits joining two female pipe hubs. Note in the photo below that if we want 4" of additional space we make the pipe length longer than that to allow for the length of pipe that slips into each of the two hubs.

In our photo we hadn't yet used our rasp file to clean off the second pipe end edges.



Below our cleaned up pipe "nipple" cut to joint the first 45 degree angle elbow to the hub at the top of our vertical chimney section.



Below: I've put some dish soap solution on the edges of our 4" nipple to make it easier to slip it into the pipe hubs.



Below is the lower end of our first vertical chimney pipe section inserted into the upper opening of the pipe tee provided in Cinderella's installation kit.

The bottom of the tee will receive a removable cover that is taken off to permit future chimney vent cleanouts.



Below: here is the first vertical chimney vent section installed, hub-up, into the exhaust tee.



Below: this photo shows that our 4-inch nipple has been inserted into the 45 degree elbow and I'm about to insert the other end of the nipple into the upturned hub of the vertical chimney section.



Below: the elbow has been connected to the upturned hub of the vertical chimney exhaust pipe and the second of several support clamps has been snugged to the building wall.



...

Build the Angled Chimney Extension Around the Roof Edge

Now we are ready to insert, measure, and cut the angled length of chimney-vent to get our remaining chimney installation clear of the roof overhang.

Below: we have installed the angled run of chimney pipe and are ready to measure the cut point below that uppermost hub.

We'll cut the angled pipe to a length that gives us the desired distance from the roof edge to our final vertical chimney section.



To calculate the necessary length of our diagonal pipe length we can use the simple formula for a right triangle shown below. Remember to include in your length the amount by which the pipe will extend into the interior of the 45-degree angle hubs.

Or, by making the required measurements with the pipe already inserted into the lower 45 degree elbow in the photo above, when we measure (or calculate) the length C that is needed, we need only include the extra length of pipe that extends into the upper 45 degree elbow hub since the lower elbow already has the pipe inserted.

Just mark the upper pipe length cut location (green line in our photo).

Result

Given $b=16$ and $\alpha=30^\circ$,
 $a = 9.2376$
 $c = 18.47521$
 $\beta = 60^\circ = 1.0472 \text{ rad} = \pi/3$
 $h = 8$
 $\text{area} = 73.90083$
 $\text{perimeter} = 43.71281$
 $\text{inradius} = 3.3812$
 $\text{circumradius} = 9.2376$

[* Show Calculation Steps](#)

a =	<input type="text"/>	$\alpha =$	<input type="text" value="30"/>	degree
b =	<input type="text" value="16"/>	$\beta =$	<input type="text"/>	degree
c =	<input type="text"/>	h =	<input type="text"/>	

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Knowing any two lengths of a right triangle's sides A, B, and C you can calculate the length of the remaining side using the Pythagorean theorem: $C^2 = A^2 + B^2$

If you've forgotten how to calculate a square and square root of a number you can use a calculator or an online calculating website.



Above: We chose to space our chimney around the soffit's fascia at plenty of distance to avoid damage from snow sliding off of the roof and to give room for the supporting chimney bracket.



Above: we test-assembled the angled pipe run on the ground and checked our measurements of both the total assembly length (photo above) and the straight cut pipe length with its upper hub already removed (photo below).

Note that these are the measurements we needed for the particular roof and soffit overhang dimensions shown in this article. The dimensions you'll need will almost certainly differ.

Easiest, with no calculations at all, is to simply test-assemble the pipe as we showed above on this page, then mark the cut line on the pipe as a point level with the lower edge of the roof.

Watch out: Cinderella warns about two angle options for this sloped section of chimney pipe

- If the angled section is using 30 degree elbows and slope, the total length of the angled section must not be longer than 5 ft. (1.5m)
- If the angled section is using 45 degree elbows (illustrated here), the total length of the angled section must not be more than 3 ft. 4 in. (1.0m)

Below, the straight length between hubs in our installation was 15 1/2" and the total straight length of this angled section was about 18" - well within the Cinderella's limits.



Below: our two 45 degree angle pipe hubs and straight length of chimney vent pipe between them brings the opening of the upper hub level with the lower edge of our roof, and at the distance we wanted our chimney to be spaced out horizontally from the fascia board.

In this installation the distance of the lower vertical chimney pipe from the building was set by the horizontal vent pipe that comes through the building wall and the tee attached to its end.

That put our lower vertical pipe at about the middle of the two-foot wide soffit or roof overhang.



For the upper section of our chimney to jog around and clear the soffit and then continue vertically we measured and cut the length of the angled pipe run as described above.

...

Check Chimney Clearance from Roof Edge



When measuring and setting the clearance between the last vertical section of your Cinderella chimney/vent and the roof edge you could make either of two measurements.

Above we measured the distance from the face of the fascia board, because we'll need to know this when cutting the threaded chimney bracket rod to length.

An added reason for a generous clearance distance between fascia and chimney (8" in this case) is to allow for future installation of roof edge gutters should the building owner decide to add that feature.

Because a proper roof shingle installation will include a drip edge and shingle extension a bit past even the edge of the drip edge, the clearance distance from that edge to the chimney side will be a bit less - shown below.



Below: we set the remaining vertical chimney height to give adequate clearance above the roof surface and also (this is important) to meet the recommended chimney height given in the Cinderella toilet instructions - necessary for proper exhaust draft.

For a fossil-fuel venting chimney, chimney height requirements are described

at [CHIMNEY HEIGHT & CLEARANCE CODE](#)

We might also want to avoid any effect on the Cinderella vent performance that might be caused by winds, wind turbulence, wind downdrafts due to a chimney top too close to the roof surface, so respecting the two-foot rule described in the article above might be useful even for the simpler vent for an incinerating toilet.

...

Set Chimney Top To Proper Rooftop Clearance Height

Below: our measurement shows that the top of the chimney's outlet (with top cap installed) will be two feet above a horizontal line (or a level pine board) drawn from the chimney top.



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Install Top Chimney Section & Set Chimney Perfectly Vertical (Plumb)

Watch out: before making final measurements of chimney height or horizontal distance from the fascia (to cut and install the threaded-rod chimney support bracket) be sure that your chimney is perfectly plumb or vertical by measuring it with a level, on two sides.

The first is shown below as I set the level along the chimney side parallel to the building.



A second plumb measurement will be made on the side of the chimney facing away from (or towards) the building so that we know the chimney is set plumb in both directions.

Our photos below show us adjusting the chimney position to dead plumb as we make final adjustments to the threaded rod chimney brace that holds the chimney off of the building's fascia board and roof.



...

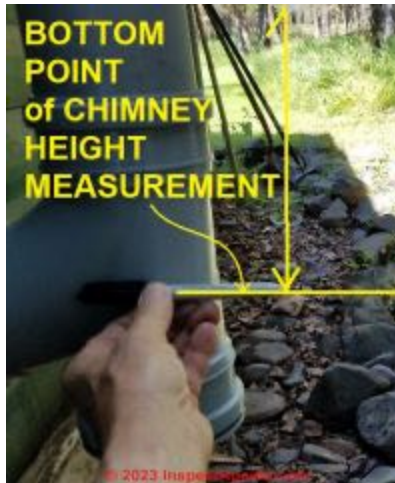


With the Cinderella chimney's top section cut to length and dead plumb we can measure our roof edge clearance. We need this distance to cut the threaded rod to proper length for our top chimney brace / bracket - described in detail next.



...

Confirm Adequate Chimney Vertical Height to Meet Cinderella's Requirements



When measuring the vertical chimney height for the Cinderella toilet, we measure from the center line of the horizontal outlet tee (photo above) to the top of the chimney outlet (photo below).

Maximum Cinderella Chimney Vent Height & Clearances

- Maximum total vertical height of the chimney in a straight run (no bends after the base tee connection) = 18 ft. (5.5m)
- Maximum total vertical chimney height where a single 45 degree or 30 degree bend has been included = 15 ft. (4.5m).



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MAXIMUM HEIGHT for CINDERELLA COMFORT CHIMNEYS

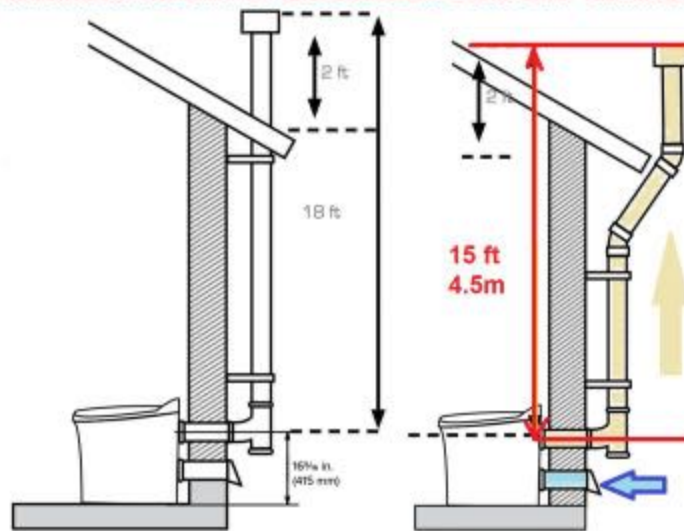


fig. 5

fig. 6

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Install Upper Chimney Support Brackets

Below: the threaded rod chimney vent support brackets provided in the Cinderella installation kit provide a maximum support distance between the center of the vent and the bracket base mounting point of 18 inches.



Below we're cutting the threaded rod to the proper length for our installation. Remember to leave sufficient rod length to thread into both the chimney clamp and the wall mount support hardware.



Below: this Cinderella vent bracket rod has been cut to mount between the roof edge fascia board and the chimney clamp. This was our shortest bracket but even this one allowed considerable side wobble in the chimney, perhaps worse in an installation where the vent angles through two 45 degree elbows to jog around the roof overhang.



Watch out: in our OPINION these chimney braces using a threaded rod are strong and secure the chimney from movement towards or away from the building, but the chimney was very wobbly from left to right.

We found that even a slight push was enough to set the chimney askew, particularly along its angled elbows. We didn't think the vent system was going to collapse but to us it looked fragile and when askew, like a sloppy installation that might, over time, compromise the seal of the hub gaskets.

For that reason and to avoid damage that might be caused by windy conditions or prowling bears, we added what is conceptually a stronger angular brace between the chimney and the fascia board.

Below are the tools and supplies you'll need to add a chimney brace against lateral movement.



One of these braces, using steel plumbing strapping, was sufficient to stop any side to side chimney movement.



It's easy to integrate the steel plumbing strap support with the OEM chimney bracket, as we show here. Simply dis-assemble the bracket and re-route its tightening screw through the hole in the steel strapping. I bent over the end of the strapping for neatness and to give good strength against breakage, but kept the length of strapping steel beyond the hole short so that the end fits nicely within the chimney bracket itself.



Below our strapping has been connected to the Cinderella chimney bracket but left loose. It's critical that you install and adjust the OEM threaded rod chimney brace to the fascia first, setting the chimney plumb before continuing with the add-on steel strapping that will prevent lateral movement of the chimney.



Below: before securing our lateral-movement preventing bracket we make sure that we've got the chimney plumb in both directions.



Then we first tack in place the steel strapping to the fascia board and when we're confident the chimney is still vertical and the strapping snug, we can bolt it in place.



Below, and before final painting, the Cinderella incinerating toilet exhaust chimney and cap and supporting brackets have been installed and the combustion air inlet cover has also been fitted to the building wall.

Note that the chimney installation is completed by a factory-kit-provided top cap or "ventilator cowl" that helps to prevent downdrafts and so assists in effective ventilation.



...

Bending an Off-Set into a Chimney Support Bracket Rod

Below: the two lower threaded rod chimney support brackets were installed as shown. The upper of the two had to be positioned a bit to the left of the chimney's center line where we could bolt it to vertical trim on the building, so we had to bend the rod to accommodate this offset.

The lower chimney support bracket is mounted to horizontal trim and is in direct line with the centerline of the chimney.



Measure the amount of offset needed and simply make a pair of 45 degree angled Zee bends in the threaded rod to achieve that necessary distance - see the bends in the rod above the yellow arrow in our photo.

...

Paint the Cinderella Exhaust Vent & Air Inlet to Match Building Siding



While the manufacturer assures us that the chimney of a Cinderella toilet never reaches high temperatures, we still chose a high temperature spray paint in a color to match the building exterior walls.



Before painting the plastic exhaust venting and inlet vent piping it's important to clean it thoroughly of any surface oil, grease, soap or debris. Otherwise your paint job will fail in short order.

We used alcohol wipes to clean the plastic and metal surfaces before painting.



Below: after painting the materials with a heat-resistant green paint to match the building.



Below: the Cinderella toilet installation is complete, with finished wall surface in place, the toilet is plugged-in and ready for use.



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Continue reading at [CINDERELLA INCINERATING TOILET USE GUIDE](https://inspectapedia.com/septic/Cinderella-Toilet-Instructions.php) - <https://inspectapedia.com/septic/Cinderella-Toilet-Instructions.php> or select a topic from the closely-related articles below, or see the complete [ARTICLE INDEX](#).

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