STUDENT MACHINE SHOP

EQUIPMENT DESCRIPTIONS
MILLING MACHINES

Milling: a machine tool in which a horizontal arbor or vertical spindle rotates a cutting tool above a horizontal table, which is used to move a workpiece.

There are a total of six milling machines in the student machine shop. There is one manual milling machine along with five CNC milling machines. Students can be trained on any of the following machines, and once they are trained, they are allowed to use any of the milling machines for any of their design projects.
BRIDGEPORT MANUAL VERTICAL MILLING MACHINE WITH DIGITAL READOUT
BRIDGEPORT VERTICAL MILLING MACHINE WITH PROTO TRAK EDGE 2 AXIS CNC CONTROL
TRAK K3 VERTICAL MILLING MACHINE WITH PROTO TRAK A.G.E. 2 AXIS CNC CONTROL
TRAK K3 VERTICAL MILLING MACHINE WITH PRO TO TRAK EMX 2 AXIS CNC CONTROL [1]
TRAK K3 VERTICAL MILLING MACHINE WITH PRO TO TRAK EMX 2 AXIS CNC CONTROL [2]
TRAK K3 VERTICAL MILLING MACHINE WITH PRO TO TRAK SMX 2 AXIS CNC CONTROL
LATHES

Lathe: a machine used for shaping wood, metal, or other material by means of a rotating drive that turns the piece being worked on against changeable cutting tools.

There are a total of four lathes in the student machine shop. Students can be trained on any of the following machines, and once they are trained, they are allowed to use any of the lathes for any of their design projects.
HARDINGE HLV-H 11” X 18” TOOL ROOM METAL LATHE WITH DIGITAL READOUT
CLAUSING 15” X 48” METAL LATHE WITH DIGITAL READOUT
SOUTH BEND TURN-ADO 16” X 60” METAL LATHE WITH DIGITAL READOUT
PROTO TRAK 18” X 45” SX CNC METAL LATHE WITH SLX CONTROLLER
DRILL PRESSES

Drill Press: a powered vertical drilling machine in which the drill is pressed to the work automatically or by a hand lever.

Fosdick 10” High Speed Drill Press

Rockwell 17” Variable Speed Drill Press
SAWS

Saw: a tool used for cutting wood and other materials, typically with a long, thin serrated steel blade.

Students must take extreme caution when using any of these machines. Saws can be very dangerous if not used properly.
DO-ALL 36” METAL CUTTING VERTICAL BAND SAW
POWERMATIC 20" METAL CUTTING VERTICAL BAND SAW
RONG-FU INDUSTRY CO., LTD HORIZONTAL METAL CUTTING BAND SAW
SAW STOP TABLE SAW FOR WOOD AND PLASTIC
CENTRAL MACHINERY 16” SCROLL SAW
BLACK AND DECKER PANEL SAW
Sheet Metal Equipment: used to cut sheet metal by moving the edge of a blade through it.

- Tennsmith 52” Air Powered Shear
- Pexto 48” Sheet Metal Roller
- MSC 48” Box and Pan Bending Brake
PRESSES

Press: a machine tool that changes the shape of a workpiece by the application of pressure or fits two pieces of material together; otherwise known as a press fit.

Red Arrow 25 Tin Hydraulic Shop Press

Greenerd 16” Arbor Press

Greenerd 4” Arbor Press

Dake 10” Arbor Press
GRINDERS AND SANDERS
Grinders: a machine that has a rigid, course wheel rotating at a certain speed that is used for precision machining of metal of other materials.

Marathon 6” Pedestal Grinder

10” Pedestal Grinder with Buffing Extension and Wire Wheel

Delta 6” Pedestal Grinder
**GRINDERS AND SANDERS**

Sander: a non-rigid piece of paper, disk or cloth that is covered with an abrasive material and rotates at a certain speed and is used to smooth or flatten a material, typically wood.

- D.P.I. 2” Belt Sander
- Rockwell Delta 6” Belt and 12” Disc Sander
DUST AND MIST COLLECTORS

The purpose of dust and mist collectors is to cut back on the about of debris that is left over from sanding, cutting or drilling a material.
WELDING EQUIPMENT

Welding: joining together (metal pieces or parts) by heating the surfaces to the point of melting using a blowtorch, electric arc, or other means, and uniting them by pressing, hammering, etc.

Oxy-Acetylene Cutting and Welding Torch Set

Miller Synchrowave 250DX T.I.G. Welder

Miller Millermatic 212 M.I.G. Welder with Spoolmate3035 Spool Gun for Aluminum Welding