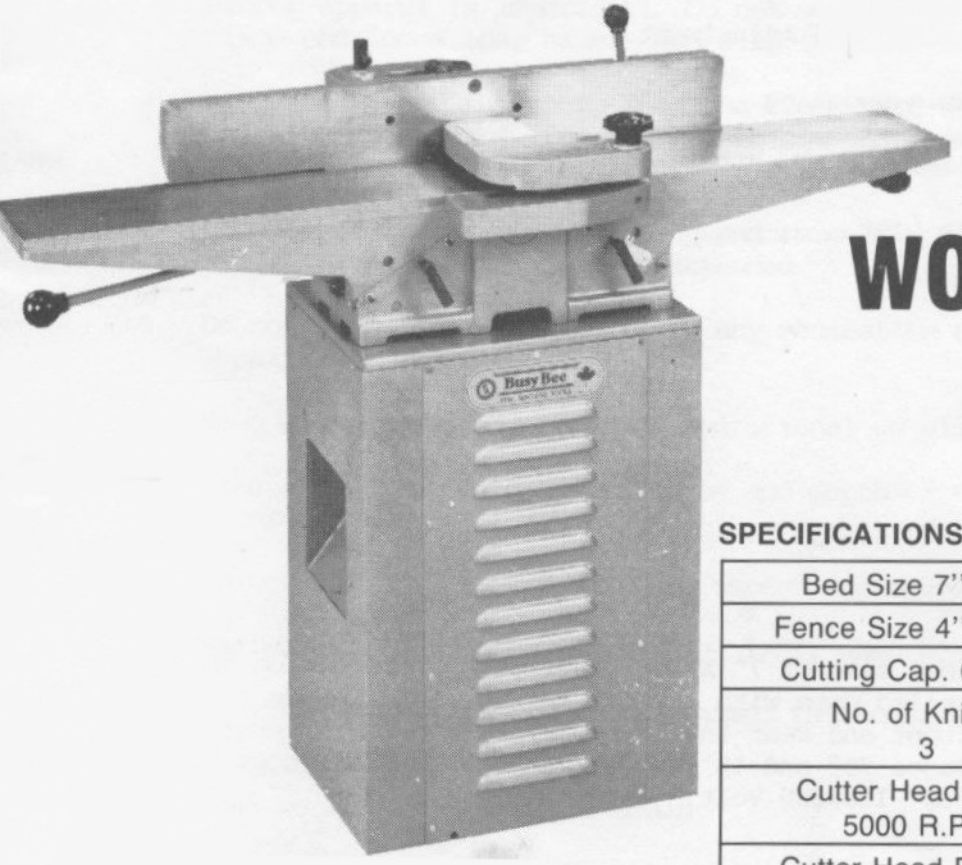
Busy Bee Machine Tools

IMPORTERS OF FINE MACHINERY

18 BASALTIC ROAD, CONCORD, ONTARIO, CANADA L4K 1G6
TELEPHONE: (416) 738-1292 TELEX: 06-964685

WOOD WORKING JOINTER B706



6'' WOODWORKING JOINTER

SPECIFICATIONS:

Bed Size 7'' x 47''	Rabbeting Capacity 1/2''
Fence Size 4'' x 29¼''	Working Height 30½''
Cutting Cap. 6'' x ½''	Motor 1 HP 110/220 V
No. of Knives 3	Floor Space Required 57'' x 12¼''
Cutter Head Speed 5000 R.P.M.	Approximate Shipping Weight 240 lbs.
Cutter Head Diameter 2.56''	Knife Size 6'' x 1'' x 1/8''

OWNER'S MANUAL

''NOTE''

Warranty Registration should be completed and returned to
Busy Bee Machine Tools Ltd., 18 Basaltic Rd., Concord, Ont. L4K 1G6

CONTENTS

A. TOOL FEATURES B706 JOINTER

This heavy duty jointer has a bed size of 7" X 47", cast iron construction and surface ground tables; Dove tailed ways with a quick acting lever device for fast easy adjustment of both front and rear tables; Cabinet stand with dust chute; Two way adjustable cast iron fence 90° and 45° stops; Rabbet cuts are possible with rear table design. 1 H.P. Motor 110/220 Volt. 3450 rpm.
Knife size 6" X 1" X 1/8".

B. SAFETY RULES SUGGESTED BY BUSY BEE

1. Know your power tool, read the owner's manual carefully and make use of reference books in your local library.

2. Safety glasses should always be used when there is a danger from flying particles.

3. Proper apparel is important. Do not wear loose clothing, jewellery, rings and loose long hair. Non slip footwear is essential.

4. Have a safe environment. Keep the floor bare and dry. Restrict children and other observers from the center of operations. Lock switches if children have access.

5. Disconnect tools when servicing and remove wrenches etc. before starting. Never leave a tool running unattended.

6. Do not use machine having taken any medication or stimulant which may impair your judgement.

7. Keep all guards, in place and operational on all cuts.

8. Make all adjustments to the fence and depth of cut before turning on the machine.

9. Do not adjust the outfeed table except during the installation of knives.

10. Maximum cut when jointing an edge 1/8", when planning a surface, 1/16".

11. Minimum length of work 12". Minimum thickness of work 3/8" without jigs and hold-downs.

12. Feed work to cut with the grain.

13. Keep hands away from the cutter head. Allow a 4" margin of safety.

14. Use a push block when planing a flat surface. NEVER PASS YOUR HAND DIRECTLY OVER CUTTER.

15. Keep the knives sharp- DULL TOOLS CAUSE ACCIDENTS.

C. ASSEMBLY GUIDE B706 JOINTER

The B706 Jointer as shipped from Busy Bee Machine Tools Ltd. is complete in two packages. One package contains the stand and the other contains the jointer, motor, fence and hardware.

TO ASSEMBLE THE STAND

Refer to the page "B706 Stand". Busy Bee suggests that you assemble the dust hood from the plate and the 2 side members and attach it to the left stand support. Then attach the base plate and the right stand support. Use the short small machine screws with the washers for the stand assembly. Hold final tightening until the stand is complete and on a flat level surface. Turn the stand upside down and mount the motor on the dust hood plate using the 4 larger machine bolts, washers and nuts. Do not fix in place until after the belt is installed and tensioned. Install the motor pulley, and secure making sure the lock screw contacts the key. Attach the power supply to the motor inside the motor junction box. Secure the green (ground) lead to the brass screw. Use the connector to support the cable where it enters the box.

TO SET UP THE JOINTER

Place the stand up right and place the jointer on top aligning the 3 sets of holes. Install using 3 machine screws and washers. Align the motor and machine pulleys and install the V belts. Adjust for tension as illustrated and tighten the four motor bolts.

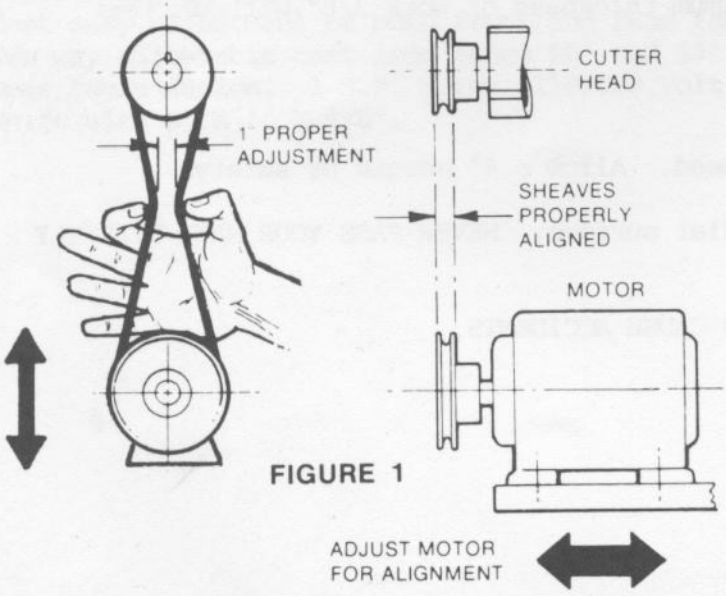


FIGURE 1

Mount the base with good quality anchor bolts through the mounting holes in the base. Install louvered cover plates. Remove the shipping preservative using kerosene, or mineral spirits (varsol) and cloths. Do NOT use lacquer thinners as they may damage the painted surfaces.

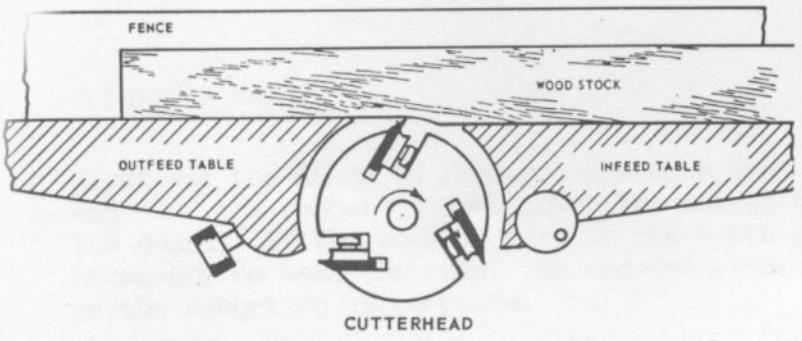
D. OPERATION AND ADJUSTMENT

POWER SUPPLY

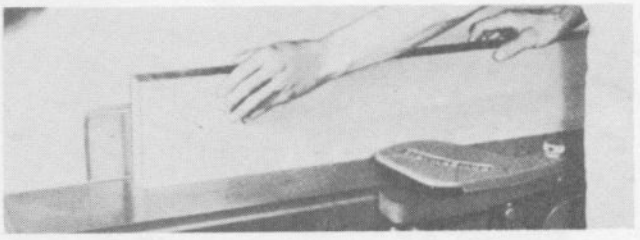
The power required is 15 amps 110 Volts single phase. To guard against voltage drop, Busy Bee recommends that the machine be plugged directly into the outlet. Busy Bee also suggests the use of a dust collection device when using a jointer.

PLANING AN EDGE (JOINTING)

Inspect the grain in the board and determine its direction. Turn to feed properly as shown. Check the fence for squareness and secure it. Have only enough cutter exposed to do the job. Check the guard. Set infeed table for the depth of cut required. Start the jointer. With the stock on the infeed table press it lightly in against the fence. Move the stock through the cut as shown, using first one hand and then the other to feed.

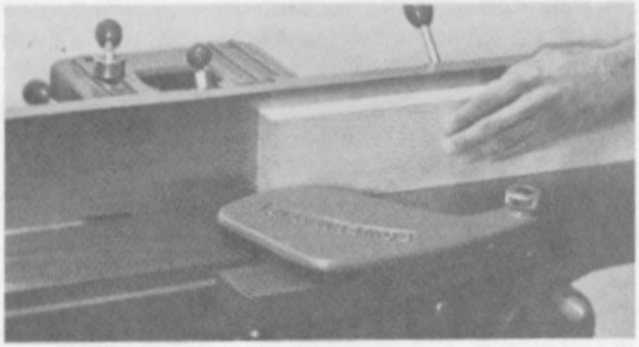


How the jointer works. Note the direction of the woodgrain.

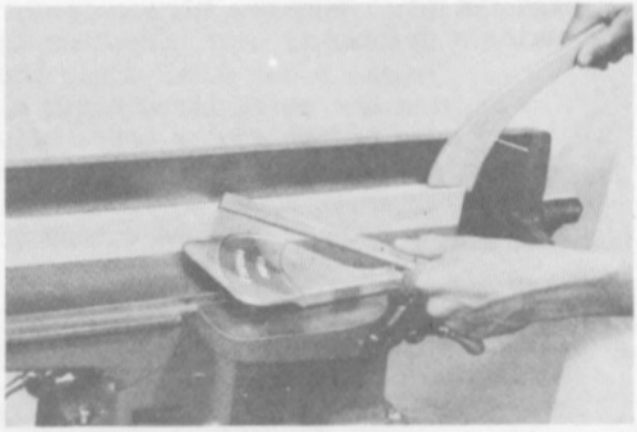


Planing the edge of a large piece.

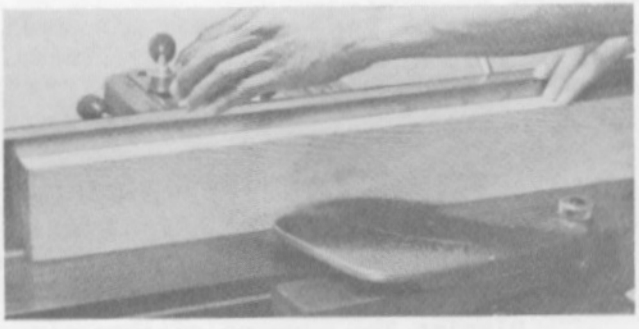
If narrow stock is being jointed keep the left hand well back from the cutter until a foot or more rests upon the outfeed table. Then move the left hand up and over to the outfeed table. Press down and in against the fence and continue the cut to completion with the right hand being brought up and over to the outfeed table. Neither hand needs to violate the 4" margin of safety.



Planing narrow stock. Starting the cut.



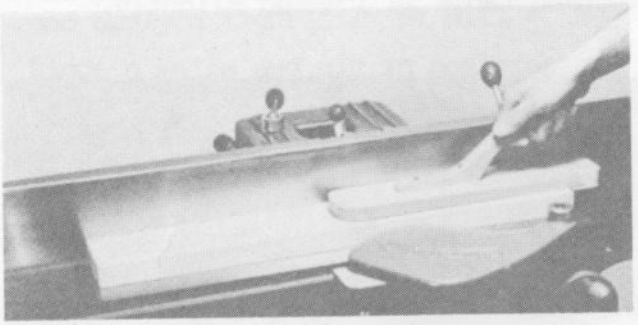
Small pieces near the minimum size of 12" should be controlled with a push stick as illustrated.



Stepping the left hand across the knives.

PLANING A SURFACE

Feed in the direction indicated by the grain. If the wood is warped or cupped, place the concave surface down. Set the depth of cut at about 1/16. Feed in the same fashion as "Planing an edge." When nearing the end of the cut finish it using a push block, similar to the illustration.



Using a pusher block for a surface cut.

PLANING END GRAIN

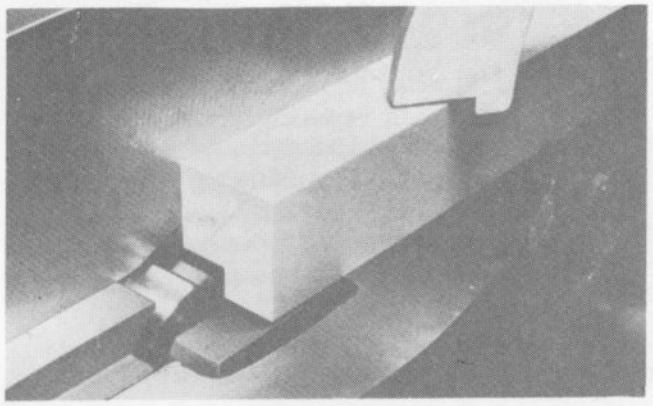
End grain or plywood may be planed by first planing about an inch on one end and then reversing the work.
Minimum length 12". Use a light cut and a slow feed.

BEVELS AND CHAMFERS

The fence is set at an angle and may be tilted in either direction in relation to the table. When possible tilt toward the table.

PLANING A RABBET

First set the fence to required distance from the ends of the knives for the width of the rabbet Then lower the infeed table to the required depth. Remove the guard. If the wood is hard or the depth of rabbet is great it may be necessary to make two cuts. Be careful- there is no guard. Replace guard as soon as the rabbeting is complete.



Cutting a rabbet. Work carefully. Guard cannot be used.

SHARPENING JOINTER KNIVES

Jointer knives must be kept keen and sharp to do good work. Dull knives will vibrate the stock, cause "kickbacks" and increase the hazards of operation.

If there are no serious nicks in the edges, the knives can be honed a number of times before grinding is required. To hone the knives the following procedure can be used:

1. Disconnect the electrical power by pulling the plug or turning off the main switch and locking the panel.

2. Remove the fence, lower the infeed table, and clean the cutterhead.

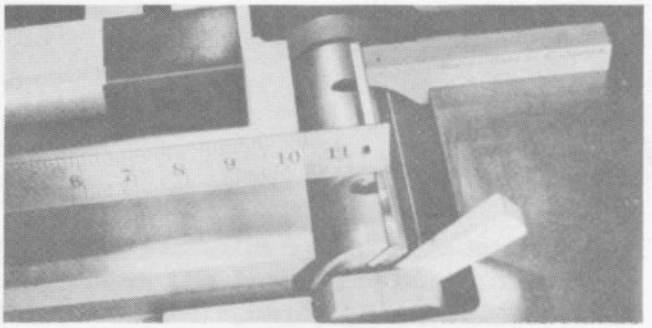
3. Lower the outfeed table until a straightedge resting on it aligns with knife bevel with about 5 deg. of clearance.

4. A gauge block can be made so that the infeed table can be adjusted to this setting. The other knives are then easily set in the same position.

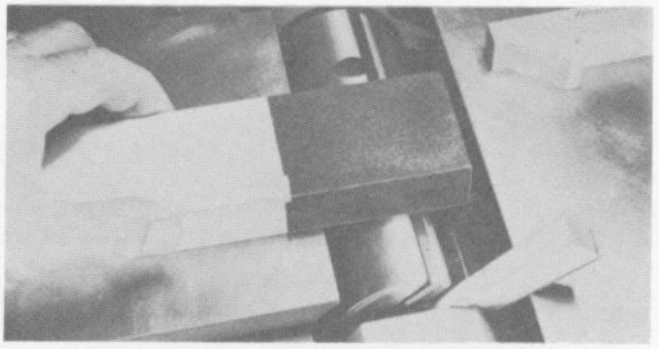
5. Drive a wooden wedge between the cutterhead and frame to lock it in position.

6. Wrap a piece of paper around one end of a silicon carbide oilstone, saturate it with oil, and hone the knife edge as shown. Stop as soon as a slight wire edge starts to form.

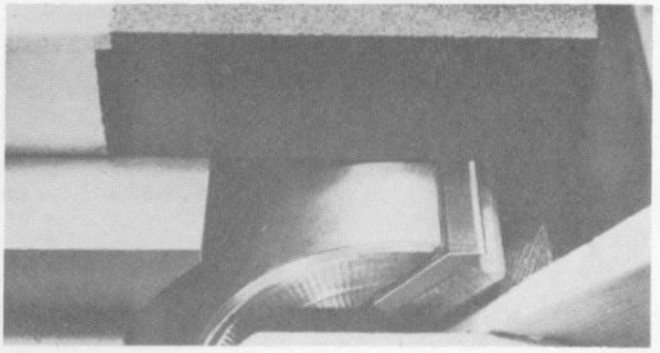
7. Repeat the operation on the other two knives. Try to hone each knife the same amount.



Setting cutterhead to hone knives. Outfeed table is lowered slightly.



Honing knives with a fine oilstone.



Close-up view.

8. Use a fine slip stone and lightly stroke the front of the knife to remove the wire edge. Keep the stone aligned with the surface of the knife.

9. Clean the machine and re-adjust the table, fence, and guard. Inspect all settings carefully, connect the power and make several trial cuts.

Be careful. Honed jointer blades are razor sharp; serious cuts may be incurred if a slip is made.

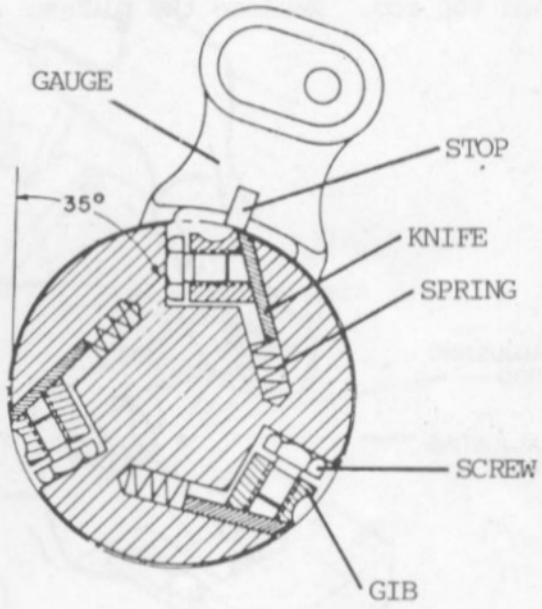
INSTALLING NEW KNIVES

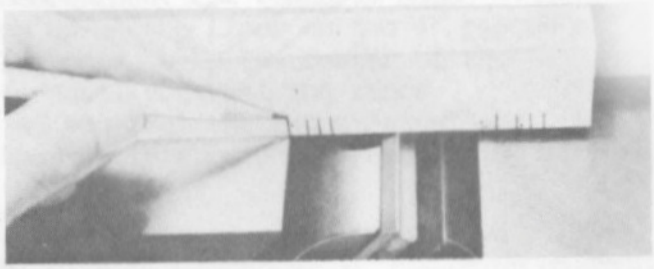
When the knives have been honed several times, it will be necessary to grind them. Busy Bee suggests that because of the accuracy required, remove the knives and send them to a sharpening service to have them ground and balanced. The following steps will help in the resetting of the jointer knives.

1. Disconnect electrical power, remove fence and lower infeed table. Clean all parts and apply a light film of oil.
2. Place a knife and gib in position and tighten the gib screws just enough to hold them in place.
3. Adjust the position of the knife so that the heel extends above the cutterhead about 1/16 in. Shift the horizontal position of the knife so that the end extends about 1/32 in. beyond the edge of the outfeed table.

   NOTE- The knife gauge used as shown will assist in this operation. If no gauge is available, continue.

4. Adjust the outfeed table to align with the high point of the knife.
5. Place a bar magnet on the outfeed table and over the knife. Loosen the knife and allow the magnet to hold it in postion. Roll the cutterhead so the edge of the knife is above the center line (high point of the knife rotation). Tighten the gib screws. Perform this operation on each end of the knife.
6. Repeat these operations for the other two knives.
7. Check the height of each knife with a straightedge as shown. Lower the outfeed table slightly and with the straightedge in position, roll the cutterhead so the knives will move the straightedge about 1/8 in. Make a mark at the edge of the table for each knife movement. The distance between these marks should be equal. Readjust any knife that is high or low.
8. Check the height at both ends of each knife.
9. Tighten each gib screw securely, going over the entire cutterhead several times.
10. Adjust the outfeed table and replace fence and guard. Turn on the machine and make several trial cuts;





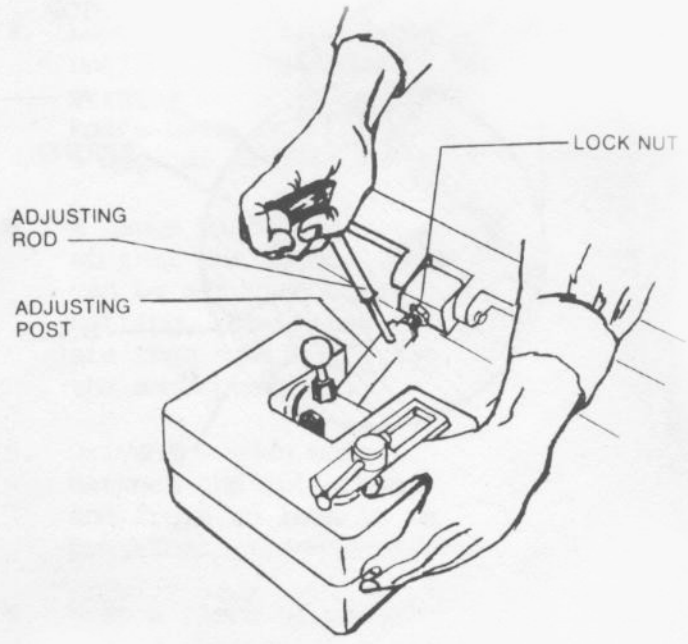
Checking the height of the knives with a wooden straightedge. The cutterhead is turned by hand and each knife should move the straightedge on equal amount. Note that the No.3 knife is too high.

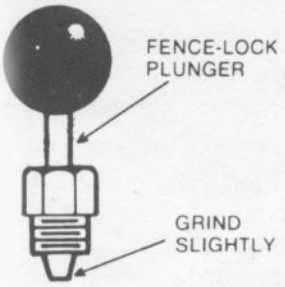
DEPTH OF CUT ADJUSTMENT

Raise or lower the infeed table to change the depth of cut. Remember to loosen the butterfly screws before adjusting and secure after the adjustment is made.

SQUARING THE FENCE TO THE TABLE

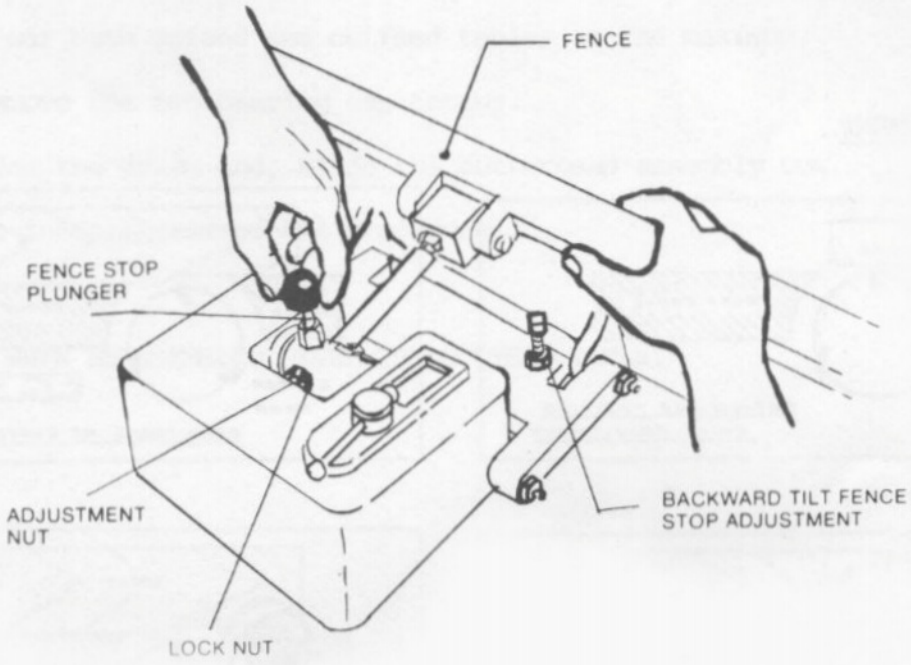
When the outfeed table height has been adjusted, place a small square on the outfeed table near the cutterhead. Loosen the lock nut and turn the adjusting post if necessary to square the fence. Tighten lock nut.
If play is evident in the fence, remove the plunger mechanism and if wear is evident in the conical retainer, grind slightly to properly engage the groove in the top rod. Replace the plunger assembly and tighten the jam nut.





FENCE TILT ADJUSTMENT

The fence is tilted forward and backward by pulling up on the fence lock plunger. The backward stop is a machine screw with a jam nut on the mounting hinge. The forward stop adjustment is a nut and jam nut on the adjusting post: Adjust as necessary and secure with the jam nuts to attain exact 45° settings.



STRAIGHTENING WARPED FENCE:

The fence furnished with your jointer is a finished casting. Under certain conditions it is possible that the fence may become warped. If fence is high (bowed) in the center, remove fence and place face up on the floor on two 4" pieces of wood (2" X 4" blocks will suffice) . Gently apply pressure to the center of the fence with your foot increasing pressure gradually until you feel the fence "give" slightly. Stop applying pressure as soon as you feel the fence "give" and check with a straight edge. The fence should be perfectly straight. Repeat if necessary.

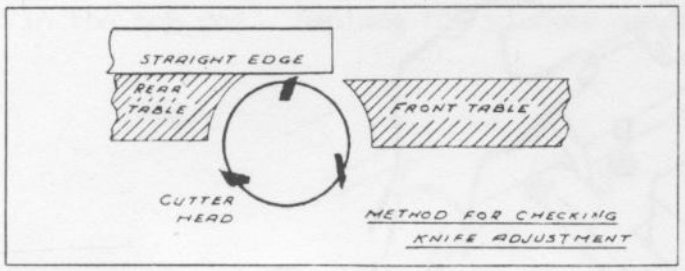
If fence is low in the center, place on the floor face down and repeat the above procedure- REMEMBER, stop when you feel the fence "give."

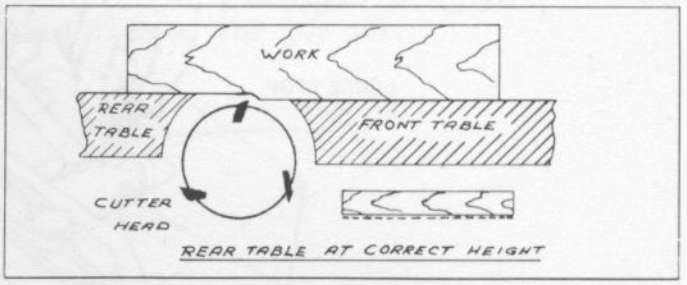
Should your fence be twisted, the following steps will return it to its original shape. Clamp one end of fence to a wood vise and sandwich other end between two 2" boards and gently "twist" the fence. When the fence "gives", stop applying pressure and check fence with a straight edge.

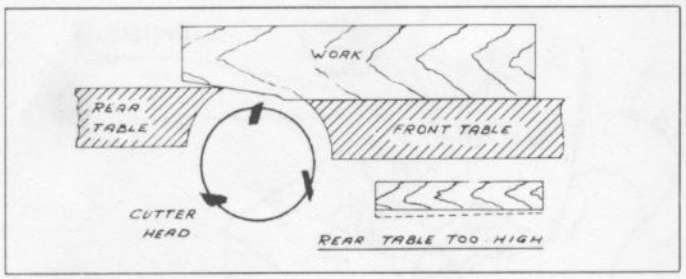
GUARD REMOVAL

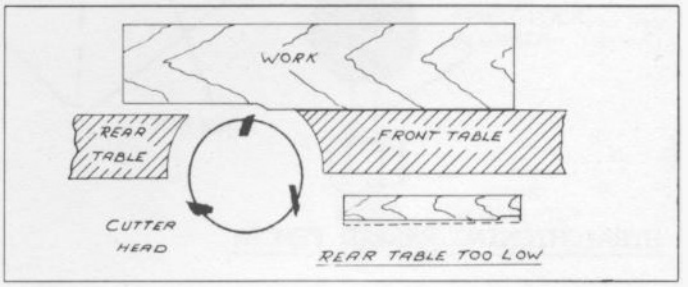
Loosen lock nut on rabetting bracket and loosen the lock screw. The guard assembly lifts out to allow rabbeting. When replaced, apply tension to the spring by turning the knob on top of the guard. Lock with the set screw and lock nut.

REAR TABLE ALIGNMENT





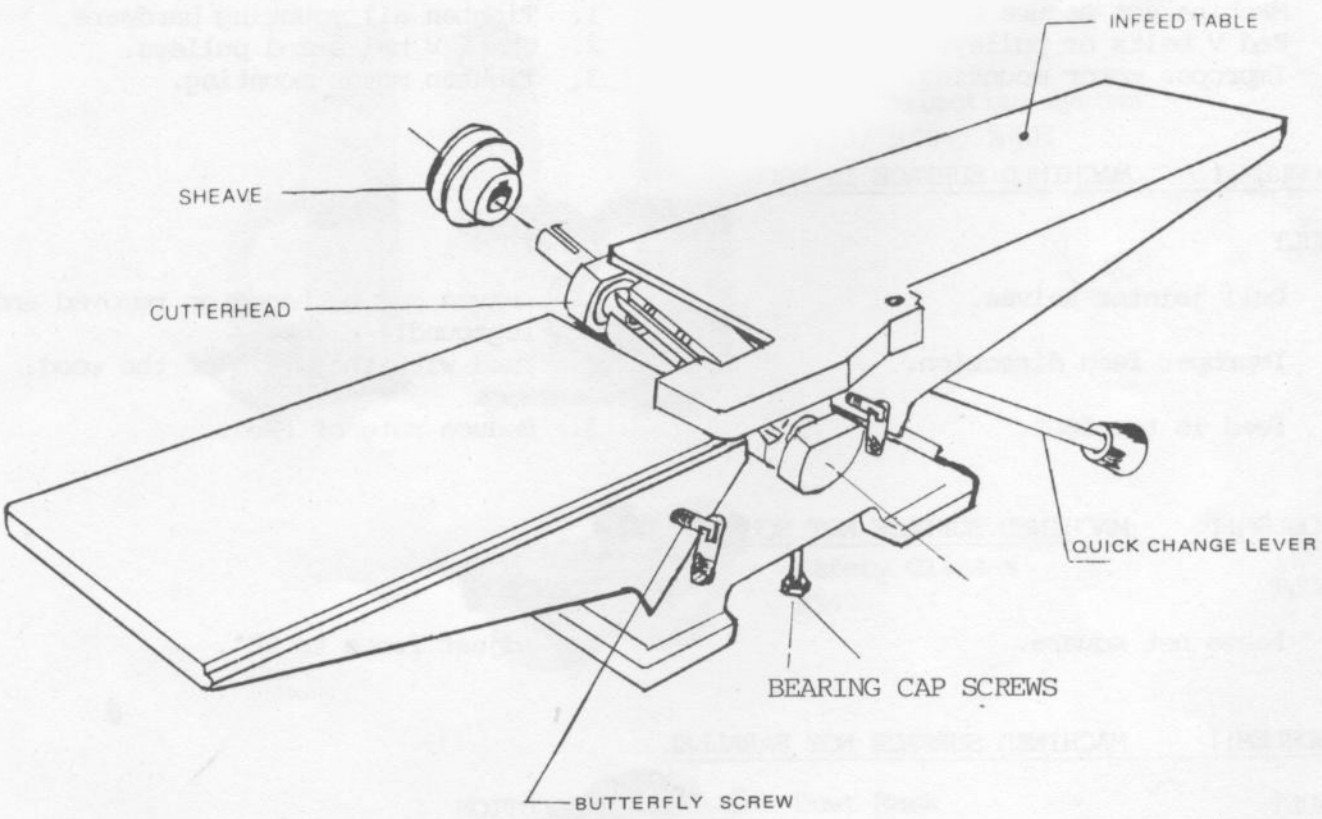




CUTTER HEAD REMOVAL

1. Disconnect Power Supply.
2. Remove fence.
3. Remove belt.
4. Lower both infeed and outfeed tables to the maximum.
5. Remove the two bearing cap screws.
6. From the drive end, slide the cutterhead assembly out.
7. To install reverse the procedure.

NOTE- WHEN REASSEMBLED LEVEL THE OUTFEED TABLE.



E. TROUBLE SHOOTING GUIDE

PROBLEM!! JOINTER WILL NOT START

FAULT	SOLUTION
1. Jointer not plugged in.	1. Plug in jointer.
2. Fuse blown or circuit breaker tripped.	2. Replace fuse or reset circuit breaker.
3. Cord damaged.	3. Have cord replaced by a certified electrician.

PROBLEM!! MACHINE DOES NOT COME UP TO SPEED

FAULT	SOLUTION
1. Power cord too light or too long.	1. Replace with proper size cord.
2. Too high feed.	2. Reduce rate of feed.
3. Low voltage current.	3. Contact your electric company.

PROBLEM!! MACHINE VIBRATES EXCESSIVELY

FAULT	SOLUTION
1. Machine not secure on stand.	1. Tighten all mounting hardware.
2. Bad V belts or pulleys.	2. Check V belts and pulleys.
3. Improper motor mounting.	3. Tighten motor mounting.

PROBLEM!! MACHINED SURFACE IS ROUGH

FAULT	SOLUTION
1. Dull jointer knives.	1. Knives may be honed or removed and reground.
2. Improper feed direction.	2. Feed with the grain of the wood.
3. Feed is too fast.	3. Reduce rate of feed.

PROBLEM!! MACHINED SURFACE NOT SQUARE

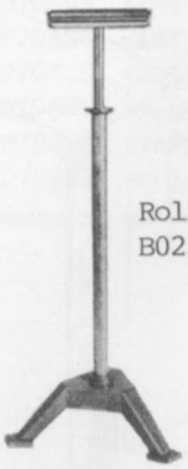
FAULT	SOLUTION
1. Fence not square.	1. Adjust fence to 90°.

PROBLEM!! MACHINED SURFACE NOT PARALLEL

FAULT	SOLUTION
1. Rear table below the cutter.	1. Adjust rear table to be level with cutter head/

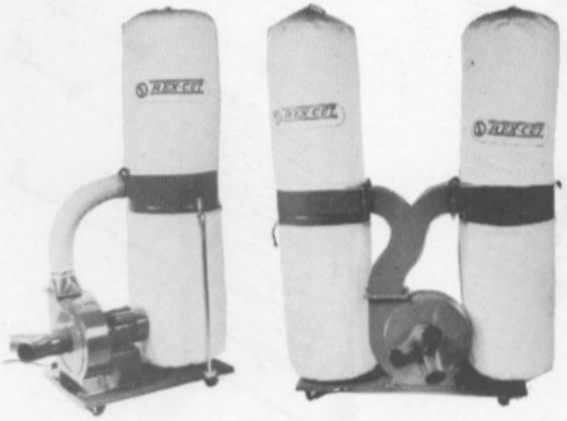
F. ACCESSORIES FOR B706 JOINTER FROM BUSY BEE MACHINE TOOLS LTD.

Extra knives	B706/006
Dust Hood 4"	B703

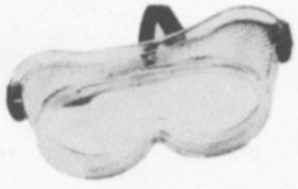


Roller Stand
B025/100

Roller Table
HRT 68



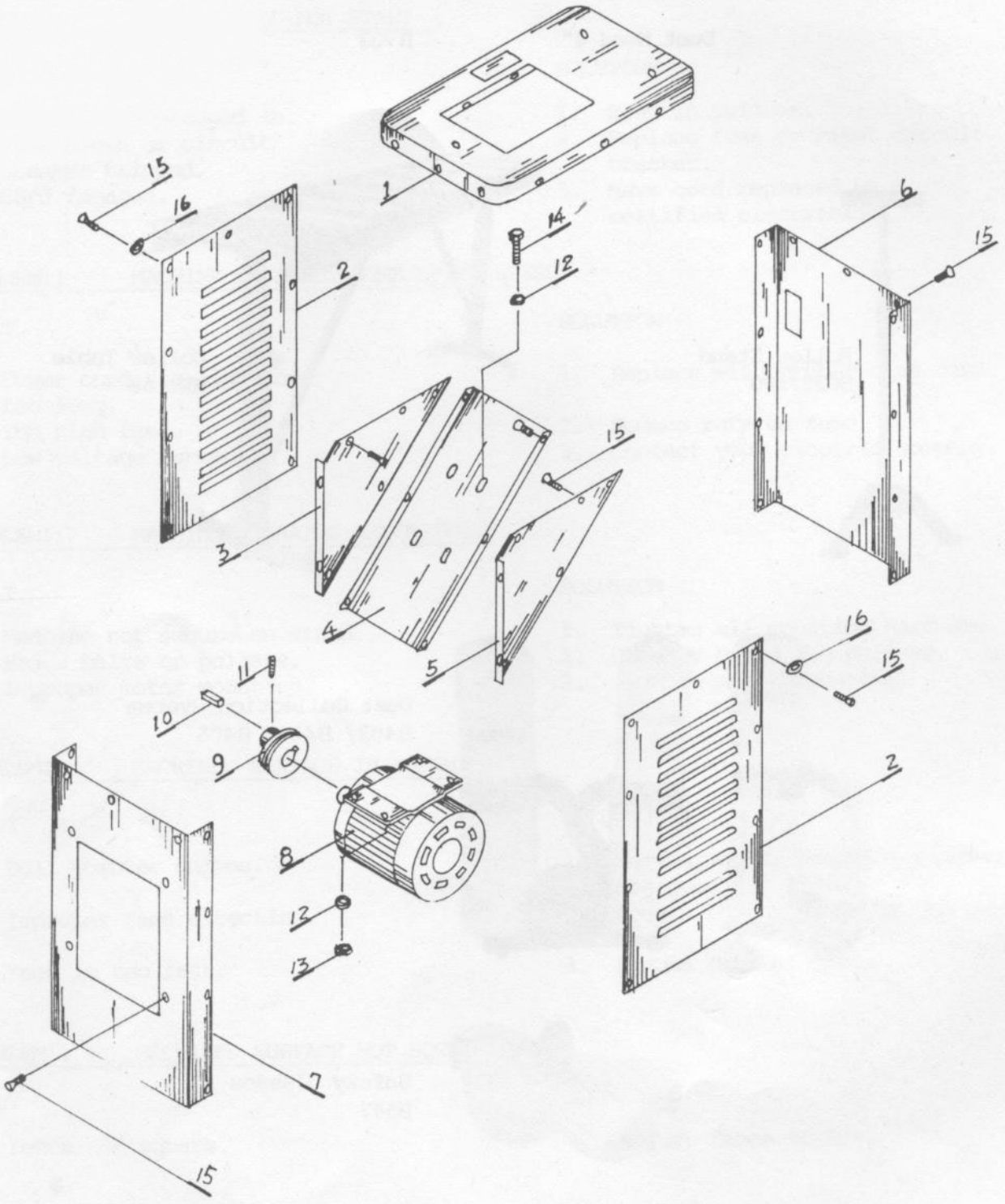
Dust Collection System
B403/ B404/ B405



Safety Glasses
B547

Dust Mask
B738

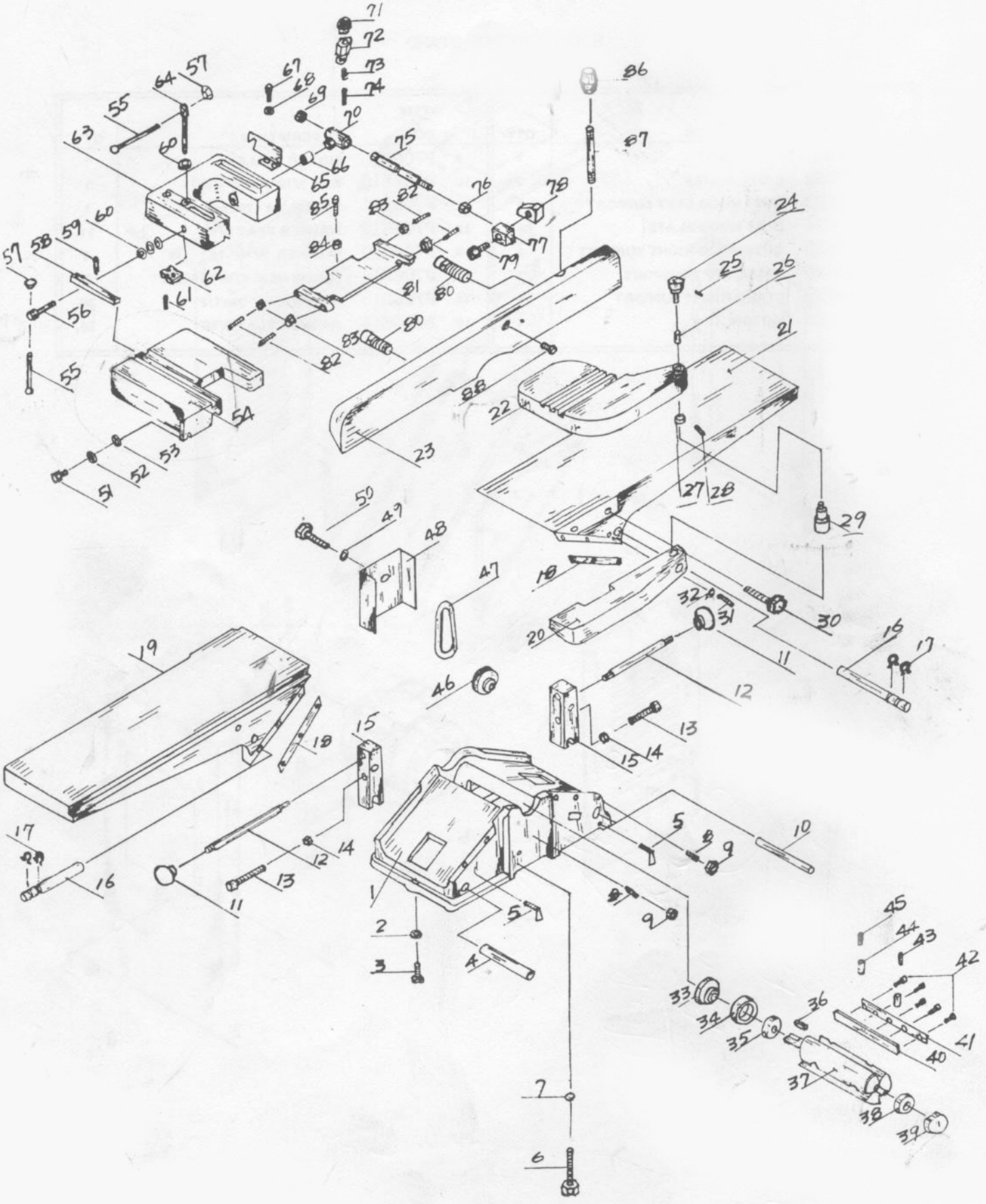
B706 JOINTER STAND



B706 JOINTER STAND

ITEM NO.	DESCRIPTION	QTY	ITEM NO.	DESCRIPTION	QTY
1. P706S1	BASE PLATE	1	9. P706S9	MOTOR PULLEY	1
2. P706S2	COVER PLATES	2	10. P706S10	KEY 3/16"x3/16"x45	1
3. P706S3	DUST HOOD LEFT SUPPORT	1	11. P706S11	SCREW 1/4"-20x3/8	1
4. P706S4	DUST HOOD PLATE	1	12. P706S12	WASHER FLAT 5/16	11
5. P706S5	DUST HOOD RIGHT SUPPORT	1	13. P706S13	NUT HEX. 5/16"-18	4
6. P706S6	STAND LEFT SUPPORT	1	14. P706S14	SCREW HEX. 5/16"-18x3/4"	7
7. P706S7	STAND RIGHT SUPPORT	1	15. P706S15	SCREW 3/16"-24x1/2"	39
8. P706S8	MOTOR	1	16. P706S16	WASHER FLAT 3/16"	39

B706 JOINTER



B706 JOINTER
PARTS LIST

ITEM NO.		DESCRIPTION	Q'TY
1.	P7061	BASE	1
2	P7062	WASHER, FLAT 5/16"	3
3	P7063	SCREW 5/16"-18 UNC x 3/4"	3
4	P7064	ROD, TABLE ADJUSTMENT	1
5.	P7065	BUTTERFLY SCREW	2
6.	P7066	SCREW HEX. HD. 5/16"—18x3-1/2"	2
7.	P7067	SPRING, WASHER 5/16"	2
8.	P7068	SCREW 1/4"-20x1"	4
9.	P7069	NUT 1/4"-20 HEX	4
10.	P70610	ROD, TABLE ADJUSTMENT	1
11.	P70611	KNOB 1/2"-12	2
12.	P70612	ARM, TABLE ADJUSTMENT	2
13.	P70613	SCREW HEX 5/16"-18x2	2
14.	P70614	NUT HEX 5/16"-18	2
15.	P70615	BLOCK, TABLE ADJUSTMENT	2
16.	P70616	ROD, TABLE ADJUSTMENT	2
17.	P70617	C-RING S-12	4
18.	P70618	GIB	2
19.	P70619	TABLE, REAR	1
20.	P70620	BRACKET, RABBET	1
21.	P70621	TABLE, FRONT	1
22.	P70622	GUARD, CUTTER-HEAD	1
23.	P70623	FENCE, TABLE	1
24.	P70624	KNOB	1
25.	P70625	SCREW SOC. 1/4"-20x3/8"	1
26.	P70626	BUSHING, BRONZE	1
27.	P70627	COLLAR, GUARD SPRING	1
28.	P70628	PIN, CUTTER KEY 1/8"x1-1/2"	1
29.	P70629	SHAFT, RIVOT	1
30.	P70630	SCREW, 3/8"-16x1" HEX HD	2
31.	P70631	NUT, 5/16"-18 HEX	1
32.	P70632	SCREW, 5/16"-18x1"	1
33.	P70633	SHEAVE	1
34.	P70634	HOUSING, BEARING	1
35.	P70635	BEARING 6203 ZZ	1
36.	P70636	KEY-3/16"x3/16"x1-1/4"	1
37.	P70637	CUTTER HEAD	1
38.	P70638	BEARING 6202 ZZ	1
39.	P70639	HOUSING, BEARING	1
40.	P70640	KNIFE CUTTERHEAD (SET OF 3)	3
41.	P70641	GIB, KNIFE	3
42.	P70642	SCREW 5/16"-18x1/2" HEX HD	9
43.	P70643	SPRING	3
44.	P70644	BUSHING	9
45.	P70645	SPRING	3
46.	P70646	SHEAVE, MOTOR	1
47.	P70647	BELT, A-35	1
48.	P70648	GUARD, BELT	1
49.	P70649	WASHER, 5/16"	1
50.	P70650	SCREW HEX HD 5/16"-18x2-1/2"	
51.	P70651	SCREW HEX HD 3/8"-16x1-1/4"	2
52.	P70652	SPRING WASHER 3/8"	2
53.	P70653	WASHER FLAT 3/8"	2
54.	P70654	SUPPORT FENCE	1
55.	P70655	HANDLE	2
56.	P70656	LOCK SCREW	1
57.	P70657	KNOB, HANDLE	2
58.	P70658	KEY	1
59.	P70659	PIN, SPRING	1
60.	P70660	WASHER FLAT 1/2"	4
61.	P70661	PIN, SPRING	1
62.	P70662	LOCKNUT, FENCE SLIDE	1
63.	P70663	BASE, FENCE	1
64.	P70664	SCREW, LOCK	1
65.	P70665	BRACKET, FENCE LOCK	1
66.	P70666	SLEEVE, FENCE TILTING	1
67.	P70667	SCREW, 1/4"-20 RD x 3/8"	
68.	P70668	WASHER 1/4" PLAIN FLAT	2
69.	P70669	NUT, HEX 5/8"-18	2
70.	P70670	CLAMP, FENCE TILTING	1
71.	P70671	KNOB, RD 1/4"-20	1
72.	P70672	NUT, FENCE STOP	1
73.	P70673	SPRING	1
74.	P70674	PLUNGER, FENCE STOP	1
75.	P70675	ROD, DEGREE TILTING	1
76.	P70676	NUT, HEX, 7/16"-20	1
77.	P70677	BRACKET, TABLE STOP	1
78.	P70678	BRACKET, SET FENCE	1
79.	P70679	SCREW	1
80.	P70680	STUD, PIVOT	2
81.	P70681	BRACKET, FENCE LOCK	1
82.	P70682	SCREW, LOCK	4
83.	P70683	NUT HEX, 5/16"-18	4
84.	P70684	NUT, HEX, 5/16"-18	1
85.	P70685	SCREW HEX, 5/16"—18x2-1/2"	1
86.	P70686	KNOB, HANDLE	1
87.	P70687	SCREW, LOCK	1
88.	P70688	SCREW, SOC. HD 5/16"-18x1-1/2"	1