

Firewood Processor

Step by Step Instructions and Measurements



Overall Length:	13 feet
Weight:	estimate of 1400 lbs.
Cutting Table Length:	8 feet
Log Capacity:	20 inch diameter
Firewood Length:	up to 22 inches
Productivity:	1 cord every 3 hours

General Notes and Information

These plans are designed to help you build a firewood processor which will *function* the same as the one in the demonstration video. The actual machine you build may be different than this one in some areas. The model and make of the gas engine used to power the hydraulic pump will most likely be different (and newer) than the one I purchased off of E-bay for my machine. The hydraulic cylinder, valve body, motor and pump will most likely be of different size, shape, and mounting types than the ones used in my machine. The requirements that must be met in order for your machine to function the same as mine will be discussed later in the plans.

As a result of the parts being specific for every machine made, the exact dimensions for the location of the bolts and the mounting brackets are not given in these plans. In place of exact dimensions will be pointers on things to consider and how to go about locating the bolt holes and design of the mounting brackets.

All hole locations may be found by measuring from centers of the holes on the item to be mounted and drilling a matching hole in the mounting location on the processor. I recommend all mounting holes be drilled oversize by $1/16^{\text{th}}$ to $1/8^{\text{th}}$. This will allow a small amount of movement and ease in aligning the mounted piece with the processor. When placing bolts in slightly oversize holes it is very important to use locking nuts or lock washers to assure that the bolts stay tight.

Metal Working Tools and Equipment Needed

Welder

Cutting Torch

Hand Grinder

Drill Press

1" drill bit (for cylinder pin hole)

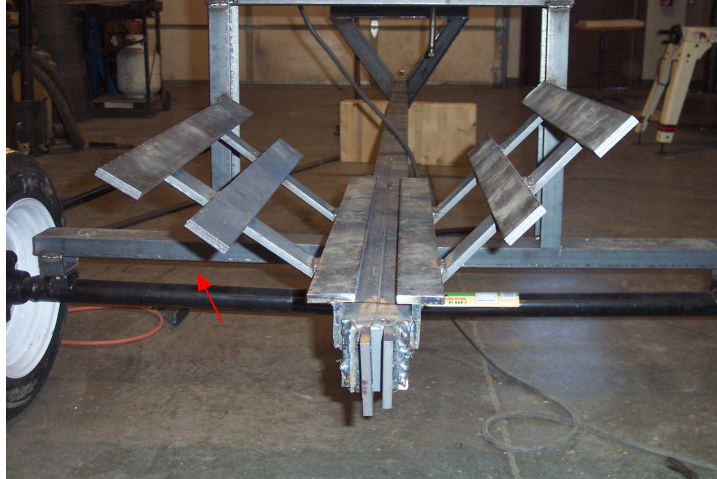
Cut Off Saw (or other means of cleanly cutting steel)

The Trailer

1. Cut 2 pieces of channel iron to 13 feet in length and weld them together with a butt weld in 2 inch stitches to make a square tubing. Stitch welds should be placed about every 2 feet. This piece will be used as the tongue of the trailer.
Make sure there are no stitch welds on the end where the hitch will be welded later.
Make sure there are no stitches where the splitter plunger will be sliding later.
2. Cut a piece of channel iron to a 4 foot length to be used as the frame over the axle.
3. Weld the tongue and the axle frame to each other at 90 degree angles. The intersection of the axle frame and tongue should be placed so that there is 2 ft of tongue extending behind the axle frame.
4. Cut 2 pieces of channel iron to 2 inch lengths. These pieces need to have holes drilled in them that will match the holes in the axle mounting brackets.



5. Turn the 2 inch pieces of channel once drilled upside down and weld one to each end of the axle frame piece. Then bolt the axle to the axle frame member. Use locking nuts. The red arrow in the following picture points out one of these small brackets.



6. At this point you may notice that the pre-stressed axle is upside down. The arch of the axle is inverted from its intended usage. This may be fixed if you add your own mounting system and put in leaf springs. I did not do this. I felt springs were an unnecessary expense and that the 2,000 lb rating of the axle would be more than enough for the estimated finish weight of 800lb.

Optional Leaf Spring Set-up

The above steps are for a low cost, low traveling trailer axle. I found it worth the added cost to put on a set of leaf springs.

Cost: 2 springs = \$25 each
2 sets of spring shackles = \$16 each
Extra 4 feet of 3 inch channel iron = aprox \$16

1. Cut 2 pieces of 3 inch channel iron to 2 feet in length
2. Weld the pieces cut in step 1 to the end of the axle channel iron at 90 degree angles.
3. Weld the spring shackles to the underside of the 2 foot length of channel iron (follow the directions on the spring shackle kit you purchase)
4. Mount the springs to the axle and shackles as shown in the directions that come with the springs.



7. Cut 2 pieces of channel iron to 18 inches in length.