

Model 160 16" (406mm) Planer

MAINTENANCE INSTRUCTIONS AND PARTS LIST

Price \$2.50



POWERMATIC®

Strength and performance right down the line.

POWERMATIC  **HOUDAILLE, INC.**
McMinnville, Tennessee 37110 AC 615-473-5551

FOREWORD

SAFETY FIRST!

This manual has been prepared for the owner and those responsible for the maintenance of a Powermatic Planer. Its purpose, aside from machine maintenance, is to promote safety through the use of accepted operating practices. Read the safety and operating instructions thoroughly before operating the machine.

In order to obtain maximum life and efficiency from your Powermatic Planer, follow all the instructions in the operating instructions and maintenance manuals carefully.

The specifications put forth in this manual were in effect at the time of publication. However, owing to Powermatic's policy of continuous improvement, changes to these specifications may be made at any time without obligation on the part of Powermatic Houdaille, Inc.

WARRANTY

This machine and its component parts have been carefully inspected and performance tested at various stages of production and each finished machine is subjected to a final inspection before shipment. We agree that for a period of eighteen (18) months or 3000 hours of use, whichever occurs first from date of delivery from our authorized dealer, to repair or replace, at our option, any machine (or component part thereof) proving defective within the above period, F.O.B. our plant, providing such machine (or component part) is returned prepaid to our plant, or to a designated service center of the undersigned, for our examination. This warranty does not include repair or replacement required because of misuse, abuse, or because of normal wear and tear. Nor does it include electrical motors and electrical components which are warranted by their manufacturer and which should be taken to their local authorized repair station for service. Cost of removal, shipment and reinstallation are not covered hereby. Further, we cannot be responsible for the cost of repairs made or attempted outside of our factory or designated service center without our authorization. No claims will be honored if Serial No. plate has been removed. THIS WARRANTY IS MADE EXPRESSLY IN PLACE OF ALL OTHER WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, WITH RESPECT TO FITNESS, MERCHANTABILITY, QUALITY OR OPERATIVENESS. THIS WARRANTY IS MADE ONLY TO THE ORIGINAL PURCHASER, AND BECOMES EFFECTIVE ONLY WHEN THE ACCOMPANYING CARD IS FULLY AND PROPERLY FILLED OUT AND RETURNED TO THE FACTORY WITHIN TEN (10) DAYS FROM DATE OF DELIVERY.

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PLANER SAFETY INSTRUCTIONS

1. **Read, understand, and follow** the safety and operating instructions found in this manual. **Know** the limitations and hazards associated with this planer. A safety rules decal is installed on each machine to serve as a reminder of basic safety practice.
2. **Grounding of the planer:** Make certain that the machine frame is electrically grounded and that a grounding lead is included in the incoming electrical service. In cases where a cord and plug are used, make certain that the grounding lug connects to a suitable ground. Follow the grounding procedure indicated by the National Electric Code.
3. **Eye safety:** Wear an approved safety shield, goggles, or glasses to protect eyes when operating the planer.
4. **Personal protection:** Before operating the machine, remove, tie, rings, watch and other jewelry and roll up sleeves above the elbows. Remove all loose clothing and confine long hair. Protective type footwear should be worn and hearing protectors should be used where noise exceeds the level of exposure allowed in section 1910.95 of the OSHA regulations. **Do not wear gloves.**
5. **Work area:** Keep the floor around the machine clean and free of scrap material, sawdust, oil or grease to minimize the danger of tripping or slipping. Be sure the table is free of all scrap, foreign material and tools before starting a cut. Powermatic recommends the use of anti-skid floor strips on the floor area where the operator normally stands and that each machine's work area be marked off. Make certain the work area is well lighted and that a proper exhaust system is used to minimize dust. Provide for adequate work space around the machine.
6. **Guards:** Keep the machine guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards on completion of the maintenance task before using the planer. **Do not operate the machine with the guards off.**
7. **Do not over reach:** Maintain a balanced stance and keep your body under control at all times. Do not over reach.
8. **Maintain tools in top condition:** Keep tools sharp and clean for safe and best performance. Dull tools increase noise levels and can cause kickbacks and glazed surfaces. Broken tools or tools that are not securely locked in the cutterhead can be thrown out of the planer causing severe or fatal injury as well as severe damage to the machine. Check the condition and adjustment of the tools before making any cuts. Follow the sharpening instructions on knife grinding and jointing, installing and adjustments. **Caution:** Do not use knives that have been reground to less than 5/8" (16 mm) height on standard cutterheads or 1/2" (13 mm) height on quiet cutterheads.
9. **Operator position:** Stand to the left side out of line with the table and make sure no one else is standing in line with the table.
10. **Hand safety:** Keep hands outside the machine. **Never** reach under the guards to try to clear stock that stops feeding. Do not clear chips and sawdust with hands; use a brush. Note caution decal at rear of the machine. Do not have any part of the hands under that part of the board that is over the table when starting a cut; the infeed roll will engage the board and force it down against the table causing a pinching action.
11. **Cutterhead rotation:** Be sure cutterhead rotates under power in a counterclockwise direction when viewed from the main drive motor side.
12. **Machine adjustments:** Make all machine adjustments with power off except feed rate.
13. **Machine capacity:** Do not make any cuts requiring more power than is available on the machine. Each machine has a caution decal on the front panel indicating the maximum depth of cut and the maximum difference in board thickness allowed when multiple board surfacing when it is equipped to do that operation. Do not attempt to feed two boards side by side (multiple board surfacing) on any machine not equipped with a sectionalized infeed roll and chipbreaker.
14. **Material condition:** Do not plane boards with loose knots or with nails or any foreign material on its surface. Knife impact on these objects can cause the knives to be pulled out and cause them to shatter against the chipbreaker or pressure bar. Twisted, warped, or in wind stock should first be jointed on one surface before attempting to plane a parallel surface on the planer. Serious stock flaws cannot be removed by use of a planer alone.
15. **Stacked boards:** Do not feed stacked boards through a planer; a kickback can occur causing severe or fatal injury.
16. **Short stock:** Do not attempt to plane boards shorter than 12" (305 mm) in length without butting a board of equal thickness behind it to help it through the planer. Be sure the last board of a butted sequence is 12" (305 mm) long or longer.
17. **Stock stops feeding:** If the board being planed stops feeding, disengage or turn the feed off and turn the power off. Wait until the cutterhead comes to a complete stop before lowering the table to remove the board. **Never** lower the table with the power on and the stock still in the machine. A kickback can occur which could cause a severe or fatal injury.

18. **Avoid accidental starting:** Make certain the motor switch is in the off position before connecting power to the planer.
19. **Careless acts:** Give the work you are doing your undivided attention. Looking around, carrying on a conversation, and "horseplay" are careless acts that can result in serious injury.
20. **Job completion:** If the operator leaves the machine area for any reason, the planer should be turned "off" and the cutterhead should come to a complete stop before his departure. In addition, if the operation is complete, he should clean the planer and the work area. **Never** clean the planer with power "on" and **never** use the hands to clear sawdust and debris; use a brush.
21. **Disconnect machine:** Before performing any service or maintenance and when changing blades.
22. **Replacement parts:** Use only Powermatic or factory authorized replacement parts and accessories; otherwise the planer warranty and guarantee will be null and void.
23. **Misuse:** Do not use this Powermatic planer for other than its intended use. If used for other purposes, Powermatic disclaims any real or implied warranty and holds itself harmless for any injury which may result from that use.
24. **Kick Back:** Locate the machine such that if a kick back occurs no other Personnel is endangered.

Listed below is a table of horsepower and cutterhead r.p.m. for Powermatic planers. **Do not equip your planer with motor of higher horsepower nor run the cutterhead in excess of the r.p.m. indicated in the table. Doing so voids the warranty and Powermatic holds itself harmless from any injury that may result.**

PLANER SIZE 16" (40.6 cm)

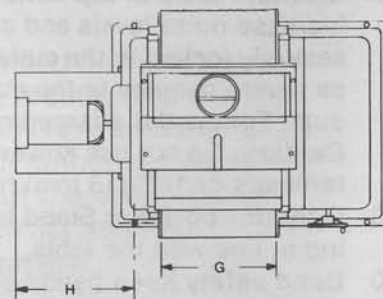
Max. Horsepower

7½

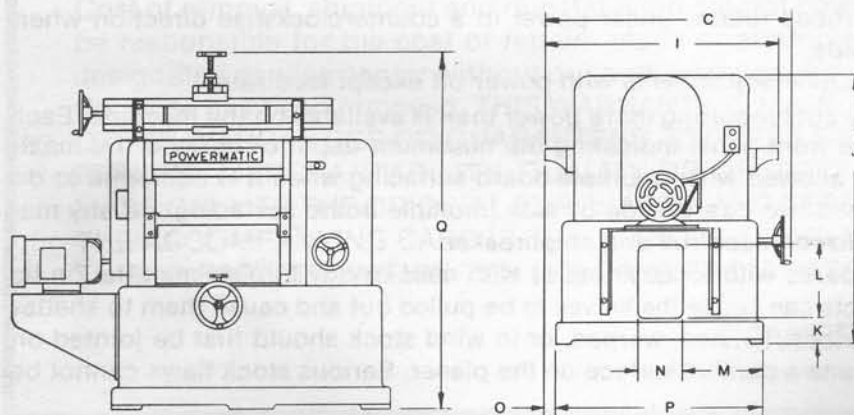
Max. Cutterhead R.P.M.

4800

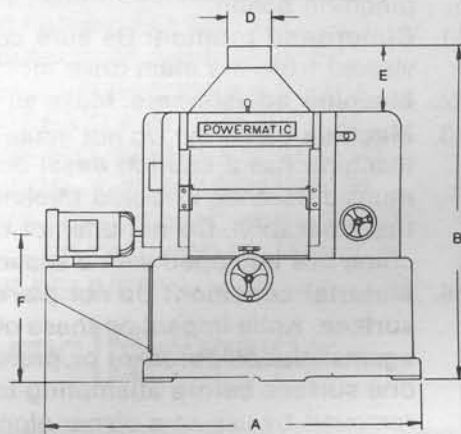
POWERMATIC MODEL 160 PLANER



W/OPTIONAL KNIFE GRINDER



W/OPTIONAL DUST HOOD



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
MODEL 160	51 7/8"	45 7/8"	34"	6"	9"	20 1/4"	16 1/16"	16 5/8"	31 3/4"	36 3/4"	3"	10"	11"	6"	1 5/8"	28 1/2"	49"

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
MODEL 160	131.8cm	116.5cm	86.4cm	15.2cm	22.9cm	51.4cm	40.8cm	42.2cm	80.6cm	93.3cm	7.6cm	25.4cm	27.9cm	15.2cm	4.1cm	72.4cm	124.5cm

POWERMATIC MODEL 160 PLANER

SPECIFICATIONS: ENGLISH	MODEL 160	
	16	
	Std.	"Q" Model
TABLE AREA	16x32	16x32
CUTTERHEAD DIAMETER	3 $\frac{5}{8}$	3 $\frac{5}{8}$
CUTTING CIRCLE	3 $\frac{7}{8}$	3 $\frac{7}{8}$
DIR. DR. CUTTERHEAD S.F.M.	3650	--
BELTED DRIVE CUTTERHEAD S.F.M.	4870	3600
KNIFE SIZE	5/32x1 $\frac{1}{4}$ x16 $\frac{1}{4}$	3/16x1x2 $\frac{1}{4}$
FEED ROLL DIAMETER	2 $\frac{3}{16}$	2 $\frac{3}{16}$
BED ROLL DIAMETER	2	2
FEED RANGE F.P.M.	15 - 37	11 - 27
MAX. DEPTH OF CUT, SINGLE BOARD	$\frac{1}{2}$	$\frac{1}{2}$
STOCK RANGE THICKNESS	$\frac{1}{8}$ - 6	$\frac{1}{8}$ - 6
WIDEST PLANEABLE STOCK	16	16
SHORTEST PLANEABLE BUTTED STOCK	7	7
SHORTEST PLANEABLE STOCK NOT BUTTED	9	9
MOTOR H.P. RECOMMENDED:		
LIGHT WORK	3 & 5	3 & 5
HEAVY WORK	7 $\frac{1}{2}$	7 $\frac{1}{2}$
APPROXIMATE WT. DOMESTIC (CRATED WITH MOTOR)	1230	1230

LINEAR DIMENSIONS IN INCHES.

S.F.M. IS SURFACE FEET PER MINUTE.

F.P.M. IS FEET PER MINUTE.

WT. IS IN POUNDS.

THE ABOVE SPECIFICATIONS, DIMENSIONS AND DESIGN CHARACTERISTICS
ARE SUBJECT TO CHANGE WITHOUT NOTICE.

SPECIFICATIONS: METRIC	MODEL 160	
	40.6	
	Std.	"Q" Model
TABLE AREA	40.6x81.3	40.6x81.3
CUTTERHEAD DIAMETER	9.2	9.2
CUTTING CIRCLE	9.8	9.8
DIR. DR. CUTTERHEAD S.M.M.	1112.5	--
BELTED DRIVE CUTTERHEAD S.M.M.	1484.4	1097.3
KNIFE SIZE	40x3.2x41.3	48x2.5x5.7
FEED ROLL DIAMETER	5.6	5.6
BED ROLL DIAMETER	5.1	5.1
FEED RANGE M.P.M.	4.6-11.3	3.3-8.2
MAX. DEPTH OF CUT, SINGLE BOARD	1.3	1.3
STOCK RANGE THICKNESS	.32-15.2	.32-15.2
WIDEST PLANEABLE STOCK	40.6	40.6
SHORTEST PLANEABLE BUTTED STOCK	17.8	17.8
SHORTEST PLANEABLE STOCK NOT BUTTED	22.9	22.9
MOTOR H.P. RECOMMENDED:		
LIGHT WORK	3 & 5	3 & 5
HEAVY WORK	7 $\frac{1}{2}$	7 $\frac{1}{2}$
APPROXIMATE WT. DOMESTIC (CRATED WITH MOTOR)	558	558

LINEAR DIMENSIONS IN CENTIMETERS

S.M.M. IS SURFACE METERS PER MINUTE

M.P.M. IS METERS PER MINUTE

WT. IS IN KILOGRAMS

THE ABOVE SPECIFICATIONS, DIMENSIONS AND DESIGN CHARACTERISTICS
ARE SUBJECT TO CHANGE WITHOUT NOTICE.

MACHINE INSTALLATION, ADJUSTMENTS & MAINTENANCE

Receiving:

Uncrate machine and check for shipping damage. Report any damage to the carrier and your distributor immediately. If accessories were ordered with the machine, these will be in a separate container and should be checked for completeness and damage. Notify the carrier and your distributor immediately if any items are missing or damaged.

Clean protective coating from all areas and lubricate parts as indicated in this manual.

Installation:

Mount machine on a solid foundation, preferably a concrete floor, and lag machine to the floor through the holes provided in the base (see page 4 for mounting dimensions). The machine area should be clean, dry, well ventilated, and well lighted. Since planers can create noise problems, the site selection should be one which minimizes reverberant sound from walls, ceilings and other equipment. Electricals should be installed so that they are protected from damage and exposure. Be sure to properly ground the machine frame.

Exhaust System:

When an exhaust system is used, be sure it is of sufficient size to provide an exhaust volume of 1100 cubic feet/min. (31.2 cubic meter/min.). If an exhaust system is not used, the user is cautioned against the health hazard and the limitations in the OSHA regulations for employee or student exposure to dust particles.

Powermatic recommends that an exhaust system be used with a planer.

Inspection:

Before putting power on the machine, check that all screws are tight, that all mechanical functions work freely and that the cutterhead turns freely without knife contact with the chipbreaker or pressure bar. Periodic or regular inspections are required to insure that the machine is in proper adjustment, that all screws are tight, that belts are in good condition, that dust has not accumulated in the electrical enclosures, and that there are no loose or worn electrical connections.

Before Operating:

Check the motor and switch wiring diagram for proper connections before applying power to the machine (see page 17 for wiring diagrams). Turn the main drive motor on and engage feed lever momentarily to check for proper direction of rotation. Correct as required. Cutterhead should rotate counterclockwise when viewed from the sheave or motor side. The infeed roll should turn clockwise when viewed from the motor side of the planer.

Run the machine without cutting for a short period of time to check that all powered functions are operating properly.

Be sure to read and understand the operating instruction manual before using the planer.

Lubrication:

The cutterhead, infeed roll and outfeed roll are mounted on sealed ball bearings and require no lubrication. The following lubrication chart indicates the lubrication points, frequency, and recommended lubricants.

MODEL 160

POINT	FREQUENCY	LUBRICANT
Infeed roll housing	Weekly	Fiske Lubriplate #630AA.
Table ways	Daily	SAE 10
Fd. drive idler shafts	Weekly	SAE 10
Variable fd. handwheel bracket	Weekly	SAE 10
Variable speed sheaves	Weekly	SAE 10
Quick-Set linkage	Weekly	SAE 10

Table elevating miter gears	Weekly	Fiske Lubriplate #630AA.
Table elevating screws	Weekly	Fiske Lubriplate #630AA.
Knife grinder screw brackets	Prior to use	Fiske Lubriplate #630AA.
Knife grinder screws	Prior to use	Fiske Lubriplate #630AA.
Knife grinder ways	Prior to use	SAE 10
Fd. drive gears	Monthly	Fiske Lubriplate #630AA.
Table roll housings	Monthly	Fiske Lubriplate #630AA.

MACHINE ADJUSTMENTS

Planer Table:

The planer table is raised and lowered by twin ACME screws supported on thrust bearings and is guided by machine surfaces on the side panels. The fit-up to prevent the table from rocking is controlled by two gibs in front. These gibs should be adjusted individually using the gib screws provided (fig. 1) so that the ways are lightly contacting on all four surfaces. The gibs should be tight enough to prevent rocking or movement of the table when the planer is in operation.

To do accurate planing, the table must be parallel with the cutterhead. Lack of parallelism results in a taper over the width of a board. Check with straddle-type knife gage to insure knives have the same protrusion from the cutterhead arc [approximately .125 (3.2 mm)] end to end and that each knife is the same. Maximum deviation allowed for good planing is .001 (.025 mm). If deviation exceeds .001 (.025 mm), see section on installing cutterhead knives or section on jointing and grinding knives before leveling the table.

Place a 6" x 5" (152mm x 127mm) gage block (fig. 2) and shop scale to be used as a feeler gage or bed and table roll gage at the extreme right hand side of the table, rotating head so the knives clear the gage surface. Raise the table with the table raising handwheel until the scale on top of the block just touches the cutterhead. If using the indicator gage, establish the low point of the cutterhead arc by moving the gage front to back for the maximum indicator reading and then zero the dial at this point (fig. 3). Move the block or indicator gage to the extreme left side of the table. Using the indicator gage or block, find the low point of the cutterhead

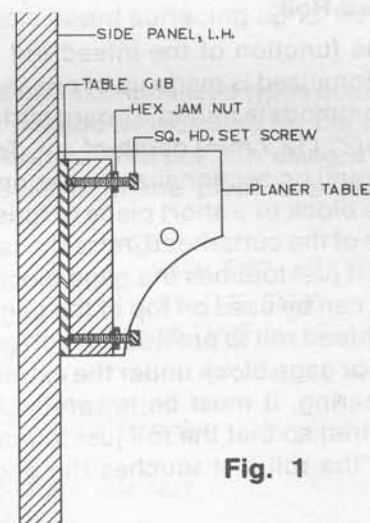


Fig. 1

Fig. 2

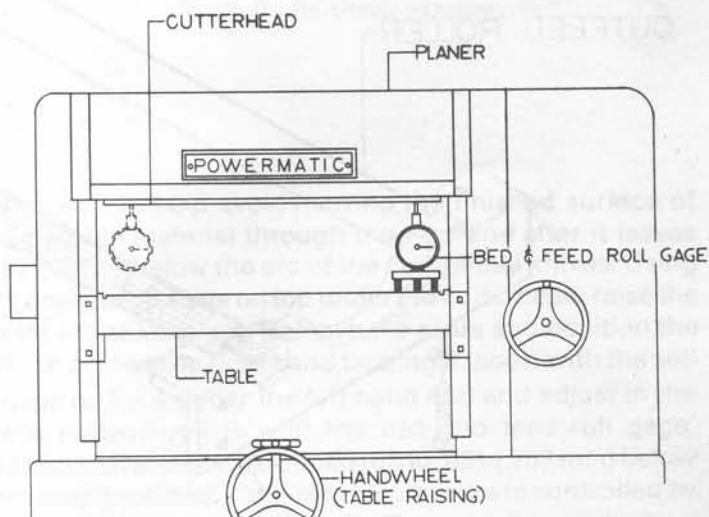
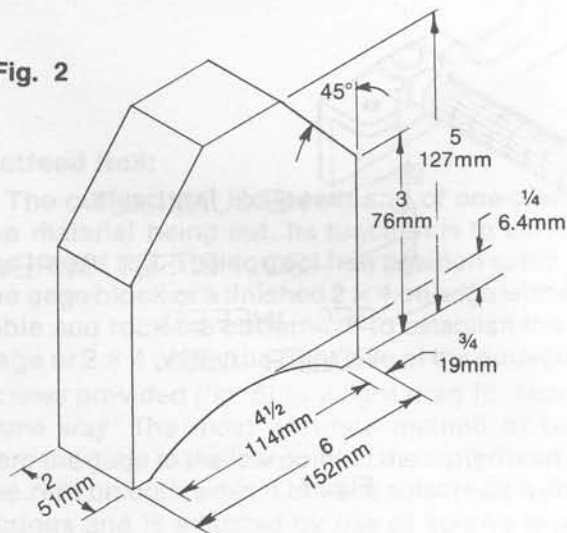


Fig. 3

arc without moving the table height. Note whether the reading is less than or greater than the right side. If greater on the left side, the right side of the table must be raised; if less, the left side of the table must be raised. With the indicator or gage block under whichever side that must be raised, loosen the setscrew locking the ACME threaded flange nut (fig. 4) from rotation in the table on the side to be raised. Rotate the nut using a rod in the flange holes and raise that side of the table until the indicator reading or drag feel on the gage block is the same on both sides. Relock the flange nut setscrew in the table. Another method that can be used if the table is free is to loosen the setscrew on the high side of the table and then rotating the table handwheel clockwise raising the opposite side until it is level. Relock the flange nut setscrew in the table.

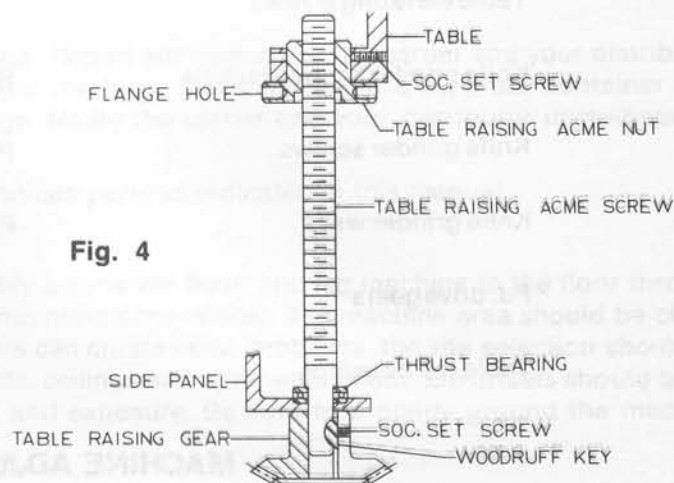


Fig. 4

Infeed Roll:

The function of the infeed roll is to feed the material into the machine. It is a corrugated roll and when sectionalized is made up of one inch (25.4 mm) wide sections with 1/8" (3.2 mm) movement in each section to accommodate multiple board surfacing. In addition, the whole assembly is spring loaded to accommodate the full 1/2" (12.7 mm) depth of cut. To provide proper drive, it should be set so that the bottom of its arc is 1/16" (1.6 mm) on sectionalized types and 1/32" (.8 mm) on solid types below the arc of the cutterhead knives. Using gage block or a short piece of finished 2 x 4 lumber notched to clear the table rolls placed on edge under one knife of the cutterhead, raise the table with the table raising handwheel and rock the cutterhead back and forth until it just touches the gage block or 2 x 4. [A shop scale of the proper thickness, 1/32" (.8 mm) or 1/16" (1.6 mm) can be used on top of the gage block when touching off under the knives and then removed when setting the infeed roll to provide the correct step down.] Lower the table 1/16" (1.6 mm) or 1/32" (.8 mm) and move the 2 x 4 or gage block under the extreme right hand side of the infeed roll. If it will not go in the roll must be raised. If clearing, it must be lowered. Using the setscrews provided (fig. 5) unlock the setscrews and adjust as required so that the roll just touches. Move the 2 x 4 to the extreme left side and adjust that side as required until the roll just touches the gage. Recheck the right side and then lock the setscrew with the jam nuts

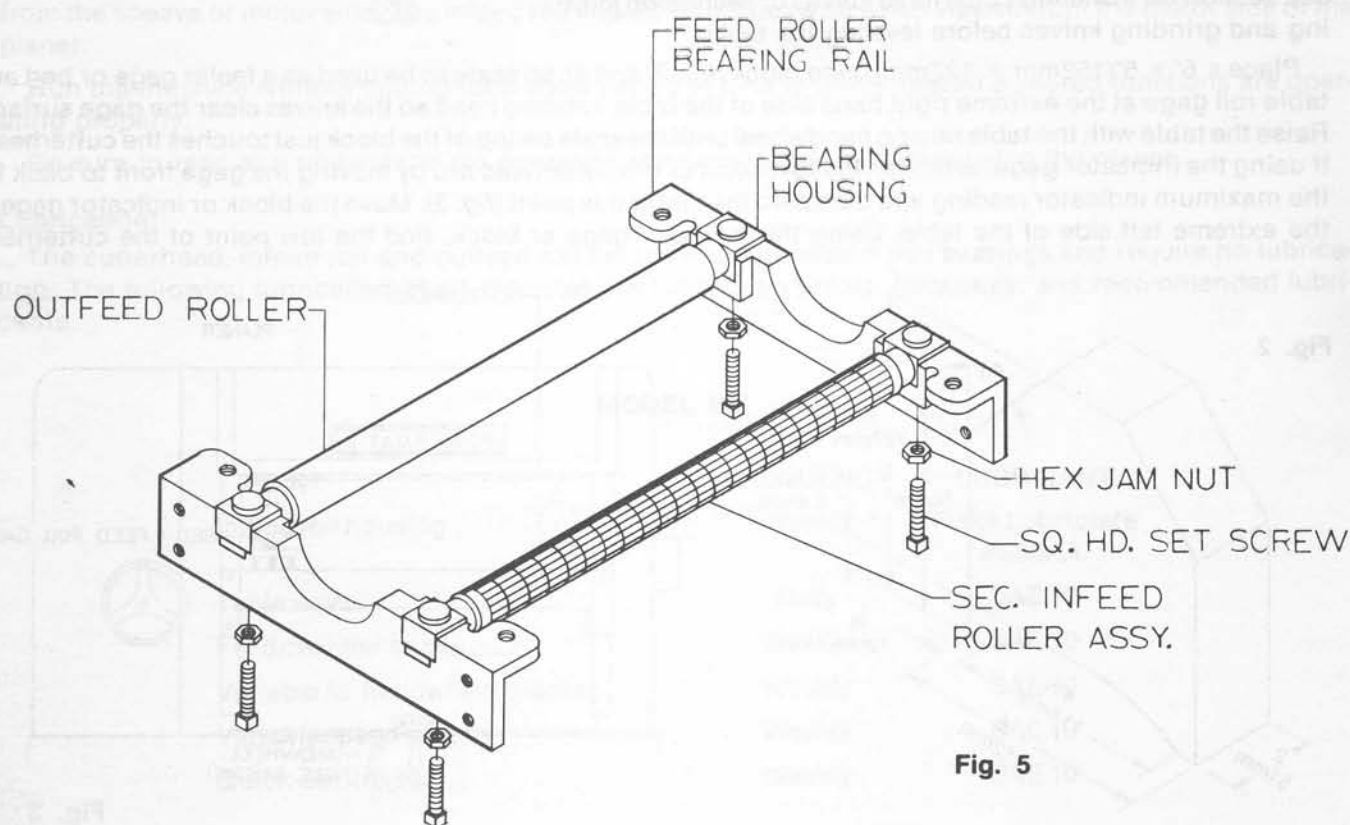


Fig. 5

provided. The most accurate method of setting the infeed roll is with the bed and feed roll gage. Find the low point of the knife arc to the end of the gage then set the infeed roll to .031 with solid infeed roll or .062 for sectionalized infeed rolls below the zero point. It is important that the setting on both sides of this feed roll be close to the same height to help avoid skewing of the material as it is fed through the machine. Infeed roll pressure is controlled by springs and is adjusted by use of screws located on top of the side panels (fig. 6) Pressure should be slightly higher on the drive side to help avoid skewing of board as it feeds through, the adjusting screw will be approximately flush with the bottom of the countersink on the top side panels when properly adjusted.

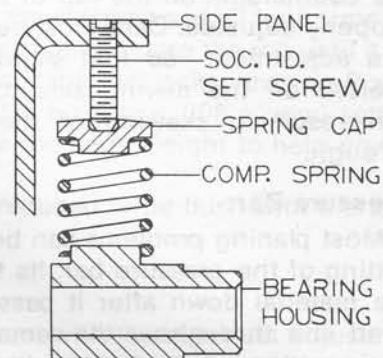


Fig. 6

Chip Breaker:

The chip breaker can be either a solid or sectionalized type. The sectionalized chip breaker is constructed of 1" (25.4 mm) wide spring-loaded sections mounted on a bar which swings concentric with the cutterhead. Each section has approximately 1/8" (3.2 mm) independent yield. The functions of the chip breaker are to help avoid splintering out of the wood, to break chips into small pieces, to help avoid board bounce on thinner boards, to direct the flow of chips out of the machine, and to permit multiple board surfacing up to 1/8" (3.2 mm) difference in thickness on the sectionalized type.

The chip breaker in its free position should be 1/32" (.8 mm) on both solid and sectionalized types below the cutting arc of the knives: the same as the solid infeed roll. Using the same method as indicated for the infeed roll, remove the cover over the top section of the planer, adjust the chip breaker free position using a 2 x 4 gage block and shop scale of the proper thickness and adjusting screws in the pivot arm at each end. It is important that each end be close to the same height to help avoid skewing of the material as it is fed through the machine. Since the chip breaker adjusting screws (fig. 7) contact the bearing housings for the infeed roll, its adjustment should be made after the infeed roll and if the infeed roll setting is altered, the chip breaker must be readjusted. **Caution:** A chip breaker set too low may prevent stock from feeding into the machine.

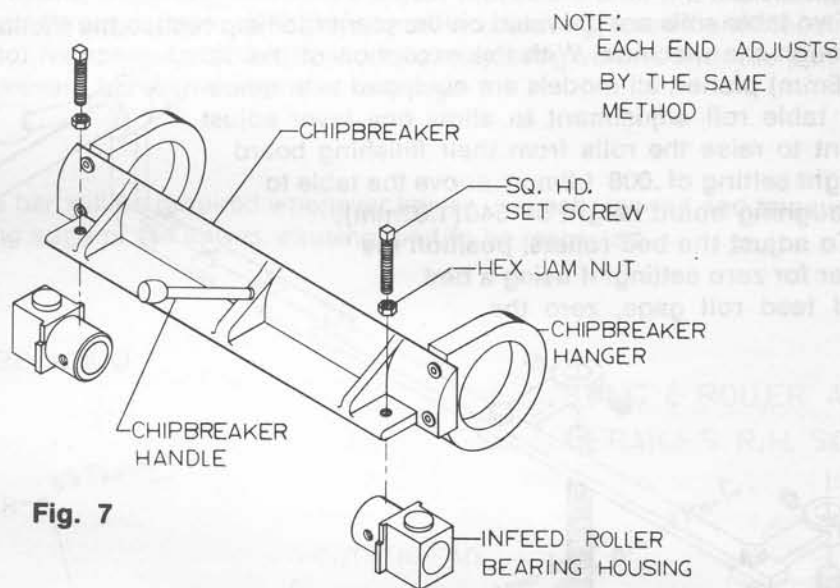


Fig. 7

Outfeed Roll:

The outfeed roll is smooth and of one-piece construction to help avoid marring the finished surface of the material being cut. Its function is to continue to feed the material through the machine after it leaves the infeed roll. The correct free position setting is 1/32" (.8mm) below the arc of the cutterhead knives. Using the gage block or a finished 2 x 4 on edge with a 1/32" (.8mm) shop scale on top under the cutterhead, raise the table and rock the cutterhead to establish the low point of the knife arc. Remove the scale and position the gage or 2 x 4 under the right side of the outfeed roll. Raise or lower its right hand bearing support with the set-screws provided (fig. 5) to a light drag fit. Move the gage or 2 x 4 under the left hand end and adjust in the same way. The most accurate method of setting the outfeed roll is with the bed and feed roll gage. Zero the gage to the low point of the cutterhead arc and set each end of the outfeed roll to .031 (.787 mm) below the zero on both sides. Lock the setscrews with the jam nuts provided. Out feed roll pressure is controlled by springs and is adjusted by use of screws located on top of side panels (fig. 6). The top of the adjusting

screw will be approximately flush with the bottom of the countersink on the top of the side panels when properly adjusted. Care must be observed in making this adjustment so that slightly more pressure is exerted on the driving side. Unbalanced pressure can result in skewing of the board as it feeds through.

Pressure Bar:

Most planing problems can be related to improper setting of the pressure bar. Its functions are to hold the material down after it passes under the cutterhead and throughout the remainder of the cut. Its basic setting is to be in line with the arc of the cutterhead knives. If it is too high, a shallow clip will occur 6" (152mm) in from each end of the board. If it is too low, stock will not feed through.

With a bed and feed roll gage or a gage block and a 1/32" (.81mm) thick 6" (152mm) scale as a feeler placed under the cutterhead, raise the table with its elevating handwheel to determine the low point of the arc of a cutterhead knife. Move the gage or gage block and scale under the low point of the extreme right hand side of the table and adjust that end of the pressure bar with the jackscrews provided to be in line with the low point of the knife arc (fig. 8). Move the gage or gage block and scale to the extreme left hand side and adjust that side to be in line with the low point of the knife arc. Recheck the right side; check the full width of the pressure bar. If the center is slightly low, adjust both sides the same amount to bring the low point into line. Using the bed and feed roll gage set the full length of the pressure bar to be .002-.003 (.08 mm) above the arc of the cutterhead. This initial setup is a starting point and final adjustment may have to be made during a test cut.

Table Rolls:

Two table rolls are provided on the planer to help reduce the friction of the stock on the table as it feeds through the machine. With the exception of the 12" (305mm) planer, all models are equipped with quick-set table roll adjustment to allow one lever adjustment to raise the rolls from their finishing board height setting of .008 (.2mm) above the table to a roughing board height of .040 (1.02mm).

To adjust the bed rollers, position the lever for zero setting. If using a bed and feed roll gage, zero the

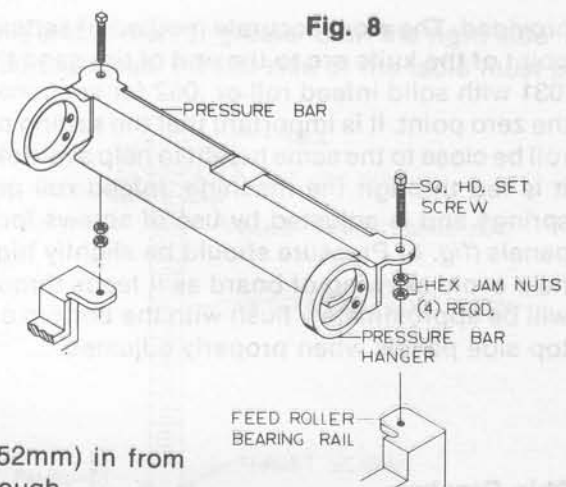


Fig. 8

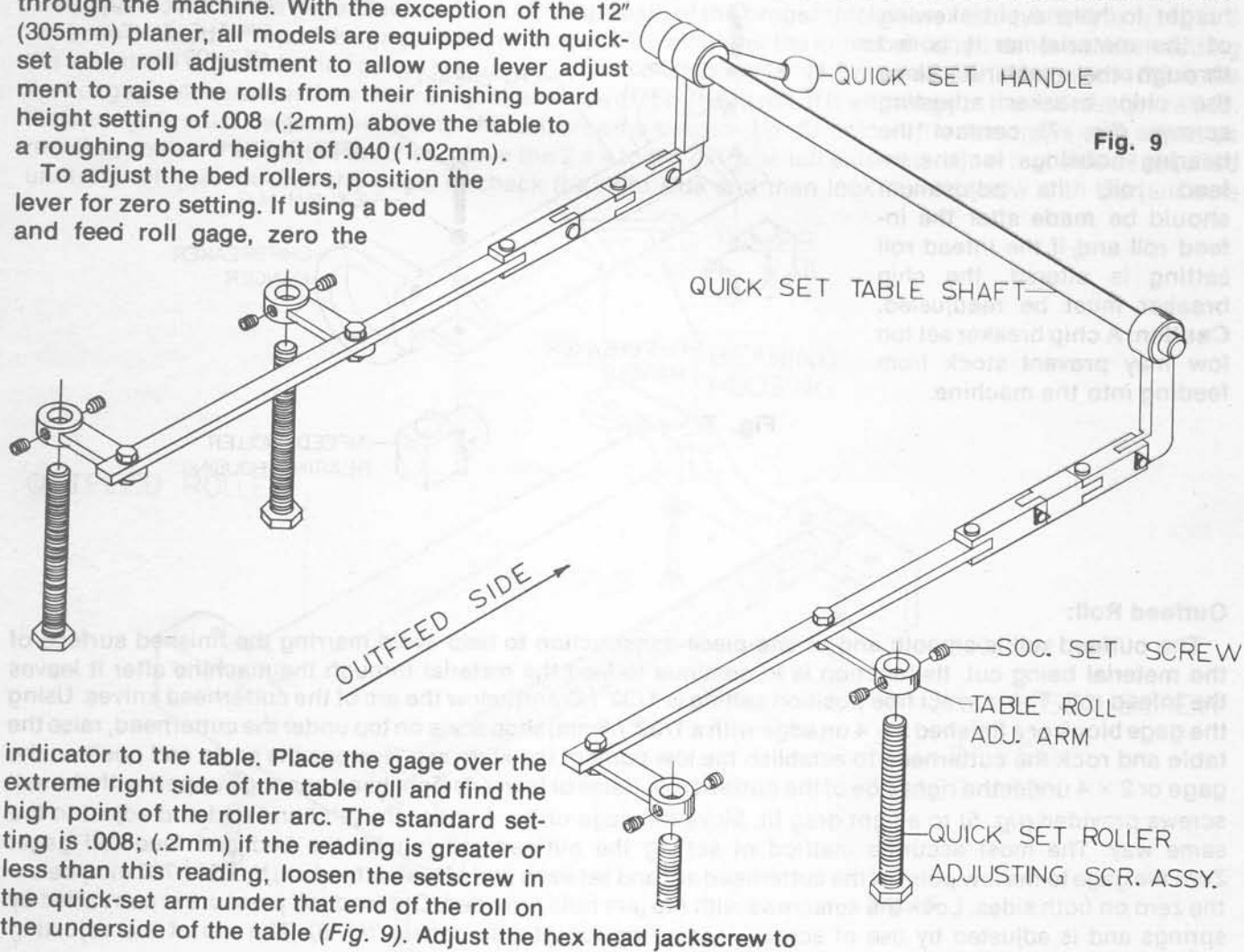


Fig. 9

indicator to the table. Place the gage over the extreme right side of the table roll and find the high point of the roller arc. The standard setting is .008; (.2mm) if the reading is greater or less than this reading, loosen the setscrew in the quick-set arm under that end of the roll on the underside of the table (Fig. 9). Adjust the hex head jackscrew to

position the roll to the .008 (.2mm) setting. Repeat the process on the left side and then recheck the right side. Relock the setscrews in the arms. If a gage is not available, loosen the setscrews in all four arms and lower the roll below table level. Lay a straight edge across the slot on one side and raise the roll until it just touches the straight edge. Repeat the process on the opposite side. Since table roll jackscrews on Powermatic planers have 16 threads per inch, rotate the screws on each end 1/8 turn for a .008 (.2mm) setting. Relock arm setscrews. It is important that both ends of the bed rolls be the same height to help prevent skewing of the board as it feeds through the machine.

NOTE:—When planing thin stock the minimum setting may have to be reduced to be flush with the table.

Test Cutting:

Using a piece of semi-finished stock, set up for a 1/16" (1.58mm) deep cut with the quick-set adjustment at zero. Start the machine, and standing to the left-hand side begin feeding the stock into the machine. (Fig. 10 shows the basic planer configuration.)

Caution: Never stand directly behind stock or allow anyone else to do so and do not bend down to see how the stock is feeding. Should a kickback occur, a serious or fatal injury could result.

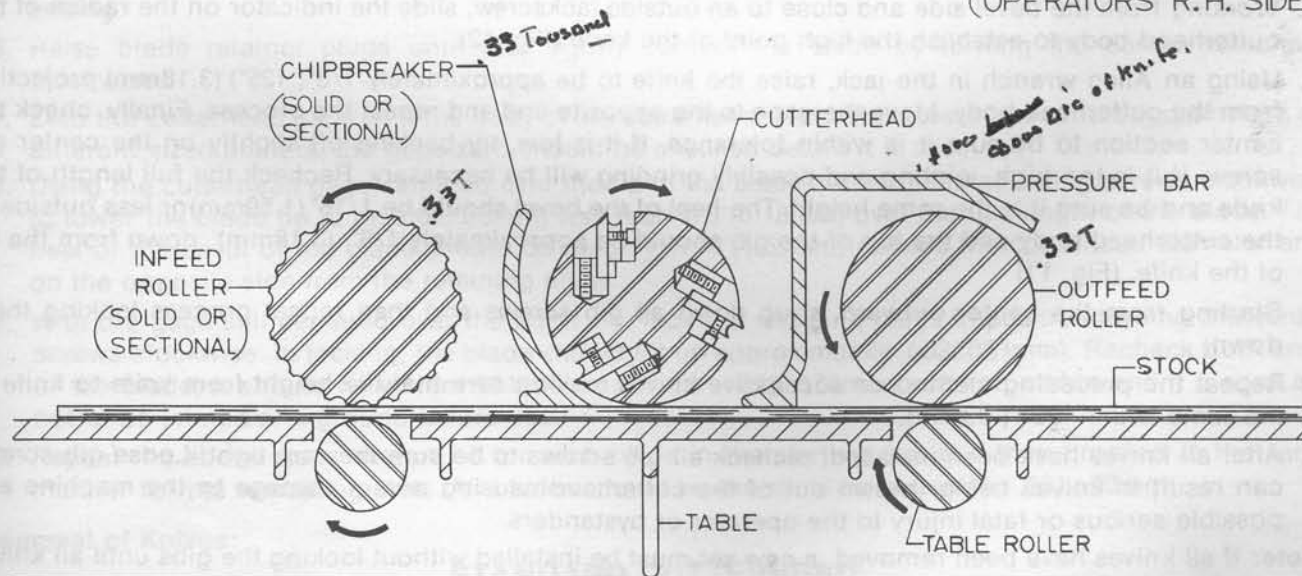
The infeed roll should take the material and force it under the chip breaker and cutterhead. If the material feeds through effortlessly, examine the finished cut carefully for imperfections. Learning to read a board for imperfections will save hours in adjusting a planer to operate properly. (See Trouble Shooting chart on page for imperfections not related to the pressure bar which can develop due to misadjustment and knife wear.)

If "clip" marks occur 6" (152mm) in from each end of the board, the pressure bar is too high. Turn both right and left hand adjusting screws the same amount, 1/4 turn clockwise or less, and take another 1/16" (1.58mm) deep cut. Re-examine the board. Continue the operate-adjust procedure until the clip marks disappear. Should the board fail to feed through, back off slightly on both adjusting screws until feeding is smooth and the imperfections do not reappear. Lock the pressure bar adjusting screws with the jam nuts provided. **Caution:** Do not adjust pressure bar with cutterhead running.

Note: Adjustment of the pressure bar will be required whenever knives are resharpener and because of wear which will occur on the cutting edge of the knives, causing feed to be restricted.

Fig. 10

CUTTING & ROLLER ASSY.
(OPERATORS R.H. SIDE)



Feed restriction can also occur due to pitch buildup on the table. Be sure the table surface is clean and dusting the surface with talc occasionally will aid in smoother feeding and help to prevent pitch buildup.

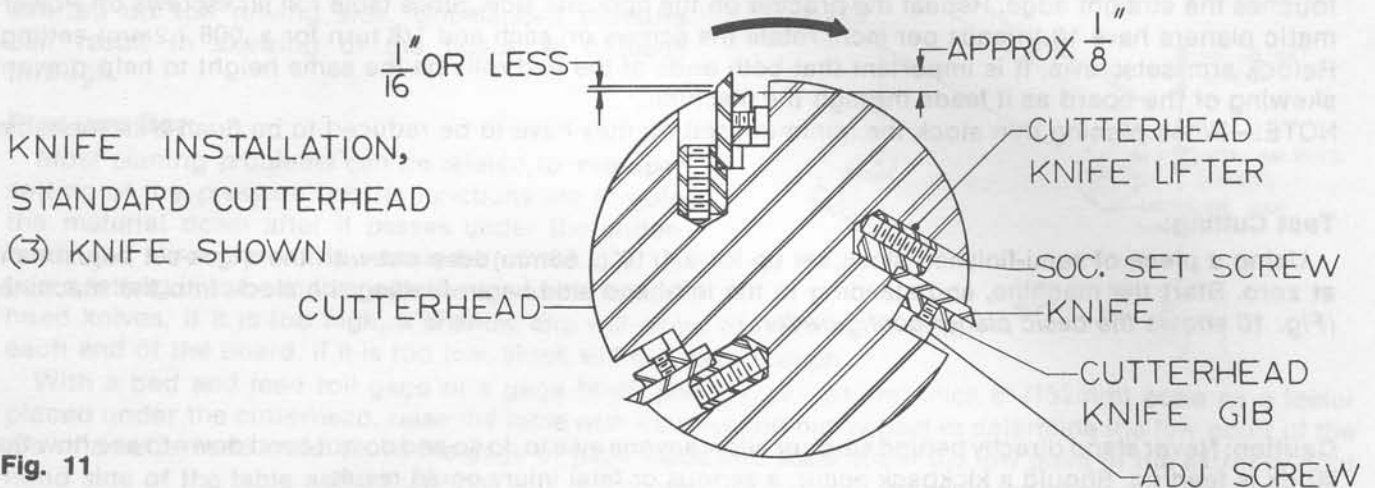


Fig. 11

Knife Installation:

STANDARD CUTTERHEAD

Knife installation on a planer can be a difficult and exacting process. If the knives are not to be jointed and ground, end-to-end and knife-to-knife relationship must be held within .001 (.03mm) for accurate and smooth planing. To help avoid cutterhead distortion in changing out a set of knives, remove and replace the knife in one slot before changing the next knife.

1. Clean all dust, chips, pitch and accumulated foreign matter from a cutterhead slot and off of its gib.
2. Working with one slot, drop in the knife jacks in their seats with the notched surface facing the slot.
3. With the knife and gib against each other and the beveled surface of the knife on the knife jack side and the concave shaped surface of the gib up, insert into the slot. The back edge of the knife bevel should be slightly below the outside diameter of the cutterhead. Lightly tighten the two outside and center gib screws.
4. Take the cutterhead knife gage (Fig. 12) and zero it on the cutterhead outside diameter. As a reminder, different size planers have different cutterhead diameters so that the zero point should be checked before using the gage.
5. Working from the bevel side and close to an outside jackscrew, slide the indicator on the radius of the cutterhead body to establish the high point of the knife (Fig. 12).
6. Using an Allen wrench in the jack, raise the knife to be approximately $1/8"$ (.125") (3.18mm) projection from the cutterhead body. Move the gage to the opposite end and repeat the process. Finally, check the center section to be sure it is within tolerance. If it is low, try backing off slightly on the center gib screw. If it is too high, jointing and possibly grinding will be necessary. Recheck the full length of the knife and be sure it is the same height. The heel of the bevel should be $1/16"$ (1.59mm) or less outside of the cutterhead body and the top of the gib should be approximately $1/8"$ (3.18mm) down from the tip of the knife. (Fig. 11)
7. Starting from the center outward, snug down all gib screws and then repeat process locking them down.
8. Repeat the preceding method on successive knives making sure that the height from knife to knife is the same within .001 (.03mm).
9. After all knives have been installed, recheck all gib screws to be sure they are tight. Loose gib screws can result in knives being thrown out of the cutterhead causing severe damage to the machine and possible serious or fatal injury to the operator or bystanders.

Note: If all knives have been removed, a new set must be installed without locking the gibs until all knives and gibs are in and the gib screws lightly snugged down. The locking process should proceed working from the center out on each knife and after locking all gib screws once, repeat the same sequence until all screws are equally tight. Locking one knife in without the others in position can cause cutterhead distortion.

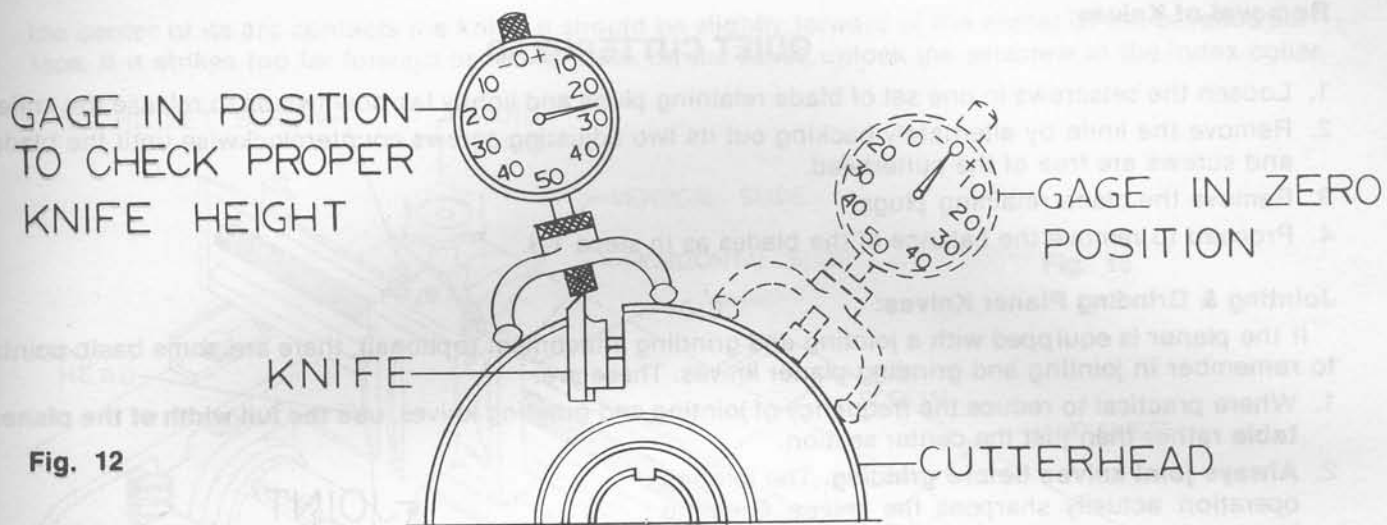


Fig. 12

QUIET CUTTERHEAD

The following is a list of steps to insure the proper installation of the cutterhead knives. If the knives are not to be jointed and ground, knife-to-knife height setting should be within .001 (.03mm) to insure smooth and accurate planing.

1. Clean slots, holes and retainer plugs to be free of sawdust, chips, pitch and accumulated foreign material.
2. Adjust half-dog setscrews in blade retainer plugs to be flush with the full round end.
3. Working with one slot and one blade at a time, insert blade retaining plugs into the cutterhead with the round end down and the flat facing the slot.
4. Insert a blade into the cutterhead slot with the blade adjusting screws held in the notches of the blade.
5. Screw in the blade adjusting screws clockwise alternating between screws until the tip of the blade is slightly higher than 1/8" (3.175mm) from the body of the cutter. A shop scale can be used for this rough setting.
6. Raise blade retainer plugs until they lightly contact the blade by turning the center setscrews clockwise.
7. Zero the cutterhead gage with the body of the cutterhead. **Note:** Because of the different diameters on different sized planers, the gage zero should be checked before it is used.
8. Using the cutterhead gage centered over the tip of the blade, rotate blade adjusting screws clockwise to lower the blade tip to be .002 (.05mm) less than 1/8" (3.18mm) over the full length of the blade. The heel of the bevel of the blade should be roughly 1/16" (1.59mm) outside the cutterhead diameter and on the opposite side from the retaining plugs.
9. With the gage still centered over the blade tip, lock the retaining plugs in position turning the center screws clockwise. In locking, the blade should lift up approximately .002 (.051mm). Recheck both ends of the blade; it should be within .001 (.03mm) of the .125 (3.175mm) position end-to-end if blades are not to be jointed and ground before use.
10. Repeat the above steps except #7 for each blade in the starting slot and then proceed in the same manner for the remaining slots. All blades should be the same height within .001 (.03mm).

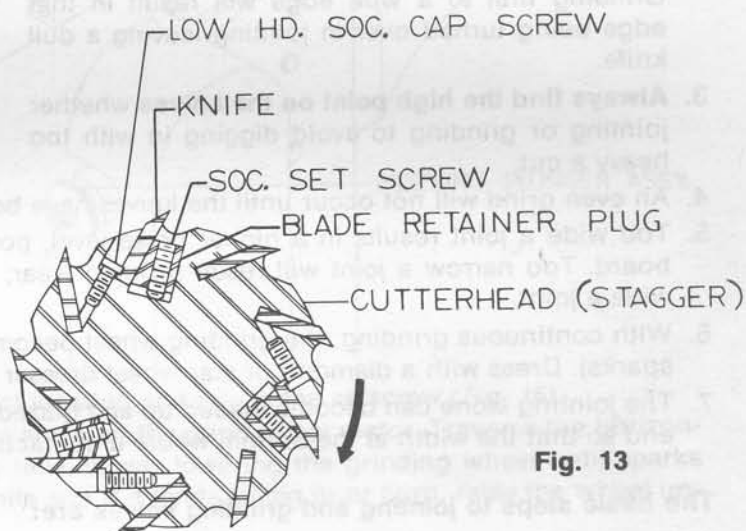


Fig. 13

Removal of Knives:

STANDARD CUTTERHEAD

1. Loosen all gib screws in one slot.
2. Remove both knife, gib, and blade jacks.
3. Repeat steps 1 & 2 for the remaining knives.

Removal of Knives:

QUIET CUTTERHEAD

1. Loosen the setscrews in one set of blade retaining plugs and lightly tap downwards to release the knife.
2. Remove the knife by alternately backing out its two adjusting screws counterclockwise until the blade and screws are free of the cutterhead.
3. Remove the blade retaining plugs.
4. Proceed to remove the balance of the blades as in steps 1-3.

Jointing & Grinding Planer Knives:

If the planer is equipped with a jointing and grinding attachment (optional), there are some basic points to remember in jointing and grinding planer knives. These are:

1. Where practical to reduce the frequency of jointing and grinding knives, **use the full width of the planer table** rather than just the center section.
2. **Always joint knives before grinding.** The jointing operation actually sharpens the knives. Grinding is used to reduce the joint (fig. 14) to a narrow width to minimize pounding and to produce a consistent joint over the length of the knife. Grinding first to a wire edge will result in that edge being turned over in jointing leaving a dull knife.
3. **Always find the high point on the knives** whether jointing or grinding to avoid digging in with too heavy a cut.
4. An even grind will not occur until the knives have been reground several times.
5. Too wide a joint results in a higher noise level, pounding, and a glazed appearance on the finished board. Too narrow a joint will result in rapid wear, dulling of the knives and the same results as too wide a joint.
6. With continuous grinding, the grinding wheel becomes loaded up or glazed and won't grind freely (no sparks). Dress with a diamond or star wheel dresser or other suitable dresser.
7. The jointing stone can become loaded up and glazed. Dress it on a stand type grinder. Double taper the end so that the width at the bottom where it contacts the knives is approximately 1/4" (6.35mm).

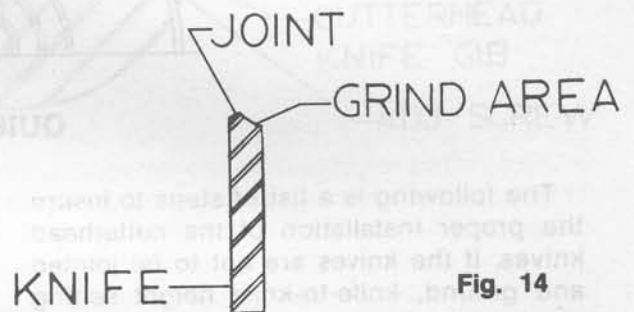


Fig. 14

The basic steps to jointing and grinding knives are:

1. Remove the dust hood or top cover.
2. Install and center the jointing head in the dovetail ways of the vertical slide. Lock in position with the setscrews provided (Fig. 15). Be sure the jointing stone clears the knives by lowering the vertical slide with the top mounted hand knob until it touches one knife at the high point of its arc. Raise the slide with two full turns of the hand knob. Check the vertical slide making sure that the gib is snug so that screw pressure is required to move the slide downward. Also check the horizontal slide to be sure the gib is snug but movement is smooth and easy. **Make sure the jointing stone's locked in its holder.**
3. Turn the cutterhead drive motor on and stand to the right side of the machine out of line of the cutterhead. Slowly lower the jointing head while, at the same time, traversing back and forth over the full width of the cutterhead with the horizontal slide. At the first sign of sparks, stop lowering the jointing head and try traversing the full width of the cutterhead. If the stone appears to dig in too much, raise it until the high point of the knife set is found and make a complete traverse of the cutterhead.
4. Alternately lower the jointing head at the end of each traverse and traverse the full cutterhead width with jointing stone until a slight flat (shiny line) appears on all knives over their full length. The flat may be wider in some places than others and this is normal due to uneven wear. Turn the cutterhead motor off (Fig. 15).
5. Examine the knives carefully. If the joint is even and narrow (less than .010) (.25mm), the grinding operation will not be necessary. Resharpenering by jointing only will be possible several times before regrounding is necessary on properly jointed and ground knives.
6. If grinding is required, remove the jointing head and install the grinding head in the vertical slide. Center in the slide in the dovetail surfaces and lock in position with the setscrews provided. Release the index pin and rotate the cutterhead by hand until it locks into the index ring. Lower the grinding wheel until it just touches the bevelled surface of the knife. Rotate the grinding wheel by hand to determine where

the center of its arc contacts the knife. It should be slightly forward of the center of the bevelled surface. If it strikes too far forward or too far back on the bevel, unlock the setscrew in the index collar

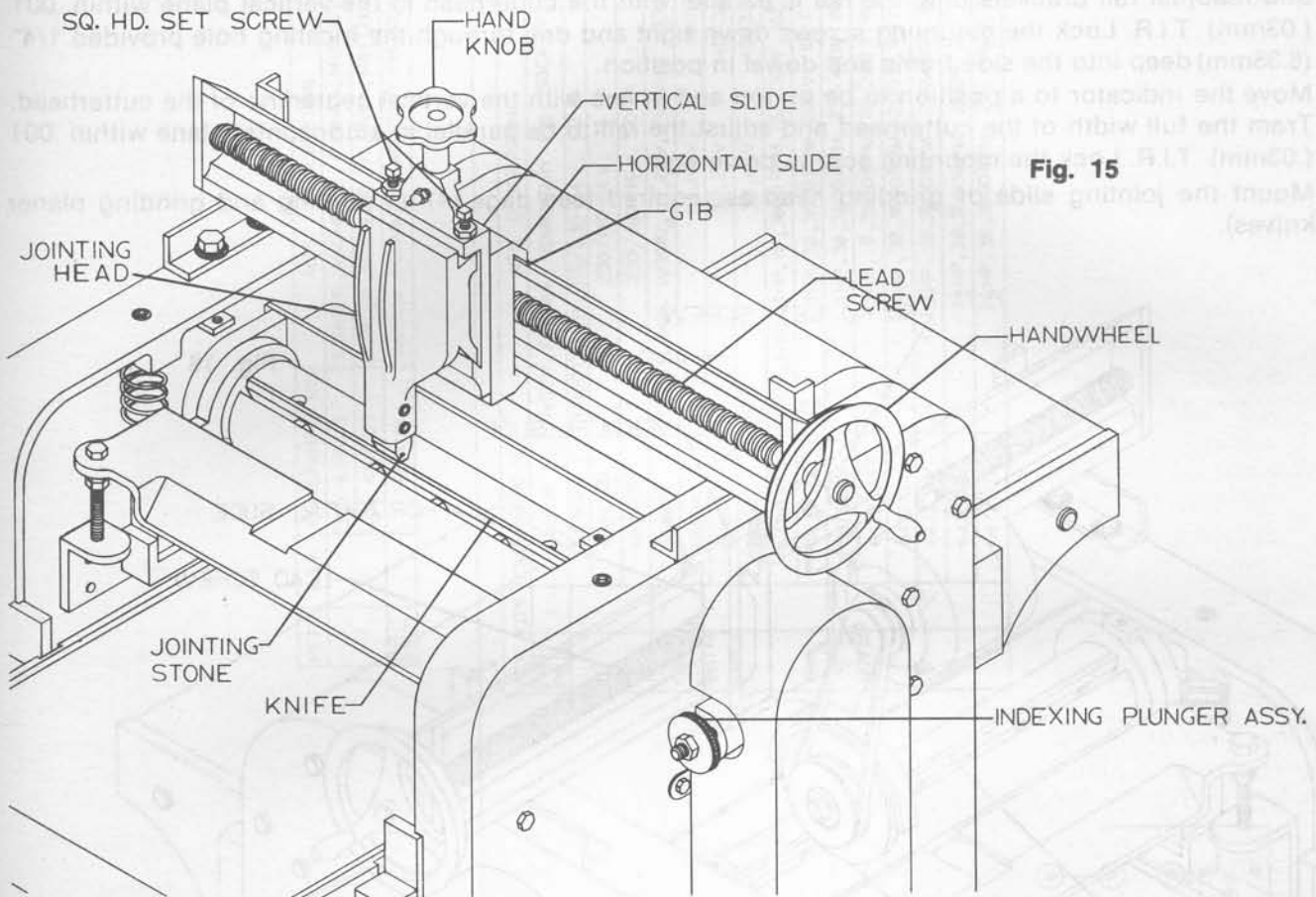


Fig. 15

and reposition the collar to establish the correct location and relock the setscrew (Fig. 16).

7. Raise the grinding wheel off of the knife surface and start the grind wheel motor. Traverse the horizontal slide backwards and forwards at the same time, slowly lowering the grinding wheel until sparks appear. Traverse the complete length of the knife and if it tends to dig in or burn, raise the wheel until the high point is found.
8. Alternately lower the grinding wheel small increments and then traverse back and forth over the full length of the knife until the grinding wheel is grinding over the full length of the blade. Examine the grind to see where the front of the grinding arc is relative to the jointed surface. Continue to lower the wheel and traverse grind until the joint width is approximately .003-.005 (.08 -.13mm). Never grind the joint completely away since it will produce a wire edge which will roll over in planing dulling the knife.
9. Index to the next knife slot and repeat steps 7 and 8 for each knife. On quiet planers, grind all knives in the same slot as though it were a full width knife.
10. Remove the grind attachment, reinstall the dust hood or top cover, and disengage the index plunger before turning the machine on for planing.

JOINTING & GRINDING ATTACHMENT INSTALLATION INSTRUCTIONS

1. Unbox the attachment and check for completeness. Report any shipping damage to the shipper and your distributor immediately to insure prompt service for repair or replacement of the damaged parts.
2. Remove the top cover or dust hood from the planer.
3. Mount the rail mounting brackets to the side panel snugging the mounting screws down but not locking them. Install the rail and slide assembly on the brackets and snug the mounting screws down.
4. Check to see if the gib on the horizontal slide provides a snug fit but allows free movement. Adjust gib if required.
5. Check the gib on the vertical slide. It should be tight enough so that the slide must be moved with hand knob pressure in both directions.

6. Install a magnetic base indicator on the vertical slide with the indicator against a smooth section of the outside diameter of the cutterhead on the horizontal centerline. Traverse the full width of the cutterhead and readjust rail brackets until the rail is parallel with the cutterhead in the vertical plane within .001 (.03mm) T.I.R. Lock the mounting screws down tight and drill through the locating hole provided 1/4" (6.35mm) deep into the side frame and dowel in position.
7. Move the indicator to a position to be on top and in line with the vertical centerline of the cutterhead. Tram the full width of the cutterhead and adjust the rail to be parallel in a horizontal plane within .001 (.03mm) T.I.R. Lock the mounting screws down tight.
8. Mount the jointing slide or grinding head as required (see page 14) on jointing and grinding planer knives).

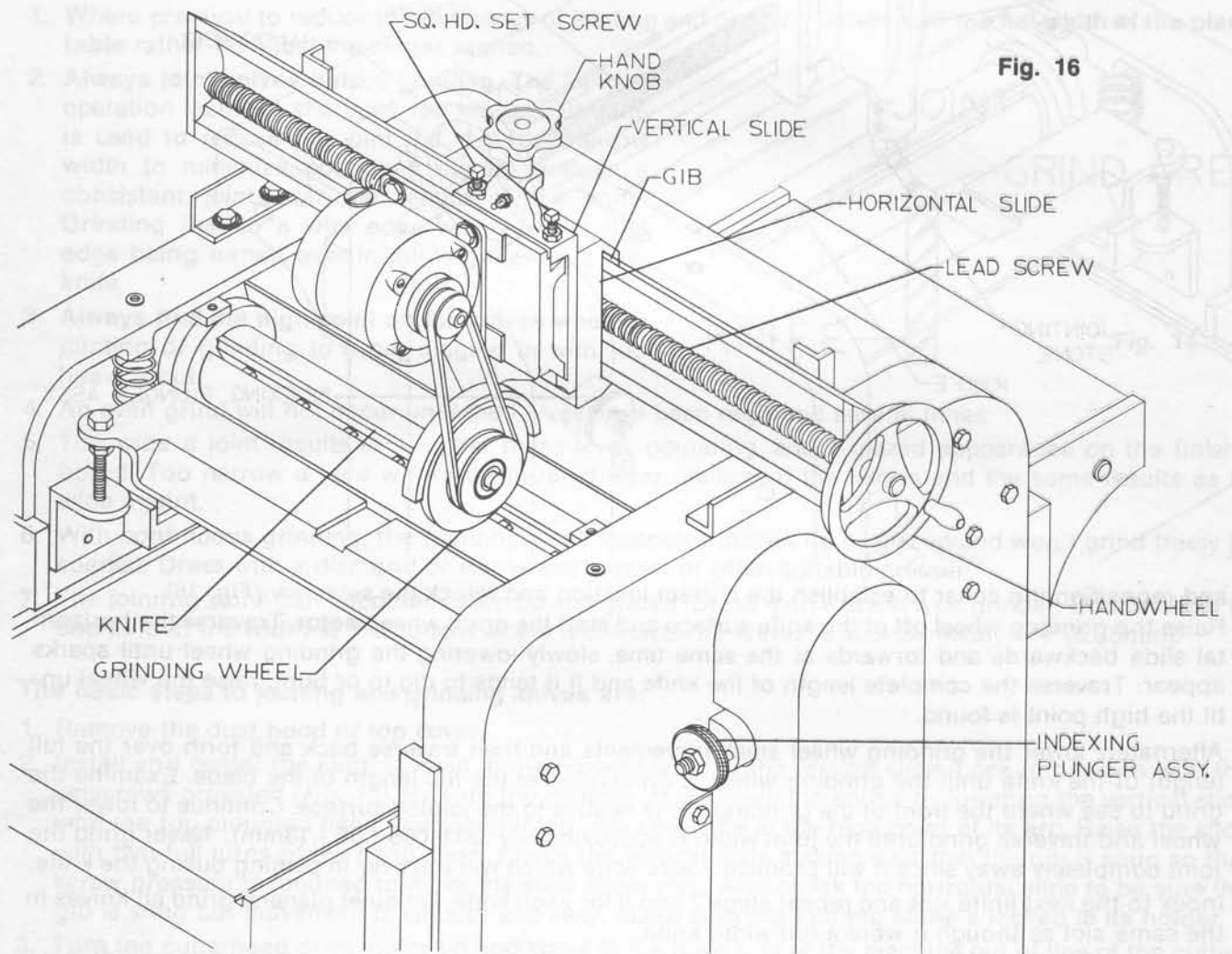
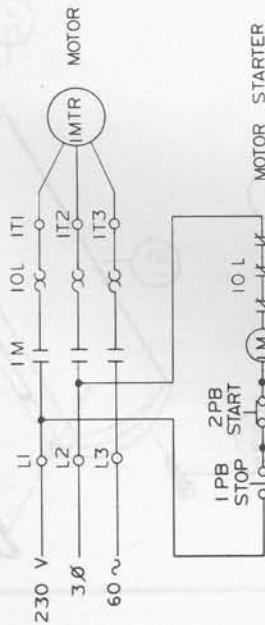
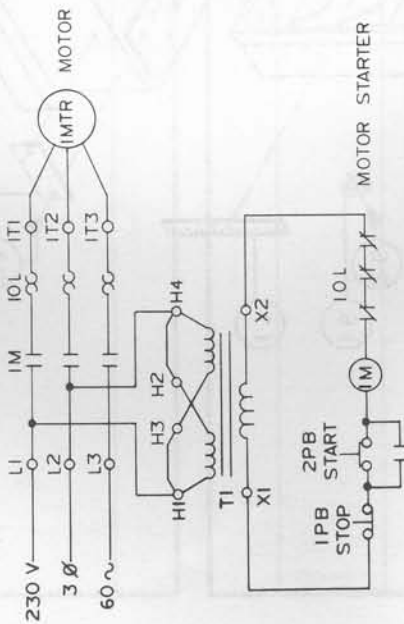


Fig. 16

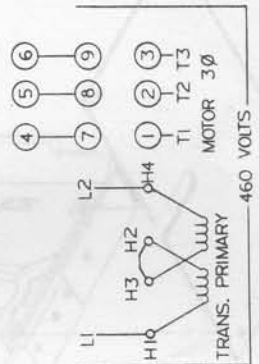
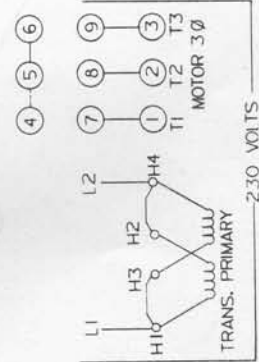
MAGNETIC



MAGNETIC W/ LOW VOLTAGE CONTROL

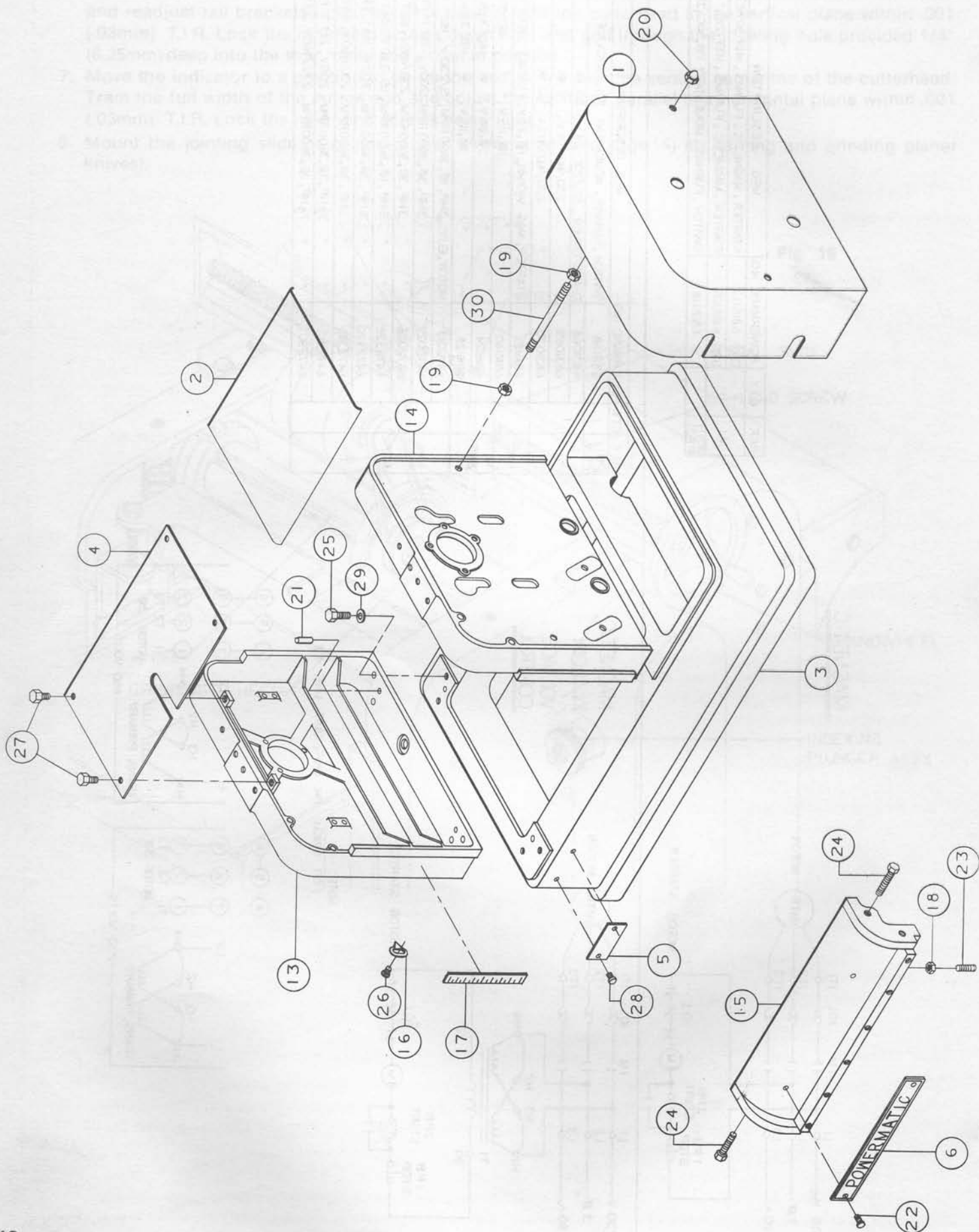


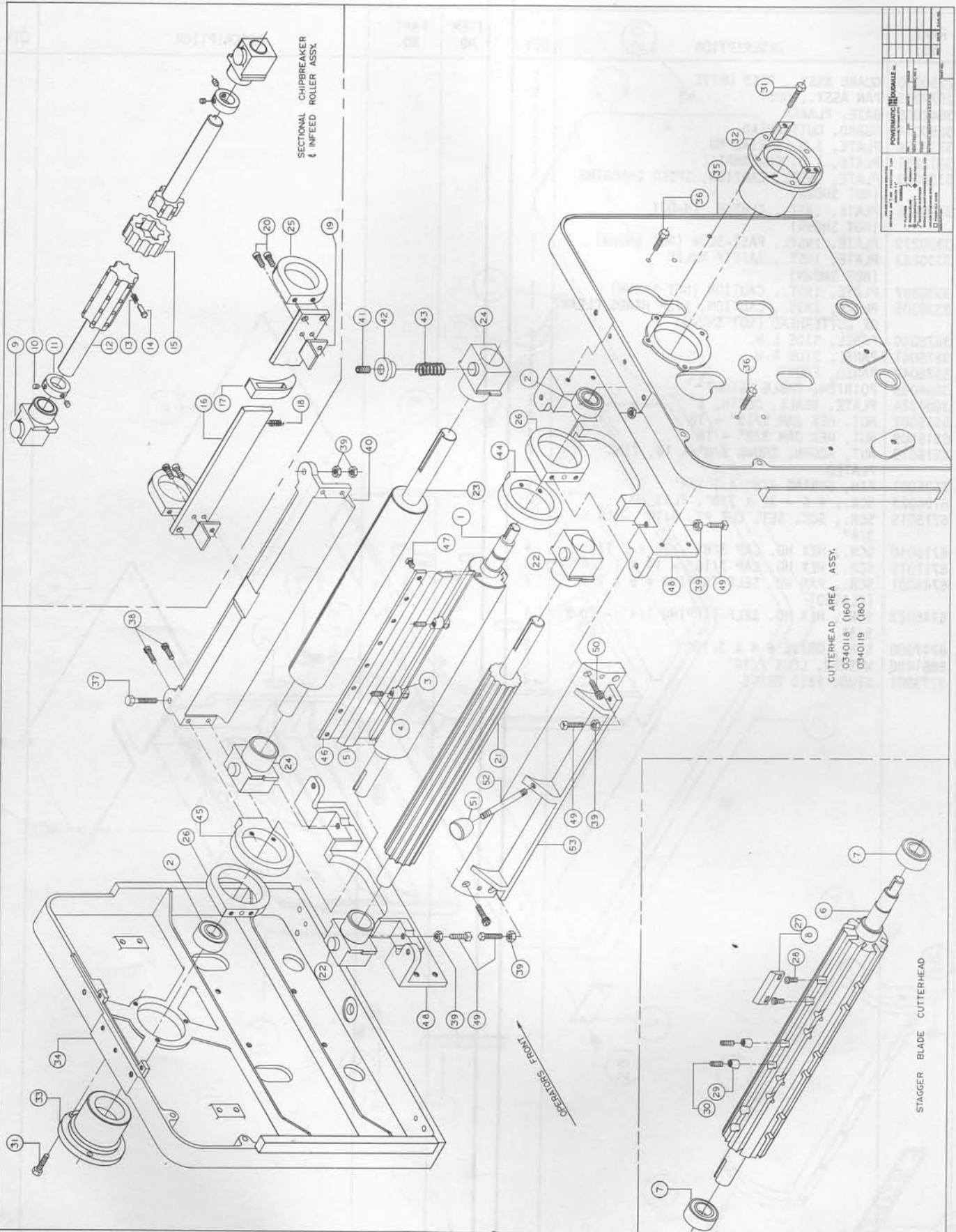
NOTE:
FOR SINGLE PH. UNIT, OMIT LINE L3



REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
M1	1	6816113	STARTER, MAGNETIC, FURNAS, 14DF32BC71
PB1	1	6816107	STARTER, MAGNETIC, FURNAS, 14FI2BA7
PB2	1	6821118	SWITCH, FURNAS, MOMENTARY PB, 50CA3DF

REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
(PB1) (PB2)	1	6821118	SWITCH, FURNAS, MOMENTARY PB, 50CA3DF
T1	1	6831068	TRANSFORMER, 115/230-24 V, 50 VA
		6831069	" 230/460-24 V, 75 VA
		6831070	" 230/460-115 V, 50 VA
I M	1	6816121	STARTER, MAG. W/XMR, 1 Ø, 24 V, FURNAS 14EF107015
(WITH XMR)	1	6816140	" " " 1 Ø, 115 V, " 14EF107019
		6816124	" " " 3 Ø, 24 V, " 14DF32BJ7BD
		6816128	" " " 3 Ø, 115 V, " 14DF32BA71BA
		6472013	MOTOR, ELEC., 3HP, 1 Ø, 3600 RPM, 115/230 V, 182 T FR.
		6472027	" " " 3HP, 3 Ø, 3600 RPM, 200V, 182 T FR.
		6472026	" " " 3HP, 3 Ø, 3600 RPM, 230/460V, 182 T FR.
		6472328	" " " 5HP, 1 Ø, 3600 RPM, 115/230 V, 184 T FR.
		6472320	" " " 5HP, 3 Ø, 3600 RPM, 200V, 184 T FR.
		6472319	" " " 5HP, 3 Ø, 3600 RPM, 230/460V, 184 T FR.
		6472512	" " " 7 1/2 HP, 3 Ø, 3600 RPM, 200V, 213 T FR.
		6472507	" " " 7 1/2 HP, 3 Ø, 3600 RPM, 230/460V, 213 T FR.

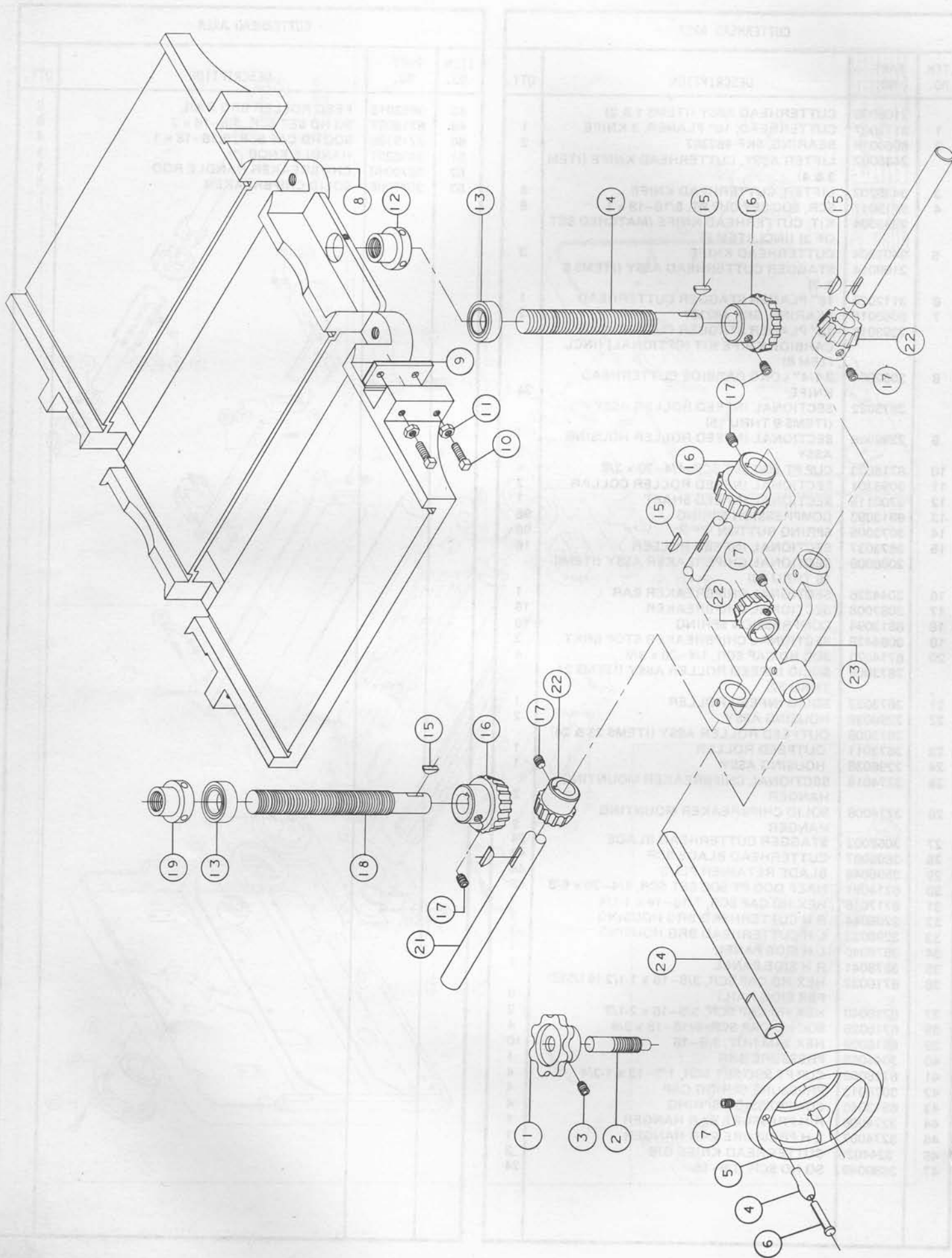


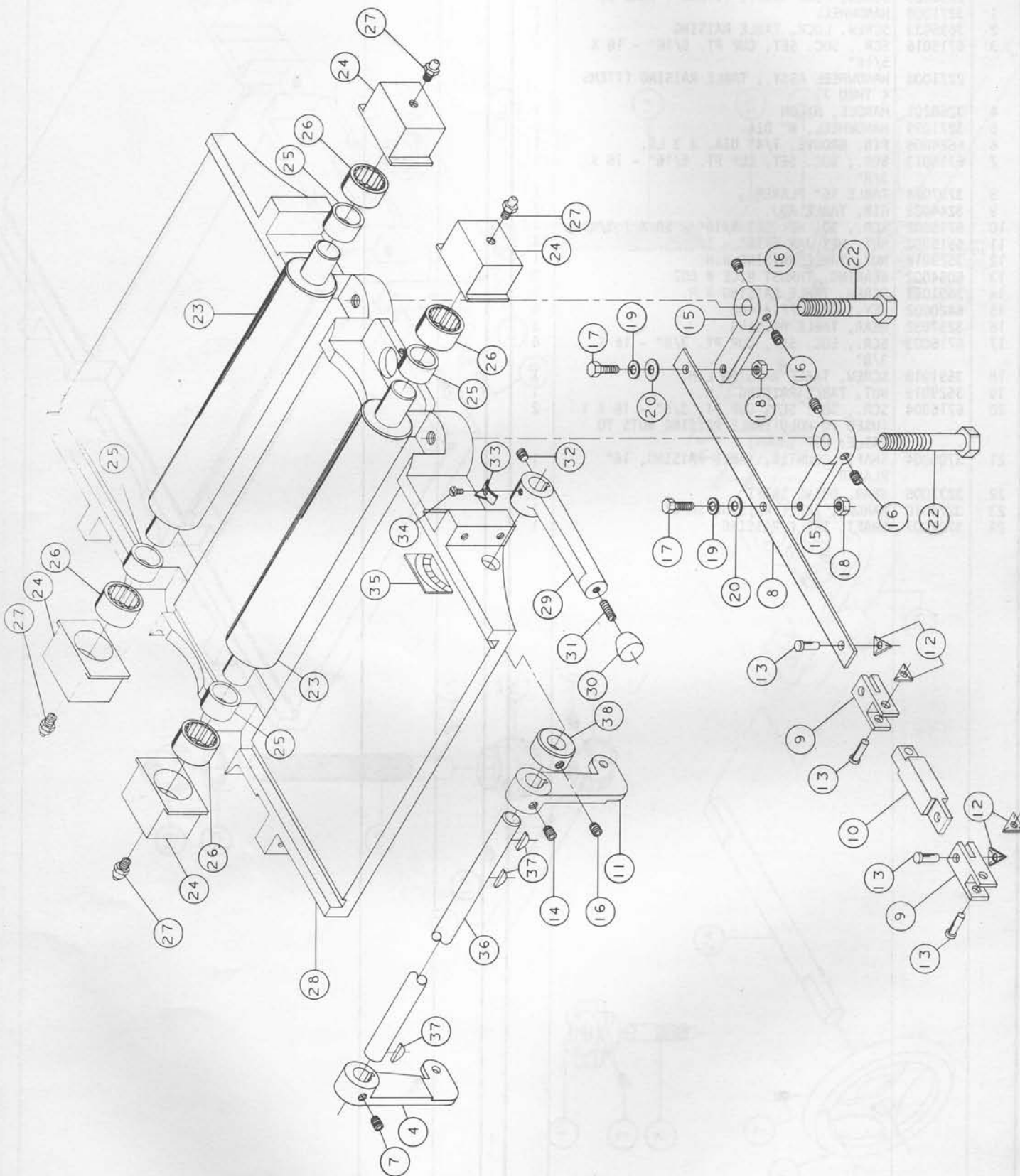


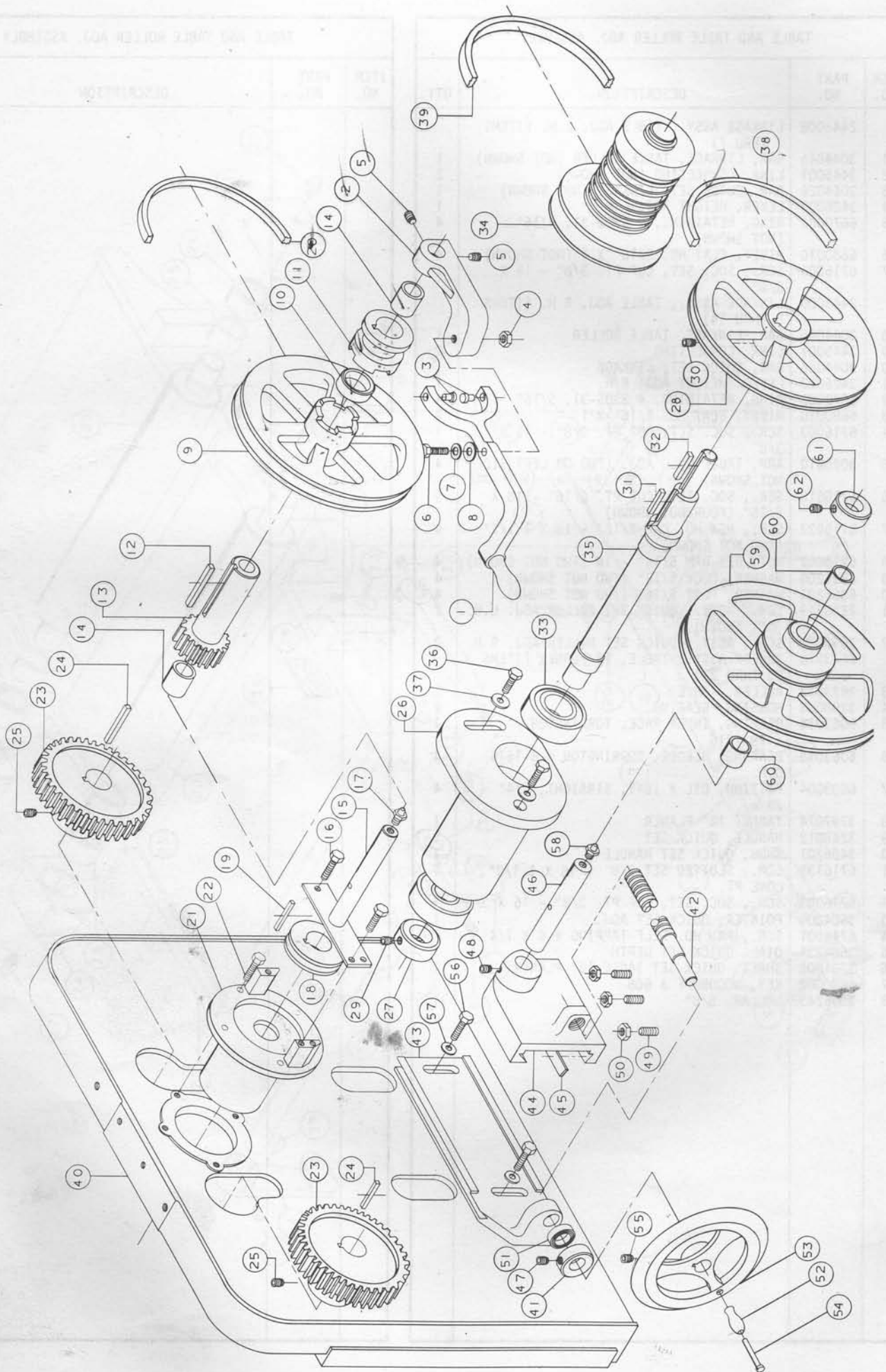
POWERMATIC INCORPORATED	
Address	Powermatic Inc., 1000 N. 10th St., P.O. Box 1000, Muskegon, MI 49441
Phone	(616) 791-1111
Fax	(616) 791-1112
Telex	150000
Model	0340118 (160)
Part No.	0340119 (160)
Rev.	1
Date	10/1/88
By	J. J. J.
Check	
Drawn	
Engineer	
Manager	
Director	
President	

CUTTERHEAD AREA			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	2109006	CUTTERHEAD ASSY (ITEMS 1 & 2)	
2	3112007	CUTTERHEAD, 16" PLANER, 3 KNIFE	1
	6060018	BEARING, SKF 462307	2
	2438002	LIFTER ASSY, CUTTERHEAD KNIFE (ITEM 3 & 4)	
3	3438202	LIFTER, CUTTERHEAD KNIFE	6
4	6715017	SCR, SOC SET CUP PT, 5/16-18 x 1	6
	2393004	KIT, CUTTERHEAD KNIFE (MATCHED SET OF 3) (INCL ITEM 5)	
5	3401004	CUTTERHEAD KNIFE	3
	2109014	STAGGER CUTTERHEAD ASSY (ITEMS 6 & 7)	
6	3112025	16" PLANER STAGGER CUTTERHEAD	1
7	6060018	BEARING, SKF 462307	2
	2393016	16" PLANER STAGGER CUTTERHEAD CARBIDE KNIFE KIT (OPTIONAL) (INCL ITEM 8)	
8	3052004	2-1/4" LONG CARBIDE CUTTERHEAD KNIFE	24
	2673022	SECTIONAL INFEED ROLLER ASSY (ITEMS 9 THRU 15)	
9	2298036	SECTIONAL INFEED ROLLER HOUSING ASSY	2
10	6714003	CUP PT SOC SET SCR, 1/4-20 x 3/8	4
11	3096301	SECTIONAL INFEED ROLLER COLLAR	2
12	3700115	SECTIONAL INFEED SHAFT	1
13	6813093	COMPRESSION SPRING	96
14	3073005	SPRING BUTTON	96
15	3673037	SECTIONAL INFEED ROLLER	16
	2086009	SECTIONAL CHIPBREAKER ASSY (ITEMS 16 THRU 20)	
16	3044326	SECTIONAL CHIPBREAKER BAR	1
17	3087008	SECTIONAL CHIPBREAKER	16
18	6813094	COMPRESSION SPRING	16
19	3064428	SECTIONAL CHIPBREAKER STOP BRKT	2
20	6714023	SOC HD CAP SCR, 1/4-20 x 3/8	4
	2673008	SOLID INFEED ROLLER ASSY (ITEMS 21 THRU 22)	
21	3673022	SOLID INFEED ROLLER	1
22	2298038	HOUSING ASSY	2
	2673009	OUTFEED ROLLER ASSY (ITEMS 23 & 24)	
23	3673011	OUTFEED ROLLER	1
24	2298038	HOUSING ASSY	1
25	3274018	SECTIONAL CHIPBREAKER MOUNTING HANGER	2
26	3274008	SOLID CHIPBREAKER MOUNTING HANGER	2
27	3052003	STAGGER CUTTERHEAD BLADE	24
28	3695067	CUTTERHEAD BLADE SCR	48
29	3598046	BLADE RETAINER PLUG	48
30	6714091	HALF DOG PT SOC SET SCR, 1/4-20 x 5/8	48
31	6717015	HEX HD CAP SCR, 7/16-14 x 1-1/4	7
32	3298044	R H CUTTERHEAD BRG HOUSING	1
33	3298033	L H CUTTERHEAD BRG HOUSING	1
34	3578040	L H SIDE PANEL	1
35	3578041	R H SIDE PANEL	1
36	6716032	HEX HD CAP SCR, 3/8-16 x 1-1/2 (4 USED PER SIDE RAIL)	8
37	6716040	HEX HD CAP SCR, 3/8-16 x 2-1/2	2
38	6715025	SOC HD CAP SCR, 5/16-18 x 3/4	4
39	6516009	HEX JAM NUT, 3/8-16	10
40	3044065	PRESSURE BAR	1
41	6718059	CUP PT SOC SET SCR, 1/2-13 x 1-3/4	4
42	3078013	PRESSURE SPRING CAP	4
43	6813046	COMPRESSION SPRING	4
44	3274006	R H PRESSURE BAR HANGER	1
45	3274007	L H PRESSURE BAR HANGER	1
46	3244025	CUTTERHEAD KNIFE GIB	3
47	3689049	SQ HD SCR, 3/8-16	24

CUTTERHEAD AREA			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
48	3653015	FEED ROLLER BRG RAIL	2
49	6716087	SQ HD SET SCR, 3/8-16 x 2	6
50	6715186	SOC HD CAP SCR, 5/16-18 x 1	4
51	3406201	HANDLE KNOB	1
52	3670040	CHIPBREAKER HANDLE ROD	1
53	3087005	SOLID CHIPBREAKER	1

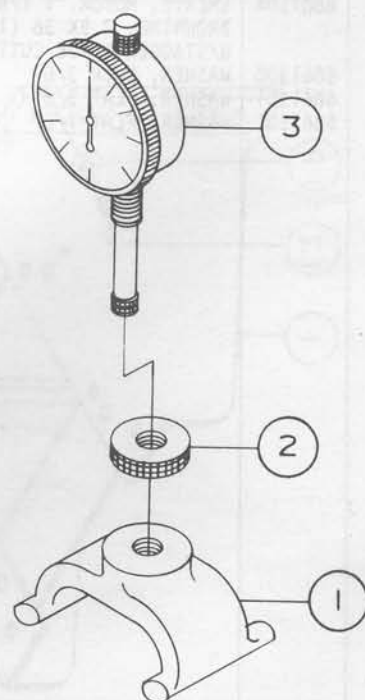
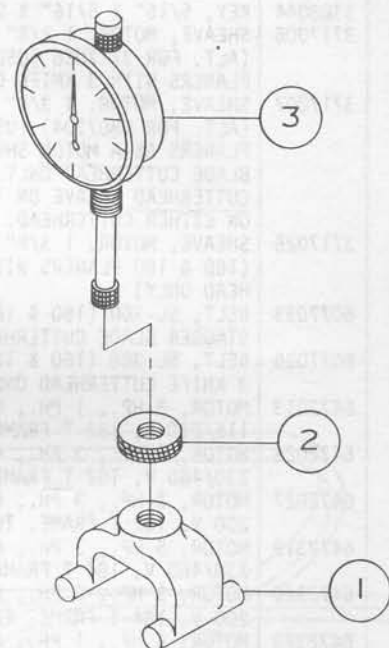
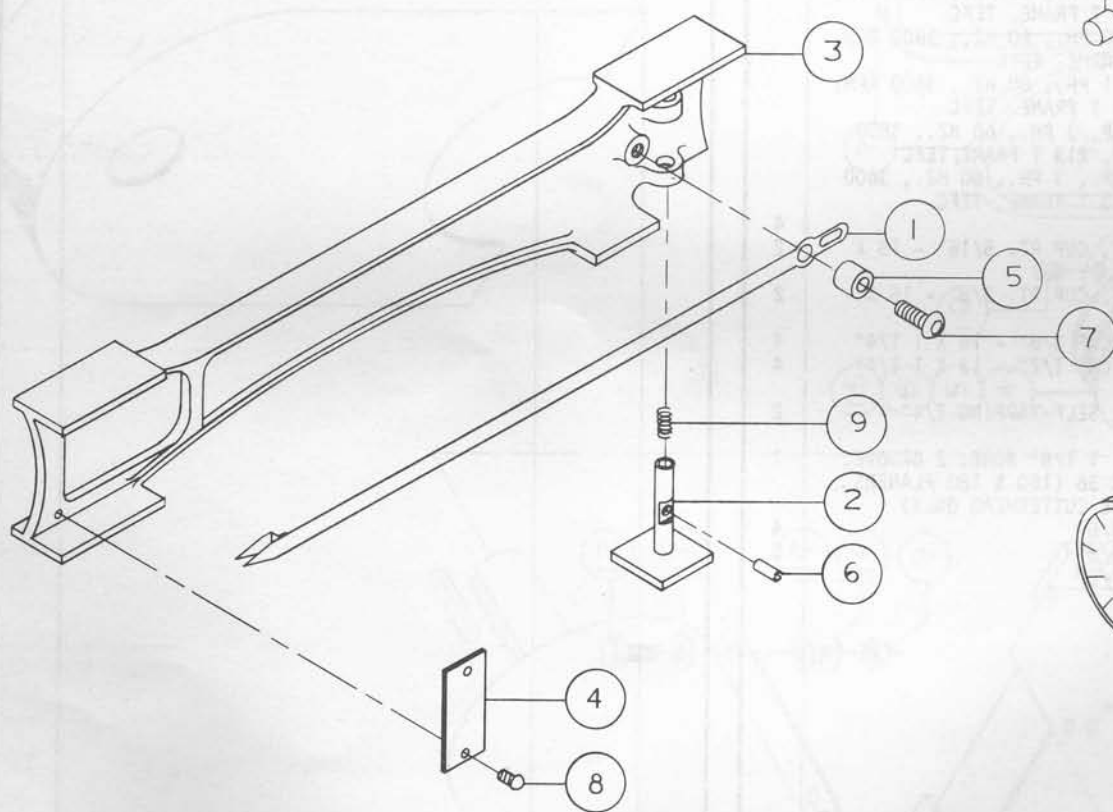
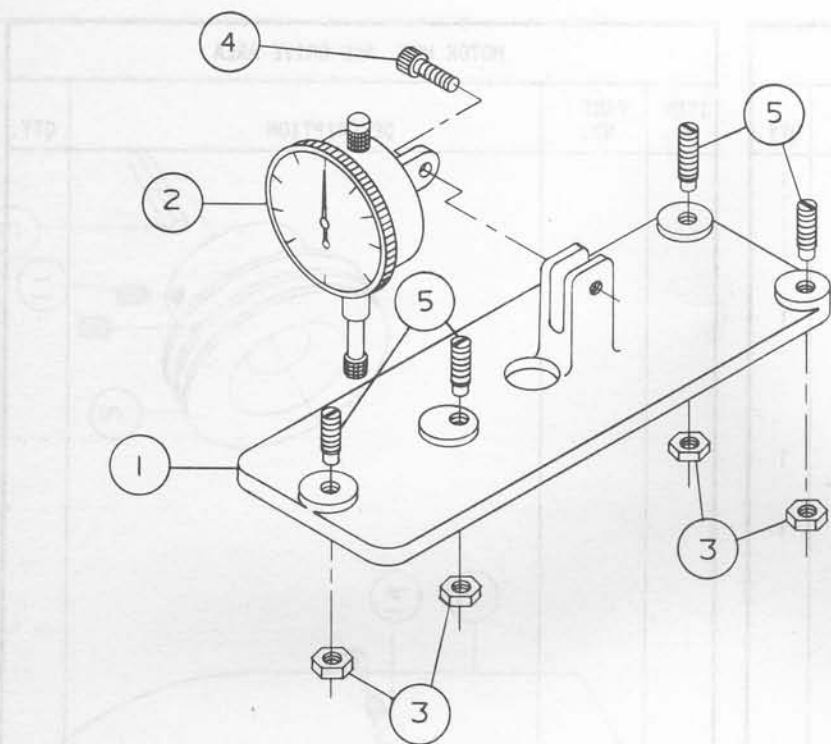






FEED DRIVE AREA			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	2268019	HANDLE ASSY., CLUTCH (ITEMS 1 THRU 8)	
2	3268015	HANDLE, CLUTCH	1
3	3274009	HANGER, CLUTCH HANDLE	1
4	3585205	PIN, CLUTCH SHIFTING	2
5	6516009	NUT, HEX JAM 3/8" - 16	1
6	6715016	SCR., SOC. SET, CUP PT. 5/16" - 18 X 5/16"	2
7	6716035	SCR., HEX HD. CAP 3/8" - 16 X 1 3/4"	1
8	6861300	WASHER, LOCK 3/8	1
9	6861301	WASHER, FLAT 3/8"	1
10	2719030	SHEAVE ASSY., CLUTCH (ITEMS 9 THRU 14)	
11	3716011	SHEAVE, DRIVE CLUTCH	1
12	3096026	COLLAR, PINION	1
13	3095005	CLUTCH, COLLAR DRIVEN	1
14	3388008	KEY, 3/16" X 3/16" X 1 1/2"	1
15	3586015	PINION, FEED ROLLER GEAR DRIVE	1
16	6095026	BUSHING, 3/4" I.D. X 7/8" O.D. X 1 WIDE, PS-700-64	2
17	2063015	BRKT. ASSY., FEED DRIVE MTG. (WELDMENT)	1
18	6716031	SCR., HEX HD. CAP 3/8" - 16 X 1	3
19	6609004	FITTING, OIL # 1641, 1/4" - 28	1
20	6807014	SHEAVE, BROWNING # AS-28, 3/4" BORE	1
21	3388004	KEY, 3/16" X 3/16" X 1	1
22	6077039	BELT, "V" 5L-440	1
23	3298044	HOUSING, CUTTERHEAD BEARING R.H.	1
24	6717015	SCR., HEX HD. CAP 7/16" - 14 X 1 1/4"	4
25	3237030	GEAR, FEED ROLLER DRIVE	2
26	3388008	KEY, 3/16" X 3/16" X 1 1/2"	2
27	6715016	SCR., SOC. SET, CUP PT. 5/16" - 18 X 5/16"	2
28	2404002	KIT, VARIABLE SPEED ASSY., (ITEMS 26 THRU 35)	
29	3298019	HOUSING, BEARING, V.S. COUNTERSHAFT	1
30	3096214	COLLAR, V.S. SHAFT	1
31	3716010	SHEAVE, V.S. DRIVE SHAFT	1
32	6715016	SCR., SOC. SET, CUP PT. 5/16" - 18 X 5/16"	1
33	6716003	SCR., SOC. SET, CUP PT. 3/8" - 16 X 3/8"	1
34	3388004	KEY, 3/16" X 3/16" X 1	1
35	3388008	KEY, 3/16" X 3/16" X 1 1/2"	1
36	6060014	BEARING, SKF 62062RS	2
37	2719037	SHEAVE, V.S. ASSY.	1
38	3700050	SHAFT, V.S.	1
39	6717015	SCR., HEX. HD. CAP 7/16" - 14 X 1 1/4"	2
40	6861401	WASHER, FLAT 7/16"	2
41	6077030	BELT, "V" 4L-620	1
42	6077044	BELT, "V" 5L-500	1
43	3578041	PANEL, SIDE R.H.	1
44	2730011	SLIDE ASSY., V.S. ADJUSTING (ITEMS 41 THRU 55)	
45	3096243	COLLAR, 5/8"	1
46	3690022	SCR., V.S. ADJ.	1
47	3063059	BRKT., MTG. V.S.	1
48	3730001	SLIDE, MTG. BRKT. V.S. ADJ.	1
49	3244027	GIB, V.S. SLIDE ADJ.	1
50	3706004	SHAFT, COMPOUND DRIVE	1
51	6715016	SCR., SOC. SET, CUP PT. 5/16" - 18 X 5/16"	1
52	6716003	SCR., SOC. SET, CUP PT. 3/8" - 16 X 3/8"	1
53	6714005	SCR., SOC. SET CUP PT. 1/4" - 20 X 1	3
54	6514008	NUT, HEX JAM 1/4" - 20	3
55	6064001	BEARING, THRUST, NICE # 605, 5/8" I.D. X 1 1/8" O.D. X 11/32" W	1
56	3268201	HANDLE, NYLON MACHINE	1
57	3271049	HANDWHEEL, 6" DIA.	1
58	6624006	PIN, GROOVE, STEEL, 1/4" X 3	1
59	6715013	SCR., SOC. SET, CUP PT. 5/16"-18 X 3/8"	1
60	6716032	SCR., HEX HD. CAP 3/8" - 16 X 1 1/2"	2
61	6861301	WASHER, FLAT 3/8"	2
62	6609004	FITTING, OIL # 1641, 1/4" - 28	1
63	2719031	SHEAVE ASSY., COMPOUND (ITEMS 59 THRU 60)	
64	3717028	SHEAVE, MULTI-GROOVE	1

FEED DRIVE AREA			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
60	6095078	BUSHING, BRONZE, 1" I.D. X 1 1/8" O.D. X LG. PS-1000-64	2
61	3096214	COLLAR, V.S. SHAFT	1
62	6715016	SCR., SOC. SET, CUP PT. 5/16" - 18 X 5/16"	1



2230002 GAUGE, BED AND FEED ROLL			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	3042031	BASE, TABLE LEVEL INDICATOR	1
2	6391001	INDICATOR, TABLE LEVEL	1
3	6515007	NUT, HEX JAM 5/16" - 18	4
4	6714018	SCR., SOC. HD. CAP 1/4" - 20 X 3/4"	1
5	6715171	SCR., SET, SLOTTED HEADLESS, CUP PT., 5/16" - 18 X 1 1/4"	4

GAUGE, BED AND FEED ROLL			
ITEM NO.	PART NO.	DESCRIPTION	QTY.

2230007 GAUGE, CUTTERHEAD QUIET			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	3042340	BASE, INDICATOR	1
2	3528003	NUT, KNURLED, 3/8" - 24 UNF	1
3	6391002	INDICATOR, KNIFE LEVEL	1

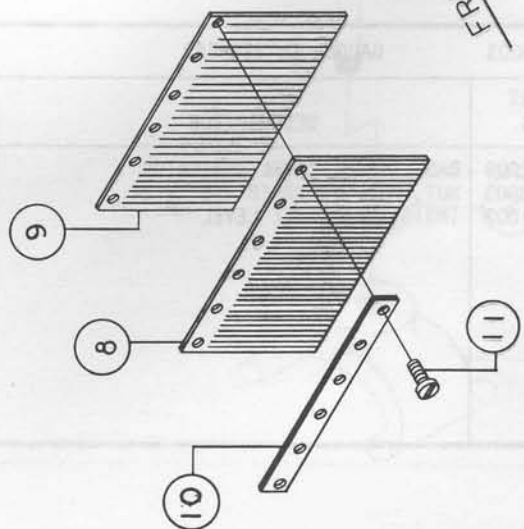
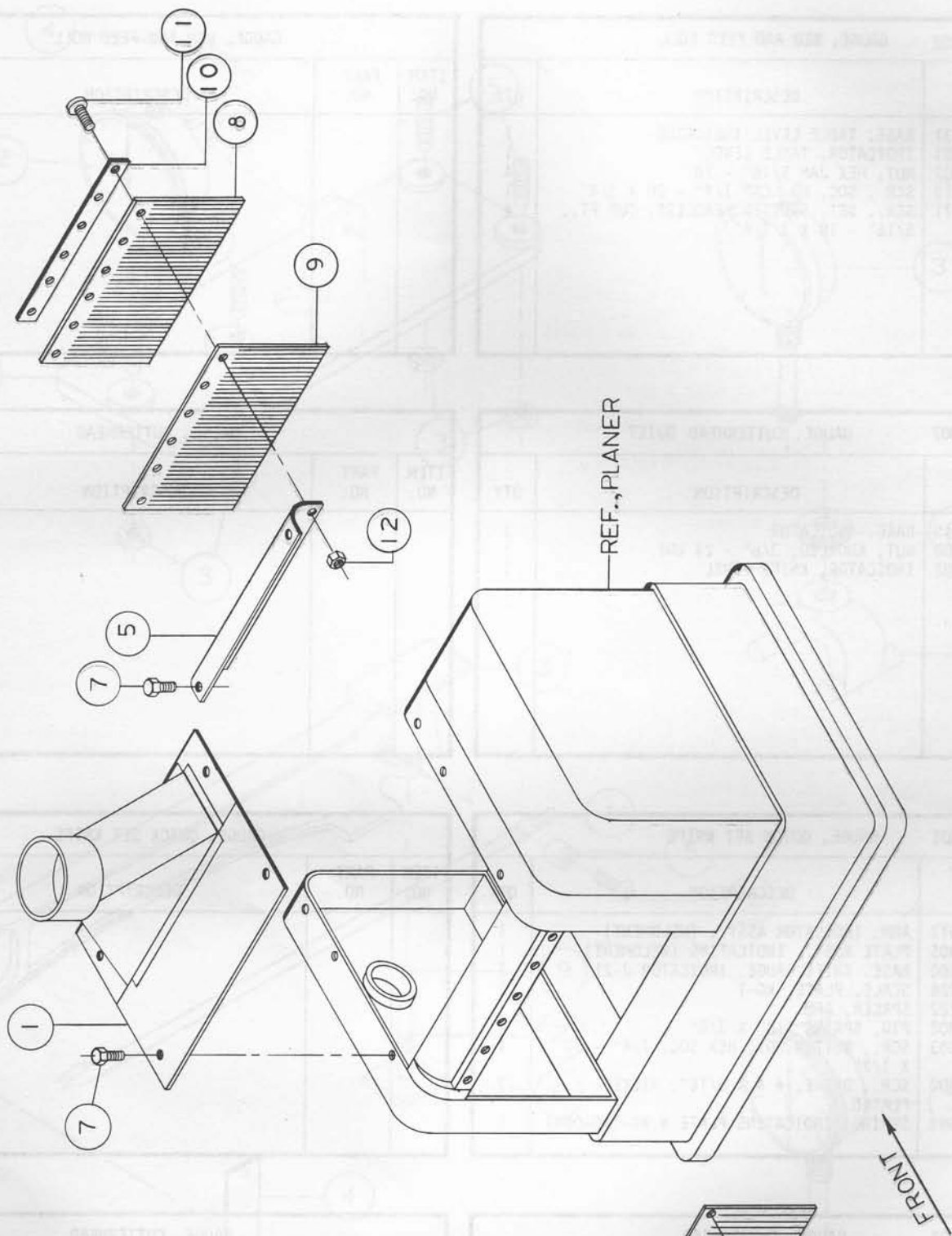
GAUGE, CUTTERHEAD			
ITEM NO.	PART NO.	DESCRIPTION	QTY.

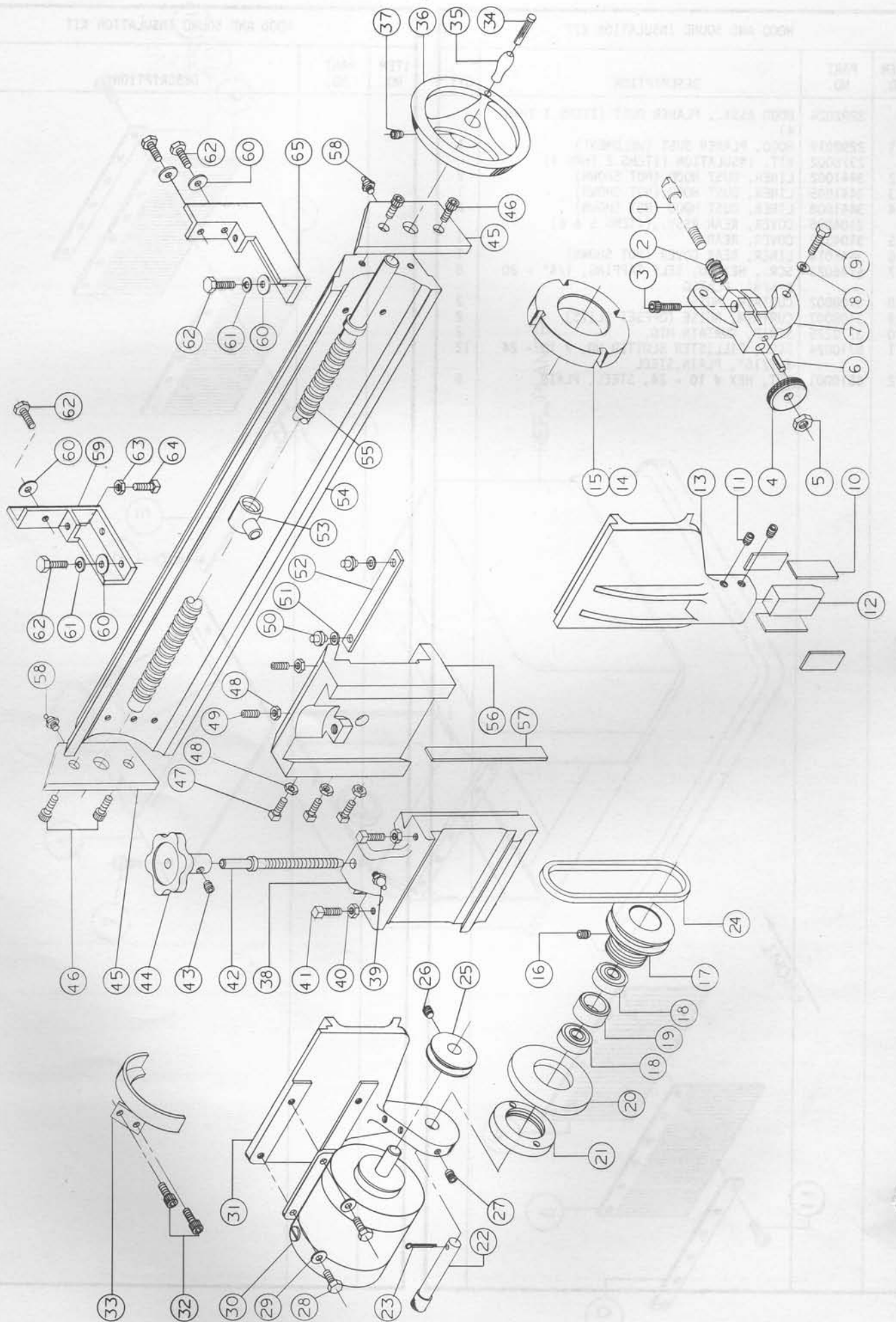
2230001 GAUGE, QUICK SET KNIFE			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	2025012	ARM, INDICATOR ASSY., (WELDMENT)	1
2	2595005	PLATE ASSY., INDICATING (WELDMENT)	1
3	3042060	BASE, KNIFE GAUGE, INDICATOR J-21	1
4	3684226	SCALE, PLATE, KG-1	1
5	3735222	SPACER, ARM	1
6	6626002	PIN, SPRING 1/8" X 3/8"	1
7	6714083	SCR., BUTTON HD., HEX SOC. 1/4" - 20 X 1/2"	1
8	6747000	SCR., DRIVE, # 4 X 3/16", NICKEL PLATED	2
9	6813053	SPRING, INDICATING PLATE # KG-140-0041	1

GAUGE, QUICK SET KNIFE			
ITEM NO.	PART NO.	DESCRIPTION	QTY.

2230003 GAUGE, CUTTERHEAD			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	3042009	BASE, KNIFE LEVEL INDICATOR	1
2	3528003	NUT, MTG., KNURLED 3/8" - 24	1
3	6391002	INDICATOR, KNIFE LEVEL	1

GAUGE, CUTTERHEAD			
ITEM NO.	PART NO.	DESCRIPTION	QTY.





GRINDER ASSEMBLY, KNIFE			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	2601005	INDEXING PLUNGER ASSY., (ITEMS 1 THRU 9)	1
2	3601003	PLUNGER, INDEXING	1
3	6813073	SPRING, COMPRESSION., .600 O.D. X .556 I.D. X 1 3/4"	1
4	6710016	SCR., SOC. HD. CAP, # 10 - 24 X 5/8"	1
5	3406002	KNOB, INDEX PLUNGER	1
6	6516007	NUT, HEX, 3/8" - 16 (ZINC PLATED)	1
7	6626056	PIN, SPRING, 5/32" X 3/4"	1
8	3298029	HOUSING, INDEXING BELT DR.	1
9	6861400	WASHER, LOCK	2
10	6717018	SCR., HEX HD. CAP	2
11	2277025	HEAD, JOINTING ASSY., (ITEMS 10 THRU 13)	4
12	3244012	GIB, SHIM, JOINTING STONE	4
13	6714011	SCR., SOC. SET, FLAT HD., 1/4 - 20 X 1/4"	1
14	6818000	STONE, WHEEL, DRESSING	1
15	3277003	HEAD, JOINTING	1
16	3096024	COLLAR, INDEXING, STANDARD CUTTERHEAD	1
17	3096104	COLLAR, INDEXING, STAGGER CUTTERHEAD	1
18	2258002	GRINDER, KNIFE ASSY., (ITEMS 16 THRU 33)	1
19	2024011	ARBOR & GRINDER WHEEL ASSY., (ITEMS 16 THRU 23)	1
20	6714006	SCR., SOC. SET, KNURLED CUP PT., 1/4" - 20 X 3/16"	1
21	3301013	HUB, GRINDER WHEEL	1
22	6060003	BEARING, BALL, N.D. Z993L01	2
23	3741001	SPACER GRINDER WHEEL SHAFT	1
24	6900003	WHEEL, GRINDER, SIMONDS # WA46H8V2	1
25	3530004	NUT, GRINDER WHEEL HUB	1
26	3749201	SPINDLE, GRINDER	1
27	6622007	PIN, COTTER KEY, 3/32" X 3/16" X 3/4"	1
28	6077159	BELT, 3L-250	1
29	6807105	SHEAVE, # OK 35 BROWNING, 1/2" BORE	1
30	6714004	SCR., SOC. SET, 1/4" - 20 X 1/4"	1
31	6715018	SCR., SOC. SET, 5/16" - 18 X 5/8"	1
32	6714127	SCR., HEX HD., 1/4" - 20 X 1/2"	4
33	6861101	WASHER, FLAT, 1/4"	4
34	6473301	MOTOR, 1/3 HP, MARATHON	1
35	3063030	BRACKET, MOUNTING (KNIFE GRINDER)	1
36	6710015	SCR., SOC. HD. CAP, # 10-24 X 1/2"	2
37	3250041	GUARD, GRINDING WHEEL	1
38	2040009	BAR ASSY., GRINDER (ITEMS 34 THRU 65)	1
39	2271006	HANDWHEEL ASSY., LEAD SCREW (ITEMS 34 THRU 37)	1
40	6624006	PIN, GROOVE, STEEL, 1/4" X 3	1
41	3268201	HANDLE, NYLON MACHINE	1
42	3271049	HANDWHEEL, 6" DIA.	1
43	6715013	SCR., SOC. SET, CUP PT. 5/16" - 18 X 3/8"	1
44	2730008	SLIDE ASSY., VERTICAL ADJUSTING (ITEMS 38 THRU 41)	1
45	3730009	SLIDE, GRINDER	1
46	6609004	FITTING, GREASE, STRAIGHT, 1/4" - 28 NPT. # 1641-B	1
47	6515007	NUT, HEX JAM, 5/16" - 18, ZINC PLATED	2
48	6715097	SCR., SQ. HD., 5/16" - 18 X 1 1/4"	2
49	3690214	SCREW, VERTICAL FEED	1
50	6715013	SCR., SOC. SET, CUP PT. 5/16" - 18 X 3/8"	1
51	3271007	HANDWHEEL, VERTICAL FEED	1
52	3055016	BLOCK, LEAD SCR. BEARING	2
53	6715023	SCR., SOC. HD. CAP, 5/16" - 18 X 1/2"	4
54	6714072	SCR., SQ. HD., 1/4" - 20 X 1	3
55	6514008	NUT, HEX JAM, 1/4" - 20	5
56	6714139	SCR., SOC. SET, KNURLED CUP PT., 1/4" - 20 X 5/8"	2
57	3601202	PLUNGER, CROSS FEED SLIDE SHIM	2
58	6813071	SPRING, SCHNORR, 11/16" X .382 X .0275 (BEVEL WASHER)	2
59	3244008	GIB, SHIM, CROSS FEED	1
60	2526002	NUT ASSY., FEED SCREW (WELDMENT)	1
61	3044058	BAR, GRINDER	1
62	3691015	SCREW, CROSS FEED LEAD	1
63	3730002	SLIDE, GRINDER HORIZONTAL	1

GRINDER ASSEMBLY, KNIFE			
ITEM NO.	PART NO.	DESCRIPTION	QTY.
57	3244007	GIB, SHIM, VERTICAL FEED	1
58	6609002	FITTING, GREASE, 1/4 - 28 NPT, 45°, ALEMITE	2
59	3063013	BRKT., BAR MTG., L.H.	1
60	6861309	WASHER, FLAT, 3/8"	7
61	6861300	WASHER, LOCK, 3/8"	4
62	6716039	SCR., HEX HD., 3/8" - 16 X 1 1/4"	7
63	6515007	NUT, HEX JAM, 5/16" - 18	2
64	6715097	SCR., SQ. HD., 5/16" - 18 X 1 1/4"	2
65	3063015	BRKT., BAR MTG., R.H.	1

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