OVERVIEW

A jointer is a crucial tool for achieving flat and straight edges in woodwork, and understanding its operation and techniques is essential for successful woodworking projects. Throughout the module, we will provide a step-by-step guide that covers everything from preparing the workpiece to jointing multiple passes. You will also learn about important considerations such as grain direction and specific techniques for jointing bowed or twisted boards. By the end of this module, you will have the knowledge and skills to confidently use a jointer and achieve professional-quality results in your woodworking projects.

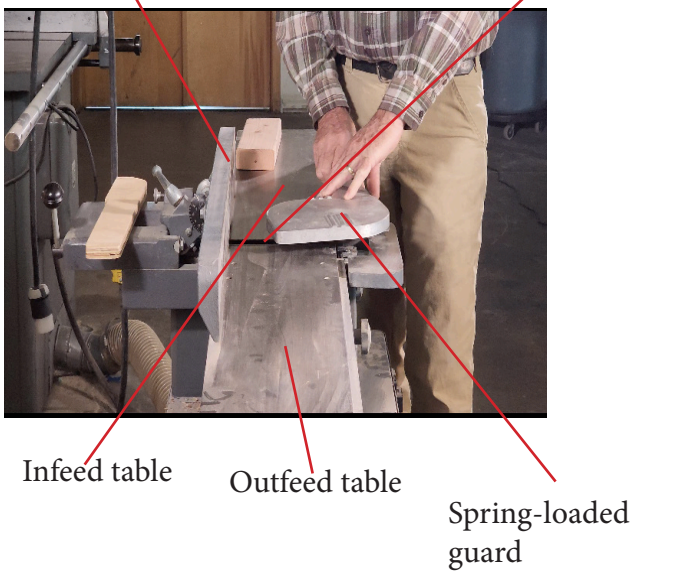
PARTS

1. Infeed table
- The infeed table is the flat surface at the beginning of the jointer where the woodworker feeds the stock into the machine. It supports the board and allows it to move smoothly towards the cutter head.

2. Outfeed table
- The outfeed table is the flat surface located at the end of the jointer, opposite the infeed table. It supports the board as it exits the cutter head, allowing for a smooth and even transition.

3. Fence
- The fence is a vertical support that aligns the wood as it moves over the cutter head. It helps ensure that the wood remains at a consistent angle and provides a reference for creating straight edges.

4. Cutter head
- The cutter head is a cylindrical component equipped with rotating knives or blades. It is positioned between the infeed and outfeed tables. The knives cut into the wood as it passes over the cutter head, removing material to create a flat and straight edge.



PROCEDURE

Step 1: Turn on the Jointer
- Ensure that the jointer is securely plugged in and the power switch is in the off position. Turn on the jointer and allow it to reach full speed before proceeding.
- Adjust the cutting height of the infeed and outfeed tables to the desired height. The infeed table is set slightly lower than the outfeed table, allowing for a gradual cut.

Step 2: Position the Workpiece
- Place the flater face of the workpiece against the infeed table, ensuring that the straight edge rests firmly against the fence. Apply downward pressure and keep the workpiece pressed against the table and the fence throughout the process.

Step 3: Begin Jointing
- Jointing requires finesse and a light touch. Keep your fingers or push stick in a fixed position, apply the right pressure, and steadily move the material over the jointer while keeping slight pressure above the blade.

Step 4: Slowly push the workpiece across the jointer's tables, moving it from the infeed table to the outfeed table. Maintain steady pressure against the tables and fence to ensure consistent contact and prevent uneven cutting at the beginning or end of the board.

NOTE
- Avoid applying excessive downward force, as only enough force is needed to counteract the knives pushing up. Using excessive force can distort the board and affect the quality of the jointing.

Tips for Jointing Specific Boards:

- Jointing a bowed board: When jointing a bowed board, place the concave side down for stability and ensure two points of contact for better results.
- Jointing a twisted board: If jointing a twisted board, balance the twist first and then run the edge of the board against the fence to stabilize it. Take a deeper cut on the first pass to establish a reference surface quickly.

Joint Multiple Passes
- For larger or thicker workpieces, it may be necessary to make multiple passes over the jointer. Adjust the depth of cut to remove a small amount of material with each pass until you achieve the desired flatness and straightness.

Establish first flat surface

Rotate 90 degrees hold surface flat against the fence which should be 90 degrees.

Turn off the Jointer
- Once you have finished jointing, turn off the jointer and allow the cutter head to come to a complete stop before leaving the machine.

Inspect and Refine
- Examine the jointed edges for any imperfections.

OVERVIEW

A surface planer is a tool used for reducing the thickness of wooden boards and achieving smooth, uniform surfaces. I will cover the essential parts of a surface planer, including the blades, rollers, crank, table, fence, and more. Additionally, I will guide you through a step-by-step process, emphasizing safety measures, preparing the wood, adjusting the planer, feeding techniques, minimizing snipe, making planing passes, inspecting the results, and finalizing the surface.

PARTS

A. Table:
- A surface planer has a flat table or bed on which the wooden board rests during the planing process. It provides stability and support for the board as it moves through the planer.

B. Powered Rollers:
- The rollers play a crucial role in feeding the board through the planer. The infeed roller grabs the board, passes it under the blades, and then the outfeed roller helps pull the board out of the planer.

C. Blades:
- The blades of the surface planer are responsible for cutting and removing material from the wooden board.

D. Crank:
- The crank is located on the side of the planer and is used to raise and lower the entire housing of the surface planer, which in turn adjusts the height of the blades.

PROCEDURE

1. Safety First

Before embarking on any woodworking task, prioritize your safety by wearing appropriate gear, including safety glasses and hearing protection.

2. Prepare the Wood

Choose a piece of wood for planing that is dry, free from nails or staples, and properly jointed or squared.

3. Adjust the Planer

Configure the planer according to your starting wood thickness. Planers feature a depth adjustment handle or knob for controlling the cut's depth. Refer to the manufacturer's instructions specific to your planer model.

4. Dust Collection: Connect a dust collector to the planer to effectively capture the substantial amount of dust produced during operation. Ensure the dust collector is switched on before using the planer to maintain a clean working environment.

5. Feed Direction

Determine the proper feed direction for the wood through the planer. You may need to feed the wood against the rotation of the cutter head. The feed direction is usually indicated by arrows on the planer or in the user manual.

6. Depth of Cut

Set the desired depth of cut on the planer. Start with a shallow cut, especially if you are unfamiliar with the wood or if it contains irregularities. Gradually increase the depth of the cut as you gain confidence and experience.

7. Planing Technique

- Hold the wood firmly and steadily while feeding it into the planer. Apply even pressure to prevent the wood from rocking or shifting during planing. Keep your hands away from the cutter head and maintain a safe distance.
- The stock material should encounter minimal resistance.
- Snipe refers to slight variations in height at the beginning and end of a board caused by the planer's rollers. To minimize snipe, slightly lift the board as it enters and exits the planer to prevent it from being pulled up into the blades. This helps maintain an even thickness throughout the board. A properly adjusted planar will not snipe.

8. Planing Passes

- Feed the wood gradually into the planer, allowing the cutter head to evenly remove material. Avoid rushing or forcing the wood through the planer, as it may result in tear-out or uneven planing.

9. Inspection

- After the wood has passed through the planer, inspect the surface for irregularities, tear-out, or snipe (thinning at the ends). If necessary, make adjustments to the depth of cut or feed speed to achieve the desired result.

10. Repeat Planing

- For further planing requirements, make additional passes using the same technique. Ensure consistent pressure and feed speed throughout each pass. These are preset and hace specific adjustment controls.

NOTE

Final Passes

- As you approach the desired thickness, make shallower cuts to minimize the risk of tear-out or excessive material removal. Take your time to achieve a smooth and even surface.

Final Inspection

- Once the planing process is complete, carefully examine the wood's surface for any remaining imperfections or irregularities. If needed, utilize sandpaper or other finishing tools to refine the surface further.

Clean Up

- Clear the planer and the surrounding area of wood chips and debris. Dispose of waste material responsibly.

- Remember, it is crucial to adhere to the manufacturer's instructions and safety guidelines specific to your planer model. Practice proper techniques, exercise patience, and prioritize precision to achieve the best results when using a planer in woodworking.