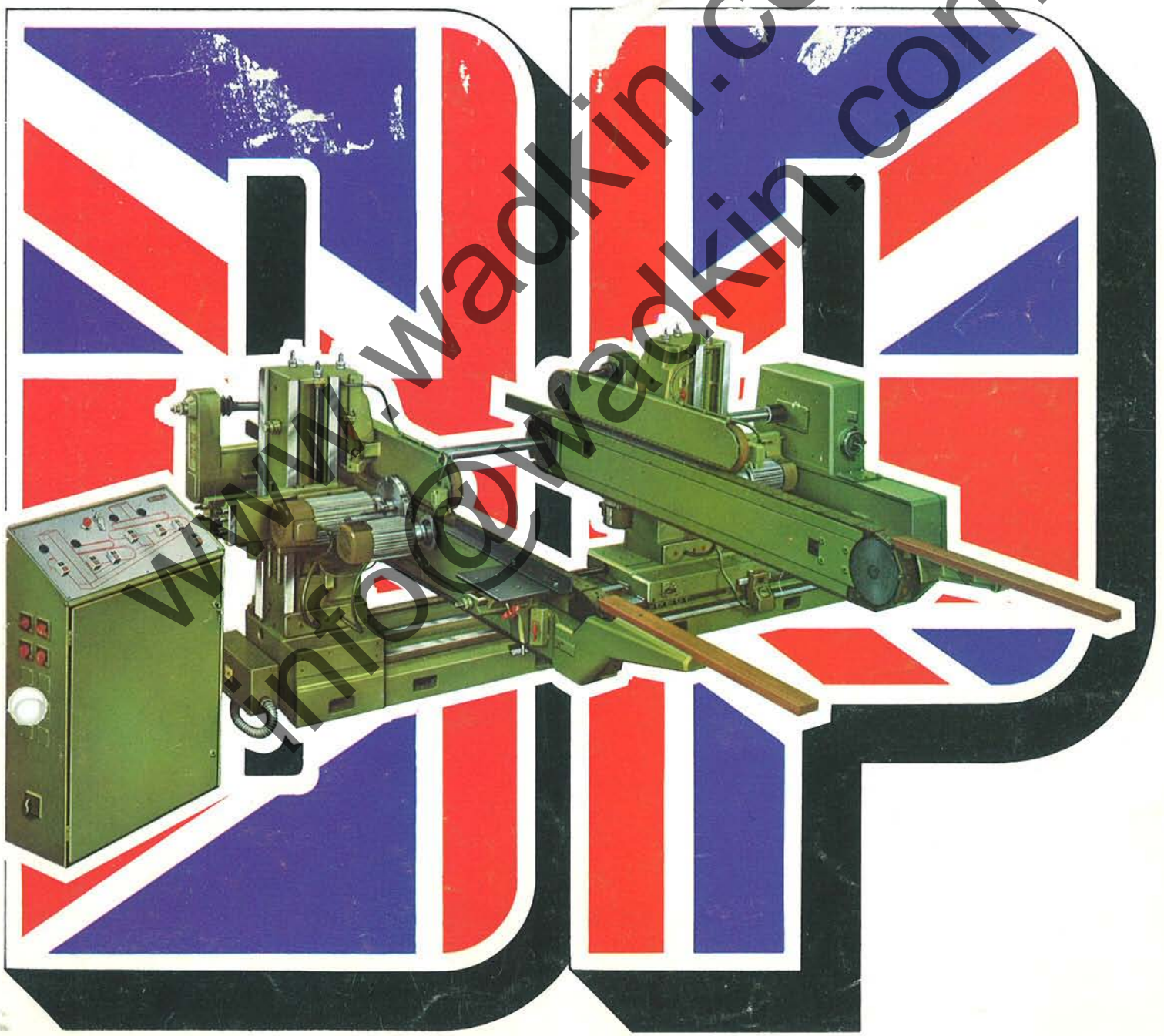


14'6" x 12'

# Wadkin

## Double Ended Dimensioning & Profiling Machine

British Standard Classification 81-13



# DP Double Ended Dimensioning & Profiling Machine

This is a new generation double ender offering an unprecedented combination of high performance, quick setting-up features, and versatility for both panel and joinery work.

The Wadkin policy of continuous development and improvement are immediately apparent in the DP: notably in the new feed chain with its very high accuracy, durability, and quiet running, as well as the many features for reductions in setting-up time.

The capability of the Wadkin DP, coupled with the fact that it is the only British-built machine of its kind, makes it a must in the industry from the small joiner to the large furniture manufacturer.

[www.wadkin.com](http://www.wadkin.com)  
[info@wadkin.com](mailto:info@wadkin.com)

**A New Generation of British Double Enders  
for your Panel and Joinery Work**

# LOOK AT THESE FEATURES

**High performance**

Feed speeds available up to 46 m/min (150 ft/min).

**Quick setting-up**

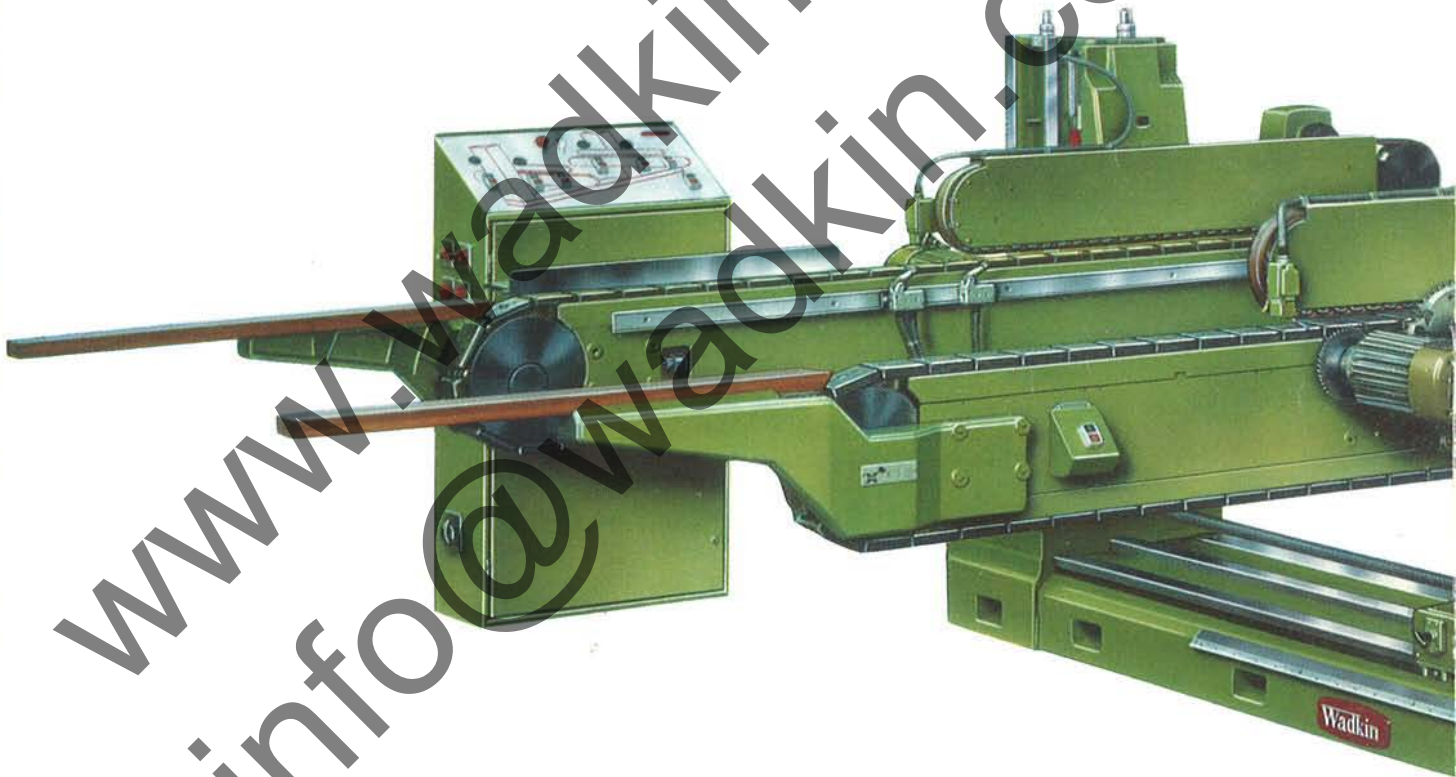
Particularly advantageous on small runs.

**76 different models**

A choice of 19 head sequences and four bed lengths.

**Greater machining accuracy**

Precision made stainless steel feed chains.



**Quick change dogs** Patented chain dogs combine quick change features with better workpiece control.

**Feed chain reversal** Quicker setting up and easy clearing of machine.

**Durability** Extremely long life chains with moulded platforms and high friction polyurethane facings.

**Versatility** Equally proficient in cutting off, sizing, rebating, grooving, scoring, jump scoring, jump relishing, mitring, profiling, tenoning or dovetailing.



Fig. 1

**Wadkin**

## Industries Served

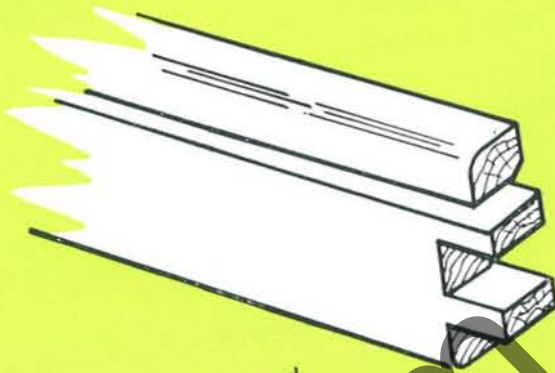
No machine offers greater possibilities for improving production of all classes of manufactured woodwork than a Wadkin Double Ender. This latest Dimensioning and Profiling machine model DP has been designed and engineered to handle a wide range of work with a high degree of accuracy. As demonstrated below, there is an application for this machine in every field of woodworking. The economy in labour effected by automatic double end working, plus the higher standards of accuracy resulting from the elimination of multi-handling for separate operations, makes this an investment that can easily be justified in any woodworking shop large or small.



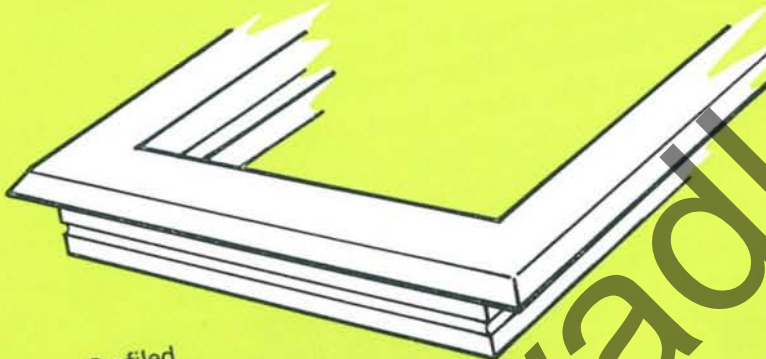
# Typical Products



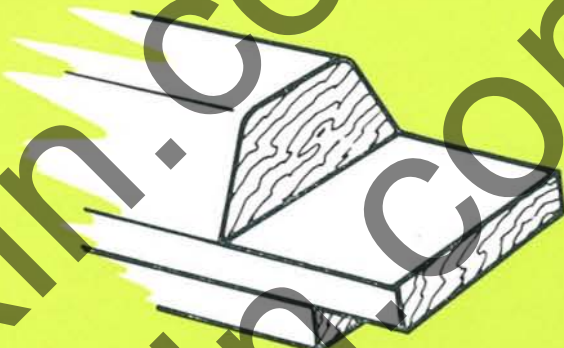
Trimmed flush door



Tenoned door frame



Profiled window sash



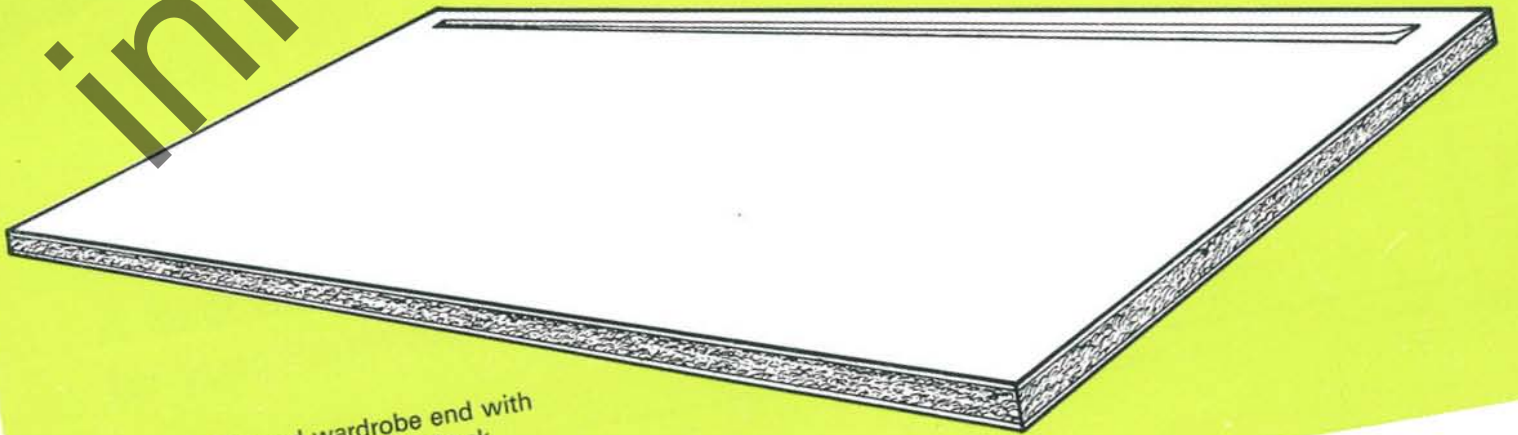
Tenoned and scribed window transom



Trimmed melamine faced kitchen unit door



Profiled solid lipped furniture panel



Trimmed wardrobe end with stopped groove for back

# Cutting Operations

Fig. 2 Cutting off or panel trimming by hogging

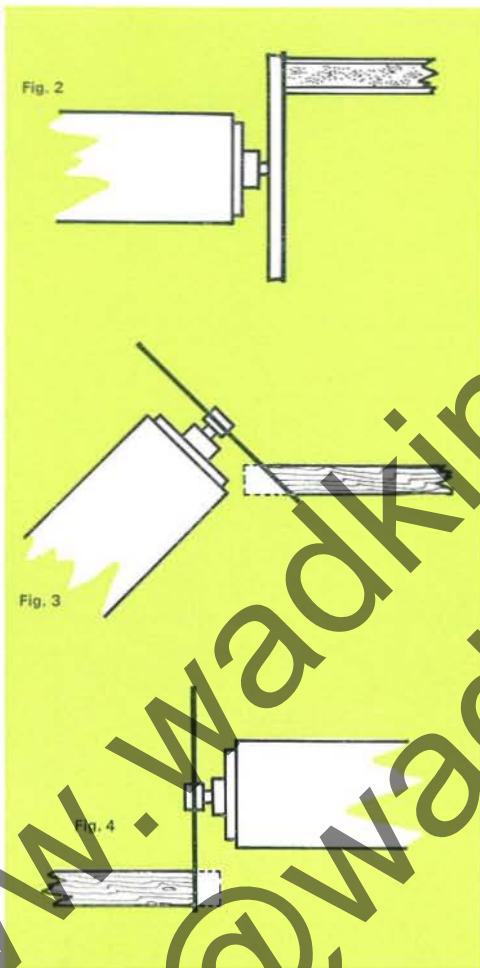


Fig. 3 Angled sawing

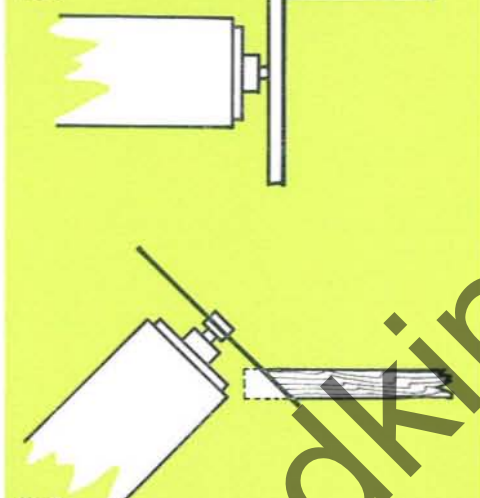


Fig. 4 Cutting off by saw

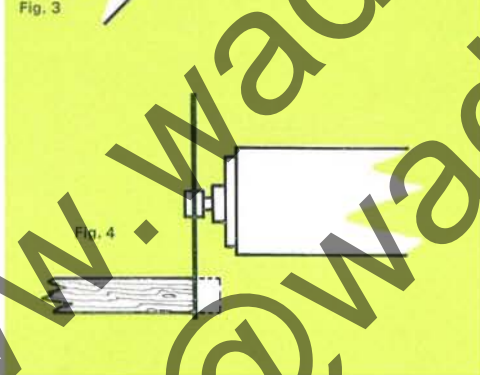


Fig. 5 Scoring and hogging for clean top and bottom faces

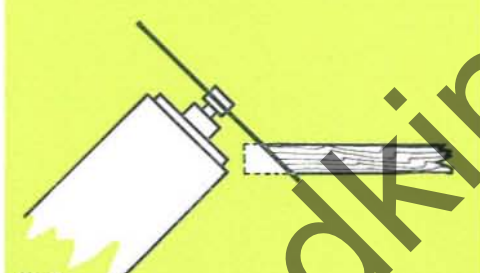


Fig. 6 Jump scoring and hogging to give clean ends in addition

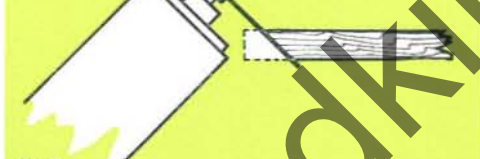


Fig. 7 Contra rotating jump heads for melamine faced panels

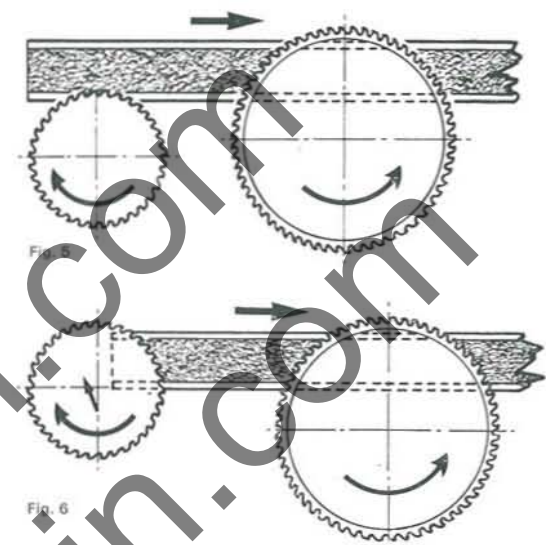


Fig. 8 Grooving with head mounted on extension spindle projected through main beam

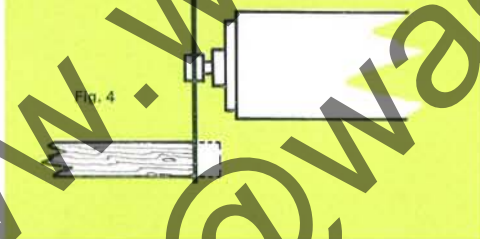


Fig. 9 Fork jointing

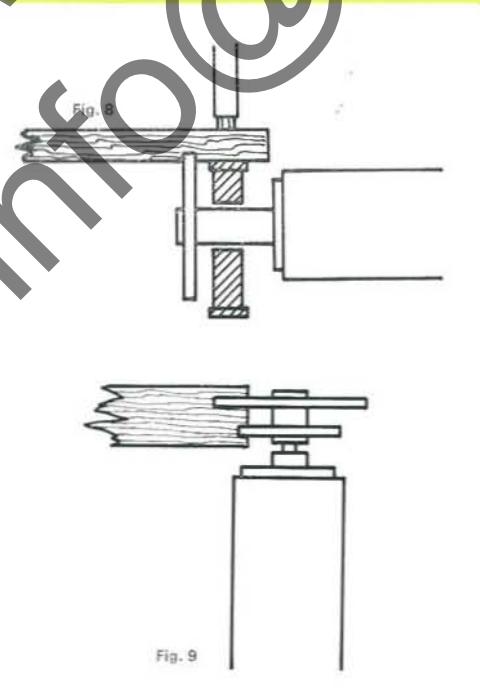


Fig. 10 Tenoning

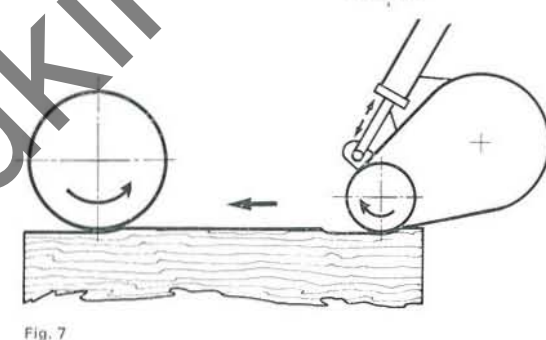
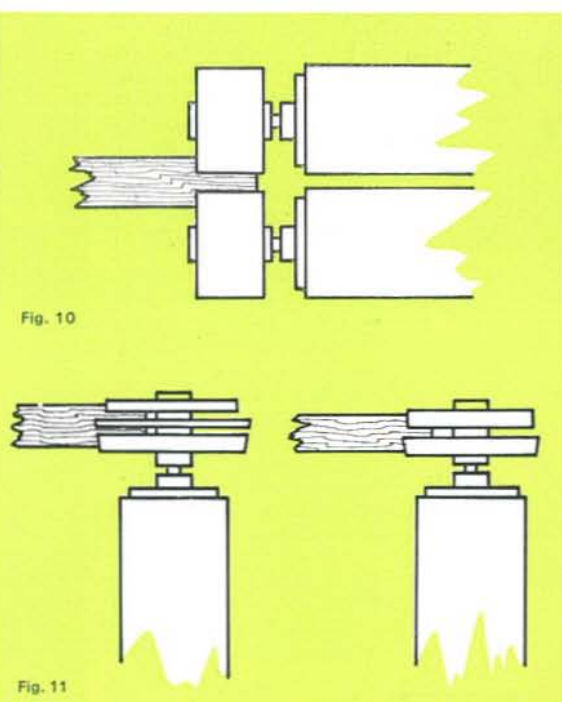


Fig. 11 Double and single tenoning



# Cutting Heads

Multi head machines are supplied as detailed on page 15 and with 19 head sequences will satisfy all the particular needs of the industry. These units can be used vertically or horizontally thus permitting a wide range of operations. All heads will rotate through 180° giving enormous flexibility to cutting arrangements. They are fitted with exhaust hoods to suit the cutter equipment and with metric rules (imperial scales are available to order). The head units can be supplied with direct motors (Fig. 13) and a frequency changer or belt driven (Fig. 12).

See specification page 17 for details.

The belt driven heads allow the spindles to be positioned closer to the track in the vertical plane and when used in tandem in the horizontal position. This permits smaller cutter diameters to be used and enables the spindle to be used closer to the work providing greater stability.

Additional heads can be fitted on the auxiliary column (Fig. 14) supplied on Suffix 4, 5, and 5D machines.

Suffix 4U machines can be used with the cut off saw above or below the track with no obstruction to the overhanging material because the universal auxiliary column is below the track level (Fig. 15).

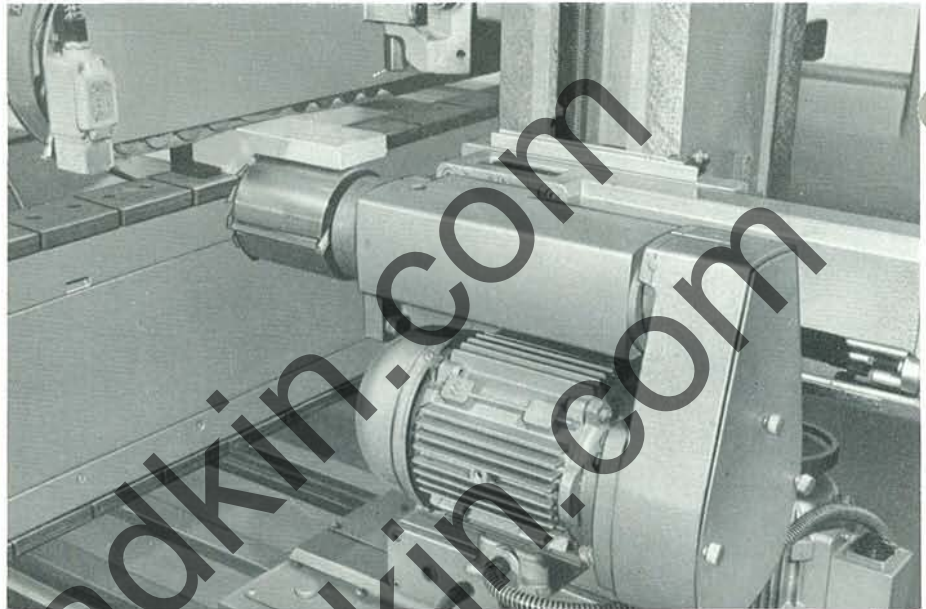


Fig. 12

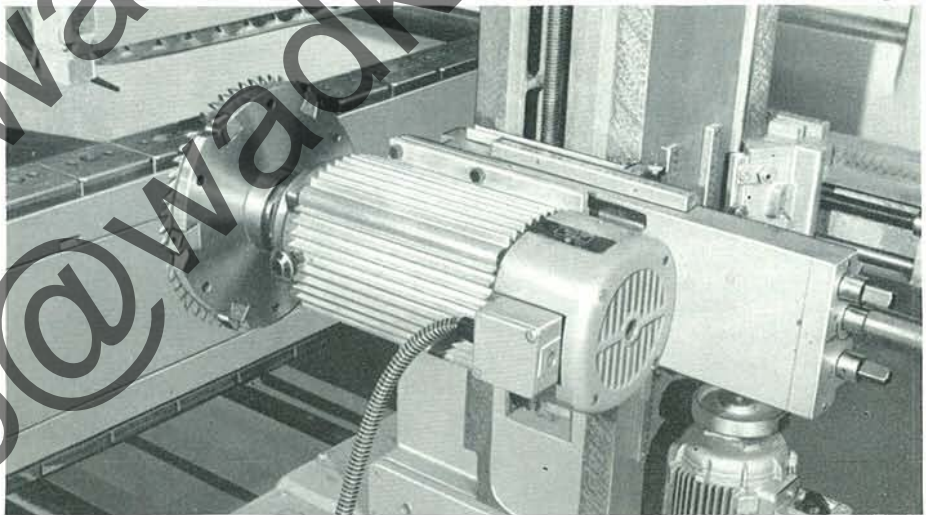


Fig. 13

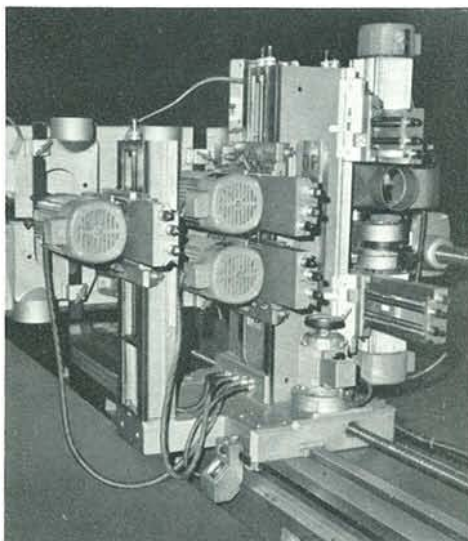


Fig. 14

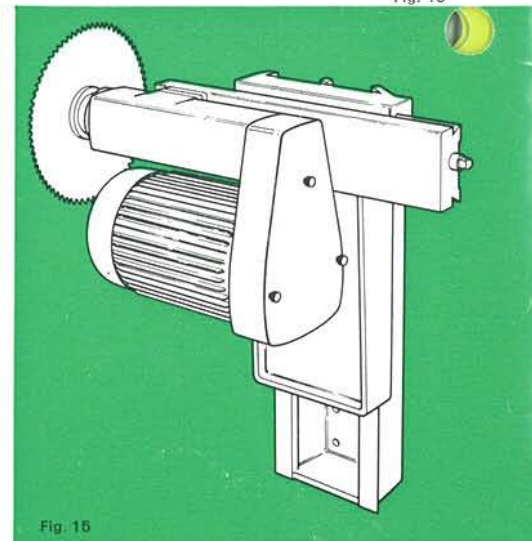


Fig. 15



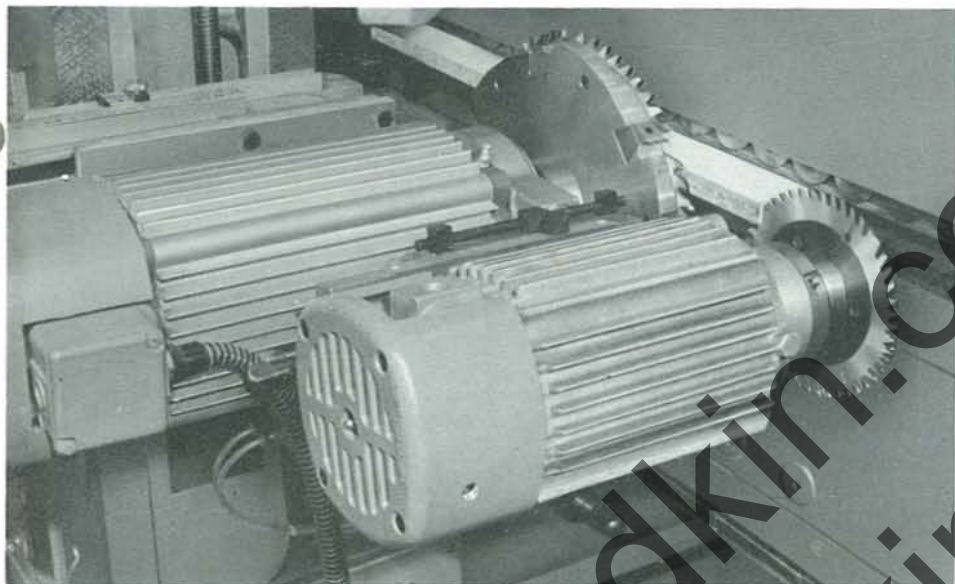


Fig. 16

To ensure clean cutting on the underside and at the trailing edge of panels the machine can be supplied with scoring heads arranged to jump (Fig. 16).

Jump relishing (Fig. 17) is available for stop grooves and stopped rebates. When used in tandem with contra rotating action, break out on the rear edges of made up items can be eliminated.

Fig. 17

Jump equipment can be timed for accurate control by limit switches mounted on the inside of the chain beams (Fig. 19) or by a timing drum assembly driven through adjustable synchronizing gear mechanism suitable for the control of six different jump actions (Fig. 18).

Fig. 18

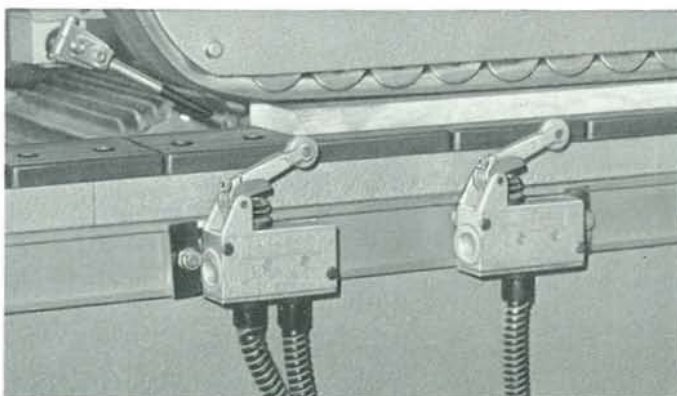
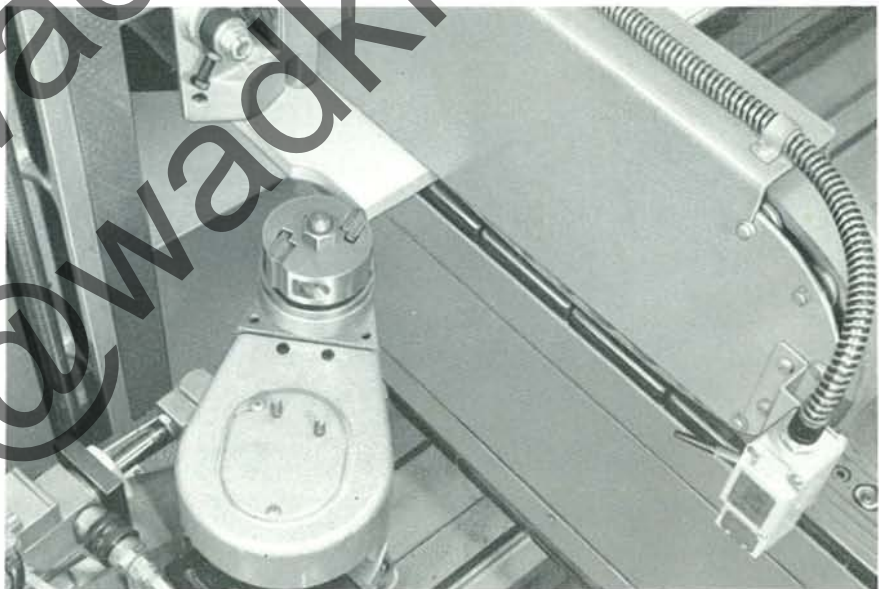
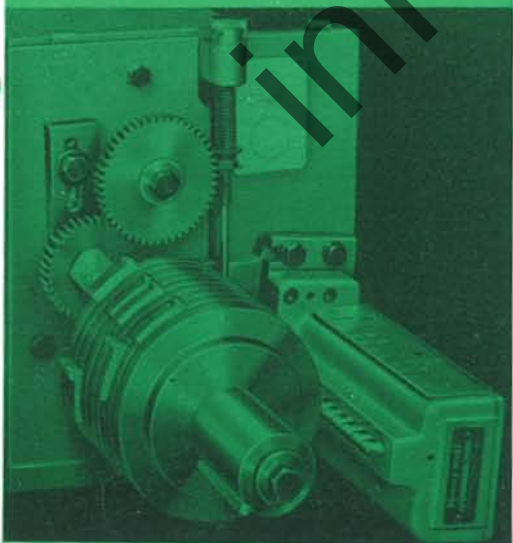


Fig. 19



# Feed Chains

The feed chains and supporting beams (Fig. 20) are of the utmost strength and rigidity to ensure accurate feeding. The chain links are of stainless steel to minimize wear and are virtually indestructible ensuring a long accurate working life. The links are fitted with a top platform accurately guided in the horizontal and vertical planes, and the beams which are of rigid box steel

construction house a front idle sprocket (Fig. 21) spring loaded to maintain constant chain tension. The links are 100 mm (3.937 in) between centres to give close dog spacing facilities and the facing is high friction polyurethane for positive drive to all types of material faces to be worked. Infeed support rails (Fig. 22) to hold larger panels are available if required.



Fig. 20

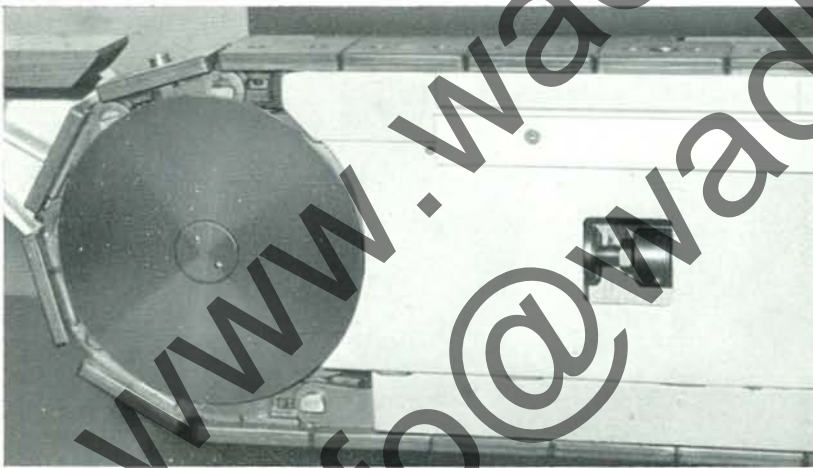


Fig. 21

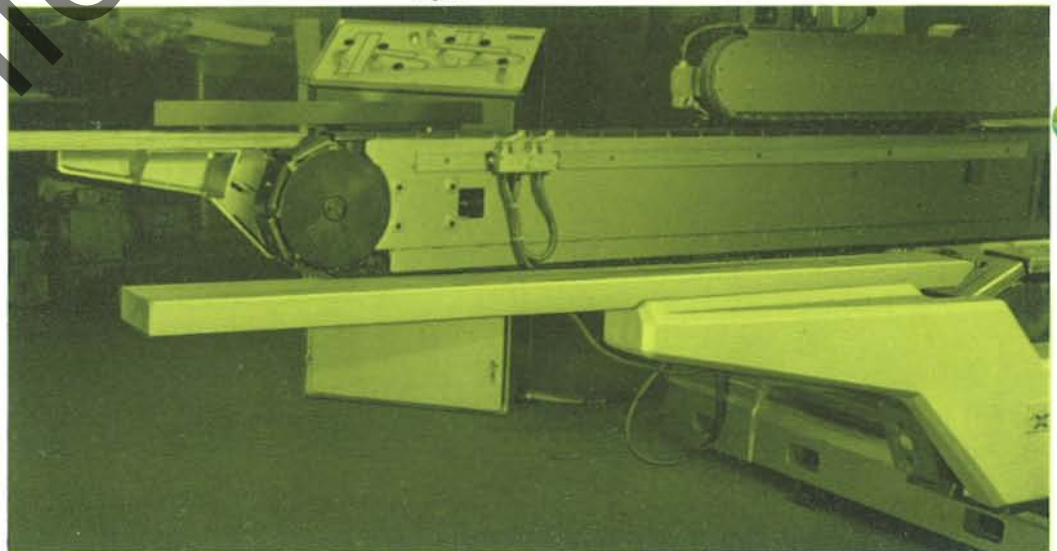


Fig. 22

# Chain Dogs



Fig. 23

In the past, the fitting of backing pieces has inevitably involved a long tedious operation. The speed of fitting the revolutionary DP quick clamping adjustable backing dogs (Fig. 23) now means that these backing dogs can be used for all operations without loss of valuable production time.

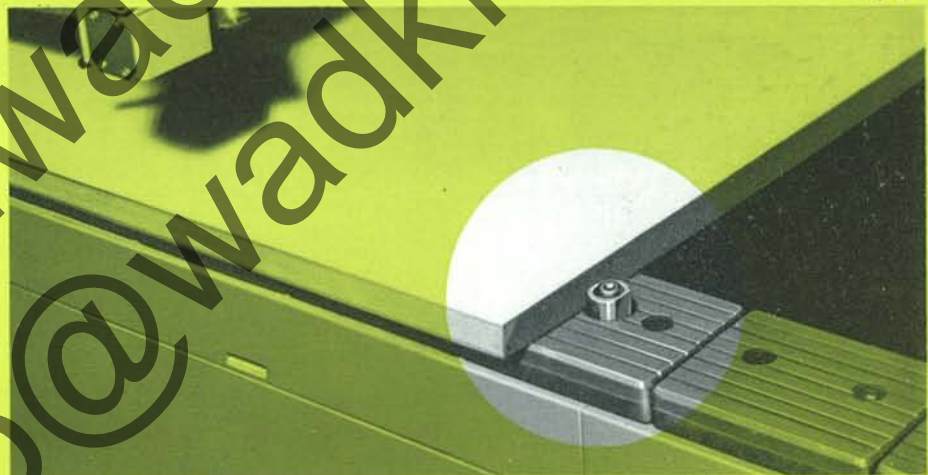


Fig. 24

Plunger type dogs (Fig. 24) with quick retraction and individual squaring facilities are available for panel work. These dogs have a built in accuracy by wedge fitting to eliminate play. Dogs can also be supplied to register to the core when overhanging face material could cause problems.

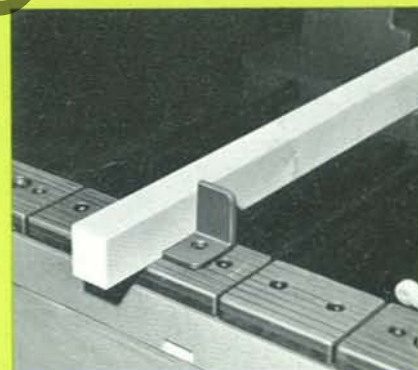


Fig. 25

For different depths of timber, finger dogs (Fig. 25) are available eliminating the need for dog changing, and trapping dogs (Fig. 26) support material on edge right through the machine.

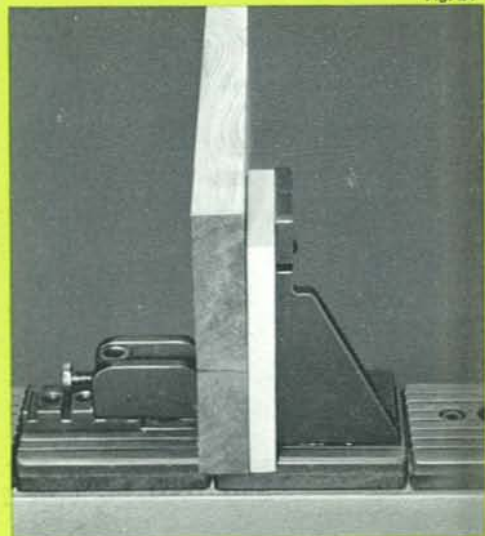


Fig. 26

All dogs can be reversed for material to be fed in front of or behind them.

# Overhead Pressures

Positive traction is ensured by facing the feed chains with polyurethane and using a special rubber faced top pressure belt controlled by close centre spring loaded pulleys. The positive traction permits single track working (Fig. 29).

To enable panels to be fed greater in length than the infeed capacity or to feed against reverse facing dogs, a drive to the top pressure belt (Fig. 27) is available to order. This drive is controlled by a friction clutch gear driven from the back shaft and adjustable by the operator. The speed is set to run slightly faster than the feed chains.

Lateral control of the top pressure belts to allow a 28 mm adjustment across the feed chains gives many advantages and enables a wider variety of work to be machined than is possible on double enders

with a fixed top pressure. When the top pressure runs on the inside of the feed chains (Fig. 32) the top cutting tool can be set closer to give a better finish. By setting the top pressure to the outside of the feed chains (Fig. 31) narrow materials such as window sashes can be held much closer to the workpoint ensuring positive drive and greater accuracy of the profiling. The rollers to the pressure belts (Fig. 28) will permit a 15 mm ( $\frac{5}{8}$  in) variation of stock thickness at any one setting and a safety feature is fitted to stop the feed if two panels or oversized stock were fed inadvertently.

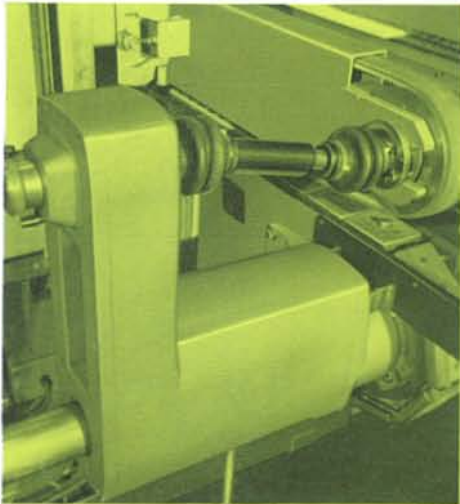


Fig. 27



Fig. 28



Fig. 29

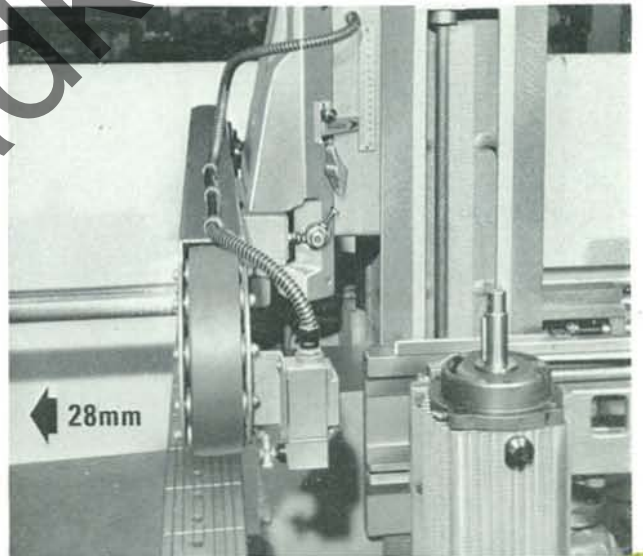


Fig. 30



Fig. 31

Caterpillar top pressures (Fig. 30) are available and are specially suitable for feeding deep narrow rail sections on edge.

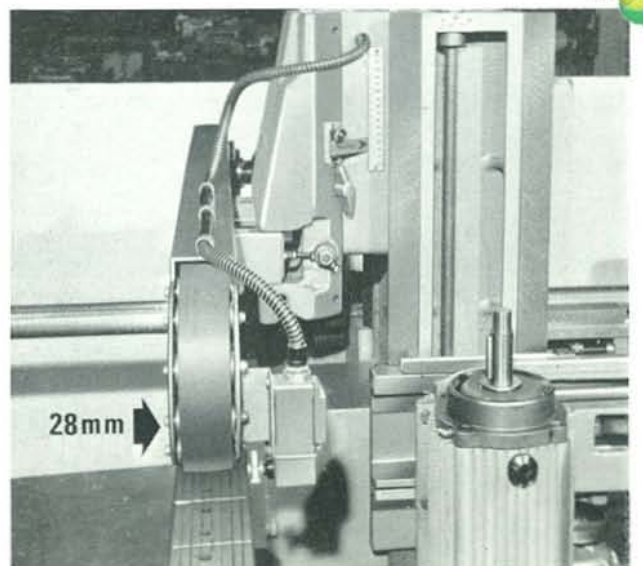


Fig. 32

# Feed Drive

The standard feed speed range is 3 to 23 m/min (10 to 75 ft/min) with an optional feed range of 6 to 46 m/min (20 to 150 ft/min). The feed control through these ranges is infinitely variable and will therefore permit the optimum finish to production speed. The drive is by a 3 kW (4hp), 750 rev/min motor through a variable drive and gearbox (Fig. 34) to a

sturdy 70 mm (2 $\frac{3}{4}$  in) diameter back shaft. To attain smoother running and greater accuracy from the two chains the front sprockets are spring loaded and patented cams gently control entry of the chain.

For quicker setting up and clearance of material from the machine both track reversal and braking features are available.



Fig. 33



Fig. 34

# Lubrication

Lubrication and cleanliness of the feed chains are maintained by an air blast distributing from nozzles on the beam a high powered oil mist air stream. The nozzles only operate when the feed chains are in motion.

Each link pin incorporates an individual oiling point (Fig. 35) for joint lubrication. To ensure easy frictionless movement of the adjustable head stock, lubrication to the bed slideways, leadscrew, and back shaft is provided by a hand actuated oil pump (Fig. 36) positioned at the traverse control point.



Fig. 35

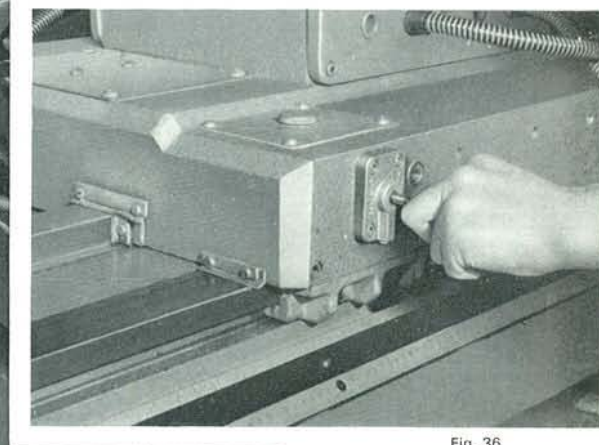


Fig. 36

Wadkin

# Auxiliary Attachments

A wide range of guards is available to suit all types of cutter equipment. Each guard incorporates a common fitting, permitting ready removal and replacement without the use of spanners (Fig. 37).

Rise and fall adjustment of fences (Fig. 38) is particularly useful when using thin fences for core stock.

Swing away fences (Fig. 39) are available and in most cases obviate the need for long fences.

The standard fence plate (Fig. 40) can be reversed for core stock work.



Fig. 37



Fig. 39



Fig. 38



Fig. 40

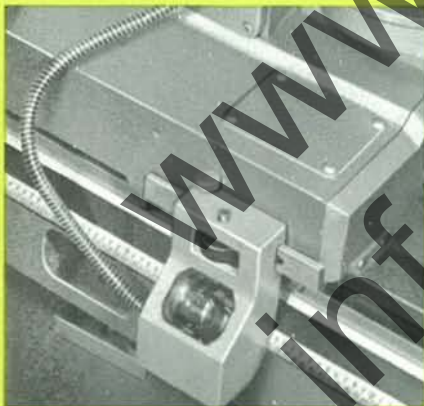


Fig. 41

The illuminated scale magnifier (Fig. 41) is ideally positioned for an operator to read clearly the scale while making fine adjustment to the adjustable beam by handwheel (see Fig. 50).

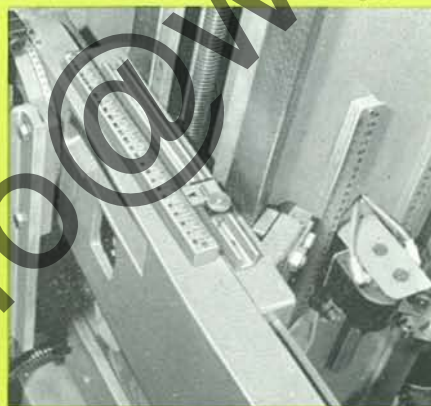


Fig. 42

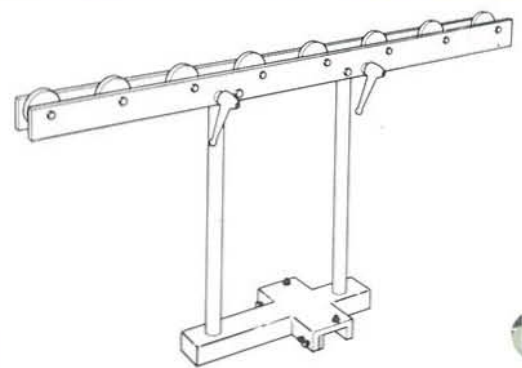


Fig. 43

Practical scales and pointers are designed for clarity and optimum head setting accuracy (Fig. 42).

Stock supports (Fig. 43), available to order, provide support to wide material and prevent sagging between beams.

Turret stops (Fig. 44) enable a cutting head to be precisely re-set to any one of four horizontal positions.

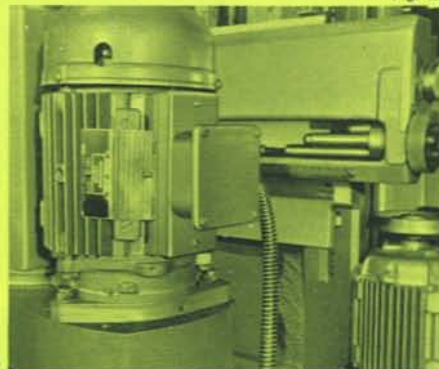
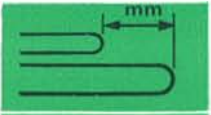


Fig. 44

74" L"

# Varieties

The DP is available with 19 head sequences and four bed lengths to give a choice of 76 different models. On the larger models with up to 16 cutting head positions some heads can be left set up for different jobs, thereby saving setting-up time. The wide range of variations available on the DP enables many operations to be performed, making it the ideal machine for your panel and joinery work.



	MODEL	SEQUENCE
600	DP48/1	
1000	DP56/1	
1400	DP64/1	
400	DP48/2	
800	DP56/2	
1200	DP64/2	
315	DP48/3	
715	DP56/3	
1115	DP64/3	
150	DP48/4	
550	DP56/4	
950	DP64/4	
150	DP48/4U	
550	DP56/4U	
950	DP64/4U	
350	DP56/5	
750	DP64/5	
350	DP56/5D	
750	DP64/5D	

Fig. 45

# Electrical Controls

A wander control unit (Fig. 46) can be provided to control start/stop and inch of the feed chains.

A pictorial control panel houses all the start/stop push buttons (Fig. 47); indicator lights show which cutting head is running. All the motors are fitted with no-volt and overload protection.



Fig. 46



Fig. 47

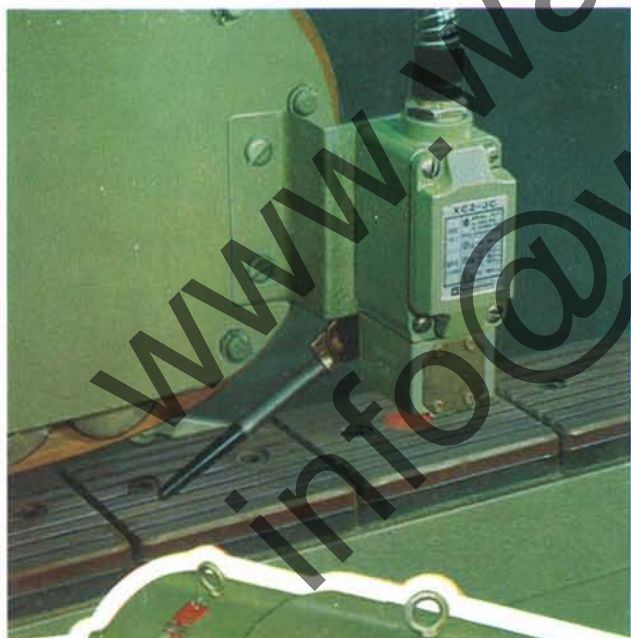


Fig. 48



Fig. 50



Fig. 49

A safety feature (Fig. 48) is fitted to stop the feed if two panels or over-sized stock are fed inadvertently.

When head units are ordered with direct motors a frequency changer (Fig. 49) is available.

Power traverse to the adjustable beam by motor and rotating nut is controlled by a switch on the motor (Fig. 50) and fine adjustment is by adjacent handwheel.



# Specification

Max. distance across outside of feed chains .. .. .	1500 mm	59 in
Max. distance across outside of feed chains .. .. .	2500 mm	98 in
Max. distance across outside of feed chains .. .. .	3200 mm	126 in
Max. distance across outside of feed chains .. .. .	4000 mm	157 in
Min. distance across outside of feed chains .. .. .	165 mm	6½ in
Spindle diameter .. .. .	30 mm	30 mm
Spindle diameter for long spindle 'A' type motors .. .. .	40 mm	40 mm
Beam capacity with forward feeding dogs – see Fig. 45, page 15		
Max. depth of timber pressures will admit .. .. .	150 mm	6 in
Max. overhang track to column .. .. .	200 mm	8 in
Standard feed speeds, infinitely variable .. .. .	3 to 23 m/min	10 to 75 ft/min
Option feed speeds, infinitely variable .. .. .	6 to 46 m/min	20 to 150 ft/min
Horsepower, feed motor .. .. .	3 kW	4 hp
Standard horsepower, 'B' type head motors .. .. .	4 kW*	5.5 hp*
Speeds of 'B' type head motors, 50 hertz .. .. .	3000 and 6000 or 4500 and 7200 rev/min	
Speeds of 'B' type head motors, 60 hertz .. .. .	3600 and 7200 rev/min	
Horsepower, 'A' type head motors (except jump dado and scoring heads) .. .. .	3.7 kW*	5 hp*
Speed of 'A' type head motors, 50 hertz .. .. .	3000 rev/min (6000 rev/min with high frequency)	
Speed of 'A' type head motors, 60 hertz .. .. .	3600 rev/min (7200 rev/min with high frequency)	

\*5.5 kW (7.5 hp) or 7.5 kW (10 hp) motors available to special order.

## Cutter Equipment

The full range of cutter equipment available for the Wadkin range of Double Enders is described in Section F of the Wadkin Tools and Accessories Catalogue.

# Transfer Units

Mechanized lines incorporating double ended profiling machines can be supplied with a variety of transfer units for both panels and solid timber components.

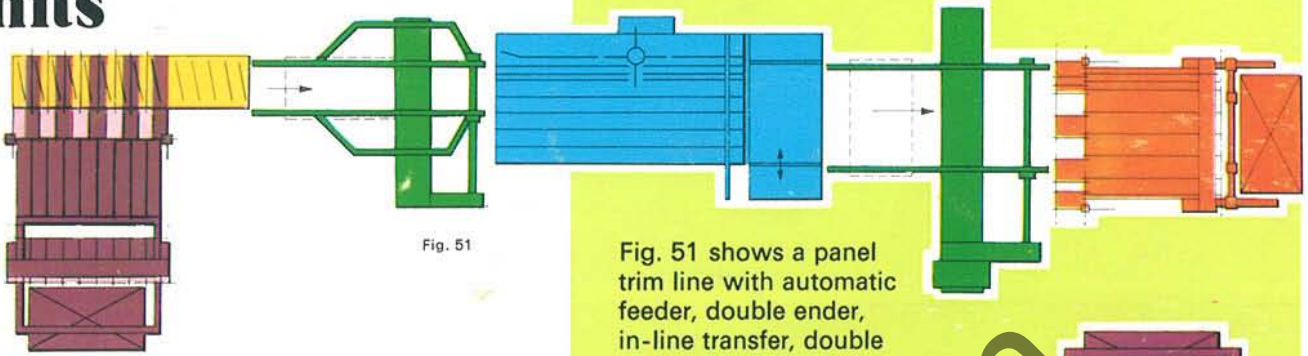


Fig. 51

Fig. 51 shows a panel trim line with automatic feeder, double ender, in-line transfer, double ender, and automatic stacker.

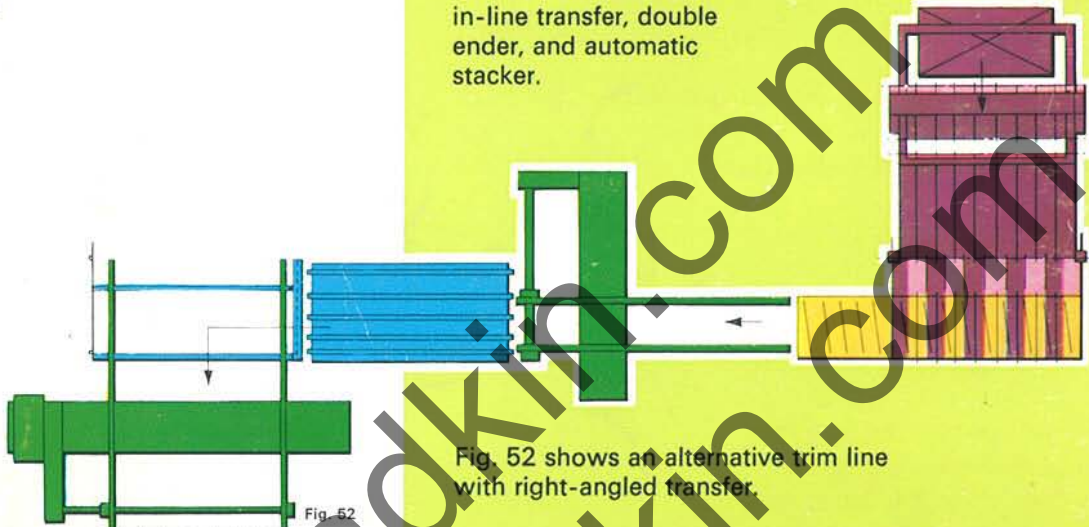


Fig. 52

Fig. 52 shows an alternative trim line with right-angled transfer.

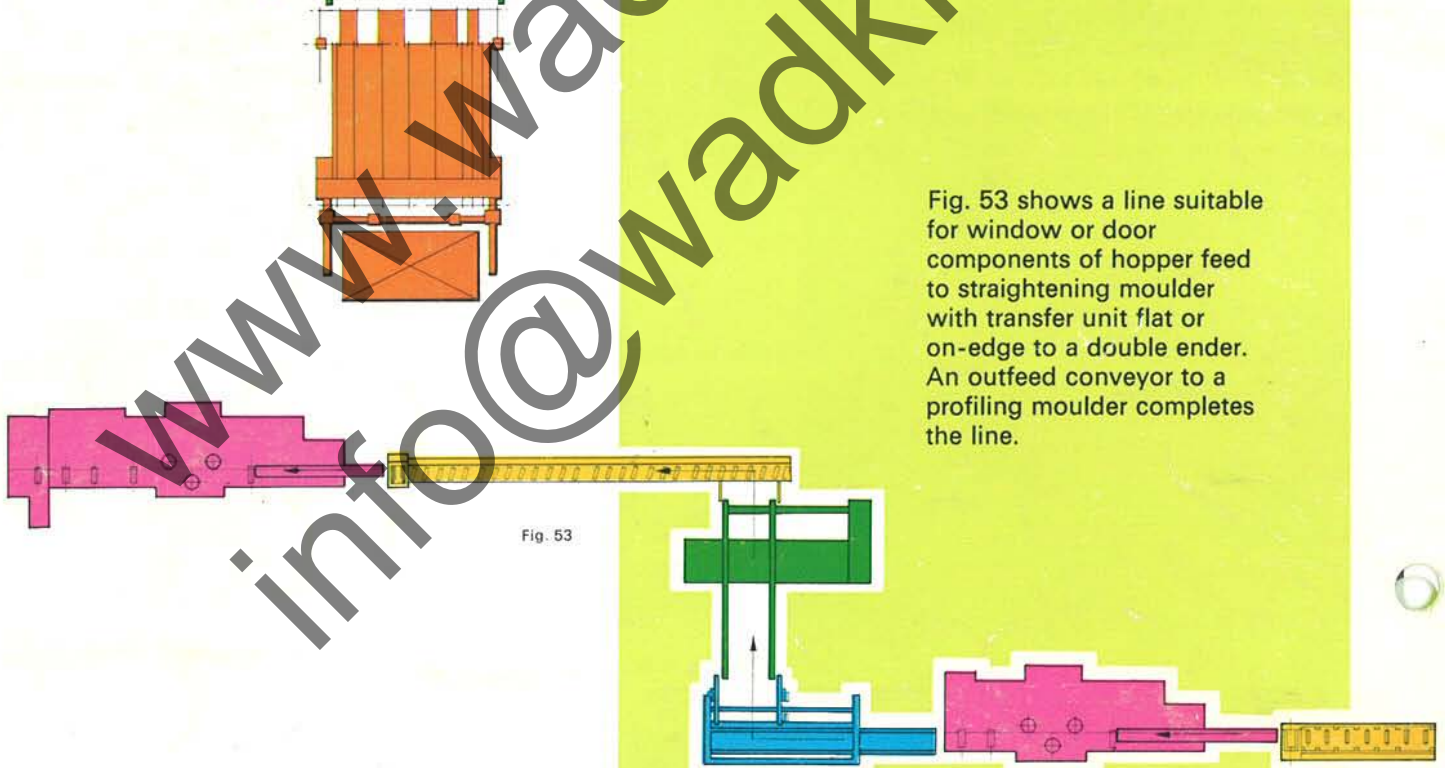


Fig. 53

Fig. 53 shows a line suitable for window or door components of hopper feed to straightening moulder with transfer unit flat or on-edge to a double ender. An outfeed conveyor to a profiling moulder completes the line.



**Wadkin Ltd.**

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