

UW Physics Student Machine Shop

Standard Operating Procedures

Arbor Press

The Purpose

The purpose of the Arbor Press is to accurately and efficiently apply extreme downward mechanical pressure between two work pieces. This tool is most often used to install or remove press fit relationships in assemblies, for example, precision dowel pins and bushings. . The vast majority of Arbor Press applications involve pressing round items through holes bored at 90 degrees to their mating surfaces. This makes it critical that the travel of the Arbor Press is running true and is set-up squarely with the work piece or pieces.

Limitations

- The Arbor Press is itself a limited version of the larger, more powerful Hydraulic Press. Arbor Press can range from small benchtop models to large pedestal or floor-mounted models. Whatever its size, the Arbor Press remains limited by its strictly mechanical working principle.
- Items being pressed, as well as their mating holes, must be aligned both concentric and square to the downward travel of the Press.
- If the items being pressed, as well as their mating holes, are aligned too off center, the Arbor Press may kick the item out. That may cause the item to spring out like a projectile.
- The most serious danger with the Arbor Press is the potential for explosive shatter. Before pressing, always inspect both work pieces for fractures or weak points. Also, measure mating features very carefully and make sure you have the correct and safe amount of interference material for desired press fit.
- **As always, whenever you have any doubt regarding the safe operation of Student Shop equipment, find the Shop Instructor or another Instrument Maker and ask before you act**

Hazards

There are a number of particular hazards associated with the operation and use of this tool, including but not limited to

- Arbor-pressed parts can violently shatter. Always inspect them for fractures, sharp corners, etc. You must also measure mating features. Excessive interference in press fits can be dangerous, both to your outcome quality and your safety
- If the items being pressed, as well as their mating holes, are aligned too off center, the Arbor Press may kick the item out. That may cause the item to spring out like a projectile.
- Watch for sharp edges and burrs.
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- Keep the work area free of clutter, dust and debris at all times. Raise the Arbor Press handle and leave it in a safe position when work is done.

Required Personal Protective Equipment (PPE)

- Safety Glasses and/or Face Shield. Eye protection should be worn whenever operating the Arbor Press.
- Closed-toe, sturdy footwear. Sturdy sneakers and other such footwear is the minimum level of allowable foot protection. Proper safety shoes or boots, with steel toes, electrical protections, etc. are preferred. Extremely lightweight sneakers and all sandals and flip-flops are not safe for machine shops in general.

- Hearing protection is recommended in areas which exceed 85 decibels. Higher decibel levels can cause permanent hearing loss very quickly so hearing protection is always recommended in machine shop.
- Hair ties, hats, etc. to safely contain long hair if needed
- Sturdy, well-covering and comfortable clothing WITH NO LOOSE SLEEVES, SCARVES, etc. that could get pinched.
- ABSOLUTELY NO GLOVES ARE TO BE WORN WHILE USING THE ARBOR PRESS

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