

# Makerspace



## Mandatory Safety Rules

Observe all safety instructions. Instructions or approval is required for some of the machines. Ask someone for help, consult the wiki or email the mailing lists when in doubt.

Ask for instructions if you are unfamiliar on how to use a tool. This is to protect you and to protect the tool. This is a shared space – consider others around you before using a machine; and be aware of others working nearby. Leave the space cleaner than you found it.

Make sure you know where the **emergency stops and fire extinguishers** are.



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by a machine. Consider that others may be working at the space – and you may be in close range of their machines too.



### Eye protection recommended

Also consider that hard-metal cutters and ceramics can suddenly shatter.



### Protective gloves recommended

But also: be careful with gloves – they can be caught in the machine and when made of a sturdy material, help rip your finger off.



### Wear appropriate footwear

No sandals or similar in the main workspace.



### Ear protection recommended

And try to be considerate Neighbours—especially after 19:00.



### Wear a mask when needed

Especially when cutting materials such as MDF

If something breaks or is amiss – it is **your** responsibility to report it. If you find something broken – report it before using/repairing the machine.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Large CNC Cutter



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

Be very careful with viruses/media – as we cannot re-install the software on the PC.



Machine can only be used between 07:00 - 19:00 (be kind to our neighbours)



## Ear protection strongly recommended

Note also that this machine should not be used after 19:00



## Eye protection recommended

Especially when using very small cutters.



## Wear a mask when needed

Especially when cutting materials such as MDF



## Machine can suddenly start

Machine can suddenly start moving; and can move under its own command (even when the PC is off – rely on the emergency stop buttons.).

It will also start moving without warning – for example when the PC&software are (re)started.



## Crushing

Risk of crushing – the machine does not have any sensors that detect obstacles This includes things such as your hands (do not lean on the blue rail) or tools you've left on the workspace.

This machine contains commercial software which is locked to this specific hardware and OS install. Neither of which we can re-install (as we have no media and the suppliers have long gone out of business). So be very very careful with USB sticks and other media. A virus or malware may permanently kill this setup.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Abene Mill



## Instructions & Approval Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you. You must also have a '**dangerous equipment waiver**' filed with the foundations trustees and been given **approval or card access** to use the machine.



### Do not wear gloves

Especially strong leather ones. They get caught easily and then 'help' ripping body parts off.



### Eye protection recommended

Swarf will fly. Cutters can come loose. Broken cutters can fly very far and are razor sharp.



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



### Crushing

Risk of crushing – the machine does not have any sensors that detect obstacles.

Note that it can also run very slow; barely noticeable.



### Slippery surface

Floor will get very slippery; especially when using coolant.



### Sharp rotating elements

This machine is essentially a cutter without any guard whatsoever.

Only switch XYZ feeds when the machine is not running. Use the hand-wheel to get the gear fully locked in prior to starting the feed. Be sure to tighten all 4 nuts post rotating the head or all 4 nuts when moving the head laterally.

Try to avoid getting coolant or similar on the slide-ways – especially the Y slipway between machine and table. Use a shield or adjust the flow. Machine needs to be cleaned post use. When using coolant – also empty the recess on the left of the table and clean out the t-Slots until dry.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Metal Lathe



## Instructions & Approval Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you. You must also have a '**dangerous equipment waiver**' filed with the foundations trustees and been given **approval or card access** to use the machine.

Be careful when using the auto-feed; especially with cutters near the revolving head.



### Do not wear gloves

Especially strong leather ones. They get caught easily and then 'help' ripping body parts off.



### Crushing

Risk of crushing – the machine does not have any sensors that detect obstacles.

Note that it can also run very slow; barely noticeable.



### Eye protection recommended

Swarf will fly. Cutters can come loose. Broken cutters can fly very far and are razor sharp.



### Slippery surface

Floor may get slippery when using coolant.



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.

Clean after use – especially when you have used coolant or have used metals that can rust easily or cause a galvanic reaction.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Wood Lathe



## Instructions & Approval Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you. You must also have a '**dangerous equipment waiver**' filed with the foundations trustees and been given **approval or card access** to use the machine.

This machine is for WOOD only.



### **Wear a mask when needed**

Especially when cutting materials such as MDF



### **Eye protection mandatory**



### **Not recommended to wear gloves**



### **Wear protective clothing**

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Mitre saw



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

This machine is for WOOD only.



Machine can only be used between 07:00 - 19:00 (be kind to our neighbours)



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



### Wear a mask when needed

Especially when cutting materials such as MDF



### Eye protection recommended



### Sharp rotating elements

So keep your fingers away. Bypassing or using your fingers to hold the guard open is downright stupid.



### Ear protection recommended

Note also that this machine should not be used after 19:00 if it is that noisy

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Wood Circle-saw Table



## Instructions & Approval Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you. You must also have a '**dangerous equipment waiver**' filed with the foundations trustees and been given **approval or card access** to use the machine.

This machine is for WOOD only.



Machine can only be used between 07:00 - 19:00 (be kind to our neighbours)



**x 2** A second person must be present during operation, have agreed to be your second, knows how to stop the machine and what to do in an emergency.

Be sure to attach and power on the dust extractor.



### Ear protection strongly recommended

Note also that this machine should not be used after 19:00



### Eye protection recommended

Especially when using very small cutters.



### Wear a mask when needed

Especially when cutting materials such as MDF



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



### Do not wear gloves

Especially strong leather ones. They get caught easily and then 'help' ripping body parts off.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Wood Bandsaw



## Instructions & Approval Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you. You must also have a '**dangerous equipment waiver**' filed with the foundations trustees and been given **approval or card access** to use the machine.

This machine is for WOOD only.

Be sure to attach and power on the dust extractor.



### Ear protection strongly recommended

Note also that this machine should not be used after 19:00



### Eye protection recommended



### Wear a mask when needed

Especially when cutting materials such as MDF



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**



# Planer



## Instructions & Approval Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you. You must also have a '**dangerous equipment waiver**' filed with the foundations trustees and been given **approval or card access** to use the machine.

This machine is for WOOD only.



Machine can only be used between 07:00 - 19:00 (be kind to our neighbours)



**x 2** A second person must be present during operation, have agreed to be your second, knows how to stop the machine and what to do in an emergency.



### Counterrotating rollers

This machine will 'pull' you in using counter rotating rollers. Which ALSO have a ratchet mechanism.



### Eye protection recommended



### Wear a mask when needed

Especially when cutting materials such as MDF



### Ear protection strongly recommended

Note also that this machine should not be used after 19:00



### Do not wear gloves

Especially strong leather ones. They get caught easily and then 'help' ripping body parts off.



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Jointer



## Instructions & Approval Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you. You must also have a '**dangerous equipment waiver**' filed with the foundations trustees and been given **approval or card access** to use the machine.



Machine can only be used between 07:00 - 19:00 (be kind to our neighbours)



A second person must be present during operation, have agreed to be your second, knows how to stop the machine and what to do in an emergency.

Be sure to attach and power on the dust extractor.



### Sharp rotating elements

This machine is essentially a cutter without any guard whatsoever.



### Eye protection recommended



### Wear a mask when needed

Especially when cutting materials such as MDF



### Ear protection strongly recommended

Note also that this machine should not be used after 19:00



### Do not wear gloves

Especially strong leather ones. They get caught easily and then 'help' ripping body parts off.



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Large CNC Laser cutter



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

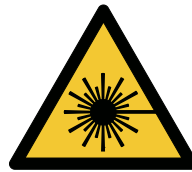
Be sure to check that cooling, air assist and fume extraction fan are all on.

Report any use in the log - and **pay for it!**



## Do not extinguish with water

It has a high voltage (kV) power supply. Use the  $CO_2$  extinguisher (on the pillar to your left).



## Laser beam

Keep the lid closed at all times. If you bypass the safety interlocks – you are an idiot.

Do not forget to switch on (and off post use) the compressor and fume extraction fan (in the corner near the electric distribution board).

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Small CNC Laser cutter



## Instruction Mandatory

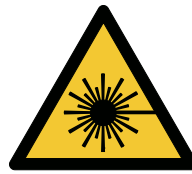
Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

Be sure to check that water cooling pump, air pump (behind the machine) and fume extraction fan are all on.



## Do not extinguish with water

It has a high voltage (kV) power supply. Use the  $CO_2$  extinguisher (on the pillar to your left).



## Laser beam

Keep the lid closed at all times. If you bypass the safety interlocks – you are an idiot.

Do not forget to switch the fume extraction fan (in the corner near the electric distribution board) post use.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Large Grinder



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

Noise wise – be considerate to our neighbours – especially in the evenings.



## Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



## Eye protection needed



## Ear protection recommended

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Hydraulic Press



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.



**Eye protection  
needed**

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Sanding Cabinet



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

Do not spray at your hands/fingers. The gloves **will** ultimately give way and they are not cheap.

Do switch off the compressor after use.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Metal bandsaw



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

Use plenty of cutting oil, WD40 or similar.

Do not leave unattended (not in the least as you may want to keep lubricating it to get a nice cut).



## Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



## Sharp rotating elements



## Eye protection recommended

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**



# CNC Vinyl cutter



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.



**Sharp rotating elements**



**Machine can suddenly start**

Also during power-up.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# PCB Reflow Oven



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# T-Shirt hotplate



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.



## Hot surfaces

The hotplate will become hot (obviously).

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Welding equipment



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

Gas cylinders must be kept mounted in their stand with a **safety strap** at all times.

There should never be more than a total 125L of 'water equivalent' volume, aggregated across all bottles (full or empty) at the space.

Report any use in the log - and **pay for it!**



**Wear a welding mask**



**Pressurised Cylinders**



**Wear protective gloves**



**Use protective apron**

Do not forget to close the valves on the gas bottles post use.

If you have empty bottles; be sure to get them refilled or remove them from the space.

There should **never be more than a 125 litres** of 'water equivalent' volume present at the space (aggregated across all cylinders, **empty or full**, pressured or unpressured).

This is because the space does **not have the required permits** for crossing the **125L limit**.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Ultimaker 2 & 2+Extended



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

Do not walk away from the machine until the first 10 layers or so have been deposited.

OK to leave unattended after first 10 minutes when used with normal settings/materials.



## Automatic start-up

Machine may suddenly start moving. Also during power up.



## Hot surfaces

The bed and the head will become (very) hot.

Keep the filament in a sealed container. Exposure to air (humidity) makes it brittle.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Drill press



## Mandatory Safety Rules

Make sure you clamp your workpiece well - to avoid spinning.

Let the drill do its work - do not apply much pressure (drill gets dull or will snap).

Use the correct drill speed (higher for aluminium, low for steel, very low for stainless steel (RVS). Use the table on the wall.

Use drilling oil when needed (when in doubt - always use the green oil).



### Eye protection recommended

Sharp bits will fly, drills snap.



### Wear protective gloves



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



### Wearing gloves not always good

Wearing gloves can be a mixed blessing - if they are caught in something rotating they may pull your hand towards the machine.

Noise wise – be considerate to our neighbours – especially in the evenings.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Pottery Oven



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

This oven is for pottery, ceramics, annealing and similar use. Up to 1200°C.

Please write down the electricity use (kWh counter) and pay €0.25 to the foundation (NL30 TRIO 0197 6945 19).



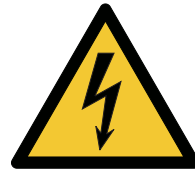
## No mid-bake opening

This oven is not designed to be opened while hot. Or to have contents removed (or added) while hot.



## No fumes

This oven has no exhaust. So no metal melting or similar.



## Bare electric wires inside

Do not open the oven while powered on. The heating spirals are not isolated.

Stay with the machine while it is powered.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Drill & Mill



## Mandatory Safety Rules

**Drilling:** Use with common sense, do not drill in the metal of the XY table! Use the wooden overlay to protect it.

**Milling:** Getting instructions **prior** to use is mandatory. After milling: put the machine back in order for drilling, so others can use it

**When changing the drillbit for milling: use a nylon hammerhead, do NOT use a metal hamer.**



### Do not wear gloves

Especially strong leather ones. They get caught easily and then 'help' ripping body parts off.

Very thin (latex) gloves that easily tear are ok.



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



### Eye protection recommended

Especially when milling. Swarf will fly. Cutters can come loose. Broken cutters can fly very far and are razor sharp.



### Sharp rotating elements

This machine is essentially a cutter without any guard whatsoever.



### Slippery surface

Floor will get very slippery; especially when using coolant.

To adjust the height: 1) loosen the lower nut at the right back side of the machine (marked: 'deze moer' ). Then 2) use the big handle on the left side to crank up/lower the whole top part of the drill.

**And 3) fasten the nut again before drilling!**

For speed adjustment open the top and re-arrange the belts as shown on the diagram on the machine for the right speed. You can run these off/on the wheels by starting and ending with the larger of the two.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**



# Metal Sander



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

This machine is for metal sanding - both ferrous and non-ferrous metals are allowed (until further notice).

**Connect a shopvac/vacuum cleaner to keep the dust under control.**



Machine can only be used between 07:00 - 19:00 (be kind to our neighbours)



## Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



## Wear a mask when needed

And keep the dust under control by connecting the vacuum cleaner or a shop vac. The grit is both unhealthy & damaging to other equipment.



## Ear protection recommended

Note also that this machine should not be used after 19:00 – it is that noisy!



## High speed abrasive surfaces

So keep your fingers away.

It takes metal away awfully fast.



## Eye protection recommended

Consult the WIKI (or ask) when you need to change the sanding belt. Report this on the mailing list.

Try to leave the machine in at least as clean a state as you found it. Likewise, if you 'gum up' the sanding belt (easy with for example soft aluminium) – do feel encouraged to replace it or at least warn the next user via the mailing list.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Wood Router



## Instruction Mandatory

Instruction **prior** to use is **mandatory**. Check the wiki for who can help you.

This machine is for WOOD only.



Machine can only be used between 07:00 - 19:00 (be kind to our neighbours)



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



### Wear a mask when needed

Especially when cutting materials such as MDF



### Sharp rotating elements

Bypassing or using your fingers to hold the guard open is downright stupid.



### Eye protection recommended



### Ear protection recommended

Note also that this machine should not be used after 19:00 if it is that noisy

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**

# Wood Workshop



## Mandatory Safety Rules

The wood shop is separate from the rest of the space for dust- and clean-tool control reasons.

**Keep wood-tools separate from other tools and free of (machining) oil.**

**Connect a shopvac/vacuum cleaner to keep the dust under control.**



### Keep this door closed

To keep the dust under control



### Ear protection recommended

And if you need it - so do our neighbours - so observe the 07-19:00 noise limit.



### Keep wood-tools separate

Try to keep wood- and metal-tools separate; the latter are often oily and can spoil others people work for a long time afterwards



### Eye protection recommended



### Wear protective clothing

Wear tight fitting clothing, keep long hair out tied up, no jewellery or anything else that can be caught by the machine.



### Wear a mask when needed

Use the dust extractors and keep this door closed

Try to leave the woodshop in a better state than you found it.

If a machine is not clean or appears broken - then report this to the mailing list. Clean/fix prior to use.

**Report any damage, issues or accident within 24 hours to the mailing list.**