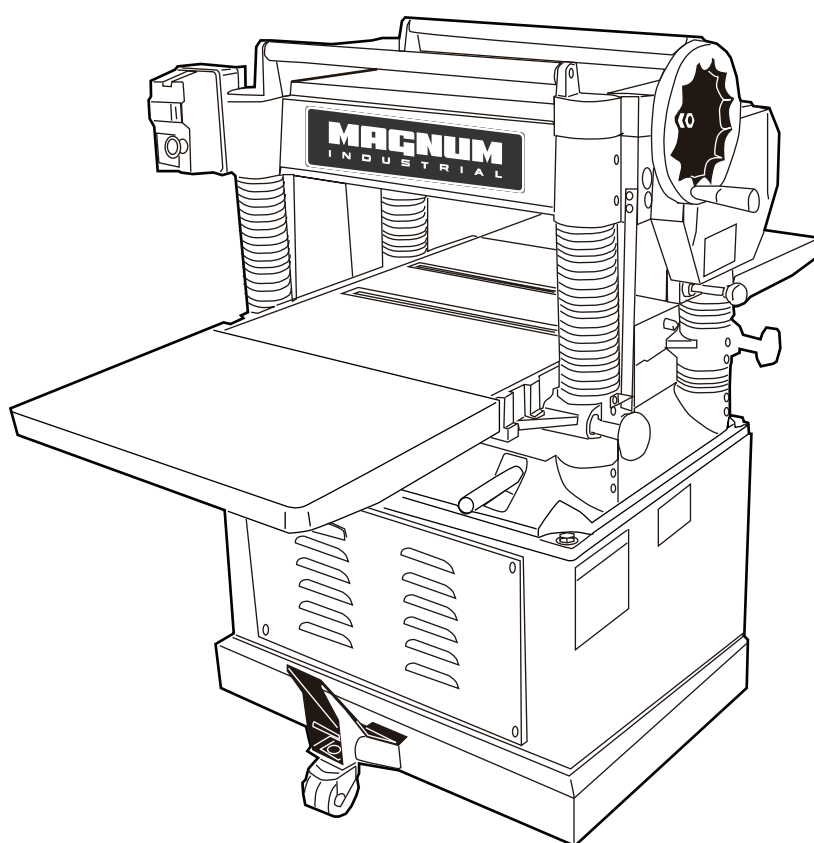


MAGNUM

I N D U S T R I A L

MODEL NO.: MI-31450 / MI-31453



OPERATING MANUAL

MI-31450 / MI-31453

MOTOR 220V 60 CYCLE 5HP

Cutting Capacity:

Length of Unbutted Stock	Minimum	6.74" (171m/m)
Width of Stock	Maximum	20" (508m/m)
Thickness of Stock	Maximum	8" (204m/m)
Planing depth	Width of workpiece below	8.3" (210m/m)
	(Max)	0.23" (6mm)
	Width of workpiece	8.3"— 20" (210m/m — 508m/m)
	(Max)	0.12" (3mm)

Feed Rates 16/20 FPM (4.96/6.33 mm/min)

Cutterhead:

Number of Knives	58
Diameter	3 15" (80m/m)
Speed	5,000 RPM
Cuts Per, Minute	20,000

Feed Rolls:

Spiral in-feed	2" Dia (50.8mm)
Table Bed Rolls (Two)	Adjustable
Table	25.7"x20.01" (653x510mm)

Over all Dimensions:

Length	26" (660mm)
Width	36.6" (930mm)
Height	41.4" (1051mm)
Net Weight	771 Lbs (350kg)
Gross Weight	926 Lbs (420kg)
Packing Size (LxWx H)	39.4"x28.8"x44.2" (1000mmx731 mmx1 123mm)

GENERAL SAFETY INSTRUCTIONS

1. KEEP GUARDS IN PLACE.

Safety guards must be kept in place and in working order.

2. REMOVE ADJUSTING KEYS AND WRENCHES.

Before turning on machine, check to see that the keys, chucks and adjusting wrenches are removed from the tool.

3. REDUCE THE RISK OF UNINTENTIONAL STARTING.

Make sure switch is in the OFF position before plugging in the tool.

4. DO NOT FORCE TOOLS.

They will do a job better and safer at the rate for which they were designed.

5. USE RIGHT TOOL.

Do not force a tool or an attachment to do a job for which it was not designed.

6. SECURE WORK.

Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tools.

7. MAINTAIN TOOLS WITH CARE.

Keep tools sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.

8. DISCONNECT TOOLS FROM POWER.

Before servicing, or when changing accessories such as bits, blades, cutters, etc. disconnect from power.

9. USE RECOMMENDED ACCESSORIES.

Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injuries.

10. CHECK DAMAGED PARTS.

Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect the tool's operation. A guard or other part that is damaged should be properly repaired or replaced.

11. TURN POWER OFF. NEVER LEAVE TOOL RUNNING UNATTENDED.

Do not leave tool until it comes to a complete stop.

12. KEEP WORK AREA CLEAN.

Cluttered areas and benches invite accidents.

13. DO NOT USE IN DANGEROUS ENVIRONMENT.

Do not use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.

14. KEEP CHILDREN AWAY.

All visitors should be kept at a safe distance from the work area.

15. MAKE WORKSHOP CHILD PROOF.

Use padlocks, master switches, and remove starter keys.

16. WEAR PROPER APPAREL.

Loose clothing, gloves, neckties, rings, bracelets or other jewelry may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

17. ALWAYS USE SAFETY GLASSES AND DUST MASKS.

Use face or dust mask if cutting operation is dusty. Every day eyeglasses only have impact resistant lenses, they ARE NOT safety glasses.

18. DO NOT OVERREACH.

Keep proper footing and balance at all times.

19. NEVER STAND ON TOOL.

Serious injuries could occur if a moving part is unintentionally contacted.

ADDITIONAL SAFETY RULES FOR AUTO-FEED PRECISION PLANER

1. If you are not thoroughly familiar with the operation of planers, obtain advice from your supervisor, instructor or other qualified person.
2. Keep cutterhead sharp and free of all rust and pitch.
3. Check material for loose knots, nails and other defects.
4. Remove shavings only with the power off.
5. Keep hands away from the top surface of the board near the feed rolls.
6. Check that switch is in OFF position before plugging in power cord.
7. Before moving table upward or downward, loosen locking knobs.
After choosing the proper position tighten locking knobs.
The locking knobs are on the right side of machine as shown in PG 6.
8. Be sure the knives of cutterhead are correct and all hex screws are secured tightly before use.
9. Keep hands away from the feed rolls and the cutterhead.
10. Do not operate machine while the gear cover is open.
11. Remove adjusting tools and loose articles from machine before operating.

UNPACKING AND CLEANUP

To ensure maximum performance from your planer, clean it properly; and install it accurately before use. As soon as you receive the planer, we recommend you follow these Procedures:

1. Inspect packing crate for damage in transit. Record damage and report it immediately to shipper.
2. Open crate and check that machine arrived in good condition. If not, let your industrial distribution know immediately.
3. Before lifting machine, remove all bolts locking it to its shipping base.
4. Transport machine to location with a hand truck or dolly.
5. Remove the protective coating from the table, bed rolls, feed rolls, cutterhead and loose items packed with the machine, including lifting handles and motor pulley.
6. This coating may be removed with a soft cloth moistened with Kerosene. NOTE: Do not use acetone, Gasoline or lacquer thinner for this purpose.
7. Do not use solvents on plastic parts; solvents dissolve or damage plastic. 8 Care must be taken when cleaning the cutterhead as the knives are in the cutterhead and knives are very sharp.

Lifting Handles

There are four lifting handles, furnished. All lifting handles are of hidden type. Pull the handles out for use, push in when not in use. Two of the lifting handles (A) are as shown in Fig. 1

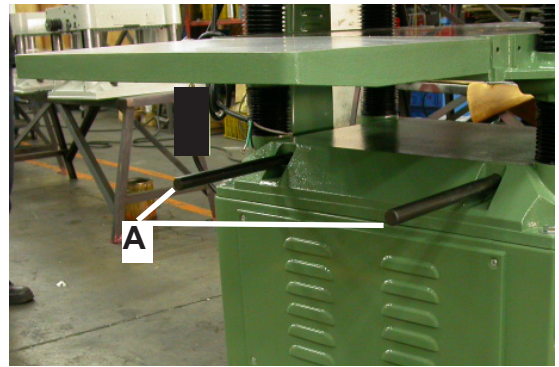


Fig. 1

Lifting Planer

If any type of sling is used to lift machine, be sure to attach to lifting handles only. Be sure that machine is kept in level position while lifting, as shown in Fig. 2

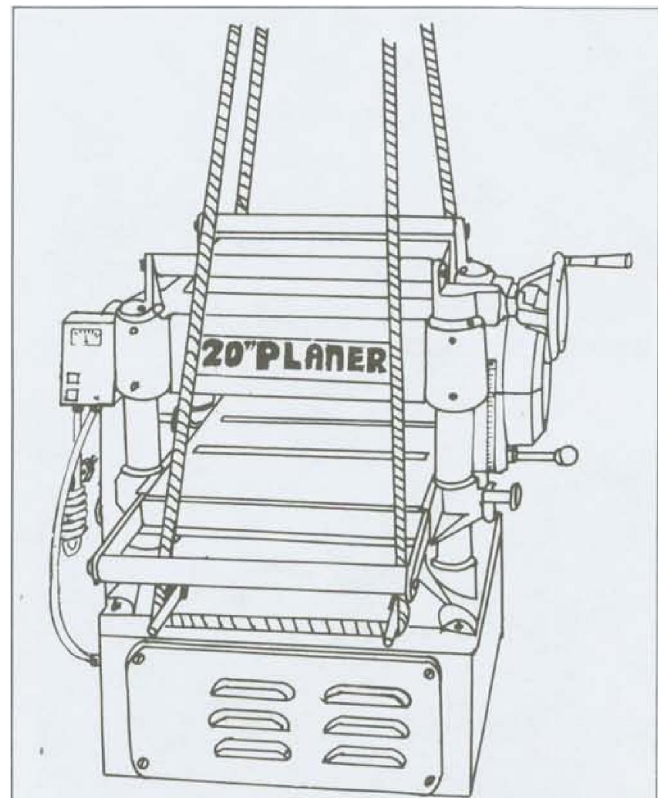


Fig. 2

Stand Assembling

For best planing performance, locate planer on solid, level foundation. With machine in position, test table surface lengthwise and crosswise with machinist level. Place metal shims under low corners. Check that all four corners are supported, then tighten lag screws, retest level of table surface in both directions; and adjust if necessary.

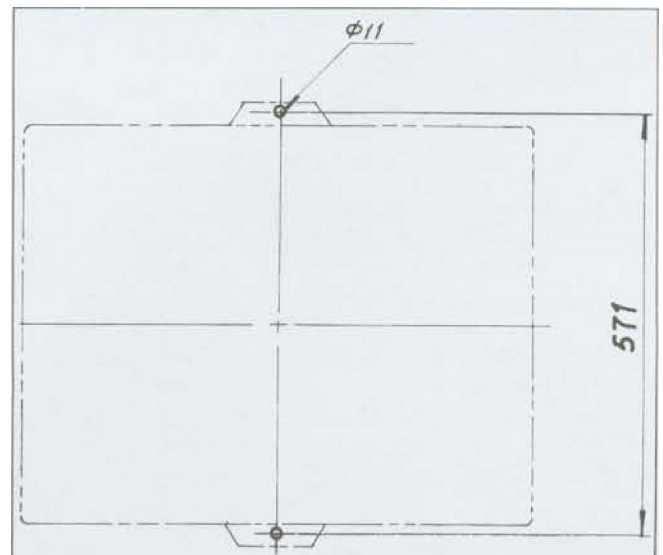


Fig. 3

Lubrication Guide Of MI-31450 / MI-31453 Auto-Feed Precision Planer

No.	Position	Interval	Suitable Types of Oil	Fig. No.
1	Chain	Frequently	Grease	4
2	Gear Box	When operated more than 2,500 hours	HD-100,Mobil Gear 627, Shell Omala 100,ESSO Spartan EP-100	4
3	Rollers	Frequently	SAE-30	5
4	Worm Gear	Frequently	Grease	6
5	Lead Screw	Frequently	Grease	6
6	Column	Frequently	Clean and SAE-30	6
7	Chain •	Frequently	Grease	7
8	Bushing	Frequently	SAE-30	8

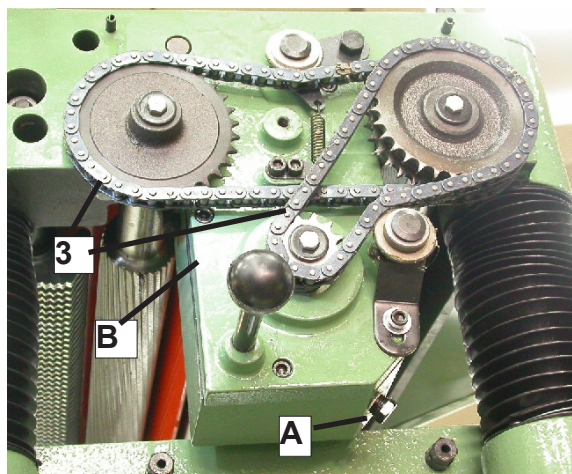


Fig 4

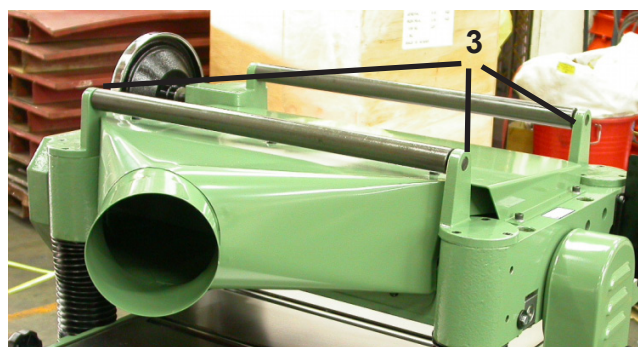


Fig 5

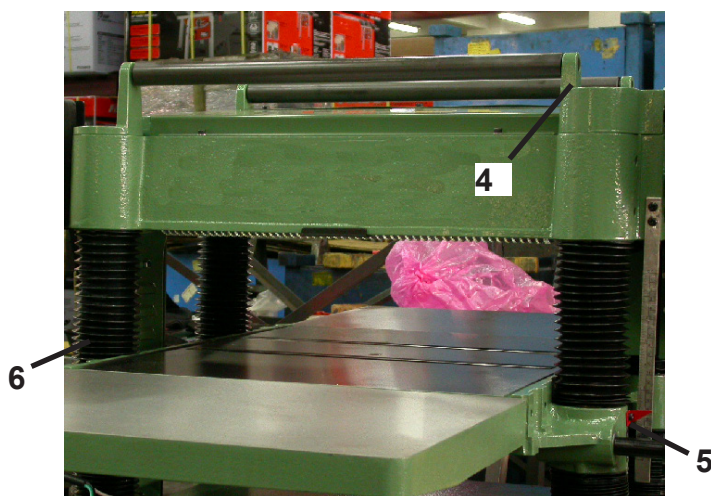


Fig 6

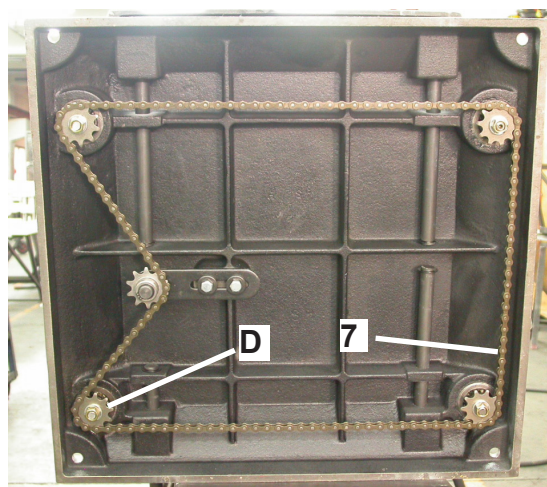


Fig 7

Lubrication Guide of Gear Box:

The gear box lubricant must be replaced every 2,500 hours. Suitable lubricant purpose gear box lubricant.

To Replace Lubricant:

1. Remove the drain plug (A). Fig 4 and tiller Cap (B) ,Drain dirty oil thoroughly.
2. Tighten the drain plug (A)
3. Fill with clean lubricant through hole (B)
4. Tighten the filler cap (B)

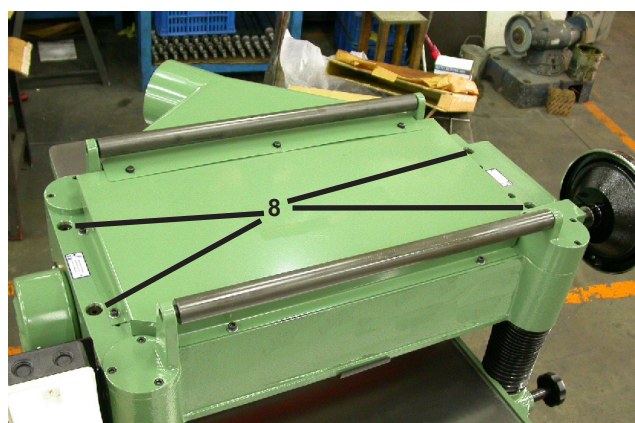


Fig 8

Assembling And Aligning Motor, Motor Pulley And Belt:

1. Assemble the motor pulley to the motor shaft with the key and tighten the screw in the motor shaft, as shown in Fig. 9.
2. Assemble the motor to the motor mounting plate, as shown in Fig. -10

NOTE: It is very important that the motor must be mounted to motor plate by using the mounting hardware (A) Fig. 10

3. Using a straight edge, align the motor and cutter-head pulleys as shown in Fig. 11, the motor plate (B) Fig. 10 Can be moved for alignment by loosening the set screws (C) in the motor plate (B) as shown in Fig. 10
4. Assemble the belts to the two pulleys, as shown in Fig. 11. And adjust for the proper belt tension by raising or lowering the motor plate, as shown in Fig. 12, then tighten the nuts (A) Fig. 12. Correct tension is obtained when there is approx. 114" deflection of the center span of the pulleys by using light finger pressure.



Fig. 9

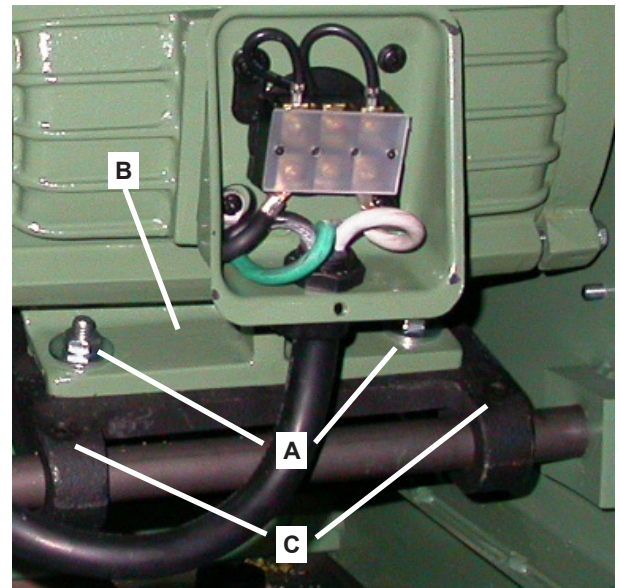


Fig. 10

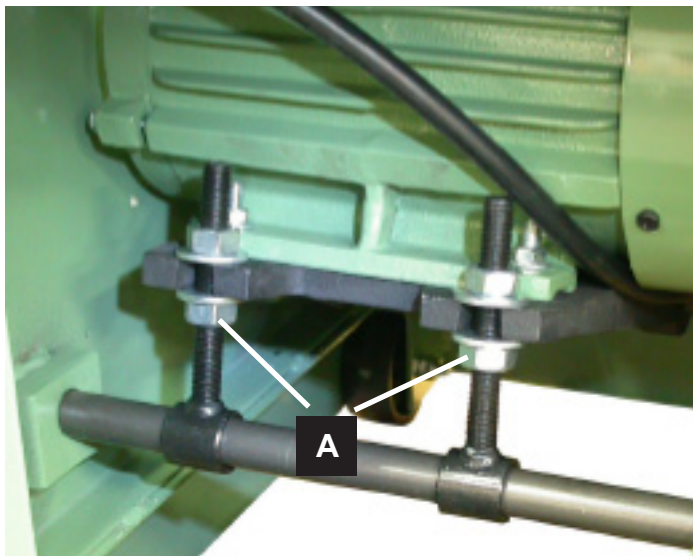


Fig. 12

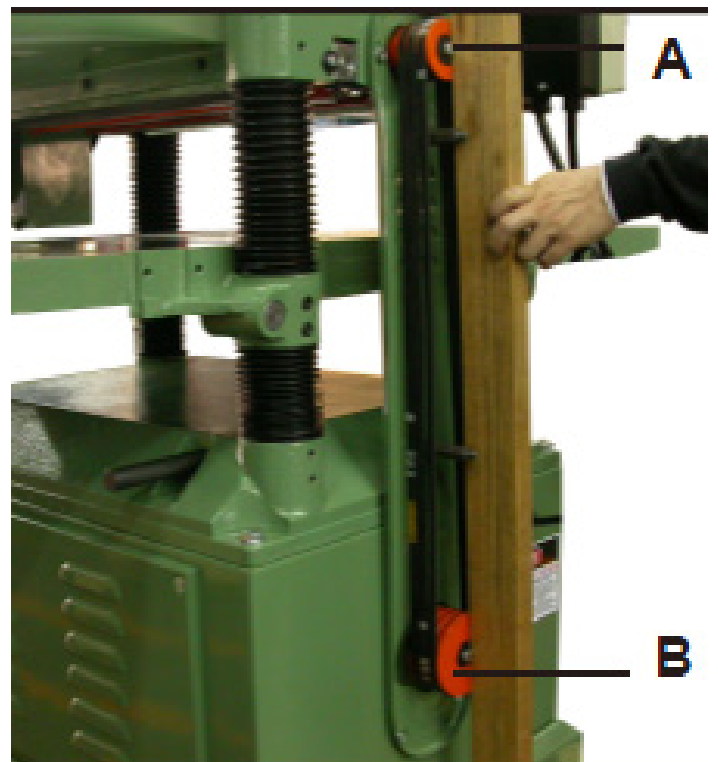


Fig. 11

Adjusting Table Rollers

Your planer is supplied with two table rollers (A) Fig. 13, which aid in feeding the stock by reducing friction and turn as the stock is fed through the planer. It is not possible to give exact dimensions on the proper height setting of the table rollers because each type of wood behaves differently.

As a general rule, however, when planing rough stock, the table rollers should be set at high position, and when planing smooth stock the table rollers should be set at low position.

NOTE:

The raising range between 0.003"-0.006" when raising the roller higher above table as shown in Fig. 14.

The Table Rollers on your planer are set for average planing and are parallel to the table surface. If you desire to adjust the table rollers higher or lower, proceed as follows:

1. Disconnect machine from the power source.
2. Lay a straight edge (A) Fig. 15 across both rollers, loosen the screws (B) Fig. 15, and turn the eccentric shafts (C) to raise or lower the table rollers, when the proper height is obtained tighten screws (B) as shown in Fig. 15. Table rollers must be adjusted on the opposite end of table in the same manner.

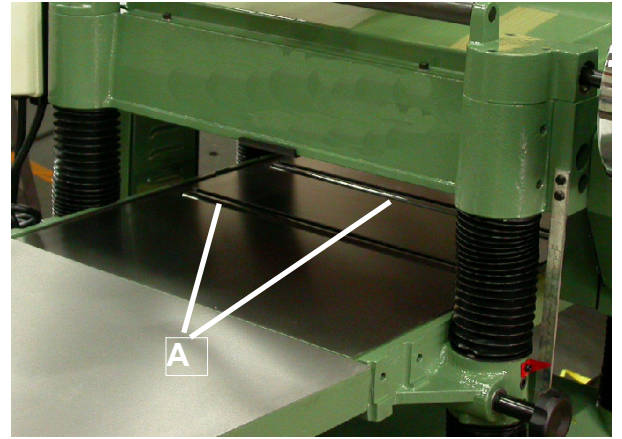


Fig 13

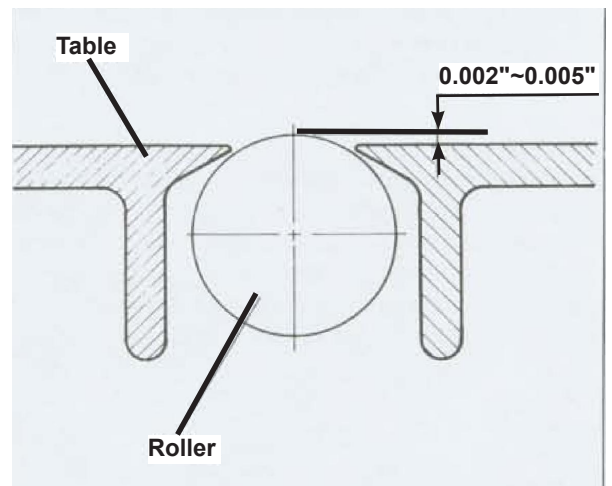


Fig 14

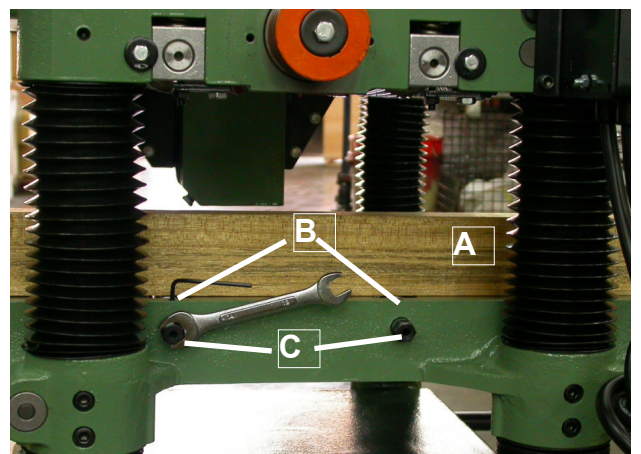


Fig 15

EXTENSION TABLES

1. Mount a cast iron table to the edge of the main table with three M8 x 25 hex cap screws (Fig. 17) using a 12mm wrench. Do not fully tighten yet.
2. The extension table must be leveled with the main table. Place a straight edge (such as a jointed board) across both tables.
3. Insert three socket set screws with a 4mm hex wrench, and screw them in or out as needed until tables are level.
4. Securely tighten the hex cap screws.
5. Mount the second extension table to the opposite side of the planer table, using the same procedure.

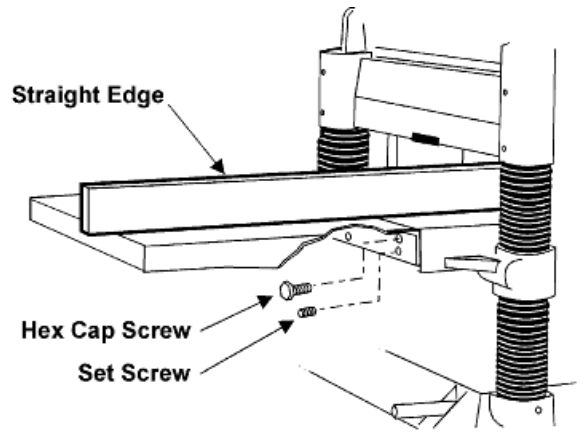


Fig 18

Controlling The Depth Of Cut

The cutting depth scale is a combination inch/metric scale (A), Fig. 18, cutting range from 0 to 8" (204mm). The distance of upward or downward movement is controlled by Handwheel (B) Fig. 18 for one evolution is 0.059" (1.5mm). Before moving table upward or downward, loosen the lock nuts (C) as shown in Fig. 18. After choosing the proper position, tighten the lock nuts (C),

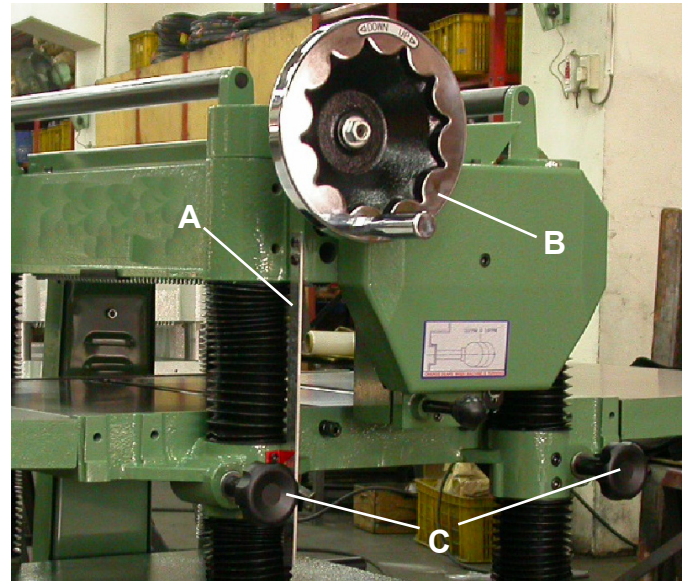


Fig 18

Adjustments

Although your planer was carefully adjusted at the factory, it should be checked before being put into operation. Any inaccuracies due to rough handling in transit can easily be corrected by following these directions.

In order to check the adjustments you will need a straight edge, feeler gage and a homemade gage block made of hard-wood. This gage block can be made by following the dimensions shown in Fig. 19.

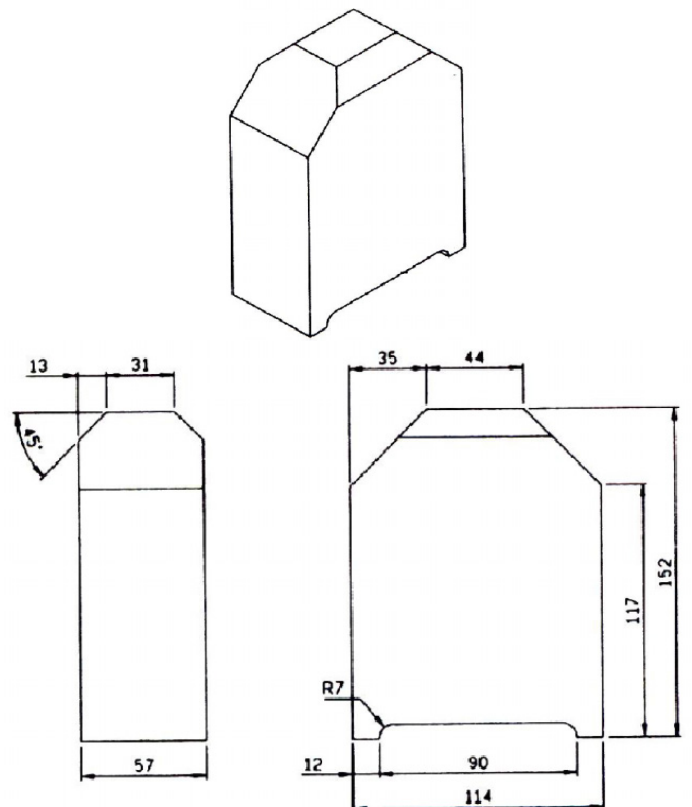


Fig 19

WARNING

WHEN CHECKING ADJUSTMENTS, ALWAYS MAKE SURE THE PLANER IS DISCONNECTED FROM THE POWER SOURCE.

Checking And Adjusting Of Knives

When checking or adjusting the cutterhead knives, proceed as follows:

1. Disconnect the machine from the power source.
2. Remove the six screws (A), and remove the upper cover (B) as shown in Fig. 20.
3. To check and adjust knives use the knife gage (A) Fig. 22 and check all four knives.

Knives should just contact the bottom of the center protrusion (B) of the knife gage, as shown in Fig. 22.

4. If an adjustment to one or more of the knives is necessary, slightly loosen the knife locking bars (C) Fig. 22, of all four knives by turning the 24 locking screws (D) Fig. 22 into the knife locking bars just enough to relieve stress in the cutterhead and not disturb the setting of the knives.
5. Using the knife gage adjust the knife, that must be reset by loosening all six locking screws (D) Fig. 22, by turning them into the knife locking bar. As the knife locking bar becomes loose, lifter springs (E) located under the knife will raise the knife until it comes into contact with the center protrusion (B) of the gage (A) Fig. 22. Then snug up the knife locking bar by lightly backing out the six locking screws (D) against the slot.

NOTE: At this time, only tighten the knife into the slot just enough to hold knife into position.

6. If additional knives must be reset, repeat STEP 5.
7. After all four knives are set with screws just snug, back out and tighten the six screws (D) Fig. 21, 22 against the slot starting with the end screws first, then the center screws until the knife is securely held in the cutterhead. Tighten remaining three knives in the same manner.

NOTE: Double Check all screws for Tightness

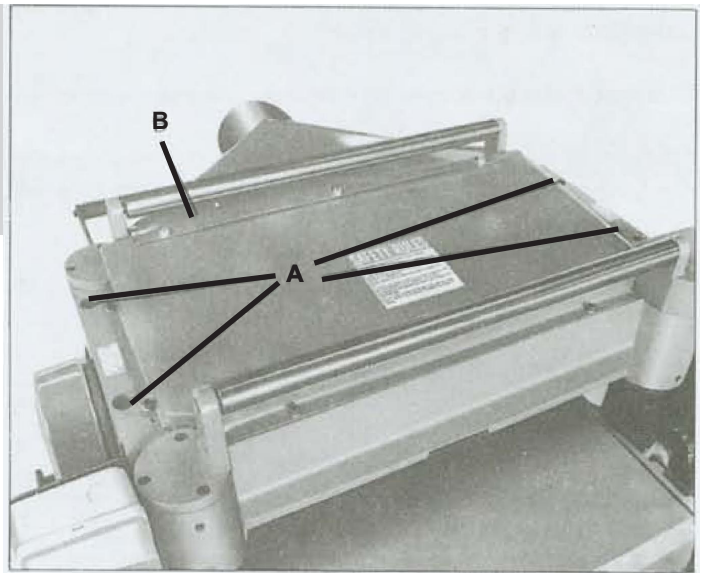


Fig 20

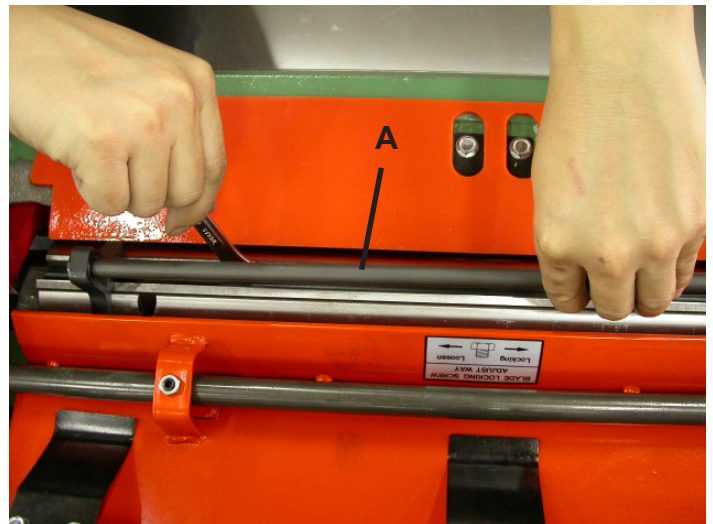


Fig 21

WARNING

AFTER REPLACING AND CHECKING, PLEASE CHECK ONE MORE TIME CAREFULLY. BE SURE THAT THE DIRECTION OF KNIVES IS CORRECT AND ALL 24 LOCKING SCREWS ARE TIGHTENED SECURELY. IT IS VERY IMPORTANT.

Checking Working Table Parallel To Cutterhead

The working table is set parallel to the cutterhead at the factory and no further adjustment should be necessary. If your machine is planing a taper, first check to see if the knives are set properly in the cutterhead. Then check to see if the working table is set parallel to the cutterhead. proceed as follows:

1. Disconnect machine from the power source.
2. Place the gage block (A) Fig. 23 on the working table directly under front edge of head casting (B), Make slight contact by gently raising table as shown in Fig. 23.
3. Move the gage block (A) to opposite end of the working table, as shown in Fig. 24.

IMPORTANT :
DISTANCE FROM THE WORKING TABLE TO EDGE OF THE HEAD CASTING SHOULD BE THE SAME.

5. Adjust opposite end in the same manner.

Adjusting Working Table Parallel To Cutterhead

If the working table is not parallel to the cutterhead, perform the adjustment procedures as follows:

1. Disconnected the machine from power source.
2. Tilt planer on its side to expose underside of base, as shown in Fig. 25
3. Remove bolt (A) and loosen bolt (B) Fig, 25, which will allow you to move the idler sprocket assembly (C) far enough to release tension on chain, as shown in Fig. 26.
4. Remove chain from sprocket on corner of base that must be adjusted. In Fig. 26 chain has been removed from sprocket (D).
5. Turn sprocket (D) Fig. 26 by hand to bring that corner into adjustment with other three corners.

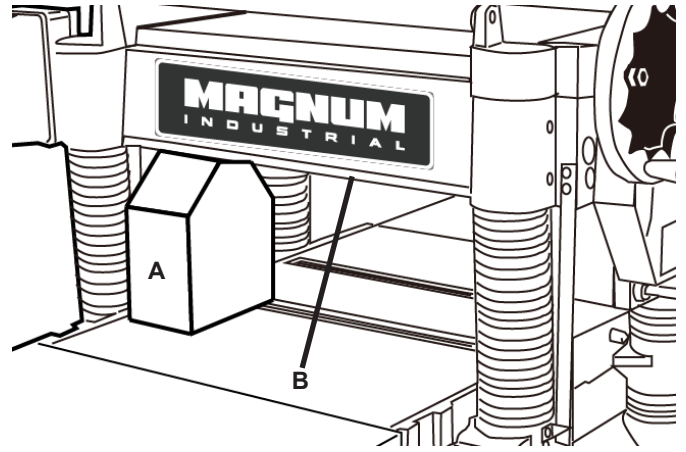


Fig 23

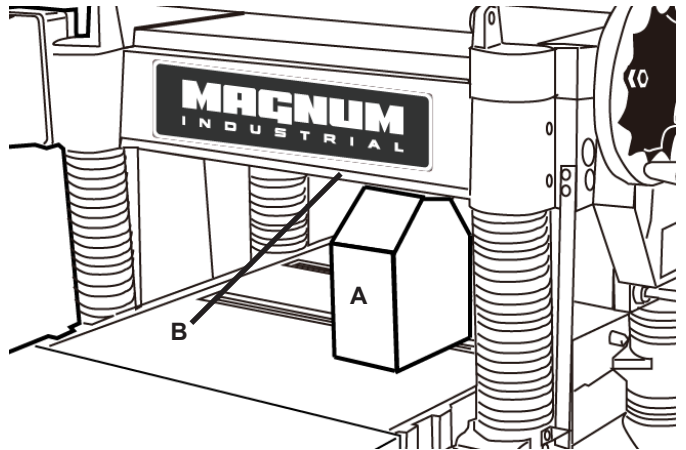


Fig 24

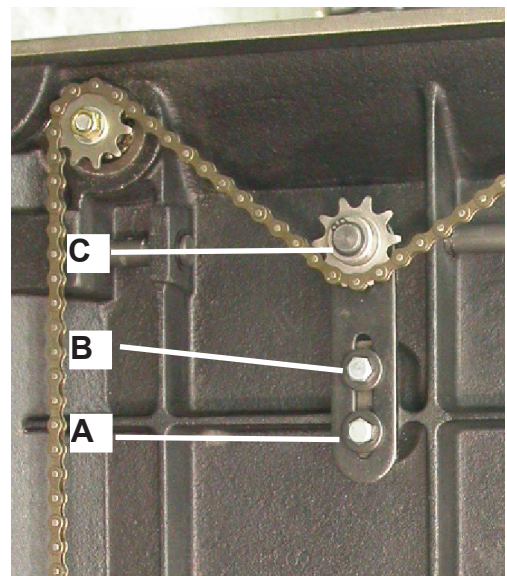


Fig 25

NOTE:

- A. Turning sprocket (0), clockwise will increase the distance between the working table and headcasting counter clockwise will decrease the distance.
- B. This adjustment is very sensitive and it should not be necessary to turn the sprocket more than one or two teeth.

Know The Transmitting Rollers Of Your Planer

- A. Infeed Roller
- B. Outfeed Roller
- C. Chip breaker I. Cutterhead
- E. Pressure Bar
- F. Anti-Kick back Fingers

The infeed roller (A) and outfeed roller (B) Fig. 27 are those parts of your planer that feed the stock while it is being planed. The infeed roller and the outfeed roller are under spring tension and this tension must be sufficient to feed the stock uniformly through the planer without slipping but should not be so tight that it causes damage to the board. The tension should be equal at both ends of each roller.

Adjusting infeed And Outfeed Rollers Spring Tension

* To adjust the spring tension of the Weed/Outfeed roller, turn the screw (G)/(H) Fig. 28. and also the screw on the opposite end of the Infeed/Outfeed roller.

Anti-Kick Back Fingers

The anti-kickback fingers (F) Fig. 29 are provided on your planer to prevent kickback. These fingers operate by gravity and it is necessary to inspect them occasionally to make sure they are free of gum and pitch so that they move independently and operate correctly.

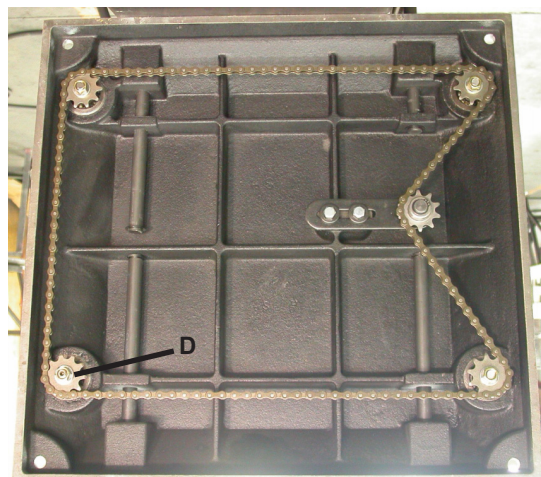


Fig 26

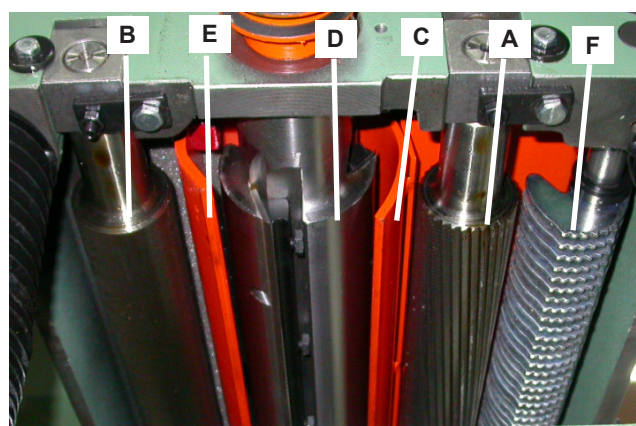


Fig 27



Fig 28

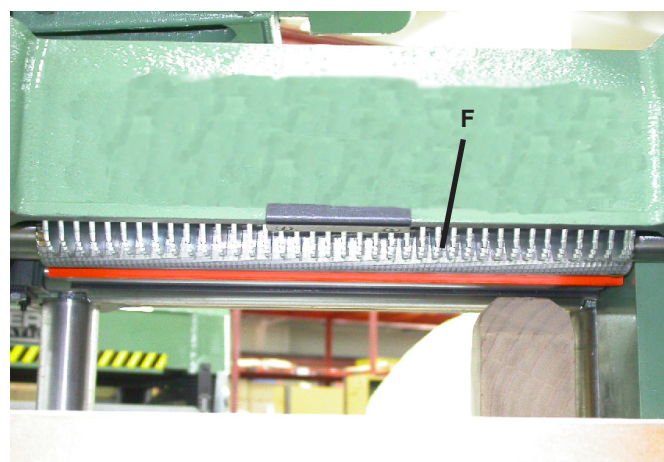


Fig 29

Checking Adjusting Height Of Infeed Roller, Chipbreaker, Pressure Bar And Outfeed Roller

The infeed roller, chipbreaker, pressure bar and outfeed roller are adjusted at the factory. The infeed roller and the Chipbreaker to be set 0.004" (0.1mm) below the cutting circle, the pressure bar to be set 0.008" (0.2mm) below the cutting circle and the outfeed roller to be set 0.02" (0.5mm) below the cutting circle, as shown in Fig. 30 If an adjustment to the infeed roller, chipbreaker, pressure bar or outfeed roller is necessary, use the manner of the example_

EX. To check and adjust the outfeed roller below the cutting circle 0.02" (0.5mm), proceed as follows:

1. Disconnect machine from the power source.
2. Make sure the knives are adjusted properly as previously explained under CHECKING AND ADJUSTING OF KNIVES.
3. Place the gage block (G) on the table directly underneath the cutterhead, as shown in Fig. 31. Using a 0.02" (0.5mm) feeler gage (H) Fig. 31, placed on top of the gage block, raise the working table until the knife just touches the teeter gage when the knife is at its lowest point. Do not move the working table any further until the outfeed roller is adjusted.
4. Move the gage block (G) under one end of the outfeed roller (B) as shown in Fig. 32. The bottom of the outfeed roller should just touch the top of the gage block. If an adjustment to the outfeed roller is necessary, loosen the lock nut (K) Fig. 32. and turn screw (L) Fig. 32 until the outfeed roller just touches the gage block. Then tighten lock nut (K) as shown in Fig. 32.
5. Check and adjust opposite end of the outfeed roller in the same manner.

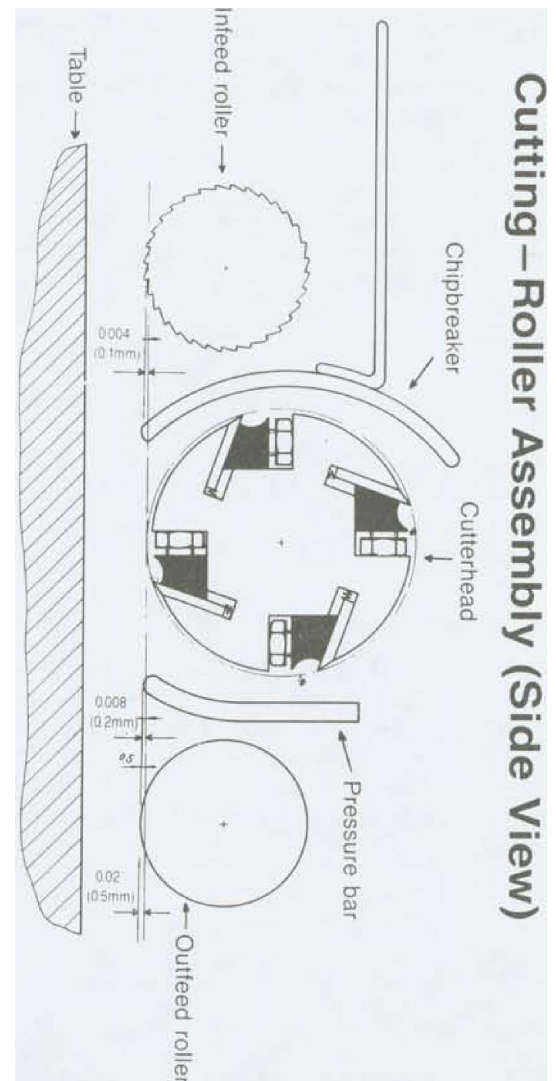


Fig 30

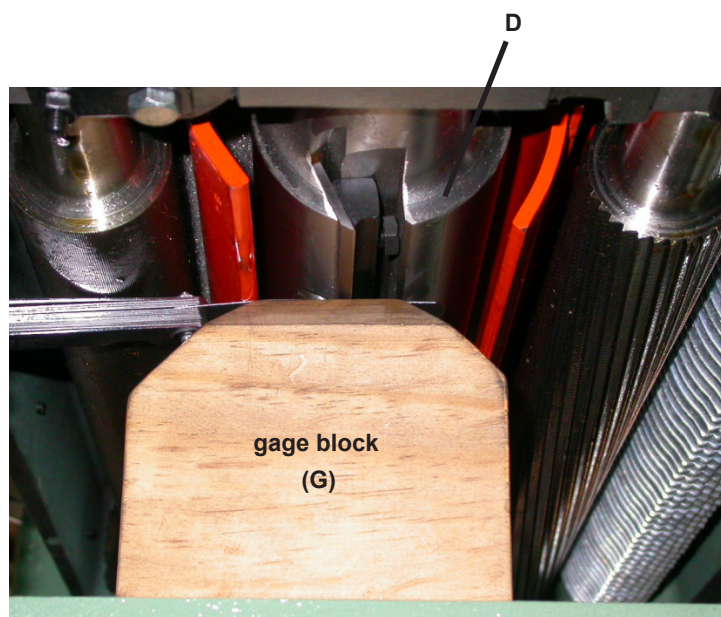


Fig 31

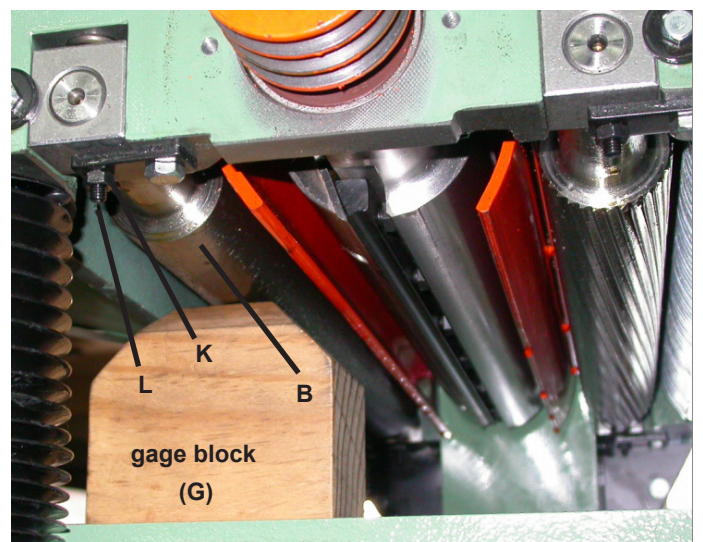


Fig 32

Feed Speed Control

Your machine is equipped with a spiral, serrated infeed roller and a solid steel outfeed roller. When the feed rollers are engaged, they turn to feed the stock. The feed rollers slow automatically when the machine is under heavy load for best planing under all conditions. The feed rollers are driven by chains (D) Fig. 33 and the sprockets (E), which take power directly from the cutterhead through the oil bath gear box (F) Fig. 33.

There are two feed speeds in the gear box by using the shift lever (G) Fig. 33 to pull out or push in, and the feed speed range as shown in Fig. 34.

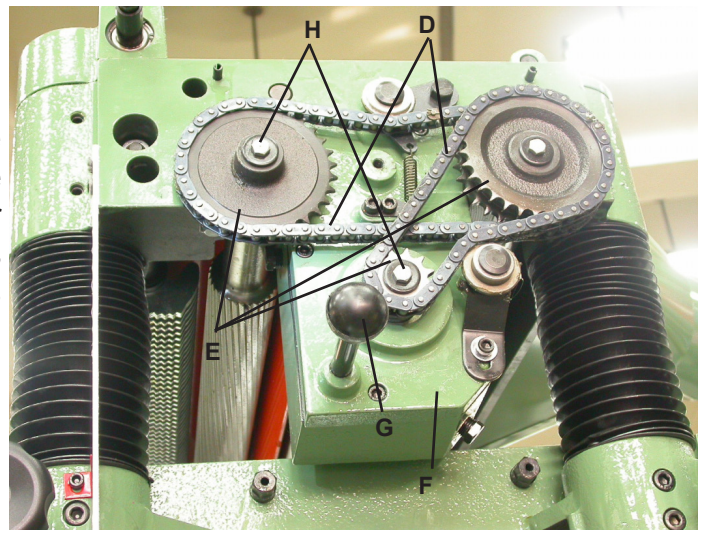


Fig. 33

FEED ROLL SPEED RATE

Speed rate of feed roll is transmitted by shaft gears in gear box.

Shift gears handle, shown as Fig. 34. There are three kinds of operations of gear box by using shaft handle to pull or push. In the position A feed roll is operating on rate 20 FPM. Shown as Fig. 16. In the position B feed roll is operating on rate 0.

In the position C feed roll is operating on rate 16 FPM.

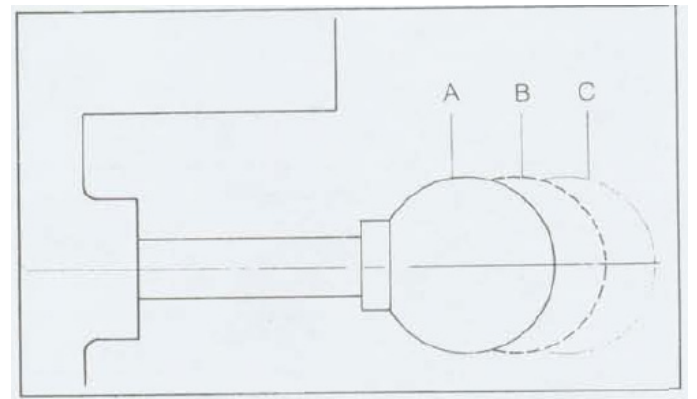


Fig. 34

Return Rollers

The two return rollers (A) Fig. 35 on the top of the machine serve as convenient stock rest. When planed lumber is returned to the infeed side, it saves time and motion, as shown in Fig. 35.

Accessory Dust Collector Hood

Dust collector hood is standard accessory. Assembled to the rear of the planer using Hex. Hd. Screws and washers. It provides an efficient means of maintaining a clean and safe work area as shown in Fig. 35 (B).

WARNING

IF, AFTER READING THIS MANUAL YOU ARE STILL UNSURE ON HOW TO SAFELY OPERATE THIS MACHINE DO NOT OPERATE UNTIL YOU HAVE RECEIVED FURTHER INSTRUCTIONS FROM A QUALIFIED PERSON.

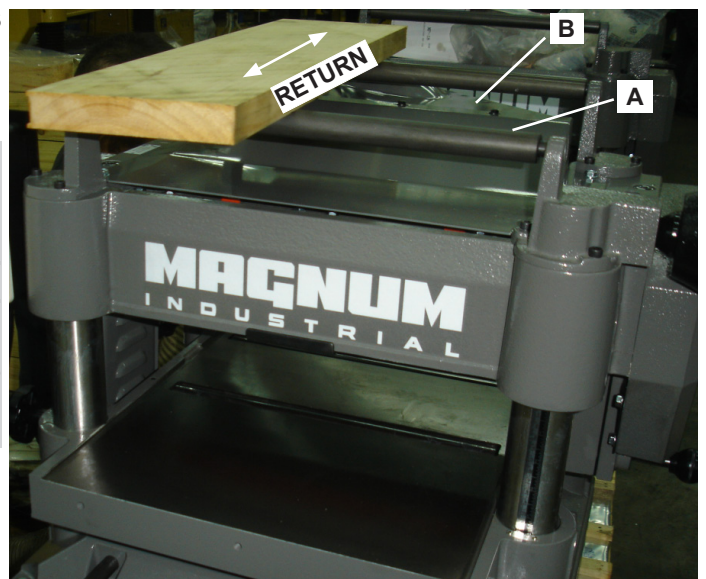
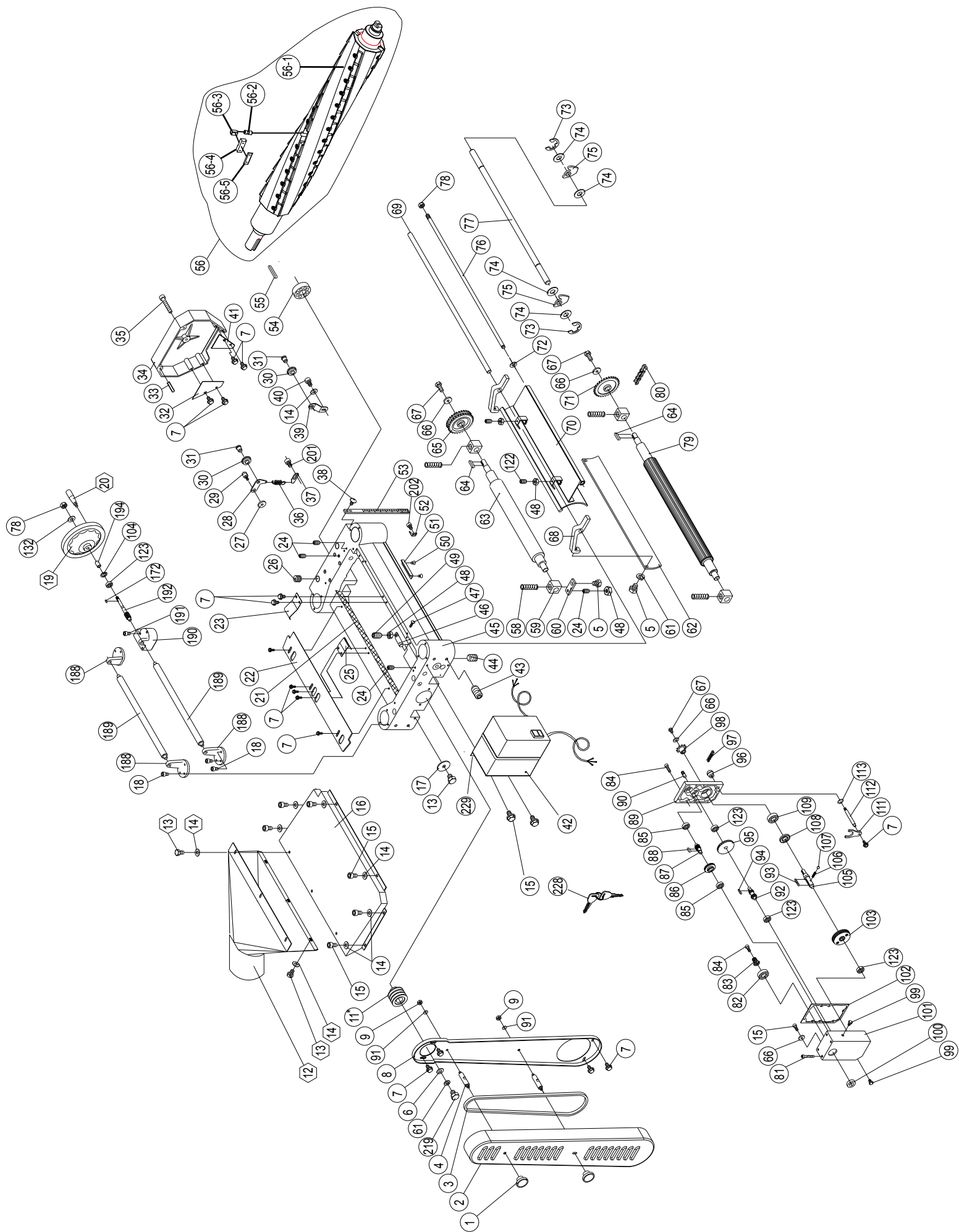
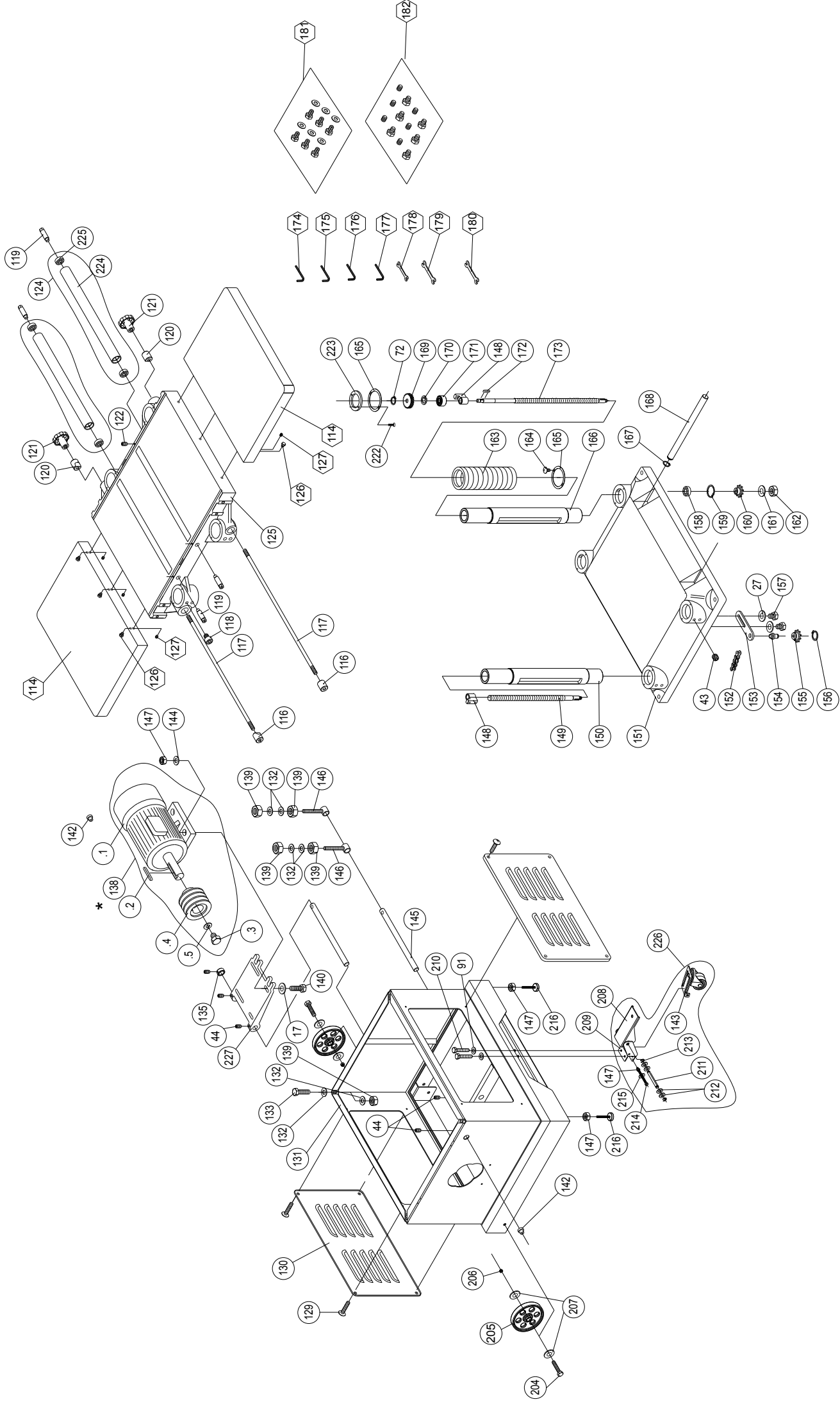


Fig. 35





PARTS LIST FOR MI-31450 / MI-31453

ITEM NO.	PART NO.	DESCRIPTION	SPEC.	QTY
MI-31450-1	230118-000	KNOB		2
MI-31450-2	170871-000	PULLEY COVER		1
MI-31450-3	014009-000	V-BELT	M57	3
MI-31450-4	380147-901	BOLT		2
MI-31450-5	000003-204	HEX. HD. SCREW	M8*1.25P*20	7
MI-31450-6	006001-043	FLAT WASHER	8.2 *30*4.0t	2
MI-31450-7	000902-202	HEX. HD. SCREW	M6*1.0P*12	20
MI-31450-8	170432-000	PULLEY GUARD		1
MI-31450-9	009005-200	HEX. NUT	5/16"-18NC(12.7B*6.75H)	2
MI-31450-11	050273-019	MACHINE PULLEY		1
MI-31450-12	170488-000	DUST CHUTE		1
MI-31450-13	000002-201	HEX. HD. SCREW	M6*1.0P*12	10
MI-31450-14	006002-032	FLAT WASHER	6.6*13*1.0t	14
MI-31450-15	000103-103	CAP SCREW	M6*1.0P*12	9
MI-31450-16	170494-000	UPPER COVER		1
MI-31450-17	006001-056	FLAT WASHER	8.5*23*2.0t	8
MI-31450-18	000103-106	CAP SCREW	M6*1.0P*16	9
MI-31450-19	240018-000	HAND WHEEL		1
MI-31450-20	230114-906	HANDLE		1
MI-31450-21	200021-000	SPONGE		1
MI-31450-22	250172-617	CHIP DEFLECTOR PLATE		1
MI-31450-23	270015-901	SPRING PLATE		3
MI-31450-24	000203-106	SET SCREW	M6*1.0P*16	7
MI-31450-25	270017-901	SPRING PLATE		1
MI-31450-26	380200-901	SCREW		4
MI-31450-27	006001-041	WASHER	8.2*22*3.0t	3
MI-31450-28	170405-901	BRACKET		1
MI-31450-29	290039-901	SHAFT		1
MI-31450-30	130071-000	IDLE PULLEY		2
MI-31450-31	360349-902	SHAFT		2
MI-31450-32	170473-904	SAFETY HATCH		1
MI-31450-33	011004-102	SPRING PIN	6*20	2
MI-31450-34	050292-000	COVER		1
MI-31450-35	000104-112	CAP SCREW	M8*1.25P*40	1
MI-31450-36	280050-000	SPRING		1
MI-31450-37	170406-901	HANGER		1
MI-31450-38	000304-203	PHILLIPS HD. SCREW	M6*1.0P*12	2
MI-31450-39	170474-901	BRACKET		1
MI-31450-40	000103-110	CAP SCREW	M6*1.0P*35	1
MI-31450-41	170475-904	SAFETY HATCH		1
MI-31450-42A	937270-000	MAGNETIC SWITCH	5HP*220V-240V*1PH	1
MI-31453-42B	937331-000	MAGNETIC SWITCH	5HP*220V-240V*3PH	1
MI-31450-43	000205-101	SET SCREW	M10*1.5P*12	16

PARTS LIST FOR MI-31450 / MI-31453

ITEM NO.	PART NO.	DESCRIPTION	SPEC.	QTY
MI-31450-44	000204-103	SET SCREW	M8*1.25P*12	6
MI-31450-45	050293-000	HEAD CASTING		1
MI-31450-46	360385-901	SHAFT		2
MI-31450-47	002301-201	RIVET	2*5	4
MI-31450-48	008005-200	HEX. NUT	M6*1.0P(10B*5H)	8
MI-31450-49	000203-107	SET SCREW	M6*1.0P*20	2
MI-31450-50	000402-202	COUNTERSUNK PHILLIPS HD. SCREW	M5*0.8P*8	2
MI-31450-51	170409-901	CUT LIMITER PLATE		1
MI-31450-52	170476-156	POINTER		1
MI-31450-53	571057-000	SCALE		1
MI-31450-54	033705-000	BEARING	6206-2NKE	1
MI-31450-55	012204-001	KEY	8*8*36	1
MI-31450-56		CUTTERHEAD COMPLETE		1
MI-31450-56-1	30300H-01	CUTTER HEAD		1
MI-31450-56-2	30300H-02	SCREW		58
MI-31450-56-3	30300H-03	NUT		58
MI-31450-56-4	30300H-04	KNIFE-HOLDER /CHIP-BRACKER		58
MI-31450-56-5	30300H-05	CARBIDE INSERT	30*12*1.5MM	58
MI-31450-58	280051-000	SPRING		4
MI-31450-59	130039-000	BUSHING		4
MI-31450-60	170408-902	PLATE		4
MI-31450-61	006305-100	SPRING WASHER	8.2*15.4	3
MI-31450-62	170477-019	PRESSURE PLATE		1
MI-31450-63	360405-000	OUTFEED ROLLER		1
MI-31450-64	012003-008	KEY	5*5*22	2
MI-31450-65	070012-000	SPROCKET		1
MI-31450-66	006001-020	FLAT WASHER	6.2*20*3.0t	4
MI-31450-67	000002-203	HEX. HD. SCREW	M6*1.0P*16	3
MI-31450-68	070016-025	BRACKET		2
MI-31450-69	360386-000	SHAFT		1
MI-31450-70	170478-019	CHIP BREAKER		1
MI-31450-71	070013-000	SPROCKET		1
MI-31450-72	010003-000	RETAINING RING	STW-12	2
MI-31450-73	010209-000	RETAINING RING	ETW-15	2
MI-31450-74	250160-615	COLLAR		56
MI-31450-75	172281-905	ANTI-KICK FINGER		55
MI-31450-76	360387-000	SHAFT		1
MI-31450-77	360388-000	SHAFT		1
MI-31450-78	008009-200	HEX. NUT	M12*1.75P(19B*10H)	2
MI-31450-79	360389-000	INFEED ROLLER		1
MI-31450-80	016308-002	CHAIN	#06B*67P	1

PARTS LIST FOR MI-31450 / MI-31453

ITEM NO.	PART NO.	DESCRIPTION	SPEC.	QTY
MI-31450-81	000104-114	CAP SCREW	M8*1.25P*50	4
MI-31450-82	030109-000	BEARING	6204-ZZ	1
MI-31450-83	320196-000	GEAR		1
MI-31450-84	000103-108	CAP SCREW	M6*1.0P*25	5
MI-31450-85	030701-000	BEARING	6201	2
MI-31450-86	320197-000	GEAR		1
MI-31450-87	320160-000	SHAFT		1
MI-31450-88	012003-003	KEY	5*5*12	1
MI-31450-89	050280-000	COVER		1
MI-31450-90	360355-901	PIN		2
MI-31450-91	006002-046	FLAT WASHER	8.5*16*1.5t	4
MI-31450-92	320205-000	SHAFT		1
MI-31450-93	012004-003	KEY	6*6*40	1
MI-31450-94	012003-002	KEY	5*5*10	1
MI-31450-95	320198-000	GEAR		1
MI-31450-96	250372-615	KNOB		1
MI-31450-97	016304-000	CHAIN	#06B*50P	1
MI-31450-98	150008-000	SPROCKET		1
MI-31450-99	043401-000	OIL PLUG	PT1/4"-19	2
MI-31450-100	043608-000	OIL SEAL	TC28*40*8	1
MI-31450-101	050281-000	GEAR BOX		1
MI-31450-102	340012-615	PACKING PIECE		1
MI-31450-103	922351-000	GEAR		1
MI-31450-104	010102-000	RETAINING RING	RTW-32	1
MI-31450-105	360357-901	SHAFT		1
MI-31450-106	280052-000	SPRING		1
MI-31450-107	017002-000	STEEL BALL	6	1
MI-31450-108	043505-000	OIL SEAL	SC25*47*6	1
MI-31450-109	030306-000	BEARING	6204Z(A)	1
MI-31450-111	070014-000	CLUTCH		1
MI-31450-112	360358-901	HANDLE		1
MI-31450-113	043303-000	OIL RING	P12	1
MI-31450-114	050301-000	EXTENSION WING		2
MI-31450-116	130038-000	LOCK STUD		2
MI-31450-117	360390-000	LOCK BOLT		2
MI-31450-118	000104-104	CAP SCREW	M8*1.25P*16	8
MI-31450-119	360391-000	ECCENTRIC SHAFT		4
MI-31450-120	130037-000	LOCKSMITH		2
MI-31450-121	230115-000	KNOB		2
MI-31450-122	000203-104	SET SCREW	M6*1.0P*12	6
MI-31450-123	030304-000	BEARING	6201Z(A)	4
MI-31450-124	921208-000	TABLE ROLLER COMPLETE		2
MI-31450-125	050302-000	MIDDLE TABLE		1

PARTS LIST FOR MI-31450 / MI-31453

ITEM NO.	PART NO.	DESCRIPTION	SPEC.	QTY
MI-31450-126	000003-105	HEX. HD. SCREW	M8*1.25P*20	6
MI-31450-127	000204-105	SET SCREW		6
MI-31450-129	000403-204	COUNTERSUNK PHILLIPS HD. SCREW	M6*1.0P*20	8
MI-31450-130	170479-000	COVER		2
MI-31450-131	170485-000	STAND		1
MI-31450-132	006002-091	FLAT WASHER	13*28*3.0t	13
MI-31450-133	000005-202	HEX. HD. SCREW	M12*1.75P*50	4
MI-31450-135	190074-901	COLLAR		1
MI-31450-138	901000-000	MOTOR COMPLETE	5HP*220V*60HZ*1PH*2P	1
MI-31450-138.1A	593049-000	MOTOR	5HP*220V-240V*60HZ*1PH*2P-25A	1
MI-31453-138.1B		MOTOR	5HP*220V-*240V*60HZ*3PH	1
MI-31450-138.2	012202-002	KEY	5*5*30	1
MI-31450-138.3	000003-204	HEX. SCREW	M8*1.25P*20	1
MI-31450-138.4	050351-019	MOTOR PULLEY		1
MI-31450-138.5	006001-043	FLAT WASHER	8.2 *30*4.0t	1
MI-31450-139	008009-100	HEX. NUT	M12*1.75P(19B*10H)	8
MI-31450-140	000003-208	HEX. HD. SCREW	M8*1.25P*40	4
MI-31450-142	021602-000	CORD PROTECTOR	5/8"	2
MI-31450-143	920306-000	CASTER		1
MI-31450-144	006001-046	FLAT WASHER	8.5*16*1.5t	4
MI-31450-145	360394-000	BAR		2
MI-31450-146	380249-901	ADJUSTING BOLT		2
MI-31450-147	008006-200	HEX. NUT	M8*1.25P(13B*6.5H)	7
MI-31450-148	130045-000	HEX. NUT		4
MI-31450-149	360395-000	SHORT LEAD SCREW		3
MI-31450-150	050296-000	COLUMN		3
MI-31450-151	050297-000	BASE		1
MI-31450-152	016004-000	CHAIN	#40*166P	1
MI-31450-153	170413-901	BRACKET		1
MI-31450-154	360362-902	SHAFT		1
MI-31450-155	150011-000	SPROCKET		1
MI-31450-156	010006-000	RETAINING RING	STW-15	1
MI-31450-157	000003-205	HEX. HD. SCREW	M8*1.25P*25	2
MI-31450-158	030305-000	BEARING	6202Z(A)	4
MI-31450-159	010103-000	RETAINING RING	RTW-35	4
MI-31450-160	150012-000	SPROCKET		4
MI-31450-161	006001-078	FLAT WASHER	10.5*19*1.5t	4
MI-31450-162	008008-100	HEX. NUT	M10*1.25P(17B*8H)	4
MI-31450-163	250173-615	EXPANSION BEND		8
MI-31450-164	001104-502	PHILLIPS HD. SCREW	M5*2.12P*10	30

PARTS LIST FOR MI-31450 / MI-31453

ITEM NO.	PART NO.	DESCRIPTION	SPEC.	QTY
MI-31450-165	170481-901	PIPE BAND		16
MI-31450-166	050298-000	COLUMN		1
MI-31450-167	010202-000	RETAINING RING	ETW-17	4
MI-31450-168	360396-902	CRANE POST		4
MI-31450-169	320203-000	GEAR		1
MI-31450-170	010104-000	RETAINING RING	RTW-38	1
MI-31450-171	130046-000	BUSHING		1
MI-31450-172	012002-004	KEY	4*4*10	2
MI-31450-173	360397-000	LONG LEAD SCREW		1
MI-31450-174	040003-000	ALLEN WRENCH	3mm	1
MI-31450-175	040004-000	ALLEN WRENCH	4mm	1
MI-31450-176	040005-000	ALLEN WRENCH	5mm	1
MI-31450-177	040006-000	ALLEN WRENCH	6mm	1
MI-31450-178	040201-000	OPEN WRENCH	12*14	1
MI-31450-179	040204-000	OPEN WRENCH	17*19	1
MI-31450-180	040206-000	OPEN WRENCH		1
MI-31450-181	850114-000	DUST CUTE HARDWARE	6.6*13*1.0t	1
MI-31450-182	850115-000	EXTENSION WING HARDWARE	M8*1.25P*25	1
MI-31450-188	050299-000	ROLLER SEAT		3
MI-31450-189	360398-902	ROLLER		2
MI-31450-190	050300-000	WORM GEAR BOX		1
MI-31450-191	000103-113	CAP SCREW	M6*1.0P*50	3
MI-31450-192	320204-000	WORM GEAR		1
MI-31450-194	190008-901	COLLAR		1
MI-31450-201	000103-102	CAP SCREW	M6*1.0P*10	2
MI-31450-202	000102-103	CAP SCREW	M5*0.8P*10	1
MI-31450-204	003005-206	HEX. NUT	3/8"-16NC*2-1/2"	2
MI-31450-205	051068-000	WHEEL		2
MI-31450-206	009102-200	SCREW	3/8"-16NC(14.2B*11.5H)	2
MI-31450-207	006002-077	FLAT WASHER	10.5*19*1.0t	4
MI-31450-208	170486-008	FAD		1
MI-31450-209	170487-008	BRACKET		1
MI-31450-210	003003-209	HEX. SCREW	5/16"-18NC*2"	2
MI-31450-211	360009-901	ROD		1
MI-31450-212	006002-093	FLAT WASHER	13.5*28*2.0t	4
MI-31450-213	010207-000	RETAINING RING	ETW-10	2
MI-31450-214	000003-412	HEX. HD. SCREW	M8*1.25P*100	1
MI-31450-215	006001-045	FLAT WASHER	8.5*16*1.0t	2
MI-31450-216	230041-000	FOOT PAD		2
MI-31450-219	048201-204	HEX. HD. SCREW	M8*1.25P*30	1
MI-31450-222	000303-106	PHILLIPS HD. SCREW	M5*0.8P*16	2
MI-31450-223	380168-901	SPACER		1
MI-31450-224	190007-000	ROLLER		1

PARTS LIST FOR MI-31450 / MI-31453

ITEM NO.	PART NO.	DESCRIPTION	SPEC.	QTY
MI-31450-225	030304-000	BEARING	6201Z(A)	2
MI-31450-226		PEDAL ASSY		1
MI-31450-227	050321-008	MOTOR BASE		1
MI-31450-228		KEY		2
MI-31450-229	171404-904	SWITCH BOARD	5HP*220V-240V*1PH	1