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## **Instruction manual - Tenon jointer**

Page 6

**IMPORTANT:** Read and understand all instructions before using.

## **Guide d'utilisation - Fraiseuse**

Page 23

**IMPORTANT:** Lire et comprendre toutes les instructions avant de démarrer les travaux.

## **Manual de instrucciones - Fresadora de espigas**

Pagina 42

**IMPORTANTE:** Lea y comprende todas las instrucciones antes de usar.

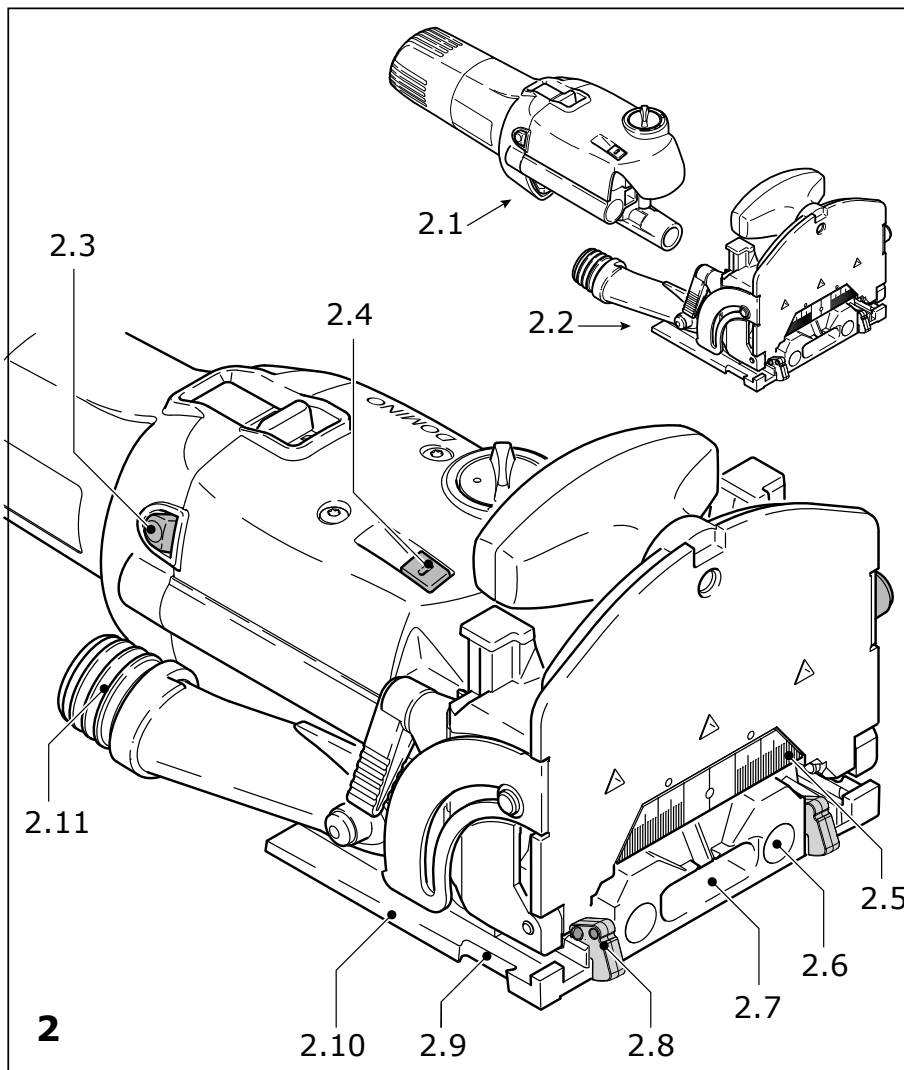
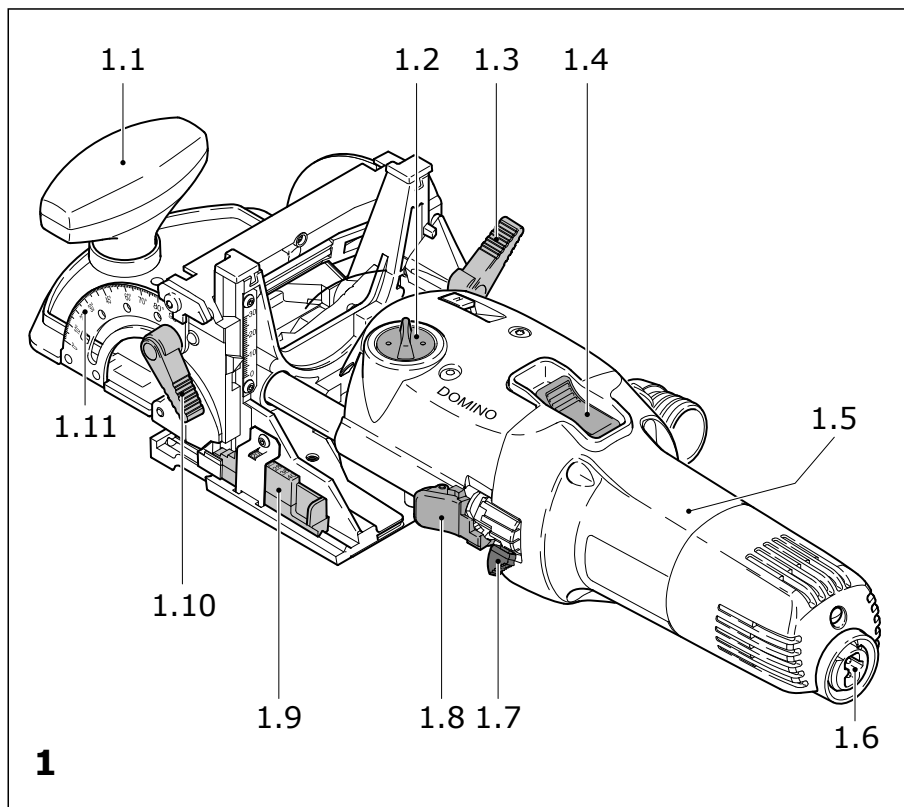
Instruction manual  
Guide d'utilisation  
Manual de instrucciones

*DOMINO*  
**DF 500**



701033\_003





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## Safety rules

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### General safety rules

**⚠ WARNING** Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury.

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

The term “power tool” in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

#### 1) Work area safety

**a) Keep work area clean and well lit.** Cluttered and dark areas invite accidents.

**b) Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.

**c) Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

#### 2) Electrical safety

**a) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.

**b) Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.

**c) Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

**d) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

**e) When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

**f) If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

#### 3) Personal safety

**a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.

**b) Use safety equipment. Always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

**c) Avoid accidental starting. Ensure the switch is in the off position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

**d) Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

**e) Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

**f) Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.

**g) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust related hazards.

#### 4) Tool use and care

**a) Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.

**b) Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

**c) Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

**d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

**e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.

**f) Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

**g) Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

**h) Keep handles dry, clean and free from oil and grease.** Slippery handles do not allow for safe handling and control of the tool in unexpected situations.

#### 5) Service

**a) Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

#### Specific Safety Rules

**a) The tools must be rated for at least the speed marked on the power tool.** Tools running over rated speed can fly apart and cause injury.

**b) Always use the guard.** The guard protects the operator from broken tool fragments and unintentional contact with the tool.

**c) Hold power tool by insulated gripping surfaces, because the cutter may contact its own cord.** Cutting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

**d) Keep hands away from the cutting area.** Never place your hand on the front face of the fence while the tool is running.

**e) Never operate the joiner without the fence attached.** When the fence is removed from the joiner, the spinning and oscillating cutter is exposed and can cause serious injury.

**f) Use only Festool authorized mortising bits.** Non-approved mortising bits can come loose during operation.

**g) Never use dull or damaged mortising bits.** Dull or damaged mortising bits can cause the tool to lurch sideways unexpectedly and lead to a loss of control of the power tool.

**h) Do not operate the tool if the spring-loaded fence does not return to its forward rest position.** The fence covers the mortising bit and prevents

accidental contact. If the slides of the fence do not move freely, have the tool serviced immediately.

**i) Wait for the cutter to stop before setting the tool down.** An exposed cutter may engage the surface leading to possible loss of control and serious injury.

## Health hazard by dust

**⚠ WARNING** Various dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

The risk from these exposures varies, depending on how often you do this type of work.



To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles. Wash hands after handling.

**⚠ WARNING TO REDUCE THE RISK OF INJURY, USER MUST READ INSTRUCTION MANUAL.**

## Tool description

### Technical specification

Power	420 W
Speed (no load)	25,500 rpm
Mortising depth, max.	28 mm (1.1")
Mortising width, max.	23 mm (0.9") +bit diameter
Mortising bit range	4/5/6/8/10 mm
Connecting thread of drive shaft	M6 x 0.75
Weight (excluding cable)	3.2 kg (7 lbs)
Degree of protection	□ / II

All metric dimensions are binding. Mortising bit dimensions are critical for safe operation, and are presented in metric units only.

## Symbols

V	Volts
A	Amperes
Hz	Hertz
~	Alternating current
$n_0$	No load speed
□	Class II Construction
rpm	Revolutions or reciprocation per minute
∅	Diameter



Note, Danger!



Wear ear protection!



Manual, read the instructions!



Wear a face mask for work which produces dust!

## Intended use

The Domino tenon jointer is designed to produce mortises in soft and hard wood, chip board, plywood and fiber boards. All applications beyond this are regarded as improper use. The tool should not be altered or used for any other purpose other than as specified in these operating instructions. Using the tool in contravention to this manual will void your warranty and may lead to injury.

**⚠ WARNING** The user shall be responsible and liable for damages and accidents resulting from misuse or abuse of this tool.

## Functional description

The pictures for the functional description are on a fold-out page at the beginning of the instruction manual. When reading of the manual you can fold out this page for having always an overview of the machine.

- [1.1] Auxiliary handle
- [1.2] Mortise width dial
- [1.3] Fence high locking lever
- [1.4] Power switch
- [1.5] Main handle (barrel grip)
- [1.6] Plug it power inlet
- [1.7] Depth adjust lever
- [1.8] Depth adjust lock
- [1.9] Board thickness gauge

- [1.10] Fence angle locking lever
- [1.11] Fence angle gauge
- [2.1] Motor housing
- [2.2] Fence body
- [2.3] Spindle lock
- [2.4] Fence body release lever
- [2.5] Horizontal position gauge
- [2.6] Friction pads (qty. 2)
- [2.7] Mortising bit throat opening
- [2.8] Stop latch (qty. 2)
- [2.9] Outrigger mounting slot
- [2.10] Baseplate
- [2.11] Dust collection port

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## Setup

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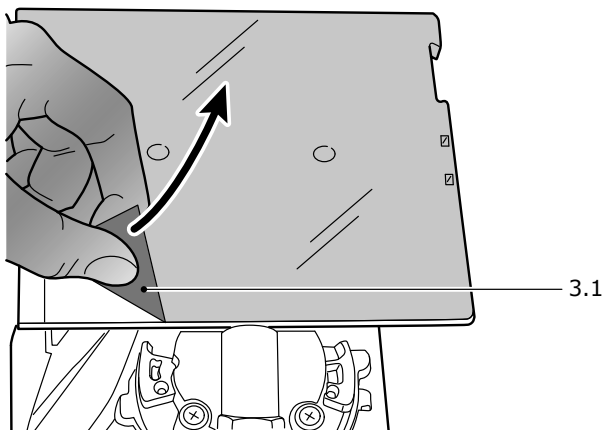
### Setting up a new Domino Joiner

**⚠ WARNING** Always disconnect the tool from the power supply before making any inspections or adjustments, or before installing or removing any accessory!

- With the joiner unplugged, inspect the mortising bit. Make sure it is not bent, chipped, or otherwise damaged, and make sure the bit is fully tightened on the spindle. (Refer to „Changing the Mortising Bit“).

**⚠ WARNING** Check regularly whether the mortising bit is in good condition. Mortising bits that are bent or damaged should no longer be used.

- Peel off the protective film [3.1] from the bottom of the joiner baseplate.

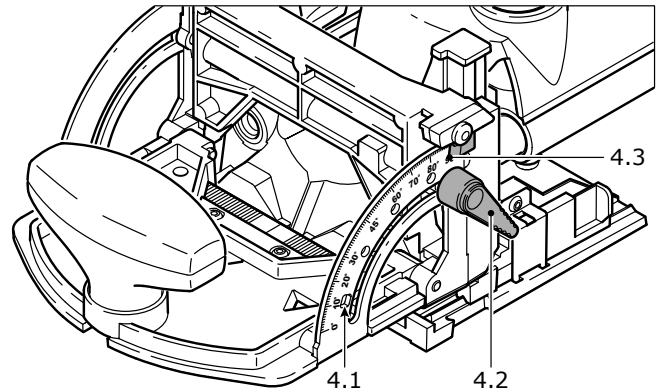


- Set up the joiner for the appropriate type of operation as described throughout the remainder of this section.
- Make sure that the fence height and angle locking levers are properly tightened.

- Install the power cord into the Plug-It receptacle on the joiner. (Refer to "Operation - Plug it power cord").

### Setting the Fence Angle

Some joints require the fence to be set to an angle from the mortising bit. The most common application is for making a mitered joint.



- Unplug the joiner for safety.
- Loosen the fence angle locking lever [4.2] by rotating it counterclockwise about ¼-turn.
- Rotate the fence face to the desired angle, and tighten the locking lever [4.2].

#### **i** Notes:

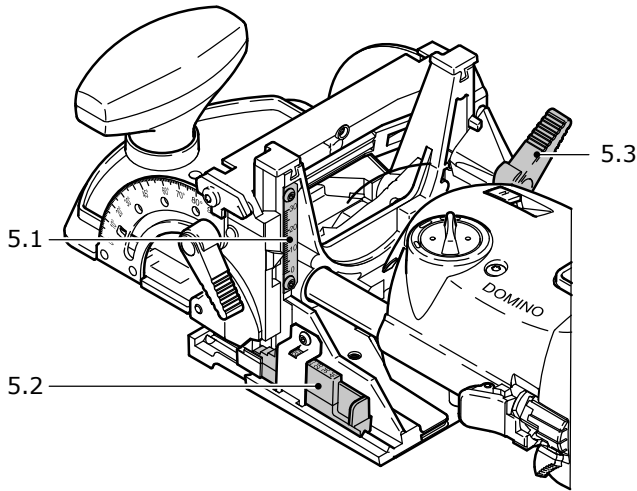
- ▶ The fence has detent stops [4.1] at 22½, 45, 67½, and 90 degrees.
- ▶ Use the gauge pointer [4.3] for setting the fence to angles other than the ones listed above.
- ▶ For greater stability, the locking lever clamps down on both right and left sides of the fence.

### Setting the Fence Height

The height of the fence needs to be adjusted depending on the type of joint being made and the thickness of the material being joined. Refer to the Applications section beginning on page 14 for more information about the optimal fence height for the specific application. There are two features available for setting the fence height; the height gauge and the board thickness gauge.

#### Height Gauge

The height gauge shows the distance between the bottom of the fence face and the centerline of the mortising bit. Use this gauge to set the mortise height relative to the surface of the workpiece.



- Loosen the fence height locking [5.3] lever by turning it ¼-turn counterclockwise.
- Make sure the board thickness gauge [5.2] is retracted out of the way (at its lowest setting).
- Raise or lower the fence until the pointer is pointing to the desired height on the gauge [5.1].
- Tighten the locking lever [5.3].

### Board Thickness Gauge

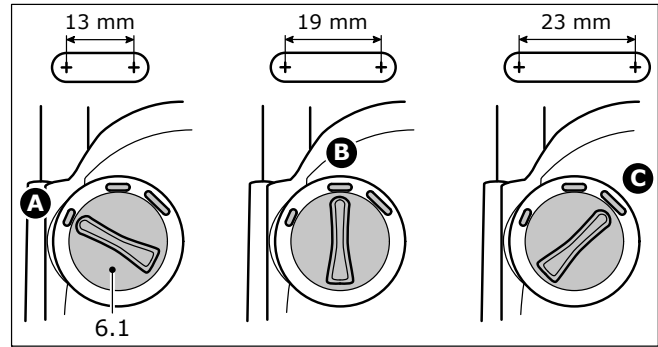
The numbers printed on the gauge [5.2] represent the thickness of the workpiece (in mm) and the mortise height will be centered in the workpiece. Use this gauge for setting the fence height based on the thickness of the workpiece without needing to calculate the center distance.

**⚠ CAUTION** Do not use the board thickness gauge for mitered joints, because this will place the mortise too close to the edge of the joint.

- Loosen the fence height locking lever [5.3] by turning it ¼-turn counterclockwise.
- Raise the fence above the board thickness gauge [5.3].
- Slide the gauge in or out until the thickness of the workpiece (in mm) is shown in the window.
- Lower the fence down until it touches the gauge.
- Tighten the locking lever [5.3].

### Setting the Mortise Width

The width of the mortise slot can be increased by the mortise width dial [6.1] to permit some side-to-side flexibility in the tenon position.



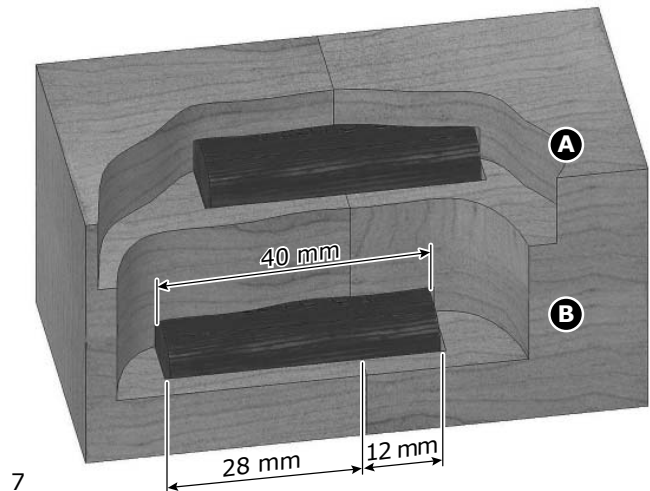
In the standard (smallest) position [A], the Domino tenon will fit snugly into the mortise slot. The width of the mortise slot is 13 mm + diameter of jounter bit. In the middle position [B], the mortise slot will be 6 mm wider than the Domino tenon. In the widest position [C] the mortise slot will be 10 mm wider than the Domino tenon.

**⚠ CAUTION** Failure to follow the notes below may result in damage to the tool.

- ▶ Never force the dial to turn.
- ▶ Rotate the adjustment dial only when the motor is running.
- ▶ Never rotate the dial during a plunging operation. This can bend or break the mortising bit, and can also damage the machine.

### Setting the Mortise Depth

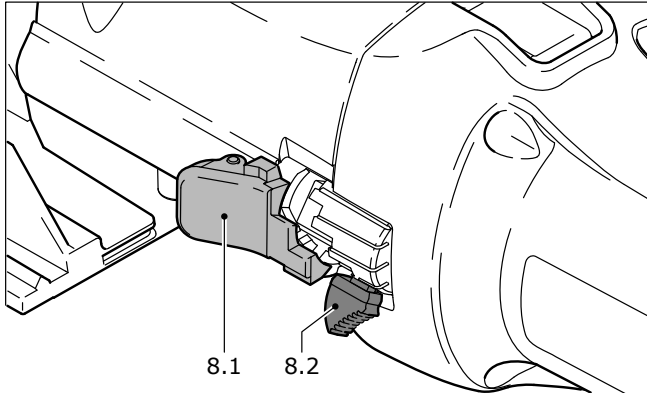
The mortising depth determines how deep into the workpiece the mortising bit penetrates. This needs to be adjusted for different sized tenons.



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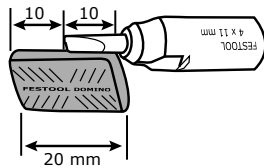
In most cases, the tenon should be centered across the joint, and the depth of the mortise should be ½ the length of the tenon. However, in some cases you may want to have more of the tenon in one piece than the other (lower Domino tenon pictured below). In this case, the sum of the two depths must equal the length of the tenon. (In the offset tenon example below, the Domino tenon is 40 mm long, the left

mortise is 28 mm deep, and the right mortise is 12 mm deep.)



- Press in on the depth adjust lock [8.1].
- Move the depth adjust lever [8.2] to the stepped position of the desired depth.
- Release the depth adjust lock [8.1].

For 4 x 20 mm DOMINO



A special cutter is available for the DOMINO dowel 4x20 mm (due to risk of breakage).

**Note** the following when using this cutter (D 4-NL 11 HW-DF 500): Set the routing depth to 20 mm using the stop lever (1.7). The actual routing depth is 10 mm. The dowel can only be positioned centrally (see Fig. above).

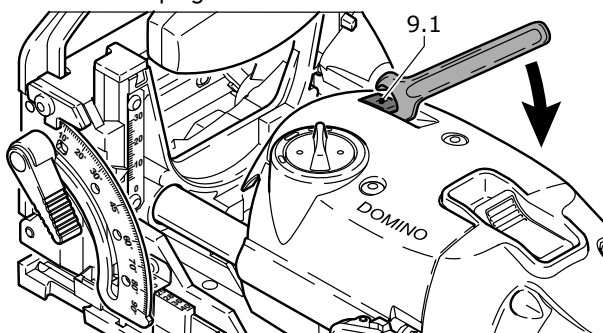
The actual routing depth is 10 mm. The dowel can only be positioned centrally (see Fig. above).

## Changing the Mortising Bit

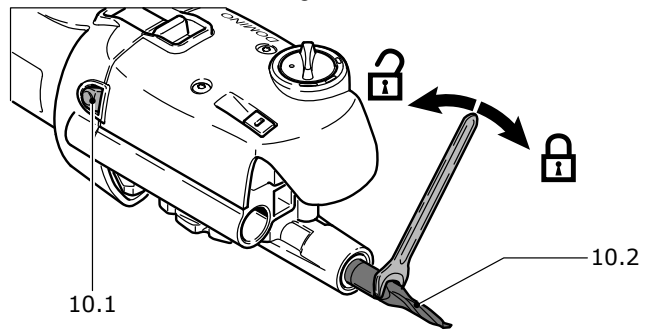
Different mortising bits are available for a variety of Domino tenon sizes. The DF500 comes equipped with a 5mm bit, and 6, 8, and 10 mm bits are available as an option.

**⚠ WARNING** Always unplug the tool before changing mortising bits, or removing the fence body from the motor housing.

- Using the provided 8 mm wrench, pry up on the fence body release lever [9.1], and slide the fence body off the motor housing (see fig. 2 on the fold-out page).



- Press and hold the spindle lock button [10.1]. This stops the spindle from turning while you loosen the mortising bit.



- Loosen the mortising bit [10.2] by turning it counterclockwise (standard right-hand thread).
- Insert a new mortising bit, and start the threads by hand to avoid cross-threading.
- Press in on the spindle lock [10.1] while tightening the bit. Do not over tighten the bit.
- Carefully reinstall the fence body onto the motor housing, and push the fence body in until the latch clicks.

### **i** Notes:

- ▶ Make sure there is no dust inside the guide tubes before inserting the fence body.
- ▶ Be careful not to damage the linear bearings (hollow tubes) when reinstalling the fence body. If it does not slide on easy, it means the fence is skewed with respect to the bearings.

## Operation

**⚠ WARNING** Please observe the following rules when working:

- ▶ The mains voltage must correspond to the specification on the rating plate.
- ▶ Always secure the workpiece in such a manner that it cannot move while being sawed.
- ▶ Always hold the Domino dowel jointer with both hands at the motor housing and at the additional handle. This reduces the risk of injury and is a prerequisite for precise work.
- ▶ Close the clamping lever for jointing height adjustment [2.3] and the clamping lever for the angle guide [1.5] so that accidental release during operation is impossible.
- ▶ Adapt the feed rate to the jointer bit diameter and material. Work with a constant feed rate.
- ▶ Only lay the Domino dowel jointer aside when the jointer bit has come to a complete standstill.

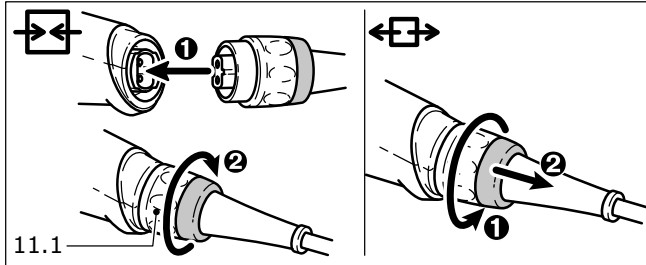


## Plug it Power Cord

The Domino joiner comes equipped with a removable plug it power cord.

To install the power cord, insert the cord into the inlet on the tool with the key and keyway aligned, and twist the locking ring [11.1].

Reverse the procedure to remove the cord.



### **i** Note:

- ▶ Turn the outer locking ring [11.1] ¼-turn to fully engage or disengage the cord.

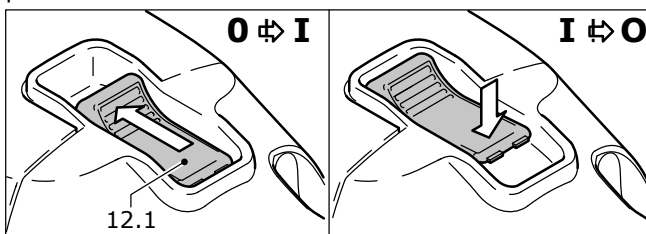
## Turning on the Joiner

**⚠ WARNING** Never turn the tool on when the Fence Body is removed, as this exposes the spinning cutter.

**⚠ WARNING** Before turning the tool on, make sure all adjustment handles are locked and the tool is safe to turn on.

To turn the joiner on, push forward and down on the power switch [12.1]. The power switch locks into the On position when activated.

To turn the joiner off, press down on the back of the power switch to release the latch.



## Extension Cable

If an extension cable is required, it must have a sufficient cross-section so as to prevent an excessive drop in voltage or overheating. An excessive drop in voltage reduces the output and can lead to failure of the motor. The table shows you the correct cable diameter as a function of the cable length for the DF 500 Q.

Total extension cord length (feet)	25	50	100	150
Cord size (AWG)	18	16	16	14

Use only U.L. and CSA listed extension cables. Never use two extension cables together. Instead, use one long one.

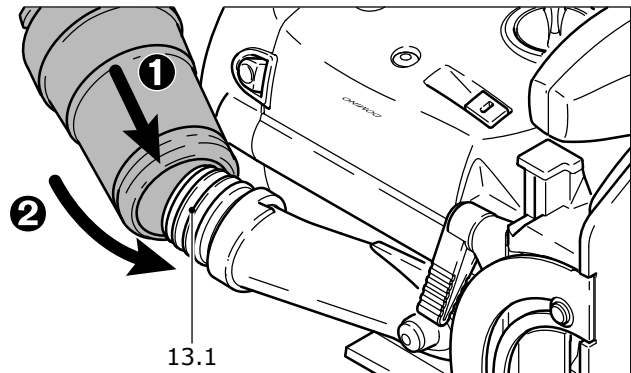
### **i** Note:

- ▶ The lower the AWG number, the stronger the cable.

## Dust Extraction

The Domino machine is intended to be used with a dust extraction system. Using the machine without dust extraction will cause it to clog with wood chips.

When installing a Festool dust extraction hose onto the dust port [13.1] of the machine, it is easiest to insert the hose at an angle and then push it on the rest of the way as shown to the right.



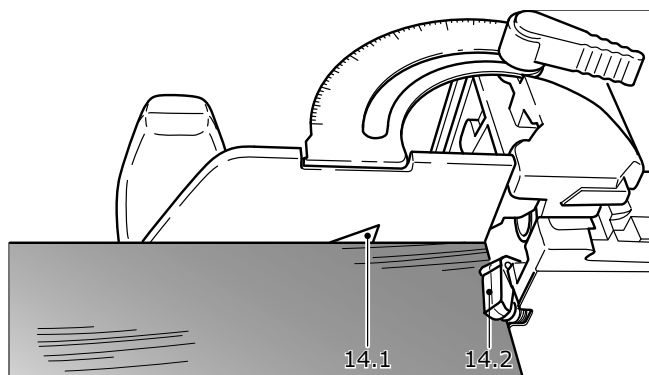
### **i** Note:

- ▶ If you have another vacuum system and the hose does not fit the dust extraction port, a Festool hose will fit many other brands of vacuums.

## Using the stop latches

The stop latches on the front of the fence are used to register the tool against the edge of the workpiece. This provides rapid and precise placement of the tool on the workpiece.

- When the stop latch [14.2] is against the edge of the workpiece, the edge will be visible in the point of the verification window [14.1] on the fence.
- The distance between the stop latch and the center of the mortise slot is 37mm (1-7/16 inch).

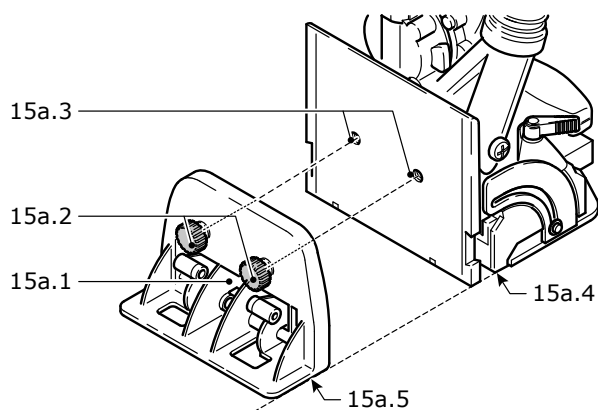


### Side stop with extension

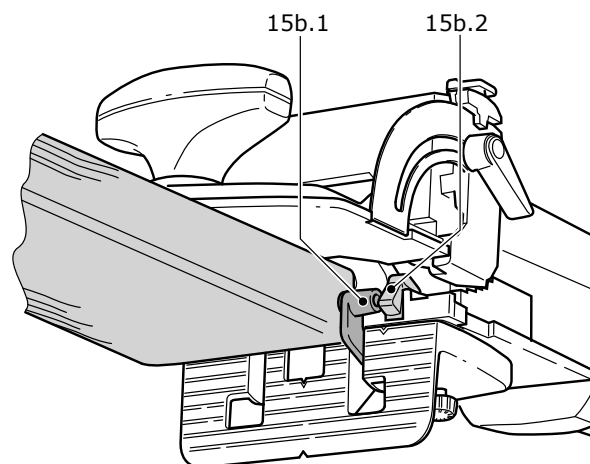
The side stop (15a.1) can be used to enlarge the contact surface when jointing on the workpiece edge, thus allowing safer guidance of the machine.

The distance to the centre of the routed hole can be reduced from 37 mm to 20 mm using the two integral stop spacers (15b.1), allowing you to position the dowel closer to the edge.

- Secure the side stop to the threaded bores (15a.3) on the guide frame using both screws (15a.2), whereby the contact areas of the support ring (15a.3) and the table (15a.4) must be level with one another.



- Swivel one of the distance spacers (15b.1) outwards to reduce the distance (see Fig. 15b). The spacer aligns automatically with the stop latch (15b.2).



## Working with the machine

### Overview, General Notes and Tips

Wood is a natural, non-homogenous material and because of this, its dimensions will most likely deviate slightly during processing, even if the machine is set accurately. Machine handling also influence the degree of working accuracy (e.g. fast-feed speed). Furthermore, the dimensions of wooden DOMINOs may vary (for example, due to humidity), regardless of how they are stored. All of these factors influence the dimensional accuracy of manufactured dowel holes and dowelling joints.

Numerous tests have been run to produce an average figure for these dimensional discrepancies. The dimensions of the machine and DOMINO dowels are based on these averages. If a lateral offset of approx. 0.03 mm - 0.04 mm occurs when two workpieces are joined together, you have the option of replacing the stop latches (2.8) fitted on delivery with correction stop latches. These latches are 0.15 mm narrower and reduce the lateral clearance of the dowel holes in relation the edge of the workpiece (see "Changing the Stop latches").

### Getting Started

Prior to processing the final workpiece, it is advisable to optimise the dowel-hole depth, width and diameter using a sample workpiece.

Because the Domino system is a form of the classic mortise and tenon joinery, it should follow much of the same guidelines of mortise and tenon joinery. Here are some guidelines to assist you in making your choices:

- When the strength of your workpieces is comparable to the strength of the Domino tenon (e.g. general hard woods) then the thickness of the

Domino tenon should be approximately 1/3 the thickness of the workpieces.

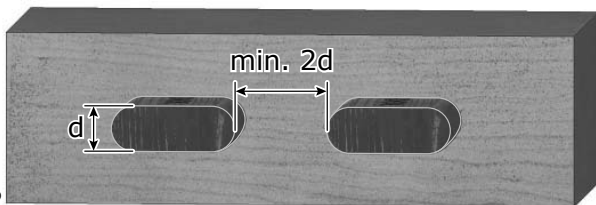
- It is acceptable to use a tenon that is slightly thicker than 1/3 when the width of the Domino tenon is relatively narrow compared to the width of the joint. This is why 8mm Domino tenons are the most common for joining 3/4-inch lumber.
- For softer woods, such as pine, the joint will be stronger when the tenon is 1/3 or slightly less.
- For plywoods, especially low-grade construction plywoods, the Domino tenon is much stronger than the surrounding wood, so it is best to maximize the strength of the substrate by minimizing the thickness of the tenon.

**Domino Tenon Placement Guidelines**

There are no steadfast rules on where tenons should be placed, especially when they are used for alignment purposes. For edge joining boards, a typical placement might be 6 to 8 inches apart.

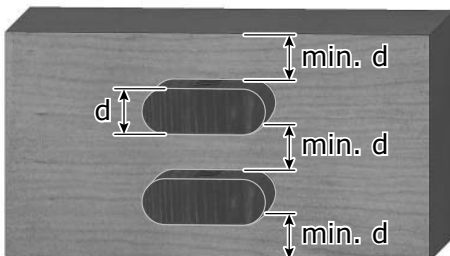
However, when tenons are used to strengthen a joint, you might be tempted to place the tenons too close together. This can actually weaken the joint by removing too much of the substrate material.

- A wide mortise weakens the substrate, so it is better to have several narrow mortises with uncut space in between, than it is to have a single wide mortise with several tenons side-by-side.
- When placing several tenons close together, leave at least twice the tenon thickness between mortise holes. As a general rule, this means the minimum tenon spacing should be about 10 mm to 20 mm, but they can be spaced much wider.



16

- When creating stacked mortises for extra thick lumber, an extension of the "1/3 rule" mentioned above still applies. Specifically, the distance between mortises, and the distance between a mortise and the wood surface should all be equal to (or larger than) the thickness of the tenon.

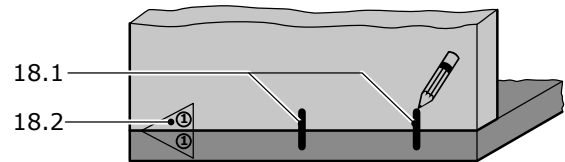


17

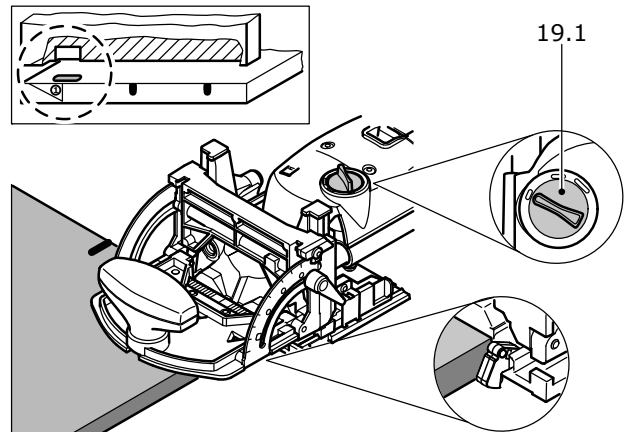
**Joining - Procedure**

Proceed as follows to create a dowelled joint:

- Select a Domino dowel and insert a matching jointing bit in the Domino dowel jointer.
- Set the jointing depth. The jointing depth must be at least 3 mm smaller than the workpiece thickness so that the dowelled joint is supportable.
- Set the jointing height to correspond to the workpiece thickness.

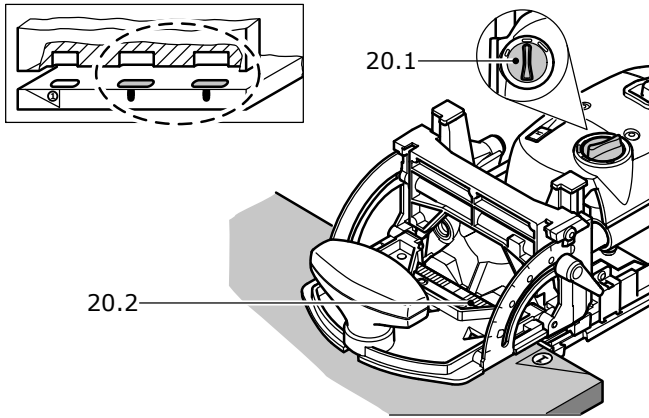


- Mark the areas on the workpiece that belong together [18.1] so that you will be able to join them correctly again once you have cut the dowel holes.
- Position the two workpieces to be joined against one another and mark the desired positions of the dowels with a pencil [18.2].



- Set the desired dowel-hole width [19.1].

Our recommendation: Cut the first hole without play (dowel-hole width = Domino dowel width), and the remaining dowel holes to the next largest dowel-hole width. The first dowel hole therefore serves as a reference dimension, whereas the remaining dowel holes have tolerance for manufacturing inaccuracies.



- Cut the first dowel hole by placing the stop pin at the side edge of the workpiece.
- Set the mortise width dial [20.1] to the next largest dowel-hole width.
- Cut the following dowel holes according to the pencil markings made beforehand and the scale of the viewing window [20.2].

## Maintenance

**⚠ WARNING** To prevent injury or electrocution, always unplug the tool from the power supply outlet before performing any maintenance or repair work on the tool!

**⚠ WARNING** Any maintenance or repair work that requires opening of the motor or gear housing should be carried out only by an authorized Customer Service Center (see your dealer for information on locating a service center). Maintenance or repair work carried out by an unauthorized person can lead to improper connection of electrical wires, misadjustment, or damage to components, which can result in injury.

**⚠ CAUTION** Do not use compressed air to clean the motor housing of the tool, as you could inject foreign objects into the motor through the ventilation openings. Low-pressure (30 psi) compressed air may be used on other components, but personal safety protection should be employed (hearing, vision, and respiratory).

**⚠ CAUTION** Certain cleaning agents and solvents are harmful to plastic parts. Some of these include, but are not limited to: Gasoline, Acetone, Methyl Ethyl Ketone (MEK), Carbonyl Chloride, cleaning solutions containing Chlorine, Ammonia, and household cleaners containing Ammonia.

The tool is fitted with special motor brushes with an automatic cut-out. When the brushes become worn the power supply is shut off automatically and the tool comes to a standstill.

## Routine Maintenance

The Domino tenon joiner does not require much routine maintenance except for cleaning. For best performance and long life of the Domino tenon joiner, keep the machine clean.

- To ensure proper cooling of the tool and motor, the cooling vents in the motor housing must always be kept clear and clean. Keep the motor cooling inlets at the back of the handle clean and free from sawdust.
- Keep the linear rails clean and free from sawdust.
- Always use the Domino joiner with a dust collection system.
- Periodically inspect the mortising bit(s) for damage, wear, or dullness. Re-sharpen or replace the bits as necessary.
- Never attempt to sharpen the mortising bits yourself. The mortising bits should be sharpened only by a qualified sharpening service.
- For best results, only the tip of the bit should be ground, not the sides.
- The maximum tip material removal from sharpening before the bit must be replaced is approximately 1mm. Any more than this and the bit will be too short for proper fit of the tenons.

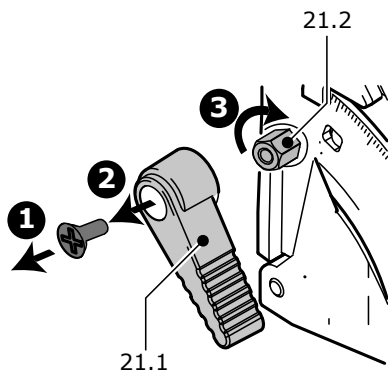
## Cleaning and Maintenance

- Blow off the exterior of the machine with low-pressure compressed air to remove sawdust, but do not blow air directly into the air cooling vents on the back of the motor as this can drive debris into the motor.
- Blow out impacted sawdust from the mortising bit area.
- Do not remove the fence body from the motor housing when the joiner is coated with sawdust.
- With the exterior of the joiner free from sawdust, remove the fence body from the motor housing and clean the linear slides:
  - With a soft cotton cloth, wipe down the linear rails.
  - With compressed air, blow out any dust from inside the linear bores.
  - With a soft cotton cloth, wipe down the interior of the bronze linear bearings.
- With a clean cotton cloth (not the same cloth used previously), apply a coating of light-weight machine oil to the linear rails.

- Use a lightweight machine oil such as “sewing machine” oil or pneumatic tool oil.
  - Do not use a penetrating oil as these may contain solvents and detergents that can remove the impregnated lubricant from the bronze bearings.
  - Do not use a rust inhibiting fluid/oil as these have limited lubrication properties, and can also remove the impregnated lubricant from the bronze bearings.
- With the plunge depth set to maximum, plunge the joiner in and out several times to spread the lubricant into the internal bronze bearings.
  - Remove the fence body from the motor housing and wipe off the excess oil from the linear rails.
  - Replace the fence body onto the motor housing.
  - Never store the joiner with the fence body separated from the motor housing, as this can permit dust and debris to enter the linear slide.

### Fixing the clamp lever

- Remove the clamp lever [21.1] as shown in [Fig. 21] step 1 and 2.
- Clamp the hexagon bolt [21.2] more firmly, as described in step 3.
- Place the clamp lever onto the hexagon bolt and secure with the cross head screw.

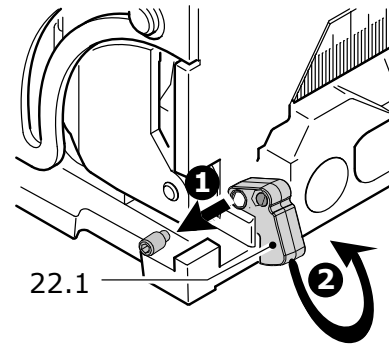


### Changing the stop latches

It is important that the two stop latches are perfectly spaced from the center of the mortise hole for properly aligned mortises.

If the position of the Domino tenons, which were created with the left and the right stop latch, does not exactly match (different distance to workpiece edge) a change of the stop latches is necessary:

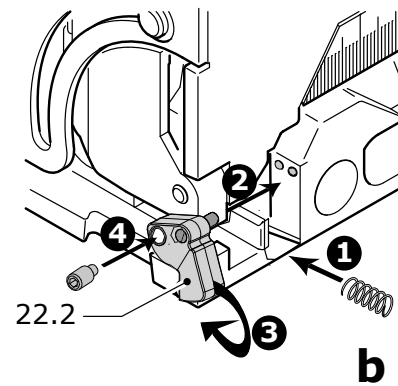
Special stop latches for making accurate adjustments are included in the scope of delivery.



a

**Remove one of the stop latches mounted on both sides of the dowel jointer [Fig. 22a]:**

- Step 1: loosen the hexagon socket screw.
- Step 2: lift up the stop latch, pull to the side and remove.



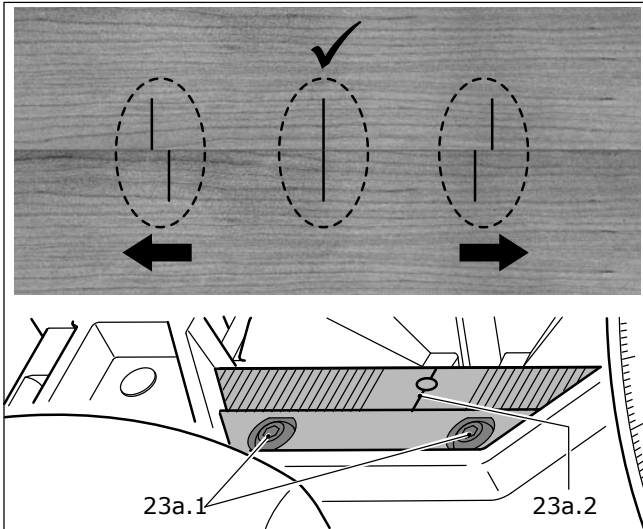
b

**Fit the stop latch on one sides of the dowel jointer [Fig. 22b]:**

- Step 1: insert the spring.
- Step 2: position the stop latch on the dowel jointer.
- Step 3: lower the stop latch until the small hemisphere engages in the spring.
- Step 4: insert the hexagon socket screw to secure the stop latch.

### Calibrating the Horizontal Position Gauge

The horizontal position gauge (also called the sight gauge) is used for aligning Domino tenons to a pencil mark on the workpiece. If the gauge is not perfectly centered over the mortising slot, the two workpieces will not be aligned when the joint is assembled.



- Take two pieces of scrap wood, and draw a thin line on each piece where a tenon is to be placed.
- Set the mortise slot width to the narrow setting (see "Setting the mortise width").
- With the middle line [23a.2] of the sight gauge lined up on the pencil line, plunge a mortise slot into each piece of wood.
- Join the two pieces of wood together without glue, and examine the alignment of the original pencil lines.
- If the pencil lines are not aligned, loosen the two screws [23a.1] on the sight gauge and slide the gauge sideways as noted in the upper image.



## Accessories, Tools

**⚠ WARNING** For your own safety, use only original Festool accessories and spare parts.



The accessory and tool order number can be found in the Festool catalogue or on the Internet under [www.festoolusa.com](http://www.festoolusa.com).

## Systainer

Many Festool products are shipped in a unique system container, called "Systainer". This provides protection and storage for the tool and accessories. The Systainers are stackable and can be interlocked together. They also can be interlocked atop Festool CT dust extractors.

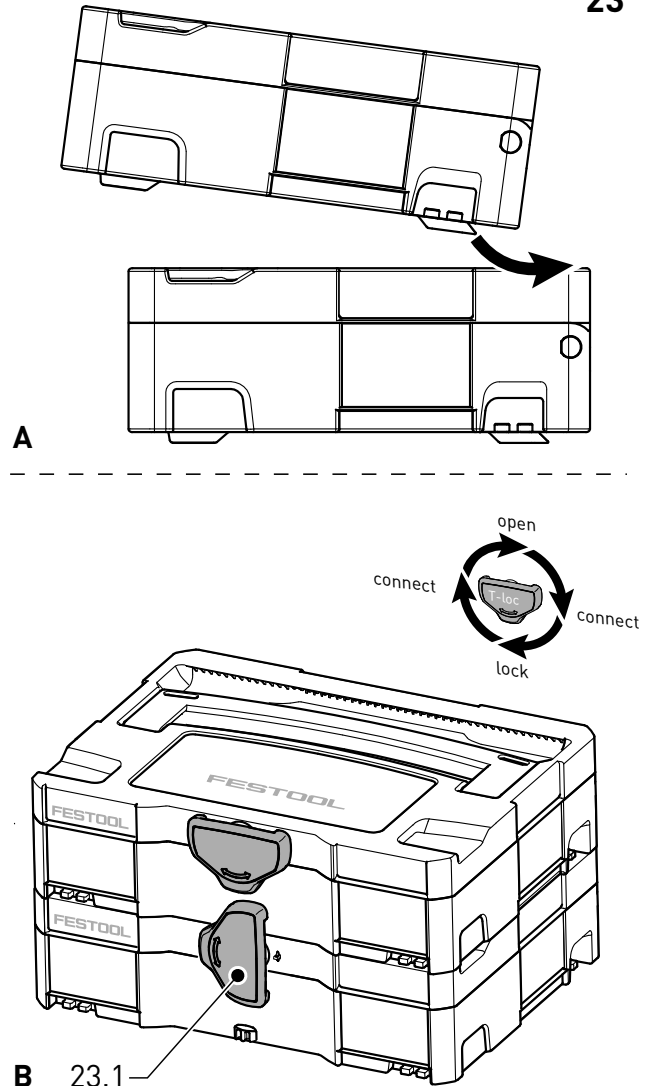
- To open the Systainer:
  - Turn the T-loc [23.1] to the position .
- To lock the Systainer:
  - Turn the T-loc [23.1] to the position .

To connect two Systainers:

- Place one Systainer on the top of the other (Fig. 23 A).
- Turn the T-loc [23.1] to the position  or  (Fig. 23 B).

The Systainers are connected and locked.

23

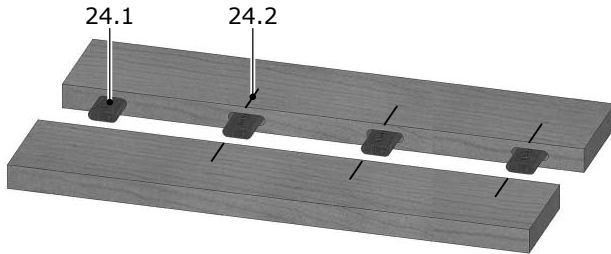


- ▶ A new generation Systainer is connectable on top of a previous generation Systainer by the four latches of the previous Systainer.

## Applications

### Edge Joining Boards

Edge joining boards is a common method for creating wide boards from a series of narrower boards. The Domino tenons add strength to the joint and also assist in aligning the boards to be flush.



For edge joining boards, a series of tenons are placed down the length of the joint. The first tenon [24.1] is used to register the two boards horizontally, so it is milled at standard width. The remaining tenons align the boards flush and may be milled with an oversize width.



#### Tips for Successful Joining

- ▶ Use the locating pins [2.8] for the first mortise slot with the mortise width dial set to the narrow setting.
- ▶ For subsequent mortise slots you can keep the mortise width at the minimum setting, but you may find it easier to set the mortise width dial to the next widest setting.
- ▶ Place the mortise slots 6 to 12 inches apart for standard joints, but this spacing should be decreased for joining plywoods or when a stronger joint is needed.
- ▶ Instead of marking the mortise placements with pencil lines [24.2], you can use the optional out-rigger guides to evenly space the mortises down the length of the boards. To do this, use the out-rigger locating pin in the previous mortise slot.

### Making Butt Box Joints

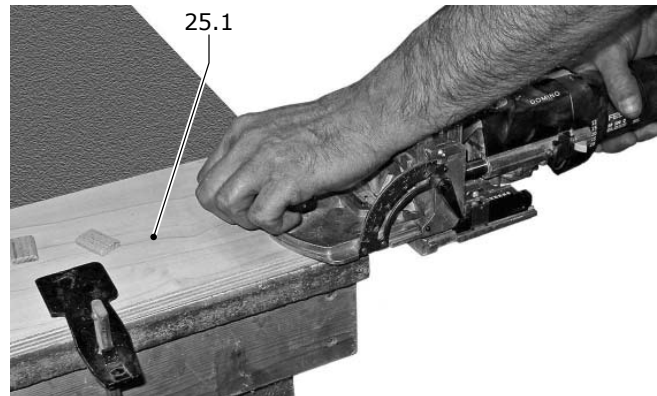
Butt box joints are typically used in general box construction or for drawer construction. The Domino tenons strengthen the joint without the need for additional fasteners. The example below highlights drawer construction, but the same techniques are used on other types of box construction.



#### Construction Tips

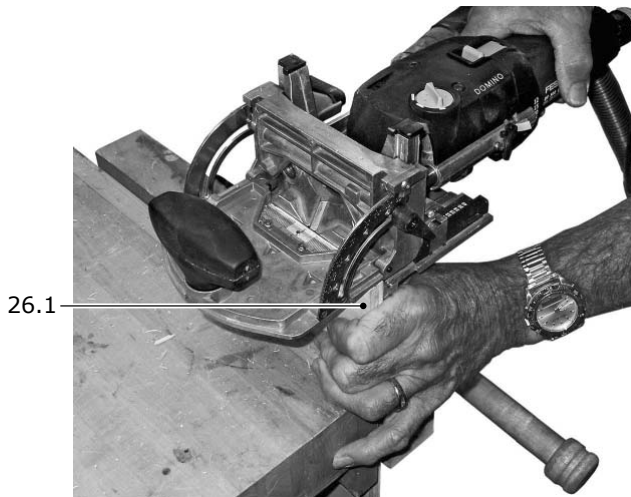
- ▶ For drawer construction with a separate drawer front, the front and rear of the box should be Captive, as shown below.
  - ▶ The drawer front is installed onto the drawer box after the box has been assembled.
  - ▶ This increases the strength of the drawer because the tenons are in shear (perpendicular) to the operation of opening and closing the drawer.
  - ▶ The ends of the side boards are concealed by the separate drawer front.
- ▶ For drawer construction without a separate drawer front, the Sides should be Captive and the Front/Rear should be the Caps (the reverse of the image below).
- ▶ For cabinet carcass construction, the Top/Bottom of the carcass should be Captive (also see "Making Carcase Butt Joints").

#### Machining the Captive-Side Tenons



- Choose a Domino tenon size to be less than or equal to 1/3 of the board's thickness.
- Set the height of the fence so the Domino tenons are in the center of the board's thickness.
- Set the mortise depth.
- ▶ Note that if your workpieces are thin, you may need to offset the tenon from center.
- Clamp the Captive boards [25.1] flat to your workbench.
- Align the tenon position using the locating pins [2.8].
- Grasp the Domino joiner by the auxiliary handle, hold it firmly down to the workpiece, and slowly plunge the cutter into the edge of the workpiece.

## Machining the Cap-Side Tenons



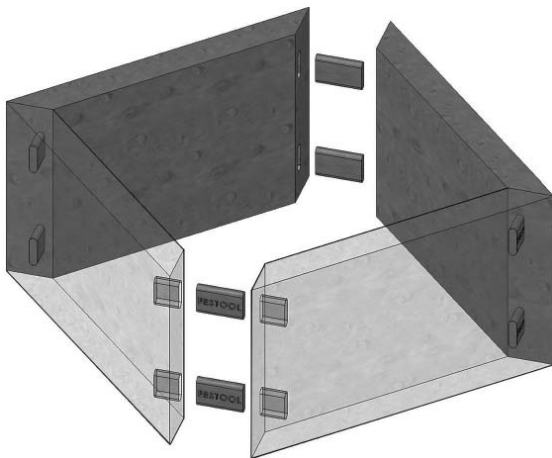
- Don't change the fence height from the previous operation. It is used to register the mortise placement from the edge of the board.
- Install the Base Support Bracket.
- If necessary, change the mortise depth setting.
- Clamp the workpiece [26.1] in a vertical position.
- Slowly plunge the cutter into the workpiece.

**⚠ WARNING** Keep hands clear of the cutter.

## Making Miter Box Joints

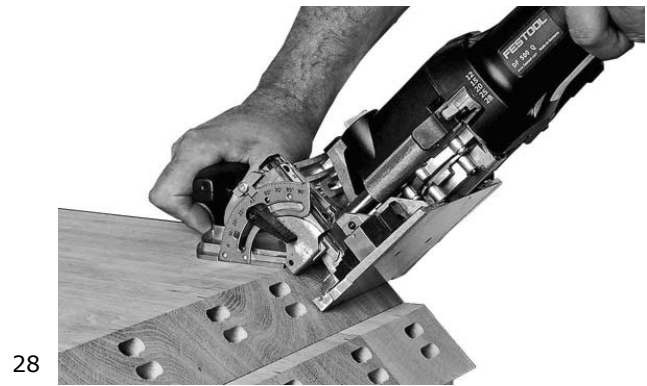
Generally miter box joints are fairly weak because the joint is predominately endgrain to endgrain. Tenons significantly increase the strength of the joint and make it easier to assemble and clamp the pieces.

### **i** Construction Tips



- ▶ For thinner materials, keep the mortise close to the inside corner. This minimizes the chances for boring all the way through the workpiece.
- ▶ For thicker materials, stacked mortises can be used as shown in the picture 28.

## Setup and Machining



- Tilt the fence to the appropriate angle.
- Lower the fence to the desired height. Note that the mortise should be close to the inside corner to avoid penetrating through the workpiece.

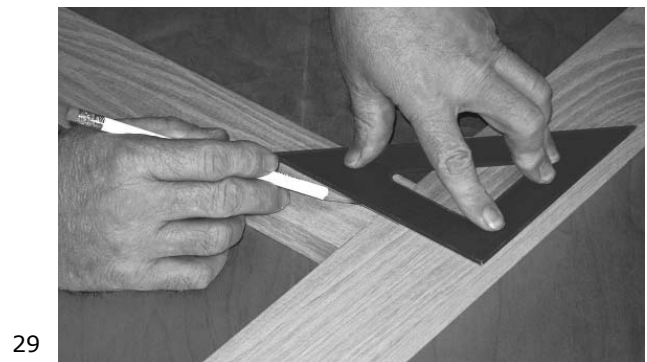
### **i** Tip:

- ▶ Before milling the mortise, double check your depth settings to ensure you don't cut all the way through.
- Grasp the joiner by the auxiliary handle for best control. Plunge the joiner.

## Making Frame Joints

Domino tenons can be used to quickly fabricate reinforced frames of all types.

### Butt Joint Frames

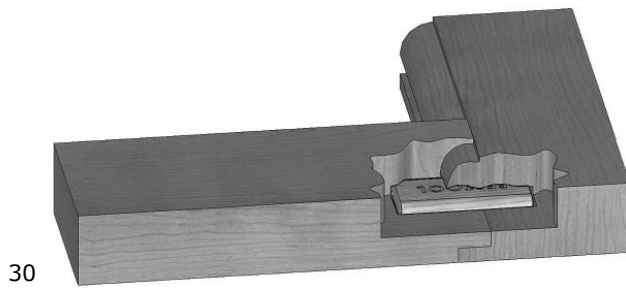


When making butt joint frames, such as cabinet faceframes, use pencil lines to lay out the position of the tenons. Use the sight glass on the joiner's fence [2.5] to position the joiner over the pencil line.

For narrow frame stock, an optional narrow frame fence is an accessory available.



## Cope and Stick (Stile and Rail) Frames

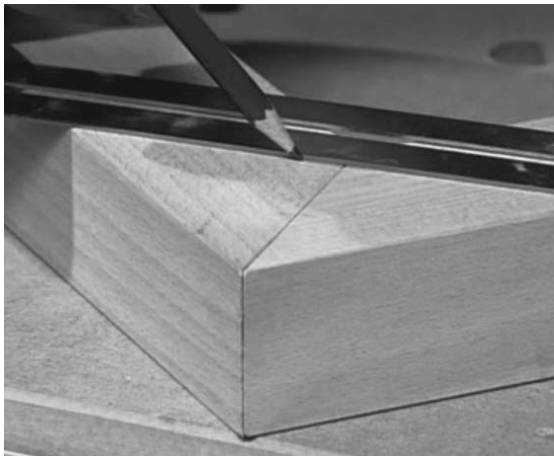


Domino tenons can also be used to strengthen cope and stick frame construction too. This is typically found in raised panel door frames.

It is important to note that the two frame pieces overlap, so the depth of the mortise needs to be extended. The amount that each mortise needs to be extended is one-half the amount of overlap.

Example: A typical stile and rail router bit set has a profile width (overlap) of 3/8-inch (about 10mm). For a 40mm long tenon, instead of plunging 20mm deep, you should increase this to 25mm for both workpieces.

## Mitered Frames

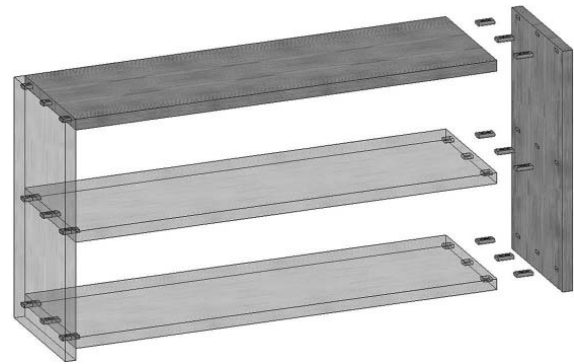


When making mitered frames, position the tenon closer to the inside corner. This reduces the likelihood of cutting the mortise all the way through the workpiece.

Make sure to securely clamp the workpiece to the bench when mortising a mitered joint.

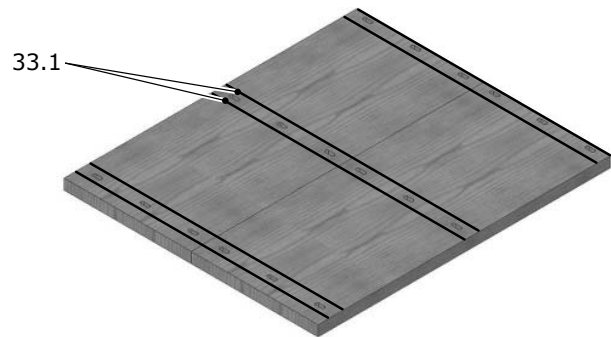
## Making Carcase Butt Joints

Using tenoned butt joints is an effective method for constructing a cabinet carcass. The tenons provide a strong support for each of the horizontal partitions of the cabinet.

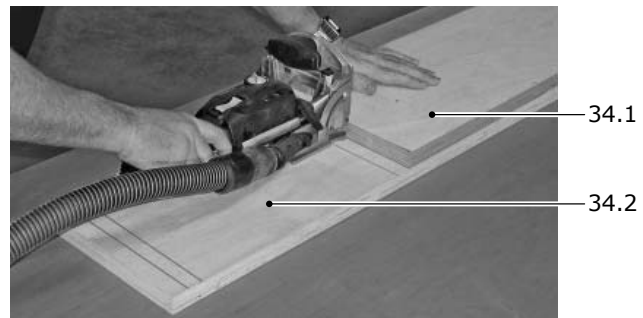


The simplicity of this method is that you use the carcass components for aligning the joiner.

## Setup and Machining



- Lay the vertical wall pieces on your workbench, and draw lines [33.1] across both pieces to indicate where the shelves will be located. Note that it is easier to avoid mistakes later on by drawing double lines, with one line above the shelf and one line below the shelf.
- For reference, label the top and bottom face of each shelf. This is so your left- and right-hand mortises are referenced from the same face of each shelf.



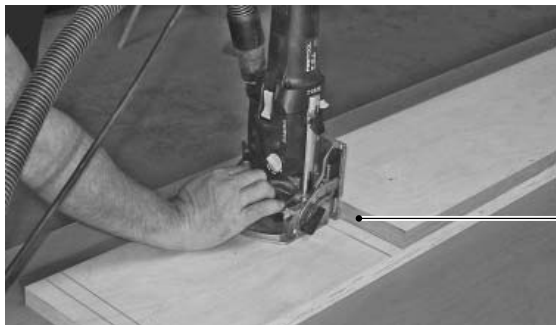
- Working with one shelf at a time, lay the horizontal shelf [34.1] on top of the vertical wall [34.2] so its edge lines up with the outside pencil line for that shelf location.

## **i** Tip:

Stand the shelf vertical on the side wall piece and in the position it will eventually be secured (between the double pencil lines), and carefully tip the shelf flat, into the position shown in the picture 34. For

greater shelf-strength, keep the tenons closer to the bottom-side of the shelf:

- ▶ If the shelf is thick (greater than 20mm), tip it down with the top-side facing up.
- ▶ If the shelf is thin (less than 20mm), tip it down with the bottom-side facing up.
- Clamp the two pieces together to prevent them from moving.
- With the Domino baseplate resting on the face of the wall-piece, plunge the joiner into the edge of the shelf. Do not use the fence for height positioning.



- With the joiner standing upright and its baseplate against the edge of the shelf [35.1], plunge downward into the side wall of the cabinet.
- Repeat these steps for each of the shelves.
- When you repeat this process for the other side wall, make sure you keep the same side of the shelf facing up.

## Tips for Applying Glue

There are many different ways to apply glue to joints, however, how you apply glue can have an impact on the quality of the joint or the ease of assembly.

- ▶ For a longer glue open-time on complex assemblies, apply the glue generously to the workpieces. The thicker the glue, the longer time it will take to skin over. Excess glue can be cleaned off after completion.
- ▶ Apply glue to the workpiece face and the mortise slots before inserting the tenons into the slots.
- ▶ When applying glue for the tenons, you can either apply glue into the mortise slots, or spread a thin layer across the Domino tenons. For applications where the tenon is the primary structure holding the joint together, you should apply the glue to the tenon. The Domino tenons have small glue pockets [36.1] and ridges [36.2] that will hold glue as the tenon slides into the mortise slot.



## Troubleshooting

Symptom	Possible causes and corrections
Motor does not start	<ul style="list-style-type: none"> <li>▶ Check that the cord is properly plugged into an outlet.</li> <li>▶ Make sure the Plug-it connector is properly inserted and fully tightened.</li> <li>▶ Make sure the outlet has power. Check the circuit breaker or try another outlet.</li> <li>▶ If used with a Festool dust extractor, make sure the selector switch is pointing to „Auto“. The auxiliary outlet on the dust extractor has power only when the selector is at Auto.</li> <li>▶ Inspect the power cord (including extension cords) for damage or missing prongs.</li> <li>▶ The motor brushes may have worn and need replacement.</li> </ul>
Plunging action is not smooth	<ul style="list-style-type: none"> <li>▶ Clean the linear rails and bronze bearings of the plunge slide, and make sure they are properly lubricated.</li> <li>▶ Inspect the bronze linear bearings for damage. Improper insertion of the fence body onto the motor housing can damage the linear bearings.</li> </ul>

Symptom	Possible causes and corrections
Domino tenons are too loose	<ul style="list-style-type: none"> <li>▶ Make sure you hold the Domino joiner firmly in position while plunging the mortise slot.</li> <li>▶ Make sure the mortise width setting is correct.</li> <li>▶ Make sure you are using the correct mortising bit for the size of the Domino tenon.</li> <li>▶ The Domino tenons may have shrunk in an overly dry or warm environment. This is normal wood movement.</li> <li>▶ Check the mortising bit to ensure it is not bent. A bent bit will make a thicker and wider mortise slot than desired.</li> </ul>
Domino tenons are too tight	<ul style="list-style-type: none"> <li>▶ The most common cause for this is that the tenons are stored in a humid environment, and they have swelled from moisture absorption. Store the tenons in a cool dry environment.</li> <li>▶ The mortising bit may have been improperly sharpened or sharpened too many times. Replace the bit.</li> </ul>
Workpiece joints are misaligned horizontally	<ul style="list-style-type: none"> <li>▶ Make sure the workpiece is securely clamped before plunging.</li> <li>▶ Check the Stop latches.</li> <li>▶ Check the calibration of the Horizontal Position Gauge (sight gauge).</li> <li>▶ Don't plunge the mortising bit into the work too fast. This may cause the joiner to move during the plunge.</li> <li>▶ Make sure the friction pads on the front of the joiner are not worn, damaged, or missing.</li> </ul>
Workpiece joints are misaligned vertically	<ul style="list-style-type: none"> <li>▶ Take care not to tilt the joiner while plunging.</li> <li>▶ If the mortise slots were registered from the bottom of the baseplate, make sure there is no dust or debris under the joiner.</li> <li>▶ Make sure the fence is properly locked at the desired height setting.</li> <li>▶ Inspect the height adjustment lock to ensure it is not broken (slipping).</li> </ul>
Tilted or misaligned mortise slots	<ul style="list-style-type: none"> <li>▶ Make sure the fence is set to the correct angle (e.g. 90 degrees).</li> <li>▶ Make sure to hold the Domino joiner firmly to the work surface.</li> </ul>
Workpiece joint won't close (gaps between pieces)	<ul style="list-style-type: none"> <li>▶ Make sure the proper plunge depth is set.</li> <li>▶ Make sure the joiner is tight to the face of the workpiece.</li> <li>▶ The mortising bit may have been sharpened too many times and is too short.</li> <li>▶ Excessive dust may be present inside the linear slide.</li> <li>▶ Excessive glue may be present at the bottom of the mortise.</li> </ul>
Tearout or rough mortise slots	<ul style="list-style-type: none"> <li>▶ Plunging speed too fast. Slow down the rate of your plunge.</li> <li>▶ Low-grade materials and plywoods will tear out more than solid woods. Decreasing your plunging speed will improve the results but may not eliminate the problem completely.</li> <li>▶ Dull mortising bit.</li> </ul>
Tapered mortise slot. The Domino tenon fits only part way into the slot	<ul style="list-style-type: none"> <li>▶ The plunge speed is too fast and the bit is not cutting the sides properly. Slow down the plunge speed.</li> </ul>