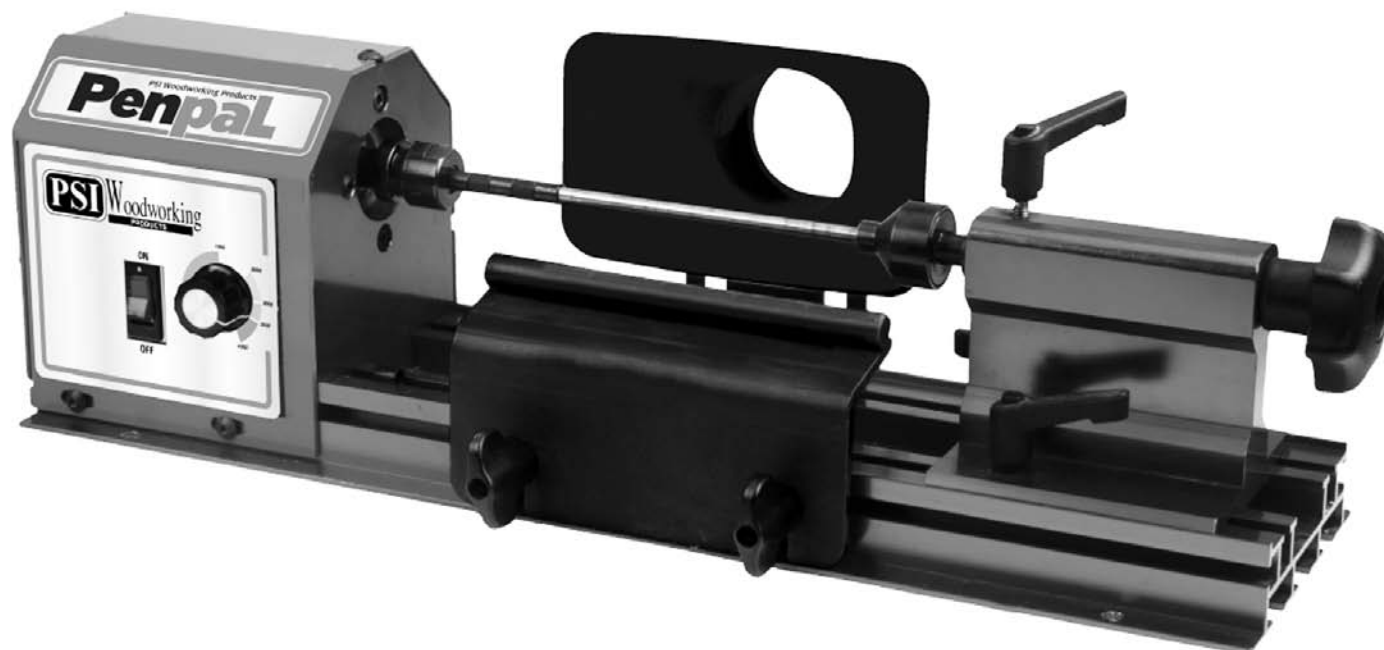


PSI PENPAL™ Lathe

OWNERS MANUAL



Model.....	#PENPAL
Swing over bed.....	5-1/2"
Mandrel Capacity.....	7"
Speeds	0 to 4300 rpm \pm 5%
Headstock thread / Tailstock	3/4"x 16tpi / #1MT
Motor	1/5 hp , 150w
Motor Voltage	110/120v
Weight	15lbs
Toolrest	6"
Overall Dimensions	20"L x 6"H x 5-1/2"W
Quill Travel	5/8"

Please consult this manual before operating this lathe



PSI Woodworking Products, 9900 Global Rd, Phila., PA 19115 1-877-774-5431

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WARRANTY

The PENPAL Lathe is warranted against defects in materials and workmanship for a period of three (3) years from the date of purchase. This warranty applies to the purchaser of this product, and is limited to repair or replacement of the product or its parts at PSI Woodworking Products' discretion. Excluded are parts that have been misused, abused, altered, or consumed by normal operation of the machine. Also excluded are direct or consequential damages to persons, property, and/or materials. Your invoice serves as proof of purchase and must be referenced prior to return authorization. Contact the dealer where you purchased your lathe for service or repair issues.

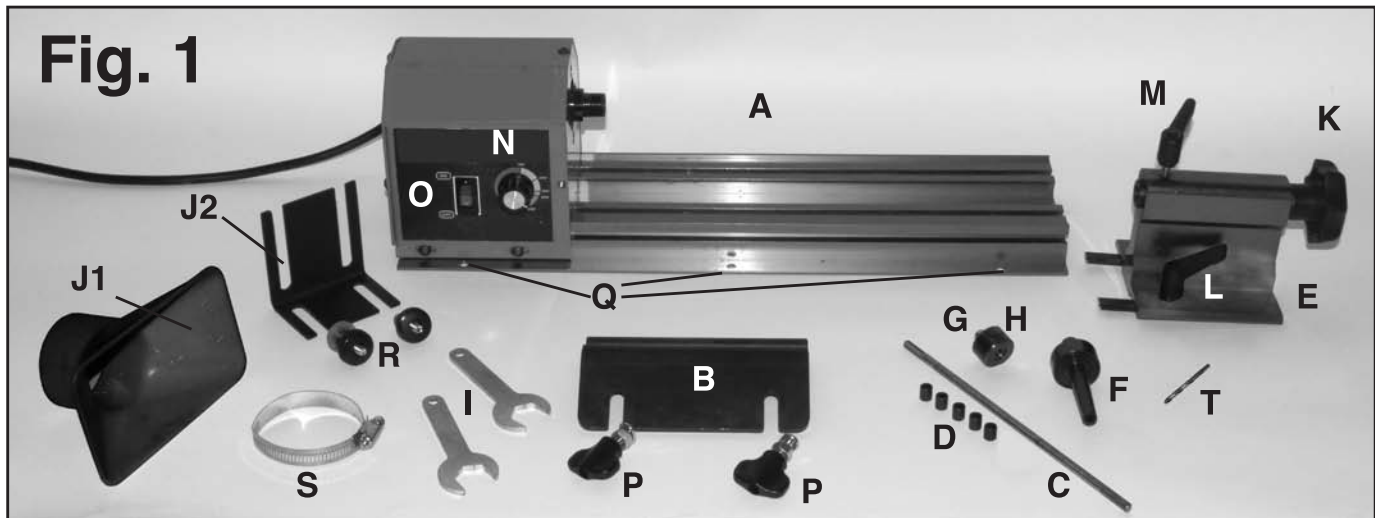
Date Purchased

Invoice Number

SAFETY INSTRUCTIONS

1. Read and understand this instruction manual.
2. NEVER connect the plug to a power source until all the assembly steps have been completed.
3. Check that your supply voltage and grounding are correct.
4. Do not use the lathe in a damp or wet location.
5. Keep the lathe clean and lightly oiled.
6. Make sure the control box is adequately guarded at all times.
7. Always remove tools when you are finished with them.
8. Keep the work area well lit and provide adequate ventilation in the workspace.
9. Keep young children and bystanders a safe distance from the lathe.
10. Do not force the lathe to do more than its designed to do.
11. Do not wear loose clothing, jewelry or neckties, which could get caught in moving parts. It is recommended that long hair be restrained.
12. Safety eyewear should be worn at all times.
13. Connect the dust hood to a shop vacuum.
14. Use a face or dust mask during lathe operation.
15. Attach all work pieces securely to the lathe.
16. For best results be sure to keep turning tools sharp, clean, and free from dust.
17. Use only three-wire extension cords that have 3-prong grounding type plugs and 3-hole receptacles that accept the tool's plug.
18. Check the speed BEFORE mounting any material onto the lathe. ALWAYS start the lathe at its slowest speed.
19. Always use an appropriate speed for the projects being turned – Slow speeds for larger diameters and roughing, faster speeds for smaller spindle blanks and finishing.
20. Vacuum excess dust build-up that may accumulate in or near the variable speed control box and motor.

LATHE COMPONENTS (A-T) / PACKING LIST



- A. Lathe** Variable Speed Mini Lathe.
- B. Tool Rest 6"** Slides over the bed and supports the cutting tool.
- C. Pen Making Mandrel** A precision rod that is centered between headstock and tail stock of the lathe.
- D. 7mm Pen Bushings (5)** Slide onto the mandrel between pen blanks. Use as spacers & guide for final turning diameter of pen barrels.
- E. Tailstock Assembly** Mounts to the bed of the lathe and supports the end of the work piece.
- F. Live Mandrel Saver** Free spinning tailstock center with a through hole to support the mandrel shaft.
- G. Headstock Collet**..... Mount into the headstock of the lathe - is used to grip the other end of mandrel.
- H. Collet Closer Nut**..... Screws over the collet and tightens it to grip the pen making mandrel.
- I. Spanner Wrenches** Used to tighten the collet closer to lock the shaft into place.
- J1. Collector Port** 2-1/2"dia. dust collector hood attachment.
- J2. Collector Port Bracket** Dust Port Bracket Mounting Device.
- K. Tailstock Wheel Knob**..... Locks the mandrel saver over the bushings. Moves quill in/out
- L. Tailstock Locking Lever**..... Locks the tailstock to the bed.
- M. Quill Lock Lever**..... Locks the quill in the slot to avoid spinning.
- N. Speed Control Knob** Variable speed control knob.
- O. On/Off**..... Switch Turns lathe on and off.
- P. Tool rest locking knobs (2)** To adjust tool rest height.
- Q. Mounting holes** To bolt down the lathe.
- R. Dust Hood Mounting Knobs (2)**.. Mounts dust hood to lathe.
- S. 2" Hose Clamp**..... Mounts dust hood and 2-1/2" hose to bracket.
- T. 7mm Drill Bit**..... To drill blanks.

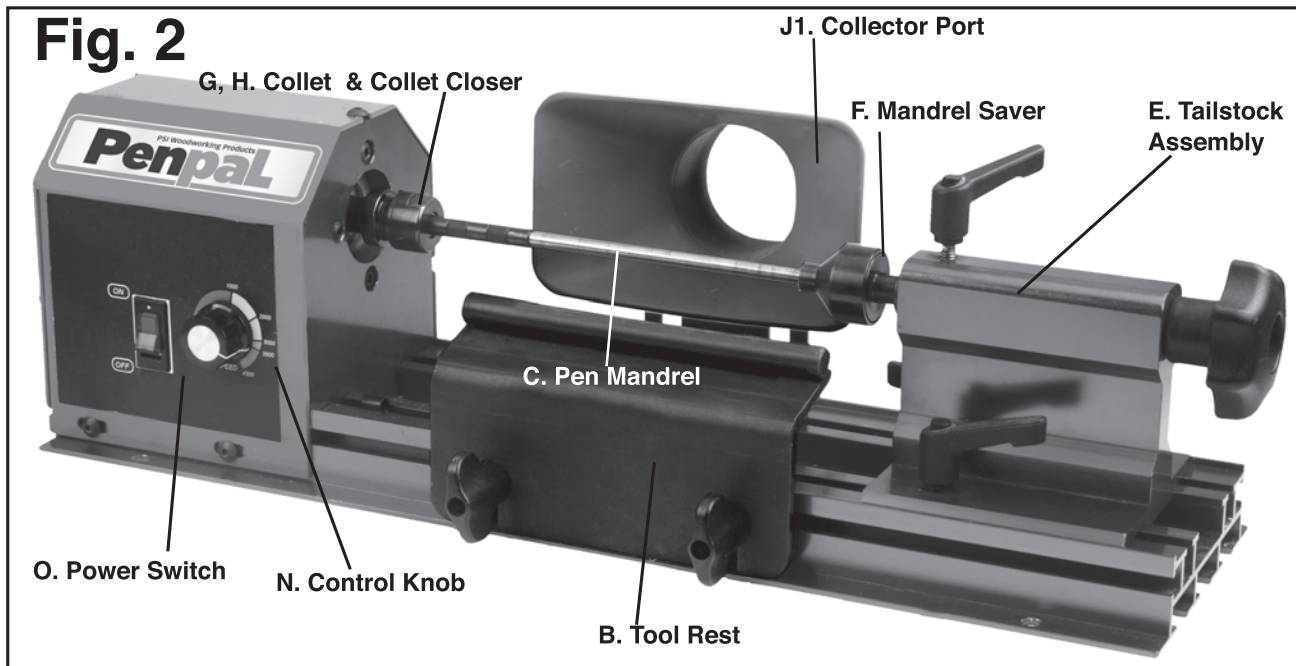
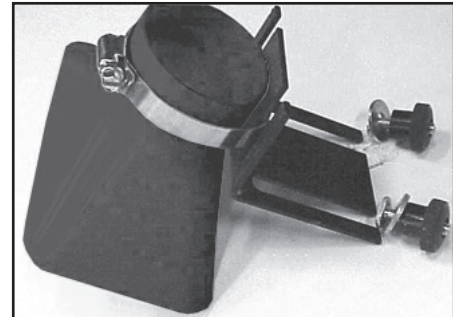
STEPS TO SUCCESSFUL TURNCRAFTING

STEP 1 – SELECT A WORK LOCATION

Even though the mini-lathe and auxiliary equipment are portable and take up a minimal amount of space, you should select a well-suited location that has the following features:

- Good Ventilation
- Adequate Lighting
- Power Outlets
- Storage Drawers
- Work Table / Bench
- Cabinet / Tool Rack

Fig. 2A
Dust Port Assembly



STEP 2 – SETTING UP THE LATHE (Refer to Fig. 2)

Remove the lathe from its box and carefully unpack the components. Clear your workbench or table and set the machine level. (Note: most turners find that the lathe is easiest to use when situated at waist level. You may have to adjust the position of the machine in relation to your height in order to achieve this optimum position).

Your lathe comes pre-assembled except for the tool rest assembly, mandrel assembly, and tailstock assembly. Follow these set-up instructions:

- 2a) Slide the tool rest (B) sideways onto bed of lathe - lock with knobs (P)
- 2b) Position collet (G) inside headstock shaft. Screw closer (H) over collet onto headstock shaft – do not tighten.
- 2c) Slide tailstock assembly (E) onto the bed of the lathe.
- 2d) Insert end of mandrel (C) into collet about 1". Tighten collet closer (H) over collet to secure mandrel with 2 spanner wrenches (I) provided. Place 2 bushings on shaft. (Be careful not to bend the mandrel).
- 2e) Insert the mandrel saver (F) into the tailstock taper.
- 2f) Make sure you plug the lathe power cord into a properly grounded outlet. Read the general safety instructions (p.2) before proceeding.
- 2g) Mount the collector port bracket (J2) onto the rear of the lathe - lock with knobs (R). Connect the collector port(J1) to 2-½" shop vacuum hose with clamp (S). (see fig 2a)
- 2h) Secure the lathe to your workbench with screws through mounting holes (Q).
- 2i) Changing Speeds: Switch the on switch (O) down to start the lathe. Spin the speed control knob (N) dial to the desired range on the speed indicator scale. Refer to the diagram on the cover.

STEP 3 – PREPARING THE PEN KIT BLANKS

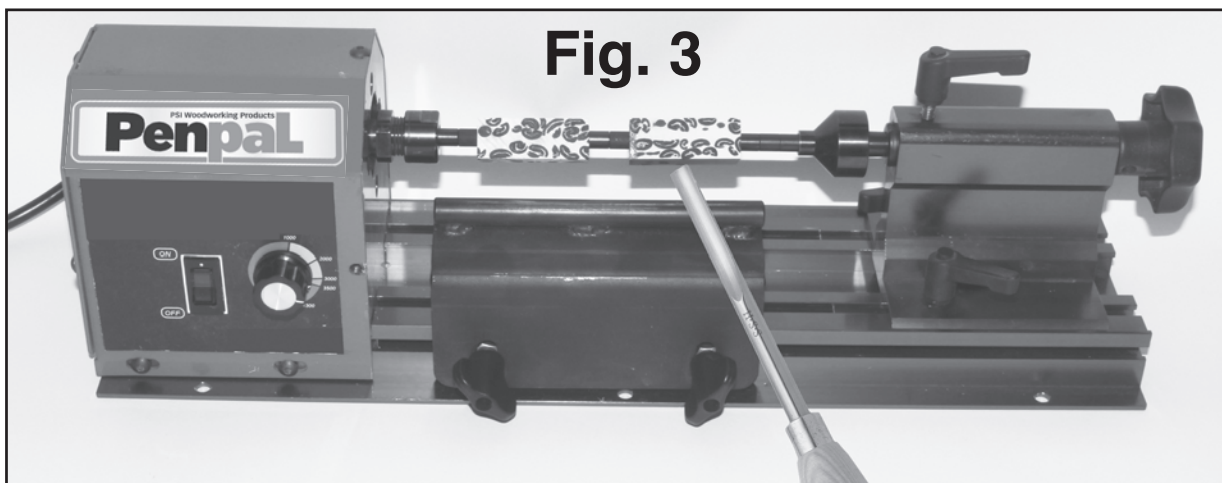
(also refer to the instructions included with the pen and pencil kits)

Cutting: Either drill 7mm hole **(T)** or use pre-drilled pen blanks for pens and pencils. If the blank needs to be cut down, trim so they are approximately 1/16" longer than the brass tubes in the kit.

Gluing: Coat the brass tubes with a liberal amount of either instacure CA glue or mixed two-part epoxy glue or polyurethane glue. Insert the tubes into the holes using a pumping and twisting motion, spreading the glue evenly inside the blank. Wipe off any excess glue. Allow the glue to set and dry, preferably overnight.

Trimming: When the glue has dried, trim off excess wood at the ends up to the edge of the brass tube with a barrel trimmer or disc sander.

Mounting: Slide one blank onto the mandrel, **(C)** Refer to Fig. 3 for pen blank mounting and turning. (two bushings should already be on from Step 2). Slip on a bushing, **(D)** the second blank, and the one or two more bushings. Be sure at least one inch of pen mandrel shaft is extended.



Loosen the tailstock lock lever **(L)** and slide the mandrel saver **(F)** over the extended end of the mandrel shaft. Lock the tailstock in place with lever **(L)**. Turn the tailstock wheel knob **(K)** forward, counter clockwise to tighten over the bushing. Lock the quill lock lever **(M)** into the groove in the quill. Loosen the tool rest **(B)** and position it in front of the blanks. The tool rest should be parallel to the mandrel and about 1/2" below the center of the blank so when you rest your tool upon it, the cut will occur in the approximate center of the blank. Slowly turn the mandrel by hand, rotating the blanks to make sure they do not strike the tool rest.

Step 4 – TURNING THE BLANKS

Protect your eyes by wearing goggles or safety glasses. A dust mask should be worn for the sanding stage. Positioning the collector port **(J1)** directly behind your blanks. Stand to the side and turn on the machine. Initially, set the speed at slower speeds. Use the spindle gouge (with the rounded cutting surface) to round your blanks.

Grip the cutting tool comfortably in both hands and gently place it on the tool rest with the cutting edge angled up so it does not make contact with the blank. Gently lower the cutting edge of the tool until you make contact, and obtain a shaving.

Your arms should remain close to your body. Slowly move the cutting tool along the tool rest. Move left and right in this fashion, cutting along the blank(s) using slow, fluid motions. Eventually you will get a feel for the process. Blanks are called "barrels" from this point forward. Continue turning until you approach the diameter of the steel guide bushings. (The sanding process will reduce the diameter further). Use the flat surface of the skew chisel along the barrels to create a straight, smooth finish. Increase the speed as you turn down the barrels to a cylinder.



STEP 5 – SANDING AND FINISHING THE BARRELS

Cut approximately 4” long strips of abrasive sandpaper. Turn on the lathe to about 1500RPM and sand the blank smooth, beginning with the coarsest grit, (lowest number), then working your way up to the finest. Avoid striking the bushings if possible. (The metal will wear down resulting in incorrect diameters for subsequent turnings, and metal powder could be transferred to the blank).

If swirl marks develop on the blank, a helpful tip is to stop the lathe when switching grit paper and hand sand along the length of the pen barrels. Higher lathe speeds may also improve your results. However, too high a speed may also burn a wood blank. Some crafters will take the shavings or sanding dust and rub the spinning barrels to burnish the wood. Wipe the barrels with a clean cloth.

Polishing is the next step. With the lathe turned on, apply several coats of sealer then pen wax. Buff with a paper towel or cloth in between applications to build up heat and melt the wax. This final finish will accentuate the natural beauty and grain of the wood you have used and create a lasting protective finish.

STEP 6 – PEN KIT ASSEMBLY

In general, all kits feature components that are pressed into or onto the ends of the barrel using a pen press, clamp or shop vise. Insert the ink refill and screw snug, then engage and push the barrels together. (Refer to the individual instructions included with each kit for diagrams and detailed instructions).

MAKING BOTTLE STOPPERS

To make bottle stoppers on the PENPAL Lathe – order item # PENPALBKIT. This kit includes all of the PENPAL accessories needed to make bottle stoppers.

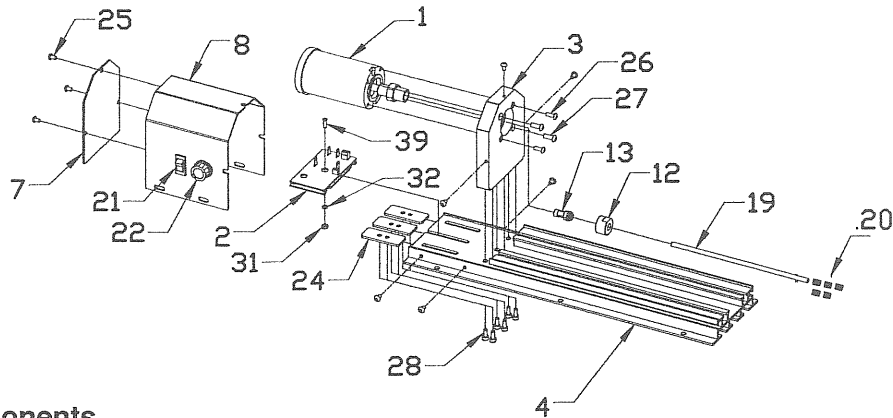


PARTS LIST

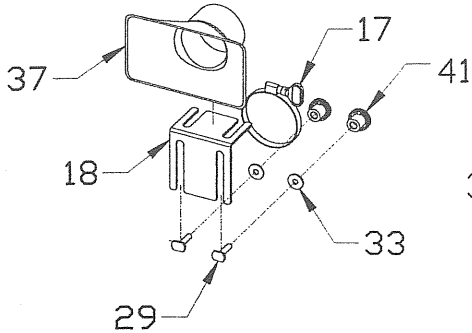
ITEM	ITEM NO.	DESC.	PER LATHE	ITEM	ITEM NO.	DESC.	PER LATHE
1	ZPENPAL01	Motor	1	21	ZPENPAL21	On/Off Switch	1
2	ZPENPAL02	Motor Circuit Board	1	22	ZPENPAL22	Speed Control Knob	1
3	ZPENPAL03	Motor Fixed Board	1	23	*ZPENPAL23	Power Cord	1
4	ZPENPAL04	Base	1	24	ZPENPAL24	Fixed pin for Base	3
5	ZPENPAL05	Tailstock	1	25	ZPENPAL25	M5x0.8Px8L hex screw	10
6	ZPENPAL06	Tool Rest	1	26	ZPENPAL26	M5.0.8x14L hex screw	2
7	ZPENPAL07	Motor Cover / Back	1	27	ZPENPAL27	M6x1.0Px16L hex screw	2
8	ZPENPAL08	Motor Cover / Top	1	28	ZPENPAL28	M5x0.8Px12L cap screw	6
9	ZPENPAL09	Tailstock Quill	1	29	ZPENPAL29	¼ x 1" L T head bolt	2
10	ZPENPAL10	Tailstock Screw	1	30	ZPENPAL30	¼" x 1-¼" T head bolt	2
11	*ZPENPAL11	22mm wrench	2	31	ZPENPAL31	M4 hex nut	1
12	ZPENPAL12	Collet Closer Nut	1	32	ZPENPAL32	8mm washer	1
13	ZPENPAL13	Headstock Collet	1	33	ZPENPAL33	19mm washer	4
14	ZPENPAL14	Live Mandrel Saver	1	34	ZPENPAL34	Tool Rest Knob	2
15	ZPENPAL15	Tailstock Wheel Knob	1	35	ZPENPAL35	Tailstock Lock Lever	1
16	ZPENPAL16	Tailstock Pin	2	36	ZPENPAL36	Quill Lock Lever	1
17	ZPENPAL17	2-½" Hose Clamp	1	37	ZPENPAL37	Collector Port	1
18	ZPENPAL18	Collector Port Bracket	1	38	ZPENPAL38	¼" x ¼" L hex screw	1
19	ZPENPAL19	Mandrel	1	39	ZPENPAL39	M4X12L cross screw	1
20	ZPENPAL20	7mm Bushing	5	40	*ZPENPAL40	7mm drill bit	1
				41	ZPENPAL41	Locking Nut	2

Lathe Components

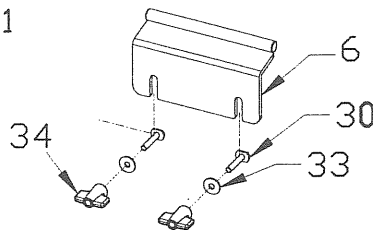
** Not Shown Below*



Dust Hood Components



Tool Rest Components



Tailstock Components

