

# Working with Sheet Metal

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## Shear



*Photo by John Dennett*

### A Shear

Straight edges can be cut onto sheet metal stock using a shear. Ensure that the shear is rated to cut the gauge of sheet metal you're working with, or you may damage the blade. The gauge rating of a shear is generally marked prominently on the machine. Sheet stock should be placed on the table and slid below the plexiglass shield. When the stock is oriented properly, make a cut by stepping down on the treadle. When the material shears, the treadle may slam down forcefully. The treadle stops are designed to prevent the treadle from crushing your someone's foot. Still, it is good practice to make sure your other foot isn't beneath the treadle.

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## Notcher



*Photo by Curt Newton*

### **A Notcher**

The machine shown above will create 90 degree notches in sheet metal. This makes it possible to create profiles that can then be bent into three dimensional shapes (like boxes). Lay the work on the table. The guides can be used to help orient the part as desired. Pulling on the actuating lever will cut a notch in the work.

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## Press Brake

A press brake can be used to bend sheet metal. The work must be slid under the shoes. Raise the shoes with the elevation levers, slide the work in place, and lower the shoes back down. The radius of the bend can be set with adjustment bolts on both sides of the machine. Minimum bend radius is a function of the ductility and thickness of the material being worked. For aluminum sheet, the bend radius should be greater than the sheet thickness. Bend the work by applying force to the bending lever. It is necessary to bend the work slightly beyond the desired angle as the metal will "spring-back"; elastic deformation is recovered when the bending force is relaxed.