Tube Rocket Stove, 4 in

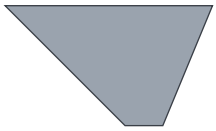


A 4-inch J-tube rocket stove in 4 x 4 x 3/16 in square tube, the way welders build them, with every joint cut for you. The riser stands on the burn tunnel in a fingered miter that locks it square, the feed slopes up at 45 degrees so sticks slide down as they burn, and a flat base stands it on an 11-1/2 x 15-1/2 in footprint.

What's in the box



Riser x1
Part RT4-01



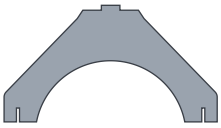
Burn tunnel x1
Part RT4-02



Feed x1
Part RT4-03



Tunnel leg x2
Part RT4-04



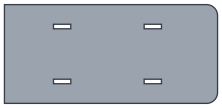
Feed leg x1
Part RT4-05



Skid x2
Part RT4-06



Shelf rib x2
Part RT4-07



Fuel shelf x1
Part RT4-08



Pot arm A x1
Part RT4-09



Pot arm B x1
Part RT4-10

What you'll need

- MIG or flux-core welder (a 120 V machine handles 3/16 in tube in two passes)
- Angle grinder with a flap disc
- Two small clamps and a small square
- Welding helmet, gloves, jacket and safety glasses

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1 Build the base

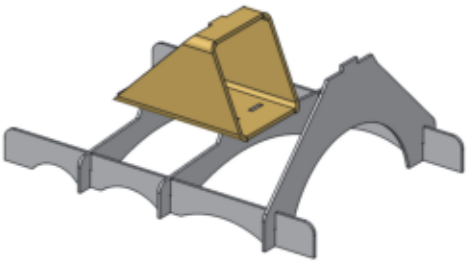


Stand the two skids on edge, notches up, about 10 in apart with their long ends together. Drop the two tunnel legs and the feed leg (the tall one) over them, so the notches cross. The feed leg goes at the short end. Check that the base sits flat and square.

TIP

The two skids are identical, and so are the two tunnel legs.

2 Set the burn tunnel on the legs

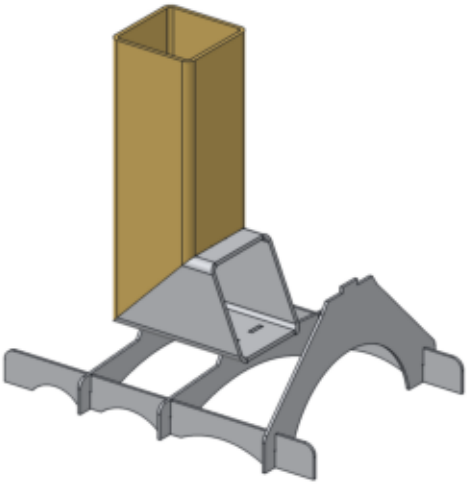


Lower the burn tunnel onto the two tunnel legs so their tabs come up through the four slots in its bottom. The 45-degree end with the fingers goes to the back, over the long ends of the skids.

TIP

If the tabs won't line up with the slots, turn the tunnel end for end.

3 Stand the riser on the tunnel

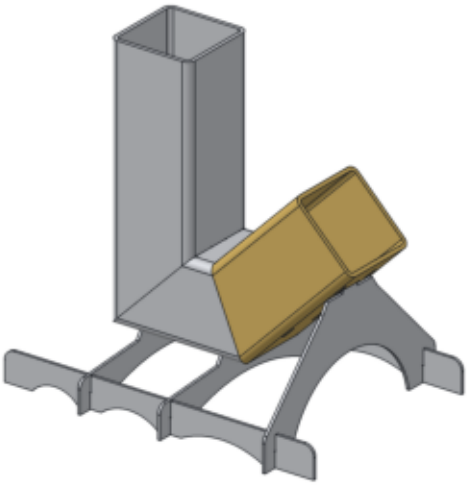


Set the riser's mitered end on the tunnel's 45-degree end so the fingers mesh: the riser's center finger at the back, its two outer fingers at the front. It now stands square on its own. Check it plumb with a square and tack the back corner.

TIP

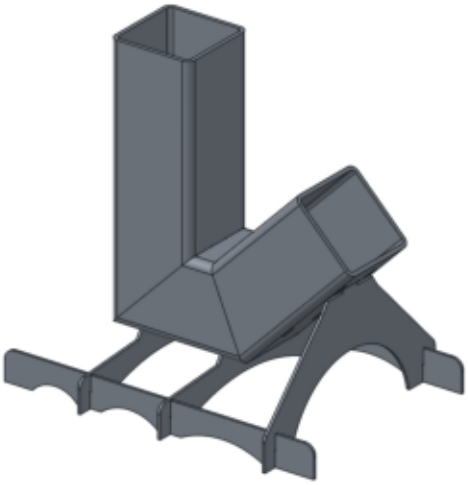
The fingers only mesh with the riser's back wall facing the back of the stove.

4 Set the feed on



Lay the feed's mitered end against the tunnel's front end so the feed slopes up and its slot drops over the feed leg's tab. Tack the bottom corner of the miter, then the top.

5 Weld it out



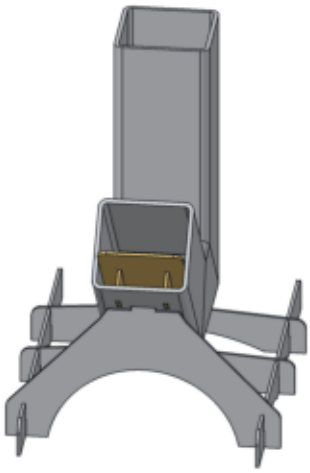
Weld both miters all the way around from outside, filling the V-groove along each one; the burn path should be sealed. Weld each leg to the tube along both sides of its top edge, and weld the four corners where the legs cross the skids. Grind the welds on the riser top flat.

TIP

Weld 1 in stitches and move around the stove so the tubes stay straight, then go back and fill between them.

3/16 in tube takes two passes on a small 120 V welder; run the first one hot.

6 Drop in the shelf ribs and fuel shelf

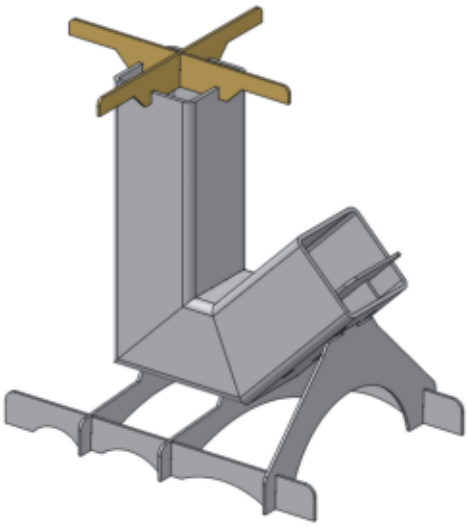


Slide the two ribs down the feed along its bottom so their tabs drop into the four slots, then slide the fuel shelf in on top so its slots drop over the ribs' tabs. The shelf's rounded end sticks out of the mouth. Neither is welded: lift the shelf out to clean the feed.

TIP

Tack the ribs from underneath through their slots if you want them to stay put.

7 Drop on the pot support



Set pot arm A (notch on top) across the riser so its notches drop over the riser walls. Lower pot arm B across it so the center notches lock together. It isn't welded: lift it off to pack.

TIP

Either arm goes either way across the riser.

Finishing

- The tubes and parts ship bare with a light oil film. Wipe them down with a degreaser before welding.
- Grind the welds and every outside edge smooth.
- Paint the outside with a high-heat paint rated to 1200 F, or leave it bare and oil it. The riser will burn the paint off near the top; that's normal.
- Burn the first fire outdoors before cooking on it, to cure the paint and burn off any oil.
- Empty the ash when the stove is cold: lift out the shelf and tip the stove forward.
- Store it dry with the pot support off.

Fire safety

- Outdoors only. A wood fire makes carbon monoxide: never use it in a tent, vehicle, camper, garage or under an awning or closed roof.
- Set it on bare ground, gravel, stone or concrete, level and clear of dry grass. The tunnel radiates heat downward: never use it on a table, a tailgate, a deck or a cooler.
- Burn dry sticks and small split wood only. Never use gasoline, lighter fluid or other liquid fuels.
- Center the pot on all four arms. Don't move the stove while it's lit or while a pot is on it.
- The whole stove gets hot enough to burn, and the riser glows. Keep kids and pets back, and use gloves.
- Many campgrounds and public lands ban wood fires and wood stoves during fire restrictions. Check the rules and burn bans before every fire.
- Keep water or an extinguisher nearby, and let it cool completely before you pack it.

This is a kit of raw steel parts. You build the finished product, and the quality of your welds and your judgment about where and how you use it are yours. Weld with proper ventilation and protective gear, and never leave a fire unattended.