

Portable Disc Grinder

I. Competencies

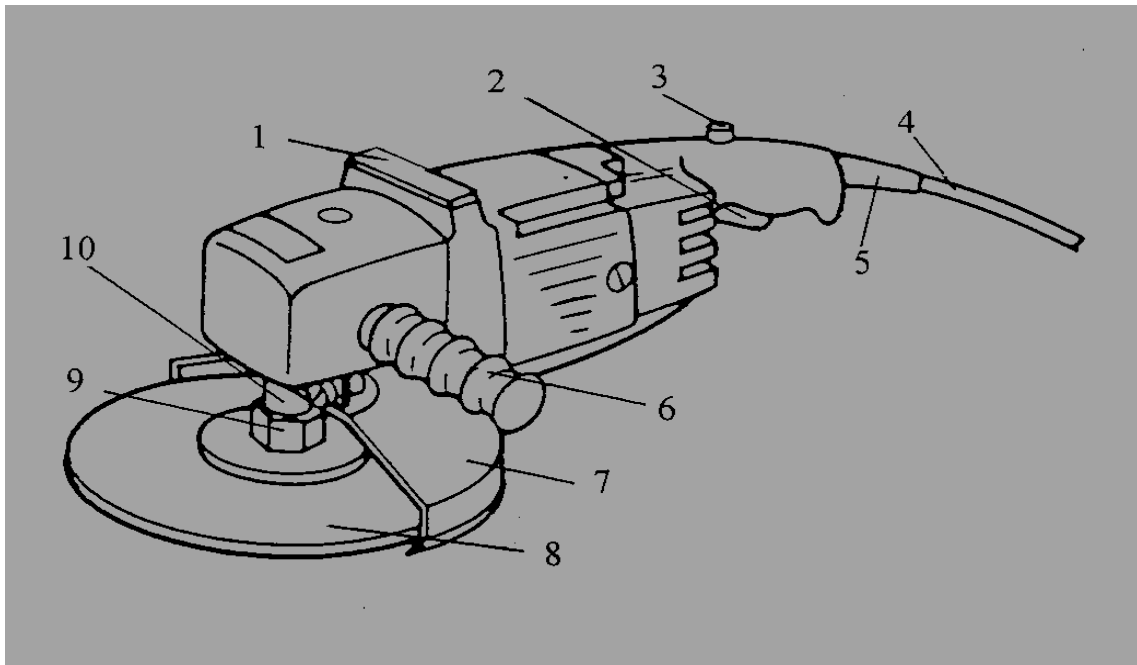
Given a properly adjusted portable disc grinder, accessories, instruction and demonstration of use, each student will be able to:

- A. Identify the major parts of the portable disc grinder.
- B. Pass a written test on safety and operating procedures of the portable disc grinder with 100 percent accuracy.
- C. Demonstrate ability to use the portable disc grinder, following suggested safety rules and correct operation procedures.

II. Instructional Materials and Procedures

A. Identification of basic portable disc grinder parts.

- | | |
|-------------------------|------------------|
| 1. Tool Rest | 7. Guard |
| 2. Off/On Switch | 8. Grinding Disk |
| 3. Switch Lock | 9. Locking Nut |
| 4. Electrical Cord | 10. Spindle |
| 5. Cord Strain Reliever | |
| 6. Handle | |



B. Portable Disc Grinder Safety

1. Wear safety glasses, or face shield at all times when using the portable disc grinder.
2. Wear hearing protection when grinding operating the portable disc grinder.
3. Position the grinder so that sparks and grit thrown of during grinding will not hit the operator or others working in the area.
4. Make sure the material being ground is well secured.
5. Never grind with the portable disc grinder in an area which houses flammable materials or combustible gases.
6. Replace the grinding disk when it becomes worn to half its original diameter.
7. Wear long sleeve leather gloves when grinding with the portable disc grinder to protect hands and forearms.
8. Hold the portable disk grinder with both hands when grinding.
9. Never lay the portable disc grinder down until the disk as stopped rotating.
10. Keep the electrical cord and extension cords out of the way of the work when grinding.
11. When using the wire brush attachment on the portable disc grinder, hold the grinder extra firm to prevent it from being thrown about and cause an accident.
12. Caution others in the work area to wear safety glasses, hearing protection and to watch out for flying sparks and grit.

C. Operating Procedures

1. Tighten the grinding disk snugly when mounting it on the portable disc grinder. The disk will tighten itself during normal operation.
2. Be sure to hold the portable disc grinder firmly when the off/on switch is turned on. The centrifugal force created by the rotating disk will cause the portable disc grinder to move or jump.

3. For extended periods of grinding the operator may lock the off/on switch in the on position to avoid fatigue from holding the switch on manually.
4. When an extension cord is used with the portable disc grinder make sure the cord is sufficiently large in size for the grinder being used. A #14 gauge extension cord is minimum and #12 gauge is preferred.
5. Keep the electrical and extension cords positioned away from the grinding area. Cords are easily severed by the portable disc grinder.
6. When laying the portable disc grinder down, always position it on the tool rest.
7. Before using the switch lock on the portable disc grinder always check to make sure the lock is functioning properly.
8. Hold the portable disc grinder so that sparks and grit are thrown away from the operator and others working in the area.
9. Using the portable disc grinder is hard work and causes rapid fatigue, rest frequently and do not become exhausted to help avoid accidents.

III. Written Test

Portable Disc Grinder Safety and Operations Test

Name _____ Class _____ Date _____

Multiple Choice - Place the letter of the most correct answer on the answer sheet.

1. What personal protective equipment should be worn when operating the portable disc grinder?
 - a. Safety glasses
 - b. Safety glasses and hearing protection
 - c. Safety glasses, hearing protection and gloves
 - d. Safety glasses, hearing protection, gloves and respirator.

2. When operating the portable disc grinder the grinding disk should be positioned so the sparks and grit are thrown _____.
 - a. away from the operator.
 - b. away from the operator and others in the work area.
 - c. up to avoid hitting others.
 - d. down to avoid hitting others.

3. Grinding with the portable disc grinder should not occur in an area which _____.
 - a. is enclosed.
 - b. is freshly painted.
 - c. has windows.
 - d. houses flammables or combustible gases.

4. The grinding disc should be replaced when worn to _____ of its original diameter.
 - a. 1/4
 - b. 1/2
 - c. 5/8
 - d. 3/4

5. Hands and arms should be protected by wearing _____ when using the portable disc grinder.
- gloves
 - long sleeved shirt
 - long sleeved leather jacket
 - long sleeved leather gloves.
6. What can the operator expect to happen when the wire brush attachment is used on the portable disc grinder?
- The grinder may jump or be thrown about.
 - The grinder rocks back and forth.
 - The grinder stays steady on the material being bushed.
 - None of the above.
7. When the portable disc grinder is laid down it should be positioned _____.
- with the disc down.
 - on its left side.
 - on its right side.
 - on the tool rest with the grinding disc facing up.
8. What minimum size electrical extension cord should be used with most portable disc grinders?
- #14
 - #12
 - #10
 - #8
9. Why is it only necessary to tighten the disk lock nut snugly when the disc is replaced on the portable disc grinder?
- The threads will be stripped on the spindle.
 - The disc may be too difficult to remove the next time.
 - The natural rotation of the disc and spindle will cause the threads to tighten.
 - To allow the loose threads to absorb some of the vibration created by the portable disc grinder.

10. What can the operator do to avoid hand and finger fatigue when using the portable disc grinder for extended periods of time?

- a. Eat lots of carbohydrates.
- b. Drink plenty of water.
- c. Wear long sleeved gloves
- d. Use the switch lock.

IV. Performance Test for the Portable Disc Grinder

Name _____ Date _____ Class _____

The student performs the following while operating the portable disc grinder.

	Yes	No	N/A
1. Safety glasses are worn while the grinder is being used.	___	___	___
2. Hearing protectors and gloves are worn when the portable disc grinder is being operated.	___	___	___
3. The portable disc grinder is held firmly in both hands before the switch is turned on.	___	___	___
4. The portable disc grinder has stopped rotating before the grinder is laid down.	___	___	___
5. The portable disc grinder is positioned so that sparks and grit are thrown away from the operator and others working in the area.	___	___	___
6. The electrical and extension cords are positioned away from the work being performed.	___	___	___
7. When the grinding disc is replaced on the portable disc grinder the electric cord is unplugged.	___	___	___
8. The student can remove and replace the grinding disc on the portable disc grinder.	___	___	___
9. The student can safely control the grinder and perform satisfactory grinding work.	___	___	___

Comments _____

I do hereby certify that the student has satisfactorily demonstrated ability to operate the portable disc grinder by passing this performance test.

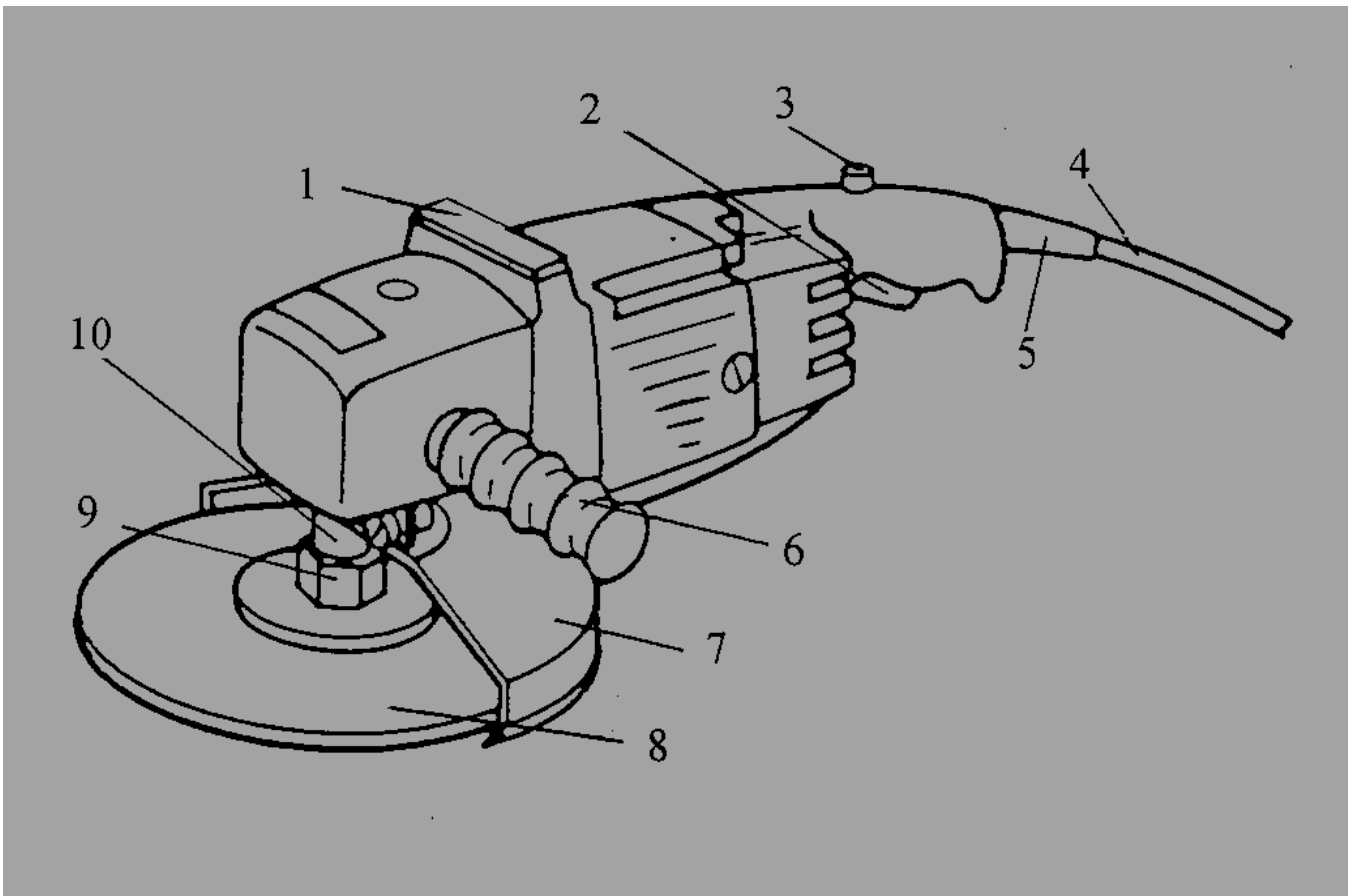
Signed (Student) Date Signed (Teacher) Date

Portable Disc Grinder Parts Identification Test

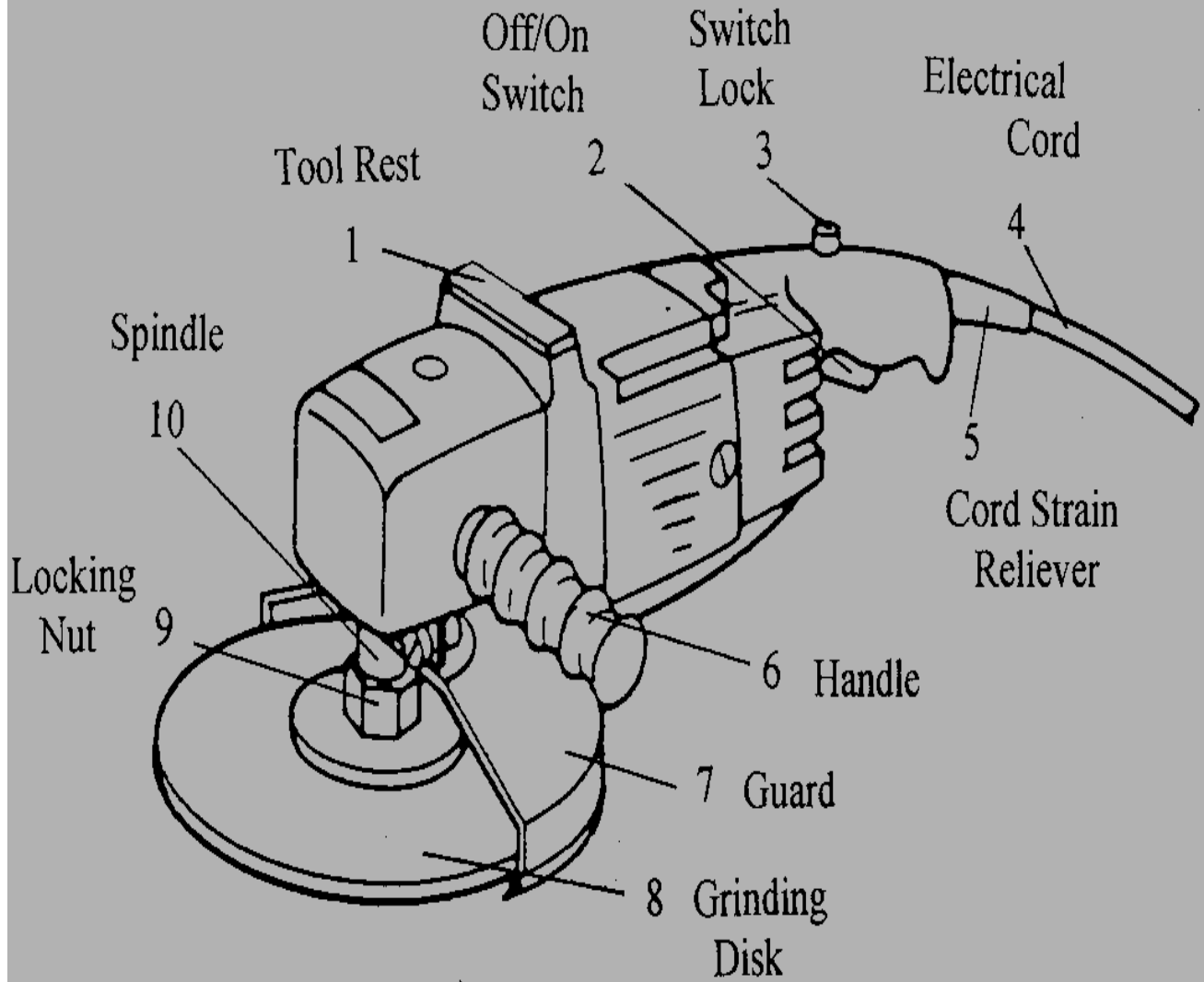
Name _____

Match the number of each portable disc grinder part with the correct name.

- ___ A. Cord Strain Reliever
- ___ B. Electrical Cord
- ___ C. Grinding Disc
- ___ D. Guard
- ___ E. Handle
- ___ F. Locking Nut
- ___ G. Off/On Switch
- ___ H. Spindle
- ___ I. Switch Lock
- ___ J. Tool Rest



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