Portable Electric Drill

I. Competencies

Given a properly adjusted portable electric drill, accessories, instruction and demonstration of use, each student will be able to:

A. Identify the major parts of the portable electric drill.

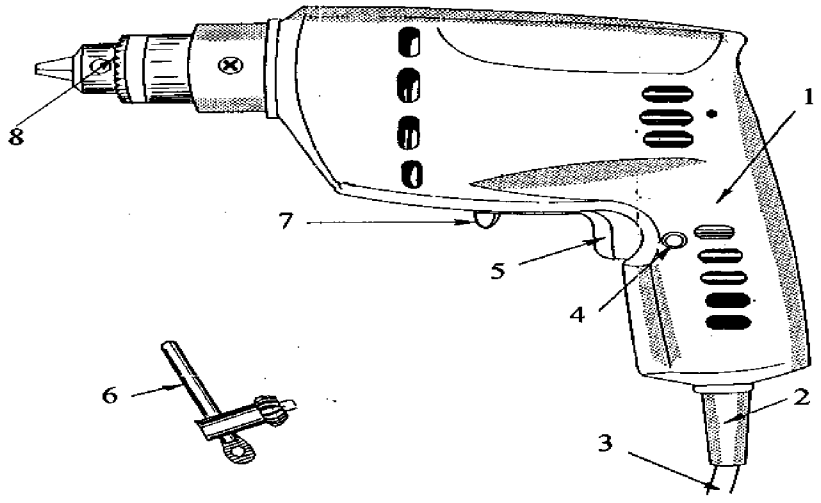
B. Pass a written test on safety and operating procedures of the portable electric drill with 100 percent accuracy.

C. Demonstrate ability to use the portable electric drill, following suggested safety rules and correct operation procedures.

II. Instructional Materials and Procedures

A. Identification of basic portable electric drill parts.

1. Piston Grip
2. Cord Strain Reliever
3. Electrical Cord
4. Switch Lock
5. Trigger Switch
6. Chuck Wrench
7. Reversing Switch
8. Chuck



B. Portable Electric Drill Safety

1. Wear safety glasses when operating with portable electric drill.
2. Disconnect the drill from the electrical supply when installing bits.
3. Clamp stock so it will not move during the drilling operation.
4. Before drilling, turn the drill on to see if the bit is centered and running true.
5. Align the bit with the desired hole location before turning the drill on.
6. Hold the drill firmly with both hands while drilling.
7. When drilling deep holes with a twist drill, move the bit up and down several times while drilling to remove cuttings and reduce overheating in the bit.
8. Do not allow the cord to become wrapped around the drill when working.
9. If the electrical cord becomes frayed or starts to separate from the drill housing, repair it immediately!
10. Remove the bit from the drill as soon as the work is completed.
11. Select the correct bit for the finish and material being drilled. Make sure the bit is securely tightened in the drill chuck.
12. Be extremely careful when using larger portable electric drills (3/8" and 1/2"). If the bit should hang or get caught the drill will twist in the operators hands causing a sprain or bruised fingers.
13. Always remove the key from the chuck before drilling.
14. To prevent seizing, reduce the feed pressure when the drill bit is about to come through the material.

C. Operating Procedures

1. Always center punch or make a starting indentation in the material being drilled to get an accurate starting point for the drill bit.
2. Tighten the drill bit by rotating the chuck key to all three holes in the chuck. This will help to keep the drill bit centered.

3. Use only straight shank or Silver and Deming drill bits in portable electric drills.

4. Apply moderate even pressure to the drill during the drilling operation. If excessive pressure is required to make the bit cut then the bit is dull and needs to be sharpened.

5. Maintain good balance at all times when drilling.

6. Use slow drill speeds for drilling metal and fast speeds for drilling wood.

7. To obtain holes that are placed accurately, drill a small pilot first then drill the final hole.