

Router

I. Competencies

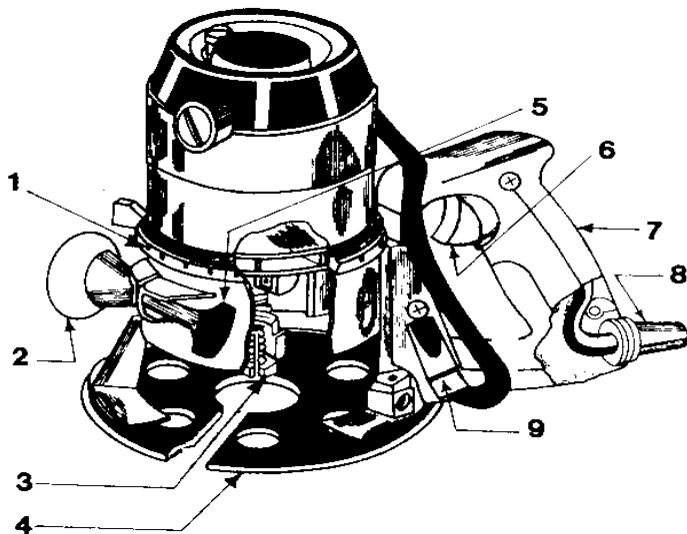
Given a properly adjusted router, instruction and demonstration of use, each student will be able to:

- A. Identify the major parts of the router.
- B. Complete a written test on safety and operating procedures of the router with 100% accuracy.
- C. Demonstrate the ability to change bits in the router, adjust router for correct depth of cut, and make router cuts while following all safety rules and correct operation procedures.

II. Instructional Materials and Procedures

A. Identification of basic router parts

- | | |
|--------------------------------|-------------------------|
| 1. Micrometer depth adjustment | 6. Trigger switch |
| 2. Guide knob | 7. D-handle |
| 3. Collet chuck | 8. Cord strain reliever |
| 4. Base | 9. Motor disconnect |
| 5. Locking handle | |



B. Router Safety

1. Check condition of the router and power cord. Make sure the handles, base switch and thumb locking screw are tight. See that the plug power cord and the cord strain reliever are not frayed, cut or pulled loose.
2. Wear safety glasses at all times while using the router.
3. Do not wear loose clothing, rings, bracelets or necklaces while operating the router.
4. Make sure the switch is off before the router is plugged into the electrical power source.
5. Have a firm grip on the router handle when you turn on the switch. Use both hands to hold the router while making cuts.
6. Make sure the router bit is not in contact with the stock before turning the switch on.
7. Be sure the stock is clamped securely to the work bench.
8. Keep the electrical cord positioned away from stock being cut to prevent the cord from being cut by the router bit.
9. Unplug the electric before making adjustments to the router or before inserting bits.
10. Do not stand on wet surfaces when using a router.
11. Wear a dust mask while using the router.

C. Operating Procedures

1. Insert the bit at least $\frac{1}{2}$ inch in the collet; then tighten the collet nut to hold the bit in place.
2. Adjust the cutter depth on the router with the electrical cord unplugged.
3. After the depth of cut adjustment is made experiment on a scrap piece of lumber to make sure it is correct. If further adjustment needs to be made, unplug the router!
4. Feed the router from the left to right on the work. Feed the router in same direction as the grain of the wood.
5. Feed the router with a uniform speed. Feeding too slowly will cause the bit to burn the wood while going too fast will result in rough cuts and excessive wear.
6. Guide the movement of the router by one of the following methods:
 - a. A straight edge clamped to the top of the wood.
 - b. A straight or circular guide attached to the router.
 - c. Bit with a pilot end.
 - d. Template or pattern.
 - e. Freehand.

7. To prevent splintering, cut the middle section first, then move the router in the same direction as the grain of the wood.
8. After completing the cut, turn off the motor but do not lift the router from the work until the bit has stopped rotating.
9. Once the cut is completed, disconnect the power source, remove the bit and clean the router.

III. Written Test

Router Safety and Operation Test

Name _____ Date _____ Class _____

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

1. The part used to hold bits in a portable router is the _____.
 - a. collet
 - b. jacobs chuck
 - c. 4 jaw chuck
 - d. pilot

2. When starting a cut with the router, the bit should _____.
 - a. not be in contact with the stock
 - b. be in place and ready to start cutting immediately
 - c. slightly tilted to make starting easier
 - d. elevated to make it easier to see

3. Feeding the router too fast will result in _____.
 - a. fine cuts
 - b. excessive wear
 - c. splintering
 - d. burning the stock

4. Which is not a safety precaution for the router _____.
 - a. wear safety glasses
 - b. hold the router with both hands
 - c. use a bit with a pilot end
 - d. disconnect electrical power before changing bits

5. When changing cutters, one should insert the shank of the bit _____ inch into the chuck.
 - a. 1/8
 - b. 1/4
 - c. 3/4
 - d. 1/2

6. Cutting with the router is more efficient if the router is moved _____.
a. left to right
b. right to left
c. clockwise
d. counter clockwise
7. Which of the following should be observed when using a router _____.
a. do not stand in wet or damp places
b. wear a dust mask
c. neither a or b
d. both a and b
8. The depth of cut adjustment on the router is made by turning the _____.
a. collet adjustment
b. micrometer depth adjustment
c. guide adjustment
d. frame adjustment
9. After a cut is completed, one should _____.
a. lift router from work
b. disconnect router
c. shut off motor
d. wait until bit stops rotating before doing anything
10. To prevent splintering at the corners, one should cut the _____ first.
a. end grain
b. middle section
c. left side
d. right side
11. When cutting with a router the power cord should be located _____.
a. in front of the router base.
b. to the left of the stock.
c. to the right of the stock.
d. away from the line of work.

12. Before making a cut with the router, what check should be made _____.

- a. make sure the circuit breaker is off.
- b. make sure the switch is off before plugging in the router.
- c. make sure the router will not be over loaded
- d. both a and c

13. A major safety precaution to observe when changing router bits is _____.

- a. keep the bit clean and sharp
- b. keep the depth of cut adjusted to a minimum.
- c. unplug the router before changing the bit.
- d. loosen the micrometer adjustment so you can reach the bit.

14. When operating a router, it would not be safe to wear _____.

- a. a ring
- b. a bracelet
- c. loose clothing
- d. all of these

15. The correct procedure for holding the router while making a cut is _____.

- a. to hold on the stock with pressure on the cutter bit side
- b. to hold firmly with both hands
- c. to hold the handle with one hand and guide the router with the other hand
- d. to hold one hand on the handle and the other hand on the motor housing

IV. Performance Test for the Router

Student_____ Date_____ Class_____

The student performs the following while changing bits, adjusting and making cuts with the router.

Yes No N/A

1. Safety glasses and guards properly in place. _____
2. The switch is in the "off" position before the router is plugged into the receptacle. _____
3. The stock to be cut is securely clamped. _____
4. A check is made to be sure nothing is in router's path. _____
5. The router cut is made in the same direction as the grain of the wood. _____

The student demonstrates the acceptable ability to;

6. Start and stop the router correctly. _____
7. Properly adjust depth of cut. _____
8. Properly insert bits in a router. _____
9. Make a straight cut with a guide. _____
10. Make a freehand cut. _____
11. Properly select bits. _____
12. Make a decorative edge. _____

Comments_____

I do hereby certify that the student has satisfactorily demonstrated ability to operate the router by passing the above performance test.

Signed (Student)

Date

Signed (Teacher)

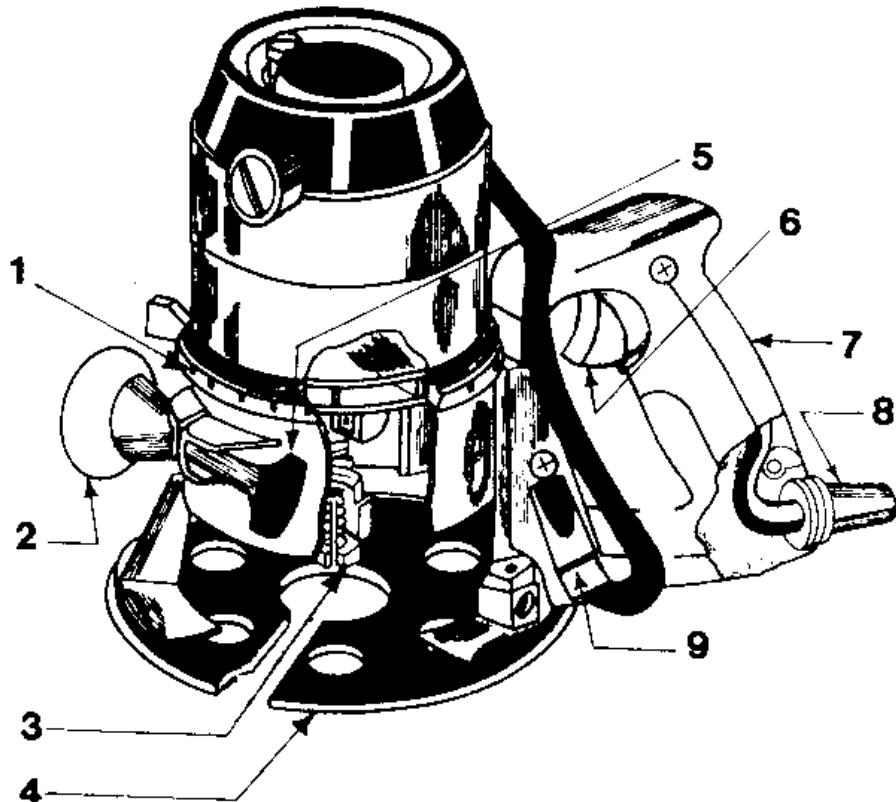
Date

Router Parts Identification Test

Name _____

Match the number of each router part with the correct part name.

- | | |
|---|--|
| <input type="checkbox"/> A. Cord strain reliever | <input type="checkbox"/> F. D-handle |
| <input type="checkbox"/> B. Guide knob | <input type="checkbox"/> G. Locking handle |
| <input type="checkbox"/> C. Base | <input type="checkbox"/> H. Motor disconnect |
| <input type="checkbox"/> D. Micrometer depth adjustment | <input type="checkbox"/> I. Trigger switch |
| <input type="checkbox"/> E. Collet chuck | |



BASIC ROUTER PARTS

