

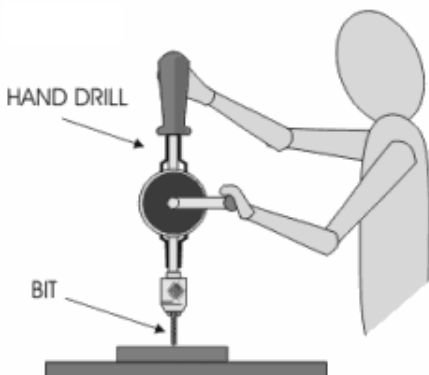
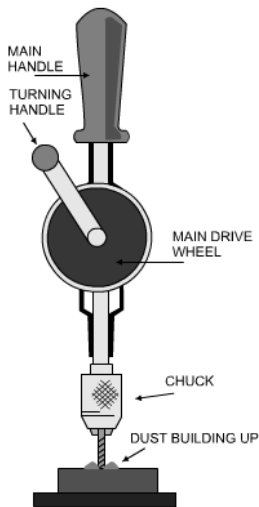
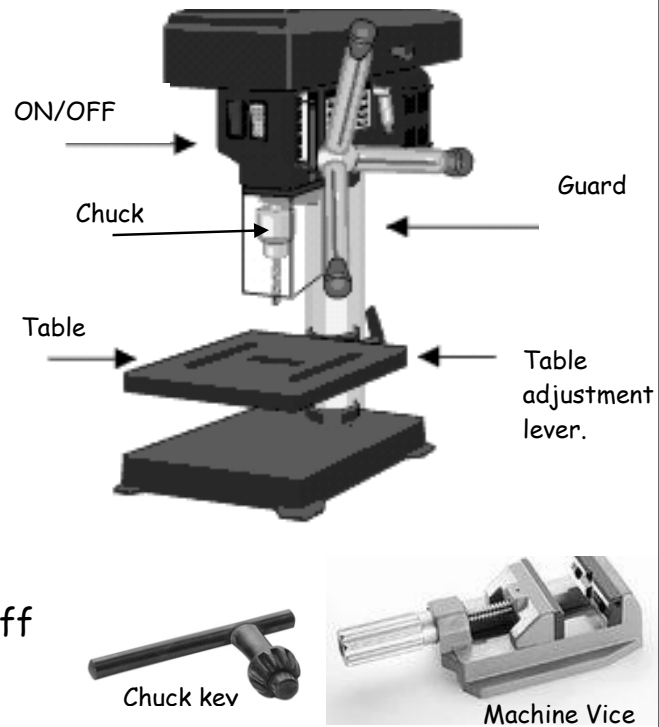
# DRILLS

Drilling is used to make circular holes between 1mm and 60mm in size. For most drilling you will use a drilling machine, but for small holes in wood or acrylic you can use a hand drill.

## HINTS ON DRILLING

1. Check that your marking out is accurate.
2. Hold your work firmly using a machine vice or a hand vice.
3. Put on eye protection.
4. Switch on the machine.
5. Use the handles to bring the drill bit down to the work.
6. Check that the work is in the correct position.
7. Press steadily on the handle until drilled.
8. Release the handle and switch off the machine.

## PILLAR DRILL

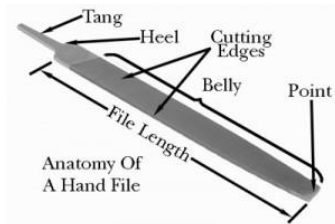
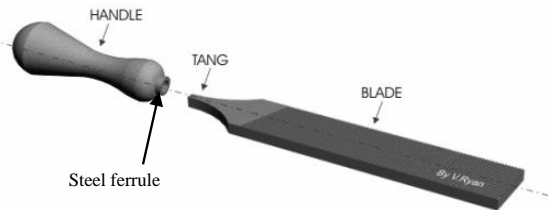
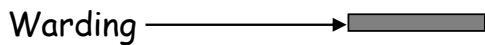
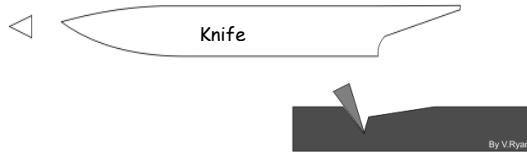
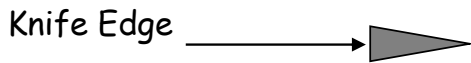
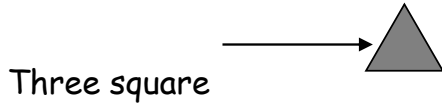
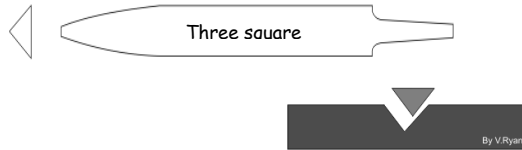
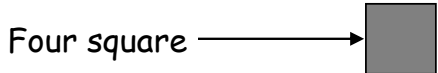
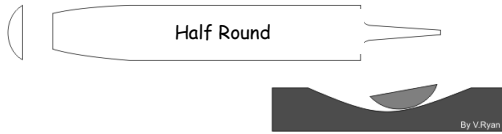
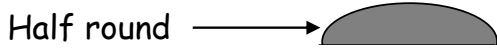
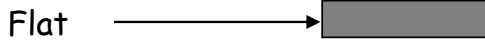
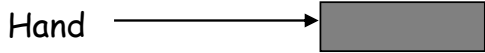


DRILL	USES	COMMON SIZES
Twist drill	Used to drill small holes in all materials	3 to 12mm
Countersink Drill	Used to taper the end of a hole allowing screw heads to go below the surface.	
Forstner bit	Used for large holes in wood	6 to 32 mm

# FILES

Files are used for shaping and smoothing, mainly metal and hard plastics, but also wood.

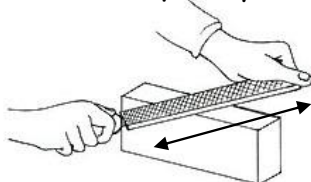
## COMMON SHAPES



There are two main types of filing technique:

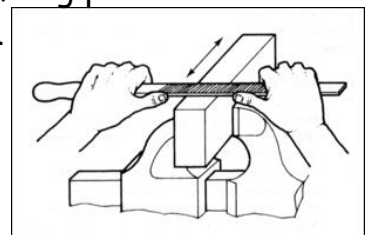
### Cross Filing:

In Cross Filing the file is moved across the edge of the work at 90 degrees. This technique removes more material quickly.



### Draw Filing:

In Draw Filing the file is placed across the work and then moved parallel with the edge. Draw filing produces a smoother finish.



# TOOLS

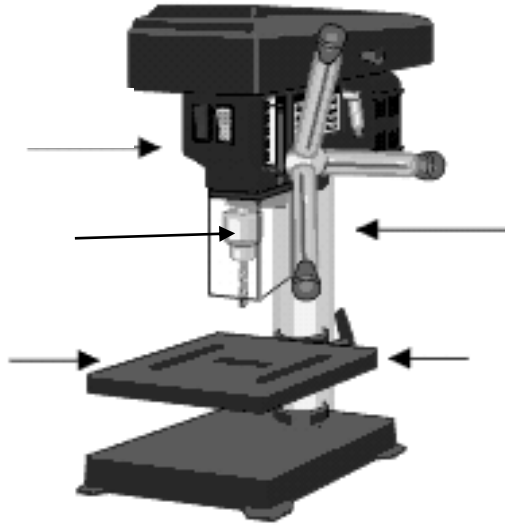
1. What is Drilling?

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2. Write down 8 points you should remember when using the Drill.

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3. Label the picture of the Pillar Drill below.



4. Name three types of Drill

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5. Write down 7 different files found in the workshop.

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6. What is a file used for?

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7. What is cross filing?

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8. Sketch and label the anatomy of a hand file in the space below