



B2063B

5-HP PROFESSIONAL SHAPER

User Manual



GENERAL SAFETY RULES FOR ALL POWER TOOLS

1. READ carefully and thoroughly AND BE FAMILIAR with the owner operating manual. Learn its limitations and applications and potential hazards.
2. ALWAYS KEEP THE GUARD in place and in proper working condition.
3. GROUND ALL TOOLS.- If the tool is equipped with a three-pronged plug, it should always be plugged into a three – hole electrical receptacle. If an adapter is used for a two – pronged receptacle, the adapter's plug must be connected to a known ground line and NEVER remove the third prong.
4. CHECK DAMAGED PARTS. – Before further using the tool, any damaged parts should be checked to assure that it will perform and operate properly for its intended purposes. Replace and align all moving parts, mounting, or any other conditions that may affect its operation.
5. REMOVE ALL ADJUSTING KEYS AND WRENCHES. –Always form the habit of checking that all keys and adjusting wrenches are removed from the tool before starting operation.
6. DISCONNECT UNIT BEFORE SERVICING and when changing blades, bits or cutters to avoid accidental starting.
7. KEEP WORKING AREA CLEAN. – Cluttered areas and benches can cause accidents. Don't use the unit in damp or wet locations or expose it to the rain. Also keep the working area well and properly lighted.
8. USE SAFETY GLASS AND WEAR PROPER APPAREL. – Also use face or dust mask if the operation is dusty. Wearing loose clothing or jewelry is not desirable because it may get caught in moving parts. Put on protecting hair covering to contain long hair.
9. KEEP CHILDREN AND VISITORS AWAY. – All visitors should be kept at a safe distance away from the working area, especially while operating tools.
10. MAKE WORKSHOP CHILDPROOF. – Lock tools when not in use by removing starter keys or the master switches.

- 11.DIB
- 12.DON'T FORCE THE TOOL –It will perform a better and safer job at a rate for which it was designed. Allow the motor to reach full speed before cutting.
- 13.USE RIGHT AND PROPER TOOL. –Don't use any other tool attachment to do a job which is not designed for it.
- 14.USE RECOMMENDED ACCESSORIES. –Consult the owner manual for all recommended accessories. Improper use of the tools may cause accidents.
- 15.MAINTAIN TOOLS IN TIP-TOP CONDITION. –For safest performance keep the unit clean, Follow all instruction of lubrication and changing attachment or accessories.
- 16.DON'T EVER OVER-REACH. –Keep proper footing and balance of your body at all time during operation of tools.
- 17.SECURE WORK PROPERLY. –Use vises or clamps to hold work. It is practical and much safer than using your bare hand.
- 18.NEVER LEAVE THE TOOL UNATTENDED. –Turn the switch on OFF position and don't leave unit until it has completely stopped.
- 19.NEVER STAND ON THE TOOL. –Serious injury could occur if the unit is tipped or if the blade is accidentally contacted.
- 20.DIRECTION OF FEED. Always feed the workpiece into the blade against the rotation of blade or cutters.
- 21.DRUGS, ALCOHOL AND MECICATION. –Never operate tools while under influence of drugs, alcohol, or after taking medication.
- 22.NEVER ATTEMPT to perform an abnormal operation. Don't try to cut small pieces. Always use adequate hold – down/push – back, ligs, or fixtures, etc.

***NOTE : KEEP THE MANUAL AND REVIEW IT FROM TIME TO TIME .REVIEWING THE MANUAL AND FOLLOWING THE INSTRUCTIONS WILL GIVE YOU A CONTINUOUS SAFE OPERATION.**

UNPACKING AND CLEANUP

To ensure maximum performance from your spindle shaper, clean it properly; and install it accurately before use.

As soon as you receive the spindle shaper, 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 distributor know immediately.
3. Before lifting machine, remove all foot bolts locking it to its shipping base.
4. Transport machine to location with a hand truck or dolly.
5. Do not use solvents on plastic parts and electric cord; solvents dissolve or damage plastic and electric cord.
6. Please refer to Fig. A & B.

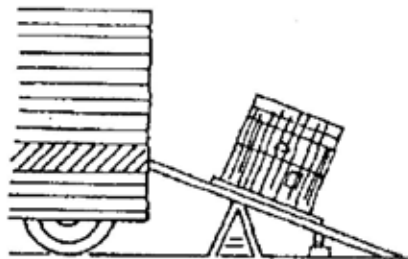


Fig. A

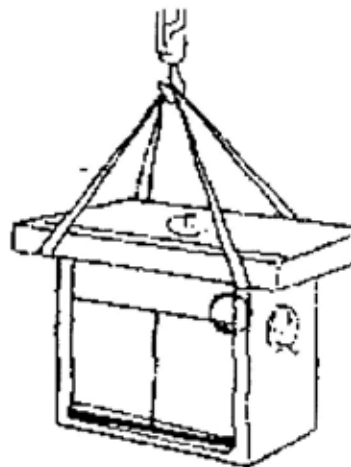


Fig.B

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SAFETY : GENERAL RULES

READ THE MANUAL Read, understand, and follow the safety and maintenance instructions found in this manual. Know the limitations and hazards associated with the 36 shaper.

WORK AREA Keep the floor around the machine clean and free of scrap material, saw dust, oil or grease to minimize the danger of tripping or slipping. Provide ample unobstructed floor area around the machine for free flow of stock from the infeed to the outfeed side of the cutter. Mark off the machine area, and make sure it is well lighted and equipped with a proper exhaust system to minimize dust.

ELECTRICAL GROUNDING Your machine must be electrically grounded. If a cord and plug are used, make certain the grounding lug connects to a suitable ground. Follow the grounding procedure indicated by the National Electric Code. Keep power tools in dry areas free from moisture.

PROTECTION Take every precaution to protect yourself. Others around you, and the machine itself from improper use.

CARELESS ACTS Give the work you are doing your undivided attention. Looking around, talking to someone, and horseplay are careless acts that can result in serious injury. Do not operate tool while under the influence of drugs, alcohol, or any medication.

IF YOU ARE NOT Thoroughly familiar with the operation of shapers, obtain advice from your supervisor, instructor, or other qualified person.

DO NOT OVERREACH Maintain balanced stance and keep your body under control at all times. Do not overreach or use excessive force to perform any operation.

EYES Always wear approved safety goggles, glasses, or a face shield when operating the shaper. There are no exceptions to this rule.

DRESS CODE Do not wear loose clothing, neckties, jewelry, or gloves that can get caught in moving parts. Confine long hair. Keep sleeves above the elbow.

GUARDS Be sure shaper guard, feather – boards, hold –downs, and specially designed devices are used whenever possible. If the guard must be removed for any operation, make sure it is replaced immediately following completion of that operation.

HOUSEKEEPING Before turning on machine, remove all extra equipment such as keys, wrenches, scrap, and cleaning rags away from the shaper. Keep the area around machine clean and free of sawdust to minimize danger of slipping.

Power on Before connecting power to the shaper, make sure the start switch is in the "OFF" position.

POWER OFF Make sure the shaper is unplugged or electrically disconnected and locked out before performing maintenance, changing cutters, or service work.

SAFETY: SPECIFIC RULES

READ THE MANUAL Know the limitations and hazards in using the 36 shaper. One SAFETY rule decal and one DANGER decal are placed on each machine as reminders of good safety practice.

SHORT STOCK Never shape stock less than 12 inches in length without special fixtures. Where practical, shape longer stock and cut to size.

12 INCH RULE When shaping, never allow your hands to come closer than 12 inches to the cutters.

HAND SAFETY Never pass the hands directly over, or in front of, the cutters. As one hand approaches the 12 inch radius point, remove it (or the push stick) in an arc motion and reposition hands 12 inches beyond the cutters (Figure 1).

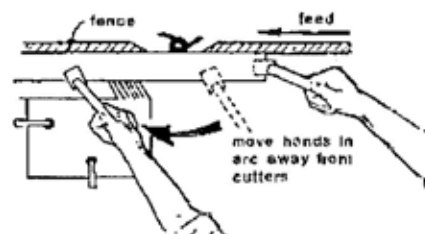
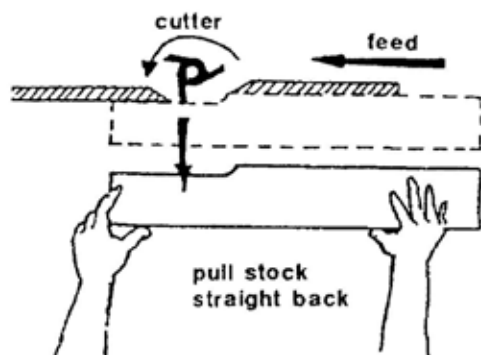


FIGURE 1

BLIND CUT When blind cutting, the workpiece is positioned on top of the template. This keeps the cutter(s) cutting only the underside of the workpiece and providing a " distance " guard for the operator.

STOCK FEED Stock opposite to the direction of the cutter rotation (p. 11). Never back stock out of the cutter once the cut has been started. Instead, pull the stock straight back away from cutter and begin the cut again (Figure 2).



CUTTER CLEARANCE With the power disconnected, always revolve the spindle by hand with any new setup to insure proper clearance with the cutters. At the same time, check to be sure the cutter head is turning in the correct direction.

TOOL MAINTENANCE Clean and sharp tools give safer and better performance. Dull tools can cause kickbacks and excessive chatter. Before making a cut, always check the condition and adjustment of the tools. Never use a tool that is not balanced and rated for the selected RPM.

SAFETY LOCK NUT Never operate the shaper without the safety locking nut and spacer located on top of the spindle nut (Figure 3) . The lock nut has left hand threads. This left hand lock nut prevents the spindle nut from coming loose when the spindle is run in a counterclockwise direction.

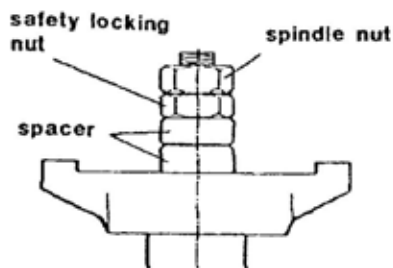


FIGURE 3

SPINDLE SPEED Do not operate tools at speeds higher than rated by the manufacturer.

CUTTER SELECTION Use only those cutters designed to be used on the machine, and mount only safety type cutters on the spindle.

STOCK CONDITION The danger of kicked back stock can occur when the stock has knots, holes, or foreign objects such as nails. Warped or in – wind stock should first be jointed on one surface before attempting to use it on the shaper.

JOB COMPLETION The operator should never leave the work station for any reason without turning off the shaper and waiting for the spindle to come to a complete stop. When the operation is complete, the operator should clean up the shaper and work area. Never clean the shaper with the power “ON” and never use the hands to clear sawdust and debris – use a brush.

DO NOT TRACH Over shaper. There is danger of kickback which can pull the hand back into the cutter. Use push sticks to assist in pushing the work through. See Figure 4 .

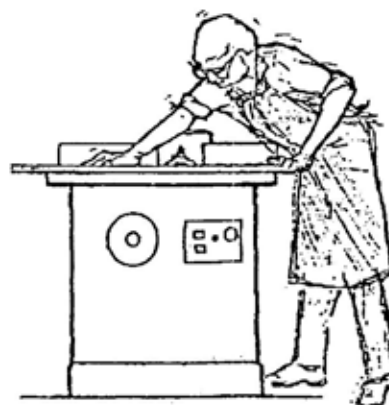


FIGURE 4

SPECIFICATION

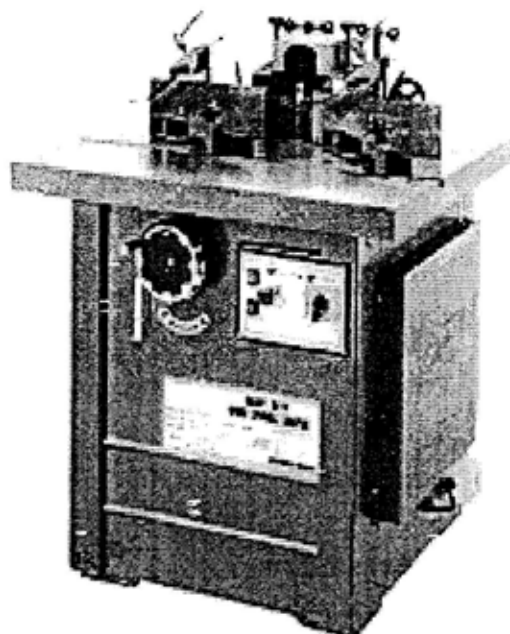


Table size.....	36" X 28"
Table height	34 – 5/8"
Spindle opening diamter	7", 3 – 1/2", 3"
Spindles available :	
interchangeable type, diamter	3/4", 1", 1-1/4"
Spindle capacity under nut :	
3/4" interchangeable	4"
1" interchangeable	5"
1 – 1/4" interchangeable	5"
Spindle travel	3 – 1/2"
Spindle speed, RPM	3600&5100&8000&10,000
Weight	290kgs

INSTALLATION

Mount base to the floor with high quality anchor bolts. Bolts are attached through the mounting holes on the inside corners of the base.

ELECTRICAL

All the electricals and motor wiring must be done by a qualified electrician. The machine must be properly grounded to help avoid electrical shock and possible death. Follow the recommendations of the National Electrical code for grounding.

INSPECTION

Before connecting power to the shaper check all mounting screws and bolts to see that they are tight. Since the spindle and quill assembly have permanently sealed bearings, lubrication is not necessary. Turn the spindle by hand to see that it turns freely. Regularly inspect the shaper to insure that the machine is in proper adjustment and free of dust in the electrical enclosure. Make sure all mechanical functions work freely, and there are no loose or worn electrical connections. Inspect the cutters, collars, and spacers for rust, nicks, and flaws. Be sure to read, understand, and follow the recommendations in the SHAPER OPERATION section of this manual before operating the shaper.

SHAPER ADJUSTMENTS

Check all mounting screws and bolts to see that they are tight. When changing tools, adjusting the drive belt, or doing cleanup and maintenance, always turn the machine off and unplug the machine from its power source.

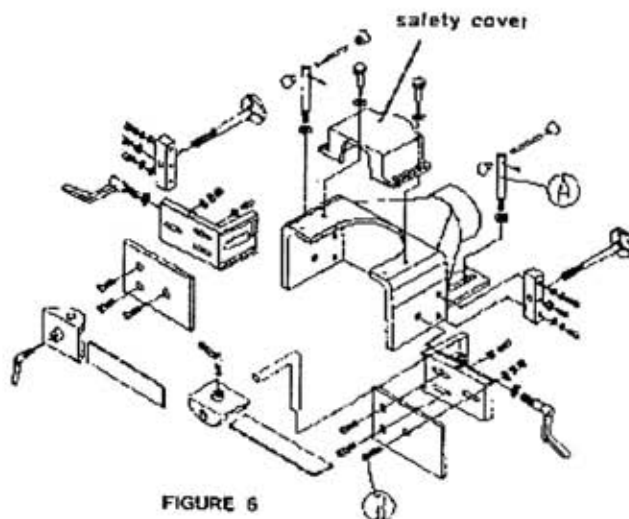


FIGURE 6

SQUARING THE FENCE

Periodically the wood fence will have to be squared with the mounting surface and adjusted parallel to each other. To correct, do the following :

1. Check the two mounting screws A, Figure 6 holding the fence assembly to the table and make sure they are tight.
2. Check the six countersink flat head bolts B that secure the wooden fences and make sure they are tight.

BELT ADJUSTMENT

Check the drive belt to insure that the sheaves are accurately aligned. If alignment is required, loosen the set screw in the motor sheave and reposition the sheave on the motor shaft.

SPEED CHANGE

The Model 36 shaper may be operated at 3600 or 5100 or 8000 or 10,000 RPM. To change the spindle speed, loosen the lock handle shown in Figure 7, and pivot the motor assembly toward the spindle. Reposition the belt to the desired speed step and retension the belt.

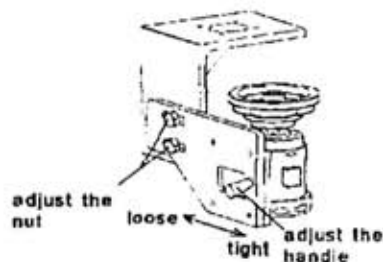
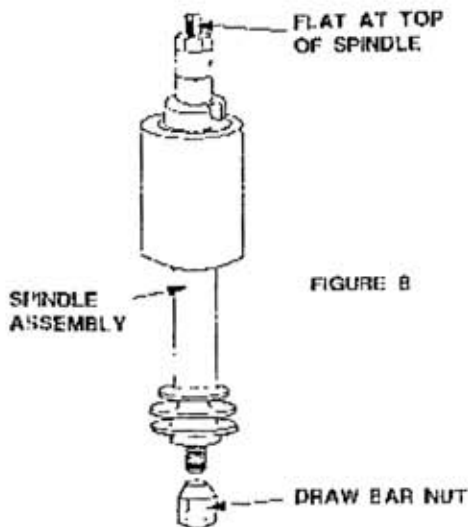


FIGURE 7

CHANGING SPINDLE

The shaper is supplied with both 3/4" and 1" and 1 1/4" spindle assemblies. These assemblies are locked in a tapered seat with a draw bar and nut. To change spindles, place one wrench on the flats on the top of the spindle and another wrench on the draw bar nut underneath the spindle drive sheave as shown in Figure 8. Turn the nut about two turns and tap upward lightly with a wood block to break the spindle loose from the taper. Finish removing the nut and lift out the spindle.



CHANGING CUTTERS

Each size spindle is supplied with a safety lock nut with left hand threads located above the larger spindle nut as shown in Figure 9. To mount or change cutters, first remove the safety lock nut. Remove the spindle nut by placing one wrench on the spindle nut and another wrench on the flats on top of the spindle. Always replace the safety lock before operating shaper.

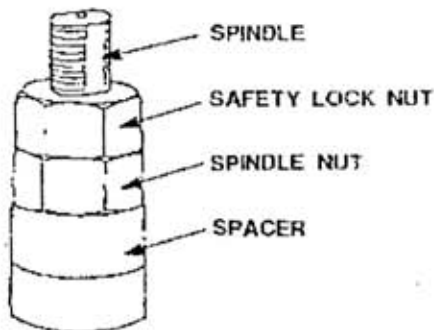


FIGURE 9

Tool changing must be done with the utmost care keeping in mind the following points:

1. Cutters, collars, and spacers mounted on the spindle shaft must have a perfect fit with no room for movement or play between parts.
2. Holes and counterbores of cutters, collars, and spacers must be perfectly shaped without rust, dings, nicks or other flaws.
3. Clean all cutters, collars, and spacers before installing them on the spindle.
4. Always mount the cutter as low as possible on the spindle.
5. Make sure all parts on the spindle are locked in position before starting the shaper.

BEFORE OPERATING

Turn the main drive motor on momentarily to check for proper rotation. The spindle should rotate counterclockwise when looking down on the spindle. Correct as required. Run the machine for a short period of time to insure that the moving parts are working properly with no excessive vibration. If a problem develops, correct before turning the shaper on for general use.

SHAPER OPERATION

WARNING: For the sake of clarity, the Model 36 shaper guard has been omitted from most illustrations. All shaper operations must be done with the proper guard in place and any other device which insures the safety of the operator.

Cutter rotation

COUNTERCLOCKWISE SETUP

With the cutter installed as shown in Figure 10, feed the workpiece from right-to-left.

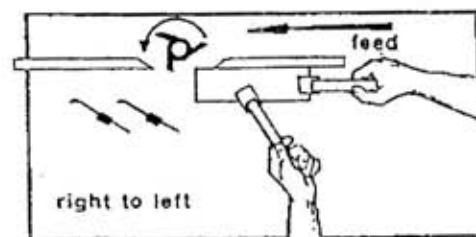


FIGURE 10

CLOCK WISE SETUP

With the cutter installed as shown in figure 11, feed the workpiece from left-to-right.

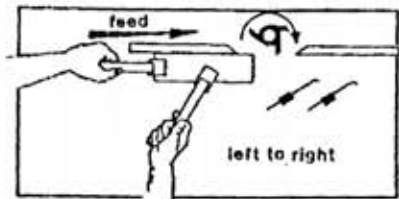


FIGURE 11

GRAIN DIRECTION

Plan to shape the work piece in the same direction as the grain when possible. Some open grain woods (such as redwood, fir, and oak) will leave a rough, or slightly splintered edge when cut against the grain.

DANGER: Deep cuts require excessive horsepower and pushing force to control the cut. Deep cuts can also cause the wood to splinter or split and may lead to lost control or personal injury. Pre-cut the stock on the band saw whenever possible to 1/16" of finished

size. When an edge finish is unsatisfactory. Take two or more cuts with the final cut no more than 1/16" deep.

In the case of shaping across the grain, the trailing board edge will often splinter. To correct this, the best solution is to make the board 1/4" oversize in width, shape the board, and simply trim off the

STRAIGHT EDGE SHAPING

Straightedge shaping is always performed with the work piece against the fence. To set up :

1. Disconnect, or unfug, the machine from its power source.
2. Check to see that the fence faces are parallel, properly in line or offset if necessary, and securely tightened.
3. Rotate the cutters and inspect for clearance.
4. Position the leading face of a cutterhead blade at 90 degrees to the in feed fence face. Position the workpiece against the in feed fence and adjust the spindle to the desired height of the cut. At the same time, check the desired depth of cut with the blade in the 90 degree position as shown in figure 12.

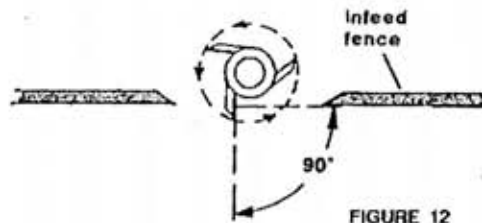


FIGURE 12

DEPTH OF CUT

The depth of cut is the distance from the outside circumference edge of the collar (which the work rides against) to the outside edge of the cutter. The depth of cut is determined by the position of the fence relative to the cutterhead and / or by the use of shaper collars.

5. Lock the spindle.
6. Install the right guard wherever possible.
7. Reconnect power to the machine.
8. Take a trial cut on a piece of scrap of the same thickness as work piece.

NOTE: Only a short cut is necessary to determine if the profile, depth, and height of cut is correct.

9. Make adjustments as required and continue to shape using the work piece.

EDGE SHAPING: LONG BOARDS

When edge shaping long boards, the work piece must be at least 12 inches long.

1. Use the hold-ins and hold-downs as shown in figure 13 to firmly hold the work piece down and against the fence. If work piece is too wide for the hold-ins to be used, clamp a scrap board to the table to substitute for the hold-ins.

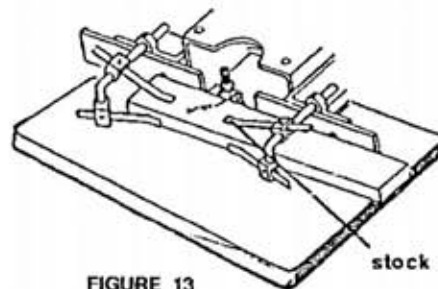


FIGURE 13

2. Check the rotation of the cutter. Be sure to feed workpiece against rotation of the cutter.
3. Feed the workpiece slowly and steadily with firm, even pressure to make a smooth cut.

IMPORTANT : The rate of feed depends on depth of cut and experience of operator.

EDGE SHAPING : SHORT BOARDS

When edge shaping short boards, never attempt to hand guide any stock less than 12 inches long, or narrower than 3 inches without the use of a special guide as shown in Figure 14.

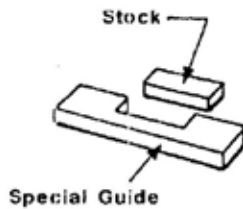


FIGURE 14

END SHAPING

When end shaping narrow stock, it is important that at least one half of the workpiece end be in contact with either the infeed or outfeed fence as shown in Figure 15.

DANGER : End shaping a narrow workpiece without a special guide could result in the workpiece rocking into the cutterhead causing minor, or major, personal injury.

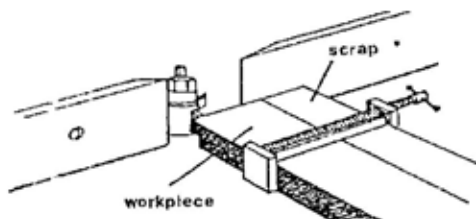


FIGURE 15

Use a guide similar to the one shown in Figure 15 which tightly clamps the scrap piece to the workpiece and provides the necessary width.

SHAPING ALL SIDES

Because cross grain shaping is more likely to create chipping out end splinters on some woods, it is good practice to first shape the cross-grain sides. Any chipping that does occur is taken care of by the with-grain cuts, as shown in Figure 16.

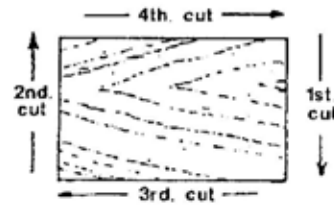


FIGURE 16

ON-EDGE SHAPING

If the shaper fence does not firmly support wide stock, use the existing bolts in the fence to attach a special rigid high fence as shown in Figure 17.

NOTE : Be sure the bolt holes are countersunk in the special fence.

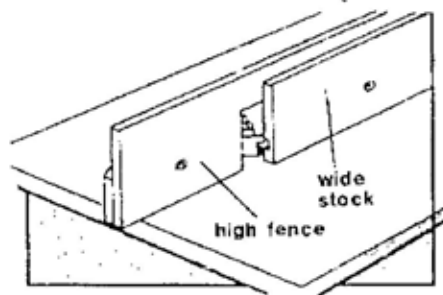


FIGURE 17

STRAIGHTLINE BEVEL EDGE SHAPING

To perform a bevel edge cut, the infeed edge of the jig is placed against the infeed fence and clamped to the table, as shown in Figure 18.

The outfeed fence is moved forward as necessary to compensate for the cut.

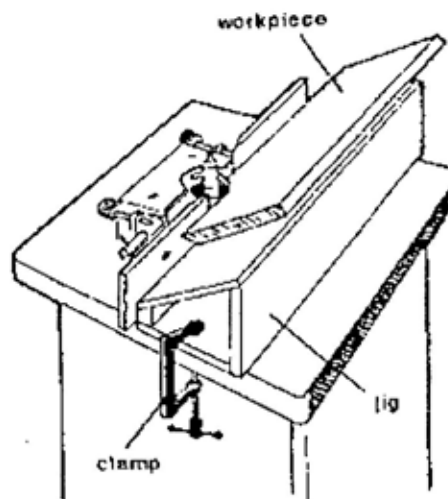


FIGURE 18

CONTOUR EDGE SHAPING WITH COLLAR BEARING

To shape contoured edges, the operator must first remove the fence assembly. In order to control the workpiece and limit the depth-of-cut, the operator must use an anti-friction collar with the cutter (s). As shown in Figure 19.

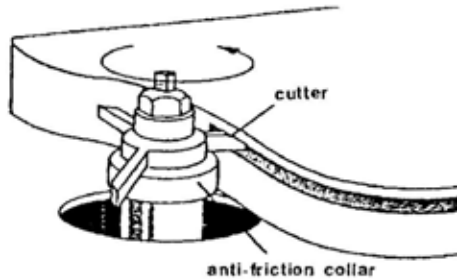


FIGURE 19

The collar may be positioned above or below the cutter (s), and its function is to ride against the workpiece or template. At the same time, the collar will establish the depth-of-cut as shown in Figure 20. Whenever possible, always use the ring guard.

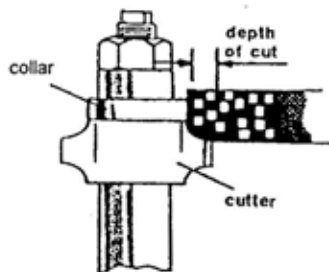


FIGURE 20

NOTE : Since the collar requires at least 1/8" of surface edge to ride against, the entire edge cannot be shaped as shown in Figure 21. The assed use of a pattern, however, permits the shaping of the entire contour edge.

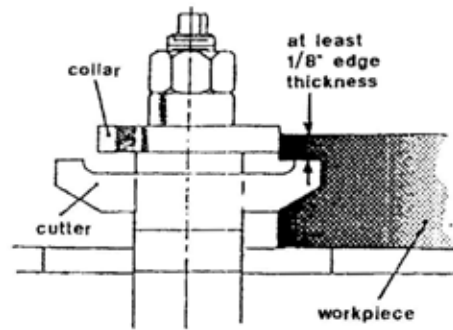


FIGURE 21

If the workpiece is to be shaped all around the perimeter, hold it firmly and push the work straight into the cutter until the depth of cut is established by the collar as shown in Figure 22. Continue to feed the work so that the point of contact on the edge is always 90 degrees to the collar (or directly in line with the cutter edge) and geld firmly against it.

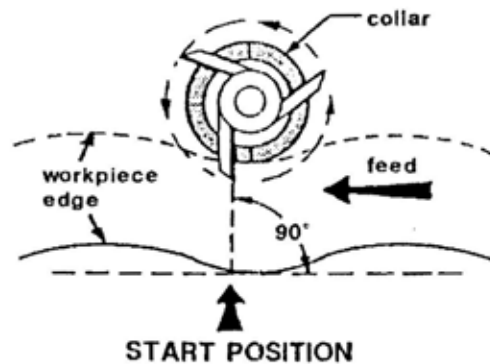


FIGURE 22

When the workpiece is not contoured all around, start the cut as shown in Figure 23. with this operation, the workpiece is positioned against the start pin and the end swung into place to start the cut. When the cut has begun and the work piece firmly against the collar, swing the stock away from the pin and proceed with cut.

GUIDEPIN Whenever possible, use a guide pin when performing pattern shaping and collar shaping operations.

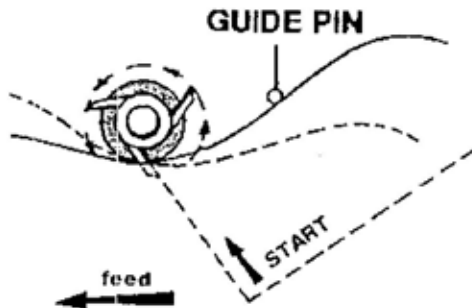


FIGURE 23

Large circular and arc-shaped stock can be shaped as described under "CONTOUR EDGE SHAPING" page 12; however, small sized stock requires the use of special shaping jigs similar to those shown in Figure 24 and 25.

With the entire fence assembly removed, carefully position the jig for desired depth of cut and securely clamp to the table.

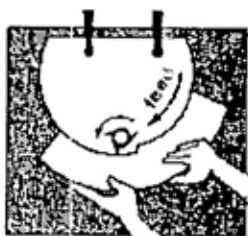


FIGURE 24

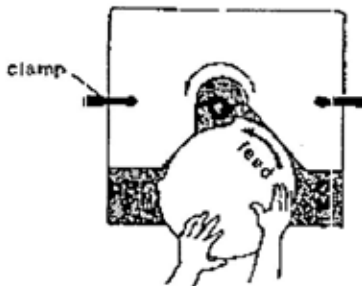


FIGURE 25

It is important with the arc and circle shapes that the workpiece, prior to being shaped, must be roughly cut to the desired size and curve of the finished piece. Make sure the jig curve of the exactly the workpiece curve. At all times keep the cutter is cutting the stock. NEVER perform this type operation without a ring guard or similar safety device over the cutterhead.

ENCLOSED EDGE SHAPING

An enclosed workpiece edge is shaped in the same manner as an outside contoured edge except that a guide post is not required as shown in Figure 26.

NOTE : If the whole edge is to be shaped, the operator **MUST** use a pattern.

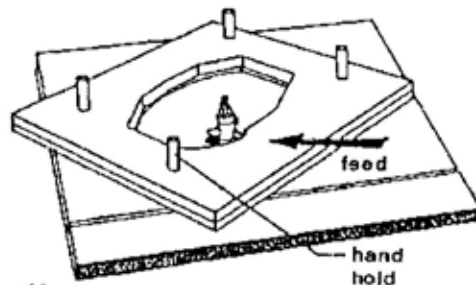


FIGURE 26

Position workpiece on the table BEFORE starting the motor. The operator must do the entire shaping cut by **PUSHING** (feeding) the workpiece into the cutter (s).

DANGER : Enclosed edge shaping is extremely dangerous. The operator must be aware at all times of the direction of feed.

GUIDE PIN Whenever possible, use a guide pin when performing pattern shaping and collar shaping operations.

NEVER PERFORM THIS TYPE OPERATION WITHOUT A RING GUARD OR SIMILAR SAFETY DEVICE OVER THE CUTTERHEAD.

1. with a firm grip, ease the edge into the cutter (s) until stopped by the collar shown in Figure 27.

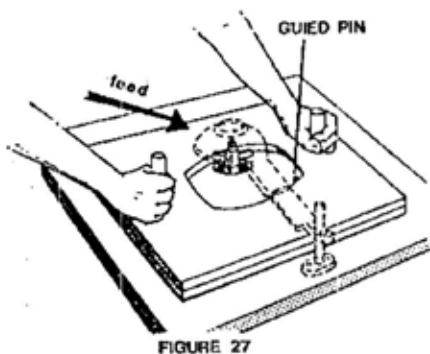


FIGURE 27

2. Continue to push straight in while feeding and turning the workpiece at the same time until the cut is finished. Turn off the motor and do NOT remove workpiece until the cutters have completely stopped. **WARNING :** Unless the workpiece is attached to a larger wooden base, NEVER perform enclosed edge shaping if there is less than 12" of workpiece material all around the opening. NEVER perform enclosed edge shaping if the workpiece opening is smaller, in any direction, than twice the diameter of the cutter(s).

TEMPLATES

The template, which is usually made of 3/4" scrap material, must be thick enough to provide a solid bearing edge against a collar. When constructing a template similar to the one shown in Figure 28, keep in mind that it serves only as a guide for the cutter.

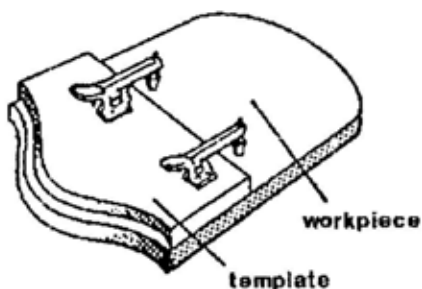


FIGURE 28

PIECED TEMPLATE

If the workpiece requires all-around shaping, the template can be constructed from several sections pieced together as shown in Figure 29.

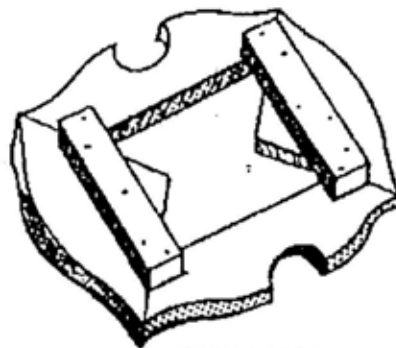


FIGURE 29

SECURING THE TEMPLATE

There are various methods used to secure the template to the workpiece. The experienced operator will choose the most appropriate according to the shape, size, and type construction of the template. For example, if the workpiece is large enough to extend beyond the front of the table and still leave room for the desired cut, it can be securely held to the template with "C" clamps as shown in Figure 30.

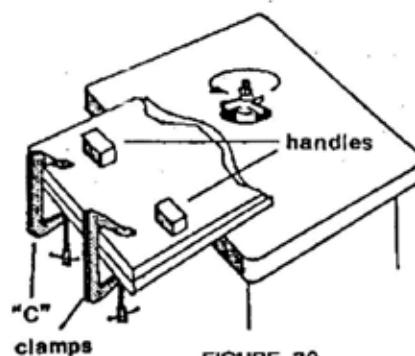


FIGURE 30

In many situations the workpiece is positioned against the template using dowels as anchor points and handles (wood blocks) to assist the operator in guiding the workpiece through the cut as shown in Figure 31.

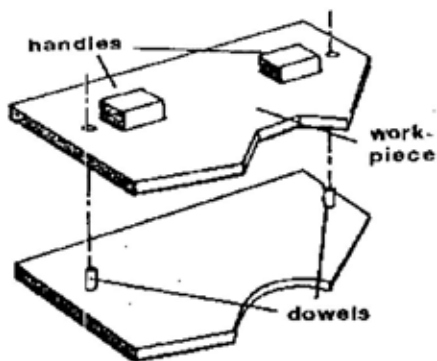


FIGURE 31

HORIZONTAL TOGGLE CLAMP

The horizontal toggle clamp, similar to those illustrated in Figure 32, is especially useful when ordinary "C" clamps will not allow the freedom of movement often required in shaping. The toggle clamp also allows the operator to firmly control the workpiece without the additional pressure required to keep workpiece and template together by hand. Anchor points, such as dowels, are required with this type setup.

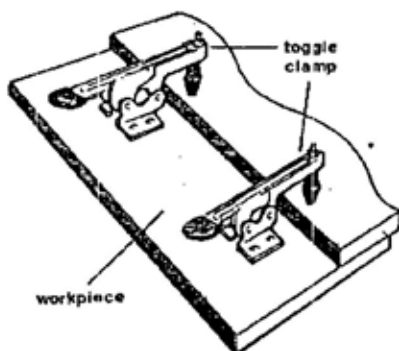


FIGURE 32

PROTECTION Take every precaution to protect yourself, others around you, and the machine itself from improper use.

CARELESS ACTS Give the work you are doing your undivided attention. Looking around, talking to someone, and horseplay are careless acts that can result in serious injury.

SPECIAL CUTS

The illustrations in this section show the profile, or section, views made by the cutter(s). The most efficient cutters are carbide tipped to ensure clean and long-term cutting. Small cutters may be solid carbide, and some use inserts. Since there are such a wide variety of choices, the operator is limited only by his experience and imagination.

STACKED CUTTERS

In addition, a variety of interesting and timesaving cuts can be made in a single setup by stacking the cutters as shown in Figure 33. When the operator stacks the cutters, extra care should be taken to see that all parts are clean, free of nicks and flaws, and perfectly balanced in the stacked position.

SASH AND DOOR SHAPING

Shaping a door still requires two operations. Figure 33 shows the sash cut for the first operation.

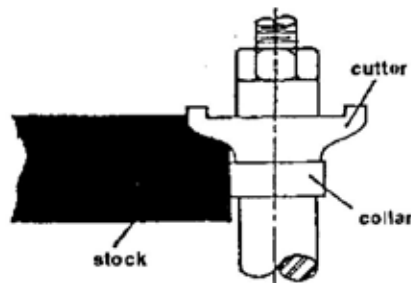


FIGURE 33

Figure 34 shows the stock flipped over and the sash cutter used with a 1/4" groove cutter to complete the cut.

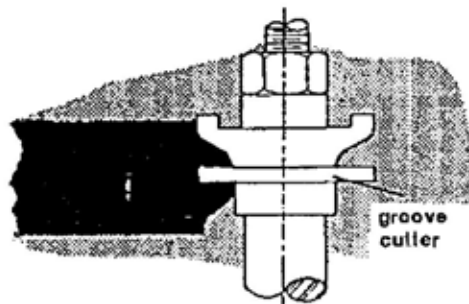


FIGURE 34

Figure 35 shows the first shaping cut with the sash cutter for the matching door stile sash.

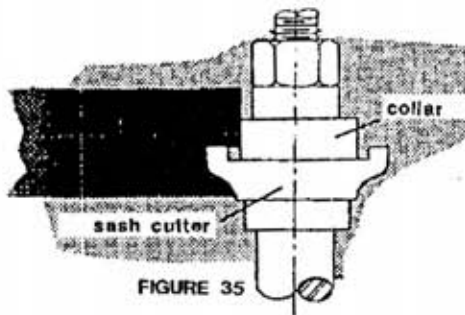


Figure 36 shows the same cut with the stock flipped.

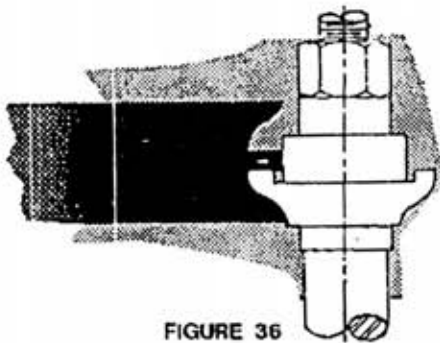


Figure 37 shows the first shaping cut for a window-sash stile utilizing a sash cutter, collar, collar, and a 1/2" groove cutter.

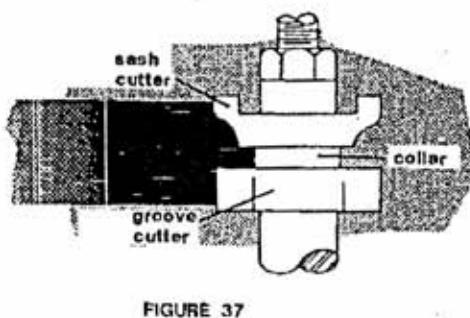
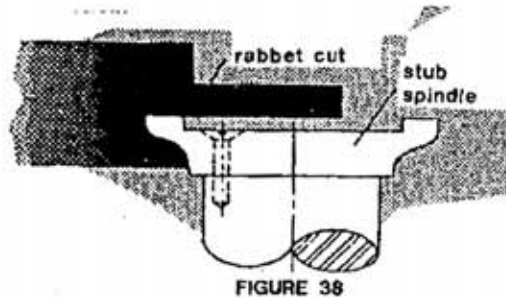


Figure 38 shows both cuts required for a window-sash rail end. The first operation at top is a rabbet cut made with a groove cutter. The second operation is performed with a stub spindle and butt head screw.



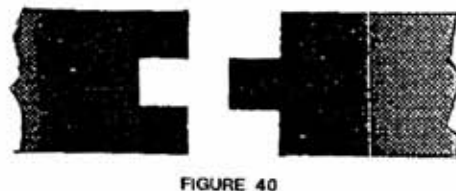
BUTT JOINTS

All butt type joints require both workpieces to be perfectly square and straight-edged.

GLUE BUTT JOINT : To perform a glue butt joint, both fences are kept in-line and adjusted for a depth of cut as shown in Figure 39. The cuts on both workpieces are part-edge cuts which do not reduce the stock width during the cutting procedure. When shaping the two workpieces, one is fed top-side up; the other is fed bottom-side up.



Tongued joint : Similar to the glue joint, both fences are kept in-line for the tongued joint and adjusted for a 1/4" depth of cut with no reduction in stock width. With this joint, however, both workpieces are fed with the same side up as shown in Figure 40.



as shown in Figure 41. the leaf workpiece is shaped with a drop Leaf Bead cutter; the table workpiece is shaped with a Drop Leaf Cove cutter. With this type joint, the whole edge of both workpieces is shaped, same side up, and allowance made for a 1/16" reduction in width. Adjust the infeed fence to reduce the workpiece width by 1/16", and adjust the outfeed fence to compensate for stock removed.



FIGURE 41

TAPER CUTS

OFFSETTING THE FENCES

Taper cuts can be made by offsetting the fences for the amount of taper desired, or with a layout line on the stock which can be made parallel to the infeed fence as shown in Figure 42.

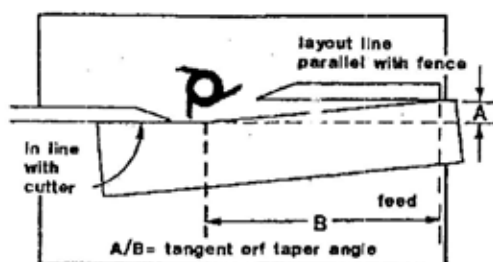


FIGURE 42

Start the cut by holding the stock against the infeed fence and swinging it into contact with the outfeed fence just past the cutterhead. As the cut is started, transfer pressure to hold the workpiece against the outfeed fence, and continue feeding the workpiece through. After the first cut the fences will have to be readjusted in order for the second cut (parallel cut) and the final depth of cut to remain true with the taper.

CAUTION: Do not use the standard fence for short work (12 inches or less in length on the side to be cut). Instead, use a miter gauge or special fixture to avoid losing control of the workpiece.

TENONING

The tenoning fixture illustrated in Figure 43 shows a miter gauge equipped with a holddown for shaping the ends of narrow workpieces.

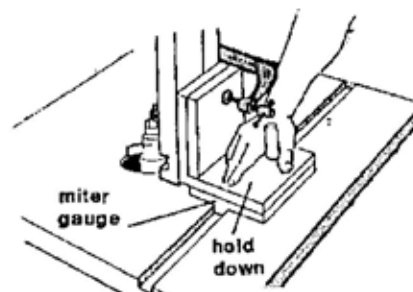


FIGURE 43

The miter gauge can also be adapted to cut square and centered tenons at the ends of legs for tables, chairs, etc. Secure the leg to jig and position for cut as shown in Figure 44.

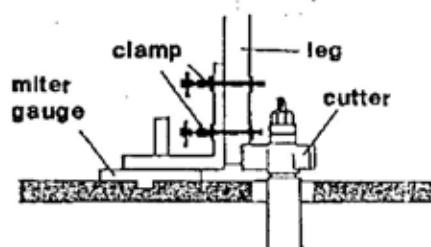


FIGURE 44

Make all first cuts with the same jig setting and spindle height. When the first series of cuts have been made, reposition leg on the jig for each succeeding cut.

NOTE: If the leg is tapered, use a wedge to place the side facing the cutter into a 90 degree vertical position as shown in Figure 45.

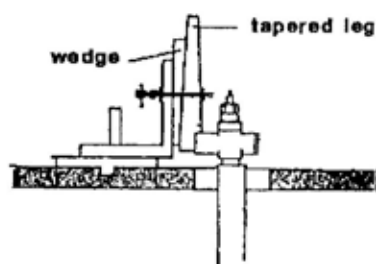


FIGURE 45

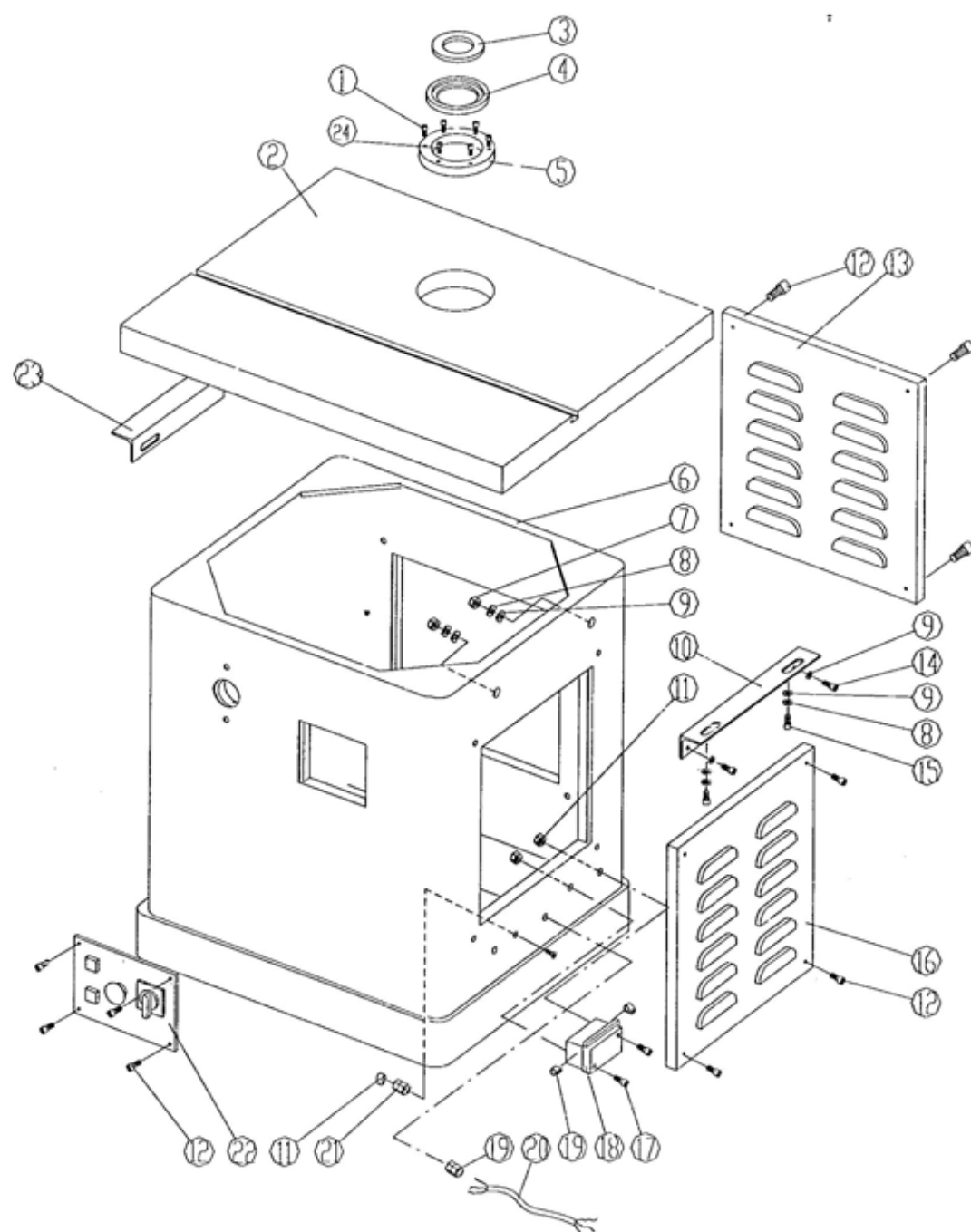
TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	SOLUTION
SHAPER WILL NOT START	<ol style="list-style-type: none"> 1. Shaper not plugged in 2. Fuse blown or circuit breaker Tripped 3. Cord damaged 	<ol style="list-style-type: none"> 1. Plug in shaper 2. Replace fuse or reset circuit breaker 3. Have cord replaced
OVERLOAD KICKS OUT FREQUENTLY	<ol style="list-style-type: none"> 1. Extension cord too light or too long 2. Feeding stock too fast 3. Clean or replace cutter, see also "unsatisfactory cuts" below 	<ol style="list-style-type: none"> 1. Replace with adequate size Cord 2. Feed stock more slowly
SHAPE MAKES UNSATISFACTORY CUTS	<ol style="list-style-type: none"> 1. Dull cutter 2. Feeding work in wrong direction 3. Gum or pitch on cutter 4. Gum or pitch on table causing erratic feed 	<ol style="list-style-type: none"> 1. Replace cutter 2. Feed work against the cutter rotation 3. Remove cutter and clean with turpentine and steel wool 4. Clean table with turpentine and steel wool
CUTTERHEAD DOES NOT COME UP TO SPEED	<ol style="list-style-type: none"> 1. Extension cord too light or too long 2. Low supply voltage 3. Motor not wired for correct voltage 	<ol style="list-style-type: none"> 1. Replace with adequate size Cord 2. Contact your electric company 3. Refer to motor name plate for correct wiring
MACHINE VIBRATES EXCESSIVELY	<ol style="list-style-type: none"> 1. Machine not mounted securely to stand or workbench 2. Stand or bench on uneven floor 3. Damaged cutterhead 4. Bad V-belt 5. V-belt not tensioned correctly 6. Bent pulley 7. Improper motor mounting 	<ol style="list-style-type: none"> 1. Tighten all mounting hardware 2. Reposition on flat level surface. Fasten to floor if necessary 3. Replace cutterhead 4. Replace belt 5. Adjust belt tension by moving motor and motor bracket 6. Replace pulley 7. Check and adjust motor mounting
CUTTERHEAD DOES NOT RAISE FREELY	<ol style="list-style-type: none"> 1. Saw dust and dirt in raising mechanisms. 	<ol style="list-style-type: none"> 1. Brush or blow out loose dust and dirt

PARTS LIST : STAND ASSEMBLY

NO	DESCRIPTION
1	SET SCREW CUP PT. 5/16" x 5/8"
2	TABLE
3	TABLE INSERT (BIG)
4	TABLE INSERT (MID)
5	TABLE INSERT (LITTLE)
6	STAND ASSEMBLY
7	HEX NUT 3/8"
8	LOCK WASHER 3/8"
9	WASHER 3/8"- ϕ 20
10	TABLE BRACE (R)
11	HEX NUT 3/16"
12	SCREW RD HD 1/4"x5/8"
13	DOOR DUST REMOVABLE
14	BOLT HEX HD. 3/8"x1 1/4"
15	BOLT HEX HD. 3/8"x3/4"
16	COVER MOTOR
17	SCREW RD, HD. 3/16"x3/4"
18	ELECTRIC
19	CONNECTOR
20	CORD ELECTRIC
21	CONNECTOR
22	SWITCH
23	TABLE BRACE (L)

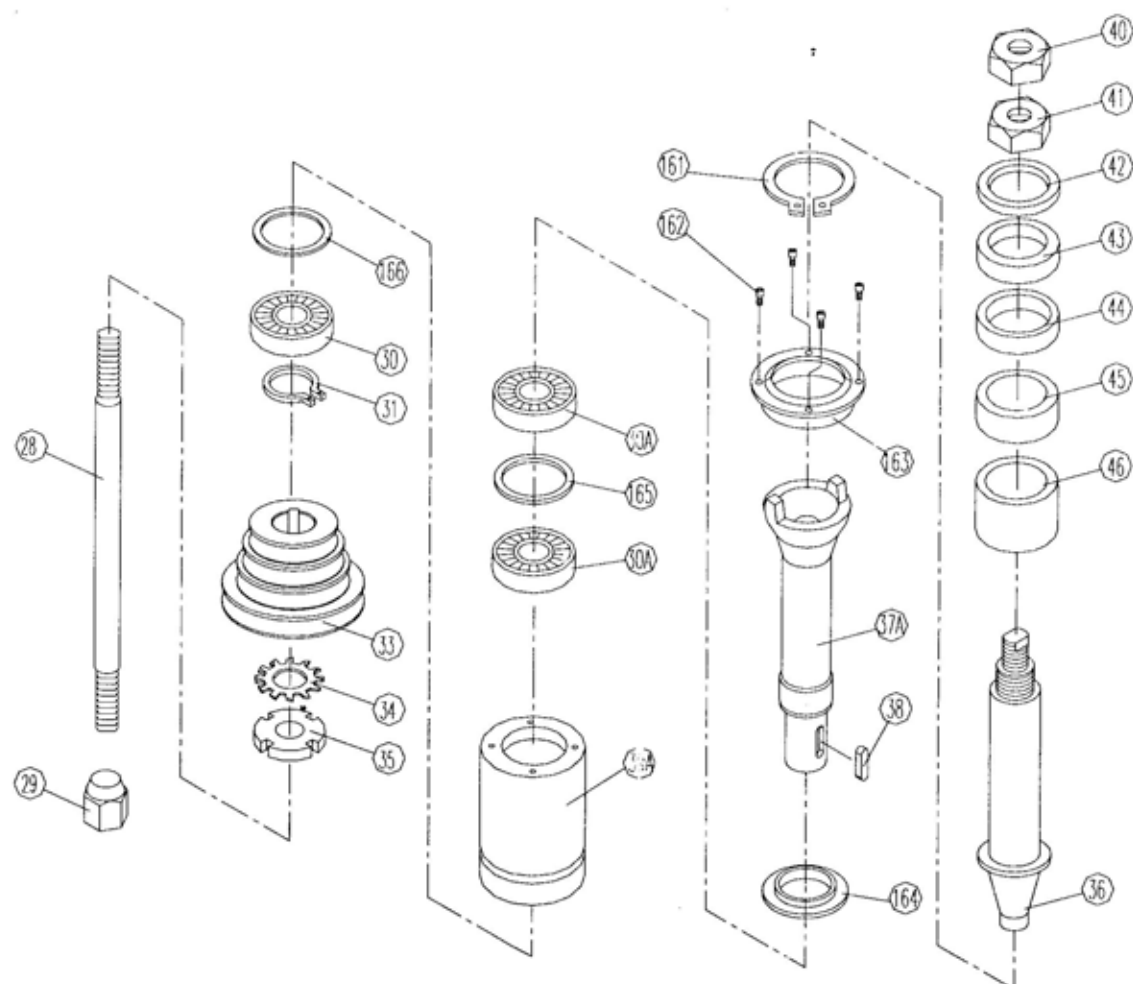
EXPLODED VIEW: STAND ASSEMBLY



PARTS LIST : SPINDLE

NO.	DESCRIPTION
28	BOLT LOCK
29	NUT LOCK
30	BEARING 6008ZZ
31	SMAP RING C-40
32	
33	PULLEY SPINDLE
34	WASHER LOCK
35	NUT LOCK
36	SPINDLE 1 1/4"
37A	SHAFT V2.0
38	KEY 7MM
39A	QUILL V2.0
40	NUT 3/4"
41	NUT 1"
42	COLLAR 1 1/4"×1/4"-1PCS
43	COLLAR 1 1/4"×3/8"-1PCS
44	COLLAR 1 1/4"×1/2"-2PCS
45	COLLAR 1 1/4"×3/4"-2PCS
46	COLLAR 1 1/4"×1" -2PCS
161	SMAP RING C-50
162	SOCKET BUTTON HEAD CAP SCREW 4mm×10mm
163	DUSTPROOF COVER (OUTER)
164	DUSTPROOF COVER (INSIDE)
165	ALTERNATELY RING
166	WAVELIKE RING

EXPLODED VIEW: SPINDLE

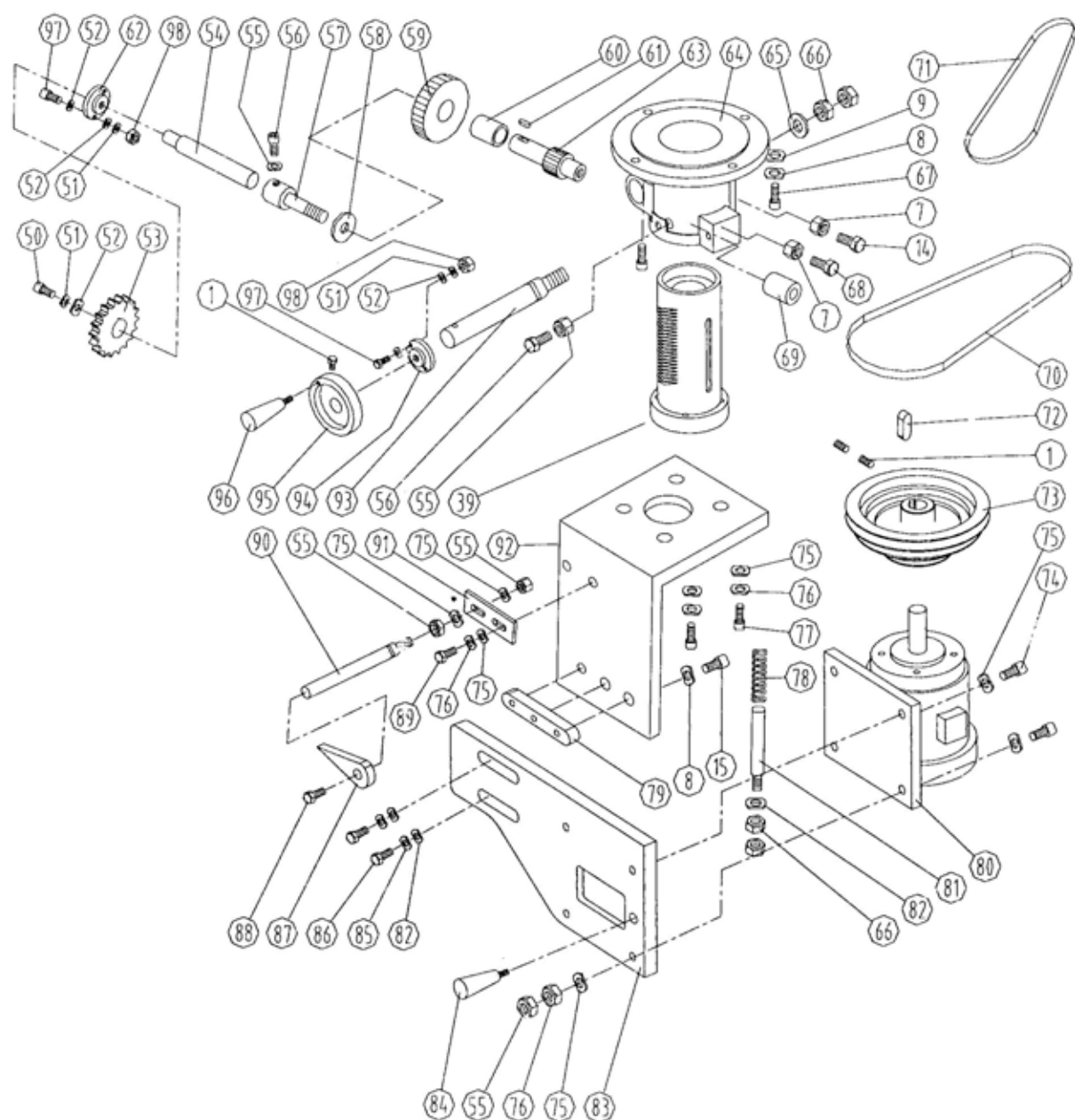


PARTS LIST : MOTOR AND SPINDLE BASE

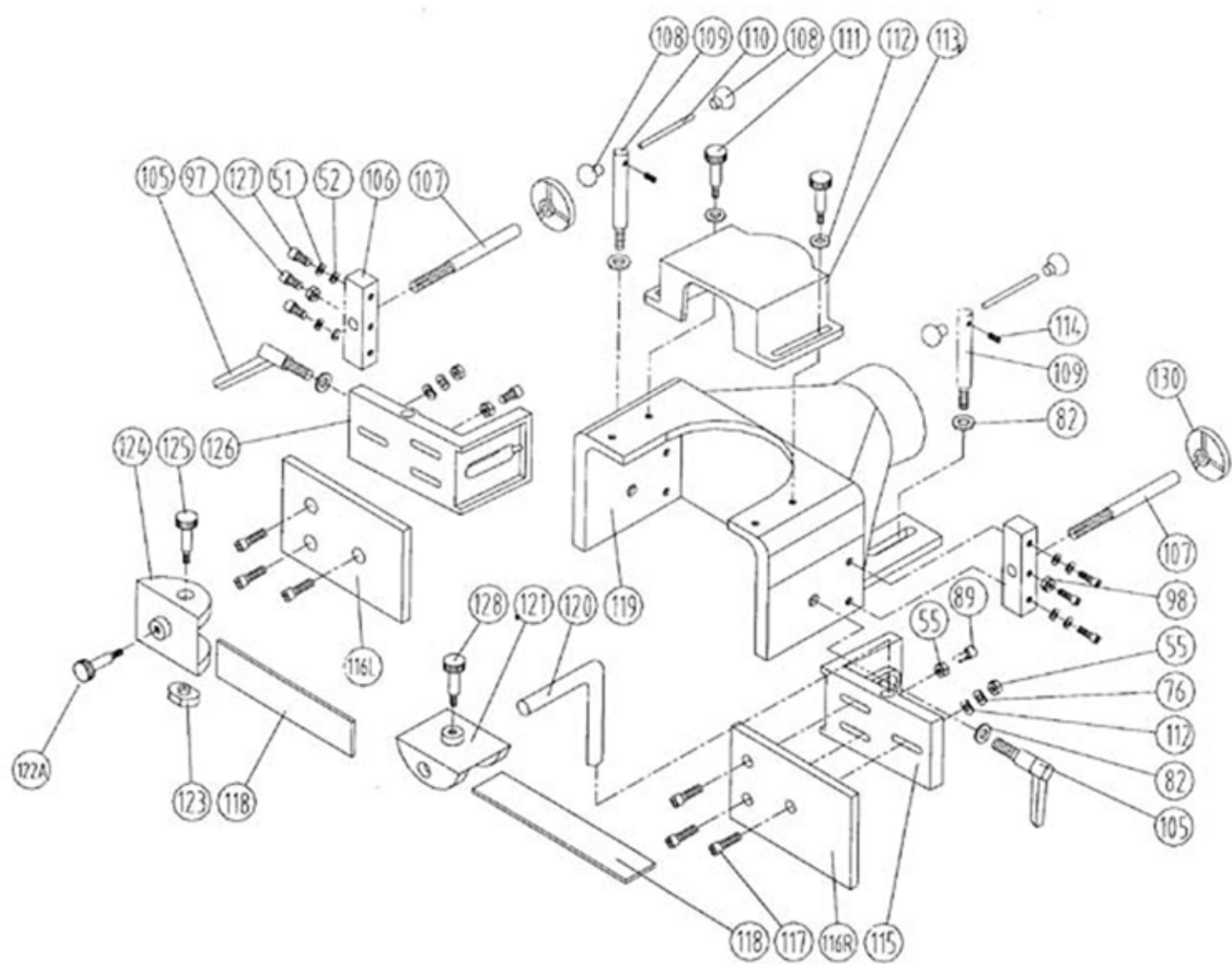
NO	DESCRRPTION
2	SET SCREW CUP PT. 5/16"x5/8"
7	HEX NUT 3/8"
8	LOCK WASHER 3/8"
9	WASHER 3/8" – ϕ 20
14	BOLT HEX HD. 3/8"x1 1/4"
15	BOLT HEX HD 3/8"x3/4"
39	QUILL
50	BOLT HEX HD 1/4"x5/8"
51	LOCK WASHER 1/4"
52	WASHER 1/4" – ϕ 16
53	HANDWHELL
54	BAR LOCK
55	HEX NUT 5/16"
56	BLOT HEX HD 5/16"x1"
57	SCREW LOCK
58	WASHER GEAR
59	GEAR
60	COLLAR
61	KEY 3mm
62	BASE GEAR SHAFT
63	SHALT GEAR
64	BASE SPINDLE
65	WASHER 1/2" – ϕ 25
66	HEX NUT 1/2"
67	SOCKEY HD. CAP. SCR. 3/8"x1 1/4"
68	SCREW
69	COLLAR
70	V-BELT 3300 13X735L1 (8000,10000 RPM)

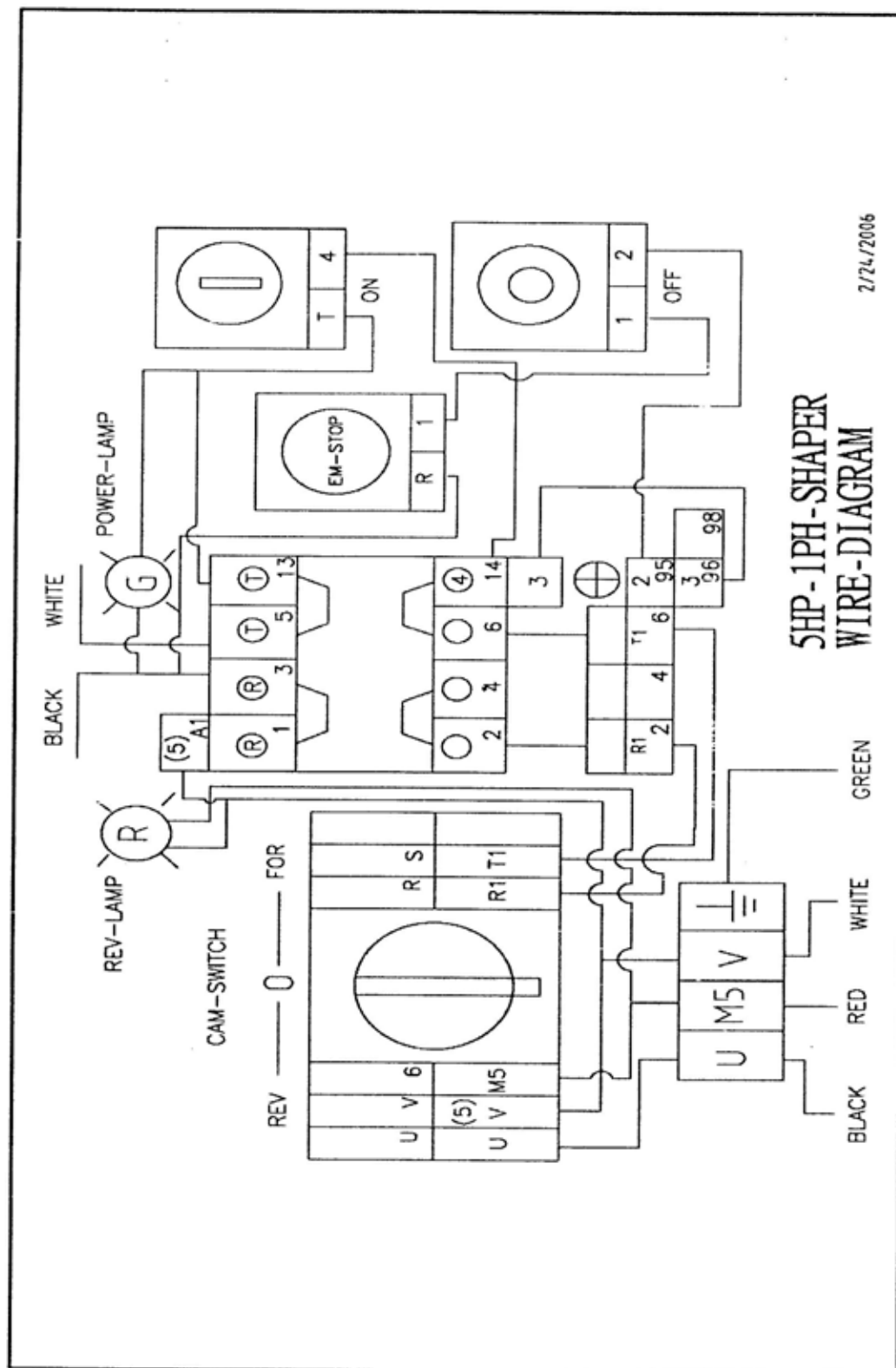
NO	DESCRRPTION
71	V-BELT 3280 13X685 L1 (3600,5100 RPM)
72	KEY 8mm
73	PULLEY MOTOR
74	BOLT HEX. HD. 3/8"x1 1/2"
75	WASHER 5/16" – ϕ 16:
76	LOCK WASHER 5/16"
77	SOCKY HD. CAP. SCR. 5/16"x1"
78	SPRING
79	KEY
80	MOTOR
81	SHAFT SPRING
82	WASHER 1/2" – ϕ 35
83	BASE MOTOR
84	KONB
85	LOCK WASHER 1/2"
86	BOLT HEX. HK. 1/2"x1 1/2"
87	POINTER
88	SCREW 3/16"x3/8"
89	BOLT HEX. HD. 5/16"x3/4"
90	SHAFT GUIDE
91	PLATE
92	PLATE MOTOR
93	SHAFT GEAR
94	BASE GEAR SHAFT
95	HANDWFELL
96	KNOB
97	BOLT HEX. HD. 1/4"x1"
98	HEX NUT 1/4"

EXPLODED: MOTOR AND SPINDLE BASE



NO	DESCRIPTION
51	LOCK WASHER 1/4"
52	WASHER 1/4"
55	NUT 5/16"
76	LOCK WASHER 5/16"
82	WASHER 1/2"
89	SCREW 5/16" * 3/4"
97	SCREW 1/4" * 3/4"
98	NUT 1/4"
105	HANDLE LOCK
106	BRACKET SCREW GUIDE
107	SCREW GUIDE
108	NUT
109	SHAFT GUIDE
110	BAR
111	KNOB
112	WASHER 5/16"
113	PLATE GUARE
114	SET SCREW 1/4"
115	BRACKET ASSY FENCE R.H.
116	FENCE WOODEN
117	SCREW
118	TENSION
119	GUARD
120	BAR
121	RETAINER (L)
122A	KNOB
123	NUT
124	RETAINER (s)
125	KNOB
126	BRACKET ASSY FENCE L.H.
127	SCREW 1/4" * 1 1/2"
128	KNOB 3/8"







WARRANTY

CRAFTEX 2 YEAR LIMITED WARRANTY

Craftex warrants every product to be free from defects in materials and agrees to correct such defects where applicable. This warranty covers **two years** for parts and 90 days for labour (unless specified otherwise), to the original purchaser from the date of purchase but does not apply to malfunctions arising directly or indirectly from misuse, abuse, improper installation or assembly, negligence, accidents, repairs or alterations or lack of maintenance.

Proof of purchase is necessary.

All warranty claims are subject to inspection of such products or part thereof and Craftex reserves the right to inspect any returned item before a refund or replacement may be issued.

This warranty shall not apply to consumable products such as blades, bits, belts, cutters, chisels, punches etceteras.

Craftex shall in no event be liable for injuries, accidental or otherwise, death to persons or damage to property or for incidental contingent, special or consequential damages arising from the use of our products.

RETURNS, REPAIRS AND REPLACEMENTS

To return, repair, or replace a Craftex product, you must visit the appropriate Busy Bee Tools showroom or call 1-800-461-BUSY. Craftex is a brand of equipment that is exclusive to Busy Bee Tools.

For replacement parts directly from Busy Bee Tools, for this machine, please call 1-800-461-BUSY (2879), and have your credit card and part number handy.

- All returned merchandise will be subject to a minimum charge of 15% for re-stocking and handling with the following qualifications.
- Returns must be pre-authorized by us in writing.
- We do not accept *collect* shipments.
- Items returned for warranty purposes must be insured and shipped pre-paid to the nearest warehouse
- Returns must be accompanied with a copy of your original invoice as proof of purchase. Returns must be in an un-used condition and shipped in their original packaging a letter explaining your reason for the return. Incurred shipping and handling charges are not refundable.
- Busy Bee will repair or replace the item at our discretion and subject to our inspection.
- Repaired or replaced items will be returned to you pre-paid by our choice of carriers.
- Busy Bee reserves the right to refuse reimbursement or repairs or replacement if a third party without our prior authorization has carried out repairs to the item.
- Repairs made by Busy Bee are warranted for 30 days on parts and labour.
- Any unforeseen repair charges will be reported to you for acceptance prior to making the repairs.
- The Busy Bee Parts & Service Departments are fully equipped to do repairs on all products purchased from us with the exception of some products that require the return to their authorized repair depots. A Busy Bee representative will provide you with the necessary information to have this done.
- For faster service it is advisable to contact the nearest Busy Bee location for parts availability prior to bringing your product in for repair.