The Jointer Machine

MARIAUD CONSULTING

Our PROGRAM

01 Presentation

02 Terminology

03 Adjustments

04 Maintenance

05 Safety

The jointer

01 Presentation

The Jointer: Function and Applications in Cooperage

1. Role of the Jointer

The jointer is an essential machine for woodworking. It is used to obtain two perfectly flat reference surfaces on a rough piece of wood. It allows for obtaining:

- **The flat** (main face of the piece)
- **The edge** (face perpendicular to the flat)

These surfaces serve as the basis for subsequent machining steps, such as passing through a planer/thicknesser, ensuring precise dimensioning.

2. Adjustments and Use

Modern jointers can be equipped with **numerical adjustments**, which allow for precise adjustment of the material removal depth. This adjustment is essential to guarantee the desired flatness and thickness of the piece of wood.

3. Presence in Cooperage

In a cooperage, the jointer is mainly used at several stations :

a) Bottom Jointing (Corroyage des fonds)

- Situated at the jointing station, it allows for the preparation of the barrel bottoms.
- Although modern cooperages are often equipped with **4-sided planers**, the jointer is still available to operators to adjust joints when the machining is not perfect.

b) Barrel Repair (Réparation des barriques)

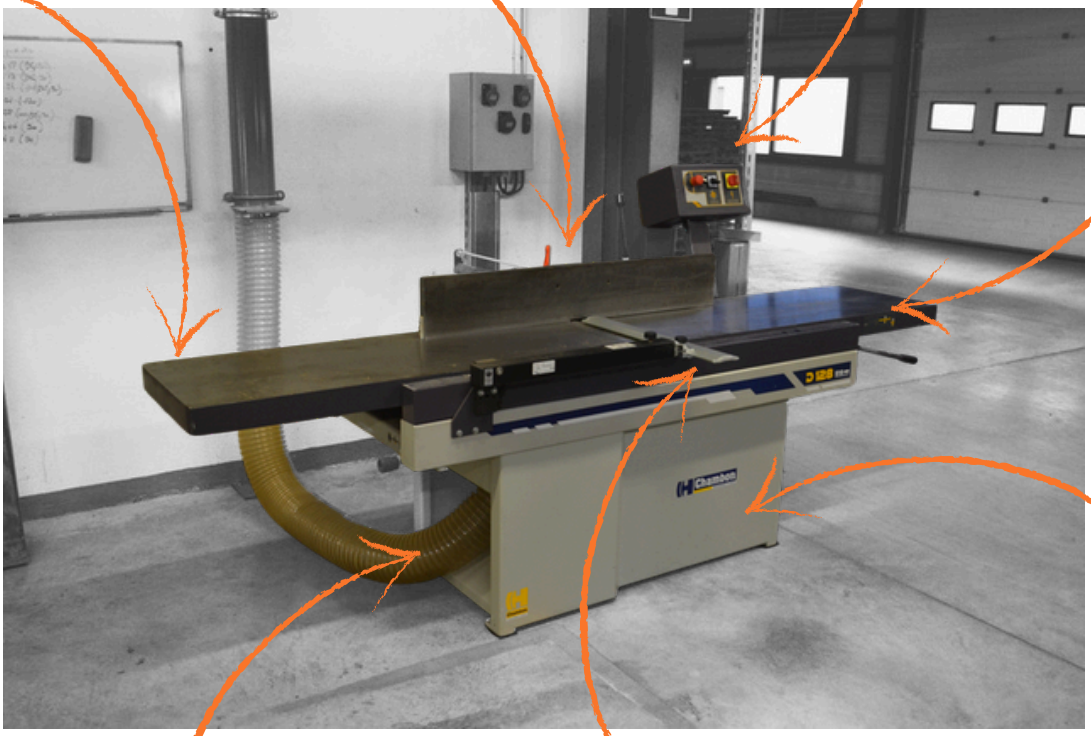
- When a stave needs to be replaced, the jointer is used to **re-joint** the defective stave as well as the adjacent ones, ensuring a proper fit during reassembly.

c) Manufacture of Vats and Foudres (Fabrication des cuves et foudres)

- In the vat and foudre workshop, it is used for the **jointing of staves and bottom pieces**, ensuring a precise and hermetic assembly.

The jointer

02 Terminologie



The jointer

02 Terminology

Different Types of Jointers and Their Composition

1. Different Types of Jointers

There are several models of jointers, which differ in their technical characteristics:

Fixed or Adjustable Rear Table:

- Certain models have a **fixed rear table**, which simplifies use and limits the necessary adjustments.
- Others have an **adjustable rear table**, allowing the operator to fine-tune the depth of cut according to needs.

Numerical or Manual Adjustments:

- Certain modern models have a **numerical interface**, facilitating the precise adjustment of the pass depth.
- Others are **manually adjustable**, via a lever equipped with a specific gauge to control the pass height.

2. Composition of a Jointer

The jointer is composed of several main elements, each having a specific function:

The Frame (Le bâti)

It is the main **structure of the machine**.
Generally made of **steel** or **cast iron**, it ensures the **stability** and **solidity** of the whole.

It houses several essential components:

- **The motor**, which drives the cutter block shaft.
- **The transmissions**, which ensure the mechanical movement and the safety features.
- **The electrical cabinet**, which groups the controls and safety features.
- **The guide fixing plate**, which allows for adjusting the angle of the pieces to be machined.

The jointer

02 Terminologie

The Jointer Tables: Function and Characteristics

1. The Tables

The two **tables** (made of cast iron or aluminium) are **parallel** to each other and aligned with **the upper edge of the cutter block**, guaranteeing precise machining.

2. The Infeed Table

- **Adjustable** to set the depth of cut (max. 8 mm).
- **Adjustment Systems:**
  - **Inclined slide**
  - **Parallelogram**
  - **Manual** (handle) or **numerical** (to the tenth of a mm on recent models)

The jointer

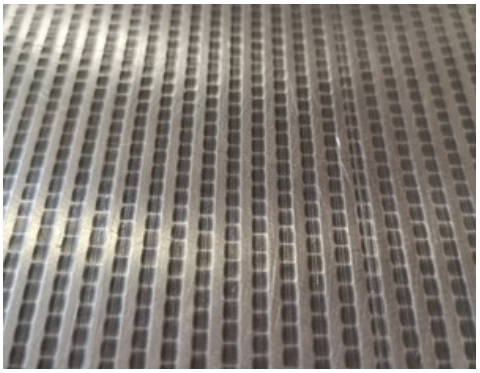
02 Terminologie

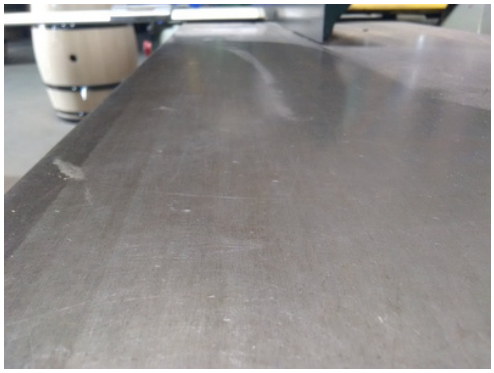
3. The Outfeed Table

- **Reference table,** always **tangent to the cutter block edge.**
- On certain models**: fixed** or **adjustable (1.1 mm max),** with the same systems as the infeed table.
- **Possibility of inclination** to adjust the concavity or convexity of a joint.

Materials and Textures

- **Aluminium Cast Iron:** Light but fragile (sensitive to nails).
- **Steel Cast Iron:** More resistant, reduces vibrations, stabilises the machine.
- **Grooved or honeycomb surfaces:** Improve sliding and evacuate shavings/dust.





The jointer

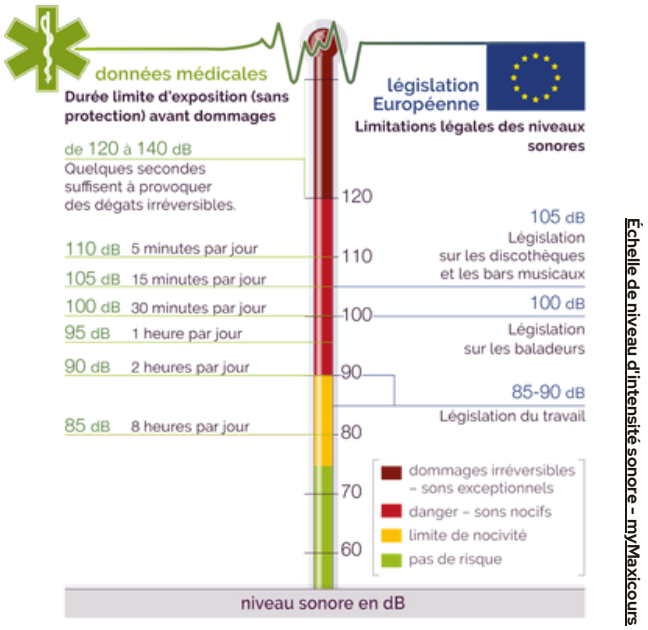
02 Terminology

Noise Emitted by a Jointer

- In operation, a jointer generates **around 100 decibels (dB).**
- This noise level is high and requires **adapted hearing protection.**

Legislation and Exposure Time

- European regulation defines **noise exposure limits** to prevent hearing risks.
- **A legislative diagram** establishes **the relationship between the noise level and the maximum duration of exposure without protection.**
- **At 100 dB,** the time of exposure without risk is very limited (a few minutes).



Échelle de niveau d'intensité sonore - myMaxicours

Prevention and Protection

- Use of **noise-cancelling headphones or earplugs** compliant with standards.
- Reduction of noise at the source with **well-maintained machines** and **sharp blades.**
- Improvement of workstations **to limit sound reverberation.**

The jointer

02 Terminology

Origin of Noise

Noise of Mechanical Origin

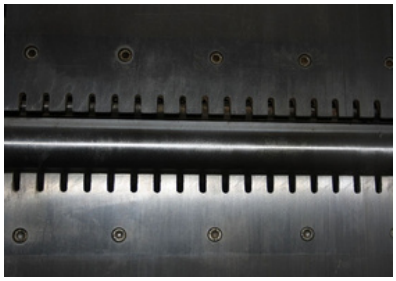
The noise of a jointer mainly comes from the rapid **displacement of the blades** near the table, which suddenly pushes the air and generates **significant aerodynamic noise**. With a cutter block rotation speed that can reach **5000 revolutions per minute**, this phenomenon becomes a major source of noise pollution, making the work uncomfortable for the operator.

Anti-Noise Lips: An Effective Solution

To limit this noise, modern jointers integrate anti-noise lips, placed between the table and the cutter block.

- They optimize **the circulation of air** without widening the space around the blades.
- They reduce **the compression and brutal expulsion of air**, significantly lowering the sound level of the machine.





The Gap: A Key Factor for Safety and Extraction

Another crucial element in managing noise and safety is the **gap,** meaning **the space between the blade and the reference table.**

- **The smaller this gap,** the more the work **is secured,** limiting the risks of dangerous projections.
- A well-adjusted gap also facilitates **the evacuation of shavings to the extraction system,** improving the cleanliness of the workstation.

The jointer

02 Terminologie

Noise of Mechanical Origin

The noise generated by a jointer mainly comes from its moving mechanical components. **This direct contact between a blade and the wood** creates a sound wave at each instance, which is one of the main causes of noise during machining.

Vibrations of the piece of wood and the machine also amplify the noise pollution. When the piece is not perfectly held or the machine is poorly fixed, these vibrations become sources of parasitic oscillations, increasing noise and reducing the precision of the work.

Another factor to consider is **the shavings path to the extraction casing**. If the extraction is insufficient, the shavings accumulate and create turbulence, generating additional noise and affecting the cleanliness of the workstation.

Finally, **imbalance in the cutter block** is a major source of vibrations. Imbalance occurs when the mass is not perfectly distributed over a volume in rotation, creating a mechanical imbalance. In this case, **the axis of inertia** no longer coincides with **the axis of rotation**, which causes parasitic oscillations, amplifies the noise and compromises the stability of the cut.

Noise Reduction and Machine Optimisation

Several solutions allow for limiting these noise pollutions and improving the stability of the machine:

- **Improve the shavings extraction**: A good extraction system not only reduces the noise caused by their displacement but also improves the ejection of residues, ensuring a clean workstation.
- **Properly balance the cutter block**: Regular control and good balancing of the cutter block limit vibrations and ensure a more precise cut.
- **Stabilise the machine and the piece of wood**: A firm fixing of the piece and a good adjustment of the tables reduce vibrations and improve the comfort of use.

The jointer

02 Terminologie

3. The Lateral Guide

The lateral guide plays an essential role in machining precision. It is used to adjust the cutting **angle between 90° and 45°**, according to needs. It is also adjustable on **the width of the table**, perpendicularly to the cutter block shaft.

A well-adjusted guide not only reduces the pressure exerted on the piece and improves machining precision. This contributes not only to quieter work but also to a better quality of finish.

The jointer

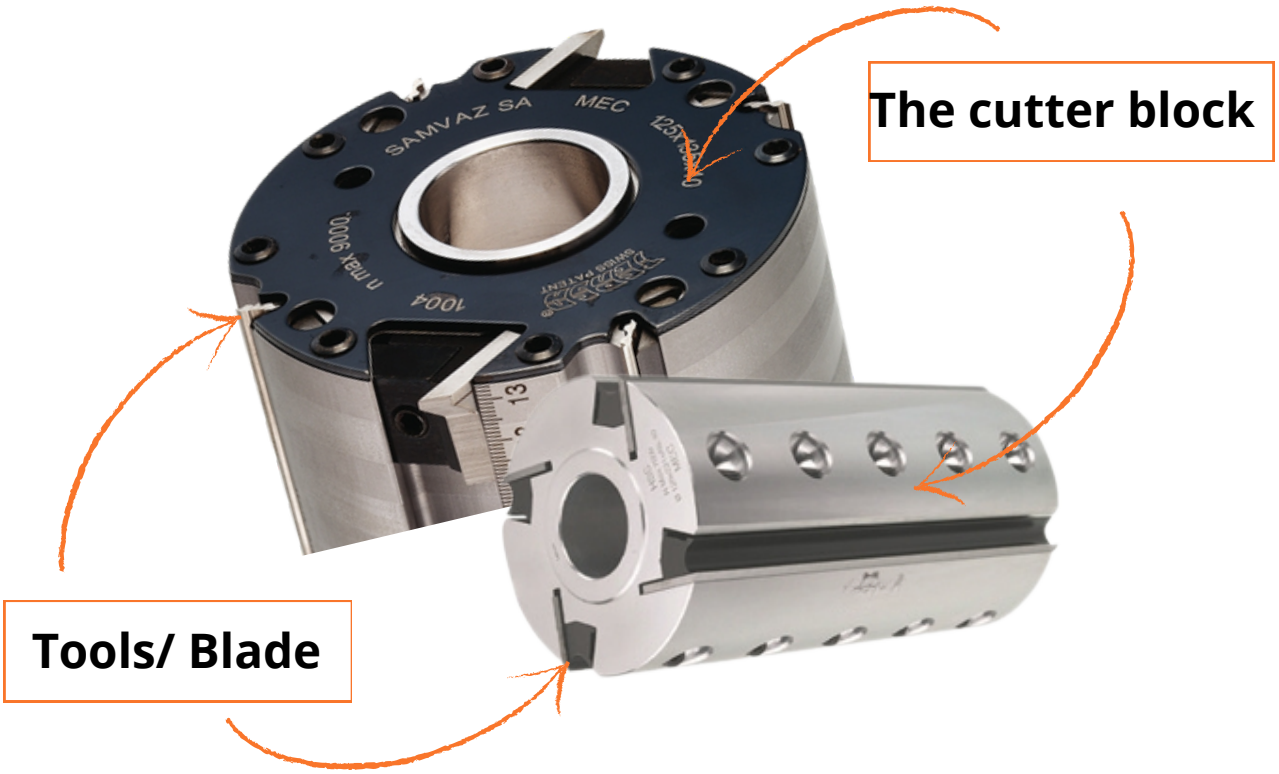
02 Terminologie

4. The Cutter Block

The cutter block is the shaft on which the cutting blades are fixed. Its **length corresponds to the width of the table**, guaranteeing a uniform cut over the entire surface of the piece.

European standards today impose the exclusive use of **cylindrical cutter blocks**, prohibiting all other forms for reasons of safety and stability. These shafts rotate at a varying speed between **3000 and 5000 revolutions per minute**, depending on the machine model and manufacturer specifications.

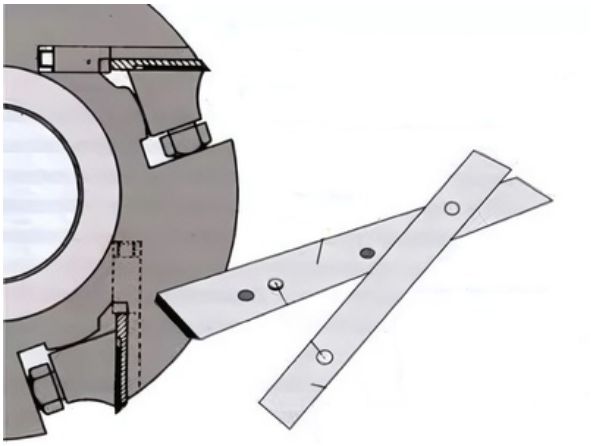
The sharpening angle of the tools is generally **between 35° and 40°,** allowing for an effective cutting edge while ensuring good blade longevity.



The jointer

02 Terminologie

There are two main types of cutter blocks on jointers. Cutter blocks with **2, 3, or 4 blades** require a strict fixing to guarantee blade immobility.
These are held in place by **trapezoidal locking wedges**, inserted into the grooves of the cutter block, preventing detachment even in case of loosening. Conversely, **self-locking cutter blocks** use reversible and disposable blades, inserted into a specific groove. A **longitudinal locking wedge**, activated by **centrifugal force**, firmly holds the blade in place, thus offering a quick and secured replacement.



Some cutter blocks use a blade clamping **system where the blades** are positioned on **springs** in the groove, then fixed using **clamping nuts**. This mechanism allows for effective holding of the blades while facilitating their adjustment and replacement. However, to guarantee **optimal balancing**, it is essential that the blades are **perfectly identical** in terms of cutting dimensions and weight. An imbalance could lead to vibrations, affecting the cutting quality and increasing operating noise.

The jointer

02 Terminologie

Felder groupe

The helical cutter block with inserts offers a smoother and less aggressive cut than blade models, guaranteeing a cleaner finish. Its design allows **for better shavings extraction and a significant reduction in noise** during operation**.** A major advantage lies in the ease of use: in case of damage due to an obstacle (like a stone), it is sufficient **to turn the insert to regain a cutting edge,** unlike blade cutter blocks which require complete sharpening. Although its long-term cost may be higher, notably around 55 euros for 10 inserts, it offers a gain in durability and maintenance.

Criteria	Insert Cutter Block (Plaquettes)	Blade Cutter Block (Fers)
Cut Quality	Smooth and clean cut, fewer tear-outs.	Good cut, but may leave traces on certain woods.
Noise	Quieter thanks to progressive cutting.	Noisier, especially at high speed.
Shavings Extraction	Improved extraction, reduced dust accumulation.	Less effective, may require high-performance extraction.
Blade Durability	Reversible and resistant carbide inserts.	Steel blades requiring regular sharpening.
Maintenance	Quick change of inserts without sharpening.	Must be sharpened regularly, which takes time.
Long-Term Cost	More economical over time (replacement only for inserts).	Recurrent sharpening cost, but lower initial investment.
Initial Investment	More expensive to buy.	Cheaper to buy.
Use	Ideal for intensive use and hardwood.	Suitable for varied uses and softwood.

The jointer

03 Adjustments

This button is used to lock or unlock the shaft. To change the blades, for example.

This button, called the "star-delta button," allows the machine to start in two speeds. You start in star (Y) and once the cutter block has started, you switch to delta.

The emergency stop button

You can also find indicators on the machine characteristics. Like the tool rotation speed here.

Ce bouton sert à mettre sous tension la machine

There are **control panels equipped with a digital screen**, allowing for **a precise and automated adjustment** of the machine parameters, such as the depth of cut, the rotation speed, and the alignment of the tables, thus offering improved **ergonomics and greater machining precision.**

The jointer

03 Adjustments

Star-delta starting is a commonly used method to reduce the starting current of three-phase asynchronous motors. This technique aims to limit electrical and mechanical constraints on the motor and the electrical network during start-up.

Operating Principle:

Start in Star mode (Y):

- The motor windings are connected in a star configuration, which reduces the voltage applied to each winding to **1/√3** (around 58%) of the line voltage.
- This voltage reduction decreases the starting current to about **one-third** of that of a direct delta start, but it also reduces the starting torque in the same proportions.

Transition to Delta mode (Δ):

- After a predefined period, usually a few seconds, a timer triggers the switching of the windings to a delta configuration.
- In this configuration, each winding receives the full line voltage, allowing the motor to deliver its nominal torque and reach its normal speed.

The jointer

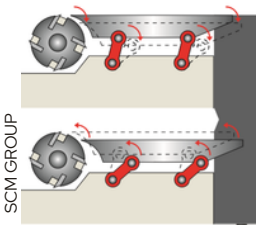
03 Adjustments

The jointer is a simple machine in principle. A **motor** drives **the power via a belt, which transmits power to the cutter block shaft.** The latter, rotating rapidly, machines the wood surface to remove irregularities and obtain a flat and perpendicular surface. The cutting quality depends on the rotation speed, the type of cutter block, and the table adjustment.

Table Adjustment on a Jointer

Adjusting **the infeed table** defines the depth of cut, meaning the amount of material removed in **each pass**. This adjustment can be done in two ways, depending on the machine model:

- **By parallelogram deformation**: This system ensures a smooth and precise movement of the table while maintaining its parallelism with the outfeed table.

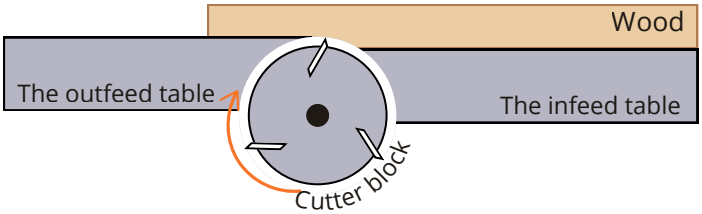


- **By slide**: Another method where the table moves on an inclined guide, allowing for a progressive adjustment of the height.

Each system guarantees optimal precision, directly influencing the quality of machining and the stability of the woodworking.

The jointer

03 Adjustments



To obtain **perfect straight joints**, it is essential that the **infeed and outfeed tables are set parallel**. Good alignment guarantees a regular and precise cut, avoiding assembly defects. Incorrect adjustment could cause a **concave** or **convex** joint, hindering the quality of the machining and the flatness of the pieces.

Effect of an Outfeed Table Too High on a Jointer

If **the outfeed table is too high, the wood cannot advance correctly** after passing over the cutter block, which entails the following consequences:

The wood bumps against the outfeed table:

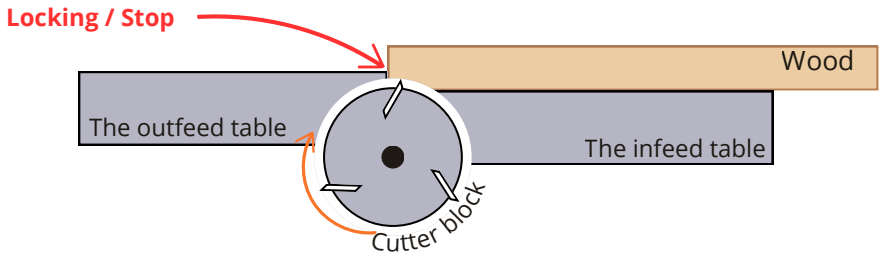
- Since the outfeed table is supposed to **be aligned with the cutting edge**, an excessive height creates **an obstacle**.
- The piece of wood no longer slides correctly after machining.

Poor finish:

- Machining only occurs on **the first part of the board**, as the wood no longer rests on the cutter block after the first pass.
- Result: **irregular cut**, even a lack of flatness.

Vibrations and kickback risks:

- The wood can be **pushed back** by the cutter block, which is dangerous.
- **Vibrations** may appear, affecting machining precision.



The jointer

03 Adjustments

Effect of an Outfeed Table Too Low on a Jointer

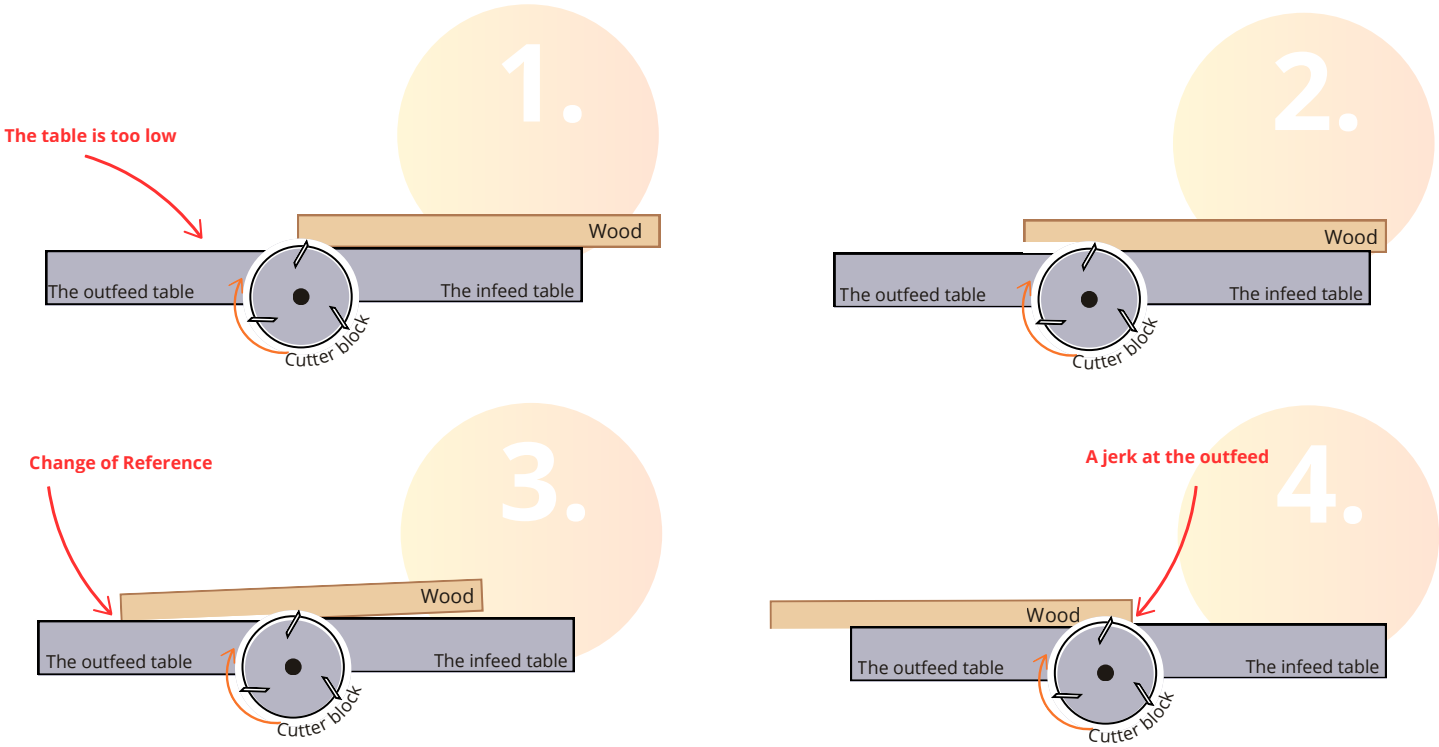
If **the outfeed table is too low, the wood does not rest correctly** after passing over the **cutter block**, which causes several problems:

Excessive machining and loss of precision:

- Since the outfeed table must be **aligned with the cutting edge,** insufficient height causes the piece to continue to be machined **beyond the intended pass.**
- Result**: over-thickness at the end of the pass and irregular machining,** often concave**.**

Poor wood support:

- The wood no longer **has stable support at the outfeed,** which causes **a slight tipping** when it reaches the outfeed table.
- Creates **a jerk at the outfeed,** leaving **a visible mark** on the piece and making the finish irregular.



The jointer

03 Adjustments

How to create a concave joint?

A concave joint (or hollow joint) can be obtained by adjusting the inclination of the infeed and outfeed tables of the jointer. The goal is to remove more material at the center of the piece than at the ends.

Table Adjustment:

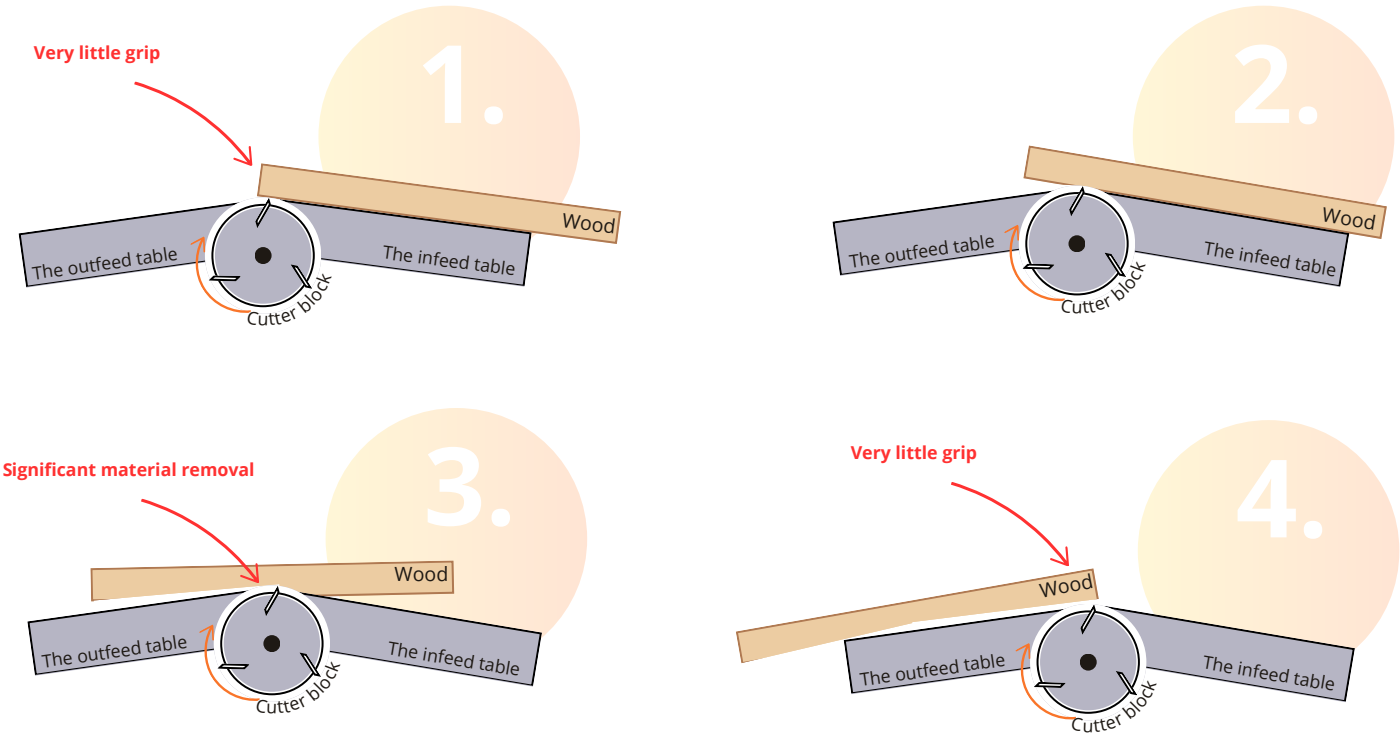
- **Raise the front of the infeed table very slightly** so that the piece begins to be machined progressively from the center towards the ends.
- **Lower the rear of the outfeed table very slightly**. This allows the wood to continue to be machined more intensively at the center than at the ends.

Machining Procedure:

Perform several light passes to avoid removing too much material at once.

Check the result by placing the two jointed pieces against each other to observe the hollow at the center.

This adjustment makes it possible to create the hollow for jointing bottom pieces, for example.



The jointer

03 Adjustments

How to create a convex joint?

A convex joint (or cambered joint) can be obtained by adjusting the inclination of the infeed and outfeed tables in an opposite manner to that used for a concave joint. The objective is to remove less material at the center than at the ends of the piece.

Table Adjustment:

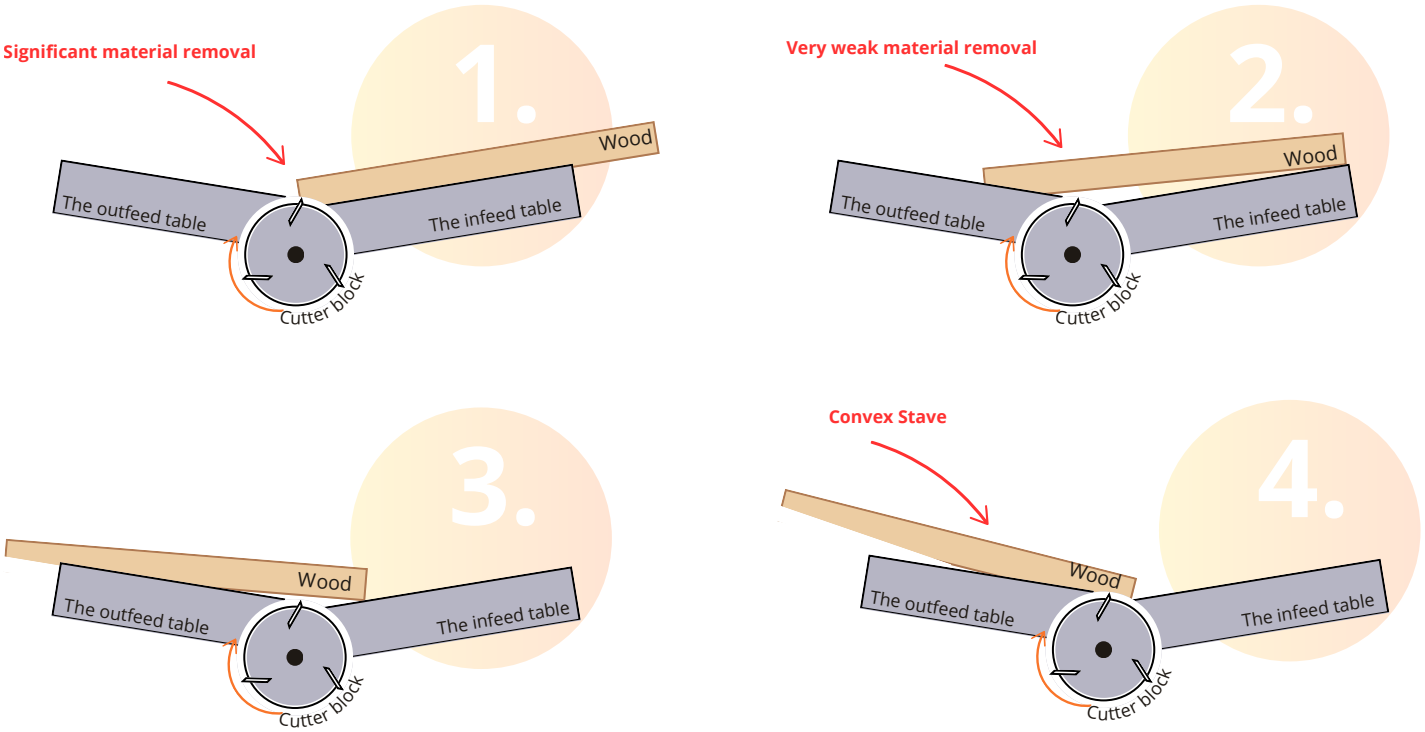
- **Lower the front of the infeed table very slightly** so that the blade removes more material at the start and end of the piece.
- **Raise the rear** of the outfeed table slightly to reduce the cut at the center of the piece and accentuate machining on the ends.

Machining Procedure:

Perform several light passes to avoid removing too much material at once.

Verify the result by placing the two jointed pieces against each other to observe the hollow at the center.

This convex joint technique is commonly used in foudre (large vat) making for stave jointing.



The jointer

03 Adjustments

Adjusting the Blades of a Jointer

When **replacing the blades** on a jointer, it is essential **to ensure they are perfectly straight and aligned at the same height.** Incorrect adjustment can lead to machining defects, such as cutting irregularities, vibrations, or risks of accidents.

Modern Adjustment Tools

Today, **magnetic gauges facilitate** this operation. These devices are placed directly on the cutter block, maintaining the blades **stably and precisely** in place during clamping. This guarantees:

- ✅Homogeneous **height** between all blades.
- ✅**Perfect alignment** to avoid any irregularity in machining.
- ✅**Time savings** and better safety during mounting.

👉**A proper adjustment of the blades is essential to obtain a clean, precise, and secure cut**.

The jointer

03 Adjustments

Operating Procedure with Magnetic Adjusters

Preparation:

- **Unplug the machine** to avoid any risk of accident.
- **Carefully clean** the cutter block shaft and the blade housings to eliminate dust and residues.
- **Slightly loosen the blade screws** to allow for their adjustment.

Identification of Used Blade Height:

- Before dismantling, place the **magnetic adjusters** to mark the original height.

Loosening the Old Blades:

- Always **loosen from the ends towards the center** to avoid distorting the alignment.

Installation of New Blades:

- Position the new blades using **the magnetic adjusters pre-set** in step 1.

Progressive tightening:

- Tighten **from the center towards** the ends to avoid **deformation** of the blades during clamping.

Final Verification:

- Place a **straightened piece of wood on the outfeed table.**
- The blades should **slightly pull the piece** without violently hooking it, guaranteeing a precise adjustment.

The jointer

03 Adjustments

Adjusting the Blades of a Jointer with a Simple Piece of Wood

If you do not have a magnetic gauge, it is possible to adjust the jointer blades with **a piece of wood** by following these steps:

Preparation:

- **Unplug the machine** to avoid any risk of accident.
- **Carefully clean** the cutter block shaft and the blade housings to eliminate dust and residues.
- **Slightly loosen the blade screws** to allow for their adjustment.

Positioning the Piece of Wood:

- Take **a straight and clean piece of wood** (ideally 20-30 cm long).
- Place it **perpendicularly on the outfeed table** (fixed), just above the cutter block.

Blade Adjustment:

Gently turn the shaft by hand to see if the blade touches the piece of wood.

The blade should slightly hook the wood and move it by 1 to 2 mm when you turn the shaft.

The jointer

03 Adjustments

- **If the wood does not move → the knife is too low → raise it slightly.**
- **If the wood is thrown too far → the knife is too high → lower it slightly.**

Repeat the operation **for each knife**, adjusting their heights so they all move the piece of wood the same distance.

Clamping and final check

- Once the knives are correctly set, **tighten the screws progressively, from the center toward the ends, to avoid any deformation.**
- Perform **a final check** with the piece of wood to ensure all knives are at **the same height**.
- Manually turn the shaft to check that there is no excessive contact with the tables.

The jointer

03 Adjustments

Angular fence adjustment for a jointer

The angular fence allows **adjusting the machining angle** to obtain precise cuts, notably **90° for square edges** or angled cuts as required.

Steps for adjustment:

Loosen the fence:

- Start by **loosening** the fence so the angle can be changed.
- **An angular scale** is often built into the support to simplify adjustment.

Set the angle:

- For machining **at 90°**, align the fence with the angular scale.
- **Check accuracy with a square** by placing it against **the outfeed table**, which serves as the reference table.

Tighten and verify:

- Once the angle is set, **tighten the fence firmly** to prevent movement during machining.
- Perform **a final check with the square** to ensure a perfect setting.

The jointer

04 Maintenance

Maintenance of a jointer

Proper maintenance of the jointer **ensures its longevity**, **preserves cutting quality, and optimizes operator safety.**

Cleaning after each use:

- **Blow out and clean the machine** to remove dust and wood residue.
- **Do not leave dust on the knives, tables, and fences**, as this can degrade machining accuracy.

Knives and cutterhead maintenance:

- **Replace knives as soon as they show a nick**, using a **setting jig to guarantee** optimal sharpening.
- **Blow out and clean the cutterhead,** nuts, and slots thoroughly to prevent sawdust buildup that could impair the system's balancing.
- **Wipe the knives if they are coated with grease** to prevent impurities from adhering.

Lubrication and surface protection:

- **Apply a paraffin-type product** to the tables **to facilitate stock sliding** and reduce machining effort.
- **Avoid overly greasy products** that can **trap dust and chips**, forming deposits that are hard to remove.

Motor and bearing checks:

- **If possible, blow out accumulated sawdust** between **the motor cooling fins** to prevent overheating.
- **Some machines have grease fittings**, but most modern **models use sealed bearings**, pre-lubricated at the factory and not requiring maintenance.

The jointer

04 Maintenance

Consumables for a jointer

A jointer uses several consumables that wear over time and require regular replacement **to ensure optimal machining quality and preserve operator safety.**

1. **Knives (or blades)**

- **Types:**
  - Straight knives: HSS (high-speed steel) or carbide.
  - Reversible inserts: used on helical cutterheads, made of carbide.
- **Wear:**
  - Loss of cutting ability, chips, nicks.
  - Sharpen or replace depending on the model.

2. Belts

- **Function**: transmit power between the motor and the cutterhead.
- **Wear**:
  - cracks, splitting, loss of tension.
  - Check and replace if excessively worn.

3. Cutterhead bearings

- **Function**: allow smooth rotation of the cutterhead.
- **Wear:**
  - play, abnormal noise (whistling).
  - On modern models they are often sealed and pre-lubricated.

The jointer

04 Maintenance

Consumables for a jointer

4. Suction hoses

- **Function:** carry chips to the extraction system
- **Wear:**
  - Cracks, holes, crushing that reduce suction efficiency
  - Replace if damaged to avoid sawdust accumulation

5. Lubricants and maintenance products

- **Paraffin or dry wax:** facilitates stock sliding on the table
- **Blowgun and specific cleaners:** remove dust and residues
- **Mild penetrating oil (e.g., WD-40 type):** for moving parts if necessary

The jointer

05 Safety

The general safety instructions for using a jointer cover three essential phases: before, during, and after machining.

Before machining — Workstation and machine preparation

✓Clean the work area and prepare the necessary tools.

✓Check cutting condition of tools and replace them if needed.

✓Set and lock fences and push blocks for stable machining.

✓Apply a thin layer of paraffin on tables and fences (machine stopped).

During machining — Operator safety

✓Wear hearing protection and safety glasses if required.

✓Secure long hair and avoid loose clothing.

✓Connect dust extraction and open access panels to evacuate chips.

✓Respect recommended cutting speeds and feed rates.

✓Wait until the machine has reached full speed before machining.

✓Always use the machine's built-in guards and safety devices.

🚫Never do

❌Do not force the cutting tool.

❌Do not place hands in the blade path.

❌Do not wear rings, bracelets, or loose clothing.

❌Do not remove chips by hand.

❌Do not put your face at table height while machining.

❌Do not machine pieces that are too short or apply paraffin while the machine is running.

The jointer

05 Safety

After machining — Securing and maintenance

✓Cut the power to the machine and the extraction system.

✓Close the extraction hatches to prevent dust accumulation.

✓Replace the protective guards over the cutting tool.

✓Thoroughly clean the workstation to avoid any residue buildup.

👉Following these rules ensures safe, precise work and extends the machine's service life.

Main factors causing accidents

- **Workpiece kickback,** often caused by excessive depth of cut.
- **Machining pieces that are too small,** which are hard to hold safely.
- **Workpiece instability,** which can lead to poor machining and ejection risk.
- **Repetitive work,** which reduces vigilance and increases the likelihood of error.
- **Using worn knives,** which degrades cut quality and can cause dangerous catches.

Usage tips for increased safety:

✓**Orient the wood correctly** before machining**.**

✓**Always place the hollow side** on the table to ensure good support and avoid instability.

✓**Set the depth of cut** progressively to avoid shocks and excessive effort.

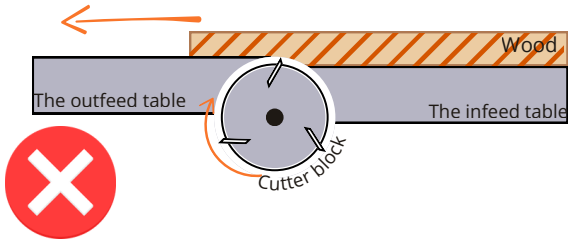
✓**Use push blocks or guides** to hold the workpiece securely, especially for small pieces.

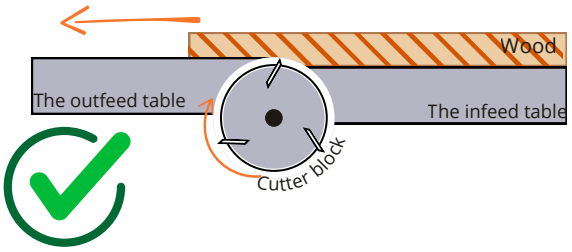
✓**Replace worn knives** to ensure a clean and safe cut.

The jointer

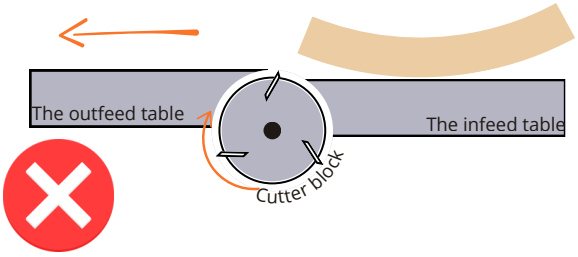
05 Safety

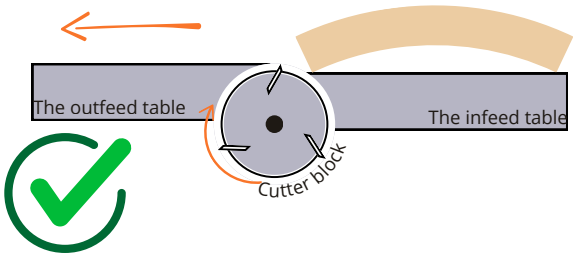
Machining must always be carried **out following the wood grain so the fibers are laid down rather than raised**. This method produces a cleaner finish and **prevents fiber tearing or splintering.** Respecting this orientation yields a smoother cut, **more precise work, and improved operator safety.**





It is essential to always **place the hollow side of the wood against the table during machining**. This ensures **optimal stability of the workpiece** and prevents it from tipping during passage over the cutterhead. By placing **the concave face against the table**, **contact** with the support surface is **maximized**, guaranteeing more precise and safer machining.





Similarly, it is **recommended to place the hollow side of the wood against the angular fence.** This ensures **a stable, continuous contact** between the workpiece and the fence, producing **a regular and precise cut**. This position also prevents vibrations and reduces the risk of tipping or kickback when passing over the cutterhead.

The jointer

05 Safety

Adjusting the Table Height by Looking at the Cursor

The adjustment of the infeed table height is done by setting the depth of pass, which corresponds to the thickness of wood removed at each passage.

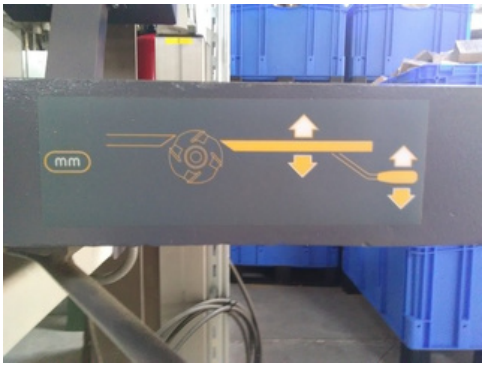
Identify the adjustment cursor: It is generally placed on the machine frame (bâti), close to the infeed table adjustment mechanism.

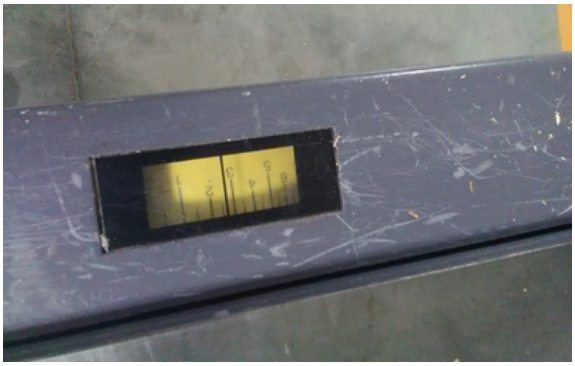
Loosen the locking mechanism: Some machines have a lever or a handwheel to adjust the table height.

Adjust the height: By turning the adjustment knob, observe the cursor movement on the graduated scale.

Verify the depth of pass: The value indicated on the cursor corresponds to the quantity of material that will be removed by the cutter block (porte-outils). A pass of 1 to 2 mm is recommended for precise machining.

Lock the table: Once the height is adjusted, lock the mechanism to prevent any movement during machining.





The jointer

05 Safety

After **analyzing the piece of wood, set the depth of pass** as well as **the height of the safety guide. Place your hands flat** on the piece and exert a constant pressure to advance it. Once the piece reaches the outfeed table (table de sortie), receive it with one hand, then alternate with the other to accompany the end of the pass smoothly.

1.

2.

To joint **an edge on the jointer**, start by identifying **the flattest face** and place it against the reference table. Position the piece **with its reference flat against the guide** and apply **constant pressure** toward the guide and the table to ensure stable support. Advance **slowly and steadily**, maintaining pressure on the outfeed table once the piece is engaged.

1.

2.

The jointer

05 Safety

To repair a stave in cooperage, it is essential to precisely **joint the edges of the replaced stave** as well as those of the **adjacent staves**. To ensure a safe pass, the guide must be moved close without being pressed flat against the stave, as its curvature could **hinder smooth guiding**. This adjustment allows for maintaining **constant pressure** and stable support while ensuring a precise cut for a perfect joint fit.

The jointer

05 Safety

Safety and Personal Protective Equipment

The use of a jointer requires heightened vigilance and the wearing of adapted protective equipment to minimise the risk of accidents.

Mandatory Protective Equipment

- **Safety shoes**: Protect against falling objects and slipping on a floor covered with shavings.
- **Noise-cancelling headphones or earplugs**: Essential for reducing exposure to the high noise generated by the machine.
- **Safety glasses**: Recommended if shavings extraction is insufficient to prevent any projection into the eyes.

Precautions and Suitable Attire

- **Avoid wearing gloves:** The loss of tactile sensation increases the risk of accident. Gloves can also get caught between the blades and the table, leading to a risk of tearing.
- **Tie back long hair**: Prevents accidental snagging in the moving parts of the machine.
- **Avoid loose clothing, rings, and bracelets**: Accessories can be pulled into the machine and cause severe injuries.

Safety Rules During Use

- Always ensure that the machine is completely stopped before any adjustment or maintenance.
- Never force the cutting tools and respect the recommended feed speeds.
- Never pass your hands into the path of the cutter block (porte-outils).
- Use push blocks (or push sticks) to guide small pieces and avoid any direct contact with the blades.

Apply these tips right now and take control of your machine with confidence and mastery!