T 77 Anleitung

Englisch

gültig bis 1.3.79

Seite 5 für USA

## 7) USE OF SPLITTING WEDGES

Accordingly all splitting wedges have to be at least a quarter thicker than the weakest part of circular saws resp. the thickness of normal saw blades or hardmetal saw blades. Please observe this hint when procuring and using additional splitting wedges.

The splitting wedge is to be so adjusted that it is no farer away from the toothed wheel rim than 25/64" (10 mm) within the range of the cutting height. Its point must not be deeper than the tooth base of the uppermost tooth.

## 8) TILTING OF THE SAW BLADE:

Undo handle d (ill. 6)
Undo handle H (ill. 1).

The required angle is adjusted by turning the star wheel K (ill.2) according to scale. The star wheel is hold in this position until the handle H (ill. 1) is tightened again. Tighten handle d (ill. 6).

# OPERATION INSTRUCTIONS

for the Joinery Saw Bench MARTIN T 17 - No........

These operation instructions give all particulars of the machine and they shoud therefore be carefully studied before setting the machine to work.

The following informations are of special importance:

1) The machine is switched for......... volts operating current (measured between two phases).

2) Careful consideration of the lubrication instructions on page 8 - 9 will help you to save money and maintain the value of your machine.

The letters and numbers mentioned in the instructions can be found on the illustrations of page 11. The operation units of the machine are marked with letters, the lubrication points with numbers.

1) ERECTION:

The machine should preferably be placed on a concrete base. The table must be precisely horizontally aligned with a spirit level. After alignment the machine is casted-in. In case the base is freshly concreted, the door in the frame should remain open during several weeks to avoid condensation water inside of the machine.

2) CONNECTION TO THE HOUSE CONNECTION LINE

Connection to the mains must be done by an expert, who is able to calculate the necessary power cross sections and the fuse power. Before connecting the machine to the network make sure that the operation voltage is the correct one (check motor tag.)
Connection to the mains is done in the main switch.
The guard wire has tobe connected at the spot marked yellow/green.
The MP-wire has to be connected at the point market with an arrow and the 3 live wires have to be connected at the points marked RST.
Should the turning direction be incorrect, two phases are to be interchanged.
During the first weeks of operation the fuses should be regularly watched. The reason is that a single fuse may blow when the machine is connected to too weak a feed wire or to a feed wire that is protected by too weak a fuse. The motor will then burn within short as a result of two-phase running.

3) SWITCHING-ON AND -OFF

For switching machine with scoring saw please see special information on the last sheet of this book.
Switching-on and -off at machines without scoring saw is done with the star-delta switch M (ill. 2). For switching-on the switch is first turned to Y (starting position) and after about 6 seconds (when the machine has taken up speed) it is turned on to I (△). Switching-off is done from I to 0 all at once.
The red button at the bottom of the machine frame serves as emergency cutout. When pushing this button the machine is at once out of circuit. Having actuated this emergency cutout or when the motor protection switch is released as a result of overload or severe undervoltage, the machine is set to work again by switching the stardelta switch M (fig.2) to 0 and by switching it on again as described above. Before the machine is started again the reason of the disturbance must be removed.

When the machine is fed with undervoltage, it might happen that it will not start when turning the switch from 0 to Y. In such cases switch very slowly from 0 to Y so that the contactor can connect inspite of the weak voltage.
We recommend, however, to care for a better current supply.

## 4) INSERTION AND REMOVAL OF THE SAW BLADES:

First the circular saw arbor is arrested by pressing the steady pin Y (ill. 4) against the circular saw arbor and turning it until the steady pin catches. The fixing nut and the loose circular saw rosette is taken off. The nut is turned to the right-hand side (left-hand thread).

After the blade is put on the blade receiver the loose rosette and the nut are put on again. For tightening turn the nut to the left-hand side. After that the steady pin Y (ill. 4) is taken off again.

To ensure a true run of the saw blade it is to be observed that all faces at the rosettes, the saw blade and the nut are perfectly clean and undamaged, when exchanging the blade apply a drop of oil on the thread of the circular saw arbor.

## 5) HINTS ON SAW BLADES:

When purchasing saw blades the diameter, thickness, tooth shape and the number of teeth must correspond to the intended purpose. When sharpening and setting the directions of the manufacturer should be strictly followed. "High-alloy high-speed steel saw blades (HSS saw blades) must not be used".

## 6) SELECTION OF THE SPEED OF ROTATION:

The circular saw spindle allows the following speeds:
2800 rpm. = the pair of belts on the small cone step of the motor pulley

4000 rpm. = the pair of belts on the medium cone step of the motor pulley

5500 rpm. = the pair of belts on the large cone step of the motor pulley.

In connection with the saw blade diameter the speeds of rotation result in the following cutting speeds:

| No.of rotation = appr. | dia. of saw blade 7.7/8" 200 mm | 9.27/32" 250 mm | 11.13/16" 300 mm | 13.25/32" 350 mm | 15.3/4" 400 mm | 17.23/32" 450 mm |
|---|---|---|---|---|---|---|
| 2800 ft./sec. | 95 | 118 | 141 | 167 | 194 | 213 |
| = m/sec. | 29 | 36 | 43 | 51 | 59 | 65 |
| 4000 ft./sec. | 135 | 171 | 207 | 240 | 276 | 308 |
| = m/sec. | 41 | 52 | 63 | 73 | 84 | 94 |
| 5500 ft./sec. | 187 | 233 | 282 | 328 | 377 | 433 |
| = m/sec. | 57 | 71 | 86 | 100 | 115 | 129 |

Turning the pair of belts over can easily and quickly be done when the saw blade is in vertical position. The tilting lever b (ill.6) is pressed downwards until it catches. Now the belts are released and can easily be turned over. After that the tilting lever is slowly moved upwards again and the belts are tensioned.

## 7) USE OF SPLITTING WEDGES

The two splitting wedges supplied with the machine fit the following blades:

| Saw blad dia. | normal Saw blades | CTC Saw blades | splitting wedge | |
|---|---|---|---|---|
| | Thickness | Thickness of shaft | No. | thickness |
| 200 | 2,0/2,2 | 2,2 | I | 2,50 |
| 250 | 2,0/2,2 | 2,2 | I | 2,50 |
| 300 | 2,0/2,2 | 2,2 | I | 2,50 |
| 350 | 2,2/2,5 | 2,2/2,5 | II | 2,75 |
| 400 | 2,2/2,5 | 2,5 | II | 2,75 |
| 450 | 2,2/2,5 | -- | II | 2,75 |

When other saw blades are used, splitting wedges matching the saw blade in size and thickness have to be used. In this connection the following should be observed.
As regards the thickness of the splitting wedge for normal saw blades, it should be at least a quarter thicker than the saw blade, however, it must not be thicker than the width of set of the saw blade.

When using CTC blades, it should be at least as thick as the shaft of the saw blade.

In order to assure that the mostly used sizes of splitting wedges align with the saw blade, the attachment of the splitting wedge of circular saws is constructed about 0,25 mm to righthand from the fixed rosette of the saw blade.

Accordingly all splitting wedges have to be at least a quarter thicker than the weakest part of circular saws resp. the thickness of normal saw blades or hardmetal saw blades. Please observe this hint when procuring and using additional splitting wedges.

The splitting wedge is to be so adjusted that it is no farer away from the toothed wheel rim than 25/64" (10 mm) within the range of the cutting height. Its point must not be deeper than the tooth base of the uppermost tooth.

## 8) TILTING OF THE SAW BLADE:

Undo handle d (ill. 6)
Undo handle H (ill. 1).

The required angle is adjusted by turning the star wheel K (ill.2) according to scale. The star wheel is hold in this position until the handle H (ill. 1) is tightened again. Tighten handle d (ill. 6).

9) HEIGHT ADJUSTMENT OF THE SAW BLADE:

Undo clamping screw at the handwheel L (ill. 2) and adjust the required height with the handwheel. Turning to the left-hand side = downward adjustment;
turning to the right-hand side = upward adjustment.

1 rotation of the handwheel = 1/8" (3 mm).
One division on the handwheel = 0,004" (0,1 mm).
In order to exclude the play in the handwheel when reading the adjustment should always be effected from below: that means that for downward adjustment the handwheel is turned downwards more than necessary, so that the precise and final adjustment can be effected from below. After that the clamping screw is tightened again.

10) OPERATION OF THE AUTOMATIC HEIGHT ADJUSTMENT:
Undo clamping screw at the handwheel L (ill. 2). Press push-button "upward" or "downward" until the required height is nearly reached. If necessary, adjust final accuracy by hand as mentioned under 9. Retighten clamping screw L (ill. 2).

11) OPERATION OF THE CIRCULAR SAW FENCE:

a) Adjustment of the Cutting Width:

Undo clamping lever Q (ill. 2) by lifting it and adjust the fence by lateral shifting to the rough-measure.
Clamp clamping lever Q (ill. 2) by pressing it downwards. Adjust precise measure with the micrometer screw P (ill. 2) according to scale.

b) Shifting of the Fence Angle:

The fence angle N (ill. 2) can be drawn out to the front. This is of special advantage for long cuts or when cutting timber which would otherwise jam between the saw blade and the rear part of the fence. Shifting is effected after undoing the handle 0 (ill. 2).

c) Cutting of narrow Strips with tilted Saw Blade:

Fully unscrew handle 0 (ill. 2) and turn the fence angle N (ill.2) over by 180 degrees towards the saw blade so that the handle 0 (ill.2) can be screwed through a hole from the other side of the fence angle N (ill.2) and the narrow side of the angle N (ill.2) serves as fence.

d) Folding the Fence down:

Put the fence to the right-hand side and clamp it with the clamping lever Q (ill.2). Take hold of the fence with the left hand and slightly lift it; turn the lever S (ill.2) upwards with the right hand and pull it to the rear.
Fold down the fence slowly!
Folding the fence upwards is done vice versa.

12) OPERATION OF THE SLIDING TABLE:

a) Mounting:

To avoid damages during transport, the sliding table is packed separately. Mounting is done as follows:
Clean the running surfaces on the prism rail with Diesel oil or petroleum.
Unscrew the safety pin at the front of the prism rail. Drive the sliding table from the front on the prism rail, return the safety pin in its position and tighten same. The length fence, which is packed separately is mounted on the sliding table as shown on ill. 1 and 3. The twin eye for the eccentric operated clamp has to be fixed as per illustration.

b) Adjustment of the Working Travel:

By moving the prism rail the working travel of the sliding table can be adapted to the respective requirements. For this purpose the clamping lever J (ill. 2) and the respective lever at the rear side of the machine areunfastened. Now the sliding table is driven against the safety pin, the sliding table is slightly lifted and the prism rail is put to the required place with the sliding table. Then the two clamping levers are tightened again.

c) Operation of the Length Fence:

A) Angle Cuts:
The precise angle position of the length fence is positioned by the fence screw G (ill. 1). The length fence is pressed against the folded-up fence screw and the clamping lever X (ill.3) is tightened.

B) Bevel Cuts:
After undoing the clamping lever X (ill. 3) and the clamping screw A (ill. 1) the length fence can be adjusted according to scale up to 45 degree. The scale can be read at the rear side of the length fence. Clamping lever X (ill. 3) is tightened. The clamping screws A and B (ill.1) are unfastened and the length fence is put again into the correct distance from the saw blade.
The clamping screws A and B (ill. 1) are tightened again.

C) Adjusting and Use of the Measure Rule

Put the supplied adjusting gauge with the two fitting pins into the bores V (ill. 3) of the measure rule. Undo holding screw W (ill. 3) and put the measure rule with the adjusting gauge towards the saw blade until the adjusting screw of the gauge touches a tooth of the saw blade, which is set to this side. Tighten holding screw W (ill.3) in this position and remove the adjusting gauge. Now the adjusted measure can precisely

be read from the two fence flaps. For adjustment of the fence flaps the two handle screws T and U (ill. 3) are unfastened by each one rotation. Fence lengths of more than 6'6" (= 2 metres) are so adjusted that the interior flap is adjusted to a measure which is precisely 1 metre smaller than the required measure. The required measure can then be set at the outer flap.
At machines with measure rule in inches the distance of the flaps is 40".

D) Folding down the Sliding Table

Put back the prismatic rail as far as possible as described under paragraph 12b. Loosen knurl screw C (ill. 1) by a few rotations. Undo clamping lever X (ill. 3), and after folding down the fence G (ill.1) turn the length fence forward, so that the nut at the clamping lever X (ill.3) comes completely out of the groove. Take out the length fence with the vertical shaft upwards.
Lift the support plate of the sliding table a little, turn the stanchion F (ill. 1) to the rear and tilt the support plate downwards.
Folding up is done vice versa.

13) DISMANTLING OF THE MOTOR:

First the saw blade is put in vertical position. The tilting lever b (ill. 6) is moved downwards and the belts are taken off from the pulley.
The adjusting ring with adjusting screw a (ill. 5) is taken off.
Get hold of the motor with both hands through the door (ill.5), lift it a little and slowly take it out of the machine. The cables are long enough, so that they need not be disco-nnected inside the machine housing.
Re-mounting is done vice versa.
The end of the torsion spring Z (ill. 5) must be lifted and kept there while the motor is installed, so that the motor sweep comes to sit below the spring.

14) LUBRICATION:

In the factory the machine was run for a longer period and was lubricated ready for use. It is, therefore, unnecessary to lubricate the machine before setting it to work.

As lubricant only the special grease, available from the machine supplier, should be used. Otherwise any guarantee will be declined.

As oil the following brands are recommended:

| | |
|---|---|
| BP - ENERGOL | - motor oil 20 W 20 |
| SHELL- X 100 | - motor oil 20 W 20 |
| ESSO - EXTRA | - motor oil 20 W 20 |

The use of the correct grease and a suitable oil is decisive for the lifetime of the machine.

Before lubricating each lubricating point must be carefully cleaned and also the lubricant must be clean, so that no dirt may get into the bearings. This especially concerns the lubriation points 23 + 36.

| | | |
|---|---|---|
| 1 | (ill. 1 ) | apply a few drops of oil to the thread weekly |
| 2 | " | " " " " " |
| 3 | " | " " " " " |
| 4 | " | " " " " " |
| 5 | " | apply a few drops of oil weekly |
| 6 | " | apply a few drops of oil to the thread weekly |
| 7 | " | " " " " " |
| 8 | (ill.2) | a few injections with the oil gun weekly. The same lubrication point at the rear of the machine is to be lubricated as well. |
| 9 | " | a few injections with the oil gun weekly. |
| 10 | " | " " " " " |
| 11 | " | " " " " " |
| 12 | " | " " " " " |
| 13 | " | apply a few drops of oil to the thread weekly |
| 14 | " | apply a few drops of oil weekly |
| 15 | (ill. 3) | " " " " |
| 16 | " | " " " " |
| 17 | " | " " " " |
| 18 | " | " " " " |
| 19 | " | " " " " |
| 20 | " | apply a few drops of oil to the thread weekly |
| 21 | " | apply a few drops of oil weekly |
| 22 | (ill. 4) | apply a few drops of oil to the thread when adjusting the splitting wedge |
| 23 | " | 2 injections with the grease gun monthly |
| 24 | " | apply a few drops of oil to the thread when exchanging the saw blade |
| 26 | " | apply a few drops of oil weekly |
| 30 | (ill. 5) | apply a few drops of oil weekly |
| 31 | " | apply a few drops of oil weekly |
| 33 | " | the motor is to be cleaned and lubricated by an expert after 2000 hours of operation |
| 34 | " | apply a few drops of oil weekly |
| 35 | (ill. 6) | " " " " |
| 36 | " | 2 injections with the grease gun monthly |
| 37 | " | apply a few drops of oil to the thread weekly |
| 39 | " | apply a few drops of oil weekly |
| 40 | " | " " " " |
| 42 | " | apply a few drops of oil weekly |
| 43 | " | brush the two chains and the behind seated toothed wheel with sufficient oil weekly. |

In order to make the lubrication points No. 25, 27, 28, 29, 32, 38 and 41 accessible, we placed the oil nipples on the outside of the frame where the number of the illustraion 6 was printed (see ill. 6).All these nipples get a few injections with the oil gun weekly. Don't use grease as this will lead to bursting of the connecting tubesand to crusting of the lubrication points.

A few drops of oil should be applied to all regularly used threads, slide faces, turning points etc. weekly.

15) CLEANING:

For proper working of the machine a regular cleaning is most important. The chip deflection sheet marked with a + on ill. 4 and the opposite arranged ones are to be cleaned from dust and resin residues weekly. For this purpose it is recommended to drop a little oil, mixed with petroleum, on the dirt accumulation and to allow it to react for some minutes. Then the incrustation is scraped away with a broken saw blade or a similar object.

When exchanging the saw blade all adjacent surfaces of the saw blade, the flanges and the nut are to be cleaned accurately to ensure that the saw blade runs plane.

It is recommended for all cleaning work to use a mixture of oil and petroleum, especially resinous deposits are to be removed. Pure petroleum should never be used as this will lead to rust generation at the treated surfaces.

16) In case difficulties of any case should arise it is advised to contact the supplier who will help to eliminate the fault by appropriate instructions.

MARTIN'S further supply program includes:

Spindle Shapers with rigid spindle

Spindle Shapers with tiltable spindle

Special-purpose Shapers

Tenoning Machines

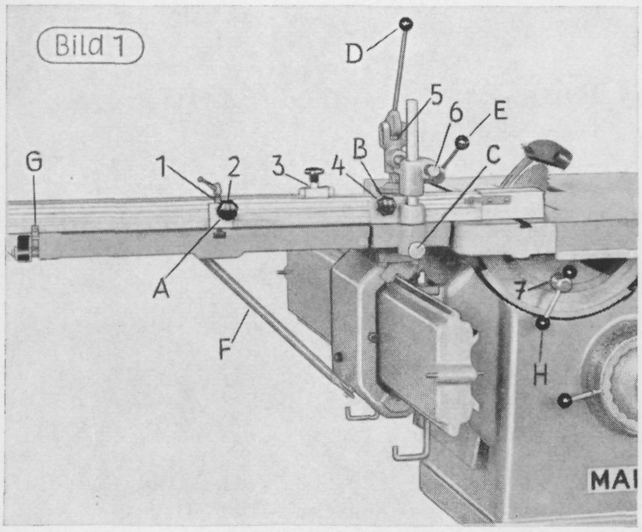
Thicknessing Planers

Surface Planers

Edging and Dimension Saws with tiltable saw blade

Automatic Panel Saws

Subject to alterations.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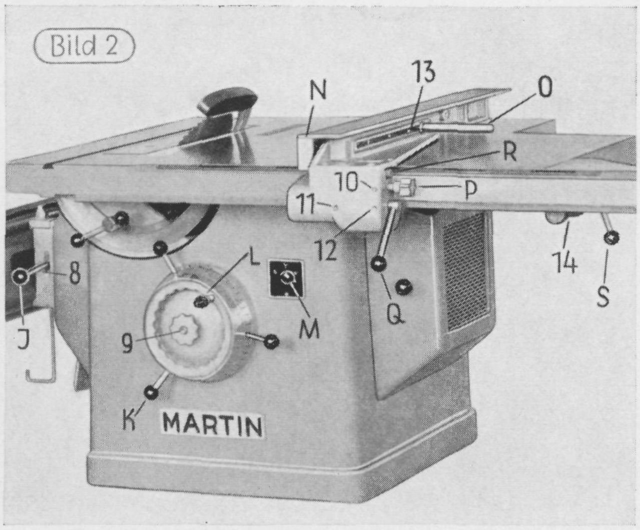
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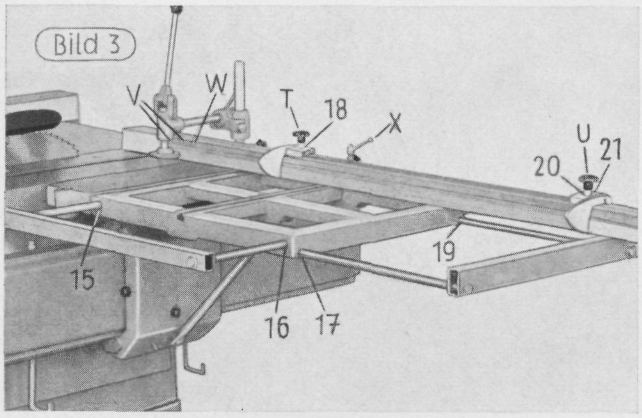
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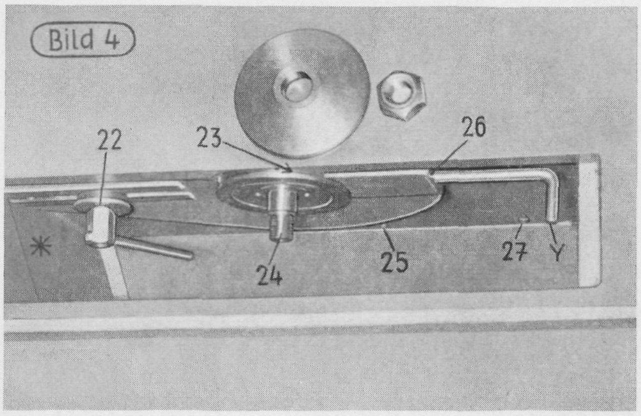
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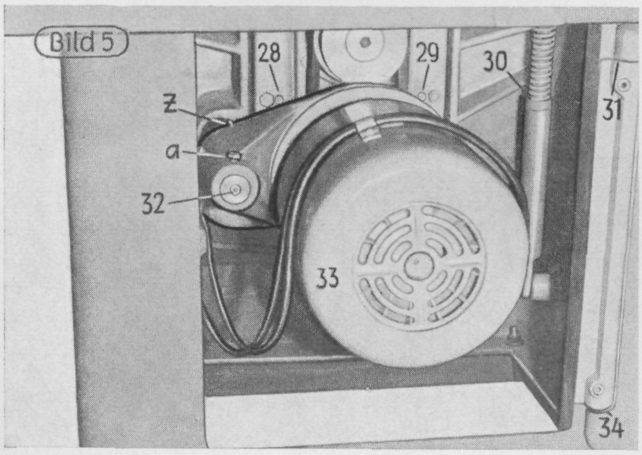
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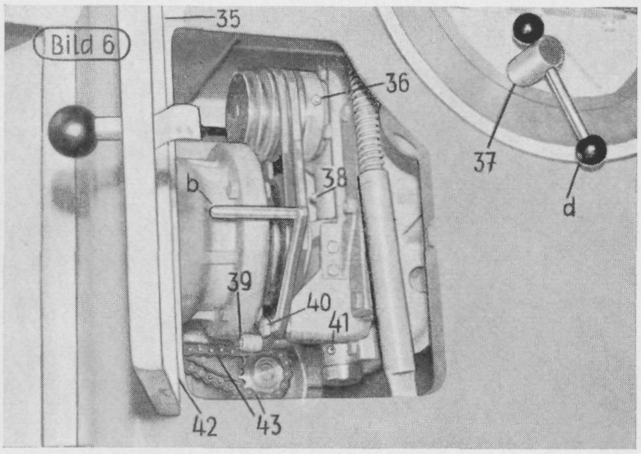
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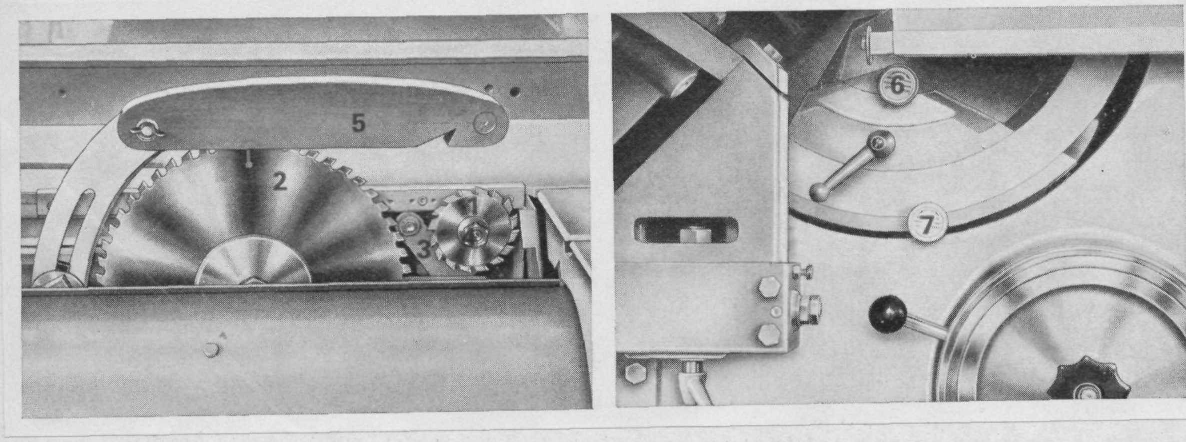
Operation of the Pre-Scoring Saw T 750 A




1) Inserting the scoring blade:

The scoring blade 1) consists of 2 small hardmetal-tipped saw blades, which are always inserted together. Between the blades up to 3 thin distance plates can be inserted. By this means the width of the cutting joint of the pre-scoring blade between 3,1 and 3,4 mm (=app. 0,12205" and 0,13386") is adapted to the cutting joint of the main blade 2).
It is essential that no foreign bodies get between the two blade-halves and the distance plates, as the cut will split then.
For insertion of the scoring blade first the stop pawl 3) is pushed upwards, while the arbor of the pre-scoring saw is turned until the pawl catches. Now the nut 4) can be removed by turning it to the left (anti-clockwise direction). The pre-scoring blade with the distance plates, if any, is slipped on the arbor as a whole and fastened with the nut 4). On inserting the turning direction is to be watched; the teeth must show to the main saw blade - see illustration. Then the pawl 3) is put downwards again.

ATTENTION! When a pre-scoring blade is inserted the long chip hood 5) has to be used on the splitting wedge.

2) Switching the Pre-scoring Saw on and off

The pre-scoring saw is switched-on and -off with the pushbutton switch at the right-hand side of the machine stand. For safety's sake the pre-scoring saw can only be switched-on when the main saw is running already. Therefore, first the main saw blade is switched-on and only then the pre-scoring blade.
For the same reason the main saw blade can only be set to work when the push-button switch of the pre-scoring saw is switched-off.
When both saw arbors are in operation they can be switched-off simultaneously with the red emergency cutout.
After that the machineis started again by switching both switches into 0-position and then to start with the switching-on procedure anew..

Also when the machine turned off because of overload or current failure the two switches are switched into 0-position and after the failure was repaired switching-on is started again.

3) Adjustment of the Pre-Scoring Blade:
With the hand screw 6) the pre-scoring blade is adjusted laterally precisely to the cutting joint of the main saw blade. Turning of the screw to the left-hand side = adjustment of the blade to the left. Turning of the screw to the right-hand side = adjustment of the blade to the right. The last accuracy is adjusted after a trial cut.

With the hand screw 7) the pre-scoring blade is adjusted horizontally to the table surface. Turning to the lefthand side = adjustment upwards. Turning to the right-hand side = downward adjustment.
The original blade with a dia. of 100 mm (= appr. 3.15/16") may project above the table surface by 2,5 mm (=appr. 3/32") .

When in between only few cuts without pre-scoring saw are to be made the pre-scoring saw can be lowered below the table surface. When, however , it is intended to work without pre-scoring saw for a longer time. it is recommended to dismantle the pre-scoring blade as it may resinify by the chips arising at the main saw blade. The height adjustment of the main saw blade has no influence on the pre-scoring saw.

4) Lubrication:
In the turning point of the pawl 3) and nearly certically below it behind the pawl there are each one oil nipple. Both have to be lubricated with the oil press once a week.

When exchanging the saw blade a few drops of machine oil are to be applied on the thread of the pre-scoring arbor.