ALTENDORF®

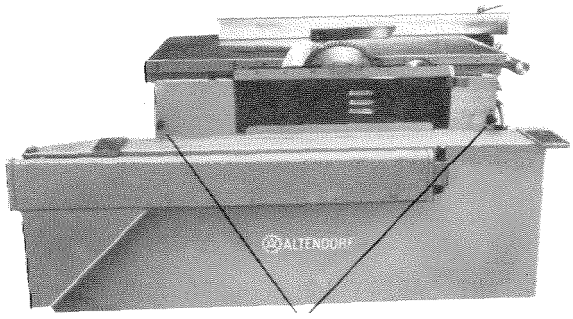
panel sizing saws

CONTENTS (cont.)

IMPORTANT SAFETY PROCEDURES AND CONSIDERATIONS

United States of America - January 1, 1980

1. Failure to observe correct operating procedures during the operation of this machine can result in severe injury.
2. Every Altendorf machine is provided with a saw blade guard. Before operating the machine, check to verify that the guard is securely in place. The Altendorf saw is not approved for operation without the saw guard in place. There are no circumstances which justify operation without the guard.
3. Use of the Altendorf saw by persons who have not been thoroughly trained is hazardous. Do not attempt to operate this machine until you have read and understood the instruction manual, and have been checked out by a qualified supervisor.
4. Never put your hand under the saw guard.
5. If you must make cuts on small parts where your hand will be near the saw guard, then use a wooden "push stick" to feed the parts. By using this method, you will keep your hand away from the saw blade.
6. There is a possibility that the material you are cutting may be kicked back by the saw blade. For this reason, when using the rip fence, never stand directly in back of the material you are cutting. Also, be sure that the saw is positioned in such a way that kicked back material will not be a danger to someone passing by, or to someone at another work station.
7. Do not use the cross cut fence and the rip fence at the same time. Use of both fences at once can cause the material to bind on the saw blade, resulting in a kick back.
8. Keep the area around the saw clean to avoid tripping on pieces of cut off material. Sawdust may cause the floor to become slippery.
9. Before changing saw blades, install a padlock on the main power switch, so that the saw cannot be started. This rule also applies when maintenance is performed.
10. Always wear O.S.H.A. approved eye protection when operating the saw.
11. Do not make adjustments to, or clean the machine while it is running.
12. The machine must be installed on a level floor to avoid movement of the sliding bed due to the force of gravity.
13. Remove and fasten loose articles of clothing such as neckties etc.
14. Remove jewelry, such as finger rings, watches, bracelets, etc.
15. Good judgement, a safety conscious attitude and alertness are important operator qualifications. Do not attempt to operate the saw while under the influence of anything that reduces your alertness.



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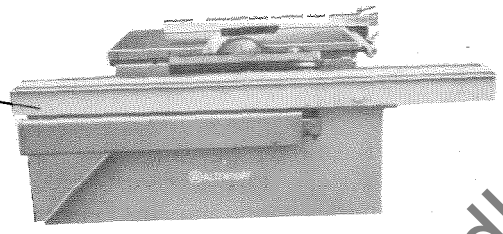
Holes for stay bolts



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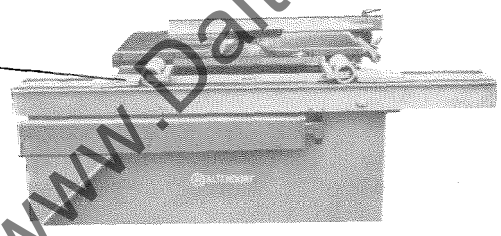

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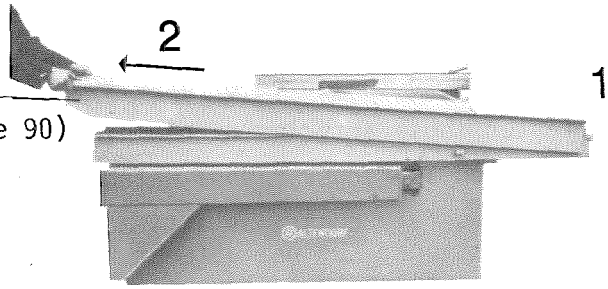

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1
3

ASSEMBLY INSTRUCTIONS

1. DOUBLE ROLLER CARRIAGE

Type 45

If the carriage is ready assembled, fit to the machine frame as described in a) below. If not already assembled, follow all the steps shown below.

a) Bottom carriage

- Loosen, but do not remove, the 2 vertical fixing bolts.
- Apply some grease to the washers so that they stay in place at the top of the bolts.
- Remove 'bowler hat' nuts from the horizontal stay bolts. (Do NOT loosen the counternuts as these are factory adjusted to give the correct carriage to sawblade alignment.)
- Position bottom carriage on frame by sliding it in sideways so that its mountings engage with the vertical bolts and the stay bolts home into the holes provided.
- HAND tighten vertical bolts.
- Firmly tighten 'bowler hat' nuts to stay bolts.
- Tighten vertical bolts down hard.

b) Middle carriage

- Place middle carriage on the rails at the front (operator) end of the bottom carriage.

c) Top carriage

- Remove black end plate at the back end of the top carriage by removing the 2 black hexagonal countersinks in the outer groove.
- Lead carriage in horizontally from the operator end, ensuring that the stabilisers (white nylon rollers) engage under the lips of the bottom carriage.
- Pull right through until the end buffer is reached. (Some resistance may be encountered towards the end of this operation caused by the middle carriage orientating itself correctly - this is quite normal.)
- Refit end plate.

Type 90

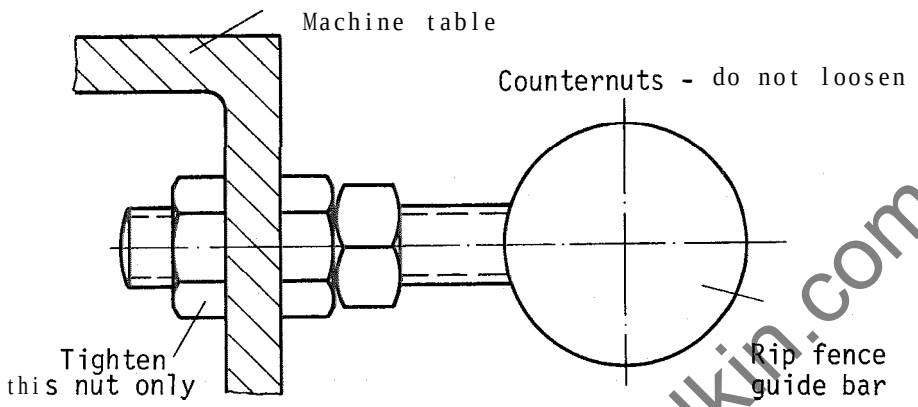
The procedure is the same as described above except that

- The 2 vertical fixing bolts can be removed completely and reintroduced after the bottom carriage has been placed on the frame. (A certain sideways motion is still required to locate the horizontal stay bolts.)
- Nothing needs to be removed from the top carriage before fitting. Hold diagonally (as shown in the photo) so that the end pair of stabilisers engage under the angles of the bottom carriage, pull to end stop and lower. In this end position, the top carriage is no longer prevented from being lifted or lowered by the middle pair of stablisers.

2. RIP FENCE GUIDE BAR.

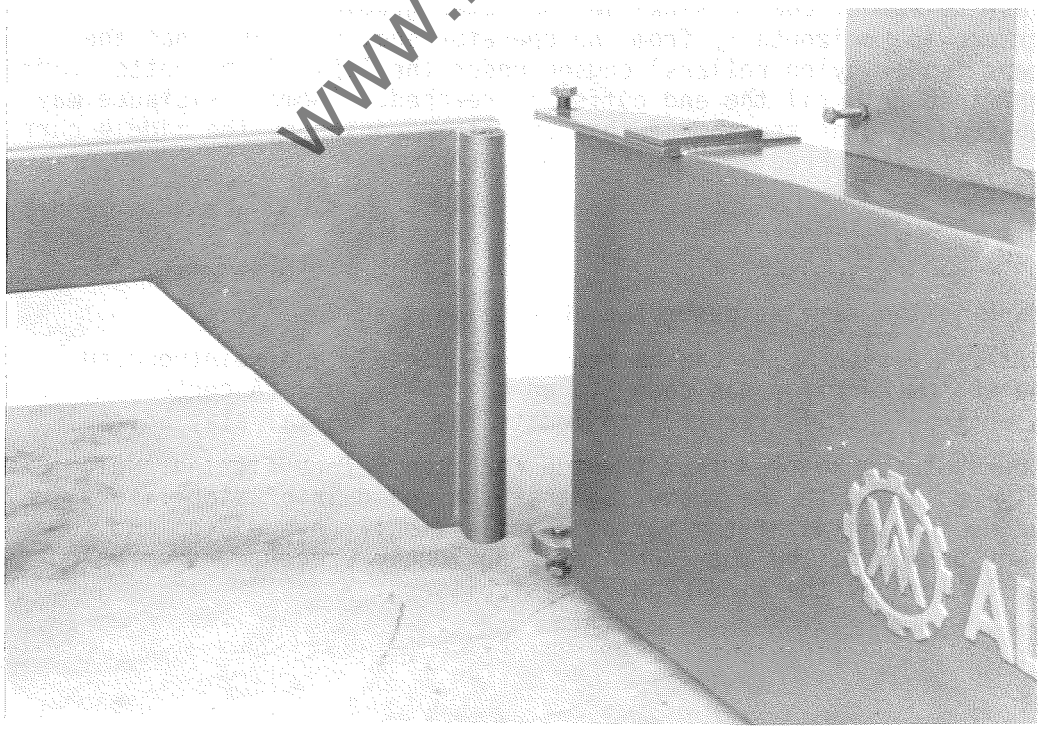
Remove loose nuts from threaded bolts on guide bar,
Push bolts through holes provided in machine table.
Refit and tighten nuts.

Do not loosen counternuts as these have been factory adjusted to ensure that the rip fence runs parallel to the sawblade.



3. SWIVEL ARM

See photo.



4. RIP FENCE SUPPORT PLATE.

Fit to right hand side of machine table using nuts, bolts and pins provided.

5. SEAWORTHY PACKING.

Remove grease and rust inhibitor.
Release motor bracket from shipment fixings.
Fit drive belt. (See OPERATING INSTRUCTIONS)

6. ELECTRICAL CONNECTION

WITHOUT FAIL; before connecting, check that machine and mains voltage are the same.

Check that the sawblade is turning in the right direction. If a prescoring unit is fitted, note that the scoring blade turns in the opposite direction to the main blade.

Motor and switches are ready wired up. Only the connection to the mains requires the services of a qualified electrician.

The overload protection switch cuts in at the amperage shown on the machine card.

BEFORE CONNECTING, CONSULT WIRING DIAGRAM AT THE BACK OF THIS MANUAL:

OPERATING INSTRUCTIONS

1. EDGING

For edging, the clamping shoe is pushed into the two grooves in the double roller carriage and fixed in position by tightening the black plastic knob.

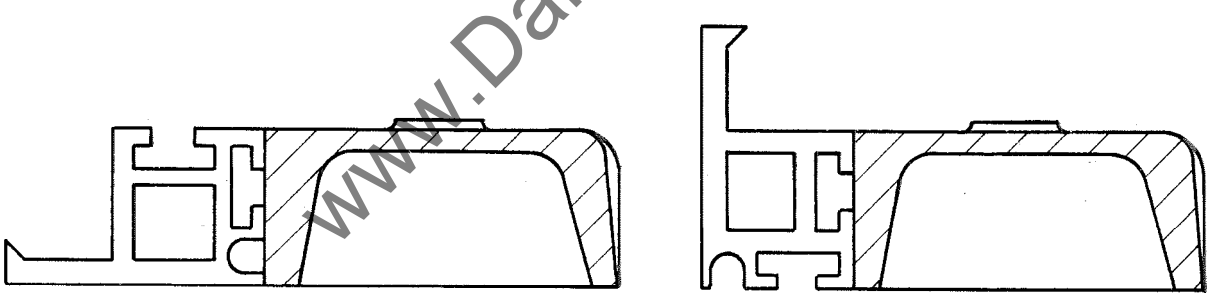
The carriage can be held stationary in its middle position, if required, using the bolt provided in the machine frame.

2. CUTTING TO WIDTH

Slide rip fence to approximate cutting width required and clamp in position using bottom locking handle. Release top locking handle and set exact measurement using fine adjustment spindle (1 turn = 1.5mm). Retighten top handle.

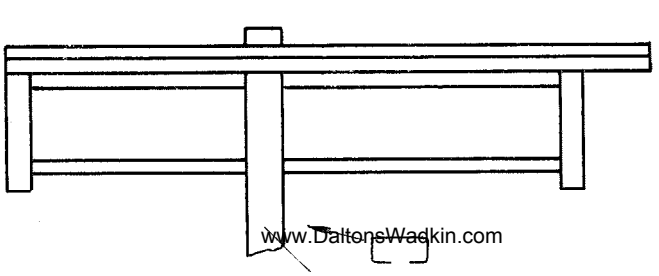
The rip fence can be removed completely by releasing the top locking handle and folding it downwards. When the fence is put back, the preset measurement still obtains.

The aluminium profile of the rip fence is adjustable along the direction of cut. Depending on how it is installed, it can be used in a high or flat position.



3. CUTTING TO LENGTH

The cross slide is fitted on the support bolt of the pivot arm and the round bar which runs along the double roller carriage. To fix in position tighten the knurled screws. It can be positioned at any point along the carriage to suit the size of the workpiece. The aluminium support rail can be adjusted lengthways, sideways and diagonally - see illustration.



Place material on the cross slide, push against the back fence and cut immediately. Push the workpiece, not the cross slide. Position the yellow recall shift so that the operator can use his seat to push the carriage back to the start position while organising his material for the next cut.

The cross fence is provided with two throwover stops, one for lengths up to 1400mm and an extension for lengths in excess of this. The shorter stop is set using the front scale and the extension is set according to the back scale. Measurements are read at the magnifying glasses, not at the stops themselves.

4. SCALES

When changing from one sawblade to another of a different thickness, test cuts should be made to determine the actual measure cut and the scales adjusted accordingly. Each scale is held by a pressure screw and can be repositioned-when this is released.

5. CHANGING SAWBLADE

- Bring carriage to its front end position (operator end).
- Lift up and remove protective plate.
- Set sawblade height to halfway position.
- Lock shaft by pushing the holding pin provided through the hole in the table top into the corresponding hole in the shaft.
- Release nut (left hand thread) and remove flange and blade.
- Clean nut and flange, lightly grease and fit new blade.

6. CHANGING SAWSHAFT SPEED

The machine has four speeds, the outer pulley grooves for the lowest, the inner for the highest. To change speed:

1. Raise the motor by pulling down the handle at the upper right hand side. (A small bolt loosely fitted in the shaft of this handle slips down when the handle is pulled and catches behind, holding the motor assembly in the up position.)
2. Select speed required by moving belt to new position on BOTH pulleys.
3. Turn the winged shaft to the position which corresponds to the new speed setting. In the wrong position one of the wings will impede the free movement of the belt. This controls the external display of the speed in the RPM window.
4. Relower motor assembly, taking great care to ensure the belt remains on the matching pulley grooves as you do so.

If the machine is run with the belt wrongly placed on non-matching grooves, we can practically guarantee that the belt will break.

7. CHOICE OF SAWBLADE AND SPEED

For the quick and clean cutting of most types of wood and plastics, the speeds shown in column I below should be employed.

For thicker wood and wood which tends to jam or warp, the speeds shown in column II should be used.

Because of the high shaft speeds, sawblades with fine, numerous teeth cannot be used. The sawblades must have sufficient gaps between the teeth to allow space for the greater quantities of sawdust and chips created by the higher cutting speeds.

N.B. Cutting veneers requires approximately twice the number of teeth.

Blade Ø	Cutting height mm	Column I RPM	Column II RPM	Number of teeth*	
				Chrome-vanadium	TCT
250	55	6000	5000	32	32 - 60
300	80	5000	4000	40	40 - 72
350	105	4000	3000	52	20 - 60
400	130	3000	3000	60	24 - 72

* Depending on material and tooth shape

IMPORTANT

- Maximum main sawblade diameter 350mm for machines with scoring unit.
- NEVER exceed maximum sawblade/tool speeds prescribed by manufacturers or legislation.
- If the above instructions and recommendations are followed, the high speeds result in the cleanest cuts and make the least possible physical demands on the operator.
- The high cutting speeds demand quick feeding of workpieces. Otherwise the sawblade becomes too hot causing fire spots and cracks which can weaken it dangerously.
- HSS sawblades must NOT be used as they are prohibited by law for the speed range of the machine.

8. SCORING

With the scoring unit, panels faced on both sides with laminate/ veneer can be cut without any chipping out of the underside facing. The scoring blade cuts into the material to a depth of about 2-3 mm and then the main blade completes the cut.

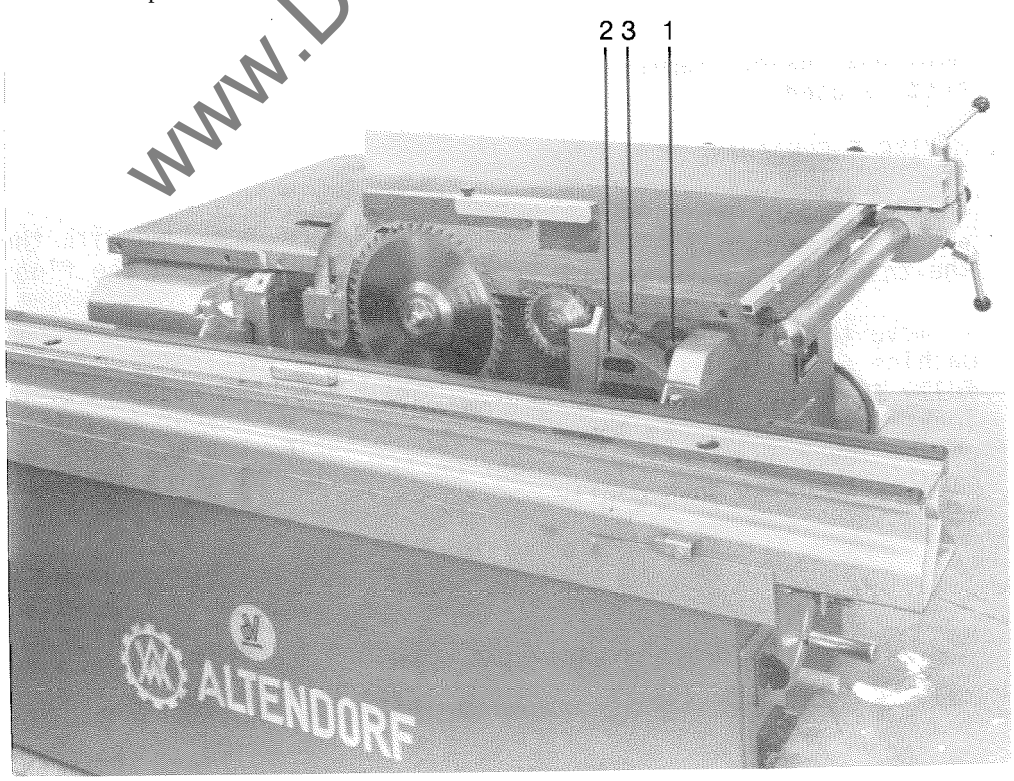
To work properly it is essential that

1. the scoring blade lines up precisely with the main blade. Sideways adjustment is carried out by turning the hexagonal nut (n°1 in the photo).
2. the width of the scoring blade is a fraction of a millimetre (1/20th mm) wider than that of the main blade. We recommend the use of scoring saws consisting of two blades with shims between them as these allow precise width adjustment. Single blade scoring sawblades with tapered teeth where the width is adjusted by varying the depth of cut become inaccurate as soon as the material to be cut is even very slightly bowed - a gap between workpiece and machine table reduces the depth and thus width of cut causing chipping out.

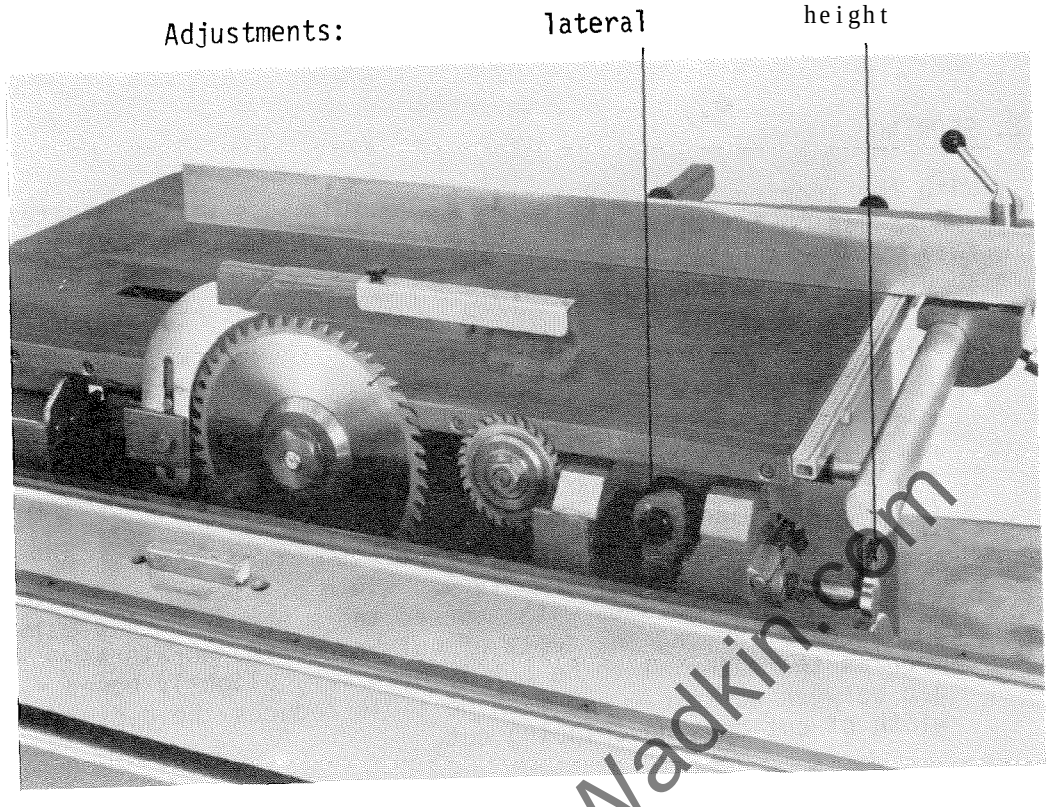
To adjust the height of the scoring blade: Type 45 - loosen the clamping screw (N° 3), adjust the lever (N° 2) and retighten the screw. Type 90 - use the handle on the front side of the machine (see photo next page).

The scoring saw turns in the opposite direction to the main sawblade and for safety reasons will only operate when the main motor switch is in delta position.

Type 45



Type 90



9. USE OF MILLING CUTTERS

Between sawblade and machine table is a strip of wood which can be removed. This allows moulding cutters (or, for GROOVING ONLY, a mixture of sawblades and cutters, or several sawblades) to be mounted on the sawshaft to a maximum width of 30mm.

N.B. When using chamfering cutters, an anti-kick-back device must be used.

IO. MOVING THE MACHINE

So that it can easily be moved, the machine is provided with three wheels, only two of which are normally in contact with the floor, the third being retractable.

To move the machine, pull out the lever at the operator end of the machine frame to its full extent. Push the double roller carriage fully forward. Put your weight on the lever with your foot till it locks in position. To lower the machine again, replace your foot on the lever and keep your weight on it while releasing the locking handle, then let down gently.

ADJUSTMENTS

All machines leave our factory with all fences etc. precisely set to the specifications shown in the machine testing record. Should any of these settings require adjustment at a later date, proceed as follows:

I. Double roller carriage to sawblade

To maintain the best quality of cut, it is essential that the double roller carriage runs parallel to the sawblade. To readjust:

- Release the two vertical bolts which attach the carriage to the machine frame.
- Adjust the parallel running by resetting the counternuts on the two horizontal staybolts.
- Retighten vertical bolts.

2. Parallel fence to sawblade

To readjust, loosen nuts on the outer of the two bolts holding the rip fence guide bar, reset counternuts and retighten in new position, finally retighten nut inside machine frame.

3. Square cut

The aluminium fence on the cross slide is fixed in position by two bolts (black plastic knobs), one at each end. The position of the bolt at the inner end is fixed, but the outer bolt homes into a flat metal plate which is adjustable when the two countersinks in the anodised aluminium bar are loosened (2 turns at most).
Do not try to measure the squareness of the cut using a workshop angle. Instead, take a panel and make 5 right angle cuts (i.e. turn 4 times in an anti clockwise direction). If the fence is correctly set to 90°, the 5th cut must be parallel to the first and the 5th waste strip must be exactly the same width at both ends.

NEVER ATTEMPT TO SET THE SQUARE CUT BY ADJUSTING THE DOUBLE ROLLER CARRIAGE.

The cross fence can be lifted off when the two bolts holding it are undone. This provides a greater area for mitre cutting and working with large panels.

4. Relative height of carriage to machine table

The double roller carriage is set very slightly - 0.3mm - higher than the machine table to facilitate feeding. If readjustment is required the height of the machine table is adjusted at its 4 support bolts.

To raise: loosen lower nuts and tighten down top nuts
To lower: loosen top nuts and tighten up lower nuts.

Finally, check and readjust parallel fence as necessary.

5. Horizontality of cross slide

Adjustment is made using the two nuts on the support bolt at the end of the swivel arm.

6. Lateral adjustment of the sawblade

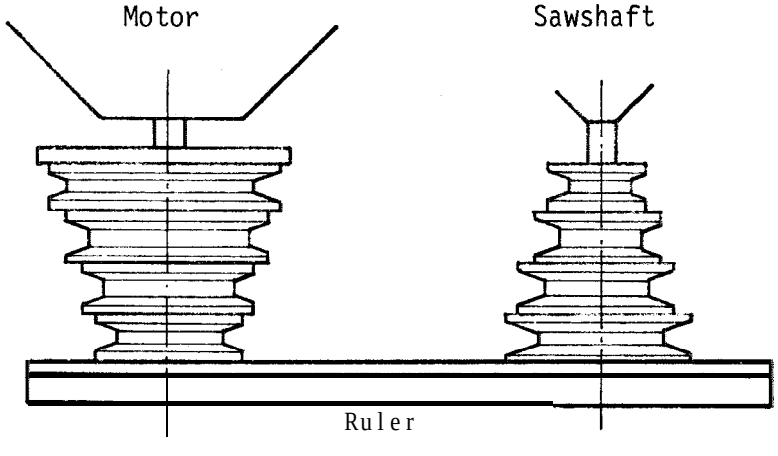
The sawblade is positioned as near to the machine table as possible to prevent narrow waste cut-offs slipping down between blade and table. Adjustment is carried out as follows:

The casting which holds the sawshaft is retained at its end nearest the rip fence guide bar by two studs, each held in position by a counternut (marked in red), one of which is accessible from the chips channel side, the other from inside the machine frame. To adjust:

- Loosen counternuts
- Unscrew stud at the end towards which the movement is to take place to a maximum of one full turn (half turn = 1.25mm sideways movement).
- Screw in opposite stud
- Retighten counternuts

7. Drive belt pulleys

If the sawshaft and motor pulleys get out of line, the normal result is that the belt eventually breaks. It is advisable to occasionally check the alignment with a ruler as shown in the sketch below.



If adjustment is required:

- Loosen the two ring clamps on the shaft holding the motor support bracket
- Move the whole unit in the direction required, checking alignment with ruler
- Retighten ring clamps
- Recheck alignment

For belt specifications see machine card.

8. Carriage stabilisers

The white plastic wheels which run under the lips of the bottom carriage prevent the top carriage from tipping when fully extended (end pairs) and from tipping towards or away from the sawblade (central pair).

As the stabilisers are fitted on eccentric mountings, adjustment is a simple matter of loosening the central nut and turning the eccenter using a pin or a nail in the hole provided.

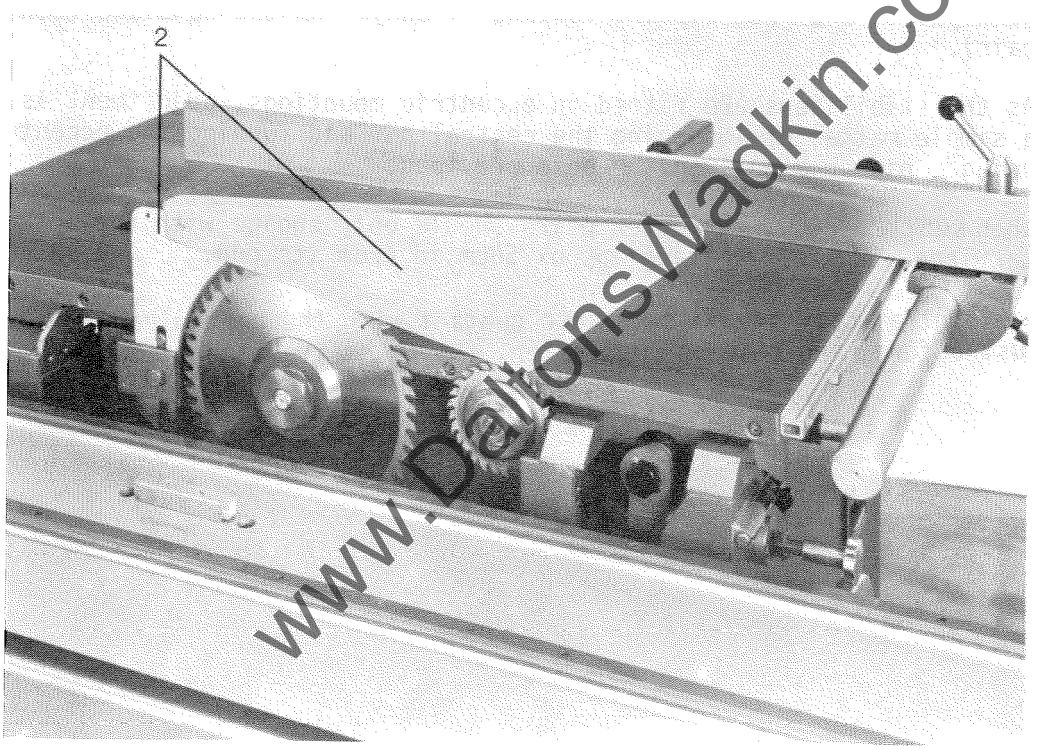
When setcorrectly, the outer pairs should only engage with the bottom carriage and start rolling approx 50cm in from its end.

The central pair should come into contact with the bottom carriage just before, and release just after, they pass the machine table.

SAFETY DEVICES

1. RIVING KNIFE

In addition to the normal protection of all rotating parts, the machine is also supplied with riving knives in accordance with modern safety regulations. Sizes of riving knife supplied cover all the most common sawblade diameters up to the maximum the machine will accept - 350mm with scoring unit, 400mm without.



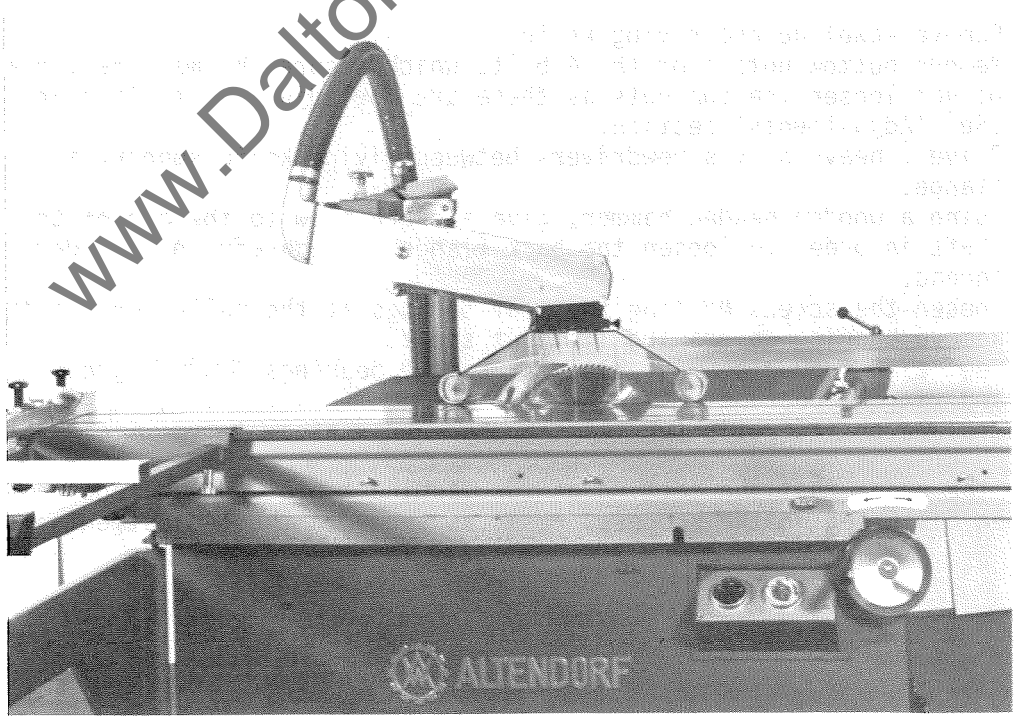
The riving knife, which in some countries incorporates a safety hood, is clamped in its holder as shown in the above photograph. It must be selected and set in accordance with the prevailing safety regulations in each country. For rebating or grooving, the short riving knife supplied must be used.

2. PARALLEL SAFETY HOOD

The parallel safety hood is supplied as an optional extra and is suitable for use with blades up to the maximum the machine will accept - 350mm with scoring unit, 400mm without. It is designed to protect the operator particularly when materials such as aluminium or plastics are being cut. In some countries, such as West Germany, it is a legal requirement and must be used when cutting any type of material. Even if originally supplied without one, all machines are predisposed for the fitting of the parallel safety hood at a later date.

In addition to its safety role, the device has two further advantages:

- it provides a dust extraction outlet above the sawblade
- when cutting thin materials, the front roller on the hood acts as a pressure device and helps to stop them fluttering.



MAINTENANCE

1. General

Regularly remove chips and dust from the inside of the machine frame, making sure that the drive belt pulleys in particular are kept clean.

From time to time, the threaded spindles inside the machine should be cleaned with resin solvent and lightly oiled, and the rails of the double roller carriage wiped over with a rag soaked in diesel to stop sawdust sticking. If the retractable part of the swivel arm is dirty, remove the rubber stopper from the back end and the aluminium face plate from the front and blow through with compressed air. To remove the retractable part completely, remove the two bolts at the aluminium face plate end and pull it out.

2. Saw shaft

The saw shaft ball bearings are totally enclosed. After about 5000 working hours, the bearings should be changed.

To dismantle/refit:

- Remove sawblade and riving knife.
- Remove bottom nuts from the 4 bolts which secure the machine table. Do not loosen the top nuts as these are for adjusting table height. (See 'Adjustments' section.)
- Drive 2 heavy duty screwdrivers between riving knife support and back flange.
- Using a wooden headed hammer, give a sharp blow to the end of the saw shaft in order to loosen the back flange. Be careful not to damage the thread.
- Loosen the screws holding the leaf springs at the pulley end of the shaft.
- Remove bearing covers and lift out shaft.
- Peel back rubber bearing sleeves, remove bearings, lightly grease shaft and fit new bearings.
- Replace shaft, retighten leaf springs and reassemble.

In the event that the setting of the machine table and rip fence have been disturbed in the process, reset as shown in the 'Adjustments' section.

ELECTRICS

The starter consists of

MAIN SWITCH (RED) (can be padlocked against use by those unauthorised)
STAR DELTA SWITCH (BLACK) (N.B. in some countries a direct starter is fitted)

If the machine is fitted with a scoring motor, this can not be switched on independently of the main motor, as it is activated in the last position (V) of the black switch. The switch must be pushed in as well as turned to reach this position.

Main motor and scoring motor (where fitted) are provided with thermal overload protection.

A built-in low voltage release shuts the machine off in the case of voltage reductions. (Not applicable in all countries.) When this operates it can cause a slight humming noise which stops when the main switch is turned off.

Before the machine can be restarted after operation of safety cut-outs, both switches must be reset to zero. The main switch must always be operated first. The electrical switch plan can be found in the starter housing.

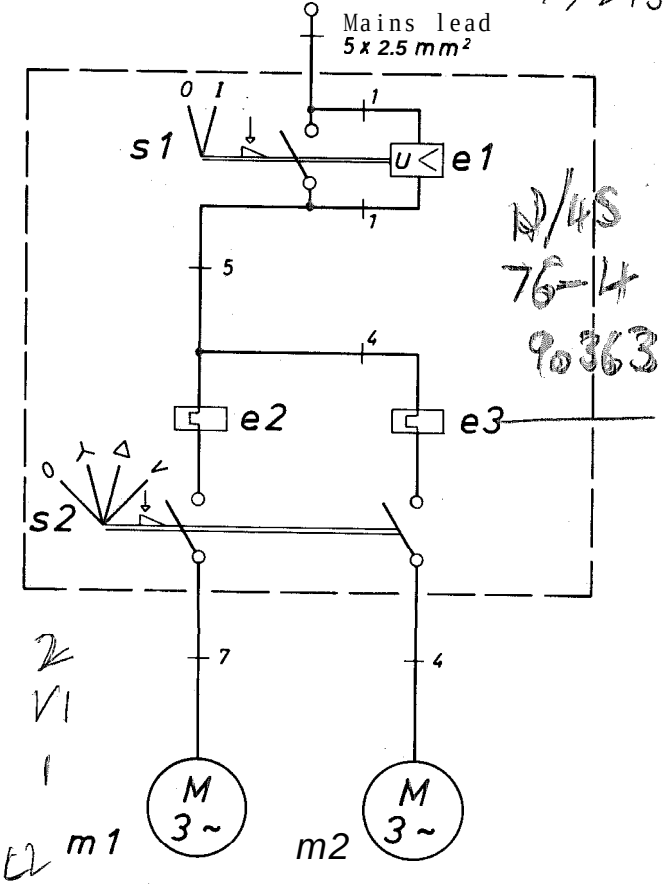
TYPE N/4S
88-4
77213

WIRING DIAGRAM

Cable from star-delta starter to motor:
1 =u 4 = U1 (Z)
2 = V 5 = VI (X)
3 = W 6 = W1 (Y)

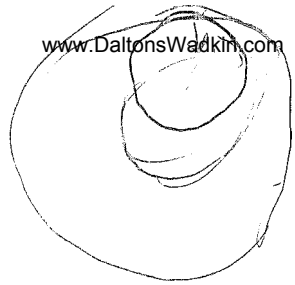
S1 = main switch, positions: 0-1
el = low voltage release
e2 = overload relay
e3 = overload relay scorer
S2 = star-delta starter with scoring motor switch, positions: 0-star-delta-(push-in barrier)-scorer.
ml = main motor
m2 = scoring motor

Motor m2 only for machines with scoring unit.



N/4S
76-4
9o363

U4 L4 2
W1 L3 V1
U1 L1 1
U2 W6 L6 V5 V2 W2
L5 —



SPARE PARTS LIST FOR SCORING UNIT

TYPE 90

Qty.	Description	Part Number	Qty.	Description	Part Number
2	Lagerdeckel	8.1	2	Zwischenringe	8.9
1	Ritzergehäuse	8.2	2	Kugeliager 6003	8.10
1	Ritzerwellenmutter	8.3	2	Nilosringe 6003	8.11
1	Flansch 80 mm Ø	8.4	2	Schlauchringe	8.12
1	Ritzerwelle kompl.	8.5	1	Distanzhülse	8.13
1	Riemenscheibe	8.6			
1	Unterlegscheibe	8.7			
1	Senkschraube	8.8