



OPERATING MANUAL
for
MORSO manual notching machine
Model NM

Hoffmann Machine Company, Inc.

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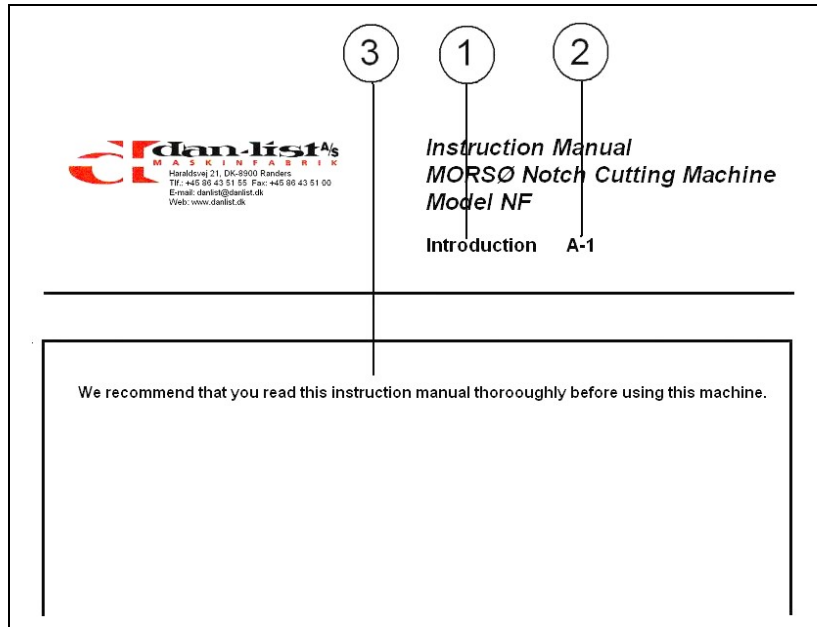
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Toll-free Technical Support: (866) 248 - 0100

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Authorized U.S. Importer and Service Center:

Hoffmann Machine Company, Inc.
1386 Drexel Road
Valdese, N.C. 28690
Toll-free: 1 - 866 – 248 – 0100
www.Hoffmann-USA.com



We recommend that you read this instruction manual thoroughly before using this machine.

Damage or faults on the machine caused by misuse or incorrect operation are not covered under our conditions of warranty.

Use of the Instruction Manual:

The reference system of this Instruction Manual described below will help you to quickly find the information you require (Picture A-1)

(1) Subject Heading

(2) Page Index

The letter (A) refers to the description of the section.
 The number (1) refers to the page number of that section.

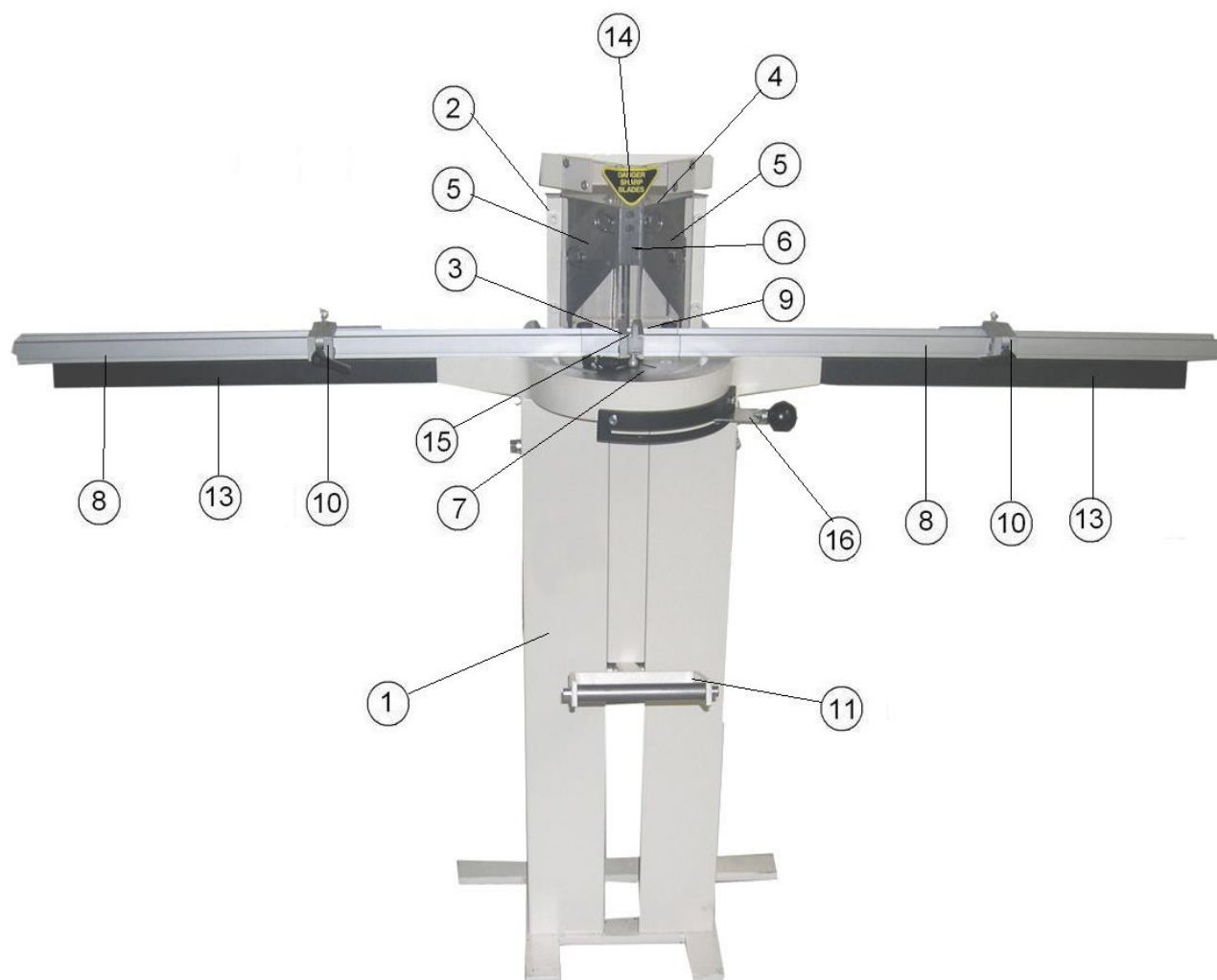
(3) Text

Description of the subject heading.

Illustration

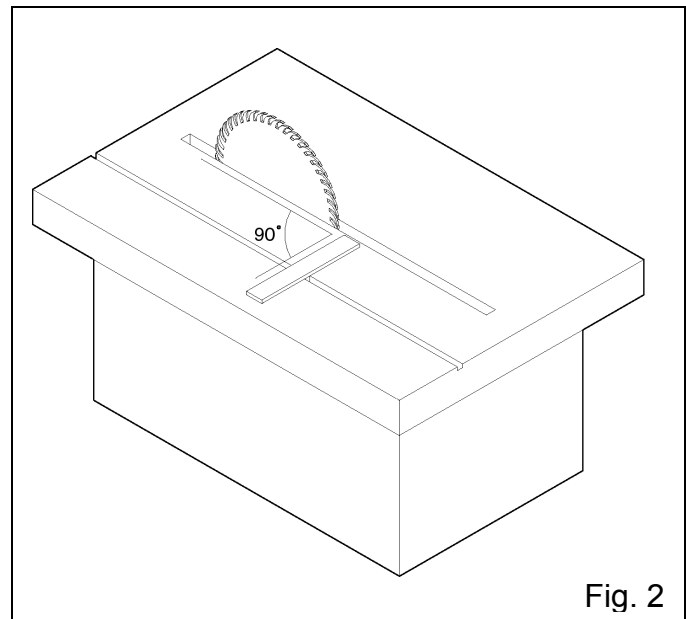
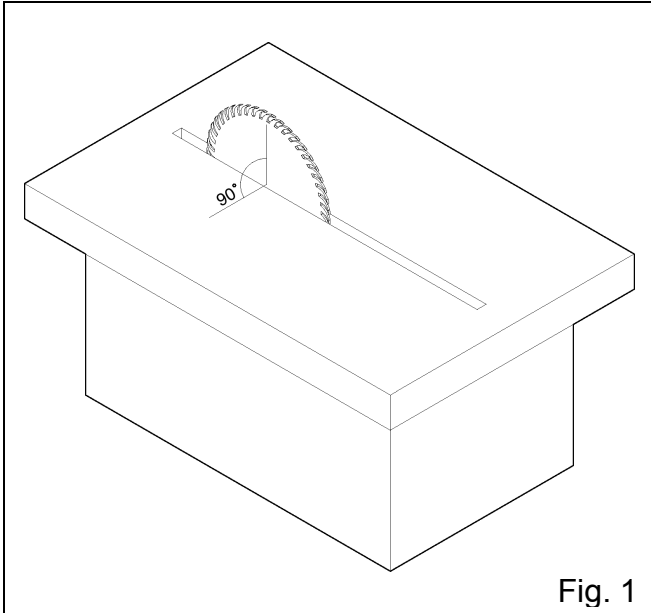
A three dimensional, numbered drawing of the text subject. The numbers in the text korrespond to the number in the drawing.

Survey



Pos.	Designation	Pos.	Designation
1	Frame	10	Sliding Stop
2	Slide frame	11	Foot Pedal, complete
3	Cross	12	Springs (not shown)
4	Knife block	13	Table Extensions
5	Side Knives	14	Safety Guard
6	Nose Knives	15	Centre Stop
7	Machine Table	16	Handle
8	Fence	17	Chip Breaker (not shown)
9	Cock-Bead stop		

Cutting of work piece on a circular saw before notching

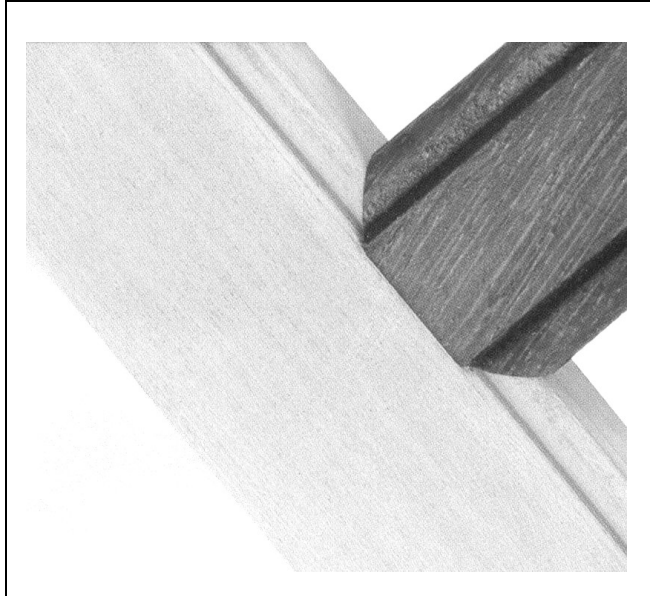


Before the notching of the work piece it must be cut to the correct length on a circular saw.

It is very important that the saw blade is exactly adjusted to 90° to the machine table (see fig. 1). The blade must also be exactly adjusted to 90° to the fence (see fig. 2).

Discrepancies arising from these cuts will result in gaps in the finished joints.

General Description



MORSØ NM notch cutter is the optimum machine to cut window bars, mullions, and cabinet face-frames requiring haunch joints.

MORSØ NM is a manual foot-operated machine. The operation is easy.

MORSØ-NM notch cutting machine is provided with 2 sliding longitudinal stops, fixed fences on both the right and left side of the machine, nose knife, side knives, chip-breaker, cock-bead stops, centre stop, and safety guard.

With the **MORSØ NM** you achieve a smooth, clean, and exact cut by notching the work piece in two cuts.

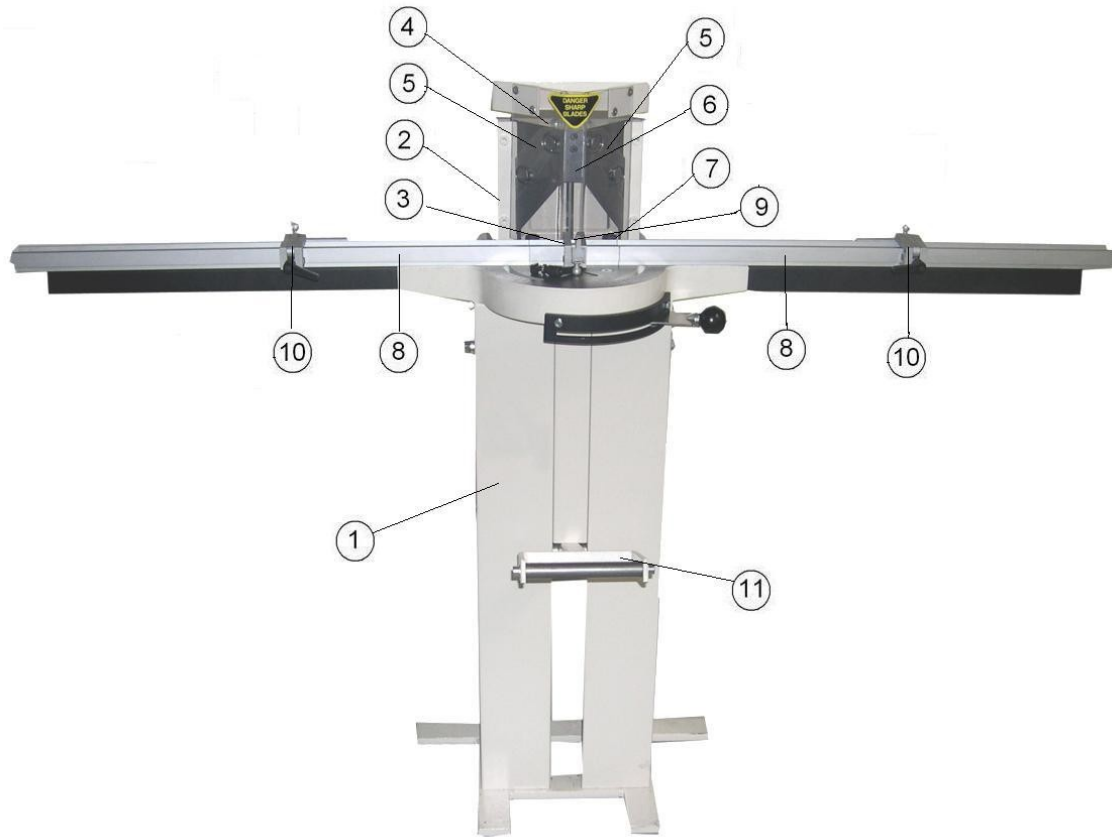
This is done manually on the **MORSØ-NM**.

The forward movement of the knife block is infinitely adjustable.

A special lever system makes the operation of the machine very easy. Twin return springs bring the knife block back to its home position.

The work pieces can be joined without any further finishing.

Machine Description



The **MORSØ-NM** is constructed as a compact machine with a sturdy frame (1) with foot pedal (11).

The cutting assembly is situated at the top of the machine.

In the slide frame (2) fitted at the cross (3) the knife block (4) is moved up and down. The cross (3) runs in the guidings of the table.

The knives (5) and nose knife (6) fitted on the knife block cut not only the notch but also cope the corners to complete the joint.

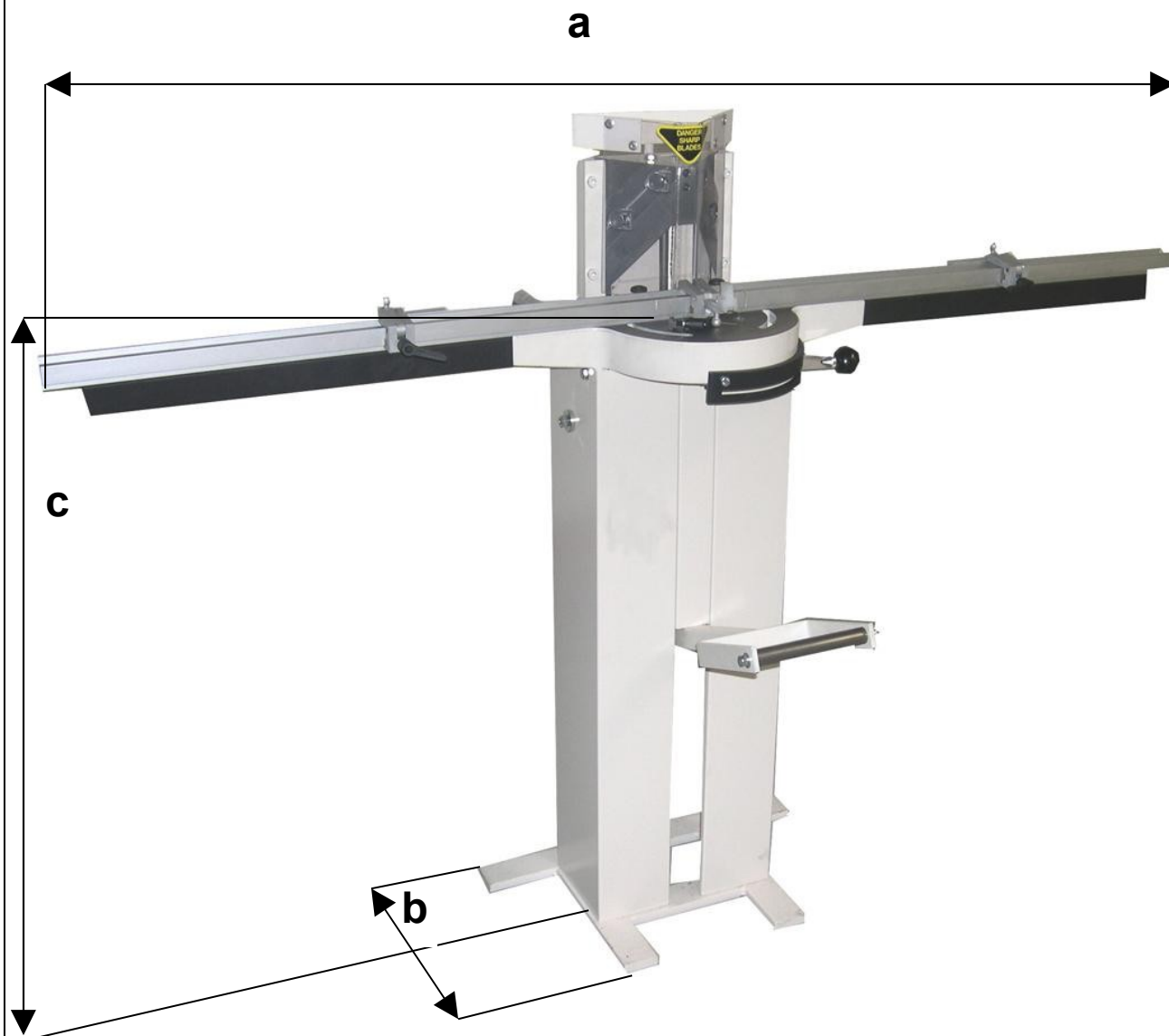
The forward movement of the knife block is made manually.

The mullion is placed on the table (7) against the fences (8).

The cock-bead stops (9) are adjusted to the required cutting depth of the notch.

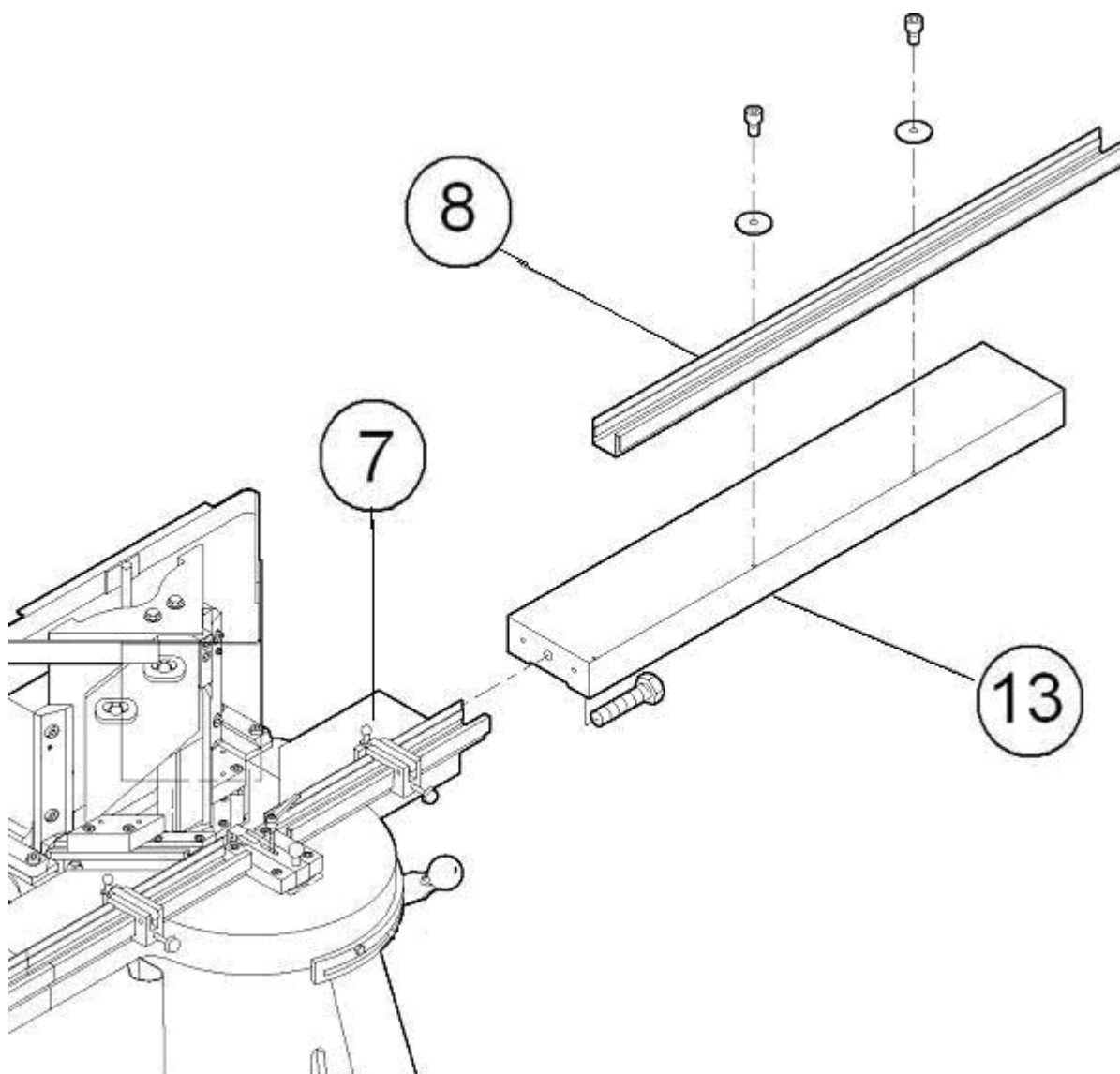
The adjustment of the sliding longitudinal stops (10) is done by means of a template of the stile.

Technical Data



Technical Data			
Machine Dimensions (max.):		Working Capacity:	
Length (a)	1600 mm (63")	Nose Knife Capacity	1.25 – 2,5 cm (½" -1")
Width (b)	630 mm (25")		
Height (c)	840 mm (33")	Moulding width, max	115 mm (4.5")
Weight	50 kg (110 lb)	Moulding Thickness, max.	85 mm (3.3")
Siting Considerations		Extensions Table, left and right	478 mm (19")
Distance to Wall	min.1000 mm (40")	Fences, left and right	00 mm (31.5")
Noise/Pollution:			
Noise Level	silent		
Pollution	nil/no dust		

In General



In General

The machine is delivered ready for use and complete with standard equipment.
Only the table extensions (13) and fences (8) are dismantled during transport.

Place the machine 1 m from the wall as stated in E-1. The machine can be fastened to the floor using parabolts through the two holes in the bottom of the machine frame.

Check each time before starting that all protection devices are correctly fitted.

Fitting of the Table Extension and fences

(the drawing shows the right side, the same procedure is used on the left side).

Before fitting, the ends of the table extension (13) and the table (7) must be cleaned thoroughly. Special attention must be paid to the pin and screw holes, as the smallest amount of dirt will prevent the correct alignment.

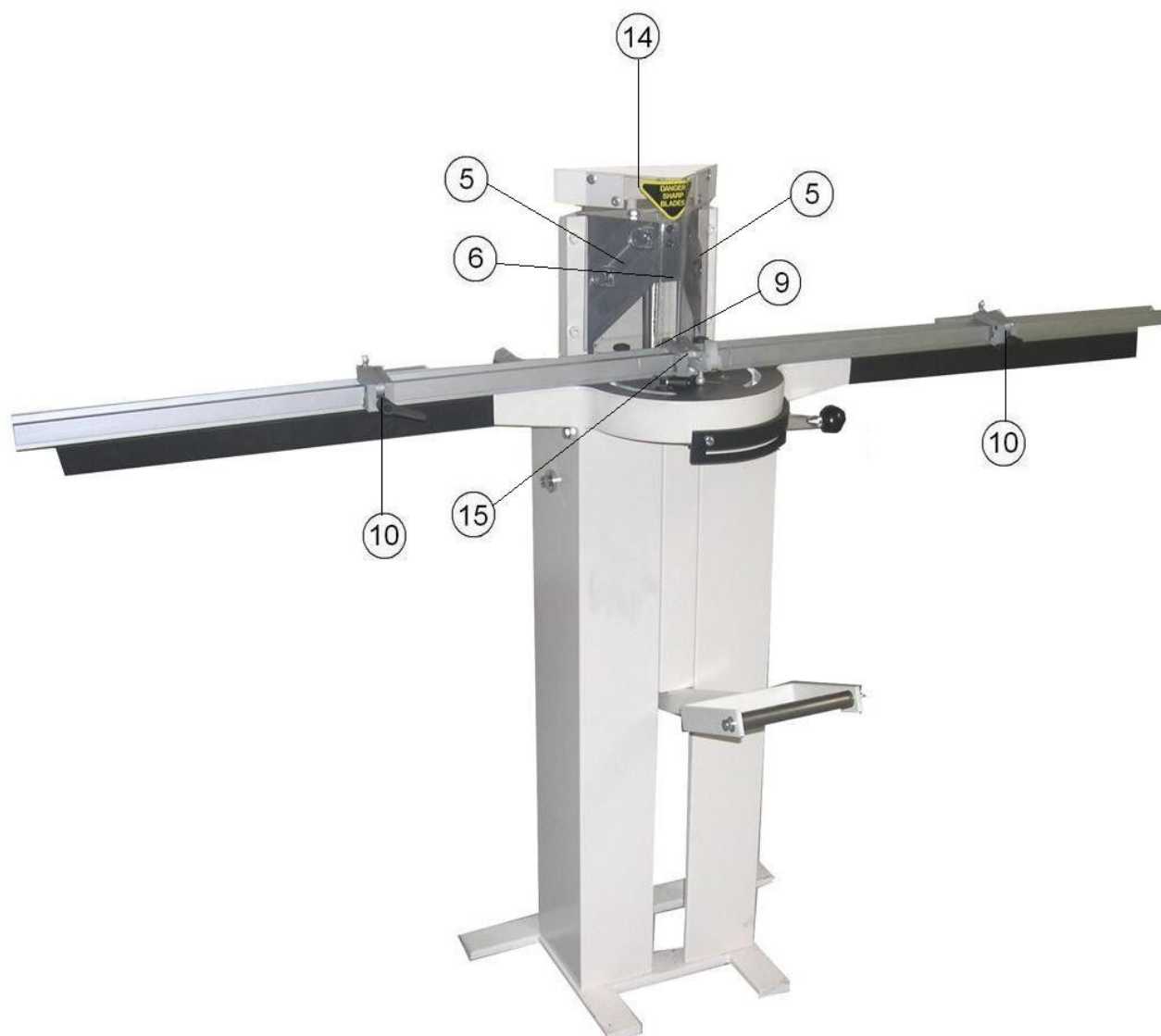
After cleaning, the table extension (13) is pressed against the table so that the pins placed in the table extension are inserted in the pin holes in the table. The included bolt is now inserted into the hole and fastened with a standard spanner.

The fence (8) is fitted on the table extension (location pins are fitted in the table extension). It is secured with Allen screws.



**Beware of the extremely
sharp knives**

Before Operating



Before Operating

Before starting the machine the following must be checked and adjusted:

1. Check

1

- a) knives (5 + 6)
general condition
sharpness
- b) waste
room for waste
- c) safety devices
fitting of all safety devices:
safety guard for knives (14)
- d) table and table extension
cleanness and undamaged surface

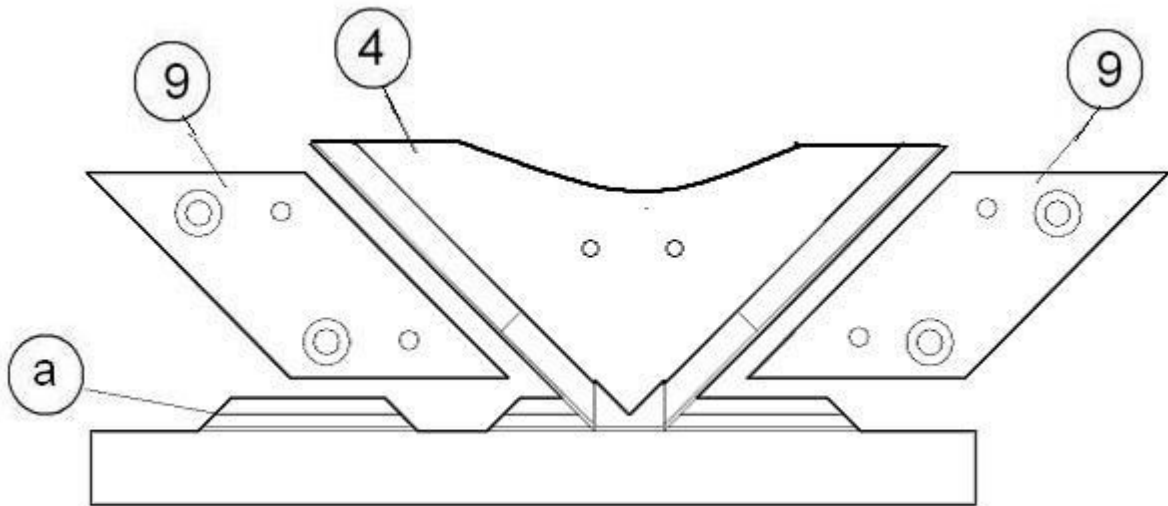
2. Adjustments

- a) Cock-bead stops (9)
(adjustment instructions page G-2)
- b) centre stop (15)
(adjustment instructions page G-3)
- c) Sliding stops (10)
(adjustment instructions page G-4)



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Cock-bead stops



Adjustment of the cock-bead stops (9)

The cock-bead stops (9) are adjusted as follows:

1. Loosen the Allen screws on the cock-bead stops (9) and move these to rear of the sliding guide.
2. Using a test piece (a) make a notch cut into the cock-bead. This cut must be the same depth as the cock-bead. The overall width must be equal to the width of the centre cross-rail. When you are satisfied the two sizes are equal, we can now position and lock the cock-bead stops (9).
3. Press the foot-pedal down and hold it in this position. By operating the hand lever, bring the knife block (4) forward into the previously cut notch. Position the cock-bead stops (9) against the cock-bead and lock them in place using the Allen screws. When these stops are fixed in position the knife block (4) can only cut into the cock-bead as far as this setting. The notch cut depth is then referenced from the face of the cock-bead. The width of stile can vary without changing this setting.
4. Check the alignment of the two cock-bead stops (9) using a straight edge. By bringing the knife block (4) forward, check that they are level and true with the fence.
5. Lock the second Allen screws on the cock-bead stops (9).
6. This setting will allow you to make regularly accurate notch cuts in the stiles. These stops will need no further adjustment unless the size of the cock-bead changes.

Adjustment of the centre stop (15)

The centre stop (15) regulates the amount of material cut from the corners of the cross-rails.

The centre stop is adjusted as follows:

1. The adjustment screws are located in each side of the Teflon head on the centre stop. They can be turned in or out, to allow more or less material to be cut from the corner of the cross-rail. The adjustment screws are adjusted exactly equal on both sides so that the distance from the screw head to the centre of the Teflon piece is equal.

Example:

Nose width 12 mm:

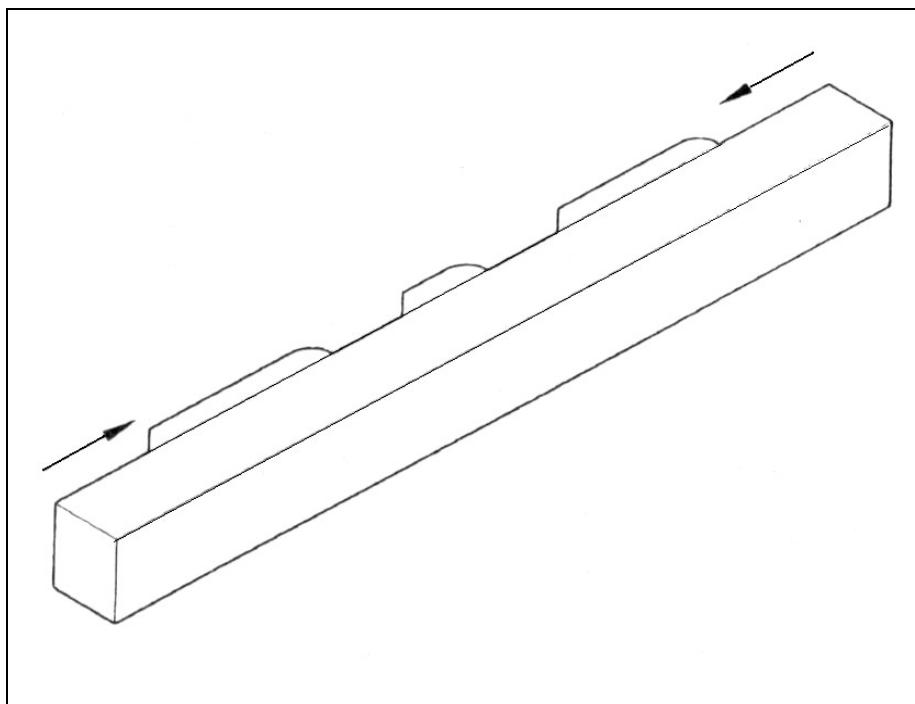
The width of the Teflon piece is measured. The screws are adjusted exactly equal on both sides, so that the distance from the screw head to the centre of the Teflon piece is 6 mm.

2. You can make minor adjustments if the width of the cross rail should vary (e.g. 11.9 or 12.2 mm instead of 12 mm). Make a 45° cut in a test piece on the cross-rail and offer it up to the notch cut already made in the test stile (see page G-2). If there is a gap in either of the two corners, adjustments can be made on the screws until an exact and tight joint is achieved.
3. To achieve this balance, take a test piece of centre-rail and cut one corner. Turn the centre-rail to the opposite side of the knife block up-side-down so that you cut in the same corner. Place it against the centre stop and bring the cutting block partially through. If this causes a fine cut or the knives do not touch the centre-rail, the two screws are not balanced with each other. The adjustment screws are balanced until the cut is correct.
It is particularly important to get this balance, when frames are made with single cock-beads on top and bottom rails. If the two corners are not taken off exactly equal, there will be a gap on one corner and an over-tight joint on the other. This will also produce frames that are not square.

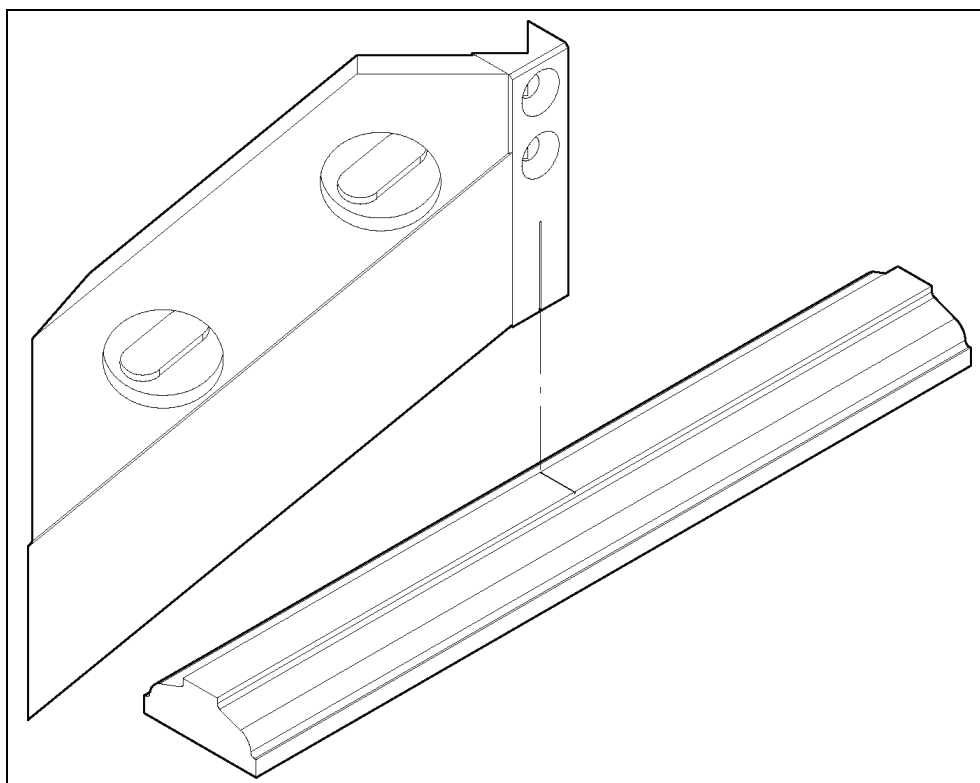


**Beware of the extremely
sharp knives**

Flip stops



G-4-1



G-4-2

Adjustment of the flip-stops (10)

Making a Template

For setting the flip stop positions a template of the stile (upright section) is made. Mark the centre of the positions on the cross-rails, incl. the top and bottom rails (see G-4-2) on the stile.

1. To make the template, put the stile in the machine. For the top and bottom rails always start cutting from the end of the stile. Feed the section in by 5 mm at each cut (to prevent break out along the end grain). See fig. G-4-1.
2. When a few cuts have been made, align the rail with the set mark and the centre line on the nose knife (see fig. G-4-2). Make a proper cut in the position.
3. Bring the first stop forward against the end of the template and lock it.
4. Flip this stop over and go to the next position marked on the rail. Make the second cut and bring the second stop to the same end of the rail. Lock the stop in position. Continue the procedure until all stops have been positioned and set.
5. When setting the last stop, make a few 5 mm cuts from the end and in (see fig. G-4-1) (to prevent break out) before setting the stop and locking it.
6. The same template is used to position the stops on the other side. Place the template on the other side of the knife block up-side-down when setting the stops. Bring the cutting block into the existing notch cut outs and position each stop in turn – as described above.



Beware of the extremely sharp knives

Lubrication



Lubrication Instructions

Approx. every two weeks lubricate the following:

The guides for

1. Knife block (4)
2. Slide Frame (2)
3. Cross (3) (lubricates simultaneously the forward movement of the knife block).
4. Links for the draw bar (15) of the knife block.
5. All links in the lever system (2), incl. spring suspension.

Lubricant: Any acid-free oil.

Cleaning

MORSØ-NM must be cleaned thoroughly after use.

Remove any waste wood from all the guides.

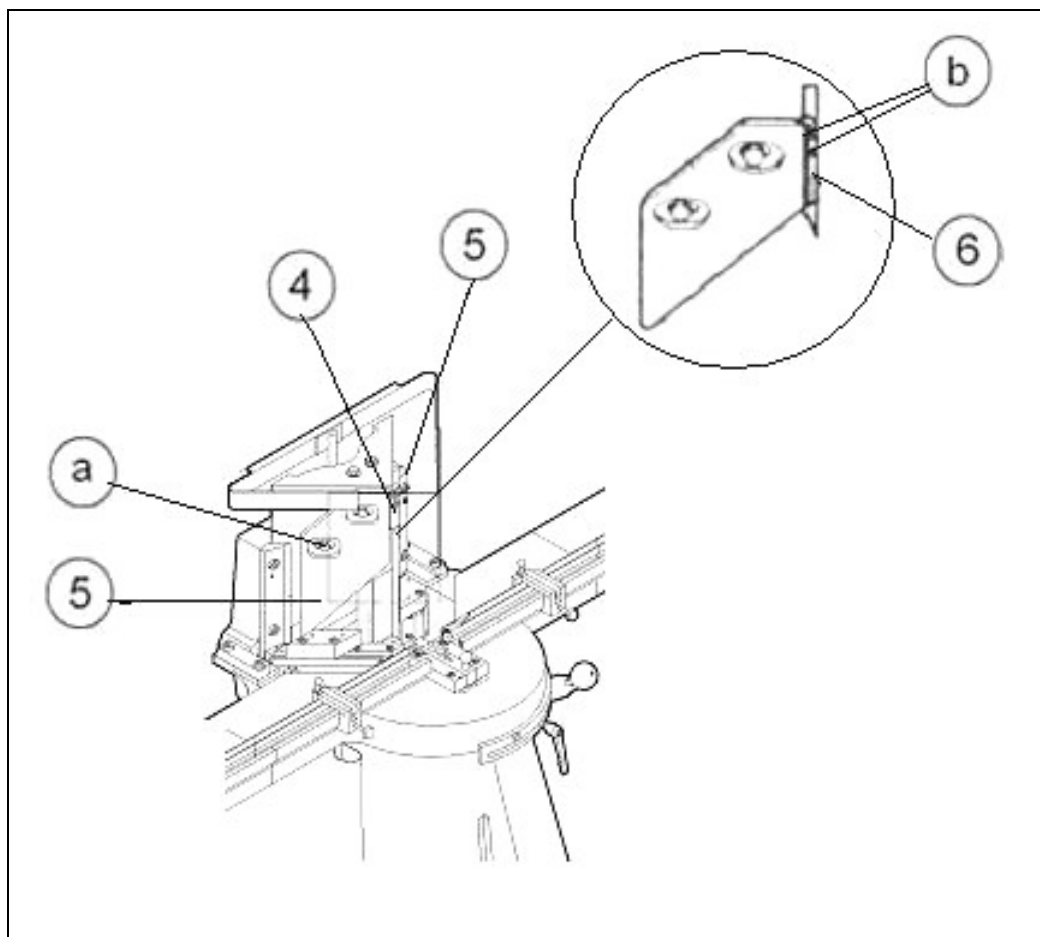
Remove the waste wood from behind the machine.

Resin from the mouldings can sometimes cause the knife blades to drag on the upward action of the knife block. To remove this resin, use WD 40, sprayed onto a cloth made in the shape of a ball (so that your fingers never go near the knives). Wipe in a downward action only so that neither the cloth nor your fingers can come into contact with the cutting edge of the knives

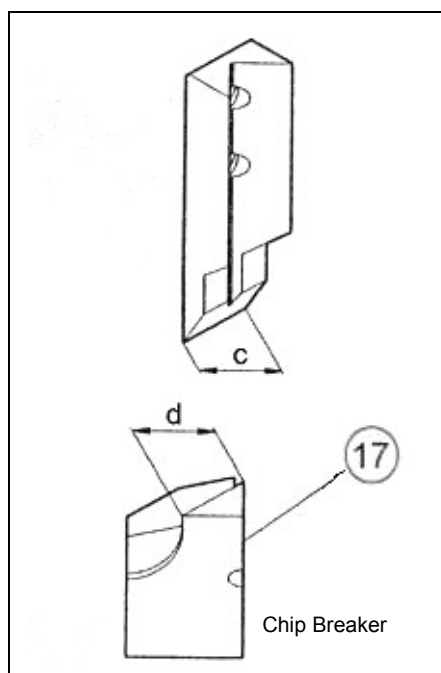


**Beware of the extremely
sharp knives**

Changing Knives and Chip Breakers



H-2-1



Chip Breaker

H-2-2

Changing of Knives and Chip Breaker – Adjustment

1. Knife Block (4) is placed in top position
2. The side knives (7) are dismounted by loosening bolts (a). The nose knife (6) is dismounted by loosening screws (b).

TAKE CARE OF YOUR FINGERS.

3. Clean the surfaces of the knife block and the new side knives (6) very carefully as even the smallest impurity between side knife and knife block can cause an incorrect cut.
4. The nose knife (7) which fits the width of the cock-bead of the rail is fitted by means of the screws (b) on the front of the knife block. **Always tighten the top screw first.**
5. The chip-breaker (17) is placed in the angle where the bottom knives meet. The width of the chip-breaker **must** be the same as the width of the nose knife ($c = d$).

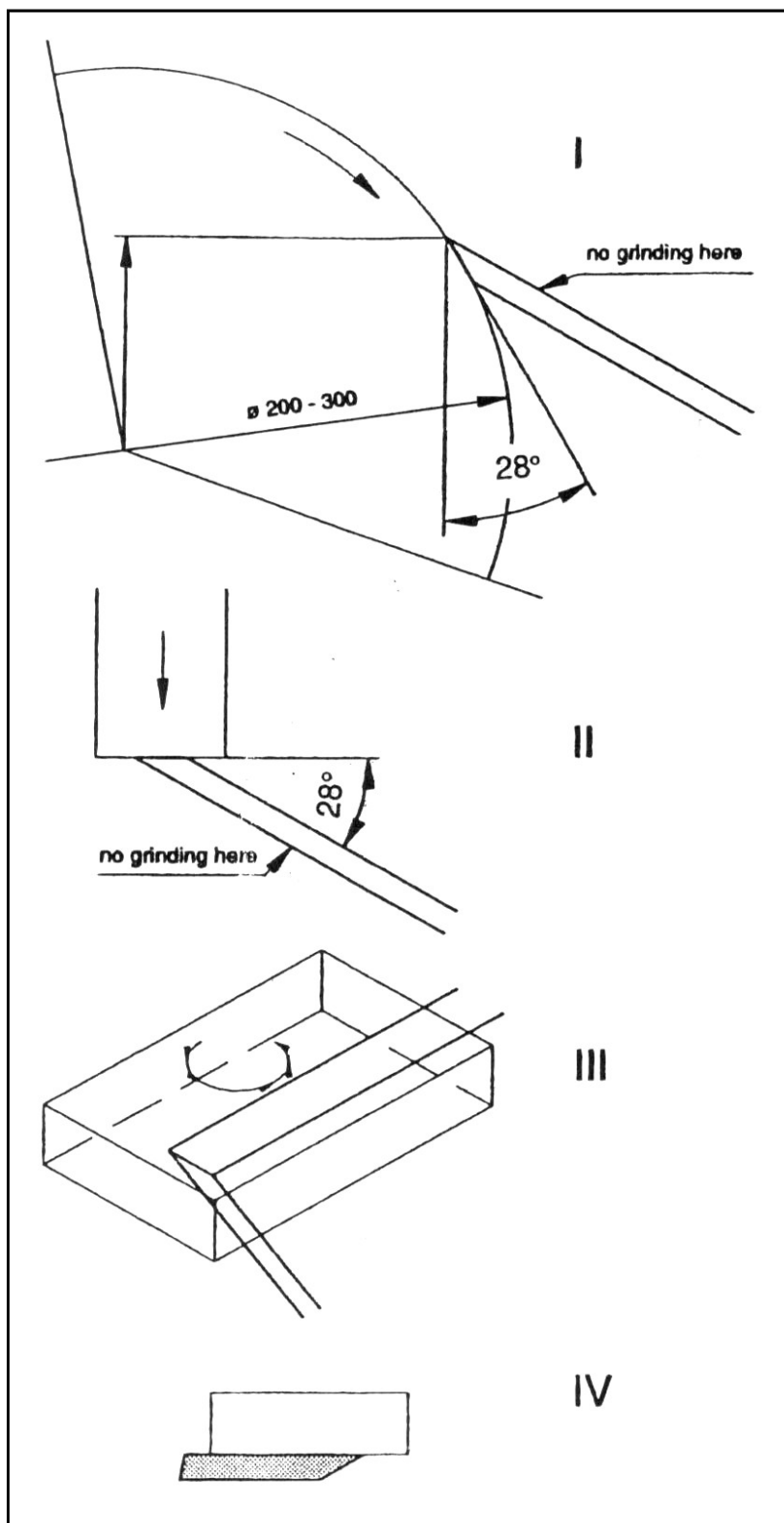
NOTE: When changing the chip-breaker (17) the knives must be dismounted.

6. Both side knives (5) are fitted with the bolts (a) on the knife block (4). These bolts must not yet be tightened.
7. The side knives (5) must meet precisely with the nose knife (6) and neither front edge must be further ahead (they must balance with the corners of the nose knife).
8. The bolts (a) can now be fastened.
9. Check the length of travel on the knife block (4), when operating the foot pedal. The nose knife (6) must cut through the chip-breaker (17) by only 1-2 mm.



Beware of the extremely sharp knives

Grinding of knives



Grinding of Knives

When grinding the knives you must **only** grind on the reverse of the cutting edge. You must under **no circumstances** grind on the front or ends of the knives, because the knives will then be useless. The angle of the cutting edge compared to the front of the knife must be 28°.

Hollow grinding (essential), figure I.

Using a grinding wheel the diameter must be between 200 - 300 mm. Using a cup wheel the diameter must be 150 mm.

Surface grinding figure II

Honing figure III

To set the cutting edge, use a soft fine-grained silicon carbide hand flat stone that must be kept in oil or kerosene.

When setting the cutting edge you must under **no circumstances** sharpen the cutting edge lengthwise, always crosswise.

First sharpen on the reverse side of the knife. The flat stone is to be kept in an angle of 29° compared to the front of the knife.

Take off burrs, figure IV

After the honing the burrs on the front of the knife will be removed with a slate flat stone which must be straight.

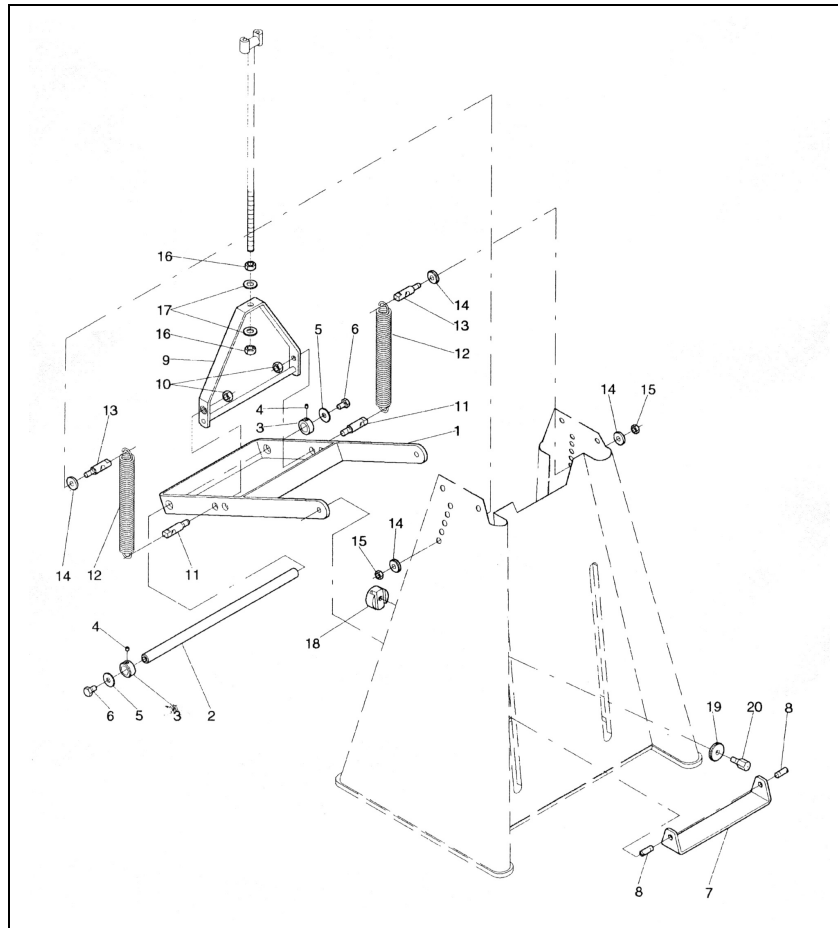
The flat stone must be completely in line with the knife, otherwise the outer cutting edge will get an incorrect angle.

Even the slightest error here will cause the knife to press too hard against the wood during the cutting.



**Beware of the extremely
sharp knives**

Changing of Spare Parts



If it is necessary to change worn out or damaged parts we recommend that you proceed in the following manner:

1. The index of the spare parts list (see page L-1) refers to which specific list the spare part can be located.
2. The list in question is then used when ordering spare parts, as there are part numbers, disassembly and assembly diagrams of the part in question.

3. Example:

Parts in the drive equipment must be renewed:

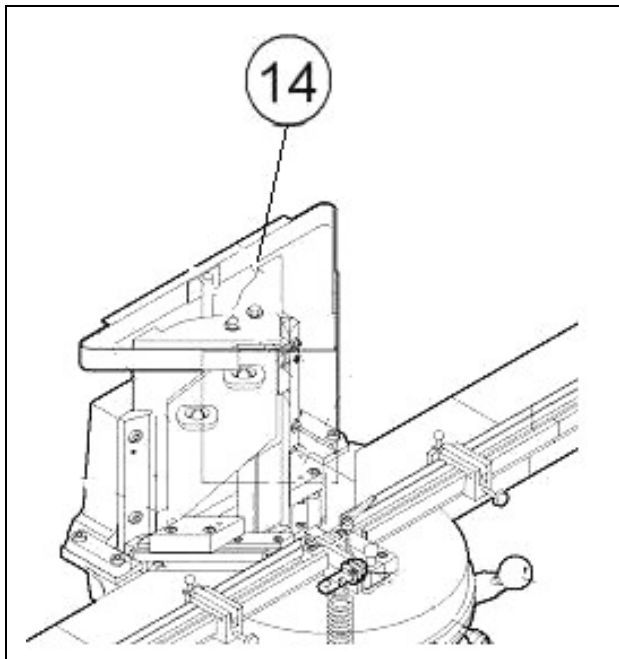
Figure L-1 shows that the parts are located in figure L-4. Under Pos. 1, 2, and 4, the parts necessary for the replacement, disassembly and assembly procedure is illustrated.

In the text part of the illustration the order number and spare part designator are stated

Rectifying Faults – Methods for Repair

Faults	Cause	Repair
Incorrect cuttings	Blunt knives	Replace/resharpen knives See page I-2/I-3
	Knives incorrectly installed	Check the installation See page I-2
Incorrect measurement	The flip stops incorrectly adjusted	Correct the adjustment See page G-4
	Wrong dimension of end piece fitted on centre stop	
	Stop loose	Fasten stop
	Wrong chip breaker	
The moulding is not cut correctly	The cock-bead stops is not correct adjusted	Correct the adjustment see page G-2

Safety Devices



According to current safety regulations **MORSØ-NM** must not be used without the following safety devices:

1. Safety Guard (14) for knife block

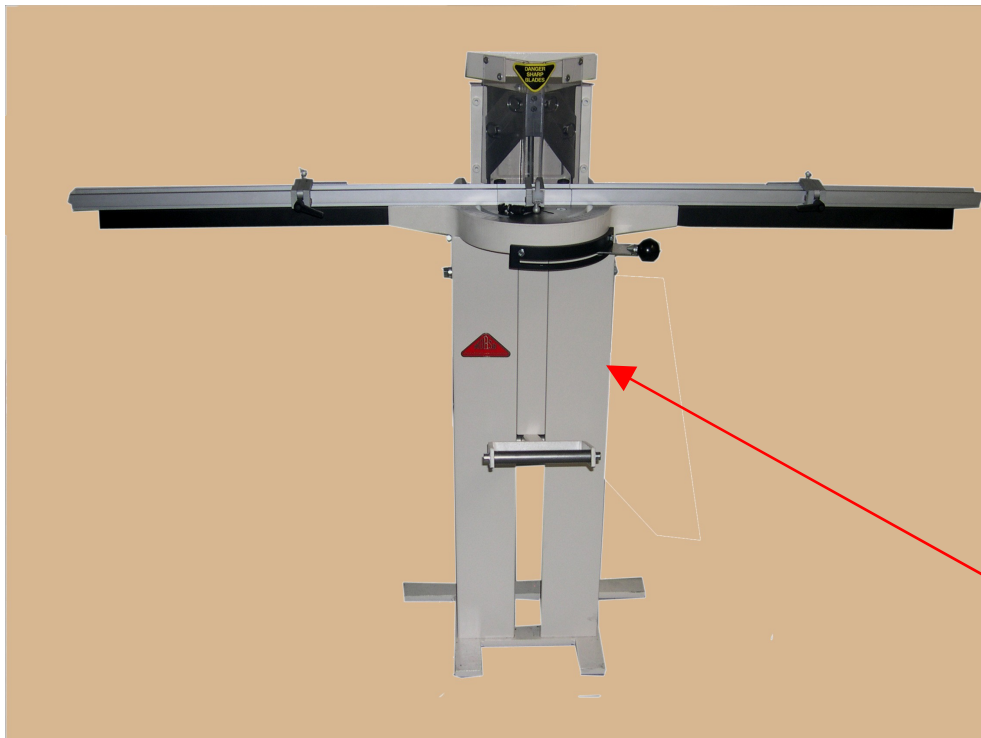
Safety Regulations

On delivery of the machine to the consumer

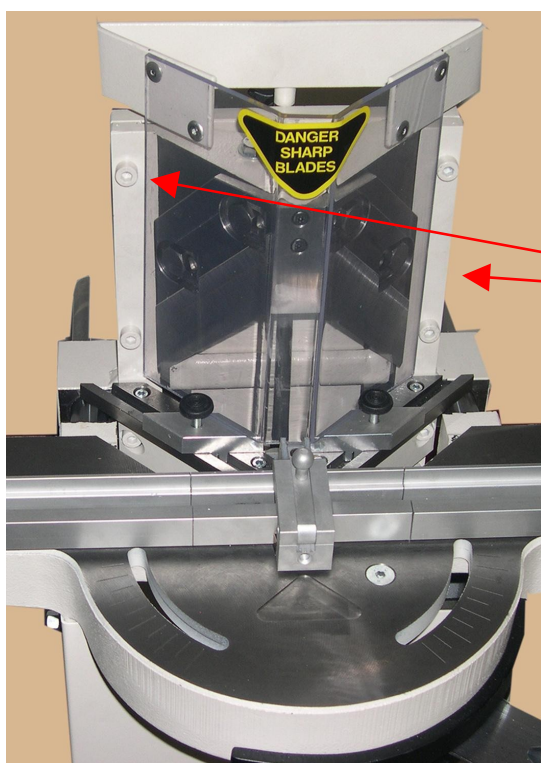
guarantees that the MORSØ-NM notch cutting machine is constructed and fitted according the CEN/TC 142 (Safety Regulations for wood working machinery).

At start and use of the notch cutting machine MORSØ-NM the operator must pay attention to current national and international safety regulations.

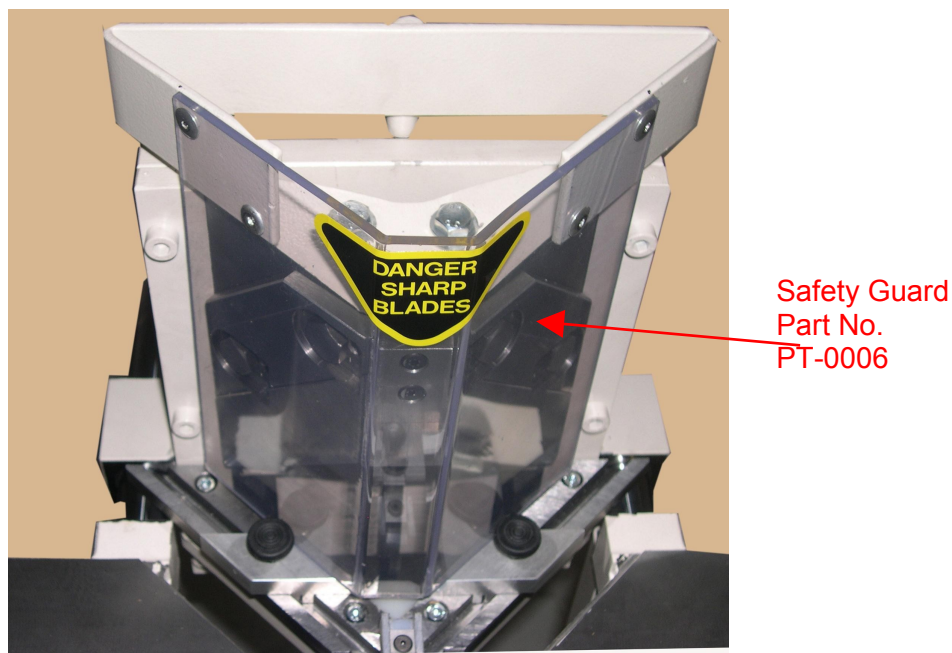
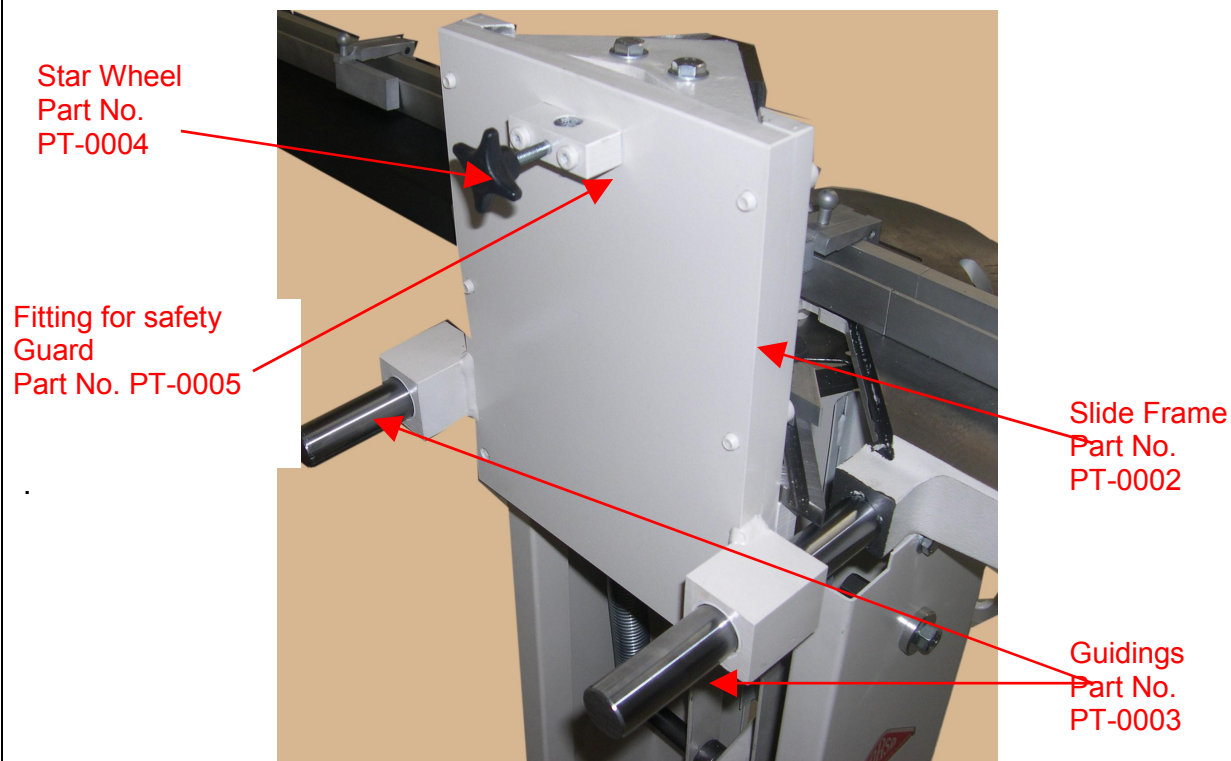
If the operator does not observe the above mentioned regulations the factory does not guarantee for damages to the machine or the operator.

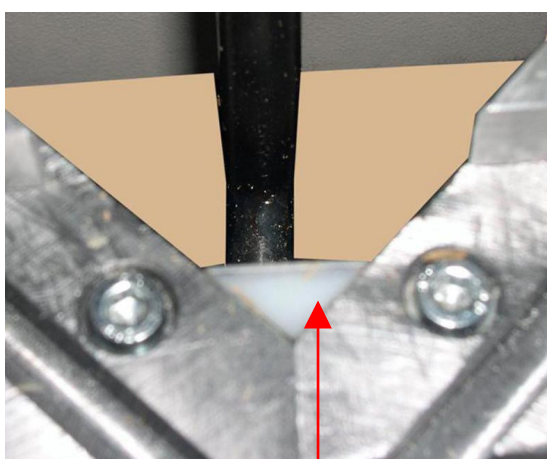
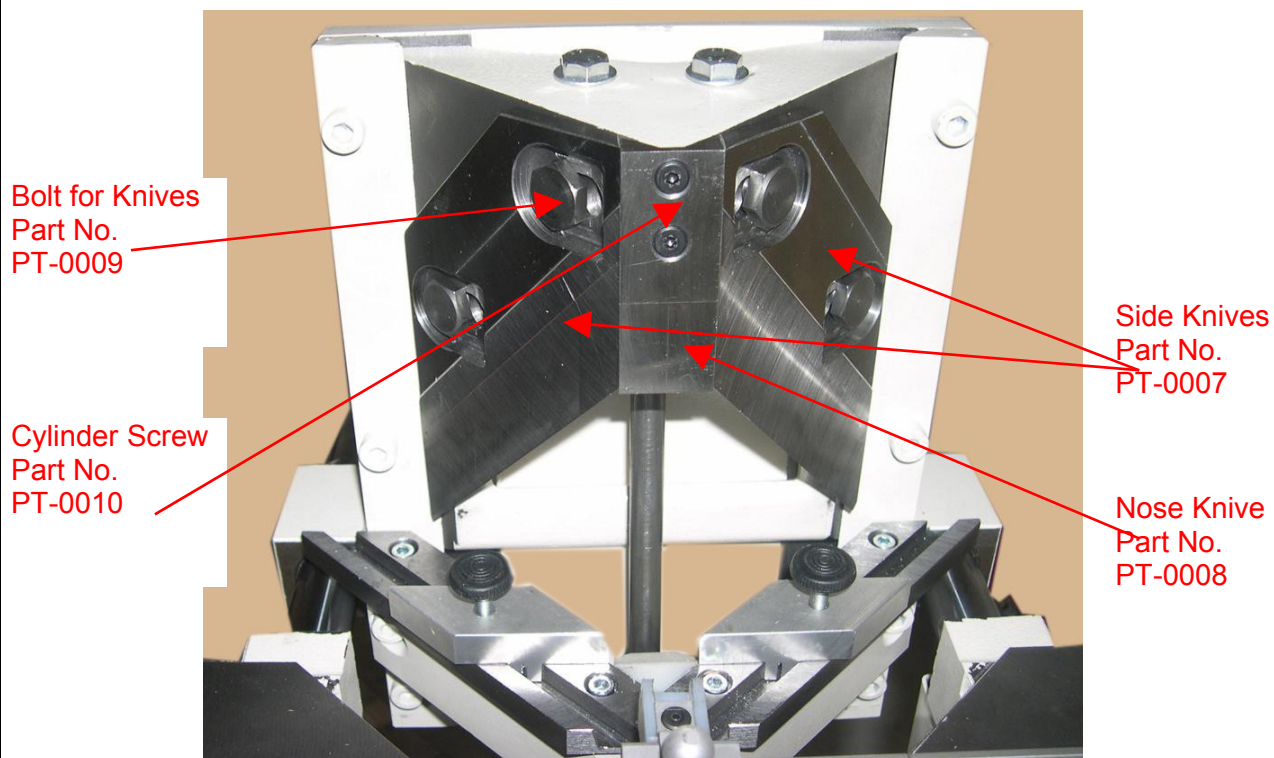


Machine Frame
Part No.
PT-0000

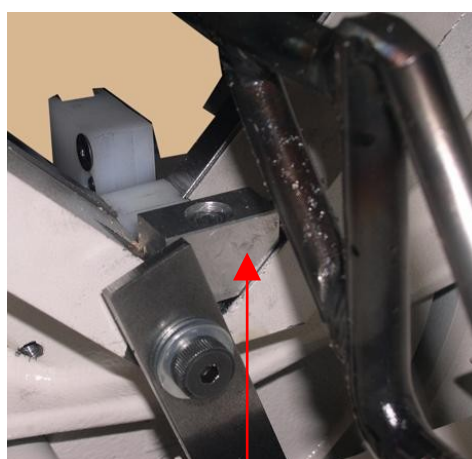


Long Guide Rails
Part No.
PT-0001 (set)

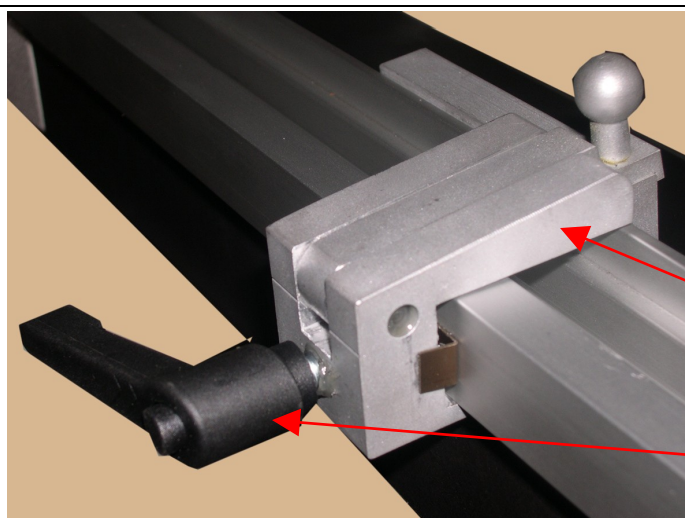




Chip Breaker
 Part No. PT-0011

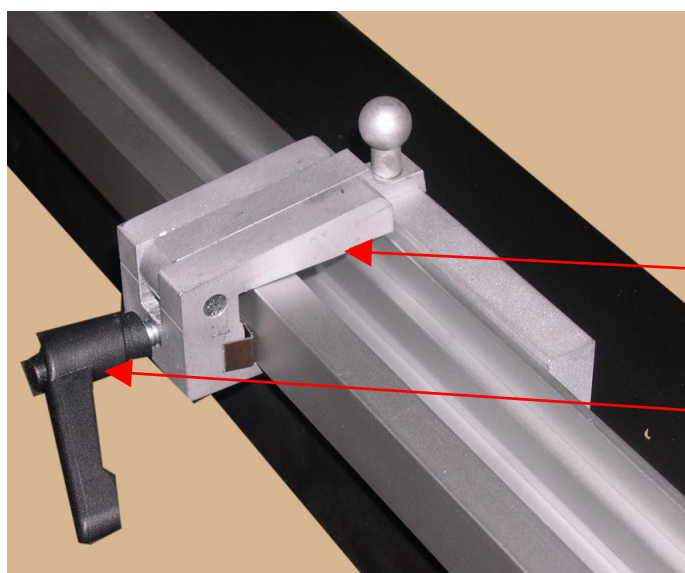


Aluminium Part for Nose Knife
 Part No. PT-0012



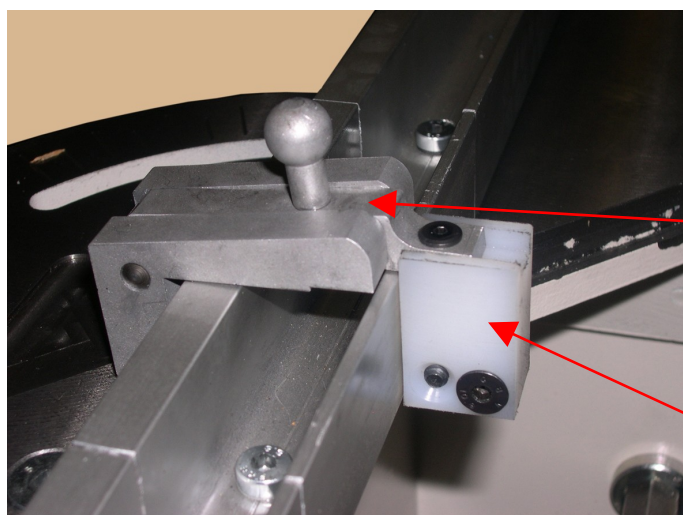
Flip Stop, right side
 Part No. PT-0013

Handle for Flip Stop,
 Part No. PT-0015



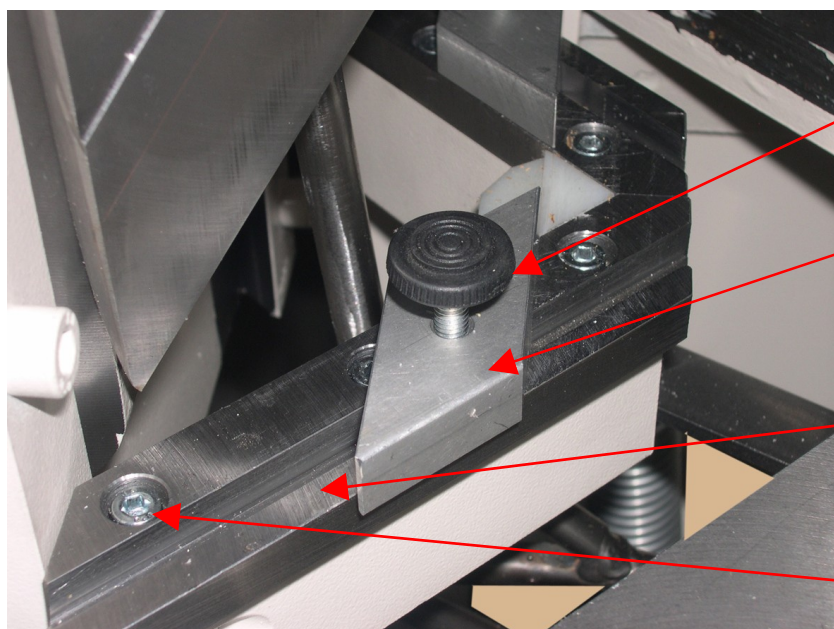
Flip Stop, left side
 Part No. PT-0014

Handle for Flip Stop,
 Part No. PT-0015



Center Stop,
 Part No. PT-0016

End Piece for Center Stop
 Part No. PT-0017

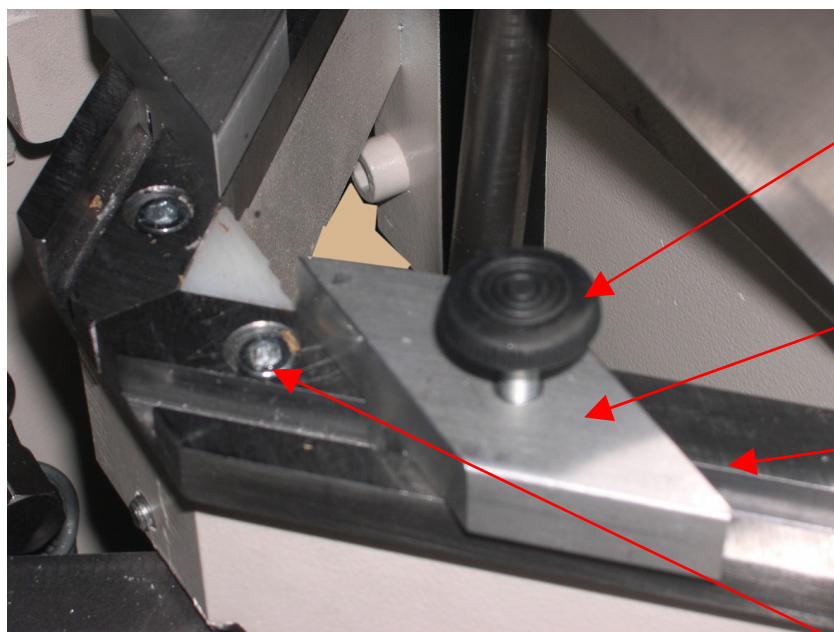


Tightening Wheel
 Part No. PT-0018
 (Replaced by a cylinder screw)

Rear Stop, left side
 Part No. PT-0019

Bottom Knives
 Part No. PT-0021

Cylinder Screw
 Part No. PT-0022

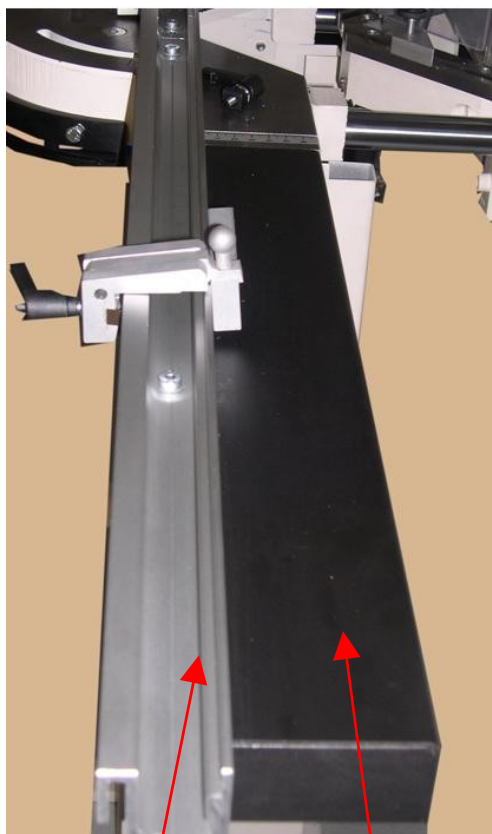


Tightening Wheel
 Part No. PT-0018
 (Replaced by a cylinder screw)

Rear Stop, right side
 Part No. PT-0020

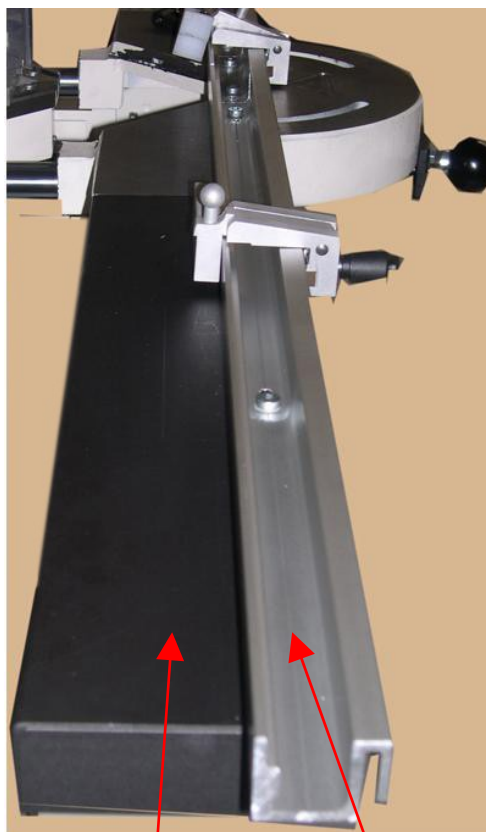
Bottom Knives
 Part No. PT-0021

Cylinder Screw
 Part No. PT-0022



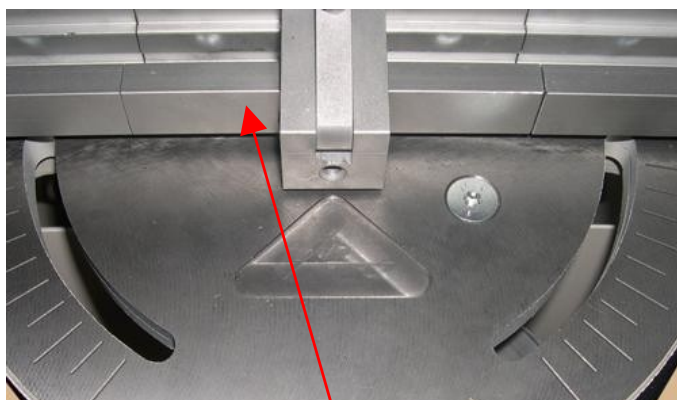
Fence, right side
Part No. PT-0023

Extension Table,
right side
Part No. PT-0024



Extension Table,
left side
Part No. PT-0026

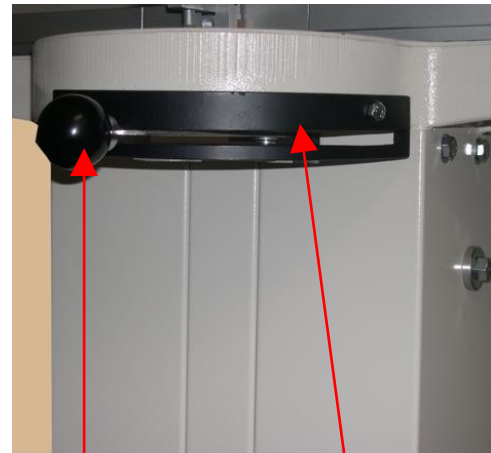
Fence, left side
Part No. PT-0025



Centre Fence,
Part No. PT-0027

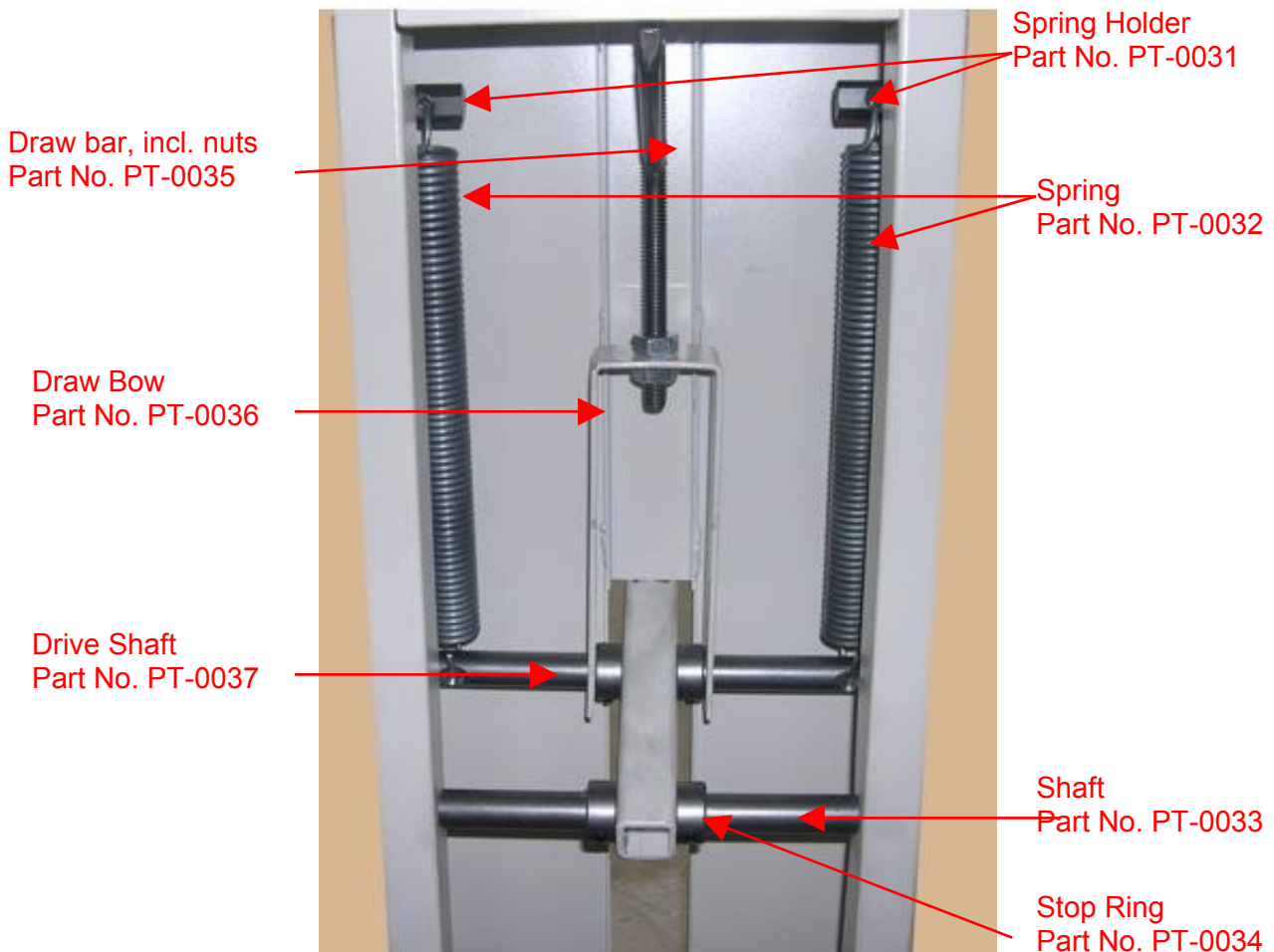


Foot Pedal, complete
 Part No. PT-0028

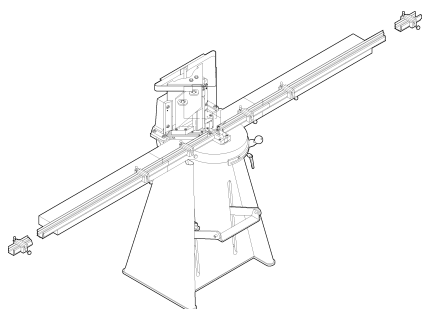


Handle
 Part No. PT-0029

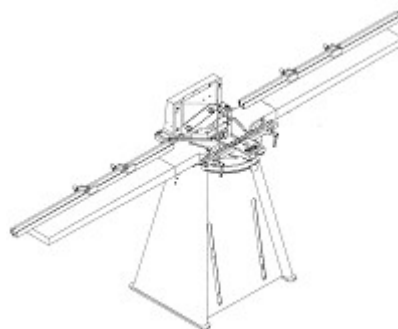
Tooth Arc
 Part No. PT-0030



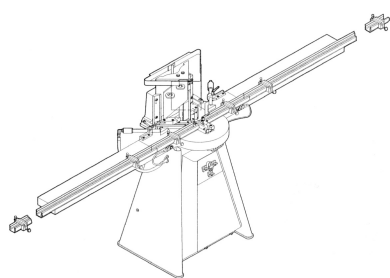
The MORSØ Notch Cutting and Router Family



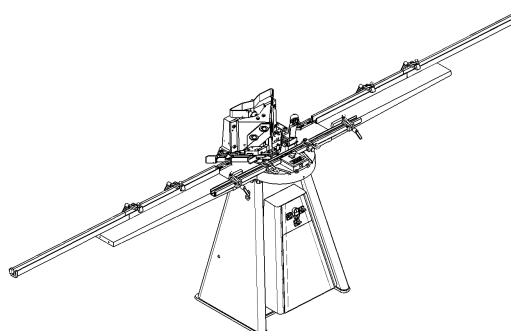
Morsø Notch Cutting Machine NF



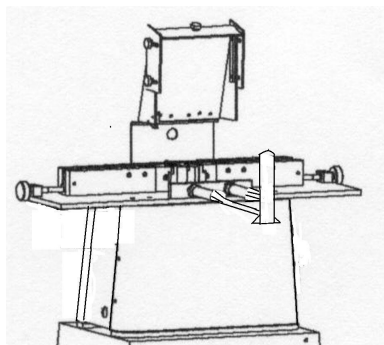
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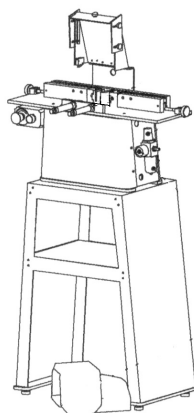
Morsø Notch Cutting Machine NEH



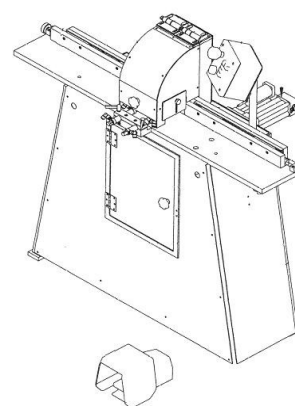
Morsø Notch Cutting Machine NXLEH



Morsø Router KSD



Morsø Router KS-MINI



Morsø Router KS

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