



How to Convert a MTD 5HP Chipper/Shredder Into a High performance Hammer Mill

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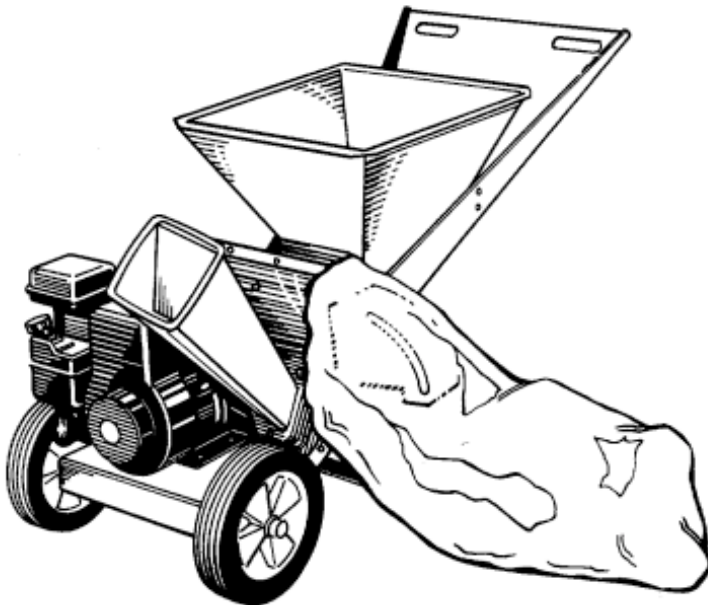
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Parts & skills needed:

- 1) MTD 5 or 8 HP Chipper/Shredder (models 243-6XXB000)
- 2) 1/8" or thicker steel sheet or preferably Perforated steel sheet in the mesh size desired.
- 3) 3/4" OD, 1/2" ID steel tubing
- 4) Welder & Basic Welding skills
- 5) Metal Grinder or Grinding wheel

In this document I used my 5hp model 243-645B000 chipper for the conversion.



**5 and 8 H.P.
SHREDDERS**

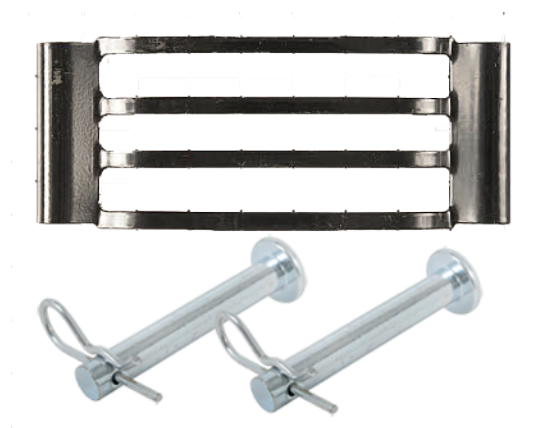
**Model Numbers
243-645B000
243-648B000
243-650B000
243-651B000**

Instructions

The MTD chipper as is, is basically a hammer mill already. The only thing required to increase its ability to reduce the milled material to smaller sizes is a simple replacement of the “Shredder Screen” to one with the desired mesh size. In this example I build a $\frac{1}{4}$ ” perforated shredder screen. The resulting milled materials (blend of leaves, branches & some evergreen bush trimmings) are reduced to almost a powder.

The original shredder screen on the MTD is designed to allow the flail blades to “pass through” the screen to perform the shredding action. **When replacing the stock screen with a perforated plate, it is important that the new screen be spaced far enough away from the flail blades so as to prevent them from striking the plate when the machine is running.** Using the $\frac{3}{4}$ ” diameter tubing to form the plate end holding pin tubes provides the needed spacing without having to try and radius the plate to provide the clearance.

1) Remove the two holding pins, and remove the stock shredder plate from the MTD chipper:

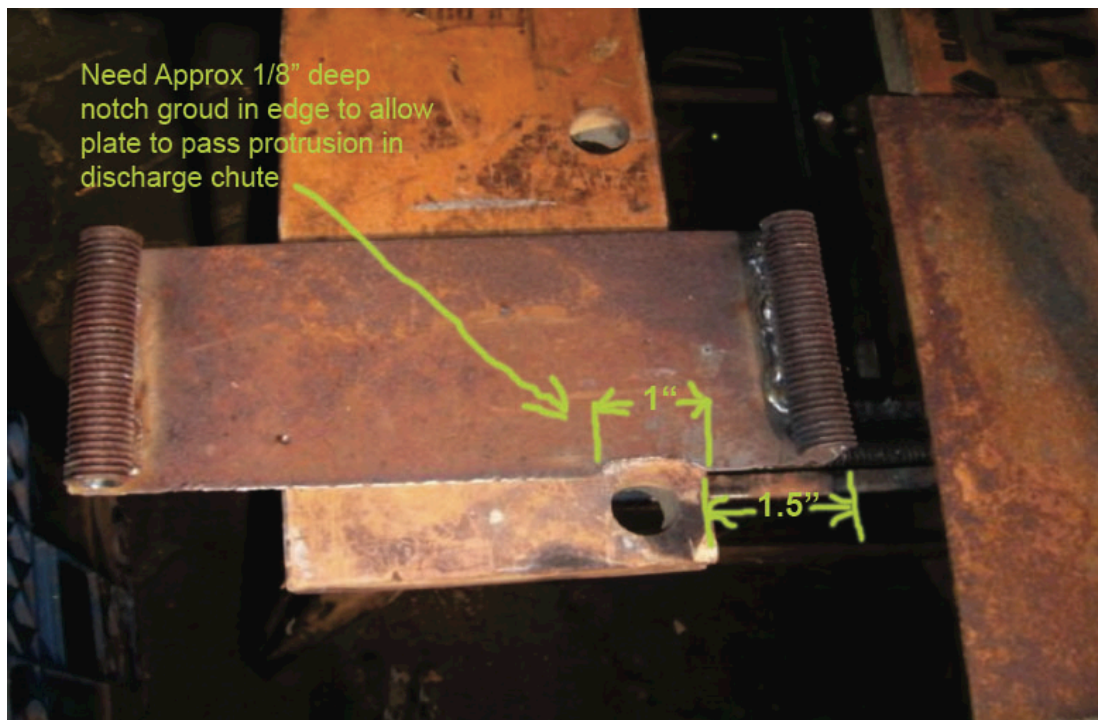
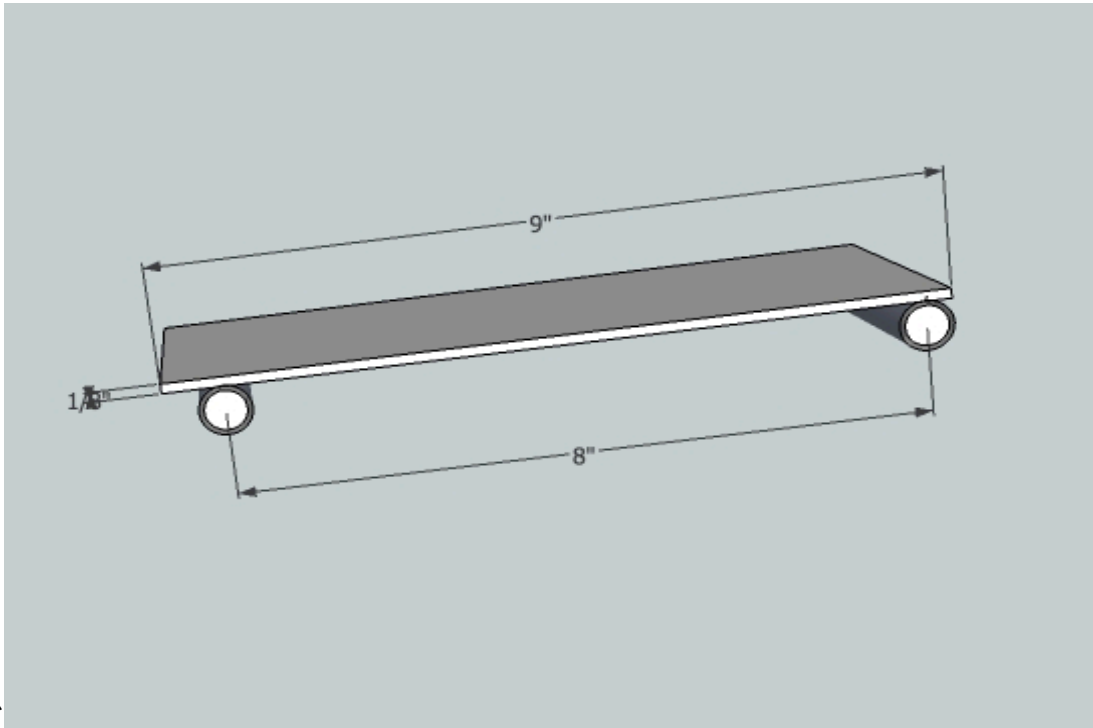


2) Cut a piece of steel plate (or perforated steel sheet) to the size of 9" X 3½" – also cut two pieces of the ¾" tubing to a length of 3.5". In the below example I am using ¾" threaded rod since I didn't have the tubing on hand – I simply bored the slugs to ½" ID.



3) Place the tubing sections flush with one end of the 9x3 ½ " plate, and the other tubing slug exactly 8" on center from the first tube clamp and weld both into place

- You will need to grind out a 1" notch ¼" deep on the right hand edge of the plate, approximately 1 ½" from the top edge. There is a small protrusion impressed into the sheet metal inside of the discharge chute. This notch will allow the plate to pass this protrusion.



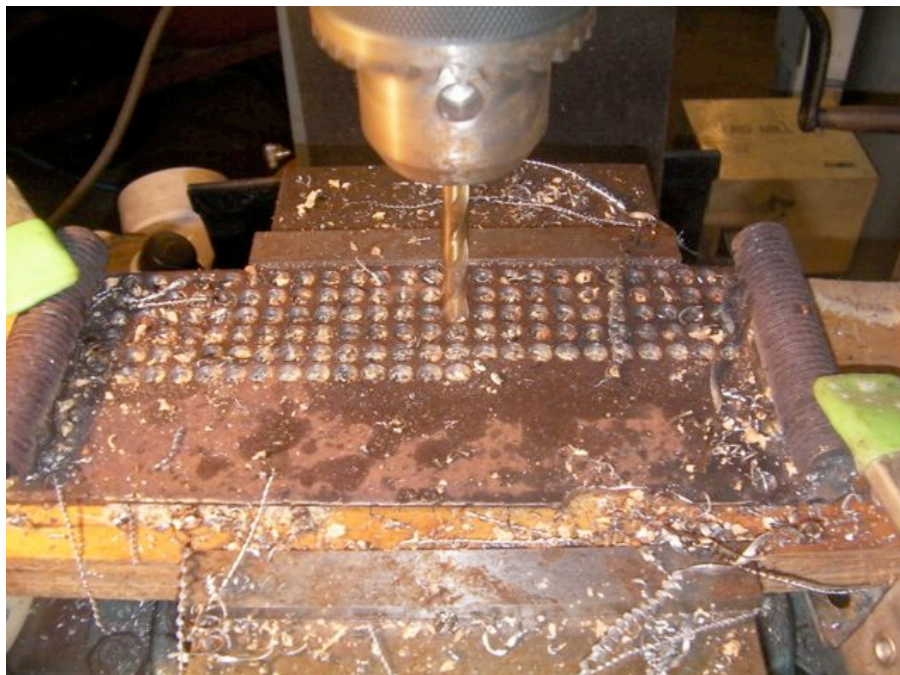
(note poor quality "blob weld – sorry)

4) My Good friend Calvin just came back from upstate Pennsylvania and brought me a case of Yuengling Lager, so time for a cold one. For those who skip the beer, grab a cold soda (or “pop” for our friends up north)



4.5) Those of you who cut the original 9" X 3 ½" plate out of perforated steel sheet in the first place can skip this tedious step – You may go directly to step 6 now. I did not have any pre-perforated sheet so I proceeded to step 5:

5) Decide on desired mesh size and drill or punch out the mesh hole pattern. In this example I made my new hammer milling screen with ¼" mesh. I used the Anilam DRO on my Enco mill to lay out the hole pattern, and drilled away. Those of you without the fancy DRO can simply use a rule and scribe and mark out a grid. It does not have to be exact or pretty (as clearly evidenced by my "blob welds". I used to be a good welder, I don't know what happened to my welding skills? further compounding my shame is the fact that I did the welding before drinking the Yuenglings!). Anyhow beauty is not needed , but you do want to have as many holes as possible in the surface of the plate, especially at the smaller mesh sizes.



6) Install your newly made Hammer Milling screen/plate into your MTD chipper/shredder – **The side with the tubes faces inwards towards flail blades.** Insert the pins and clips which hold the plate in place. Once your new plate is installed, I highly recommend removing the spark plug from your chipper, and pulling the motor over rapidly enough to ensure that centrifugal force has extended the hammer flails to their fullest reach. **Make sure there are no collisions between the flail blades and your new plate without chance of the motor actually starting.**



7) Once you are satisfied that there is adequate clearance between your new plate and the flails, Re-install your spark plug and fire up your new “High performance” hammer mill. In the below photos I was using a $\frac{1}{4}$ ” mesh plate and feeding in a blend of Fall Leaves, Juniper Trimmings and a few small branches. The output with the $\frac{1}{4}$ ” screen was almost like powder! – I generally grind up leaves and paper for pressing into biomass Pellets for my pellet stove, and the output of the $\frac{1}{4}$ ” plate is far too fine for this. I will be making a $\frac{1}{2}$ ” and a $\frac{3}{4}$ ” mesh plate for my chipper to experiment with and determine which works best for the leaves and paper.

