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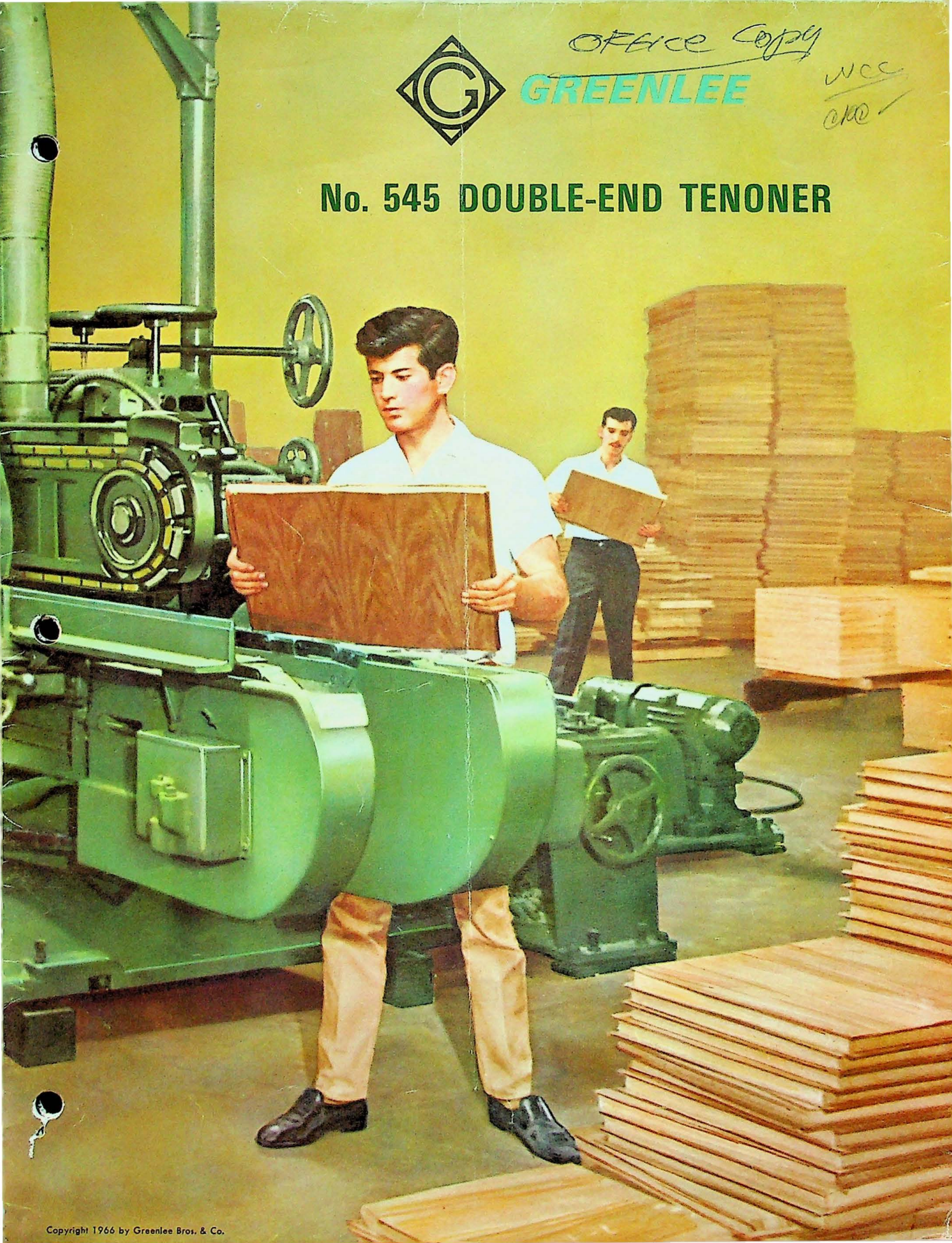
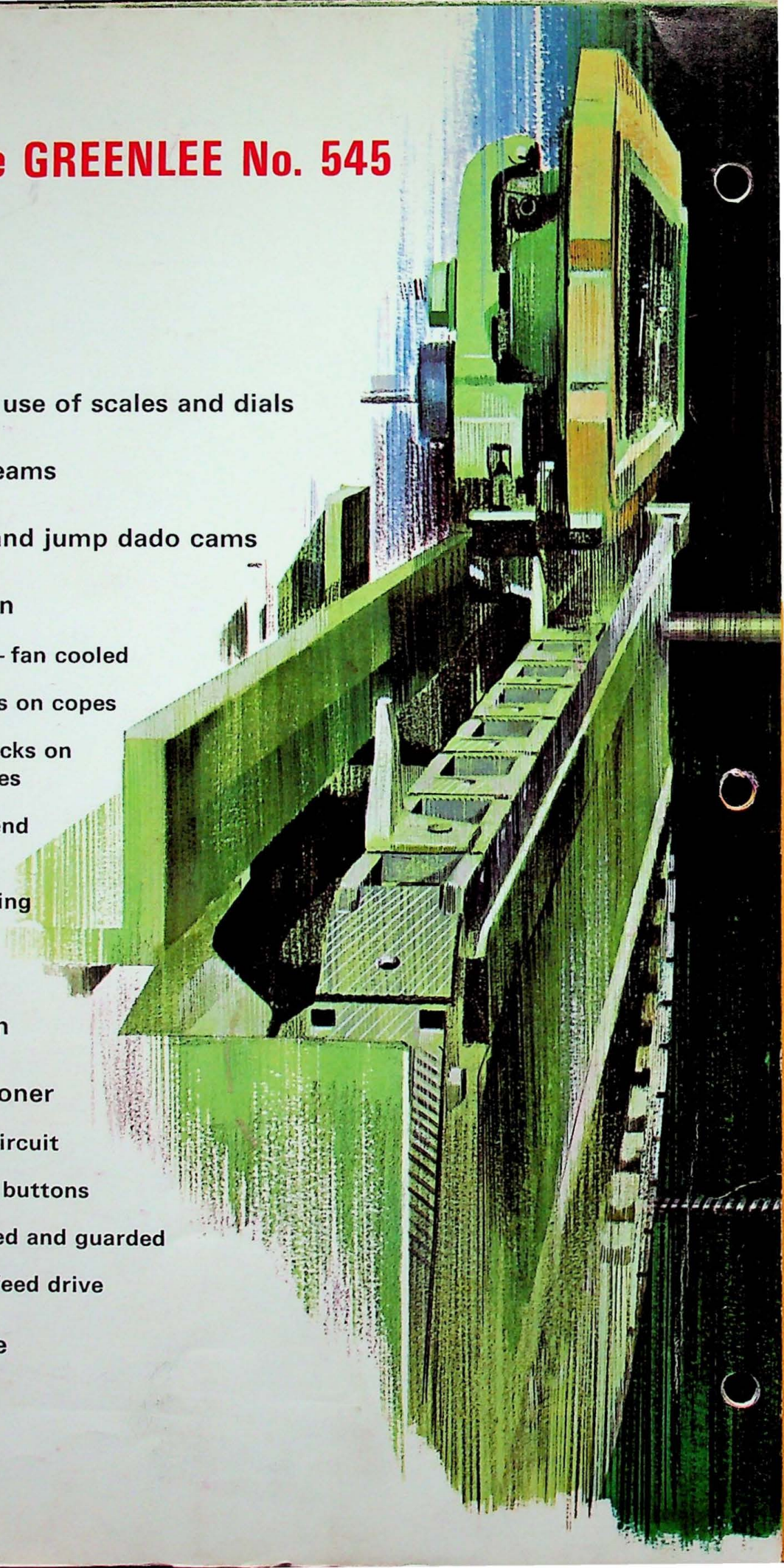
GREENLEE

No. 545 DOUBLE-END TENONER



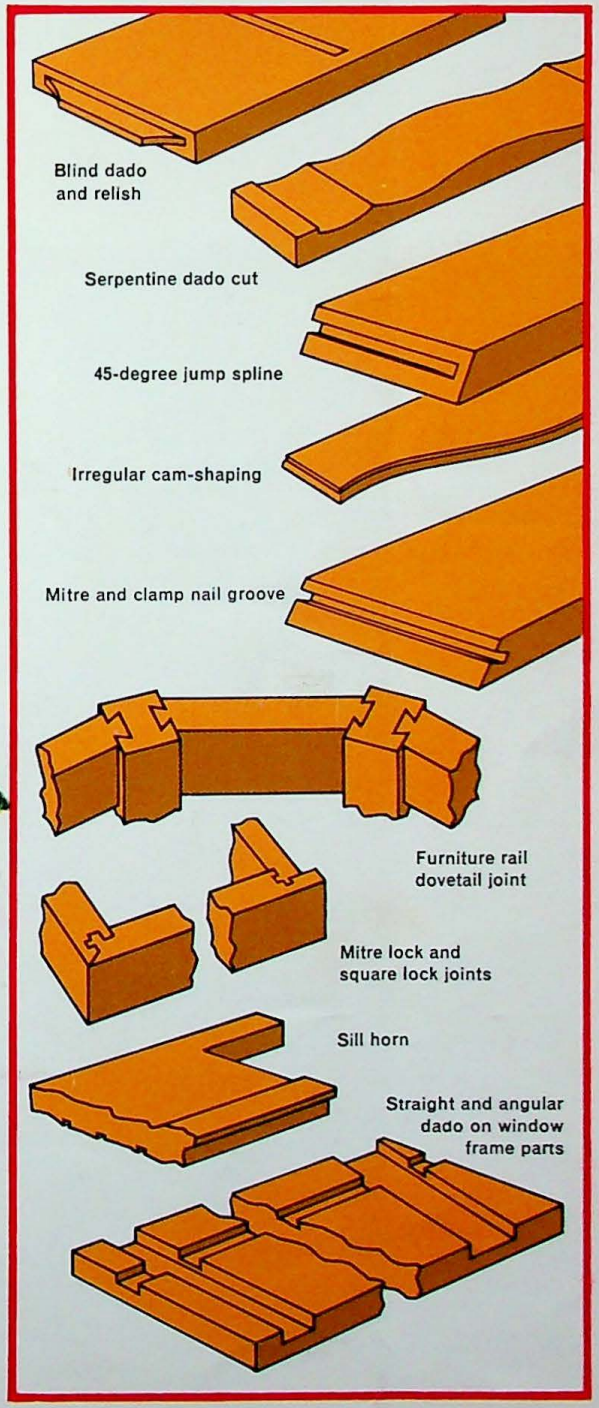
Advantages of the GREENLEE No. 545

- ☐ Greater accuracy
- ☐ Close-coupled design
- ☐ Easier setups — liberal use of scales and dials
- ☐ Pivoting hold-down beams
- ☐ Easy access to copes and jump dado cams
- ☐ Advanced motor design
  - ● Totally enclosed — fan cooled
  - ● Mechanical brakes on copes
  - ● Built-in spindle locks on saws and copes
  - ● Pivot point near end of spindle
  - ● Gear and rack tilting adjustment
- ☐ All controls at operator's position
- ☐ Safest double-end tenoner
  - ● 110 volt control circuit
  - ● Four master stop buttons
  - ● Completely hooded and guarded
  - ● Rattle clutch on feed drive
- ☐ Minimum maintenance
- ☐ Efficient lubrication

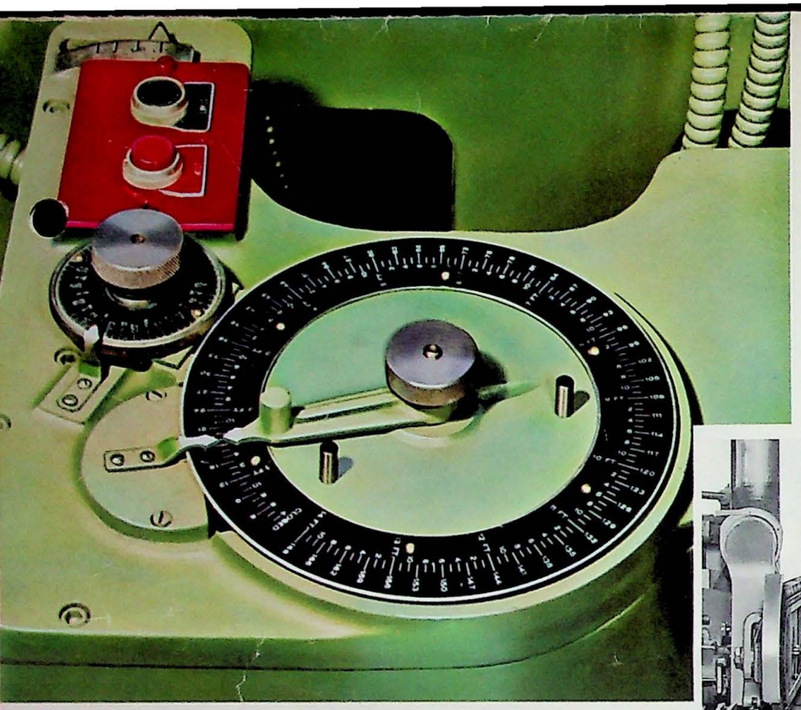


Quickly set up to perform any operation*...

The Greenlee 545, in many plants, is the key production machine which sets the pace for all other major operations. Almost any part can be mass-produced, each one an exact duplicate in size, shape and quality.



. . .*or we will design a machine that will do it!



Micrometer dial column adjusting system

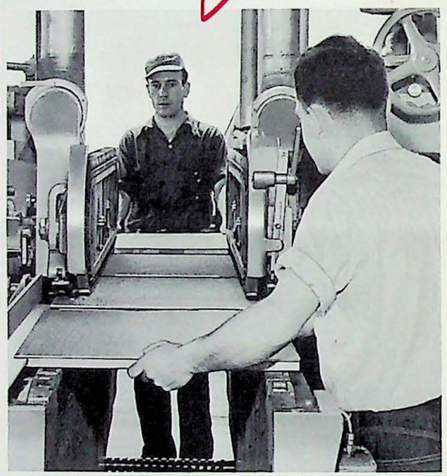
An important timesaving feature of the No. 545 is the ***accuracy, speed*** and ***ease*** with which the left-hand column can be adjusted for setting the distance between cutters. Two graduated dials at the ***operator's normal position*** (the large dial showing distance in feet and inches and the smaller dial graduated in sixty-fourths of an inch) allow ***precise, accurate settings.*** The small dial has ample room between graduations to permit ***adjustments as close as .005 ″.***

The operator sets the pointer for the desired distance between cutters and then pushes the control button. An accurately thread milled screw driven through a worm and worm gear by a 1 HP motor opens or closes the left hand machine column to the distance set on the dial. Although an independent stop button is provided for manual operation, the pointer when locked will ***automatically stop the traverse motor at the selected point*** . . . a handwheel is used to make the final, precise setting.

Another important feature is that the ***dials can quickly and easily be reset*** so their readings will correspond to the distance between any two points of importance . . . saw blades, tenon heads, cope heads, etc. Quick reset is also important when saws or heads are changed.

The ***single traverse screw*** is located ***above*** the ***rear base way,*** which is the guide way. This design ***eliminates any binding tendency*** of sliding base, ***assures chain beams staying parallel*** and does away with any attempt to coordinate two screws.

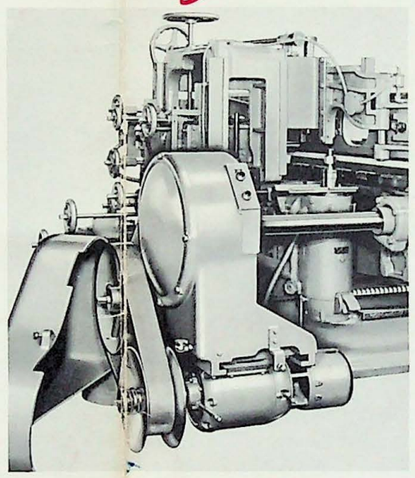
"A complete woodworking plant in itself"... "Offers more machine for your dollar"



Stock and core gauge

The 545 is equipped with a lumber gauge for positioning work ahead of the hold-downs. This gauge is adjusted with a convenient handwheel and is designed with ***connected front and rear screws to maintain parallel alignment*** with the feed chains. ***Reversing the lumber gauge provides a useful core gauge*** for feeding work with overhanging veneers.

Special devices for stock alignment, veneer centering, etc. are available for unusual requirements.

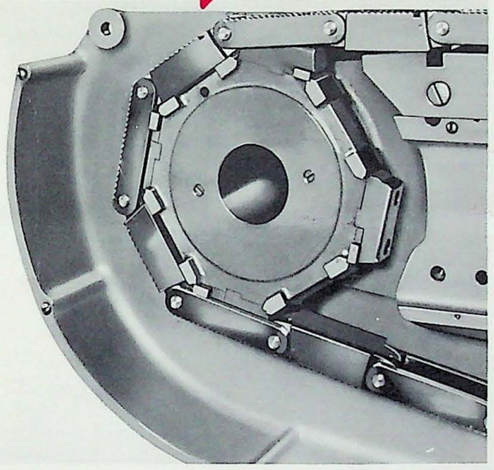


Variable feed drive

Heavy feed shaft is driven by a 3 HP, 1200 RPM motor through a ***variable-speed mechanism*** and double reduction gears. Infinitely variable between 15 and 55 feet per min. ***Faster speeds are obtainable*** with alternate gearings; slower speeds with adapter ring. Feed chains ***can be moved by hand crank or electrical jogging control.***

Speed settings are made through a crank ***at operator's normal front position.*** Scale and pointer indicate speed.

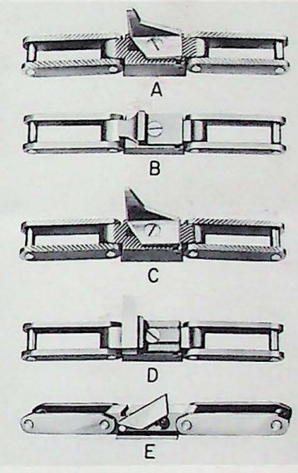
Special dust-tight brake on feed motor stops forward travel of feed chain almost immediately after stop button is pushed. Jamming or overloading is prevented by a ***safety rattle clutch*** which automatically disengages the feed. ***All gears are enclosed and continuously lubricated by*** splash system to minimize maintenance.



Chain beams, feed shaft and feed sprockets

The rear feed sprockets each have four ***hardened, replaceable teeth*** machined to exactly conform to the chain links. Lands on the drive sprockets and the front idle sprockets give ***proper support*** to the links. Chain beams are ***heavy, ribbed I-section castings*** properly proportioned to give ***maximum rigidity*** in all lengths. They are ***securely fastened to and braced from both columns*** and the right hand base and left hand sliding base.

The heavy feed shaft has two 180° opposed keyways which are ***accurately planed for straightness.*** Only one keyway is used, and while this will give long service under proper use and care, the ***second keyway is available*** if and when required to bring the chains back to first class accuracy without a major service overhaul.



Feed chains, dogs and tracks

Main dog links have accurately machined ***inverted V surfaces*** which ride on ***replaceable chain tracks.*** Side guides are not needed . . . the inverted V tracks are ***self-cleaning.*** Link pin holes are drilled and jig-bored for perfect alignment. High-strength steel link-pins are lubricated through ***grease fittings.*** Specially hardened chains and sprockets are available for use with abrasive materials.

Chain track holes are ***jig-drilled . . . easy to replace*** . . . location does not vary. Tracks are made of ***long wearing laminate*** — can be remachined. Graphited material available.

Smooth feed chains are regularly furnished. Corrugated or inserted rubber pad types available for use without feed dogs. Return portions of chain are ***shielded from dust*** and cleaned by felt wipers.

Dogs

Standard and special feed dogs are illustrated. (A) Standard fixed dog. (B) Core dog. (C) Special high fixed dog (4″ or less) (D) Wood-faced dog. (E) Hinged-type dog.

Chain

The righ
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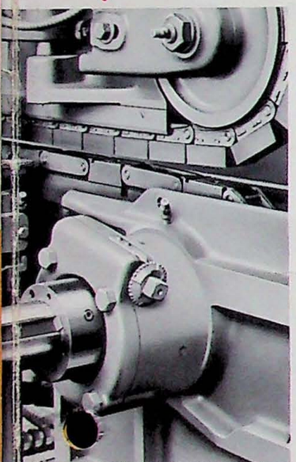
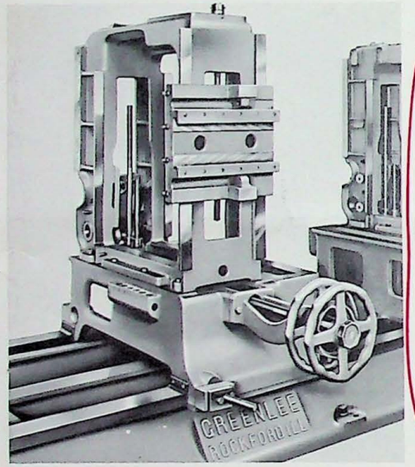
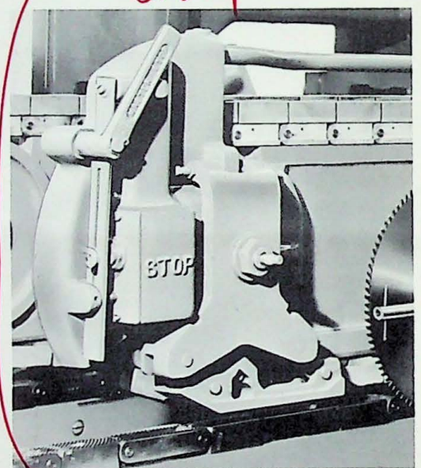
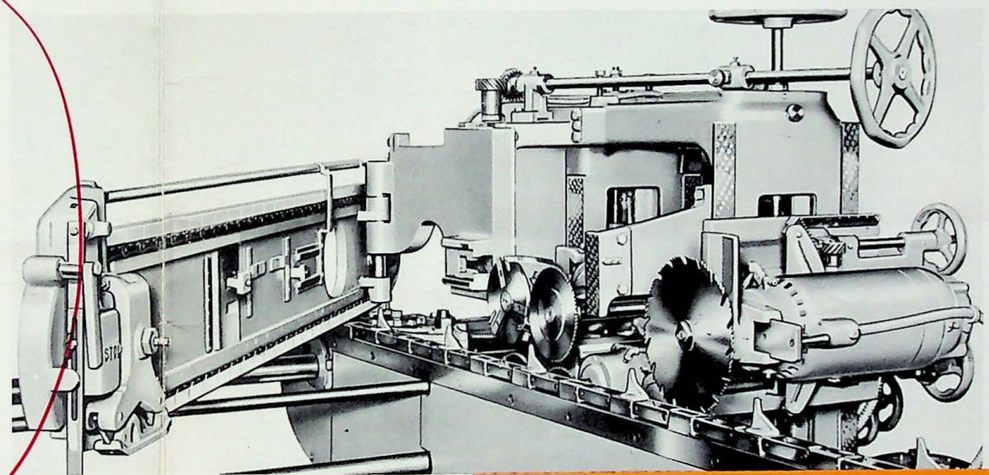
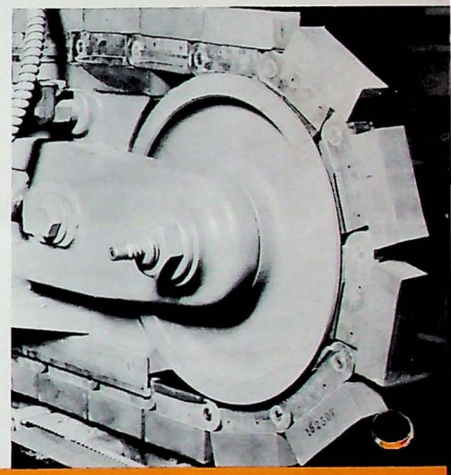
"... "The key machine in our plant"... "Our Greenlees have helped us grow"... "Paid for itself in nine months"...









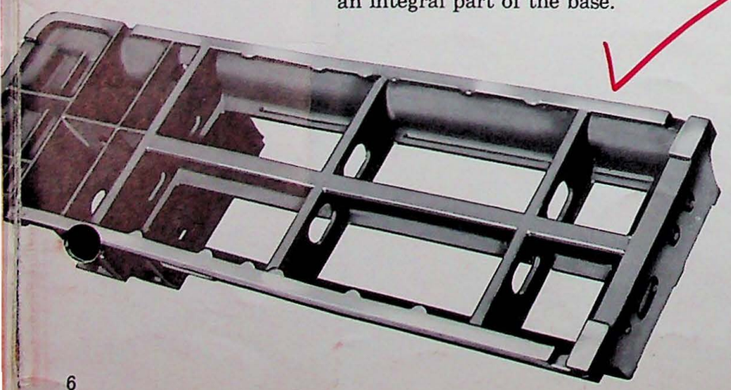


n adjusting device

ht-hand chain can be ***quickly*** *d* with reference to the other ***r lining up the dogs or stagger-n*** to run stock through at an worm and worm gear mechan-tates the right-hand feed . A ***dial*** on the worm shaft ***s movement*** of the right hand 1/64" increments.

Columns and sliding base

Rigid, box type, single piece columns provide ***proper support*** for cutting units and chain beams. ***Wide ways*** on which the ***cast box-type sliding base*** rides are machined to precise tolerances. Easily replaceable composition wear strips reduce friction and eliminate costly maintenance. Mounting surface for the fixed column is cast as an integral part of the base.



Massive base... weight where needed

Rugged base castings weigh from 3,000 to 5,500 lbs. depending on length of machine. ***Cast in one piece*** for machines up to 10 ft. capacity. ***Massive I-section and channel design*** are far superior to methods which rely on floor to provide a solid, level base.

Hold-down beam safety stop

The hold-down beam safety stop, can be set to admit any thickness of stock and automatically stops the machine when too thick a piece is fed in. This ***prevents jamming and protects both the operator and the machine.*** A master stop lever lock holds this button preventing accidental starting of any motor while set-ups are being made.

Pressure beams

Full access to the cutting heads is provided ***by pivoting the pressure beams*** at one end to allow them to swing away from the cutting heads. This ***greatly reduces down time*** necessary for changing heads.

Conveniently placed ***handwheels at the front of the machine*** raise and lower the beams with little effort. A positive locking device secures the handwheels to ***maintain exact beam settings*** during runs. Graduated scales are provided for ***accurate vertical adjustments.***

Hold-down links are made of tough, lightweight high pressure laminate. ***The non-marking rubber pads*** attached to these long wearing hold-down links grip the work holding it firmly against the feed chain without marring the finish. Other holddowns are available for special applications.

Bearings and lubrication

All spindles and drive ***equipped with ball or roller bearings*** which assure longer machine life, continued accuracy and lower power consumption. Lubricated by high-pressure grease gun except feed box which is automatically lubricated. Cutting unit ***bearings are lifetime sealed-type.***

V-tracks are lubricated by ***force feed oilers*** which operate only when feed is running. Each oiler is equipped with an adjustable automatic regulator which accurately measures amount of oil. Every chain link has a ***grease fitting for pin lubrication.***

The inner surfaces of the hold-down chains are wiped by oil-soaked felt pads which deposit just enough oil to lubricate them. Excessive oiling is avoided . . . important when running high quality cabinet stock.

Motors and controls

All motors are ***totally enclosed, dust-proof and fan cooled.*** Regularly furnished 220, 440 or 550 volts, 3-phase, 60 cycle. Normal speed, 3600 RPM. Provision can be made for ***high-frequency operation.*** Oversize motors can be furnished.

Control circuit is 110 volt for operator safety. Controls for cutting units are on a ***separate pedestal convenient to the operator.*** Indicating lights ***show which motors are running. Four master stop buttons,*** strategically located, stop all motors instantly.

All wiring is enclosed in armored, flexible cable. ***Electrical system is interlocked*** to stop the machine instantly should one motor cut out. Magnetic starters with thermal relays and control circuit transformer are mounted in a steel cabinet attached to the machine base.

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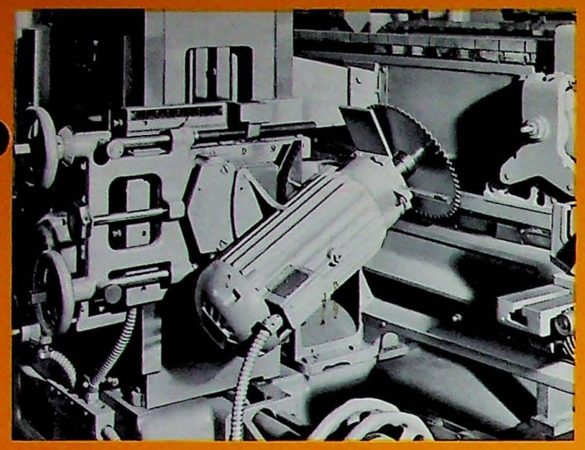
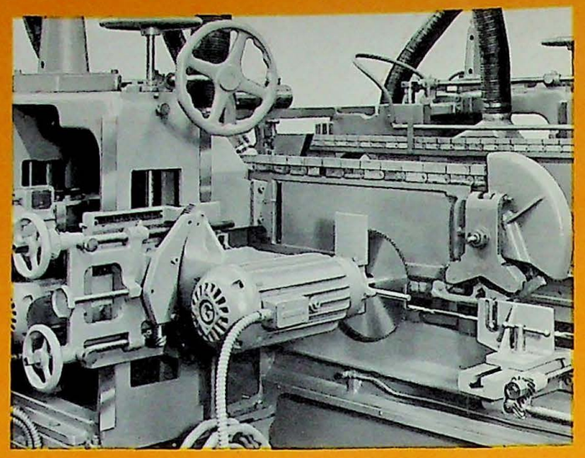


Cut-off saws

Mounted on ***widely-spaced vertical dovetail ways*** on front of columns. Vertically adjusted from top of column by handwheel and screw.

Motor housing pivots on horizontal slide having square gibbed ways. Handwheels are conveniently located at side for making horizontal and tilting adjustments. ***Scales and dials permit precise, fast set-ups. Built-in spindle locks*** save time in making cutter changes. Gear and segment provide ***positive tilt control.*** Adjusting shafts have square ends for use with crank or air wrench.

5 HP, 3600 RPM motors are standard (7½, 10 and 15 HP available). Normal tilt is 45° above or below horizontal. ***Up-to-135° tilting units are available*** to tilt 45° below horizontal to 90° vertical, thus can be used as copes.

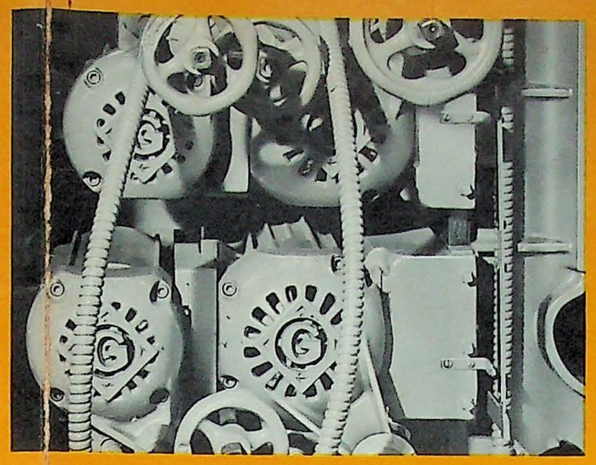


Cut-off saw modifications

Forward extended saw motor housings may be specified ***for processing wide, random-length stock,*** commonly called "double-cutting." Either 6″ or 9″ extended units are available. In both cases ***the hold-down beams are lengthened 9″ to the front,*** reducing the available loading space of any chain beam by that amount.

Extended units can be furnished ***to handle larger saw blades*** for sill horning, or to give ***added room between the cut-off point and following units for refuse strips to drop*** without interference.

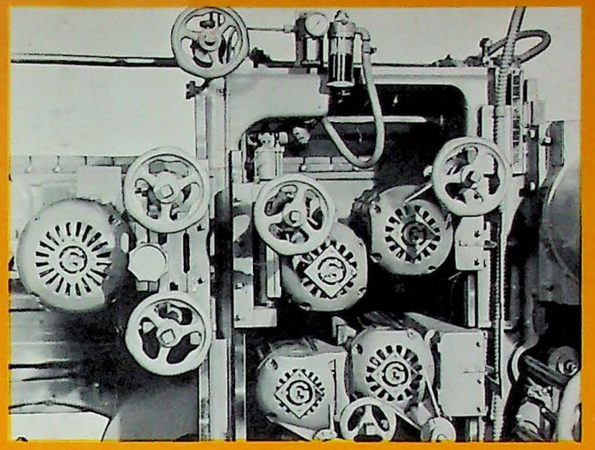
Cut-off saws ***usually cut from above, and against the feed;*** however, when necessary they ***can be altered to cut from below.*** Reversing switches and sleeve mounting for saws as recommended for reversible operation are options when needed for mitre work, etc.



Scoring saw units

Scoring saws are most often run with the feed to cut through face veneers ahead of tenon or rabbet cuts, ***eliminating any possibility of tenon heads tearing*** the work. 2 HP, 3600 RPM motors are usual, but 1 HP or 3 HP can be supplied.

To reduce set-up time, scoring saw units are ***usually mounted directly on the tenon motor housings and adjust with them,*** making it possible to ***change the setting of the tenon units either vertically or horizontally without having to readjust scoring saws.*** Independent horizontal and vertical adjustments of scoring saws can be made, however, when necessary.

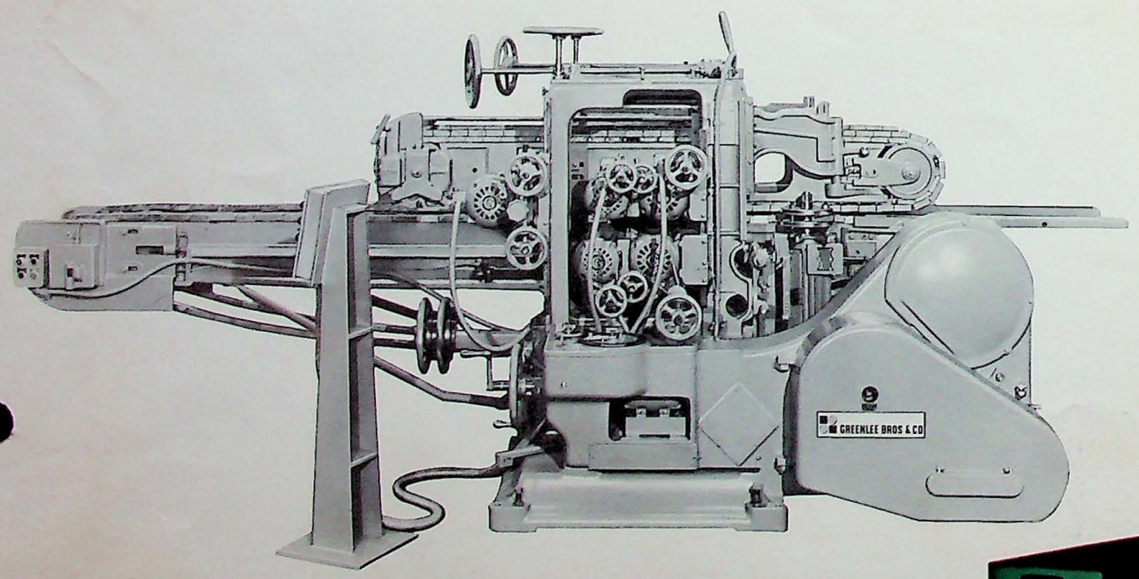


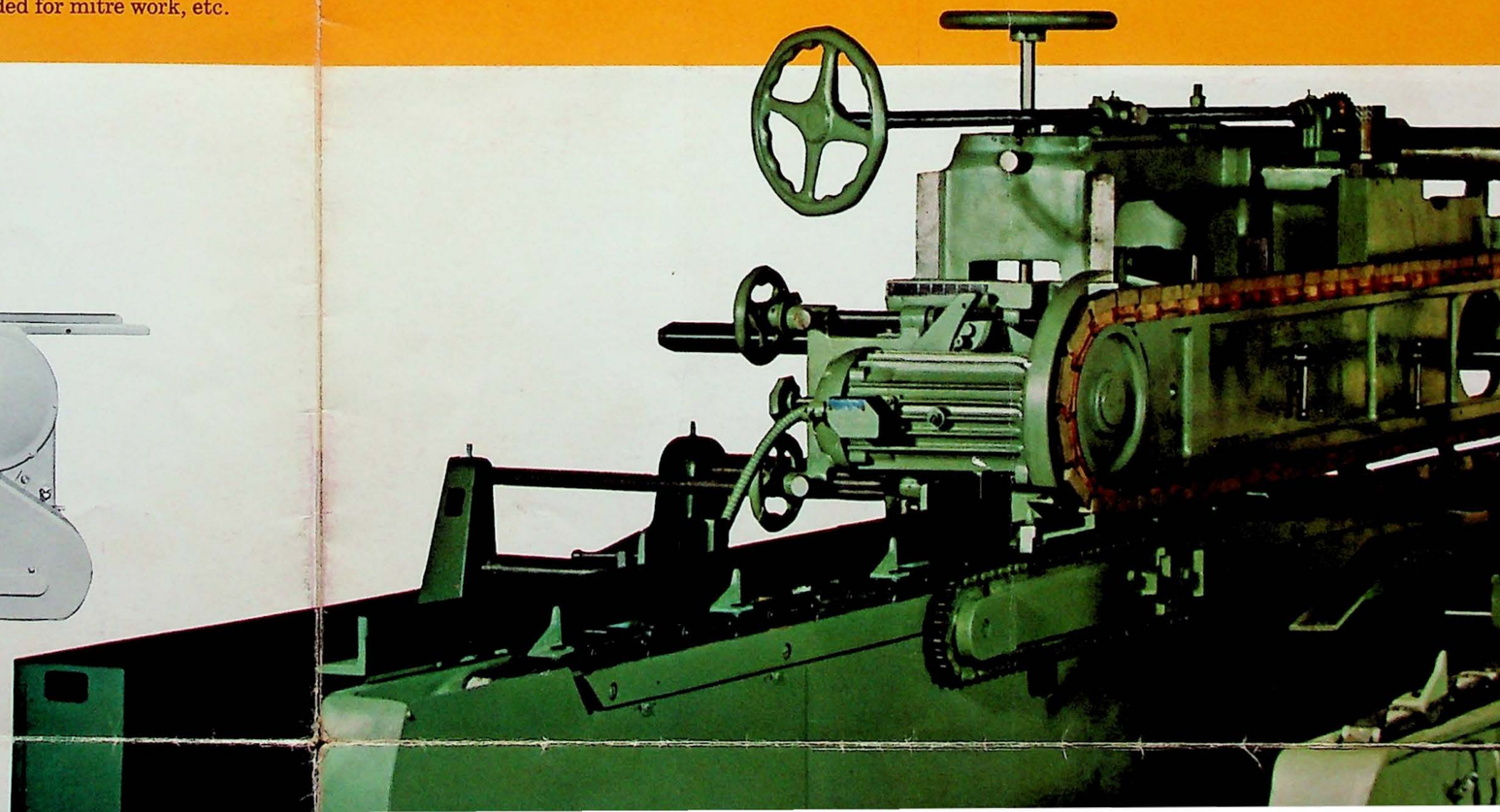
Scoring position modifications

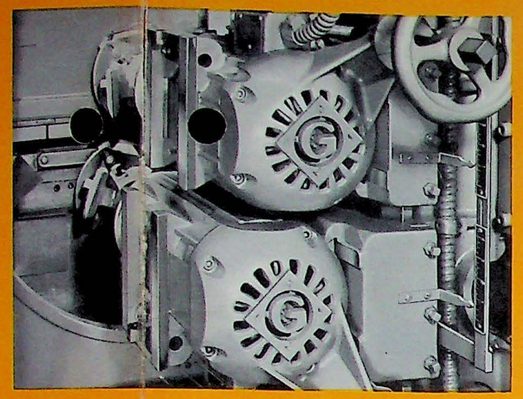
Scoring saw units ***can also be furnished for independent mounting*** on the columns in front of the tenon carriages. This is done when the units are primarily for grooving or light tenoning instead of scoring in conjunction with the tenon heads.

Tilting adjustment is available for either tenon-mounted or separately mounted scoring units, and while this is normally made for up to 45° from horizontal, the top units can be built to tilt 90° to a vertical position.

The scoring unit position can also be utilized for a variety of other special units where requirements demand.





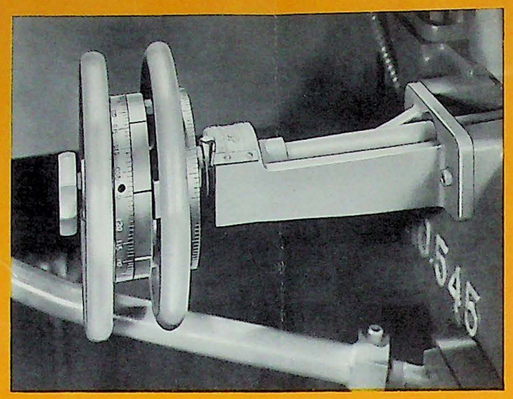


Tenoning units

Located between the upright sides of the columns, generally on ***wide rear inside dovetail ways.*** Conveniently located handwheels and dials make ***accurate adjustments quick and easy.*** Vertical adjustments ***allow moving the upper and lower units together or independently.*** Tenoning units usually do not have tilting adjustments, however, they can be specified for tilting 8° below and 22½° above horizontal.

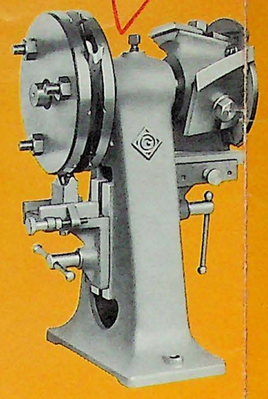
Standard tenoning motors are 5 HP, 3600 RPM. Also available in 7½, 10 or 15 HP size. The ***5 or 7-1/2 HP unit housings have machined ways to allow installation of scoring saw motors.***

Standard tenon heads are of Greenlee design with ***extreme shear for clean cuts.*** Heads are three knife, 3-spur and either 1¾″ or 3¾″ wide. Unique clamping key built into heads eliminates marring of smooth tenon unit spindles.



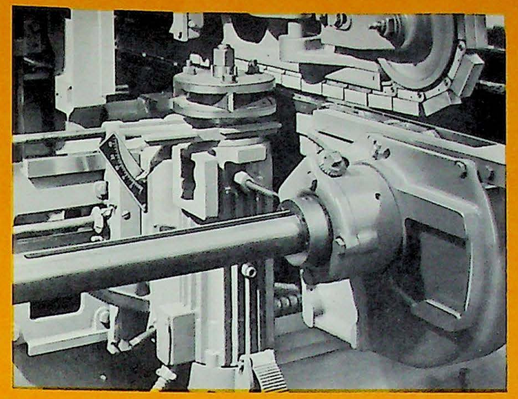
Tenon unit vertical adjustment

Tenon unit vertical adjustment is ***at operator's position in front of the machine.*** The double handwheels which may be locked together or rotated singly are used to ***move the units individually or together,*** to change tenon thickness or merely locate tenon with respect to chain. Graduations on ring scales on handwheel shafts are ***in .001″ increments.*** This exclusive feature has been found to be one of the most important reasons why Greenlee 545 users get the ***fastest and most accurate set-ups . . . real precision*** in tenon location and thickness.



Knife-setting stand

Bench-type knife setting stand furnished with machine rapidly sets cope and tenon heads, permits accurate placement of knives.

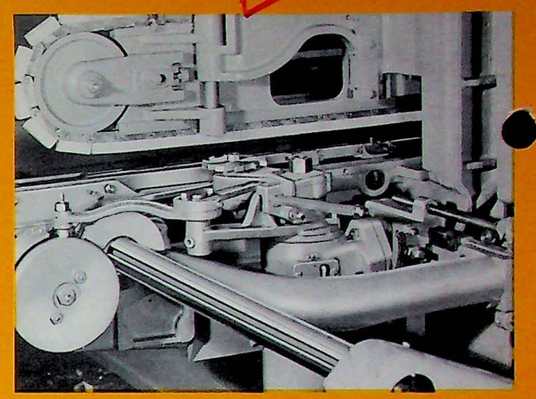


Cope units

Mounted at the rear of the machine columns and have ***fast, accurate vertical and horizontal adjustments.*** Pivoted on vertical slides to ***permit tilting by gear and segment for precise angle cuts.***

Tilt is normally 45 degrees toward the chain beams and 15 degrees away from the chains, but ***increased tilt can be specified.***

Standard cope motors are 5 HP, 3600 RPM. Larger motors (7½, 10 or 15 HP) or provisions for ***high-frequency or geared high speed operation are available. Built-in spindle locks*** save time in making head changes. ***Convenient foot-pedal brakes*** stop the head rotation quickly. ***Reversing switches are available*** to change rotation of the cope heads, but normal rotation is against the feed.

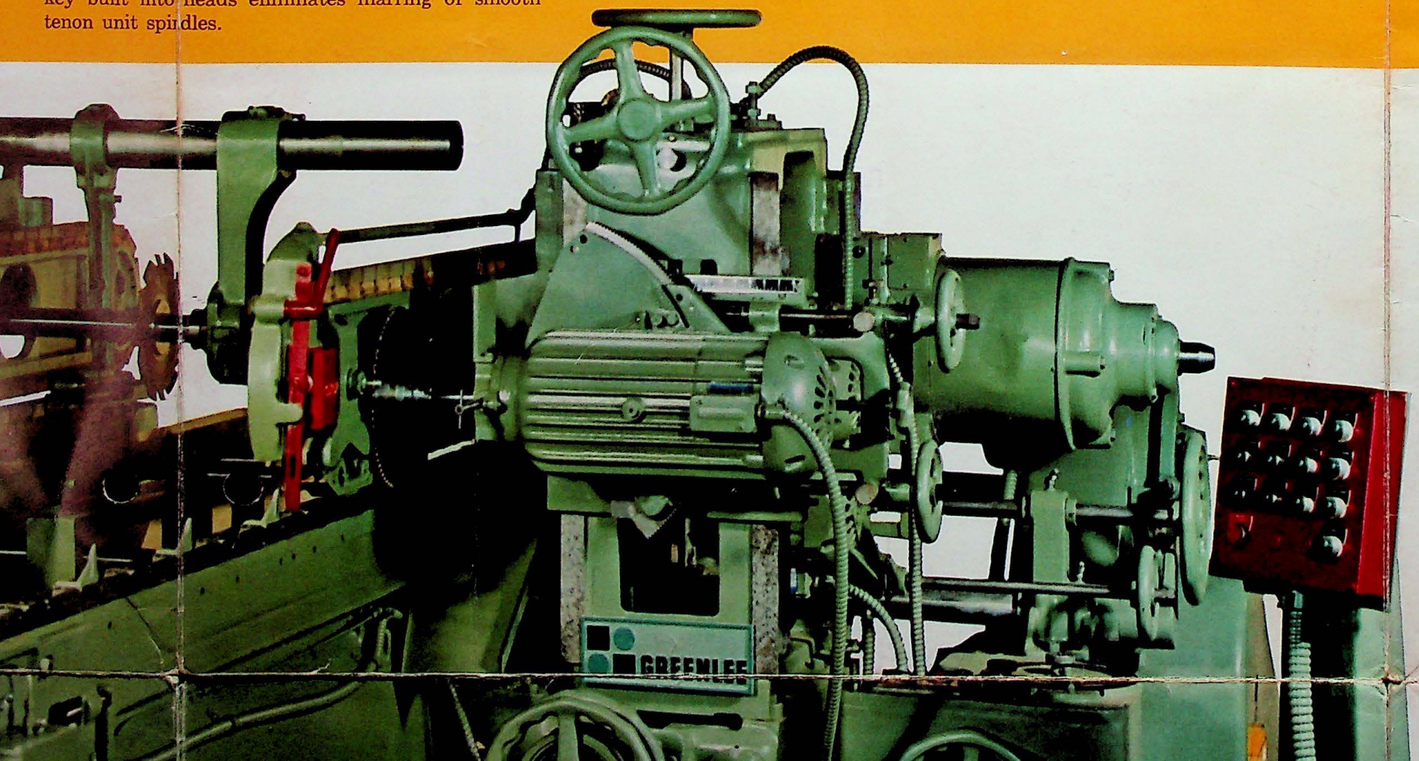


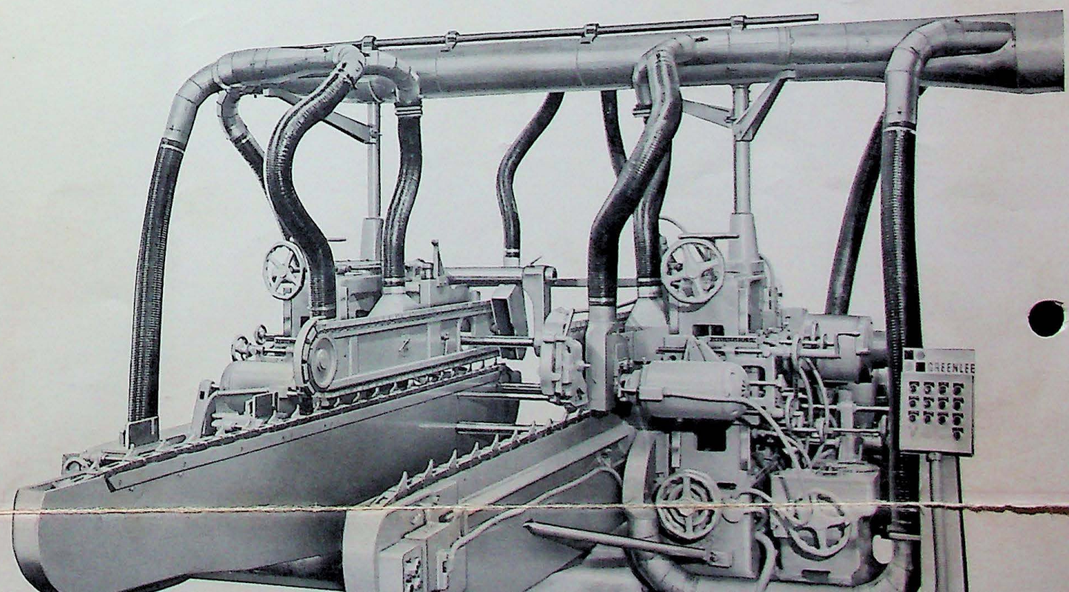
Relishing attachments

Complete cam-controlled units mount on cope motor housings. Used mostly for trimming tenons to fit in blind dado grooves. Also used for ***jump spline grooving or clamp-nail grooving*** in vertical edges or on 45° mitres.

Cutters are driven from cope spindles through ***enclosed gearing*** at 4800 RPM and are actuated by cams geared to feed drive shaft. A roller and linkage transmits cam motion to each cutting unit. Standard units ***can be adapted to operate at 45°*** for cutting perpendicular to mitred edges.

Cam can be adjusted to ***relish two or four corners*** with 16 or 32″ dog spacing. Back gear arrangement will permit 32 and 64″ dog spacing. ***Other spacing can be handled*** by back gearing or air controlling the jump.





GREENLEE CAN HELP YOU

Greenlee Cooperative Engineering can help you with difficult and complex machining problems. This mutual approach has resulted in new developments which have improved the efficiency of machining wood and wood derivatives. Profit from the outstanding production advantages of Greenlee machines.

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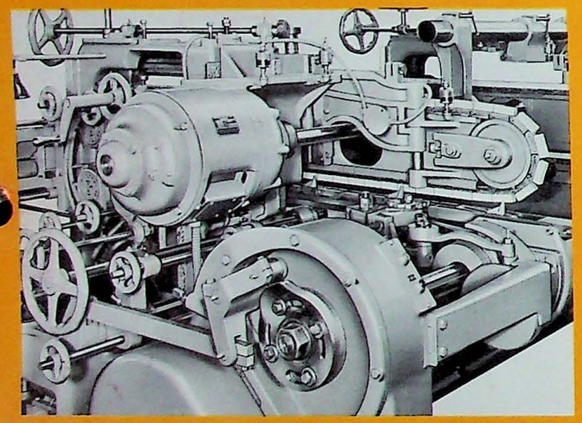
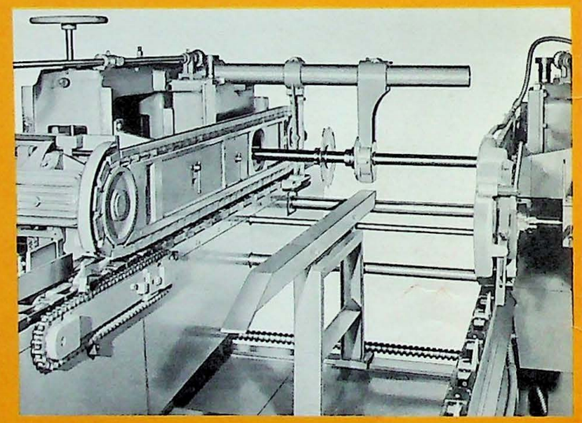


Jump or stationary dado units

Cut any reasonably-spaced groove between pressure beams, ***and grooves up to 1-1/4" wide outside the beams.*** Exclusive motor design features a hollow rotor. ***Shaft can be drawn in either direction*** for easy cutter changes. ***Self-centering collets*** clamp shaft at all bearing points.

JUMP TYPE UNIT can be used for stationary work by disengaging jump mechanism. Jump action is obtained by a pair of ***adjustable metal cams*** on feed chain shaft. They raise cutter heads ¾" (higher if needed) for each 16" or 32" of chain travel. Grooves can be cut open or blind at either or both ends. ***Graduated ring scale permits fast, precise set-ups.*** Distance between jumps can be increased by special gearing.

STATIONARY TYPE UNIT has vertical adjustment of 4", same as jump type, but does not have jump mechanism. Standard motors, 7½ to 15 HP, 1800 RPM (3600 RPM motors, 10 to 50 HP available).



Dado equipment

One or more lower stock supports are normally used when dadoing to support the work beneath the dado heads. A corresponding number of top hold-down shoes hold the parts against the lower supports. Also available are lower stock supports, vertically adjustable to various positions, for use on curved or bowed stock.

One or more ***center bearing units,*** with 4-inch long sleeves running in ball bearings and clamped by ***self-centering collets,*** are required to ***assure true running*** of the long dado shaft. The left hand center bearing often is used outside the left hand machine column to support the shaft that overhangs when the machine is closed down for shorter than maximum length stock.

Specifications on back page

GREENLEE SPECIAL ATTACHMENTS *save time*

- *Permit unusual cutting operations*
- *Complete and accurate machining without complex heads*
- *Save handling time by combining operations*
- *Increase productivity*

The Greenlee 545's closely co
years of unexcelled service
curacy and minim mainte
the tough and unusual jobs
specific needs. Eliminating i
special attachments results i
produces parts that are interc
tility of the machine with spe
expand the scope of your pro
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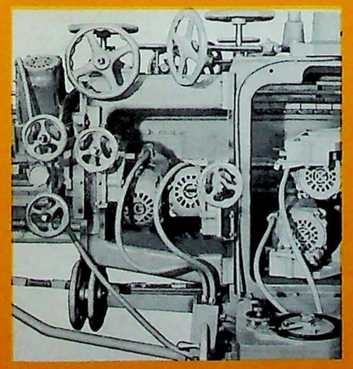
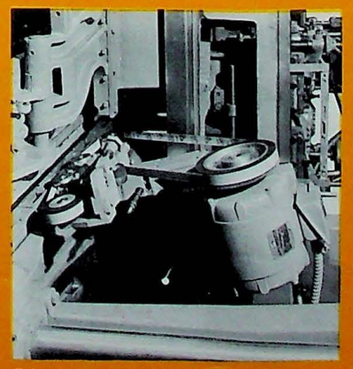
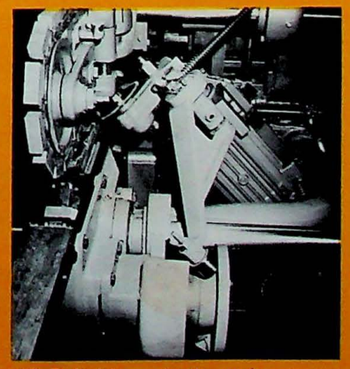


Column extensions

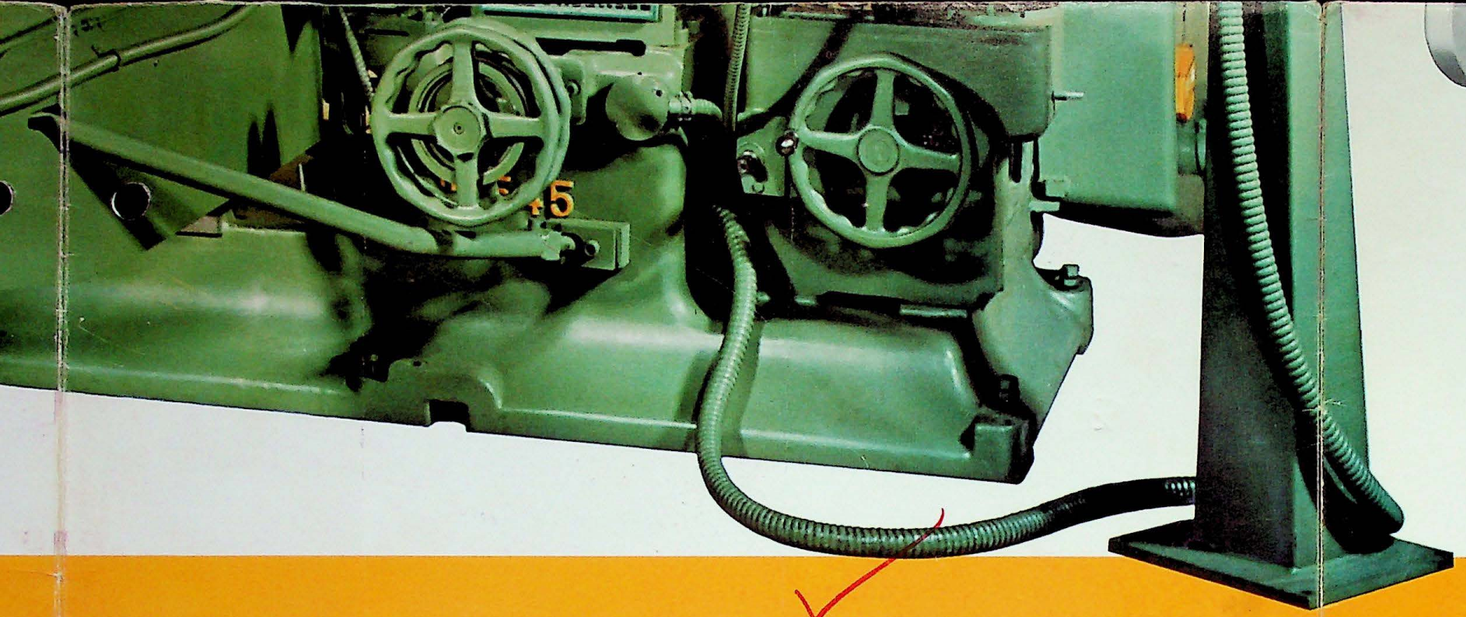


Edge sanders



45° Relishing attachments

Clean-up routers



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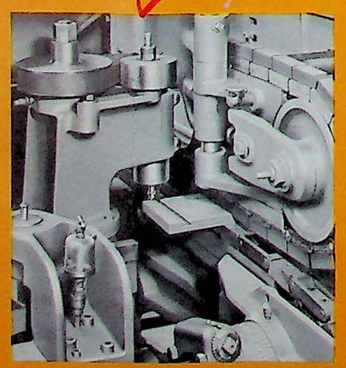
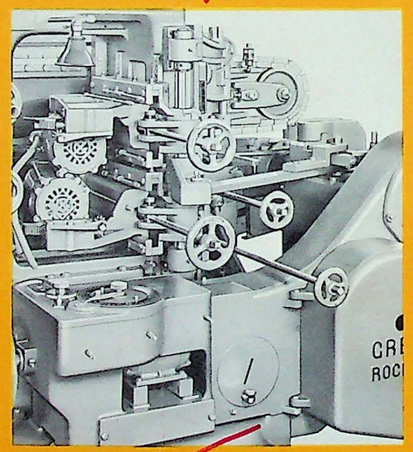
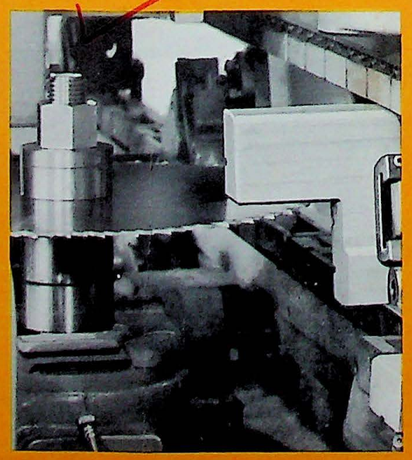


Dovetailing attachments



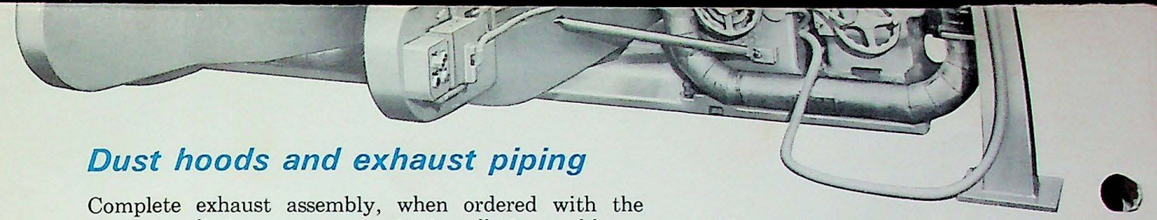


Window-frame attachment

Angle dados from 5° to 15° (also other angles) can be cut on window and door frame parts while work is fed through the tenoner on parallel dogs. Moves the top and bottom right hand tenoning units across work diagonally. Both ends can be trimmed square, angular dado cuts can be made at right and right-angle dado made at left — all in one pass. ***Most parts are handled in pairs,*** one on top of each other, ***for accurate production scheduling and precise matching of pieces.***

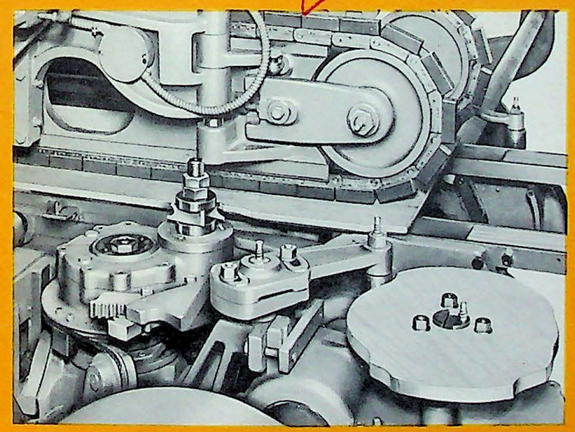
Sill-horning attachment

Special clamp dogs hold stock at correct angle for trimming and notching. Cut-off saw trims sills to length; tenon unit blade makes vertical cut at base of horn; and cope unit makes horizontal cut. ***Cuts special shapes.***



Dust hoods and exhaust piping

Complete exhaust assembly, when ordered with the machine, ***eliminates many on-site installation problems.*** Cutter hoods are made of welded sheet steel and are ***designed for maximum efficiency and positive location*** on the cutting units. Flexible lead pipes have ***convenient air cut-outs.*** Overhead ***telescoping*** pipe is available with right or left hand outlet, but ***right hand is recommended wherever possible*** since main outlet can then be fixed to stationary machine column.



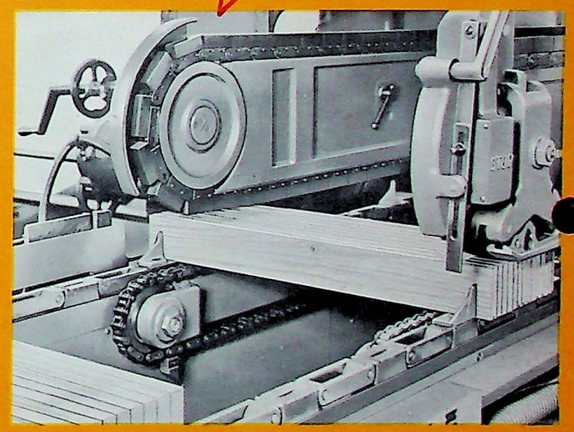
Cam-operated shaping units

Automatically duplicates irregularly shaped panels without preliminary bandsawing and with real fidelity to master pattern. Corners can be rounded or diagonal . . . serpentine and other edge shapes can be cut.

Hardwood cams which control shaping spindles are ***generated on machine*** from a master pattern. Metal relishing cams enable the unit to ***perform relishing operations.*** Feed can be slowed for complicated work.

With two attachments, both edges of work can be shaped with same or different patterns in one pass. Spindles gear driven at 7200 RPM for extra smooth cutting.

Shaping units ***can be used in a fixed position for regular coping*** and do not interfere with tenoning, dadoing and other operations. Profitable production speeds are obtainable on parts within the range of these versatile units.



Hold-back units

Chain-type hold-back units ***clamp stock firmly against the feed dogs,*** usually in a vertical position, until parts are under the regular hold-down beams. They are extremely useful for ***feeding multiple narrow pieces ahead of each dog*** as illustrated.

Tensioned chains are fastened inside the chain beams and normally carry three dogs mounted on 24-inch spacings for use with 32-inch feed dog spacings. Alternate chains are available for use with 16-inch or other feed dog spacing.

SPECIFICATIONS

STANDARD EQUIPMENT Tilting cut-off saw units, horizontal top and bottom tenon units, tilting cope units (all with 5 HP, 3600 RPM motors). Variable speed drive (3 HP motor with brake); motor (1 HP) driven dial setting mechanism; 110V control circuit; four 3¾″ face or 1¾″ face 3-wing single tenon heads. Smooth feed chains with 2″ dogs on 16″ centers. Two 12″ cut-off saws, knife setting stand and special wrenches.

RANGE On standard models maximum distance between tenon shoulders is 48″, 60″, 78″, 96″, 120″, 144″, 168″, 192″ — longer on special order. Loading space is 12″, 28″, 44″, 60″, 76″, 92″ or longer. Minimum distance between tenon shoulders is 5″; on special order, 4″.

CUT-OFF SAWS Motor spindles 1 15/16″ dia., reduced to 1¼″ for saws. Eight inch vertical and horizontal adjustment. Can be tilted 45° up or down — up to 135° available if needed. Handle thickness to 4½″ with 12″ saws. Standard mounting for 14″ saws. Extended mounting for saws up to 18″, special. Standard motors 5HP, 3600 RPM (7½, 10 or 15 HP, available). Normal rotation is against feed with unit above chain level.

TENON UNITS Spindles 1 15/16″ dia. Top unit adjusts 7″ vertically and horizontally. Bottom unit adjusts 3″ vertically and 7″ horizontally. All four units can tilt 22½° up and 8° down at motor end on special order. Standard 5HP, 3600 RPM motors will handle 8″ dia., 1¾″ or 3¾″ face single heads or 7½″ face double heads. Motors 7½, 10 or 15 HP, available. 10 HP and 15 HP motors require 8½″ dia. heads. Normal rotation is against feed.

COPE UNITS Spindles 2″ dia., reduced to 1¼″ for heads. Space under nuts, 5″; 2 15/16″ dia. collars furnished ½″, 1″ and 1½″ thick. Standard heads 9″ dia., but 12″ can be used. Larger saws or hoods, special.

Units adjust 7¾″ vertically and 8″ horizontally. Tilt 45° toward chain beams, 15° away. Tilting to 65° or more possible.

Minimum distance spindle center to chain edge 4″ with 5 and 7½ HP motors; 4½″ with 10 and 15 HP motors. 5 HP, 3600 RPM motors standard. High frequency hook-up or 7200 RPM geared heads available. Normal rotation is against feed.

SCORING SAW UNITS Spindles 1 7/16″ dia., without threaded ends, for 8″ dia., 3¼″ bore sleeve-mounted saws. Units normally mounted on tenon motors and adjust with them. Independent adjustments 5″ horizontally and 1½″ vertically provided. Motors 1, 2, 3 HP 3600 RPM available. 2 HP is standard. Normal rotation is with feed.

Top unit can be furnished to tilt 45° or 90° up; lower unit 45° down only for either tenon-mounted or separately mounted types. Separate mounting on column reduces blade or head diameter when units are tilting type.

DADO UNITS Shaft 2 3/16″ dia. can be withdrawn in either direction. If ordered larger, can be withdrawn only to left. Standard 12″ dia. heads cut up to 1½″ deep with rubber block hold-down beams, but heads up to 18″ can be used. Cutters have 3¼″ bore and are mounted on sleeves. Normal rotation is with feed.

Motors adjust 4″ vertically. Jump units jump ¾″ unless ordered otherwise. Jumps every 16″ or 32″ of chain travel unless specially back-geared. Motors 7½ to 15 HP, 1800 RPM or 10 to 50 HP, 3600 RPM depending on requirements.

RELISHING UNITS Spindles are ⅝″ dia. with standard cutter 6″ in dia. and ½″ wide. Cutters for grooving or clamp-nail work, special. Units mounted on standard 3600 RPM cope motors and gear driven at 4800 RPM. Jump every 16″ or 32″ of chain travel unless specially back geared. Two- or four-corner cuts can be made. Will tilt 45° by using special cams and arms, requiring 5½″ dia. cutters.

EXHAUST PIPING Discharge end of telescoping pipe is at right, rigidly mounted from fixed column. Left hand outlet available, but requires a support from floor or ceiling. Standard outlet diameter 14″ — 16″ or 18″ available. Outlet center line 8′7″ above floor (9′8″ overall height) unless reduction of height is required.

WEIGHTS

Net weight of machines vary from 15,000 to 20,000 lbs. or more.

FLOOR SPACE

LENGTH OVERALL

48″ machine is 12′-5″ long
60″ machine is 13′-5″ long
78″ machine is 14′-11″ long
96″ machine is 16′-5″ long
120″ machine is 18′-4″ long

DEPTH OVERALL

With 28″ chain beams 11′-1½″ deep
With 44″ chain beams 12′-5½″ deep
With 60″ chain beams 13′-9½″ deep
With 76″ chain beams 15′-1½″ deep
With 92″ chain beams 16′-5½″ deep

HEIGHT

5′-9″ to top of machine
9′-8″ to top of standard piping
8′-7″ to centerline of standard piping

GREENLEE BROS & CO
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