Jointer

I. Competencies

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

A. Identify the major parts of the jointer.

B. Complete a written test on the safety and operating procedures of the jointer with 100% accuracy.

C. Demonstrate, on a performance test, acceptable ability to safely edge, rabbet, bevel, and chamfer stock with the jointer.

II. Instructional Materials and Procedures

A. Identification of Basic Jointer Parts:

1. Cutterhead guard
2. Fence Lock Plunger
3. Fence Slide Lock Screw
4. Tilt Lock
5. Gib Screws
6. Outfeed Table
7. Rear Table Raising Handwheel
8. Table Lock Handle
9. Off/On Switch
10. Front Table Adjusting Arm
11. Infeed Table
12. Fence
B. Jointer Safety

1. Secure permission from the instructor before operating the jointer.

2. Wear industrial quality eye and ear protection while using the jointer.

3. Before operating the jointer, remove jewelry (rings, watches, bracelets, etc.) and confine all loose clothing and long hair. Protective type footwear should also be worn.

4. Keep the floor area clean and free of scrap material, sawdust, and oil or grease to minimize the danger of tripping or slipping. Anti-skid floor strips are recommended on the floor are where the operator normally stands.

5. Use the safety guard at all possible times. (Some jointers require the safety guard to be removed when cutting rabbets).

6. Never joint the end of stock less than 10” wide.

7. Check the stock carefully before jointing to be sure it is free of finishes, knots, nails or other objects.

8. Always use an approved push block or push stick when jointing stock that does not provide a distance of safety for your hands.

9. Never joint stock less than 12” inches long. As the board starts over the cutterhead, the corner is very likely to catch, throwing the wood out of your hand and allowing the fingers to drop into the revolving cutterhead.

10. Always stand to the left and out of line of the cutterhead knives.

11. Always disconnect the power source when servicing the jointer.

12. Never adjust the jointer while the cutterhead is turning.

13. Never make cuts of more than 1/16” on softwoods and 1/32” on hardwoods.

14. Check to see that all locks are tightened securely before using the jointer.

15. Maintain your balance when operating the jointer; do not overreach or use excessive force to perform any operation. Establish a comfortable position prior to starting.

16. Never move hands directly over the cutterhead. Keep hands at least 12 inches from the cutterhead at all times.

17. Use an assistant when jointing long pieces of stock.

18. Turn off the power and allow the jointer to stop before leaving the area.

19. Remember the function of the jointer is to straighten the edge of lumber and therefore, should not be used as a surfacer or planer.
20. Keep the knives sharp and properly adjusted. Dull knives are more likely to cause kickback. Knives out of adjustment, either cutting on an angle or one knife adjusted lower or higher than the others, will cause excessive cutting and may be a safety hazard.

21. Do not engage in horseplay, talk to others, or look around while operating the jointer.

C. Jointer Operating Procedures

1. Jointing and edging
   a. Always have the cutterhead guard in place when jointing.
   b. Use a try square to determine if the fence is perpendicular to the table. Adjust if necessary.
   c. Adjust the infeed table to achieve the desired cutting depth. (Usually less than 1/16” for softwoods and 1/32” for hardwoods).
   d. Always use a hold down push block to joint stock less than 3” wide or less than ½” in thickness.
   e. Adjust the fence to expose the amount of cutterhead surface required for the cut being made.
   f. When jointing hold stock tightly against the fence. If the edge has a large concave or convex shape, cut it straight on the table saw before jointing. Lumber with small convex or concave edges should have one edge straightened on the jointer and the second edge cut on the table saw.
   g. Feed stock through the jointer so it will cut with the grain of the wood.
   h. Push stock with the right hand, hold stock against fence with left hand.
   i. Do not allow the hand to pass directly above the cutterhead while applying pressure to the stock. Keep hand(s) at least 12” away from the cutterhead.
   j. Do not joint lumber with extremely rough or irregular edges.
   k. Make as many passes as needed to complete operation.
   l. Do not leave the jointer until the cutterhead has completely stopped.

2. Rabbeting
   a. Lay out and mark the exact size of the rabbet on the front edge of the board. Position the fence the width of the rabbet away from the front edge of the table.
   b. Remove the guard, if necessary, for your jointer. Use extreme care when cutterhead is off.
   c. Lower the infeed table 1/32” at a time and make successive cuts until the desired depth of rabbet has been obtained. It is easier and safer to make several shallow cuts than to make the full rabbet cut in one pass.
   d. Always use a push block when rabbeting on the jointer.
e. Lock the infeed table securely in position.

f. Do not lean over the jointer.

g. Turn the jointer off to make any adjustments.

h. Always replace the cutterhead guard immediately after rabbeting is complete.

3. Beveling and chamfering

a. Adjust the jointer fence to the desired angle using the tilt gage or a sliding t-bevel square.

b. Greater accuracy and a safer working position is possible with the fence tilted toward the operator.

c. When the fence is tilted secure a scrap piece of stock to the outfeed table with a clamp to prevent the stock from sliding away from the fence as it comes across the jointer.

d. Make shallow cuts until desired depth is reached.

e. Make coarse grain cuts first when beveling around all four edges.

f. When beveling material less than 3” wide, use beveled push blocks and apply pressure toward the fence.
III. Safety Test

**Jointer 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 jobs cannot be done with the jointer?
   a. Rabbeting
   b. Chamfering
   c. Grooving
   d. Beveling

2. Before leaving the jointer, one should __________.
   a. have the cutterhead guard in place
   b. turn the switch to the off position
   c. make sure the cutterhead has stopped turning
   d. all of the above

3. The maximum cut recommended for one pass with the jointer on softwoods is __________.
   a. 1/32 inch
   b. 1/16 inch
   c. 3/16 inch
   d. ¼ inch

4. The primary purpose of the jointer in the agricultural mechanics shop is to _______.
   a. cut rabbets
   b. edge stock
   c. cut chamfers
   d. cut bevels

5. Which of the following operation(s) cannot be done with the cutter-head guard in place?
   a. Edging
   b. Beveling
   c. Rabbeting
   d. All of the above

6. When beveling or chamfering, the operator should __________.
   a. remove the guard
   b. cut freehand without the fence
   c. tilt the fence over the table
   d. perform these operations only on the table saw
7. The only time it is permissible to remove the cutterhead guard on the jointer is to cut a _________.
   a. long taper
   b. short taper
   c. rabbet
   d. groove

8. When squaring the edge of a piece of wood on the jointer, which of the following is not true _________.
   a. the stock is fed into the jointer with the grain
   b. the fence must be adjusted to 90 degrees
   c. loose knots should be removed prior to making the cut
   d. the infeed and outfeed tables must be adjusted to the same heights

9. The shortest piece of stock you should ever attempt to edge joint is _________.
   a. 6 inches long
   b. 8 inches long
   c. 10 inches long
   d. 12 inches long

10. The adjustment for depth of cut on the jointer is made by setting the _________.
    a. outfeed table
    b. infeed table
    c. cutterhead
    d. cutterhead knives

11. The fence should be set at a 90 degree angle for most edge jointing. To check the angle of the fence _________.
    a. use a sliding t-bevel
    b. check the tilt scale
    c. use a try square
    d. use a framing square

12. Stock less than _____ inches in width will always require the use of a hold down push block to push the material across the jointer.
    a. 2”
    b. 3”
    c. 4”
    d. 5”

13. Never joint the end of stock that is less than _________.
    a. 8 inches wide
    b. 10 inches wide
    c. 12 inches wide
    d. 14 inches wide
14. When using the jointer, you should stand __________?
   a. to the right of the jointer
   b. to the left of the jointer
   c. in front of the jointer
   d. behind the jointer

15. When jointing long pieces of stock, you should ___________.
   a. use an assistant
   b. joint half of the stock from each end
   c. use a push stick
   d. set the jointer for 1/8 inch cuts

16. If you are not sure how to perform an operation on the jointer, you should _______.
   a. ask the instructor for assistance
   b. ask another student for assistance
   c. refer to the operator’s manual
   d. read about it in the textbook

17. When performing a woodworking operation on the jointer, you should attempt to complete it in
   __________
   a. one pass over the jointer
   b. two passes over the jointer
   c. three passes over the jointer
   d. as many passes as needed

18. Stock should be pushed through the jointer with _____________.
   a. either hand
   b. both hands
   c. the right hand
   d. the left hand

19. Hands and fingers should never come closer than ____ inches to the cutterhead when push blocks or
    push sticks are not used.
   a. 8 inches
   b. 10 inches
   c. 12 inches
   d. 16 inches

20. Stock _____ inches wide and less should be edge jointed only if push blocks or push sticks are used.
   a. 2 inches
   b. 3 inches
   c. 4 inches
   d. 6 inches
IV. Performance Test for the Jointer

The student performs the following while edging, beveling, chamfering and rabbeting:

<table>
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<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
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<tbody>
<tr>
<td>1. Safety glasses are worn.</td>
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<td>2. The cutterhead guard is used on all cuts except rabbet cuts.</td>
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<td>3. Clothing and jewelry are not worn.</td>
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<td>4. The depth of cut is set for no more than 1/16 inch.</td>
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<td>5. Jointer tables are clear of tools and other materials.</td>
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<td>6. The jointer fence is set at the correct angle.</td>
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<td>7. Stock is fed properly onto the jointer with the grain.</td>
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<td>8. A push stick or push block is used on narrow and thick stock.</td>
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<td>9. Adjustments to the jointer are made with the power off.</td>
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<td>10. Correct procedures are used in jointing stock.</td>
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<td>11. Work procedures are safe and acceptable.</td>
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Comments:___________________________________________________________________________
_____________________________________________________________________________________
______________________________________________

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

______________________          ________          __________________       ________
Signed (Student)   Date  Signed (Teacher)  Date
Match the number of each jointer part with the letter of the correct part name.

___ A. Fence Lock Plunger
___ B. Tilt Lock
___ C. Outfeed Table
___ D. Table Lock Handle
___ E. Front Table Adjusting Arm
___ F. Fence
___ G. Cutterhead Guard
___ H. Fence Slide Lock Screw
___ I. Gib Screws
___ J. Rear Table Raising Handwheel
___ K. Off/On Switch
___ L. Infeed Table