UNIVERSITY OF ALASKA FAIRBANKS

STANDARD OPERATING PROCEDURE
Drill Press

PURPOSE / APPLICATION

This procedure applies to any stationary industrial drill press. Refer to the Drill-Portable Standard Operating Procedure for further information about portable drills.

RESPONSIBILITIES

1. **Drill Press Operator** -- Responsible to operate the drill in a safe manner and to ensure that other employees are not exposed to the hazards of the drill.
2. **Supervisor** -- The immediate supervisor shall determine those employees that are qualified to operate a drill press, and designate a competent person to provide training for the drill press. The supervisor will also deem an employee as a qualified operator when combined experience and training provides evidence that the employee can effectively and safely operate this equipment.

DEFINITIONS

1. **Authorized Operator** – An employee that meets all training requirements to operate a particular piece of equipment, and the company has authorized that employee to operate the equipment.
2. **Point of Operation** – Area on the machine where the work is actually performed upon the material being processed.
3. **Qualified Operator** – An employee who has reviewed this SOP and has been mentored.

SAFETY

- Only authorized and qualified operators may operate this machine.
- Never leave the machine running unattended.
- Avoid wearing loose clothing, jewelry, and keep long hair tied back.
- Wear appropriate gloves during set-up for the material being drilled. Do not wear gloves while hands are near the point of operation.
- If lead, silica (from masonry products) is suspected, or chemically treated lumber is being drilled, respirators may be required. Contact EHSRM for further requirements.
- Assess the weight of the stock, and ask for help when it is heavy.
- Ensure that all guards, panels, and gear covers are in place prior to operation.
- The drill press shall be securely anchored to prevent “walking” or moving.

- Verify that all employees are out of the line of fire in the front, back, and sides of the machine.
- When conducting maintenance, the machine shall be isolated and locked out. The plug is the energy isolation point
- Keep hands and fingers clear of drill at all times.
- Remove adjusting keys before turning the tool on.
- Select the correct type of drill bit for the type of material.
- Always secure the workpiece. If this is not possible, ask for assistance. When drilling sheet metal, the workpiece shall be secured.
- Start the drill prior to lowering the drill bit onto the workpiece.
- Ensure the table lock is secured, if drill press is equipped with one.
- If bit gets caught on the material, turn the machine off to remove from the workpiece.
- Never reach under or around stock when drilling.

INSTALLING OR CHANGING A DRILL BIT

1. A drill press is considered a permanent piece of equipment; therefore, it should be connected directly to a permanently wired outlet instead of using an extension cord.
2. Turn the machine off to change the drill bit.
3. Inspect the bit for damage prior to use.
4. Open the drill chuck wide enough to accept the shank of the drill bit.
5. Insert the drill bit as far as possible into the chuck without allowing the chuck jaws to touch the fluted portion of the bit.
6. Hand-tighten the chuck, and then use the chuck key to tighten.
7. Reverse steps above to remove drill bit. It is good practice to use a rag to catch the drill bit to avoid cuts to the hands.

***NOTE**: Larger bits turning at slower speeds tend to grab the workpiece aggressively. Always clamp the workpiece.*

OPERATION

Refer to Picture One for parts of the drill press.

1. For those presses equipped with an adjustable table, place the stock on the table and determine needed height.
2. Inspect the areas around the drill for tools or foreign objects.

3. Inspect the drill for worn or broken parts. See Inspection section below.
4. Inspect materials for sharp edges that may catch the drill bit.
5. Only the authorized operator should be around the drill.
6. To adjust the height of the table, turn the power off and loosen the lock lever. Adjust the height with the crank handle and ensure that the lock lever is secured.
7. If the table requires tilting, ensure that the lock lever is secured after adjustment.
8. Secure the workpiece to the table.
9. If drilling metal, lubricate the drill bit prior to use.
10. If using a hole saw, drill a pilot hole first then apply firm and even pressure so all of the teeth contact the surface at the same time. The workpiece can be flipped to finish on the other side if desired.
11. Withdraw the bit frequently so the operator can see the workpiece clearly. This will also prolong the life of the drill bit.
12. Reduce the drilling pressure when the drill begins to break through the workpiece. This action will prevent the drill from pulling into the work and breaking.
13. Mark the intended drill spot with a punch or marker.
14. Start the drill slowly then increase speed.
15. If the bit gets caught on the work, stop immediately.
16. Don't force the drill.
17. Keep fingers and hands away from the point of operation.
18. If metal stock, the workpiece will be hot after it is drilled.
19. Upon completion of work, remove the drill bit.

PPE REQUIREMENTS

1. Safety glasses
2. Hearing protection
3. Gloves (to handle material only
4. Sturdy leather boots
5. Potentially faceshield
6. Potentially dust mask

INSPECTION / MAINTENANCE

Refer to the Owner's manual for maintenance procedures. Only qualified employees may conduct maintenance activities on this equipment. The machine shall be locked out during maintenance.

Thoroughly inspect the working area, drill, and the stock prior to placement in the machine. Areas to be inspected should include:

1. Work areas and table for unneeded tools, equipment and personnel
2. Worn or broken parts
3. Drill bits inspected for sharpness, excessive wear, warped shank
4. Point of operation guarding intact
5. Footswitch (if present)
6. Electrical wires/cords:
    - Excessive wearing
    - Bare wires
    - Damage to the plug
    - Grounding wire must be on plug

REFERENCES

- "Drill Safety 101." *Cordless-Drills.net.* 2007. 4 April 2008 http://www.cordless-drills.net/Cordless-Drill-FAQs/Drill-Safety-101.htm.
- Canada. Canadian Centre for Occupational Health & Safety. *Drill Presses.* August 21, 2001. 4 April 2008 http://www.ccohs.ca/oshanswers/safety_haz/metalworking/drillpresses.html.
- National Center for Construction Education and Research (NCCER). Tools of the Trade, Module 04102-01. Columbus, OH: 2001.
- United States. Code of Federal Regulations. *General Industry Standards-Machinery and Machine Guarding.* Washington DC: 2004. [29 CFR 1910 Subpart O)].

Document Tracking	Revision Number	Revision Date	Effective Date	Competency
Gen.Drill.Press	0		07/15/2024	Procedure Competency

COMPETENCY

1. Employee Name: _____
2. Employee's Department: _____
3. Employee Job Title: _____
4. Indicate the completed items below:

- ❑ Set up the work area
- ❑ List the safety requirements when using the drill press
- ❑ List the PPE required for this equipment
- ❑ Demonstrate how to change a drill bit
- ❑ Identify guards
- ❑ Identify safety precautions when the drill press is in operation
- ❑ Use the equipment

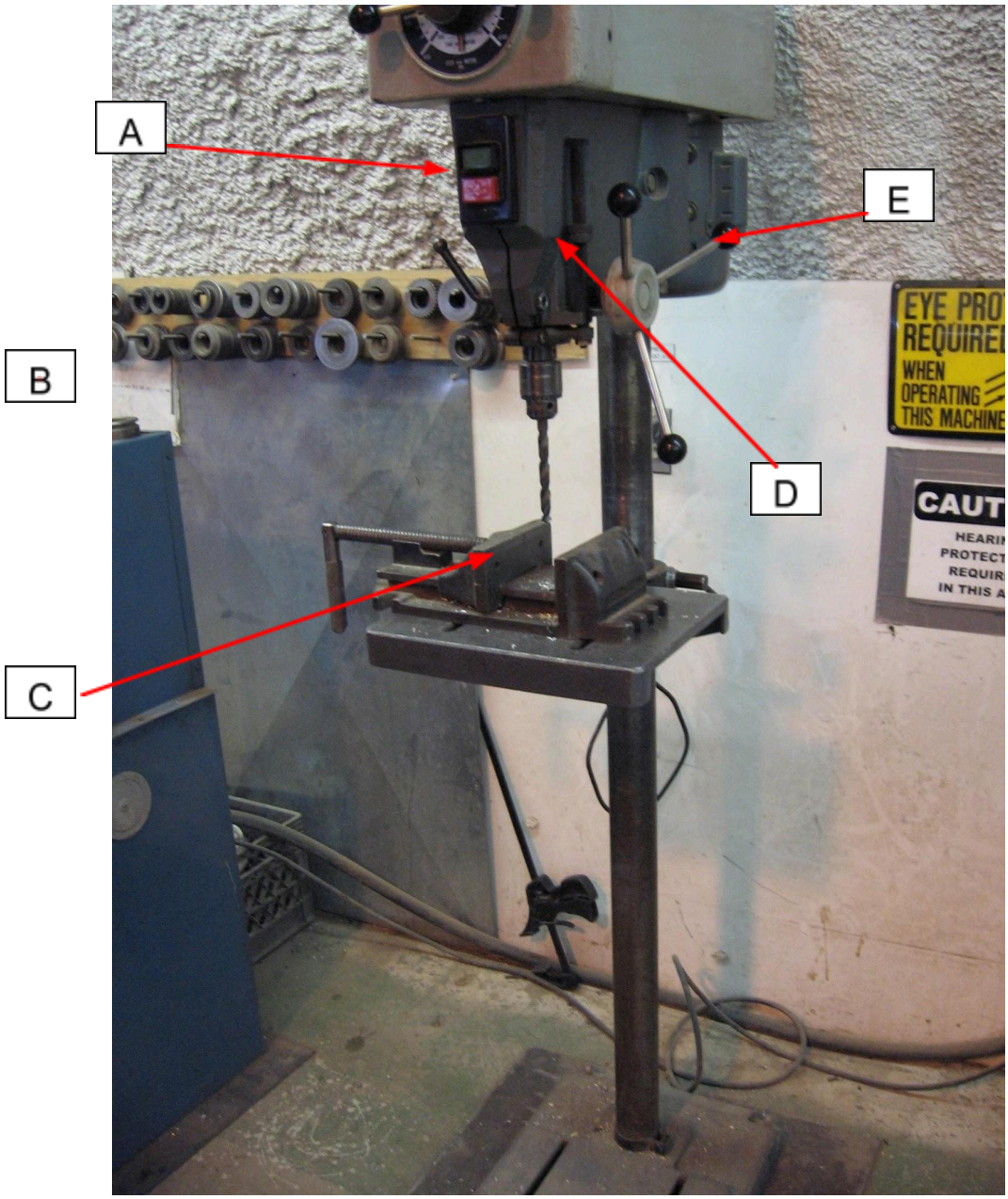
EMPLOYEE ACKNOWLEDGEMENT FORM – Drill Press

I have read and understand the Drill Press SOP. I am knowledgeable with regards to inspection, use, and safe procedures with a drill press, and have completed the competency evaluation. I will follow this procedure throughout my employment with UAF. I also understand that at any time my supervisor may determine that I require additional training due to failure to follow this established procedure.

_____	_____	_____
Employee Print Name	**Employee Sign Name**	**Date**
_____	_____	_____
Trainer Print Name	**Trainer Sign Name**	**Date**

Place this document in the employee's file.

Picture One
Drill Press



A=On/Off Switch
B= Chuck
C=Stock Vise
D=Depth Gauge
E=Feed Handle