

Model 225 24" Planer

ALL MACHINES PERFORMANCE-TESTED BEFORE SHIPMENT

*adjust from rough
to semi-finished stock
in a second!*

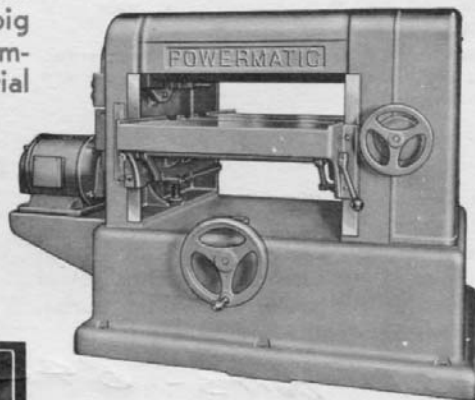
big, rugged . . . for cabinetry and high production accuracy

Regardless of the stock, from heavy, structural laminates to finished glued panels . . . the Powermatic 24" planer has proved highly dependable for unerring accuracy and extremely smooth surfacing qualities.

In finer cabinet work, the precision performance of this planer cuts finishing time to the bare minimum. Its big capacity assures a maximum range of flexibility as important for the smaller shop as it is for the larger industrial operation.



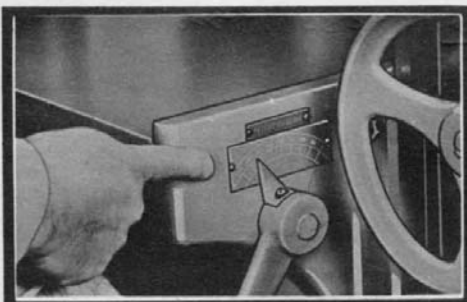
Model 225-D, Direct Drive



Model 225-B,
Belted Drive
T.E.F.C. Motor
Standard

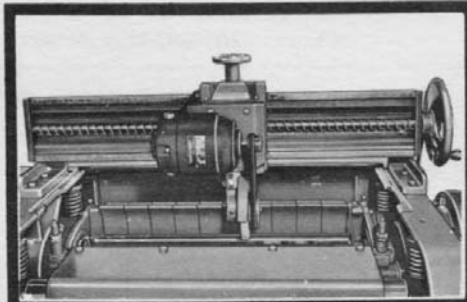
Quik-Set² Table Roll Adjustment . . .

It's standard equipment!
Adjust all rolls from 0" to .040" with a flick of the finger. Just move the Quik-Set lever at right of the table for fast, accurate change from rough to semi-finished stock.



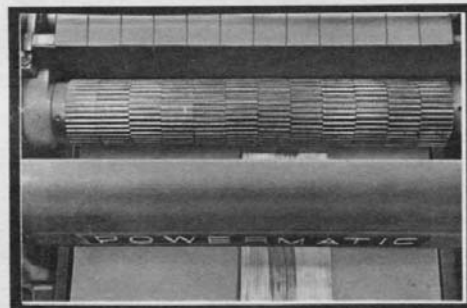
Knife Grinding and Jointing Attachment

(Optional) Keeps knives with a perfect edge always! Permanently mounted, extra heavy 6" grinder bar is precision ground for smooth, accurate operation. Grinder and jointer are belt driven by 1/4-HP, 1-phase, 110 Volt motor and are easily removed from bar when not in use.



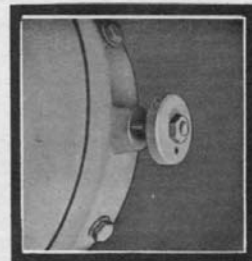
2" Spring-Loaded Sectional Infeed Rollers

have milled surfaces. 4" in diameter, rollers offer maximum feeding accuracy especially important in working rough, uneven stock.



Knife Indexer

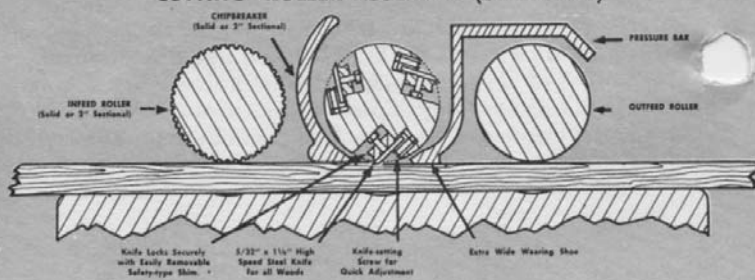
Quick acting plunger type indexing finger locks cutter-head securely for grinding knives. Predetermined and pre-set stops properly position knife.



Variable Speed Control
hand-wheel is easy to reach . . . easy to set. Adjusts rate of feed from 20 to 50 FPM



CUTTING-ROLLER ASSEMBLY (SIDE VIEW)



FEATURES

FRAME: Precision machined from extra heavy cast iron. Extra wide side panels with gibs offer rigid bed support and perfect alignment. One-piece base.

BED: 24" x 48", accurately machined with extra heavy rib-reinforcing for perfect alignment and maximum strength. Surface precision ground from a one-piece casting. Bed raises and lowers on large acme-thread screws mounted on enclosed thrust bearings, running in steel cut bevel gears.

Convenient handwheel adjusts bed through full 8" range with 1/16" movement upon each complete turn.

CUTTERHEAD: Safety-type, milled from carbon tool steel and fitted with 4 high-speed knives, 5/32" x 1 1/4" x 24". Mounted in over-size, sealed ball bearings, the entire cutterhead unit may be lifted free by removing 4 locking screws from flange mounting. 4 1/2" cutting circle.

Infeed Roll: Corrugated, 2" cast steel sectional type mounted on milled alloy steel spline shaft. Reversible without damage to springs.

Outfeed Roll: Smooth, solid type with 2 adjustable idler rollers. Fully adjustable, with drive through over-size cut gears.

PRESSURE BAR: Mounted concentric to cutterhead and fitted extremely near knife-cutting circle. The bar has extra wide foot for long wear (see side view drawing page 32) and can be adjusted during machine operation.

CHIPBREAKER: 2" cast steel, sectional-type with independent 3/8" yield. Sections are mounted on a steel bar just forward of the knife-cutting circle and swing concentric to the cutterhead.

POWER FEED CONTROL: Variable speed pulley affords complete range of feed from 20 to 100 feet-per-minute. Driven with 1 1/2-HP totally enclosed motor, and mounted in machine base.

POWER: 5-HP Motor is recommended for light and medium work loads. For extra heavy and high production requirements, the 7 1/2- to 15-HP motor is recommended.

ELECTRICALS: Machine standard equipped with magnetic controls protecting both feed and drive motor. With this exclusive safety feature, both motors shut off instantly after power failure.

STANDARD EQUIPMENT

PLANER LESS MOTOR: Set of 4 knives, 4 knife round cutterhead mounted in sealed ball bearings, Jack screws, cutterhead pulley, sectional infeed roll and chipbreaker, motor mount base, 1 1/2 HP feed drive motor, set of wrenches—less motor, motor pulley, belts, switches, wiring, and belt guard.

PLANER WITH MOTOR: Same as less motor unit except with cutterhead drive motor, motor pulley, belts, belt guard, magnetic controls with overload, low voltage and no voltage protection, separate push button stations and reversing drum switch for 3-phase operation only.

STANDARD MACHINES

Be sure to specify motor characteristics when ordering.

- 225-01**—225-D, 24" x 8" Single Planer as specified on opposite page, with four-knife round safety cutterhead, sectional chipbreaker, sectional feed rolls and 1 1/2-HP totally enclosed feed motor. 5-HP, 3-phase, 220, 440 or 550-volts, 50 or 60 cycle cutterhead motor. Motor includes Magnetic starter with overload and low voltage protection and push-button station.
- 225-03**—225-D, same as 225-01, except with 7 1/2-HP, 3-phase, 220/440-volt, 60 cycle Direct Drive motor.
- 225-04**—225-D, same as 225-01, except with 10-HP, 3-phase, 220/440-volt, 60 cycle Direct Drive motor.

- 225-05**—225-B, same as 225-01, except less cutterhead motor. With V-pulley on cutterhead shaft.
- 225-06**—225-B, same as 225-01, except with 5-HP, 3-phase, 220/440-volt, 60 cycle Belted Drive motor.
- 225-07**—225-B, same as 225-01, except with 5-HP, 1-phase, 220-volt, 60 cycle Belted Drive motor.
- 225-08**—225-B, same as 225-01, except with 7 1/2-HP, 3-phase, 220/440-volt, 60 cycle Belted Drive motor.
- 225-09**—225-B, same as 225-01, except with 10-HP, 3-phase, 220/440-volt, 60 cycle Belted Drive motor.
- 225-10**—225-B, same as 225-01, except with 15-HP, 3-phase, 220/440-volt, 60 cycle Belted Drive motor.

OPTIONAL ACCESSORIES

- 225-20**—KNIFE GRINDING AND JOINTING ATTACHMENT. Wt. 105 lbs.
- 225-21**—SHAVING HOOD. 8" outlet. Wt. 30 lbs.
- 225-22**—Set of Four High-Speed Steel Knives. Wt. 5 1/2 lbs.
- 225-23**—3 Groove B-Section 5.45" pulley for 3450 RPM motor.
- 225-24**—Switch for 5-HP, 1-phase, 220-volt, 60 cycle motor with magnetic starter and push-button station.
- 225-25**—Same as 225-24, except for 5-HP, 3-phase, 220/440-volt motor.

- 225-26**—Same as 225-24, except for 7 1/2-HP, 3-phase, 220/440-volt motor.
- 225-27**—Same as 225-24, except for 10-HP, 3-phase, 220/440-volt motor.
- 225-28**—JIC Electricals for 5 to 7 1/2-HP. Wt. 25 lbs.
- 225-29**—JIC Electricals for 10-HP. Wt. 30 lbs.
- 225-30**—Cutterhead Brake.
- 225-31**—Belt Guard for 3450 RPM motor.
- 225-32**—Belt Guard for 1725 RPM motor.

SPECIFICATIONS

Bed	24" x 48"
Cutterhead	4 1/4"
Cutting circle	4 1/2"
Recommended Cutterhead speed,	
belted drive	4600-5000-5500 RPM
direct drive	3600 RPM
Knives (4), high speed	
steel	24" x 1 1/4" x 5/32"
Feed rollers	4" dia.
Bed rollers	4" dia.
Variable speed feed	
range	20 to 100 FPM

Knife-cuts-per-minute,	
belted drive	18,400
Knife-cuts-per-minute,	
direct drive	14,400
Maximum depth of cut	1/2"
Stock thickness range	1/8" to 8"
Widest planable stock	24"
Shortest planable stock, butted	4"
Shortest planable stock,	
not butted	13"
Motors recommended for:	
Light and medium work	5 to 7 1/2-HP

Heavy duty work	10 to 15-HP
Weight, Net, less motor	2450 lbs.
Weight, Net, with motor	2600 lbs.
Weight, Domestic crated,	
less motor	2760 lbs.
Weight, Domestic crated,	
with motor	2885 lbs.
Weight, Export boxed,	
less motor (92.1 cu. ft.)	2990 lbs.
Weight, Export boxed,	
with motor (123.8 cu. ft.)	3115 lbs.

SAFETY RULES

OPERATING INSTRUCTIONS

AND

PARTS LIST

Model 225-24" Planer



POWERMATIC INC.

McMINNVILLE, TENNESSEE

MARCH, 1966

SAFETY RULES

24" Planer

1. This machine has been designed with as many safety features as humanly possible, however, always remember that a planer is only as safe as its operator.
2. BEFORE starting planer be sure to check the following:
 - (a) Table must be completely free of all foreign matter.
 - (b) Cutterhead knives **MUST** be inspected **before** each operation.
Check for tightness in cutterhead and make certain knives are not fractured in any place. Flying knives are **DANGEROUS**.
 - (c) Knives for sharpness!!
3. Check material thickness and depth of cut desired. Never overload planer, or try to cut beyond its capacity.
4. As material is fed into machine, stand to side of board (never directly behind), nearest switch. "Kick-back," caused by improper gripping of lumber by infeed roll and chipbreaker, can cause **serious** injury.
5. Never stand directly behind or walk behind machine when it is running. Direction of cutterhead rotation usually throws chips or any foreign material from rear of machine.
6. In case it is necessary to stop material as it is feeding through machine, disengage feed clutch and turn machine off. **Wait** until cutterhead has **completely** stopped before lowering table to remove material. Attempted removal while cutterhead is turning may cause "kickback."
7. **Never** horse around a running planer. "Play" should absolutely be forbidden as 9 out of 10 accidents are the results of carelessness and playing with machine as though it were a toy.
8. Always stop machine for adjustment or when leaving immediate area. Disconnect power source when working on or around any moving parts.
9. **Never** feed two boards through a planer with solid infeed rolls, at once (side by side or stacked). Kickback can result and board fly from machine with velocity of bullet. When sectional infeed rolls and chipbreakers are installed, it is possible to feed several narrow boards through machine safely.
10. Use **only** genuine Powermatic (or factory authorized) replacement parts and knives.
11. Keep all guards in place—and **use** them.
12. Do not wear long or loose sleeves or neckties when operating planer.
13. Extra care should be taken when running short pieces, butt with another piece of material of equal thickness and stand **ASIDE**.
14. Base of machine should be grounded to water pipe or central grounding system.

V. PLANER OPERATING HINTS

IF CLIP OR SNIPE APPEARS AT BEGINNING OF BOARD:

1. Pressure bar may be set too low.
2. Chipbreaker may be set too high.
3. Upper infeed sectional roll may be set too high.
4. Lower infeed roll may be set too high.
5. Spring tension may be too light on pressure bar.

IF CLIP OR SNIPE APPEARS ON END OF LUMBER:

1. Pressure bar may be set too high.
2. Lower outfeed roll may be set too high.
3. Upper outfeed roll may be set too low.
4. Lumber may not be butted.
5. Grain may be running against knives.

IF KNIVES TEAR OUT LUMBER:

1. Feed may be too fast.
2. Moisture content may be too high.
3. Head may be running too slowly.
4. Cut may be too heavy.
5. Cutting angle may be too large.
6. Grain may be running against knives.

IF KNIVES RAISE THE GRAIN:

1. Feed may be too fast.
2. Cutting angle may be too large.
3. Head may be running too slowly.
4. Moisture content of lumber may be too high.
5. Cut may be too heavy.

IF CHIP MARKS APPEAR ON LUMBER:

1. Blower system may not be strong enough.
2. Feed may be too fast.
3. May be loose connection in blower system—no suction.
4. Exhaust pipe may join at too large an angle to main blower pipe.

IF PANELS ARE TAPERED ACROSS THE WIDTH:

1. Planer bed out of level with cutterhead.
2. Knives not set even with cutterhead.

IF UNDESIRE POUNDED GLOSSY FINISH APPEARS:

1. Knives may be dull.
2. Feed may be too slow.

IF WASHBOARD FINISH APPEARS:

1. Knives may have been driven back into the head.
2. Machine may be completely out of adjustment.
3. Planer bed loose and rocking in ways.

IF REVOLUTION MARK SHOWS UP:

1. Knives may be ground poorly.
2. Knives not set properly or evenly.

IF LINES APPEAR AT RIGHT ANGLES TO THE KNIFE MARKS:

1. Knives may have checkered and nicked up by over-grinding and taking temper out of steel.
2. Chips may have wedged between rolls and tables.
3. Pressure bar may be dragging.

IF STOCK TWISTS IN MACHINE:

1. Pressure bar may be cocked.
2. Upper outfeed roll may be cocked.
3. Upper outfeed roll may have uneven spring tension on it.
4. Lower rolls may be cocked.

IF STOCK STICKS OR HESITATES IN MACHINE:

1. Pressure bar may be set too low.
2. Lower rolls may be set too low.
3. Upper rolls may not be set low enough.
4. Cut may be too heavy.
5. Coaxer board may help lumber through machine.

IF MACHINE IS NOISY AND VIBRATES AND POUNDS:

1. Knives may be too dull.
2. Machine may not be leveled up correctly.
3. Machine may not be on solid foundation.
4. Pressure bar may be set too low.

IF MOTOR KICKS OUT:

1. Knives may be dull, thus overloading motors.
2. Pressure bar may be set too low, putting drag on motors.
3. Motors may be drawing high current because other machinery in the plant in use has pulled down the voltage.
4. Machine may be out of adjustment.
5. Lower rolls may be set too low.

I. GENERAL SET-UP AND ALIGNMENT

1. RECEIVING

Uncrate and check for shipping damage. Clean all coated and greased surfaces. Read instructions thoroughly. Locate all lubrication points; adjustment; method of drive.

2. MOUNTING

Mount machine securely to solid foundation. Concrete base mounting preferred. Locate in clean, dry and well ventilated building if possible. Motor and electrical connections should be protected when not in operation or if exposed to weather elements.

3. EXHAUST SYSTEM

Recommended as a must if efficient production operation is required. Not a necessity where limited amount of operation being performed and machine can be kept clean of shavings.

4. INSPECTION

The above machine requires the minimum amount of attention in service. Periodic or regular inspections are recommended to insure machine is in proper adjustment, positive electrical connections; worn or loose "V" belts and bearings heating or loose.

5. BEFORE OPERATING

Check motor nameplate date or wiring diagram of motor and switch for proper voltage connection before wiring into line. Run motor without load to check the connections and direction of rotation. Always refer to motor nameplate for rotation connections.

II. LUBRICATION

A. Feed rollers are mounted in sealed ball bearings and do not require any lubrication.

B. OIL LUBRICATION

The following points are to be lubricated regularly every ten (10) hours of operation with oil equivalent to SAE 10 with Viscosity index of 200 at 100 Degrees.

Surface Fittings: Bed Ways

Handwheel drive shaft gears and thrust screws

C. VARIABLE SPEED SHEAVES

Use pressure grease gun to regularly lubricate variable speed sheaves—openings in right side of base permits pressure gun to be inserted to pressure fittings.

III. OPERATING ADJUSTMENTS

PLANER BED:

The planer bed is mounted in the main frame panels and is raised or lowered on acme screws mounted in thrust bearings. The screws are operated through gears by a large handwheel on the front of the planer. The planer bed is held rigid between the frames by shims placed on each side of the bed which are adjusted with two jack screws that can be tightened against the shims. The shims should be adjusted tight enough to prevent rocking or moving of the bed when the planer is in operation.

The planer bed MUST be level with the cutterhead. This

can be checked by lowering the bed to permit placing a small jack-screw type gauge (or small square block) between the bed and the cutterhead at the extreme right side of the bed. Raise the bed with the handwheel until the block or gauge just touches the cutterhead and move the block or gauge to the left side of the table and check the cutterhead. If the bed is not level with the cutterhead, raise or lower the bed by loosening screw (28) fig. 4 and turning screw nut (29) to the right or left to raise or lower the bed to the proper height. When adjusted to proper height so as to be level with cutterhead, lock in place with set screw (28) fig. 4.

PLANER BED ROLLERS:

The planer bed rollers are adjusted to the proper height with the quik-set handle mounted on the right side of the planer bed. The height of the rollers above the bed surface is indicated by a graduated dial on the planer bed and a pointer on the quik-set handle. If the height of the table rollers do not correspond with the height indicator scale, adjustments can be made by loosening the set screw (26) fig. 4 in the roller adjusting arms. Set indicator pointer at Zero on the gauge and turn adjusting screws (27) until the bed rollers are level with the planer bed; tighten the set screws (26).

To plane wet or rough sawed lumber, set the quik-set indicator on .030", for medium rough .010" to .015", and for finish lumber .000" to .010". Set the rollers high enough so the lumber will feed through the planer without hesitation.

POWER DRIVEN FEED ROLLERS:

The sectional infeed roller and the smooth outfeed roller are driven by roller chains and sprockets with a 1½ HP motor in the base of the planer. The rollers are mounted in the floating type bearing housing and operate in sealed ball bearings that require no lubrication. The floating bearing housings are held in position with pressure springs. Tension on springs is controlled with set screws (9) fig. 3. The height of the feed roller (from bed) is adjusted with jack screws (8) fig. 2. For best results, the roller must be set approximately 1/16" below the arc of the cutterhead knives. To set the roller, lower the planer bed about 4" below arc of cutterhead and place a gauge or wooden block (2" x 4" x 4") directly under the cutterhead. Rotate the cutterhead (with hand) until one knife is directly on the bottom of the cutting arc (straight down) and raise the planer bed until the block or gauge is 1/16" below the knife's edge. Check feed roller in relation to the block and adjust with jack screws (8) fig. 2 until the roller just clears the block. The feed roller pressure springs are designed so that a very limited amount of pressure adjustment is required. Too much pressure will cause infeed roller to mark the material being planed; insufficient pressure will restrict feed.

CHIP BREAKER:

The sectional type chipbreaker is constructed with 2" spring loaded sections mounted on a bar and swings concentric with cutterhead. The individual sections have approximately ¼" yield each. The lower edge of the chipbreaker should be exactly parallel (same height) with the sectional infeed, 1/16" below arc of cutterhead knives. Chipbreaker height is adjusted with the adjusting screws (11) fig. 3.

PRESSURE BAR:

THE PRESSURE IS THE MOST IMPORTANT AND CRITICAL ADJUSTMENT ON YOUR PLANER. If the pressure bar is too low the material will not feed through the machine; if too high, the knives will snipe the board about 6" from the end. The pressure bar is very close to the cutterhead and as material passes under the knives, the pressure bar holds the board down on planer bed until it reaches the outfeed roller. The pressure bar should be set on a parallel (same height) with the arc of the cutterhead knives. When the knives wear or become dull, it is necessary to re-adjust the pressure bar to compensate for the wear. The pressure bar is adjusted with screws (13) fig. 3. Turn the screws to the right (clockwise) to lower bar, to the left (counterclockwise) to raise the bar.

MATERIAL THICKNESS GAUGE:

To set the indicator on the material thickness scale to indicate properly after changing knives, loosen the screw in the planer bed which holds the brass pointer and set to the thickness the material measures when planed or fed through the machine. The hole which mounts the brass pointer is slotted and will permit proper adjustment.

CUTTERHEAD:

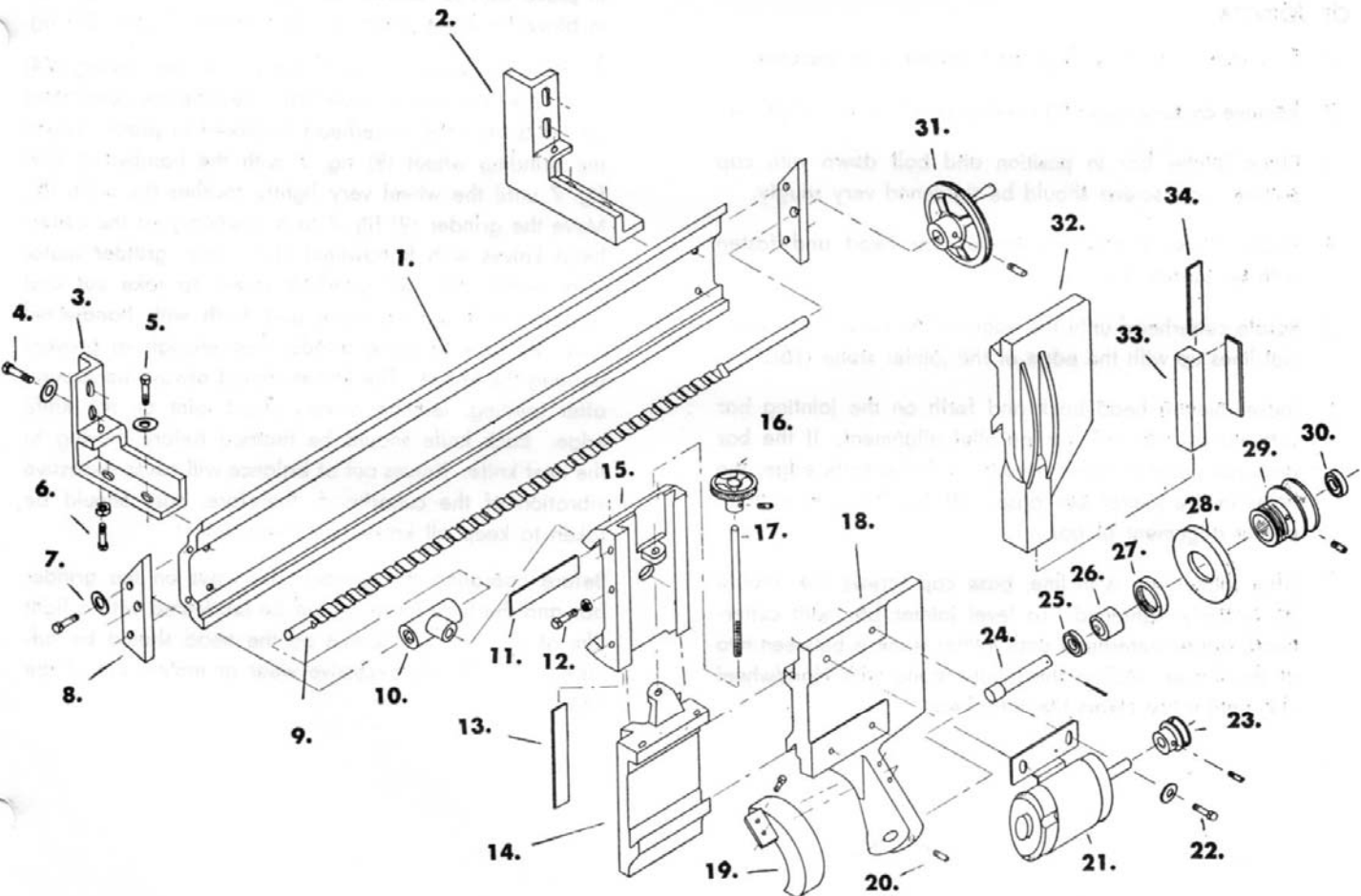
The cutterhead is equipped with four knives held in position with lock shims and set screws. As the feed roller, chipbreaker and pressure bar are adjusted to the arc of the knife cut and if height of the knives are changed, the

roller, chipbreaker and pressure bar should be adjusted accordingly. Before removing the knives from the head, the knife gauge should be adjusted to the height of the knives so that when the knives are replaced, the height will not be changed relative to the head. When replacing the knives, place the jack screw studs in place so that the "step" will act as a seat for the knife. Drop the knife and shim into the cutterhead slot so that the beveled edge of the knife is level and even with the surface of the head. The knives should not protrude more than 3/32" beyond surface of the cutterhead.

Tighten the two outside knife shim screws just enough to hold knives firmly in the head. Place the knife setting gauge in position over one extreme end of the head and turn the allen screw in jack screw plug, raising the knife until it touches the stop on knife setting gauge. Next, tighten the center knife locking shim bolt. In the same manner, set the other knives before tightening the remainder of the shim bolts. After all the knives are set, rotate the cutterhead and lock the knives uniformly. CAUTION . . . IF ONE KNIFE IS LOCKED TIGHTLY BEFORE THE OTHERS ARE TIGHTENED, THE CUTTERHEAD MAY BE SPRUNG AND CAUSE UNEVEN KNIFE HEIGHT AND VIBRATION.

KNIFE CARE:

IMPORTANT: Knives should be kept sharp. The knives do all of the work and they will not do satisfactory work if they are DULL. The set of knives are matched and balanced at the factory. When the knives are sharpened, care should be taken that they are kept in balance.



IV. INSTRUCTIONS FOR ADJUSTING AND OPERATING THE 225-24" KNIFE GRINDER AND JOINTER

JOINTING AND GRINDING PROCEDURE

The first and most important step is to JOINT the knives, then GRIND them. Jointing knives first assures uniform knife height. Knives are fastened in a round head and the cutting is done in an arc by the front edge of the knife. Even though knives are installed with a micrometer gauge, an absolute uniformity of height cannot be obtained. Knives should be jointed until all edges of knives are uniform. This jointing process actually sharpens the knives. After jointing, the jointer head is removed and grinding head installed. The excessive joint is then ground from the bevel of the knife edge.

INSTALLATION OF BAR AND ADJUSTMENT OF JOINTER

1. First carefully study illustrated numbers on pictures.
2. Remove cover screws and cover guard from top of planer.
3. Place Jointer bar in position and bolt down with cap screws. Cap screws should be tightened very snugly.
4. Place Jointer bracket on jointer bar head and fasten with set screws (15).
5. Rotate cutterhead until the edge of the cutter-head knife slot lines up with the edge of the jointer stone (16).
6. Move jointing head back and forth on the jointing bar with handwheel (17) for parallel alignment. If the bar does not move in exact parallel with the knife edge, the holes in the jointer bar base (18) are large enough to permit alignment of bar.
7. After jointer bar is in line, base cap screws (14) should be securely tightened. To level jointer bar with cutterhead, rotate cutterhead until jointer stone is between two of the knives. Adjust the jointer stone with Handwheel (19) until it just clears the cutterhead.

8. Operate Jointer head back and forth, and check with thickness gauge (20) or piece of paper to see if Jointer bar is level with cutterhead.
9. To level bar with cutterhead, loosen cap screws on jointer bar bracket and adjust with adjusting screws.

JOINTING CUTTERHEAD KNIVES

10. TO JOINT PLANER KNIVES: adjust jointer stone until it just clears knives EVENLY. Now lower Jointer stone until just touching knives.
11. Move the jointer head to a position past the cutterhead. With the planer running at full speed, operate jointer head back and forth RAPIDLY, lowering jointer head if necessary until knives are properly jointed. Take care not to OVERJOINT knives.

GRINDING CUTTERHEAD KNIVES

Mount the grinding attachment on jointer bar and secure in place with set screws (15) fig. 5. Lock the cutterhead in place for knife grinding with cutterhead lock (23) fig.

7. Turn the knob (23) until the pin in the casting (24) enters the hole in the knob (23). Revolve the cutterhead by hand until the cutterhead is locked in place. Lower the grinding wheel (9) fig. 7 with the handwheel (19) fig. 7 until the wheel very lightly touches the knife (8). Move the grinder (9) fig. 7 to a position past the cutterhead knives with handwheel (17). Start grinder motor with switch (10), set grinding wheel to take cut and rapidly move grinder back and forth with handwheel (17). Be sure to move grinder fast enough to prevent burning the knives. The knives should always be ground after jointing, leaving a very slight joint on the knife edge. Each knife should be finished before moving to the next knife. Knives out of balance will cause excessive vibration of the cutterhead; therefore, care should be taken to keep all knives the same weight.

Before operating the grinder, the ways on the grinder bar and the lead screw should be lubricated with a light film of oil. The gib screws on the head should be adjusted to keep any excessive wear or motion out of the head.

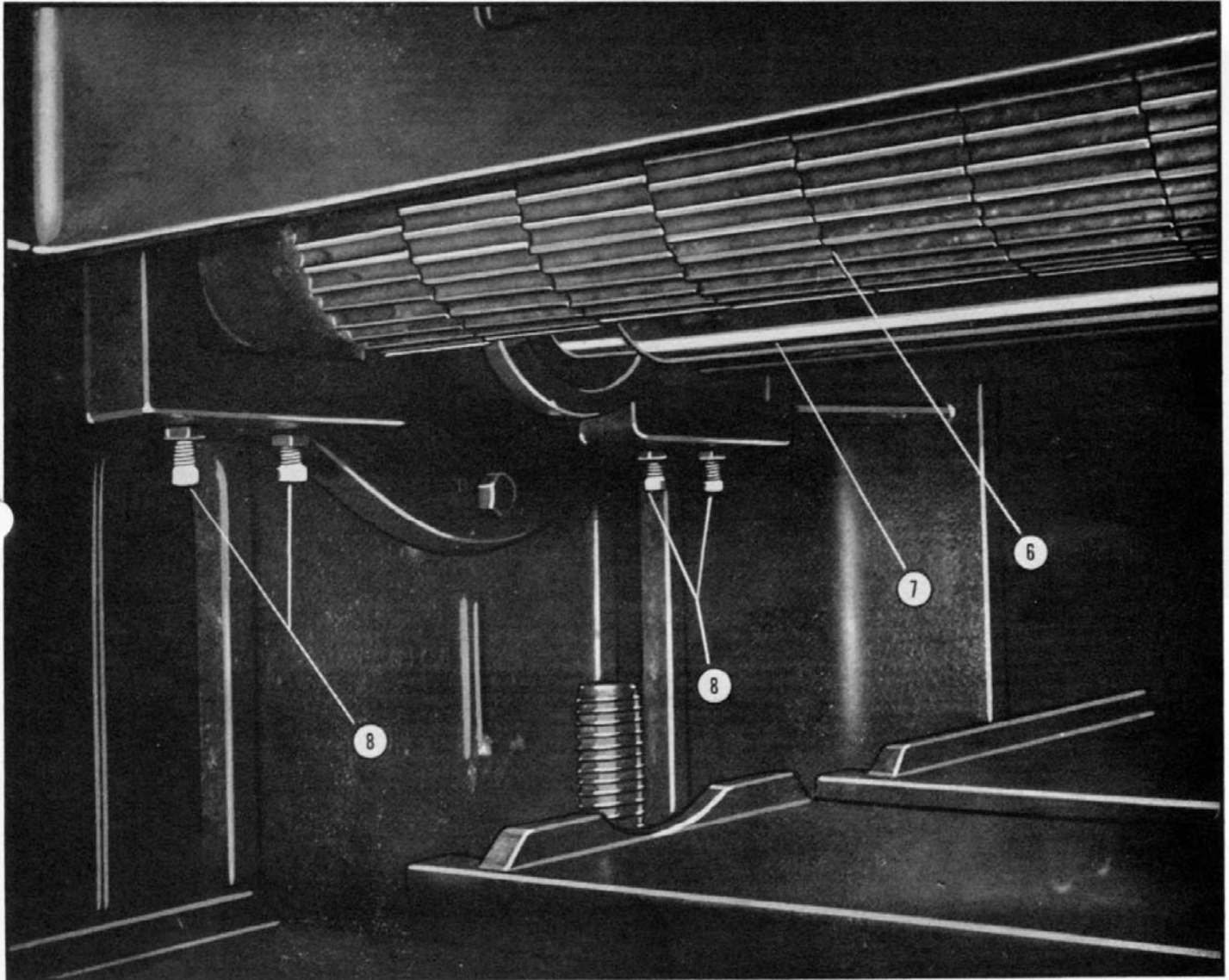


Figure 2

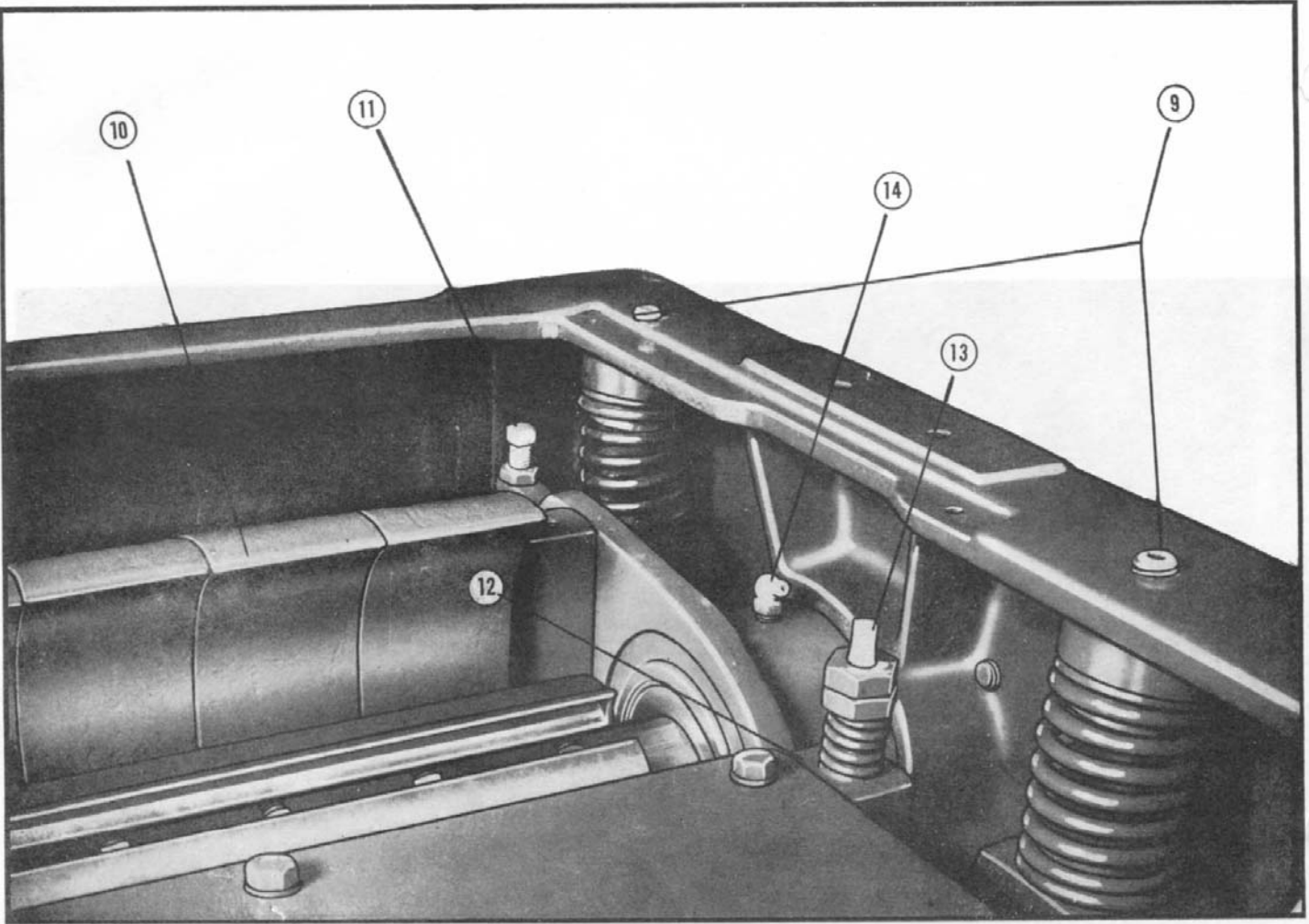


Figure 3

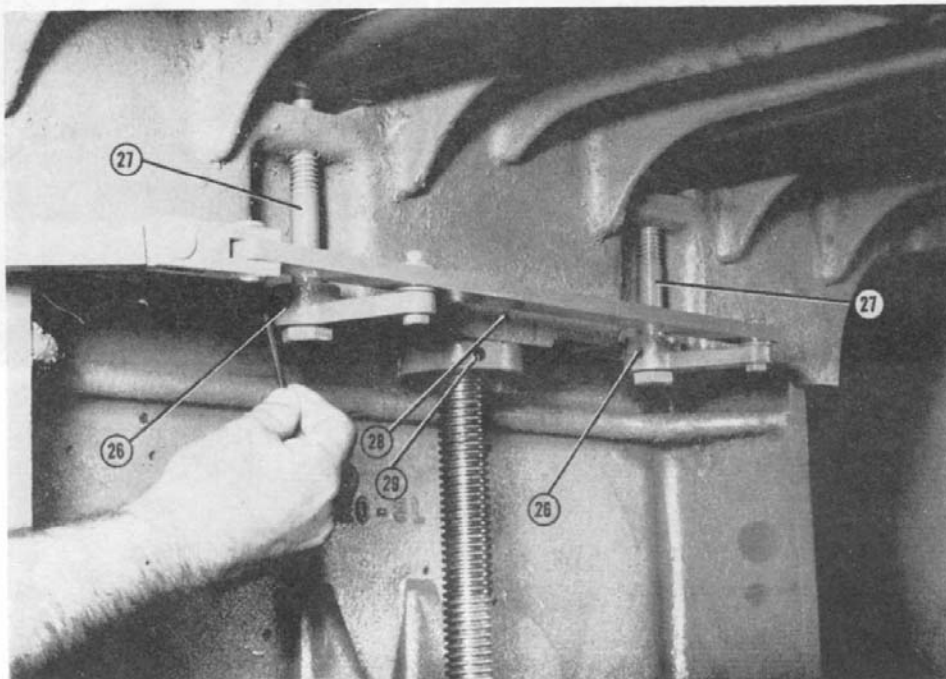


Figure 4

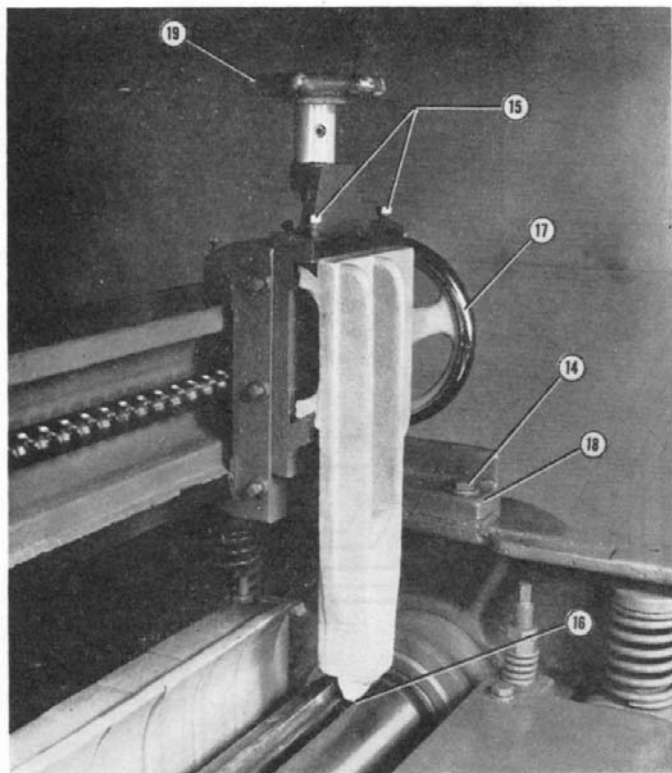


Figure 5

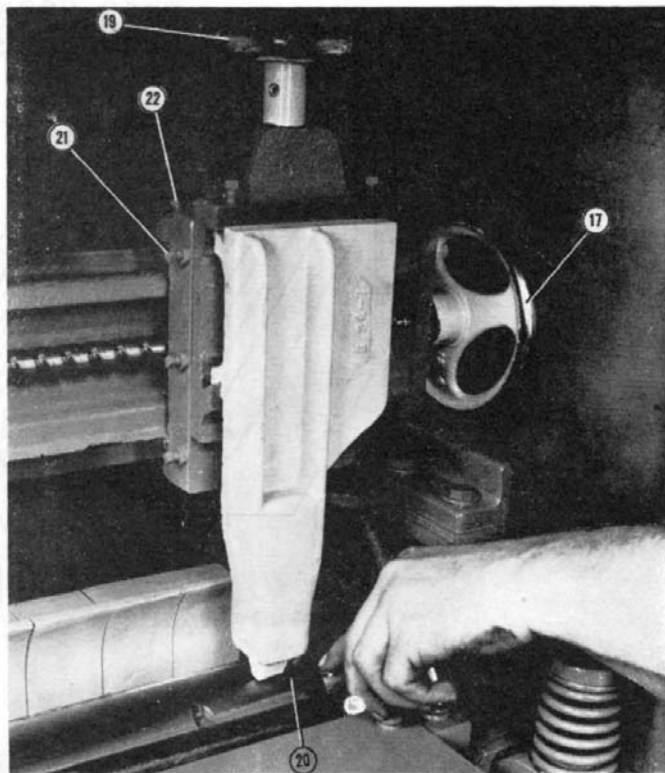


Figure 6

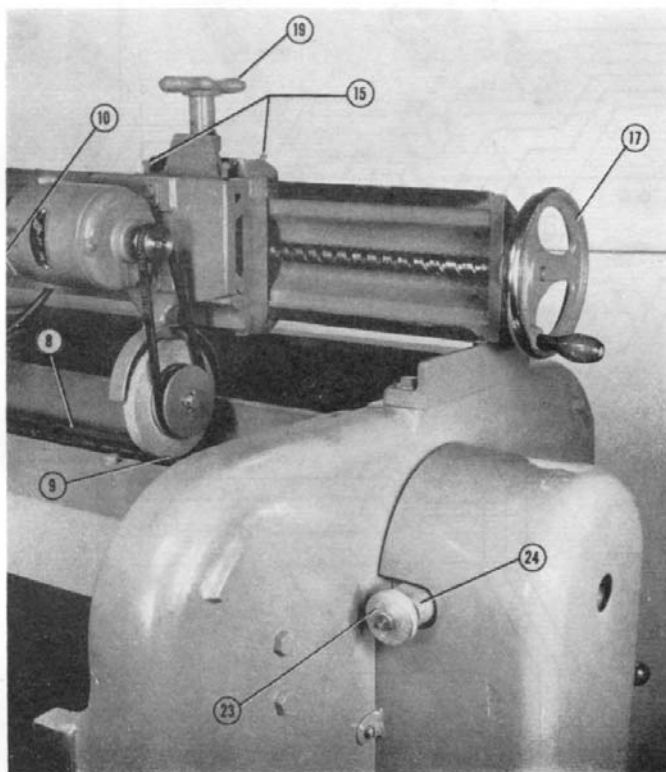
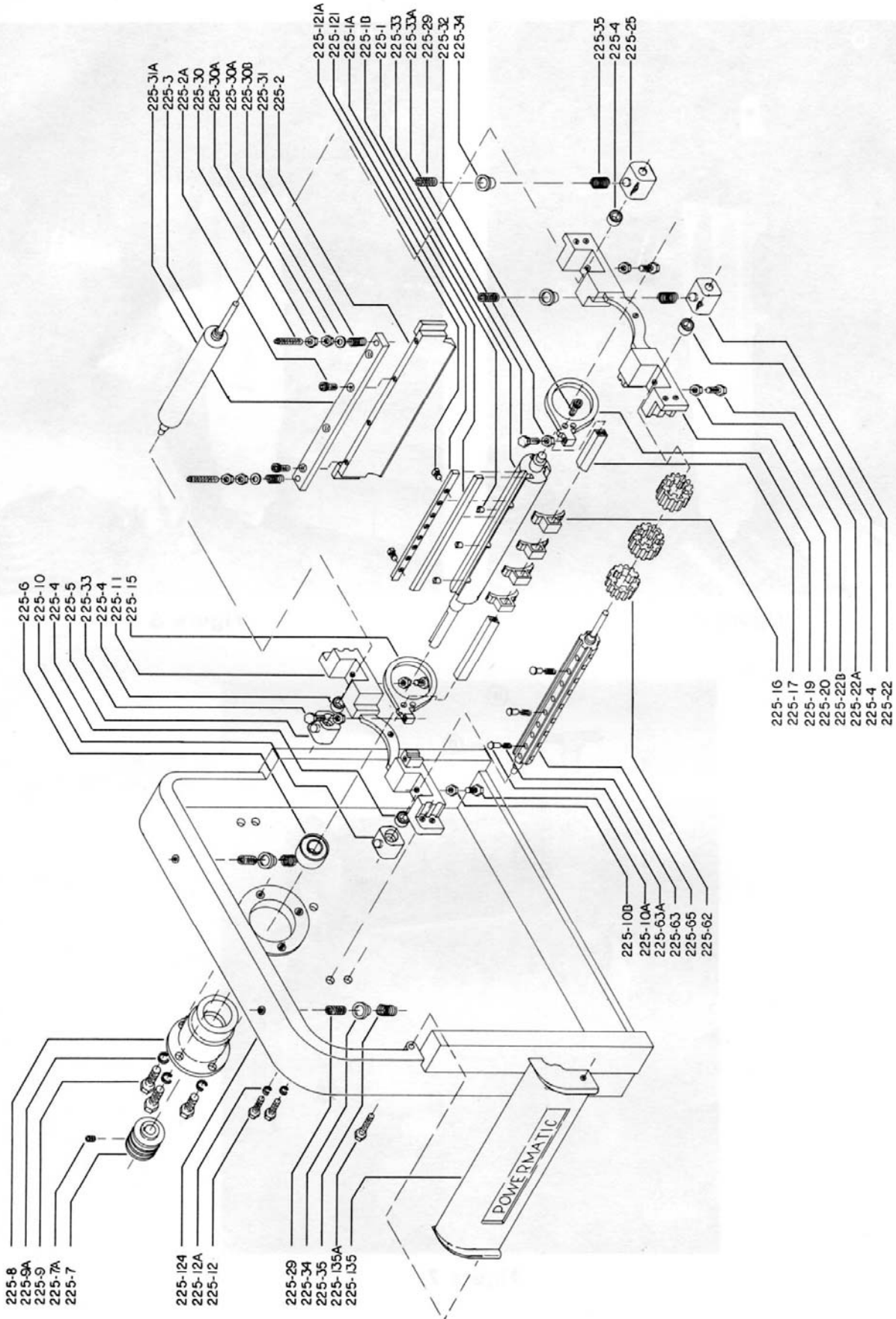
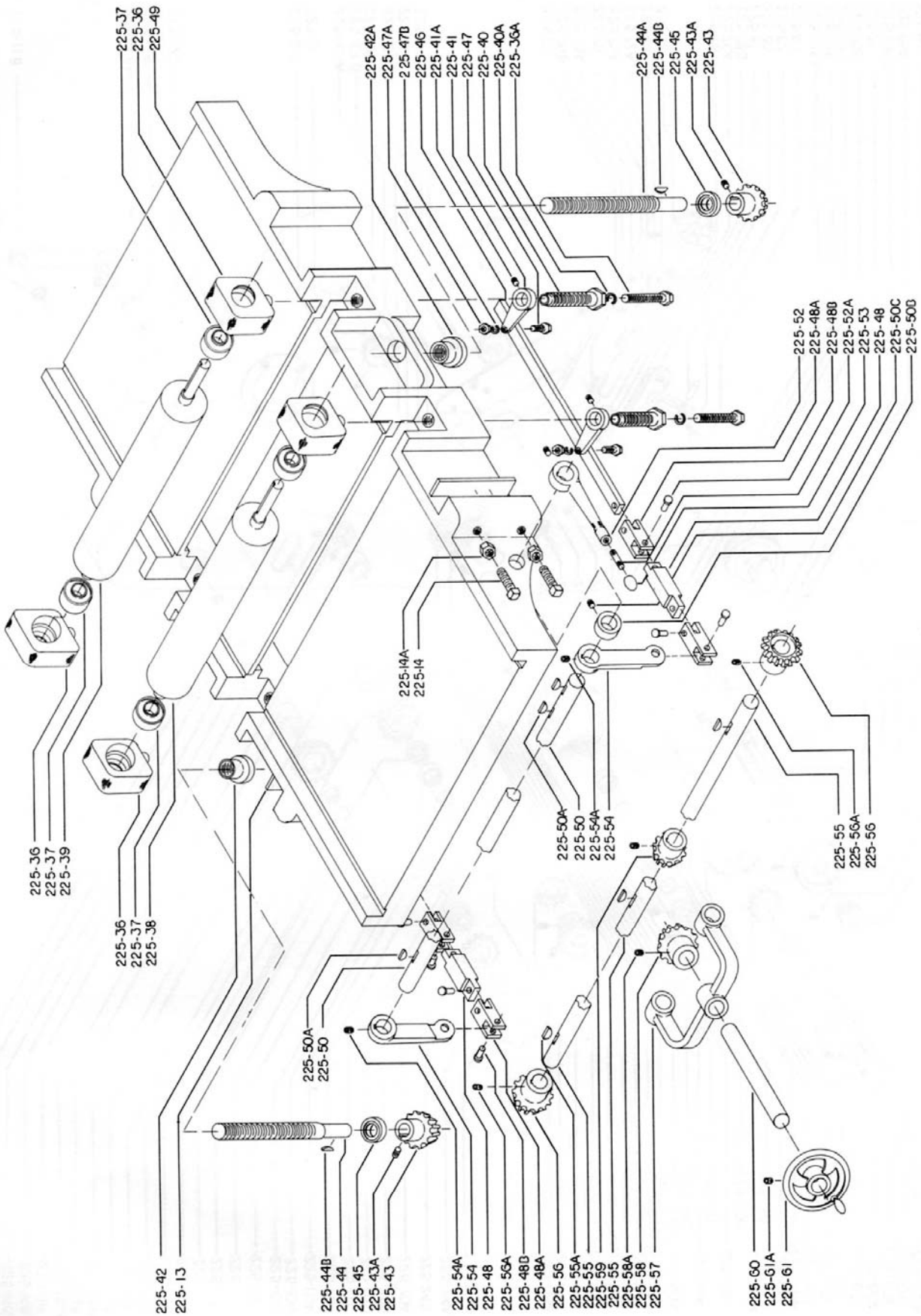


Figure 7





MODEL "225 PLANER" PARTS LIST

Part No.	Description	Qty.	Reqd.	Part No.	Description	Qty.	Reqd.
225-1	Cutterhead, Belted	1		225-37	Bearing, Table Roller 207 KLL FAFNIR	4	
225-1A	Knife, Cutterhead	3		225-38	Table, Roll, Infeed	1	
225-1B	Knife Lifter, Cutterhead	9		225-39	Table Roll, Outfeed	1	
225-2	Pressure Bar	1		225-40	Screw, Table Roll Adj.	4	
225-2A	Bolt, Pres. Bar Mounting 5/16-18 x 1 1/4 Sckt Hd	4		225-40A	Lock Washer	4	
225-3	Roller, Outfeed	1		225-41	Arm, Table Roll Adj.	4	
225-4	Bearing, Feed Roller FAFNIR 207 KLL	4		225-41A	Setscrew, Arm 3/8-16 x 3/8 lg	4	
225-5	Bearing Housing, Outfeed Roller, L.H.	1		225-42	Nut, Table Raising, R.H.	1	
225-6	Bearing, Cutterhead SKF 462 309	2		225-42A	Nut, Table Raising, L.H.	1	
225-7	Pulley, Cutterhead, 3 Groove	1		225-43	Bevel Gear, Table Raising	2	
225-7A	Setscrew, 3 Groove Pulley 5/16-18 x 5/16	1		225-43A	Setscrew, Bevel Gear 5/16-18 x 5/16	2	
225-8	Bearing Housing, Cutterhead, L.H.	1		225-44	Screw, Table Raising, R.H.	1	
225-9	Bolt, Bearing Housing Mtng, 1/2-13 x 1" Hex Hd	7		225-44A	Screw, Table Raising, L.H.	1	
225-9A	Washer, Mounting Bolt	7		225-44B	Woodruff Key, Table Raising Screw #608	2	
225-10	Bearing Housing, Infeed Roller, L.H.	1		225-45	Thrust Bearing, Table Raising Screw, NICE 1 1/4 Bore	2	
225-10A	Bolt, Feed Roller Bearing Housing Adj. 3/8-16 Hex Hd	4		225-46	Bar, Table Adj. Screw, Long	2	
225-10B	Lock Nut, Adj. Bolt 3/8-16 Hex	4		225-47	Bolt, Adj. Arm 5/16-18 Hex Hd	4	
225-11	Bearing Rail, L.H.	1		225-47A	Lock Nut, Adj. Arm Bolt 5/16 Hex	4	
225-12	Bolt, Bearing Rail Mtng. 7/16-14 Hex Hd	10		225-47B	Lock Washer	4	
225-12A	Lock Washer, Mounting Bolt	10		225-48	Bar, Table Adj. Screw, Short or long	2	
225-13	Shim, Table Adj.	2		225-48A	Linkage Bar	4	
225-14	Bolt, Shim Locking	4		225-48B	Pin, Linkage Bar	8	
225-14A	Lock Nut, Shim Locking Bolt	4		225-49	Table, Planer	1	
225-15	Hangar, Chipbreaker, L.H.	1		225-50	Shaft, "Quik-Set"	1	
225-16	Chipbreaker Section	10		225-50A	Woodruff Key, "Quik-Set" Shaft #608	3	
225-17	Bar, Sectional Chipbreaker	1		225-50B	Collar, "Quik-Set" Shaft	1	
225-19	Hangar, Chipbreaker, R.H.	1		225-50C	Setscrew, Collar 5/16-18 x 5/16 lg.	1	
225-20	Bearing Rail, R.H.	1		225-51	Gauge, "Quik-Set" (Not Pic)	1	
225-21	Sprocket, Infeed Roller & Table Roller	2		225-52	Handle, "Quik-Set"	1	
225-21A	Setscrew 3/8-16 x 3/8 lg	2		225-52A	Screw, Knob	1	
225-22	Bearing Housing, Infeed Roller, R.H.	1		225-53	Knob, "Quik-Set" Handle	1	
225-22A	Bolt, Feed Roller Bearing Hous. Adj. 3/8-16 Hex Hd	4		225-54	Arm, "Quik-Set" Adj.	2	
225-22B	Lock Nut, Adj. Bolt 3/8-16 Hex Hd	4		225-54A	Setscrew 5/16-18 x 5/16 lg ohio	2	
225-23	Bearing Housing, Cutterhead, R.H.	1		225-55	Countershaft, Table Raising	1	
225-24	Sprocket, Outfeed Roll, Drive	1		225-55A	Woodruff Key, C'Shaft #608	3	
225-24A	Hub, Outfeed Roller Drive Sprocket	1		225-56	Miter Gear, Table Raising C'Shaft 3	2	
225-24B	Setscrew 5/16-18 x 5/16	1		225-56A	Setscrew, Miter Gear 5/16-18 x 5/16 lg	2	
225-25	Bearing Housing, Outfeed Roller, R.H.	1		225-57	Fork, Table Raising	1	
225-29	Screw, Feed Roll Pressure Spring	4		225-58	Miter Gear, Table Raising Handwheel Shaft	1	
225-30	Screw, Pressure Bar Adj.	2		225-58A	Setscrew, Miter Gear 5/16-18 x 5/16 lg	1	
225-30A	Locknut, Adj. Screw 1/2 x 13 Hex Hd	4		225-59	Bevel Gear, Table Raising C'Shaft	1	
225-30B	Washer, Spring	2		225-60	Shaft, Table Raising Handwheel	1	
225-31	Spring, Pressure Bar	2		225-61	Handwheel, Table Raising	1	
225-31A	Hangar, Pressure Bar	1		225-61A	Setscrew, Handwheel 5/16-18 x 5/16 lg	1	
225-32	Bolt, Chipbreaker Hangar 3/8-16 Socket Hd	4		225-62	Section, Infeed Roll	10	
225-33	Bolt, Chipbreaker Hangar Adj. 3/8-16 Hex Hd	2		225-63	Spring, Infeed Roll Section	72	
225-33A	Locknut, Adj. Bolt 3/8-16	2		225-63A	Pin, Spring	72	
225-34	Cap, Feed Roll Pressure Spring	4		225-64	Washer, Feed Roll Section (Not Pic)	2	
225-35	Spring, Feed Roll Pressure	4		225-65	Infeed Roller, Spline	1	
225-36	Bearing Housing, Table Roll	4		225-66	Gear, Bed Roll Train Drive	1	
225-36A	Bolt, Bearing Housing Adj	4		225-66A	Bracket, Feed Roller Gear Train	1	
				225-67	Chain, Bed Roll Drive (Not Pic)	1	
				225-68	Sprocket, Outfeed Train Drive	2	
				225-68B	Hub, Outfeed Train Drive Sprocket	1	
				225-69	Chain, Upper Compound Drive (Not Pic)	1	
				225-70A	Sprocket, Outfeed Drive, Small	2	

Part No.	Description	Qty.	Reqd.	Part No.	Description	Qty.	Reqd.
225-70B	Hub, Small, Outfeed Drive Sprocket	1		225-101B	Lock Washer	2	
225-71	Setscrew, 5/16-18 x 5/16 lg (Not Pic)	1		225-101C	Setscrew, Bracket 3/8-16 x 3/8	1	
225-72	Handwheel, Variable Speed	1		225-102	Shaft, Lower Compound Drive	1	
225-72A	Setscrew, Handwheel 5/16-18 x 5/16 lg	1		225-102A	Grease Alemite	1	
225-73	Dial, Variable Speed	1		225-103	Sprocket & Hub, Lower Compound Drive	1	
225-73A	Setscrew, Dial 5/16-18 x 5/16 lg	1		225-104	Bearing, Outer Race, GR 26 McGill	1	
225-75	Shaft, Variable Speed	1		225-104A	Bearing, Inner Race, MI 22-4S McGill	1	
225-75A	Collar, Variable Speed Shaft	1		225-105	Collar, Lower Compound Drive	1	
225-75B	Key, Variable Speed Shaft	2		225-105A	Setscrew, Collar 3/8-16 x 3/8	2	
225-76	Bracket, Variable Speed Shaft	1		225-106	Bearing Housing, Variable Speed Drive	1	
225-76A	Grease Fitting, Bracket	1		225-106A	Bolt, Bearing Housing Mounting	2	
225-76B	Bolt, Bracket Mounting	2		225-107	Shaft, Variable Speed	1	
225-77	Cam, Variable Speed	1		225-107A	Key, Variable Speed Shaft	1	
225-78	Bearing, Variable Speed Cam	1		225-108	Collar, Variable Speed Shaft Bearing	2	
225-78A	Bolt, Bearing	1		225-108A	Setscrew, Collar 5/16-18 x 5/16 lg	2	
225-78B	Spacer, Bearing	1		225-109	Bearing, Variable Speed Shaft 99AE103C N.D.	2	
225-79	Adjusting Bracket, Variable Speed	1		225-113	Pulley, 2 Groove	1	
225-79A	Mounting Bolt, Adjusting Bracket	1		225-113A	Setscrew, Pulley	1	
225-80	Arm, Variable Speed Regulating	1		225-114	Shaft, Outfeed Train Drive	1	
225-81	Bracket, Regulating Arm	1		225-114A	Grease Alemite	1	
225-82	Cap Screw, Bracket Mounting 3/8-16 x 1 Hex	2		225-114B	Nut, Outfeed Train Drive Shaft	1	
225-83	Pin, Variable Speed Arm	1		225-115	Collar, Train Drive Shaft	1	
225-85	Variable Speed Pulley	1		225-115A	Setscrew, Collar 3/8-16 x 3/8 lg	2	
225-85A	Pulley Cap, Speed Regulating	1		225-116	Shaft, Train Drive	1	
225-86	Stud, Speed Regulating Arm	2		225-116A	Grease Fitting	1	
225-87	Belt, Variable Speed (Not Pic)	1		225-117	Collar, Train Drive Shaft	1	
225-88	Variable Speed Assembly, Driven	1		225-117A	Spacer, Bearing	4	
225-88A	Setscrew, 3/8-16 x 3/8	1		225-117B	Setscrew, Collar 3/8-16 x 3/8 lg	2	
225-89	Belt, Feed Drive 4L600 (Not Pic)	2		225-118	Bracket, Gear Train, Inner	1	
225-90	Sheave, Feed Drive	1		225-118A	Setscrew 3/8-16 x 3/8 lg	1	
225-90A	Setscrew, Sheave 3/8-16 x 3/8	1		225-119	Bearing, Outer Race, GR 24 McGill	5	
225-91	Sprocket, Lower Drive, Compound	1		225-119A	Bearing, Inner Race, MI 20 McGill	5	
225-92	Chain, Compound Lower Drive (Not Pic)	1		225-121	Shim, Cutterhead Knife	3	
225-94	Gear, Outfeed Bed Roller	1		225-121A	Bolt, Knife Shim 3/8-16 x 7/16 lg Sq Hd	24	
225-94A	Sprocket, Bed Roller Train Gear	2		225-123	Side Panel, Right Hand	1	
225-94B	Setscrew, 5/16-18 x 5/16 lg	2		225-124	Side Panel, Left Hand	1	
225-95	Chain, Feed Roller Drive (Not Pic)	1		225-125	Cutterhead, Direct Drive (Not Pic)	1	
225-96	Chain, Bed Roller Drive (Not Pic)	1		225-126	Collar, Indexing, Dir. Dr. (Not Pic)	1	
225-97	Mounting Bracket, Feed Drive Sheave	1		225-127	Collar, Indexing, Belt Dr. (Not Pic)	1	
225-97A	Bolt, Feed Drive Sheave Bracket 1/2-13 x 1 1/4 Hex	2		225-128	Brake, Direct Drive (Not Pic)	1	
225-97B	Lock Washer	2		225-135	Front Panel	1	
225-98	Shaft, Feed Drive Sheave	1		225-135A	Bolt, Front Panel Mounting	2	
225-99A	Hub & Sprocket, Feed Drive Sheave	1		225-144	Bearing, Outfeed Train Drive Shaft	1	
225-99B	Key, Hub & Sprocket	1		225-146	Spacer, Bearing	1	
225-99C	Grease Alemite	1		225-147	Collar, Direct Drive Motor (Not Pic)	1	
225-100	Collar, Feed Drive Sheave	1		225-148	Spacer, Bracket, Gear Train, Outer	1	
225-100A	Setscrew 3/8-16 x 3/8 lg	2		225-148A	Setscrew 5/16-18 x 5/16 lg	2	
225-101	Bracket, Compound Sheave Mounting	1		225-152	Collar, Outfeed Table Roll (Not Pic)	1	
225-101A	Bolt, Bracket Mounting	2		225-153	Setscrew, 3/8-16 x 3/8 lg (Not Pic)	2	

KNIFE GRINDING AND JOINTING ATTACHMENT PARTS LIST

Part No.	No. Required	Part No.	No. Required
1. Bar, grinder	1	18. Bracket, grinding wheel.....	1
2. Mounting bracket, grinder bar, L. H.....	1	19. Guard, grinding wheel.....	1
3. Mounting bracket, grinder bar, R. H.....	1	20. Set screw, wheel shaft.....	1
4. Bolt, grinder bar mounting.....	4	21. Motor	1
5. Bolt, grinder bracket.....	4	22. Bolt, motor mounting.....	4
6. Bolt, bar adjusting.....	2	23. Sheave, motor drive.....	1
7. Washer, lead screw bearing bracket.....	4	24. Shaft, grinder.....	1
8. Bolt, lead screw bearing bracket.....	4	25. Ball bearing, shaft.....	2
9. Lead screw	1	26. Spacer, shaft	1
10. Nut, lead screw.....	1	27. Nut, grinding wheel.....	1
11. Shim, grinder cross slide.....	1	28. Grinding wheel	1
12. Screw, gib adjusting.....	8	29. Wheel hub & pulley.....	1
13. Shim, grinder vertical slide.....	1	30. Ball bearing, shaft.....	2
14. Slide, grinder vertical.....	1	31. Handwheel, screw	1
15. Slide, grinder	1	32. Head, jointing	1
16. Handwheel, vertical adjusting screw.....	1	33. Stone, jointing	1
17. Screw, vertical adjusting	1	34. Shim, jointing stone.....	1

PARTS LIST FOR MODEL 225-24" PLANER

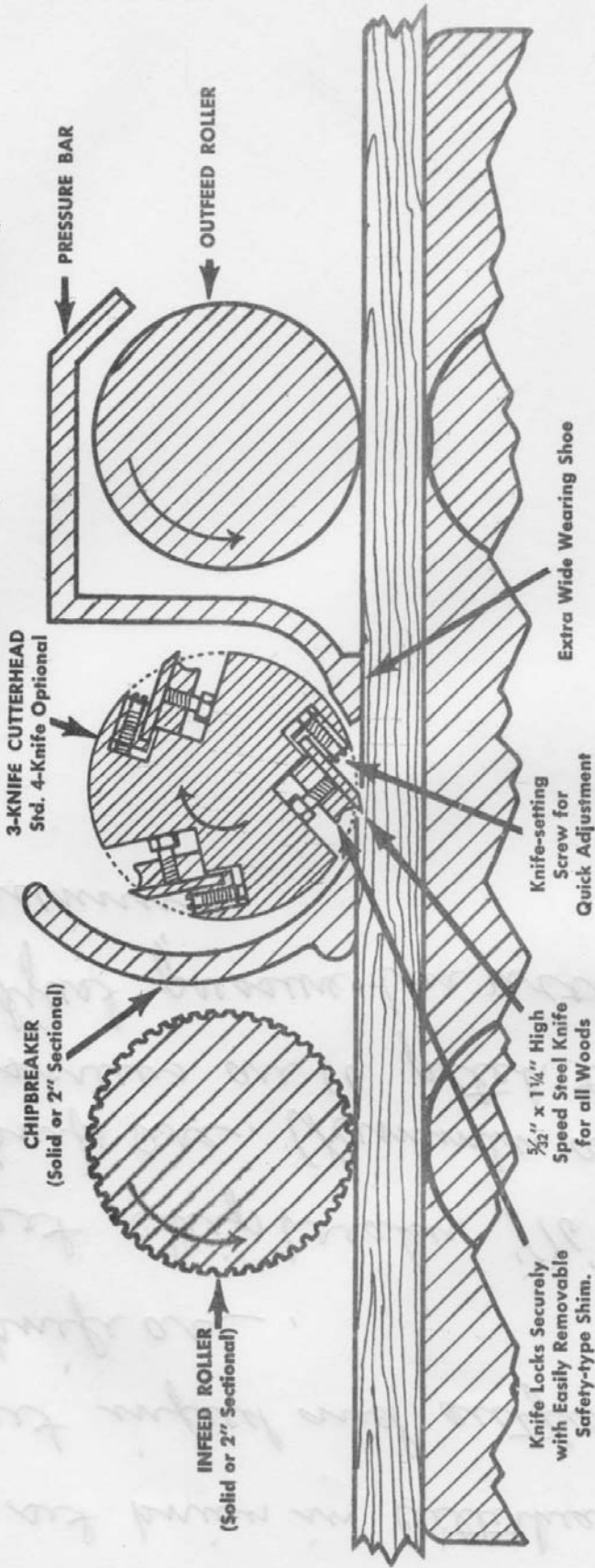
<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO.</u>	<u>PRICE</u>
225-1	Cutterhead	1	\$200.00
225-2	Pressure Bar	1	25.00
225-3	Outfeed roll	1	60.00
225-4	Bearing, outfeed roll, N.D. 88507 or equal	2	4.50 Ea.
225-5	Bearing housing, outfeed roll, L.H.	2	4.50 Ea.
225-6	Bearing, cutterhead, N.D. 87609 or equal	2	6.00 Ea.
225-7	Sheave, cutterhead, 3 groove	1	12.50
225-8	Bearing housing, cutterhead, L.H.	1	22.50
225-9	Cap screw, bearing housing	4	.15 Ea.
225-10	Bearing housing, infeed roller, L.H.	1	5.50
225-11	Bearing rail, feed roller, L.H.	1	17.50
225-12	Cap screw, bearing rail	5	.25 Ea.
225-13	Shim, table adjusting	2	1.00 Ea.
225-14	Screw, table shim adjusting	4	.15 Ea.
225-15	Chipbreaker hanger, L.H.	1	4.50
225-16	Chipbreaker section	10	4.50 Ea.
225-17	Bar, chipbreaker hanger	1	18.00
225-18	Sectional infeed foil complete	1	180.00
225-19	Hanger, chipbreaker, R.H.	1	4.50
225-20	Rail, feed roller bearing, R.H.	1	17.50
225-21	Sprocket, infeed roller	1	10.00
225-22	Bearing housing, infeed roller, R.H.	1	5.50
225-23	Bearing housing, cutterhead, R.H.	1	22.50
225-24	Drive sprocket, outfeed roller	1	16.50
225-25	Bearing housing, outfeed roll, R.H.	1	5.50
225-26	Guard, feed drive	1	60.00
225-27	Cover, feed drive guard	1	4.00
225-28	Guard, outfeed roller	1	5.00
225-29	Screw, outfeed roll pressure spring adj.	4	.30 Ea.
225-30	Bolt and Nut, pressure bar adjusting	2	1.00 Ea.
225-31	Spring, pressure bar	2	.30 Ea.
225-32	Cap screw, chipbreaker hanger	4	.30 Ea.
225-33	Bolt, chipbreaker hanger adj.	2	.25 Ea.
225-34	Cap feed roll pressure spring	4	.25 Ea.
225-35	Spring, feed roll pressure	4	.40 Ea.
225-36	Bearing housing, table roll	4	4.50 Ea.
225-37	Bearing, table roll, N.D. 88506 or equal	4	4.00 Ea.
225-38	Table roll, infeed	1	60.00
225-39	Table roll, outfeed	1	60.00
225-40	Screw, table roll adjusting	4	2.00 Ea.
225-41	Arm, table roll adjusting	4	1.50 Ea.
225-42	Nut, table leveling, R.H.	1	3.50
225-42A	Nut, table leveling, L.H.	1	3.50
225-43	Bevel Gear, table raising	2	18.00 Ea.
225-44	Screw, bed raising, R.H.	1	12.00
225-44A	Screw, bed raising, L.H.	1	12.00
225-45	Bearing, table screw thrust (Nice Ball Thrust Bearing - 1 1/8" Bore)	2	2.50 Ea.

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO.</u>	<u>PRICE</u>	
225-46	Bar, table adjusting screw, long	2	\$ 2.00	Ea.
225-47	Pin, adjusting arm	4	.10	Ea.
225-48	Bar, table adjusting screw, short	2	2.00	Ea.
225-49	Planer, Table	1	200.00	
225-50	Shaft, quik-set adjusting	1	2.00	
225-51	Gauge, quik-set adjusting	1	.50	
225-52	Handle, Quik adjusting	1	1.50	
225-53	Knob, Quik-Set adjusting handle	1	.50	
225-54	Arm, Quik-Set adjusting	2	1.50	Ea.
225-55	Countershaft, table raising	1	4.50	
225-56	Miter gear, table raising countershaft	2	12.00	Ea.
225-57	Fork, table raising	1	8.00	
225-58	Miter gear, table raising handwheel shaft	1	16.00	
225-59	Bevel gear, table raising countershaft	1	16.00	
225-60	Shaft, table raising handwheel	1	2.00	
225-61	Handwheel, table raising	1	8.50	
225-62	Section, infeed roll	10	4.50	Ea.
225-63	Springs, feed roll section	60	.10	Ea.
225-64	Washer, feed roll section	2	2.50	Ea.
225-65	Shaft, feed roll spline	1	100.00	
225-66	Gear & Sprocket, bed roll train drive	1	15.50	
225-67	Chain, bed roll drive	1	1.40	a ft.
225-68	Sprocket, outfeed train drive	1	10.00	
225-69	Chain, upper compound drive	1	6.25	
225-70	Sprocket, feed driven	1	12.50	
225-71	Sprocket, infeed roller drive	1	7.50	
225-72	Handwheel, variable feed	1	1.50	
225-73	Dial, variable feed	1	2.00	
225-74	Pointer, variable feed dial	1	.15	
225-75	Shaft, variable	1	2.00	
225-76	Bracket, variable feed shaft	1	3.00	
225-77	Cam, variable feed	1	2.75	
225-78	Bearing and bit, variable feed cam	1	1.60	
225-79	Adjustable bracket, variable feed	1	1.25	
225-80	Arm, variable feed regulating	1	3.25	
225-81	Bracket, variable arm	1	2.50	
225-82	Cap screw, 3/8" x 1" arm bracket	2	.15	Ea.
225-83	Pin, variable feed arm	1	.15	
225-84	Motor base and shaft, variable feed motor	1	3.50	
225-85	Variable speed assembly, motor drive	1	75.00	
225-86	Bolts, speed regulating arm	2	.40	Ea.
225-87	Belt, variable speed	1	12.00	
225-88	Variable speed assembly, driven	1	75.00	
225-89	Belt, feed drive No. 4L600	2	2.20	Ea.
225-90	Sheave, feed drive	1	16.50	
225-91	Compound sheave, lower drive	1	12.50	
225-92	Chain, compound sheave lower	1	4.50	
225-93	Sprocket, infeed bed roller	1	7.50	
225-94	Sprocket and gear, outfeed bed roller	1	12.50	

Page 3 PARTS LIST ON 225-24" PLANER

PART NO.	DESCRIPTION	NUMBER	PRICE
225-95	Chain, feed roller drive	1	4.50
225-96	Chain, bed roller drive	1	4.50
225-97	Mounting bracket, feed drive sheave	1	4.50
225-98	Shaft, feed drive sheave	1	2.00
225-99	Roller bearing, feed drive sheave	1	3.75
225-100	Collar, feed drive sheave shaft	1	.60
225-101	Bracket, compound sheave mounting	1	4.50
225-102	Shaft, compound sheave	1	2.00
225-103	Sprocket, lower compound	1	10.50
225-104	Roller bearing, compound sheave	1	3.75
225-105	Collar, compound sheave shaft	1	.60
225-106	Bearing housing, variable speed drive	1	8.50
225-107	Shaft, variable speed	1	4.50
225-108	Collar, variable speed shaft	2	.60 Each
225-109	Ball bearing, variable speed shaft	2	3.50 Each
225-110	Spring, variable speed sheave	1	2.25
225-111			
225-112			
225-113	Sheave, variable sheave, two groove	1	2.60
225-114	Shaft, sprocket	1	1.00
225-115	Collar, sprocket shaft	1	.75
225-116	Shaft, gear and sprocket	1	2.50
225-117	Collar, shaft	1	.75
225-118	Bracket, gear train	1	6.50
225-119	Roller bearing assembly (bearing and race)	2	3.75 Each
225-120	Roller bearing assembly outfeed roll	1	3.75
225-121	Knife shims with bolts	4	3.50 Each
225-122	Lifting screws, knife jack screw	12	.35 Each

CUTTING-ROLLER ASSEMBLY (SIDE VIEW)



MODEL 221 20" SINGLE SURFACER

POWERMATIC COMPANY
 A Division of Houdaille Industries, Inc.
 McMURRISVILLE, TENNESSEE 37110

(over)

1. check bed to see if it is tight
2. check bed for parallel to cutterhead
3. set knives in cutterhead
4. set infeed and outfeed $\frac{1}{16}$ " below knife are.
5. set chipbreaker $\frac{1}{16}$ " below knife are. (Remember all adjusting screws are 16 pitch thread)
6. adjust pressure bar with machine running.

