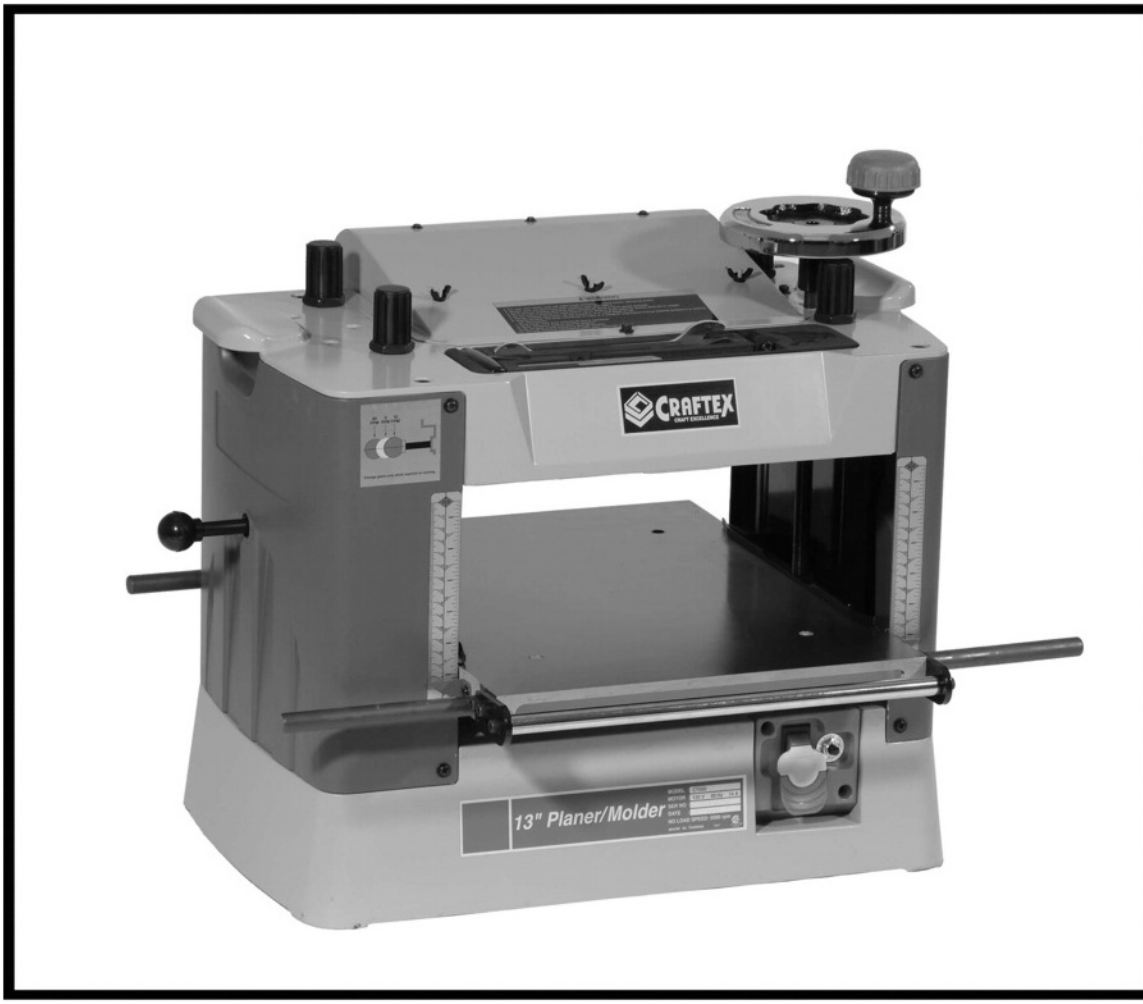
CRAFTEX
CRAFT EXCELLENCE

CT050
13" PLANER / MOULDER



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GENERAL SAFETY RULES FOR POWER TOOLS

1. Know your machine. For your own safety, read the owner's manual carefully. Learn its applications and limitations, as well as specific potential hazards pertinent to this machine.

2. Make sure all tools are properly grounded. If the tool electrical plug has three prongs, it should be used in a three-hole electrical socket. If a three prong or two prong adapter is used, the adapter plug must be properly grounded. Do not remove or disable the third prong.

3. Keep guards in place and in good working order. If a guard must be removed for maintenance or cleaning, make sure it is properly reattached before using the machine again.

4. Remove adjusting keys and wrenches. Form a habit of checking to see that the keys and adjusting wrenches are removed from the machine before turning it on.

5. Keep your work area clean. Cluttered areas and workbenches increase the chance of an accident.

6. Do not use in dangerous environments. Do not use power tools in damp or wet locations or expose them to rain. Keep work areas well illuminated.

7. Keep children away. All visitors should be kept a safe distance from the work area.

8. Make the workshop childproof. Use padlocks, master switches and remove starter keys.

9. Do not force the machine. It will do the job better and be safer at the operating rate for which it is designed.

10. Use the right tools. Do not force the machine or attachments to do a job for which they are not designed. Contact the manufacturer or distributor if there is any question about the machine's suitability for a particular job.

11. Wear proper apparel. Avoid loose clothing, gloves, neckties, rings, bracelets, and jewelry which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

12. Always use safety glasses. Also, wear a face or dust mask if the operation area is dusty. Everyday eyeglasses only have impact resistant lenses. They are not safety glasses.

13. Do not over-reach. Keep proper footing and balance at all times.

14. Maintain machine in top condition. Keep machine clean for best and safest performance. Follow instructions for lubrication and changing accessories.

15. Disconnect the machine from the power source before servicing, when changing accessories and when mounting or remounting motor.

16. To avoid accidental starting, make sure the switch is in the OFF position before plugging in the power cord.

GENERAL SAFETY RULES FOR POWER TOOLS

17. Never leave the machine running unattended. Turn the power off. Do not leave the machine until it comes to a complete stop.

18. Do not use any power tools while under the effects of drugs, alcohol or any medication.

19. Always wear a face or dust mask if operation creates a lot of sawdust and/or chips. Always operate the tools in a well-ventilated area and provide for proper dust removal. Use a dust-collection system whenever possible.

SAFETY RULES FOR CT-236PM PLANER/MOULDER

1. Always stop the motor and disconnect the machine from the power source before making any adjustments or performing any maintenance.

2. Make sure blades are aligned and properly attached to cutterhead.

3. This machine is suitable for wood boards only. Do not attempt to plane other materials.

4. Use quality lumber, with no loose knots, and as few tight knots as possible.

5. Be certain the workpiece is free of nails, screws, stones and other foreign objects which can damage the knives and cause a hazard.

6. Do not operate the planer/moulder without blade cover and chip deflector properly mounted.

7. The knives are extremely sharp. Use caution when handling the knives and cutterhead assembly.

8. Allow the cutterhead to reach full speed before planing or moulding.

9. Do not stand in line with the workpiece on either the infeed or outfeed sides while operating.

10. Never remove jammed pieces until power is off and blade has stopped.

11. Do not plane material shorter than 15", narrower than 3/4", wider than 13" or thinner than 1/2".

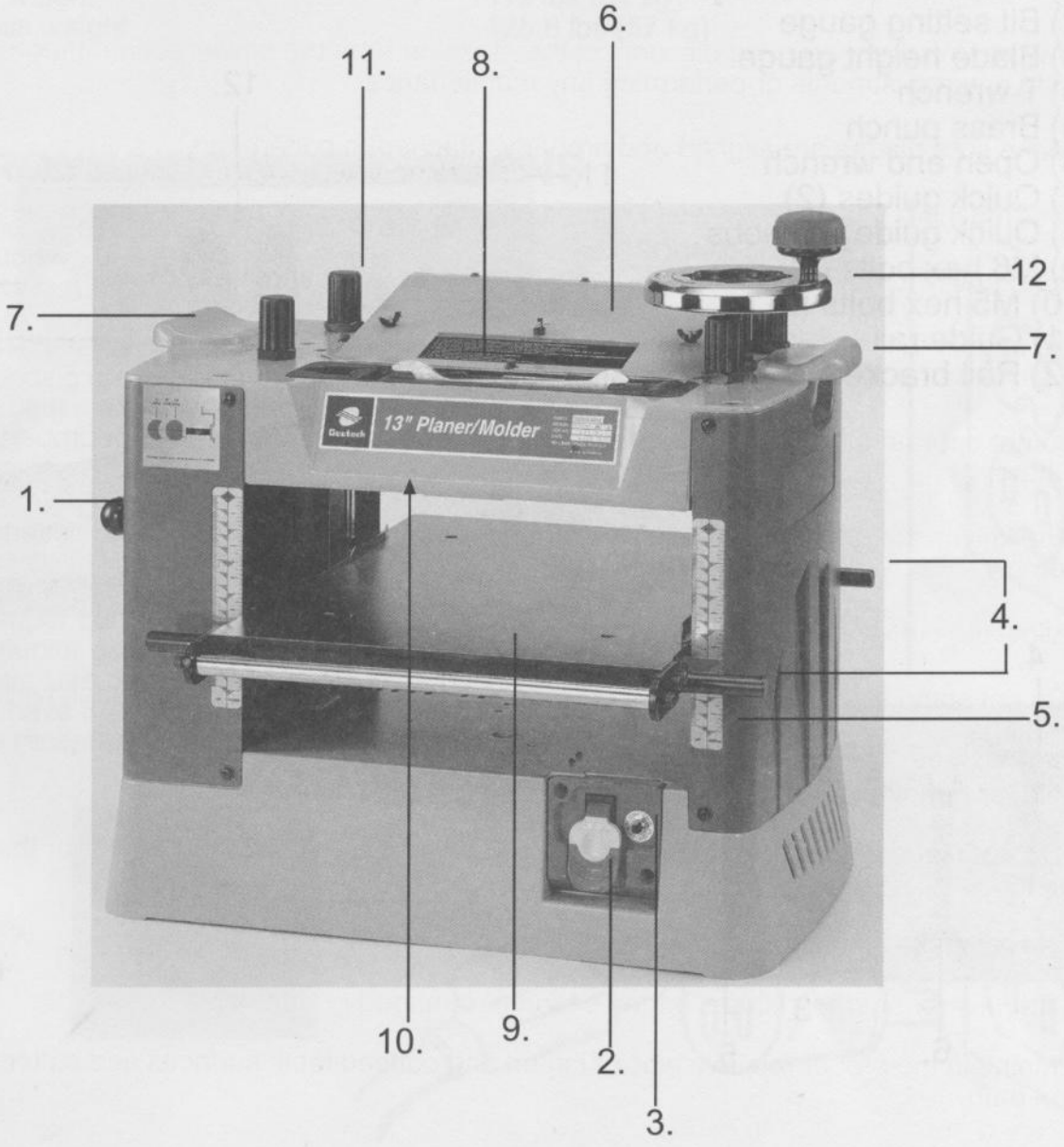
12. Never make planing cuts deeper than 3/32".

13. Replace or sharpen blades if they become damaged or dull.

14. Maintain the proper relationships of infeed and outfeed table surfaces and cutterhead blade path.

MACHINE LEGEND

1. Feedrate adjustment knob
2. ON/OFF Switch
3. Overload reset button
4. Lifting bars
5. Depth scale
6. Blade cover
7. Lifting handle
8. Toolbox
9. Table
10. Infeed roller
11. Elevation screw cap
12. Handwheel assembly



UNPACKING

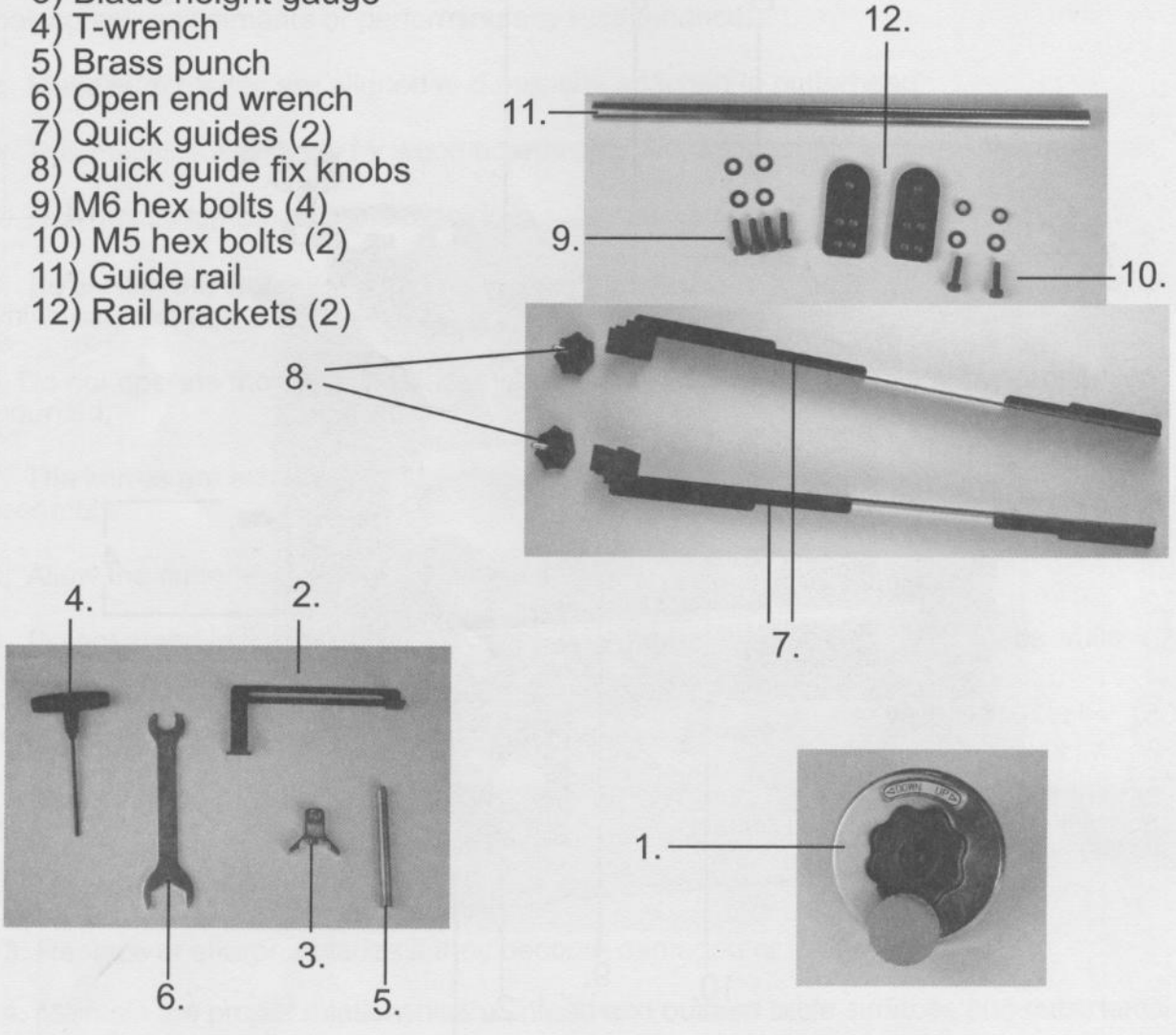
1. The planer/moulder is shipped complete in one carton.

2. Remove the machine from the box and ensure that all parts are present and free of damage. If any parts are missing or damaged, contact your local dealer immediately. Do not attempt to assemble or operate the machine without all components present and in working order.

3. Remove the rust preventative oil that coats the machine with a cloth soaked in kerosene. Do not use gasoline or lacquer thinner, as this can damage the painted parts of the machine.

LOOSE PARTS

1) Handwheel assembly
2) Bit setting gauge
3) Blade height gauge
4) T-wrench
5) Brass punch
6) Open end wrench
7) Quick guides (2)
8) Quick guide fix knobs
9) M6 hex bolts (4)
10) M5 hex bolts (2)
11) Guide rail
12) Rail brackets (2)



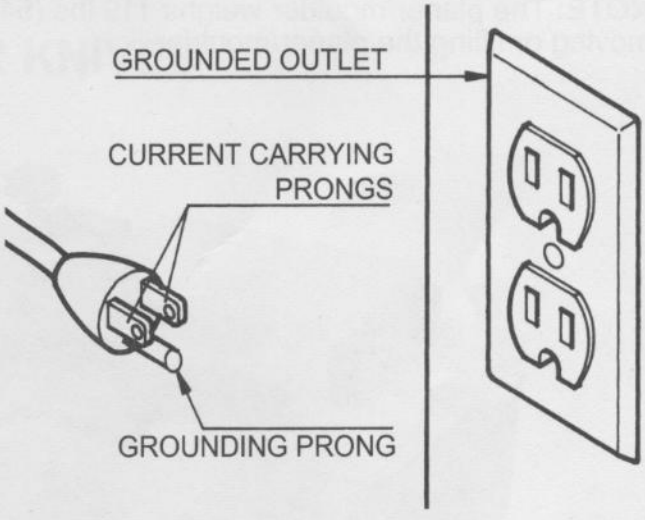
CT-236PM SPECIFICATIONS

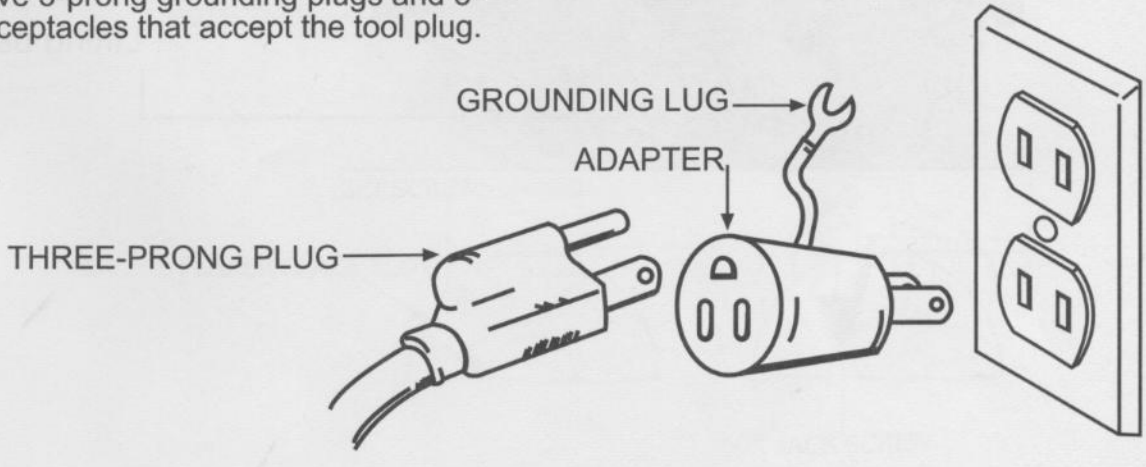
Motor	2HP
Cutterhead speed	5000 RPM
Table area	19" x 14"(490 x 360mm)
Feed speed	Planing: 20 fpm, Moulding: 10 fpm
Number of knives	Planing: 3 Moulding: 3
Maximum depth of cut	Planing: 1/8" (3mm) <5-1/2" 1/16"(1.6mm) >5-1/2"
Maximum width of cut	Planing: 13" (330mm)
Maximum thickness of workpiece	Planing: 6" (152mm)
Minimum length of stock	Planing: 6.7" (170mm)
Handwheel depth adjustment per revolution	1/16" (2mm)
Machine dimensions (L x W x H)	19-3/8" x 25-3/8" x 21-7/8" (490 x 645 x 555mm)
Packing dimensions (L x W x H)	22" x 29" x 22" (560 x 736 x 560mm)
Net weight	119 lbs (54 kg)
Gross weight	125.6 lbs (57 kg)

GROUNDING INSTRUCTIONS

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with a power cord which has an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided- if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

Improper connection of the grounding conductor can result in a risk if electric shock. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool plug.





EXTENSION CORDS

If you use an extension cord, make sure it is in good condition. Use an extension cord of sufficient gauge to carry the current the machine will draw. An extension cord of insufficient capacity will cause a drop in line voltage, and lead to loss of power and overheating. The lower the gauge number, the heavier the cord. Do not use extension cords over 25 ft (7.6m) in length.

ASSEMBLY AND INSTALLATION

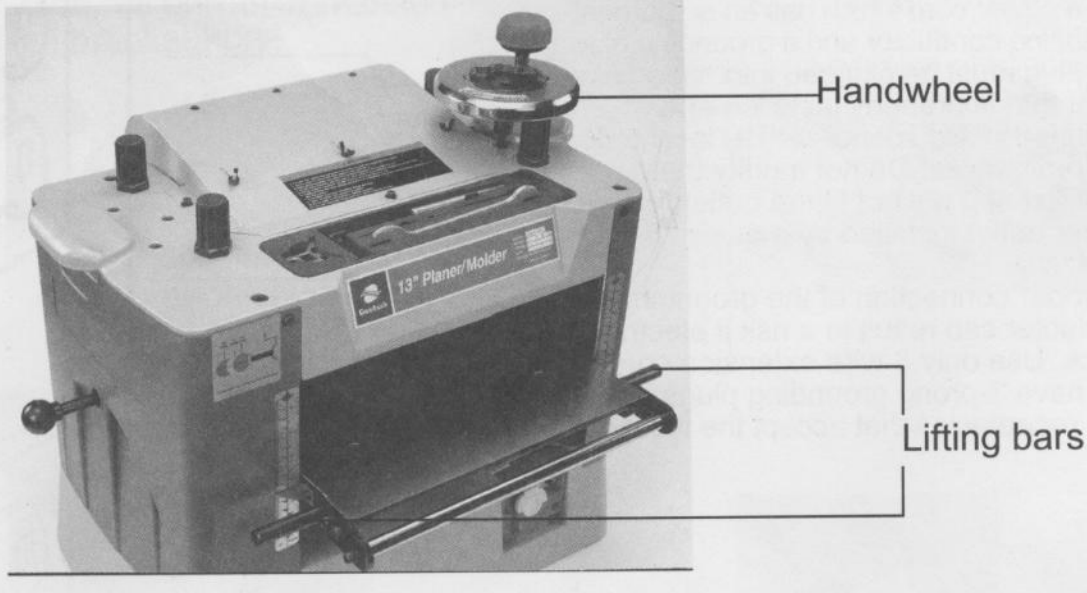
ATTACH HANDWHEEL

Slide the handwheel onto the lead screw so that the spring pin on the lead screw is positioned in the groove on the handwheel. The handwheel should rotate smoothly when attached correctly.

INSTALL PLANER/MOULDER

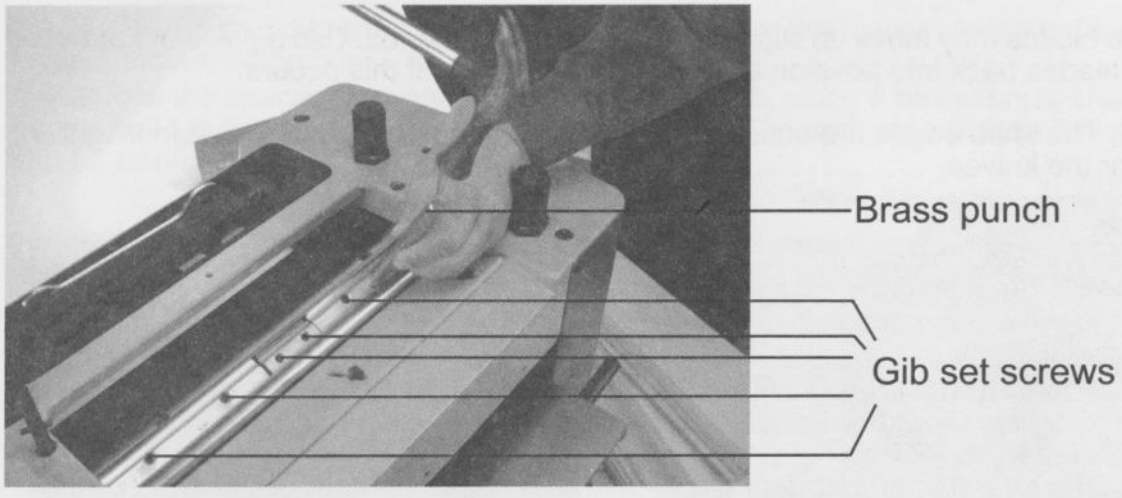
The planer/moulder should be installed on a stable, level surface. If mounting on the stand (optional), bolt the planer/moulder to the stand using the holes on the stand that correspond with the base of the planer. Use four 8-1.25 x 20mm bolts with washers to bolt it to the stand. Tighten the bolts and make sure the machine is level after it and the stand are located at the work site.

NOTE: The planer/moulder weighs 119 lbs (54 kg). Have another person help you when moving or lifting the planer/moulder.



REPLACING THE PLANER KNIVES

1. Disconnect the planer/moulder from the power source.
2. Remove the blade cover by unscrewing the three screws.
3. Use the T-wrench to loosen the set screws on the gibs.
4. Tap all the gibs down into the cutterhead slot using the brass punch and a hammer. Make sure all the gibs are loose and can be moved.

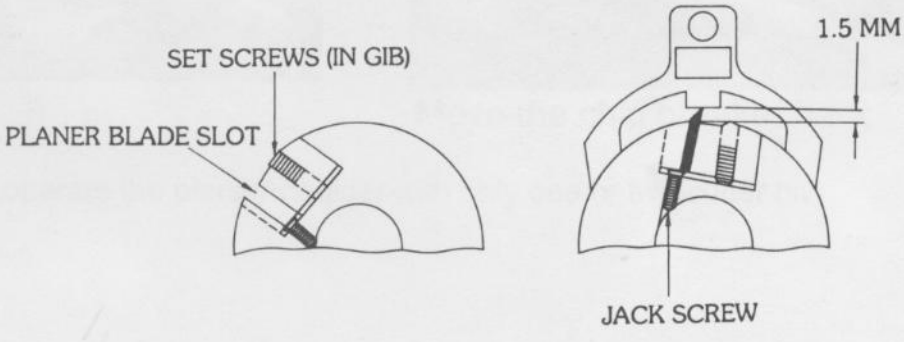


5. Remove the old blades, all gibs and spacers.
6. Make sure the cutterhead slots and gibs are clean.

INSTALLING THE PLANER KNIVES

1. Install the gibs first, planer blades, then spacers.
2. Tighten the gib set screws just enough to hold the gibs and blades in position.
3. Make sure the gibs are flush, and the spacers are positioned correctly.

NOTE: The knives must rest firmly on the jack screws.

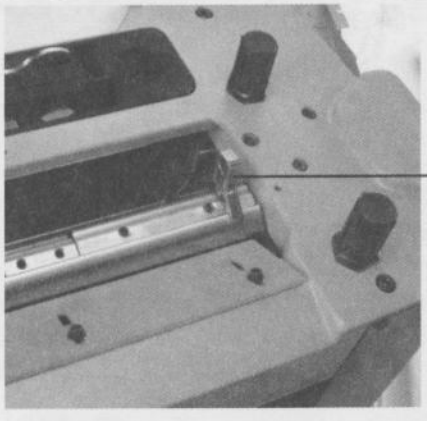


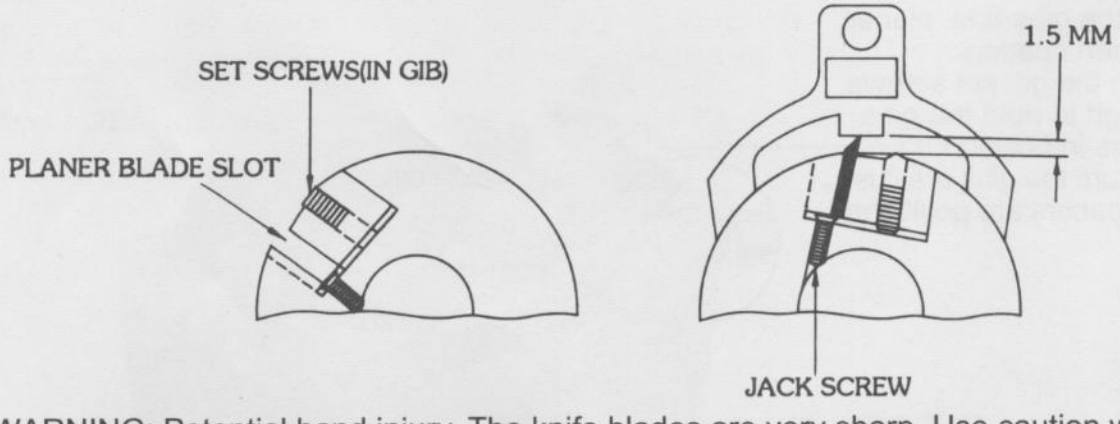
KNIFE SETTING

1. Place the blade height gauge on one end of the blade and turn the jack screw until the blade just comes into contact with the tab in the middle of the gauge.
2. The knife setting should be made on the right, left and center parts of the knife. All three blades should be the same height.
3. Tighten the gibs slowly, making sure that all three blades and gibs are tight and secure after adjustment.

NOTE: The blades may move up slightly as the gibs are tightened. Use a piece of hardwood to tap the blades back into position against the jack screws if this occurs.

CAUTION: The knife edges are susceptible to chipping. Use caution when handling the gauge near the knives.





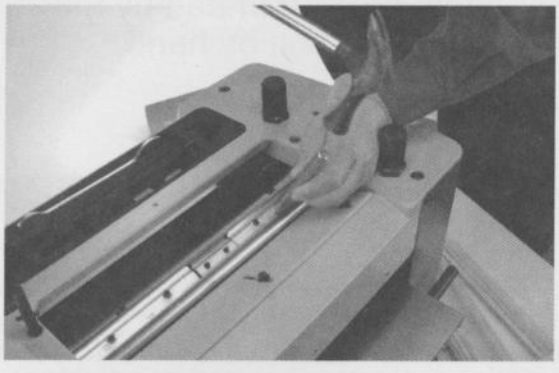
WARNING: Potential hand injury. The knife blades are very sharp. Use caution when moving hands near the knife edges.

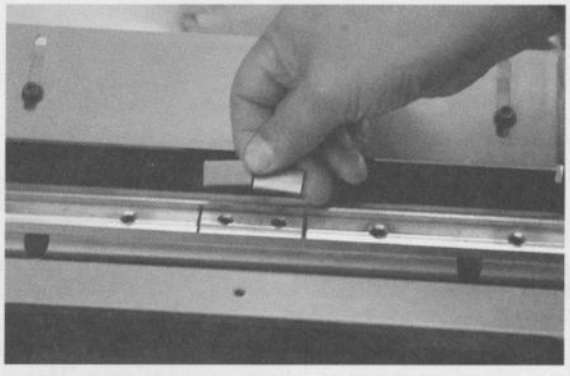
INSTALLATION OF MOULDING CUTTER BITS

Moulding cutter bits fit directly into the center of each cutterhead slot and can be used with the planer blades so that you can actually plane and mould in one pass.
The planer/moulder accepts two thicknesses of cutter: 3.8mm and 6.3mm. For the 3.8mm cutter thickness, only loosen the short gib, using a piece of aluminum or brass to tap down the wedge piece. For 6.3mm thickness, remove all gibs and replace with special gibs for the 6.3mm thickness.

CAUTION: Always disconnect the planer/moulder from the power source before changing knives and moulding bits.
1. Remove the spacer. Loosen the gib screw in the gib, using a hex wrench. Use the brass punch and tap the gibs down in the cutterhead slot. The spacers will then be loose and can be removed.

Remove spacers

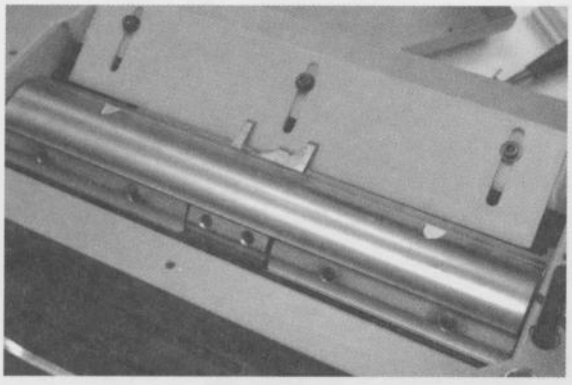


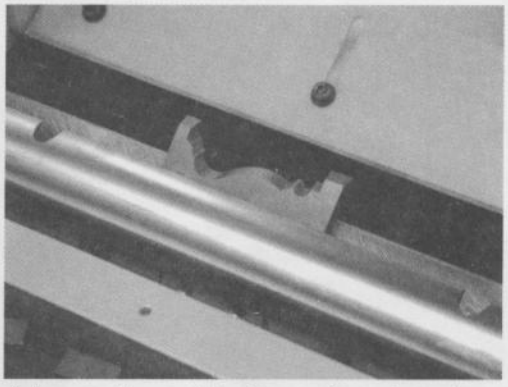


2. Install cutter bits. Select the desired pattern of moulding cutter bit and fit it into the hole left by the spacer, so that it has the same cutting direction as the planer blade. Be sure to keep each cutter bit tight against the gib.

3. Tighten the gib screw. Tighten the gib screw with the hex wrench, forming a wedge-type seal. Most cutter bits come in sets of three for all operations.

4. Move the chip breaker and blade guard back to the rearmost position.



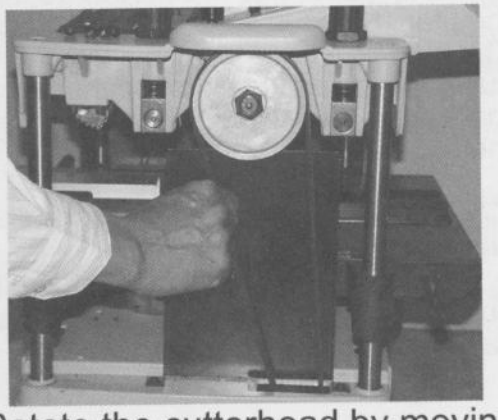


Move the chip breaker back

WARNING: Do not operate the planer/moulder with only one or two cutter bits.

INSTALLATION OF MOULDING CUTTER BITS

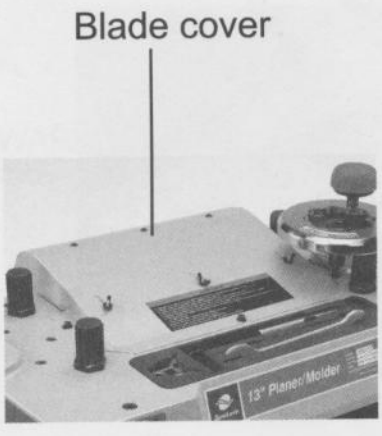
5. Make sure all bits and gibs are tight and secure.
6. Remove the bit setting gauge. Replace the blade cover and the chip deflector. Remove the right side cover and turn the cutterhead by moving the V-belt with your hand. Make sure that the chip deflector does not contact the bits when the cutterhead turns.
WARNING: Never operate the planer/moulder without the blade cover and chip deflector mounted.
CAUTION: In order to prevent damage to the cutterhead, use caution when mounting gibs in the cutterhead slots.

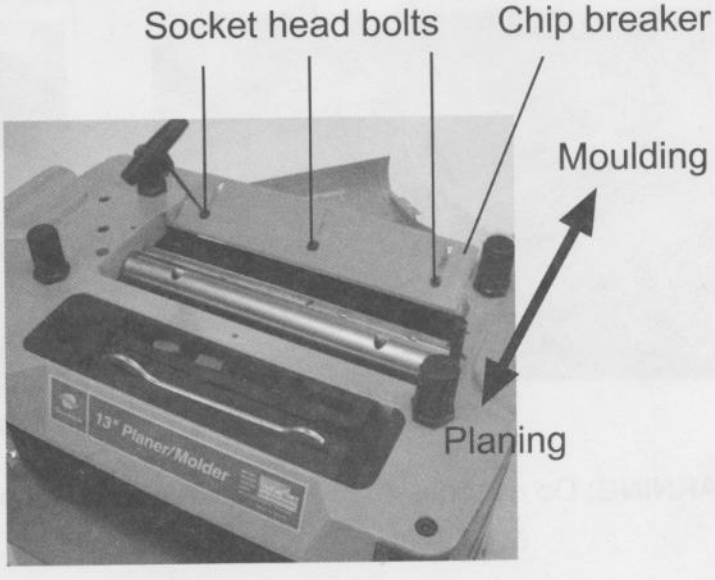


Rotate the cutterhead by moving the belt by hand.

MOVING THE CHIP BREAKER

1. The chip breaker directs the wood chip and sawdust flow away from the cutterhead during planing or moulding operations. When the cutting tools are changed or adjusted, the chip breaker will need to be adjusted.
2. When planing, move the chip breaker to the extreme forward position, when moulding, move it to the extreme rear position.
3. Remove the blade cover. Loosen the three socket head bolts that hold that hold the chip breaker, and position it as close to the cutterhead as possible.
4. Rotate the cutterhead by turning the belt as shown above to ensure that there is no interference with the chip breaker.
5. Tighten the three socket head bolts.
6. Replace and secure the blade cover.
WARNING: The blades are extremely sharp! Use caution when performing an operation that requires you to move your hands near the blades.

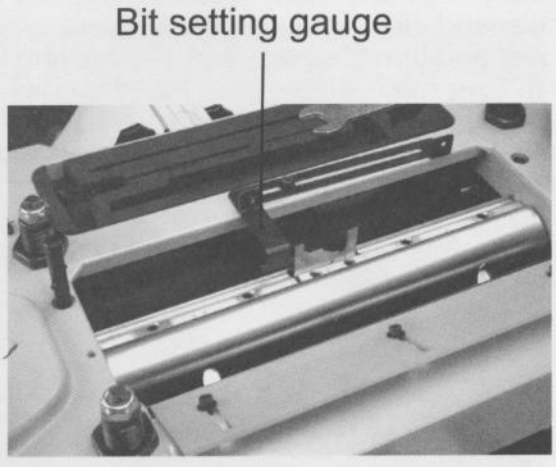




ALIGNING THE MOULDING CUTTER BITS

The bit setting gauge is used to ensure that all three cutter bits cut the workpiece in the same position.

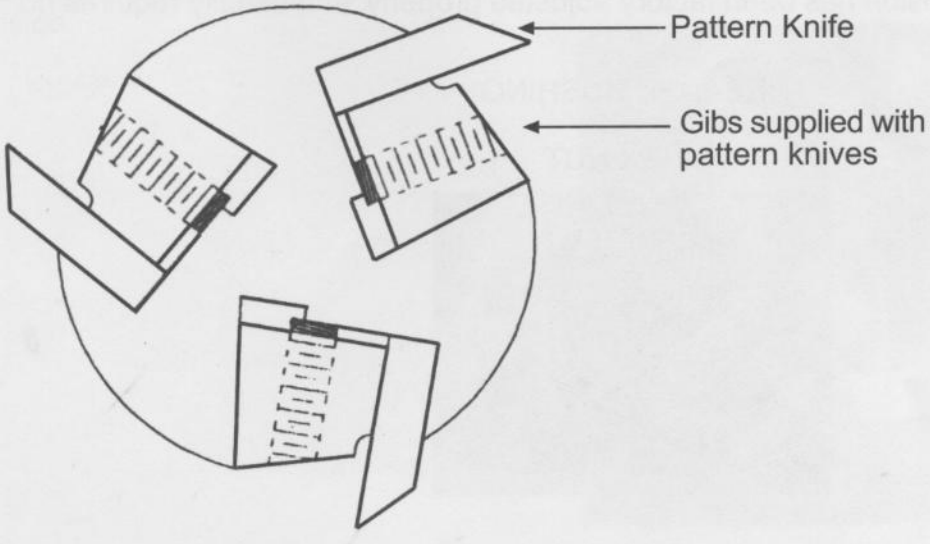
1. Use the 5mm hex wrench to mount the bit setting gauge to the top of the planer/moulder, as shown in left figure. Mount the gauge so that the is a small gap between the gauge and the cutter bit.
2. Rotate the cutterhead so that the second cutter bit is near the gauge. Make sure its position corresponds to the first cutter bit.
3. Do the same for the third cutter bit.
4. Remove the bit setting gauge, and replace the blade cover after cutter bits have been installed and aligned.



INSTALLING PATTERN KNIVES

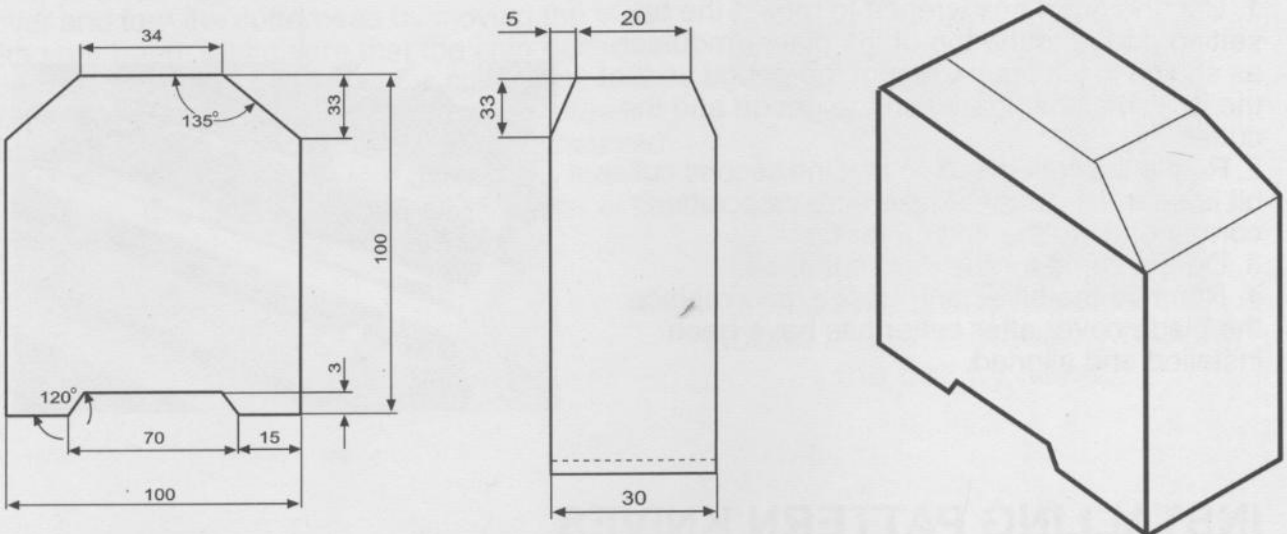
Pattern knives (sold separately) are 1/4" thick and come supplied with gibs. It is important to use only the gibs that come supplied with the pattern knives when installing pattern knives onto the cutterhead. To install pattern knives:

1. Loosen the six set screws in one of the cutterhead slots.
2. Use the brass punch to tap the gibs down into the cutterhead slot.
3. For 3.8mm (5/32") thick pattern knives, only remove the short gib from the center of the cutterhead.
4. Remove all gibs, spacers, cutter bits and planing blades.
5. Do the same to the other cutterhead slots.
6. Clean all the slots of debris and/or grease.
7. Place the first pattern knife in the slot along with the accompanying gib.
8. Move the pattern knife so that there is a small gap between the knife and the gauge and tighten the gibs in the cutterhead.
9. Loosen the three socket head bolts and position the chipbreaker.
10. Install the other two pattern knives in the same way.



MAKING AN ADJUSTMENT BLOCK

Make an adjustment block out of scrap hard wood according to the diagrams shown below. Make sure the top and bottom surfaces are smooth.



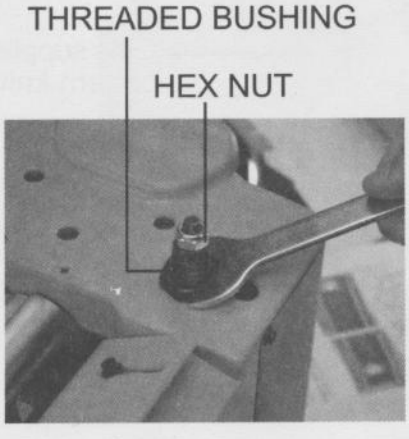
unit: mm Values are for reference only

FEED ROLLER ADJUSTMENT

The planer/moulder feed roller elevation is adjustable. The infeed and outfeed rollers are factory set at 3/16" below the cutterhead. The infeed and outfeed rollers should be set 5/16" below the cutterhead for moulding operation using the pattern knives. Feed rollers must be adjusted properly for smooth workpiece feed.

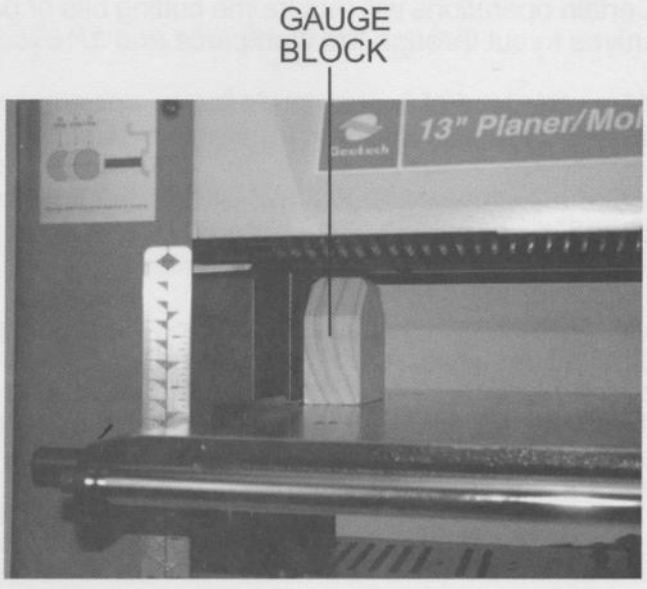
To adjust the feed roller height for moulding:
1. Place a workpiece on the table under the feed rollers, and lower the feed rollers to check the height.
2. Turn and open the plastic cap on each feed roller adjustment screw.
Using the supplied wrench, loosen the feed roller lock nut.
3. Raise or lower the feed roller height adjustment screw until proper feed roller height is obtained. Usually the proper height for the feed roller is 3mm deflection when holding the workpiece.
4. Tighten the feed roller lock nut after adjustment.

NOTE: The spring tension has been factory adjusted properly, and usually requires no further adjustment.

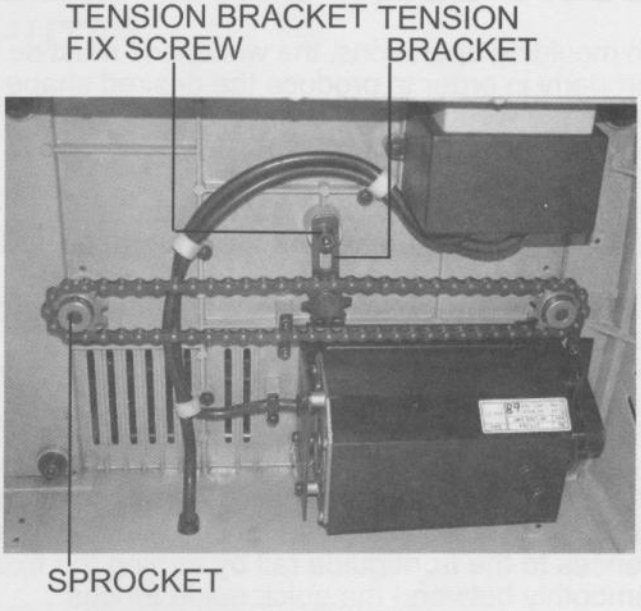


MAKING THE CUTTERHEAD AND WORKTABLE PARALLEL

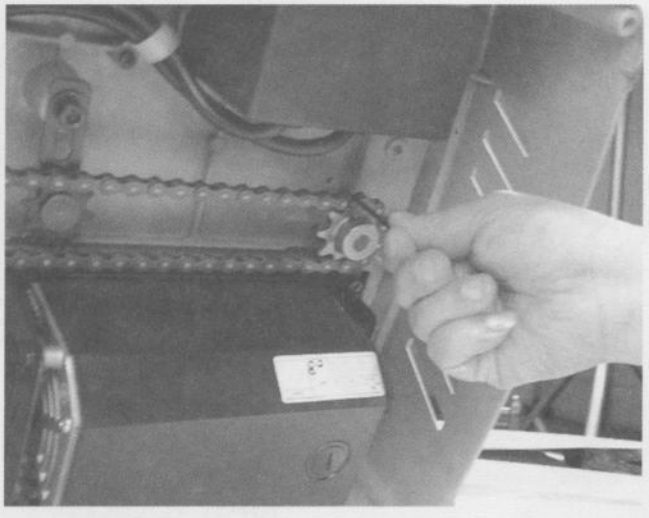
The table is factory set parallel to the cutterhead and should need no further adjustment. If the machine is producing a tapered cut instead of a flat one, check the blades to ensure that they are set properly. If they are, then the table may need to be adjusted parallel to the cutterhead.



1. Disconnect the planer/moulder from the power source.
2. Place the adjustment block on the table at the outside end of the cutterhead. Do not adjust the table position until both sides of the cutterhead have been checked. Check that the block just comes into contact with the cutterhead. The block should not contact the blades, it should contact the cutterhead outside diameter.



3. Slide the block to the other side of the cutterhead. Check to see that the block just comes into contact with the cutterhead.
4. If both sides are the same height, then no adjustment is necessary.
5. To adjust the table, loosen the bolt that fastens the tension bracket assembly.
6. On the side of the table to be adjusted, remove the chain from the sprocket, and turn the sprocket by hand. Only a slight adjustment (one or two teeth) should be necessary.
7. Rotate the sprocket until the table is parallel to the cutterhead.
8. Put the chain back on the sprocket, and make sure that the chain has the correct tension.

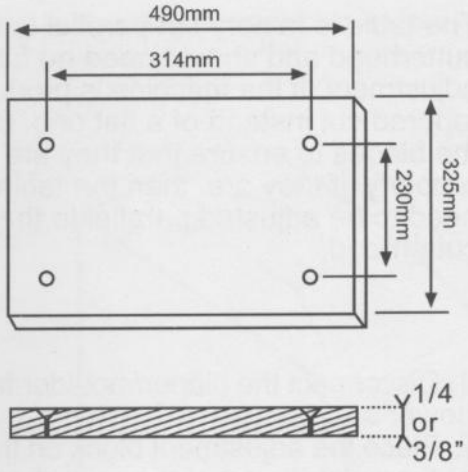


INSTALL BEDBOARD

Certain operations will require the cutting bits or pattern knives to cut through the workpiece and 1/16" beyond it.
When this kind of final sizing is to be performed, install a bedboard onto the cast iron table.

Make a bedboard out of 1/4" or 3/8" thick board, 12-3/8" wide and 31-1/4" in length. Any type of wood material can be used.

Mount the bedboard to the cast iron table using four 3/8 x 1" flat head screws (not included). Be sure to countersink the mounting holes on the bedboard for the flat head screws. The screws must not protrude above
the surface of the bedboard.



USING QUICK GUIDE FENCES

In moulding operations, the workpiece must be guided into the molding cutter bits or knives properly in order to produce the desired shape and size moulding. The quick guide fences allow the workpiece to pass the molding bits in the same position using multiple passes.

To install the quick fences:
1. Install the molding bits in the cutterhead.
2. Lower the table and turn the cutterhead so that one of the cutter bits is at the lowest position.
3. Position the workpiece beneath the cutter bit. Make sure it is aligned exactly as it is to be cut.
4. Place the quick guide fences on the bedboard (if you are using one), or the table with the clamps positioned at the front.
5. Loosen the hex bolts that fasten the front guide rail to the infeed table.
6. Move the guide rail up so that it will fit into the slots on the front of the quick guides.
7. Retighten the hex bolts on the front guide rail.
8. Position the quick guide fences laterally to either side of the workpiece, and tighten the fences to the front guide rail by turning the fix knobs. Make sure the workpiece can slide smoothly between the quick guide fences.

SETTING UP FOR MOULDING

1. Attach the bedboard.
2. Install the required moulding bits. Align the workpiece with the moulding bits.
3. Install the quick guide fences.
4. Raise the table until the workpiece just contacts the infeed roller.
5. Note the height of the table as shown on the scale.
6. Lower the table and remove the workpiece.
7. Raise the table back to the position noted- where the workpiece just came ointo contact with the infeed roller. Rasie the infeed table further by one complete turn of the handwheel. Note the table position on the depth scale. This position is the first pass measurement.

ANTI-KICKBACK PAWLS

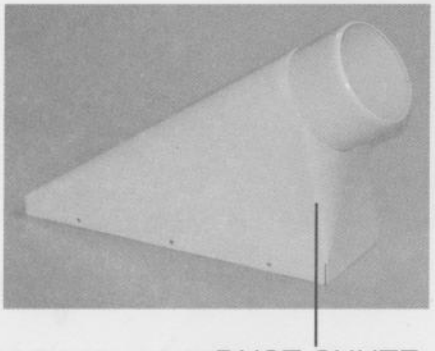
The machine is equipped with anti-kickback pawls that prevent kickback when the workpiece feeds through the planer/moulder. During kickback, the workpiece can be thrown back at the operator. It can also drag the operator's hand into the blade if the operator's hand is in the wrong place. To prevent the danger of kickback, do not stand in-line with the workpiece during operation, and do not allow your hands to approach the cutterhead while the machine is running.

DUST COLLECTOR CHIP CHUTE

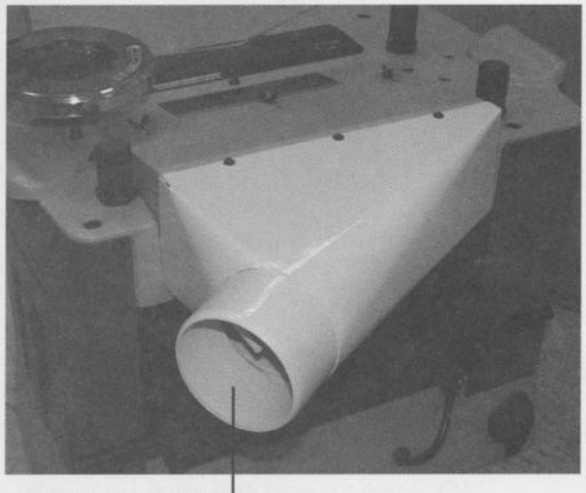
A dust chute (optional) can be used to connect the machine to a dust collector. To use the dust chute, first install it by the following steps:
1. Turn off the machine and disconnect it from the power source.
2. Remove the three pan head screws that are used to attach the chipbreaker to the moulder.
3. Remove the chip deflector.
4. Attach the dust chute so that the slots on the blade cover are aligned above the holes on the dust chute.
5. Use the three pan head screws and washers to attach the dust chute to the blade cover.
6. Use three 6-1.0 x 8mm socket head bolts and three 6mm flat washers to fasten the dust chute to the roller case.

The dust chute has a 4" diameter outlet, for use with a 4" hose. Attach a correct sized hose to the dust chute and the dust collector.

NOTE: Always turn on the dust collector before turning on the planer/molder.



DUST CHUTE



ATTACH 4" HOSE

OPERATION- DEPTH OF CUT

Thickness planing is the sizing of a workpiece to a desired thickness, while creating a surface level to the opposite side of the board. The quality of thickness planing depends on the depth of cut. The proper depth of cut setting must take into account the following factors:
Workpiece width
Hardness
Amount of moisture in the wood
Grain direction
Grain structure

The maximum thickness per pass for planing is 3/32". Optimum planing results are achieved when the depth of cut is less than 1/16". Do not cut more than *" in moulding operations.

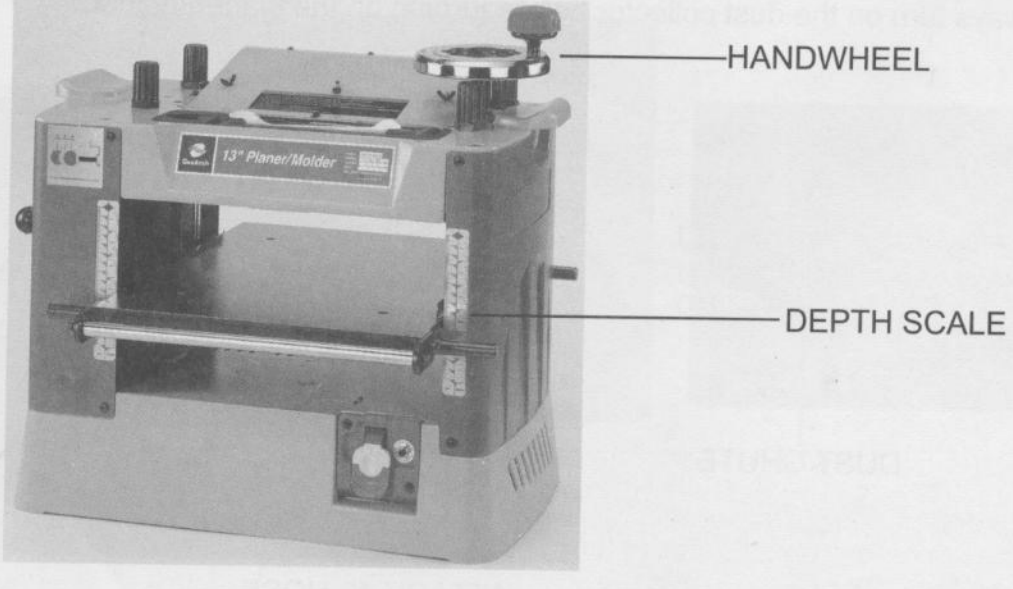
For planing, use shallow cuts to create a flat surface on one side of the workpiece. Then plane the workpiece on alternate sides until the desired thickness is achieved. Use shallower depths of cut when planing wider workpieces, or when working with hardwoods.

NOTE: Make a test cut whenever working with a new type of wood or when performing a new kind of cut. Check the accuracy of the test-cut workpiece before starting work on your finished product.

ADJUSTING DEPTH OF CUT

The planer/moulder is equipped with a depth scale, which indicates the depth of cut. To adjust the depth of cut, turn the handwheel on top of the machine. Clockwise rotation lowers the table, and counterclockwise rotation raises the table, increasing and decreasing the depth of cut respectively. The table will move 1/16" with every complete revolution of the handwheel.

1. Make a test cut on a piece of wood and measure the thickness resulting from the cut.
2. Check the measurement of the test workpiece to the measurement on the scale. If the measurements are not the same, then loosen the pan head screw on the indicator and set the indicator to show the actual thickness.
3. Make sure that both indicators are adjusted properly.



CHANGING FEED SPEED

The planer/moulder has a two-speed gearbox that allows for two feed speeds: 20 feet per minute for standard planing, and 10 feet per minute for slow planing or moulding. Slow planing can achieve a better surface finish on the workpiece.

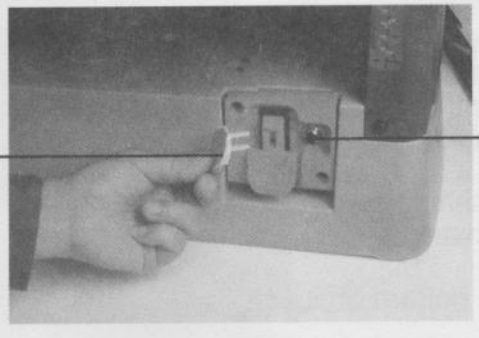
To adjust the feed rate, shift the feed rate adjustment knob on the left side of the machine as indicated by the plate on the machine front. Pull the knob out to its farthest position for 20 ft/min feed speed, push it all the way in for 10 ft/min, and shift it to the middle position for neutral (no powered feed). Only change the feed speed while the machine is running.

PLANING OPERATIONS

1. Set the table height to the desired depth of cut.
2. Stand on the side of the machine to which the handwheel is attached.
3. Place the workpiece on the infeed table. Workpieces longer than 24" should have extra support.
4. Slide the workpiece to the infeed side of the planer/moulder until the workpiece is caught by the powered infeed roller.
5. Release the workpiece and allow the powered feed to move the workpiece through the machine.
6. Do not push or pull the workpiece.
7. Move to the rear of the machine and receive the workpiece as it comes out the outfeed side. Do not stand in-line with the feeding path of the workpiece.
8. Do not grasp any part of the workpiece which has not passed the outfeed roller.

ON/OFF SWITCH

The planer/moulder is equipped with a paddle switch and a removable lock key. When the machine is not in use, turn the power off and remove the lock key as shown. Store the key in a safe place to prevent unauthorized operation of the machine.



OVERLOAD RESET

The planer/moulder is equipped with an overload protection breaker. The breaker will trip in case of electrical overload on the motor, providing protection to the machine. If the planer/moulder stops running during planing or moulding operations, unplug the machine and turn the power switch OFF. Allow the motor to cool, then press the overload reset button, reconnect the machine to the power source, and turn the power back ON.

MAINTENANCE

1. Keep the planer/moulder clean of wood chips, dust, dirt or debris.

2. Keep the machine in good operating condition.

3. Apply a thin coat of paste wax to the tables so that wood slides easily during feed.

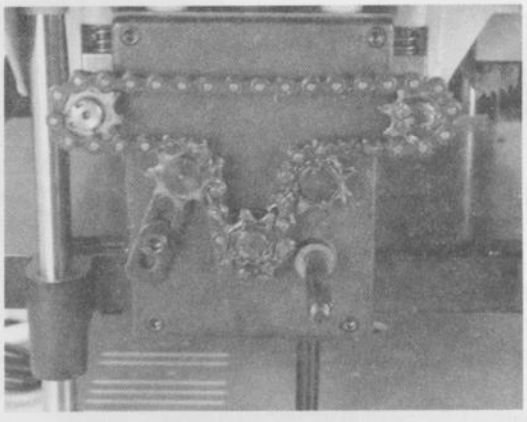
4. Do not allow chips or saw dust to accumulate under the planer/moulder. Check and empty the collection bag on the dust collection system often.

5. Clean the four steel columns to ensure smooth traverse of the table.

6. Keep the anti-kickback pawls clean and operating smoothly.

7. After every ten hours of operation, clean the chain/gear drive mechanism.

Keep the chain/gear drive mechanism clean and and lubricated with standard bearing grease.

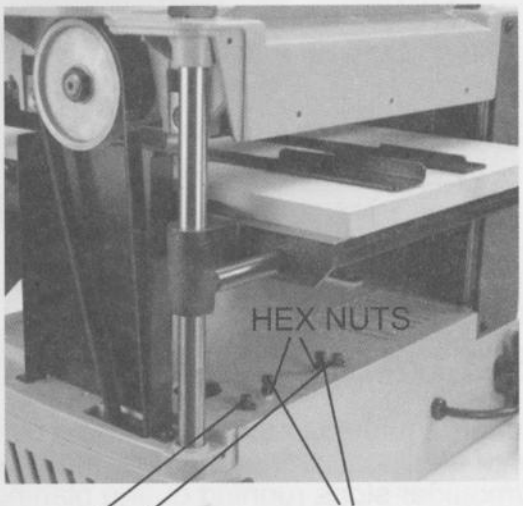


LUBRICATION

The bearings and cutterhead are factory lubricated and sealed. They require no further lubrication. The table can be lubricated with a paste wax for smoother workpiece feed. However, make sure that the lubricant used will not stain the wood, or affect the ability of the wood to take any coatings that may be applied later on the job.

ADJUSTING THE V-BELT

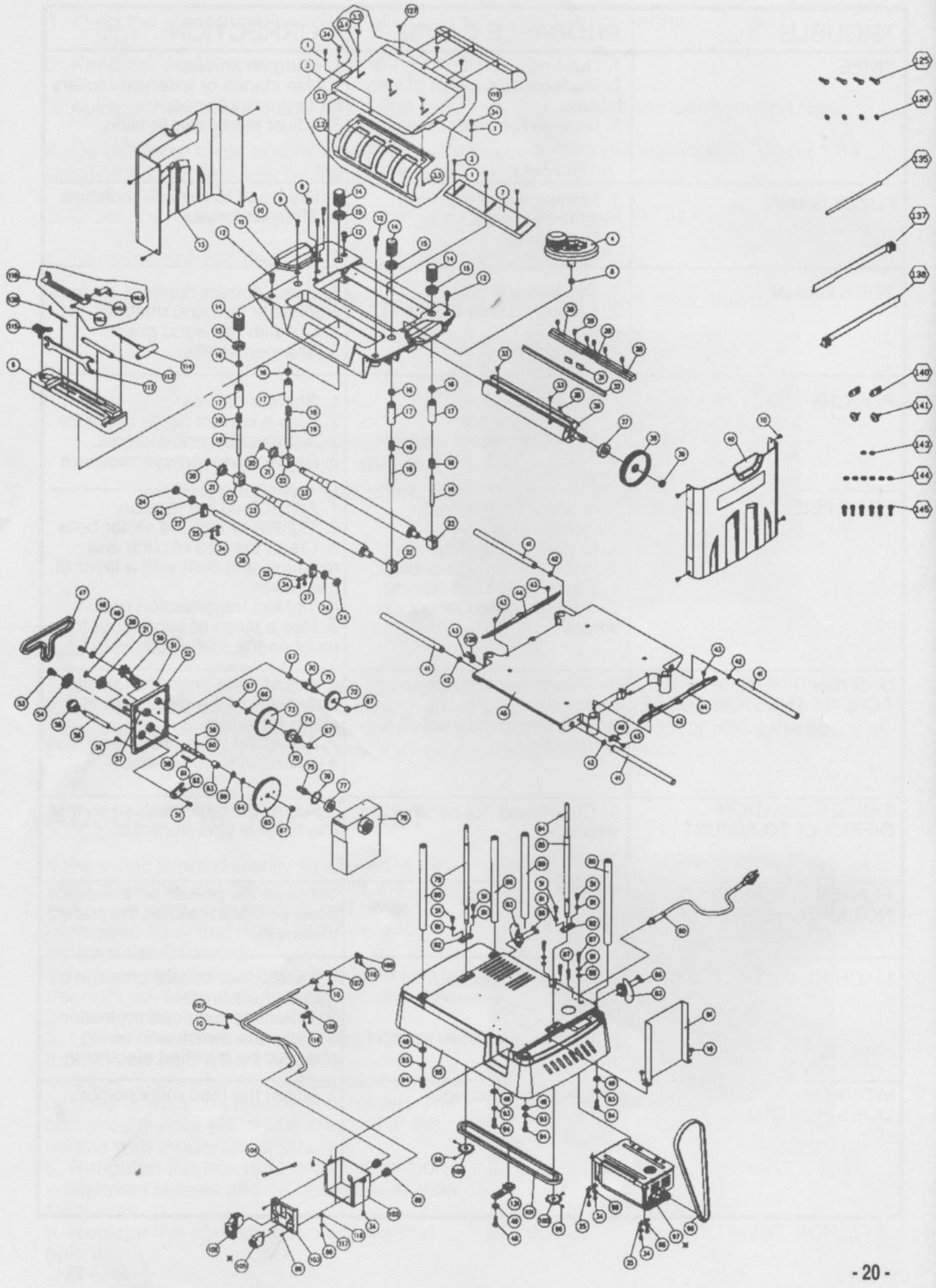
If the V-belt is not correctly tensioned, it may slip from either the motor pulley or the drive pulley, causing poor feeding and other problems. To adjust the V-belt tension, perform the following:
1. Loosen and remove the screws that fasten the right cover, and remove the cover.
2. Loosen the tension fix screws.
3. Loosen the two hex nuts at the bottom of the tension adjustment screws.
4. Adjust the two tension adjustment screws until the correct belt tension is achieved. The belt should yield 1/4" when pressed at the middle with moderate pressure.
5. Retighten the hex nuts to fix the tension adjustment screws and retighten the tension fix screws.
6. Replace the cover and the screws that hold it.



TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	CORRECTION
SNIPE	1. Dull knives 2. Inadequate support of long boards. 3. Uneven feed roller tension.	1. Sharpen knives. 2. Use stands or extension rollers for long workpieces. 3. Adjust feed roller tension.
FUZZY GRAIN	1. Planing wood with high moisture content. 2. Dull knives.	1. Dry wood to remove moisture. 2. Sharpen knives.
TORN GRAIN	1. Too heavy a cut. 2. Cutting against the wood grain. 3. Dull knives	1. Use a correct depth of cut for workpiece size and material. 2. Cut with the wood grain. 3. Sharpen knives.
ROUGH/RAISED GRAIN	1.Dull knives. 2. Too heavy a cut. 3. Moisture content too high	1. Sharpen knives 2. Use a correct depth of cut for workpiece size and material. 3. Dry wood to remove moisture
POOR FEEDING OF LUMBER	1. Inadequate feed roll pressure. 2. Motor belt slipping. 3. Planer bed rough or dirty. 4. Transmission belt slipping. 5. Surface of feed rollers too smooth	1. Adjust feed roll tension. 2. Tighten or replace motor belts 3. Clean the bed of pitch and residure, and coat with a layer of paste wax. 4. Tighten transmission belt. 5. Use a piece of sandpaper to roughen the feed roller.
UNEVEN DEPTH OF CUT ACROSS THE WORKPIECE	1. Knife projection not uniform. 2. Cutterhead not leveled to planer bed.	1. Adjust knife projection so that both sides of the knives are at the same elevation. 2. Adjust the table position so that it is parallel to cutterhead.
TABLE ELEVATION DIFFICULT TO ADJUST	1. Cutterhead not parallel with table.	1. Adjust the table position so that it is parallel to cutterhead.
PLANED THICKNESS DOES NOT MATCH DEPTH SCALE	1.Depth scale incorrect.	1. Adjust the pointer on the depth scale so that it matches the planed thickness.
MACHINE WILL NOT START	1. No power supplied. 2. Overload protection tripped. 3. Defective or loose switch or wiring.	1.Have power source checked by qualified electrician. 2. Reset the overload protection. 3. Have the switch and wiring checked by qualified electrician
WORKPIECE FEEDS BUT DOES NOT CUT	1.Feed rollers too low	1.Adjust the feed roller height.

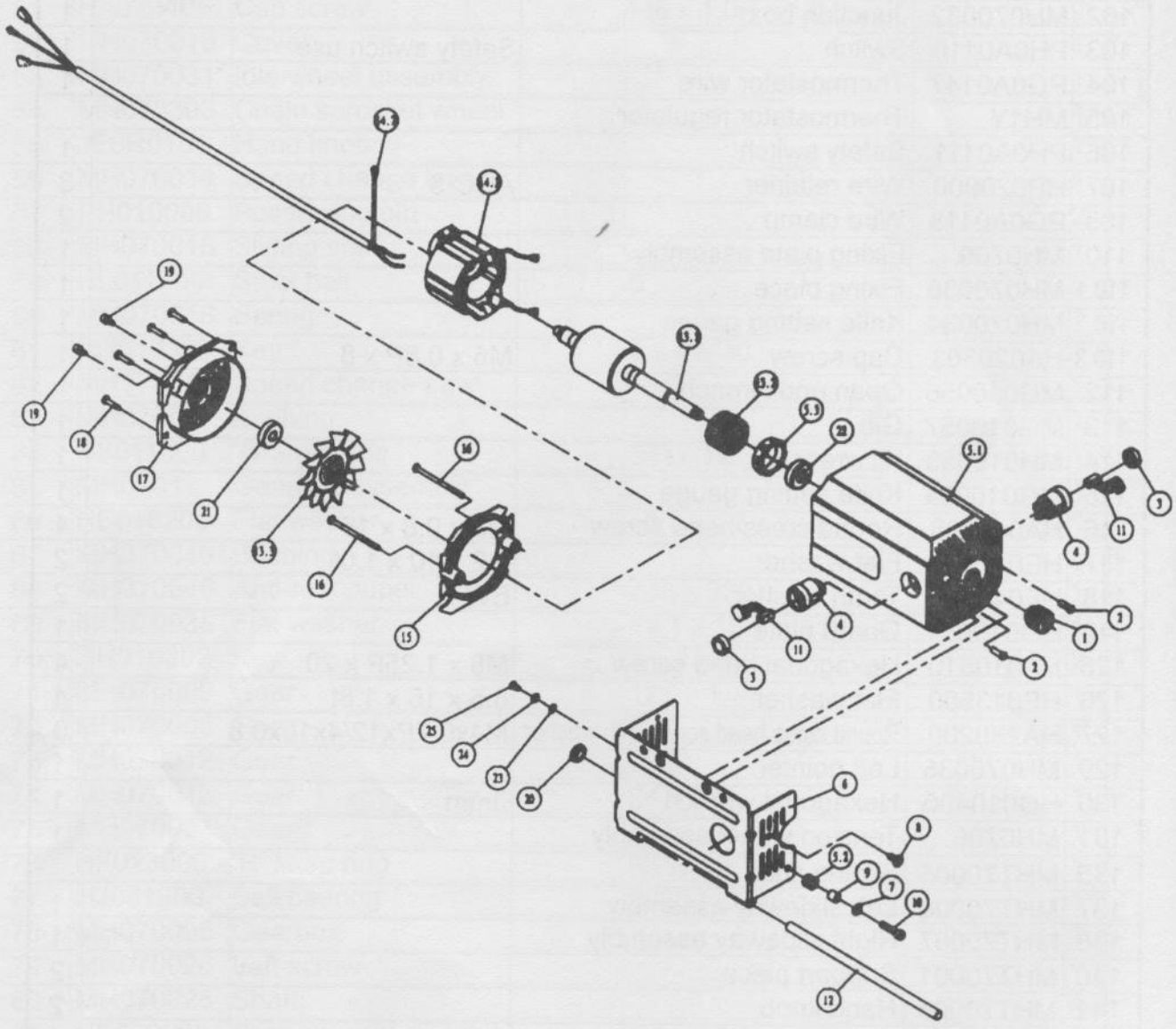
ASSEMBLY DIAGRAM & PARTS LIST



NO.	Part No.	Description	Specification	Q'ty
1	HE011600	Flat washer	5.6 x 13 x 1.0t	6
2	HA020605	Cap screw	M5 x 0.8P x 12	3
3	MH0702	Dust hood assembly		1
3.1	MH070201	Upper dust hood plate		1
3.2	MH070203	Dust exhaust plate		1
3.3	HC050300	Nut	M4 x 0.7P	3
3.4	HE010800	Flat washer	4.3 x 12 x 0.8t	3
3.5	HA040408	Round cross head screw	M4 x 0.7P x 16	3
4	MH0704	Handwheel		1
6	MH070033	Tool tray		1
7	MH010005	Chip plate		1
8	MH010021	Bushing		2
9	HA020410	Cap screw	M6 x 1.0P x 20	3
10	HA260400	Round cross head screw with washer	M5x0.9Px10/5x12x0.8t	13
11	MH070003	Roller case		1
12	HA020510	Cap screw	M8 x 1.25P x 20	8
13	MH080002	Left cover		1
14	MG010002	Bushing		4
15	MG010004	Nut	M22 x 1.5P	4
16	HW041000	Anti-loose nut	M10 x 1.5P	4
17	MH070023	Adjustment rod		4
18	MG010059	Shaft holder spring		4
19	MH070026	Adjustment rod		4
20	HF011300	'S' snap ring	STW-15	3
21	PG010030	Sprocket wheel		3
22	MG010025	Shaft holder		4
23	MH070002	Rubber roller		2
24	MG010030	Spacer		38
25	PG010005	Fix piece		4
26	MH010003	Lever		1
27	MG010029	Anti-kickback finger		35
28	MH010006	Gib		6
29	HA030505	Set screw	M8 x 1.25P x 12	18
30	MG010011	Gib		3
31	PG040703	Spacer		6
32	MH010007	Blade		3
33	HA080305	Hexagonal socket head screw	M5 x 0.8P x 12	6
34	HA020304	Cap screw	M5 x 0.8P x 10	13
35	HH010405	Key	5 x 5 x 10	1
36	MH070001	Cutterhead		1
37	HJ082000	Bearing	#6203-2NK	1
38	MH070004	Cutterhead pulley		1
39	PG010025	Nut		1
40	MH080001	Right side cover		1
41	PJ020009	Lifting lever		4
42	HF032000	'E' snap ring	ETW-12	4
43	HA040703	Round cross head screw	M6 x 1.0P x 8	6
44	MH070019	Guide plate		2
45	MH070005	Table		1

NO.	Part No.	Description	Specification	Q'ty
46	MH070029	Right pointer		1
47	HK333000	Chain	#410 x 42P	1
48	HA020508	Cap screw	M8 x 1.25P x 16	2
49	HE014500	Flat washer	8.5 x 20 x 2.0t	6
50	MH0703	Chain tension wheel		1
51	HA020405	Cap screw	M6 x 1.0P x 12	9
52	MH070016	Cover		1
53	MH070031	Idle wheel assembly		1
54	MH070303	Chain sprocket wheel		1
55	JE0R0101	Hand knob		1
56	MH070014	Speed change lever		1
57	PH010006	Positioning pin		2
58	MH070018	Sliding shaft		1
59	HL011000	Steel ball	5	1
60	MH070018	Spring		1
61	HH010323	Key	4 x 4 x 40	1
62	MH070015	Speed change pawl		1
63	MH070017	Bushing		1
64	HF011000	'S' snap ring	STW-12	1
65	MH0701	Gearbox assembly		1
66	HE016200	Flat washer	10.3 x 22 x 2.0t	1
67	MH070010	Bushing		5
68	MH010046	Anti-rust paper	495 x 330	1
69	MH070035	Flat washer	12.1 x 18.7 x 1.0t	1
70	HH010302	Key	4 x 4 x 7	2
71	MH070009	Gear	12T	1
72	MH070008	Gear	50T	1
73	MH070012	Gear	72T	1
74	MH070013	Gear	24T-16T	1
75	MH070007	Gear	10T	1
76	HF023000	'R' snap ring	RTW-35	1
77	HJ081900	Ball bearing	#6202-2NK	1
78	MH070006	Gearbox		1
79	MH070028	Left screw		1
80	MH070025	Shaft		4
81	HE020900	Spring washer	6.1 x 12.3t	6
82	PG010014	Fixing piece		2
83	PH010023	Wire winding block		2
84	HG010911	Spring pin	4.0 x 20L	1
85	MH070022	Right screw		1
86	HA040603	Round cross head screw	M5 x 0.8P x 8	8
87	HA020413	Cap screw	M6 x 1.0P x 25	4
88	HE012500	Flat washer	6.7 x 16 x 2.0t	2
89	HN031100	Wire clamp	SB8R-3	2
90	MH0F	Power wire		
91	MH070021	Belt guard		1
93	HE021100	Spring washer	8.2 x 15.4	4
95	MH070020	Base		1
96	HK140029	Belt	330J-6	1

NO.	Part No.	Description	Specification	Q'ty
97	MH0A	Motor		
98	HE020800	Spring washer	5.1 x 9.3	4
99	HA030402	Set screw	M6 x 1.0 x 06	4
100	PG040003	Chain sprocket wheel		2
101	HK335400	Chain	#410 x 66P	1
102	MH070032	Junction box		1
103	PH0A0110	Switch	Safety switch use	1
104	PG0A0147	Thermostator wire		1
105	MH1Y	Thermostator regulator		
106	PH0A0111	Safety switch		1
107	HP020900	Wire retainer	ACC-5	3
109	PG0A0118	Wire clamp		2
110	MH0709	Fixing plate assembly		1
110.1	MH070030	Fixing piece		1
110.2	MH070034	Knife setting gauge		1
110.3	HA020303	Cap screw	M5 x 0.8P x 8	1
112	MG010056	Open end wrench		1
113	MG010057	Gib		1
114	MH010053	'T' wrench		1
115	MG010054	Knife setting gauge		1
116	HA040608	Round cross head screw	M5 x 0.8 x 16	4
117	HE011100	Flat washer	5.2 x 10 x 1.0t	2
118	HE040800	Tooth washer	BW-5	2
119	HG010001	Guard plate		1
125	HA010510	Hexagonal head screw	M8 x 1.25P x 20	4
126	HE013500	Flat washer	8.5 x 16 x 1.8t	4
127	HA260200	Round cross head screw with washer	M4x0.7Px12/4x10x0.8	3
129	MH070036	Left pointer		1
130	HQ010400	Hexagonal wrench	3mm	1
131	MH0706	Tension wheel assembly		1
135	MHT70005	Sliding shaft		
137	MHT70008	Left slideway assembly		1
138	MHT70007	Right slideway assembly		1
140	MHT70001	Support piece		2
141	MHT70006	Hand knob		2
143	HE020900	Spring washer	6.1 x 12.3	2
144	HE010300	Flat washer	6.3 x 13 x 1.0t	6
145	HA020410	Cap screw	M6 x 1.0P x 20	6



NO.	Part No.	Description	Specification	Q'ty
	MH0A07	Motor assembly	110-120V	1
1	MH0A0704	Motor pulley		1
2	PG0A0126	Self tapping screw		2
3	PG0A0129	Carbon brush cover		2
4	PG0A0127	Carbon brush holder		2
5	PG0A0107	Right motor frame assembly		1
6	MH0A0701	Motor base		1
7	HE020900	Spring washer	6.1 x 12.3	1
8	HA180608	Self tapping screw	M6 x 2.54 x 16	1
9	MH0A0705	Bushing		1
10	HA020413	Cap screw	M6 x 1.0P x 25	1
11	PG0A0128	Carbon brush	110-220V	2
12	MH0A0702	Rotor shaft		1
13	PH0A0104	Rotor assembly	110-220V	1
14	MH0A0703	Stator assembly	110-220V	1
15	PH0A0106	Motor spacer		1
16	PH0A0112	Self tapping screw		2
17	PH0A0103	Motor rear cover		1
18	PH0A0102	Self tapping screw		4
19	HA290100	Cap screw with washer	M5 x 0.8P x 10 / 5	2
20	HP160100	Wire protection ring		1
21	HJ081700	Bearing	6200-2NK	1
22	HJ081800	Bearing	6201-2NK	1
23	HE040800	Tooth washer	5.3 x 10 (BW-5)	1
24	HE011100	Washer	5.2 x 10 x 1.0t	1
25	HA040603	Round cross head screw	M5 x 0.8P x 8	1