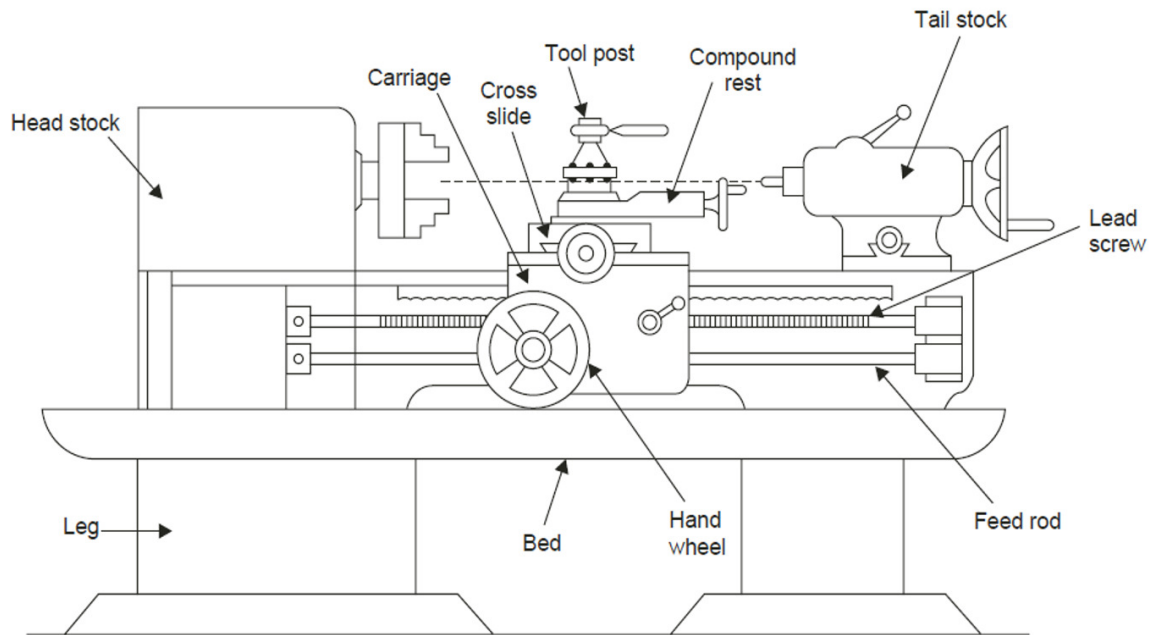


## Lathe 101 on Nardini.

### Safety - recap.

- Wear safety glasses or side covers for normal glasses.
- No long sleeves, loose clothing, neckties or scarves.
- Closed toe shoes.
- No gloves.

### Machine parts.



### Lubrication - Oil every time.

- 9 points on the Saddle.
- 2 points on top of Tail stock.

### Power up.

- Main switch on the back to show red in the window.
- Power indicator will now be on.
- Check trip switches if power light not on. Door will only open when main switch is off.
- Pull the emergency switch.
- DRO if needed - Push ON and then CLEAR.
- Motor switch (Low/High). (Plan in conjunction with gearbox).

### Mounting Collets.

- Remember to unlatch the drawbar on lathe one when screwing collets in/out.
- Test tightness with lever on lathe one.
- Turn motor speed to off when working with collets (or chuck).

### Start

- Check the full distance of planned cut for interference.
- Forward / Reverse.
- Plan speed and engage gearbox. Move spindle to engage gears.
  - If this is not easy, you are not doing it right.
  - Keep in mind which gear is engaged to spindle.
  - Cutting speeds are higher for softer metals and slower for drilling.

- Self protection
- Oil circulation in gear box should be visible.

#### Gearbox.

- Wait until spindle has stopped before changing gears.
- Move spindle / chuck with hand to mesh gears.
- Position between gears to rotate easily e.g. when mounting chuck.
- Be gentle - no need to ever use force.

#### Tail Stock.

- Never crank out past 4.5".
- Check that saddle will not run into tail stock at end of cut.

#### Cross Slide, Tool post.

- Cross slide is marked for actual material reduction. DRO is selectable.
- Zero the cross slide when appropriate.
- Adjust tool height accordingly.
- Check for interference for full length of planned cut.
- Be aware of the backlash - one direction only.

#### Tool post, Tool holders and tools.

- Adjust height of tool in holder for correct cutting.
- Chatter is sometime due to cutting tool height.
- Always mount cutting tool for the least amount of flex.
- Lubricate cuts.
- Carbide insert tools are affordable (Ebay & Amazon) and recommended.
- Use tail stock when you can.
- Steady rest is available for long parts, but it usually leaves marks.
- Avoid using sand paper, but cover the ways with a cloth if you have to use it.

#### Center drilling, drilling and boring.

- Get your own center drills from Harbor Freight or Amazon.
- Drill only as deep as drill diameter for 1/4" up before cleaning out.
- Drill will wander if not cleaned out.
- 135 Degree drills wander less.
- Boring is more accurate than drilling, but depth is limited.

#### Tapping.

- Use spring loaded tap guide.
- Half turn (or until it binds) and back off.
- Come out completely every couple of turns.
- If you break the tap, your part is trash.

#### Clean up.

- Remove big cuttings by hand.
- Vacuum up small chips.
- Vacuum tray below and pull tray out and clean if dirty.

#### Power down.

- Motor switch off.
- Push the emergency switch in.
- Gear box in neutral (between gears).
- Main switch on the back to off.
- Remember to turn off at wall and lock the main switch.