

Metal Cutting Bandsaw

I. Competencies

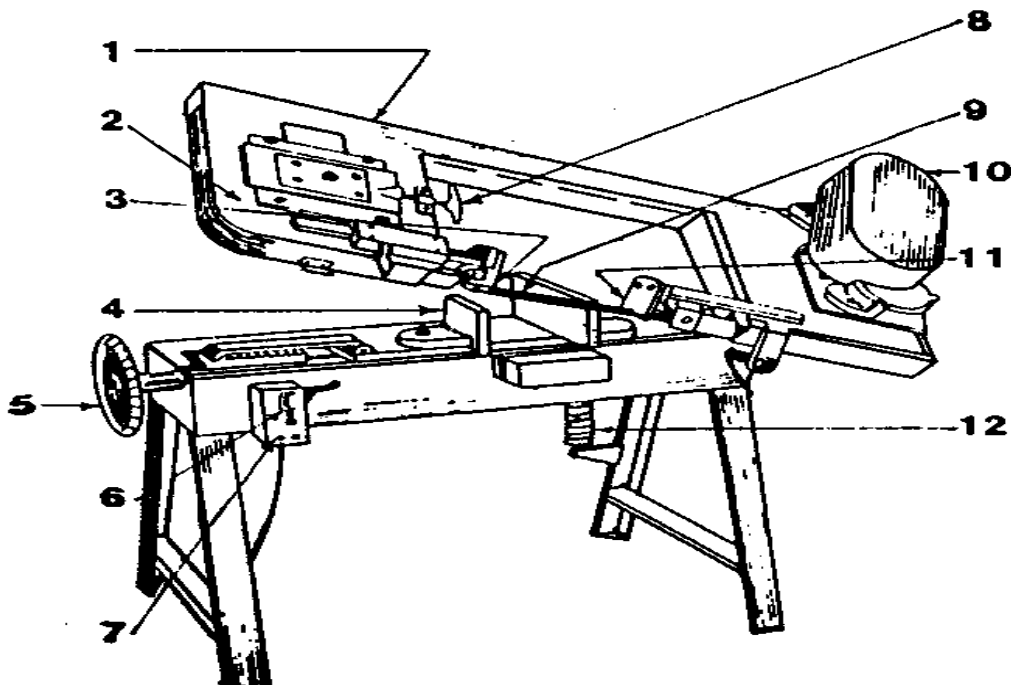
Given a properly adjusted metal cutting bandsaw, instruction and demonstration of use, each student will be able to:

- A. Identify the major parts of the metal cutting bandsaw.
- B. Pass a written test on safety and operating procedures of the metal cutting bandsaw with 100 percent accuracy
- C. Demonstrate, on a performance test, acceptable ability to cut metal using the metal cutting bandsaw.

II. Instructional Materials and Procedures

A. Identification of Basic Metal Cutting Bandsaw Parts

- | | |
|------------------------------|----------------------------|
| 1. Head | 7. Motor switch |
| 2. Blade guard | 8. Blade tightening screw |
| 3. Adjustable blade guide | 9. Blade |
| 4. Vise | 10. Blade pulley guide |
| 5. Vise adjusting handwheel | 11. Stationary blade guard |
| 6. Automatic shut off switch | 12. Hydraulic feed control |



B. Metal Cutting Bandsaw Safety

1. Wear safety glasses when operating the metal cutting bandsaw.
2. Never wear loose clothing, or jewelry when operating the metal cutting bandsaw.
3. Keep the blade cover in place at all times.
4. Disconnect the electrical power when servicing the saw or replacing blades.
5. Never adjust the metal cutting bandsaw while it is in operation.
6. Use a support when cutting heavy or long stock.
7. Clamp metal securely before sawing.
8. Keep the floor free of coolant-water and metal.
9. Never leave the saw unattended while in operation.

C. Metal Cutting Band Saw Operating Procedures

1. Adjust the arm guide rollers as close as possible to the stock.
2. If the metal cutting saw is equipped with a coolant/lubricant system, be sure the coolant is flowing over the stock.
3. Place stock in the vise:
 - a. Clamp firmly
 - b. When cutting several pieces of flat iron, stand the stock on edge and clamp together in vise.
 - c. When cutting rectangular stock, clamp widest side of stock toward blade.
 - d. Clamp angle iron with legs down in vise.
 - e. Cut round stock separately.
4. After starting the saw, lower the blade head by hand until the blade makes contact with stock. This will prevent damaging the blade teeth.
5. Supports for long stock should be no higher than the vise to prevent pinching the blade.
6. If the saw cuts too slowly or binds, replace the blade; do not apply pressure to the blade head.
7. Remove unused stock from the saw to prevent others from walking into it.
8. Keep proper feed pressure on the hydraulic feed control.

III. Written Test

Metal Cutting Bandsaw Safety and Operation Test

Name _____ Date _____ Class _____

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

1. Which of the following should be worn when operating a metal cutting bandsaw _____.
 - a. rings
 - b. bracelets
 - c. loose clothing
 - d. none of the above

2. Before leaving the metal cutting saw, an operator should _____.
 - a. be sure the saw has stopped
 - b. turn off the coolant/lubricant pump
 - c. loosen the metal in the saw vise
 - d. raise the saw blade arm

3. When the saw blade cuts too slowly, one should _____.
 - a. apply pressure to the blade
 - b. increase speed of the blade
 - c. install a new blade
 - d. change the position of the metal

4. The blade arm guide rollers should _____.
 - a. not be adjusted for most cuts
 - b. be adjusted only when a new blade is installed
 - c. be adjusted as close as possible to each side of the stock
 - d. be adjusted to within 6 inches of the stock

5. The blade feed pressure is controlled by the _____.
 - a. arm guides
 - b. hand wheel
 - c. blade tightening screw
 - d. hydraulic feed control

6. When sawing round metal, it should _____.
- not be cut on a metal cutting saw
 - be cut separately – one piece at a time
 - be cut only after it has been secured in a special vise
 - be cut only on an abrasive cut-off saw
7. Long stock needs to be supported while being sawed to _____.
- help insure square cuts
 - prevent the blade from binding
 - assure smooth cutting surfaces
 - a and b
8. When starting a cut using the metal cutting band saw _____.
- release the tension on arm guides
 - lower the blade arm by hand until the blade contacts the metal
 - tighten the blade tension
 - start the saw motor after blade makes contact with the stock
9. When cutting multiple pieces of flat stock _____.
- stand the pieces on edge and clamp them in the vise
 - cut one piece at a time to avoid blade damage
 - cut each piece clamped in the horizontal position
 - increase speed of saw blade
10. The blade on the metal cutting bandsaw should be _____.
- be cleaned daily
 - be in contact with the guides at all times
 - be used only when cutting flat stock
 - be adjusted each time the blade guides are moved

IV. Performance Test for the Metal Cutting Band Saw

Student _____

The student performs the following while using the metal cutting bandsaw.

| | Yes | No | N/A |
|---|------------|-----------|------------|
| 1. Safety glasses are worn at all times. | ___ | ___ | ___ |
| 2. Guards and covers are kept in place. | ___ | ___ | ___ |
| 3. Clothing and jewelry are not hazards. | ___ | ___ | ___ |
| 4. The stock is well secured in the vise. | ___ | ___ | ___ |
| 5. The arm guide rollers are properly adjusted. | ___ | ___ | ___ |
| 6. Other students are kept out of the machine work zone. | ___ | ___ | ___ |
| 7. The machine vise is properly adjusted when making angle cuts. | ___ | ___ | ___ |
| 8. The saw blade arm is lowered by hand until the blade contacts the metal. | ___ | ___ | ___ |
| 9. The stock support device is adjusted to the correct height. | ___ | ___ | ___ |
| 10. The operator is inside the machine safety zone during the cut. | ___ | ___ | ___ |
| 11. Correct procedures are used in cutting stock. | ___ | ___ | ___ |
| 12. All work procedures are safe and acceptable. | ___ | ___ | ___ |

Comments: _____

I hereby certify that the student has satisfactorily demonstrated ability to operate the metal cutting band saw by passing the above performance test.

Signed (Student) Date Signed (Teacher) Date

Metal Cutting Band Saw Parts Identification Test

Name _____

Match the number of each metal cutting bandsaw with the correct part name.

- ___ A. Blade tightening screw
- ___ B. Adjustable blade guide
- ___ C. Vise
- ___ D. Hydraulic feed control
- ___ E. Head
- ___ F. Stationary blade guide
- ___ G. Blade pulley guard

- ___ H. Blade guard
- ___ I. Motor switch
- ___ J. Vise adjusting handwheel
- ___ K. Automatic shut-off switch
- ___ L. Blade

