

# DRILL PRESS

VERSION 3.1



AUTODESK  
PIER 9

# DRILL PRESS

MACHINE  
INTRODUCTION

VERSION 3.1

THE DRILL PRESS MAKES CYLINDRICAL HOLES IN MATERIAL.

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GEAR CHANGE  
HANDLES

E-STOP &  
START SWITCH

MOTOR SPEED  
SELECTOR

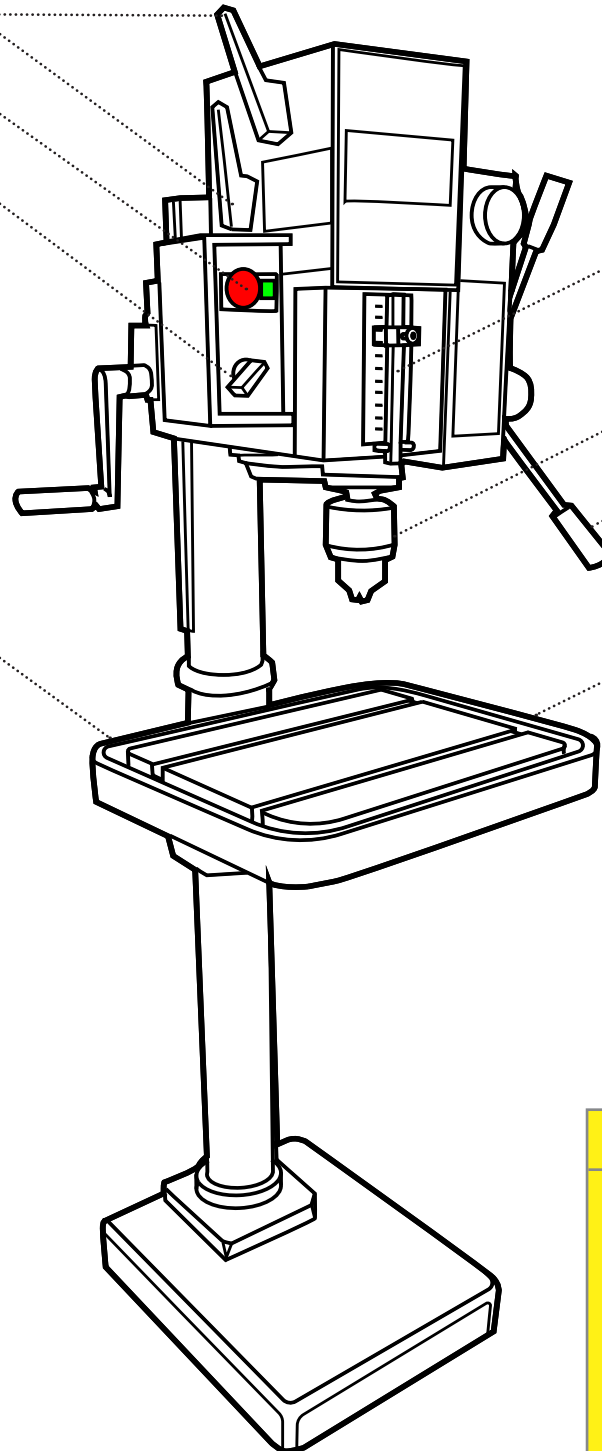
DEPTH GAUGE

CHUCK

FEED HANDLE

TABLE HEIGHT  
ADJUSTER AND  
LOCK  
(behind)

TABLE



## MATERIALS

### **i** ALLOWED MATERIALS

- + Metal
- + Plastic

### **⊗** BANNED MATERIALS

- + Wood
- + PVC
- + Carbon fiber and composites

### **?** SEE SHOP STAFF FIRST

- + All other materials

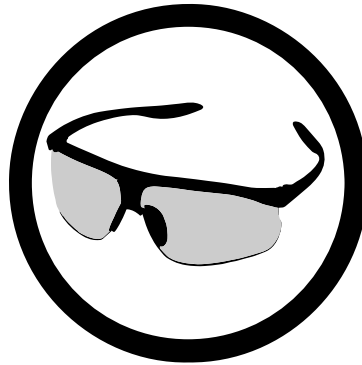
# DRILL PRESS

KEEP IT SAFE

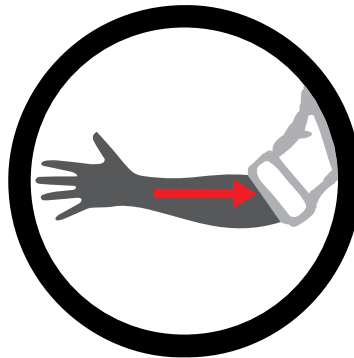
VERSION 3.1

TAKE PROPER SAFETY PRECAUTIONS WHEN OPERATING THE DRILL PRESS.

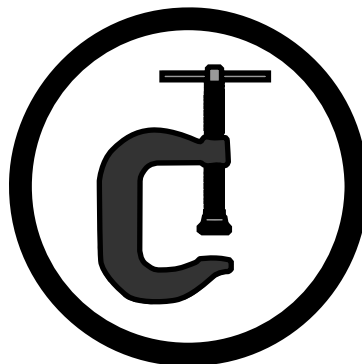
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Always wear safety glasses.



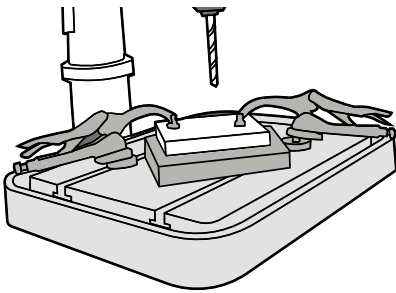
Always wear short sleeves, or rolled sleeves, pull back and tuck in long hair, remove jewelry and lanyards, etc. Do not wear gloves.



Clamping is required for all work.

PROPERLY POSITION THE WORK BEFORE OPERATING THE DRILL PRESS.

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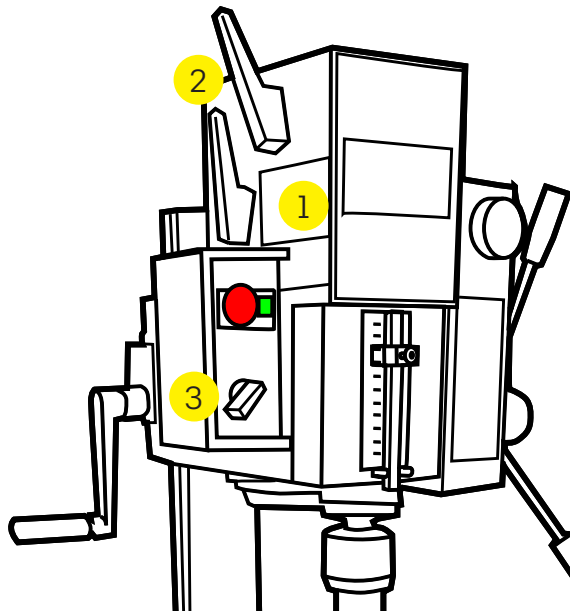


### USING CLAMPS

Always clamp the workpiece. The drill bit can grab, and cause the material to spin dangerously.

There are a variety of clamping options available; ask Shop Staff if you need assistance.

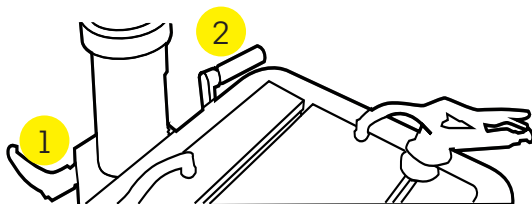
**Note:** Do not drill into the table. If you are going to drill through the workpiece, put a sacrificial board or piece of metal under the workpiece.



### CHANGING SPEEDS

All speed changes must happen with the *motor off*.

1. Use the speed chart to determine settings.
2. Move the upper & lower levers to match the image on the chart.
  - ▶ If a lever is difficult to engage, rotate the chuck by hand while moving the lever.
3. When you are ready to start the motor, rotate the speed selector to 1 or 2, according to the speed chart.
  - ▶ Always turn the knob to the right (clockwise), so the motor spins the correct direction.



### ADJUSTING THE TABLE HEIGHT

All adjustments must happen with the *motor off*.

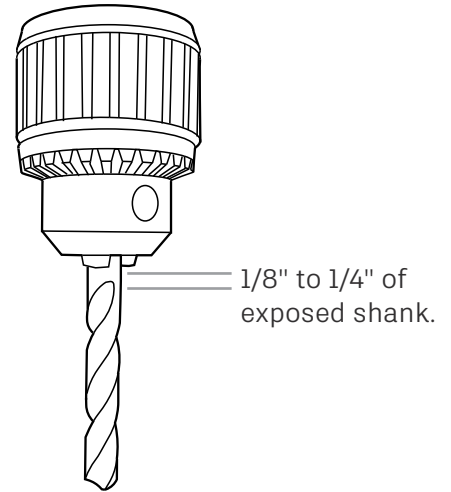
1. Move the lever to unlock the table.
2. Rotate the handle to raise or lower the table.
  - ▶ The table can be rotated around the column when unlocked.
3. Lock the table.

## INSERTING A BIT

The chuck has three jaws that grip the bit.

Insert the bit with 1/8" to 1/4" of shank exposed out of the chuck.

- + Turn the chuck by hand, until it's snug.
- + Tighten the chuck further, with the chuck key.
  - ▶ Immediately remove the chuck key.
- + Rotate the chuck by hand to ensure the bit is centered, and the gears are fully meshed.



## TYPES OF DRILL BITS

**General purpose** drill bits are the most common bits for metal and plastic.

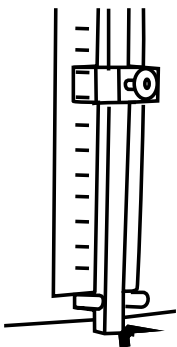
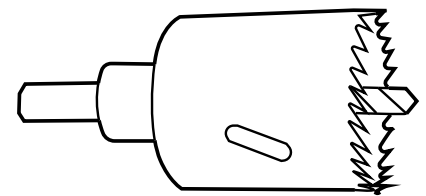


**Plastic** bits have a pointy tip, and are for plastic only.



**Hole saws** make large diameter holes, and leave a center "plug" of uncut material.

- + Many hole saws are only for use in wood. If unsure, ask Shop Staff for assistance.



## SETTING THE DEPTH STOP

The *depth stop* limits vertical movement. It allows you to drill multiple holes at the same depth, and to avoid drilling into the table.

Tightening the depth stop lever will allow the quill to move down that far, *from the current position*.

- + To drill a 1" deep hole in the work, set the stop at 1" while the tip of the drill bit is on top of the workpiece.
- + To prevent drilling into the table, set the stop at 0" with the drill bit tip *just above* the table.
- + Use an Allen wrench to adjust the depth stop.

# DRILL PRESS

HANDS ON

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CLEAR STEPS FOR SAFE MACHINE OPERATION.

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## AREA AND MACHINE PREPARATION

1. Clean and clear the table.
2. Clamp your material in a vise, and clamp the vise to the table whenever possible.
  - ▶ If clamping to the table, use a sacrificial board under the workpiece to keep from hitting the table.
3. Insert the drill bit.
  - ▶ Remove the chuck key immediately.
4. Adjust the table height.
5. Adjust the RPM.
6. Get a bottle of cutting fluid designed for use with your material.

**ALWAYS CLAMP YOUR WORKPIECE.**

## DRILLING THE HOLE

1. Start the drill.
2. Slowly pull the quill handle until the bit contacts the material.
3. Apply more pressure as needed.
  - ▶ When drilling metal, apply a small amount of cutting fluid to the bit with the brush.
4. Holes in deep material may become clogged with chips.
  - ▶ Pull the bit out of the hole periodically to help to clear out chips.
5. Turn off the drill press by pushing the E-stop.

**DO NOT CLEAN OFF THE TABLE WITH YOUR HAND WHILE THE BIT IS ROTATING.**

## CLEANUP

1. Remove and return the bit.
2. Return the coolant & clamps.
3. Brush off the table and clean up the area.
4. Recycle scraps and put reusable pieces in the storage bin in the metal shop.

**PUT BROKEN OR DULL BITS IN THE LABELED BIN.**