



**Thumbnail<sup>®</sup>**

OPERATING  
MANUAL

NIELSEN & BAINBRIDGE

Introduction .....	2
Main Components .....	3
Unpacking and Set Up Instructions .....	4
A. Supplying Electricity	
B. Connecting the Vacuum	
Instructions for Use .....	5
Maintenance .....	6
Adjustments .....	7
Questions and Answers .....	8
Trouble Shooting .....	9
Parts Diagram & Listing .....	10, 11, 12
Warranty and Service .....	13

Congratulations on your purchase of a Nielsen & Bainbridge Thumbnail Frame Joiner. Your unit has been carefully inspected before shipment to insure conformance to all of our specifications. Take a few moments now to read the entire manual carefully so that you may put your Thumbnail to work confidently.

**SAFETY PRECAUTIONS**

**DO NOT OPERATE WITHOUT EYE PROTECTION.**

**DO NOT OPERATE WITHOUT ENGAGING MOULDING CLAMP.**

**KEEP HANDS, HAIR AND LOOSE CLOTHING AWAY FROM BIT WHEN OPERATING.**

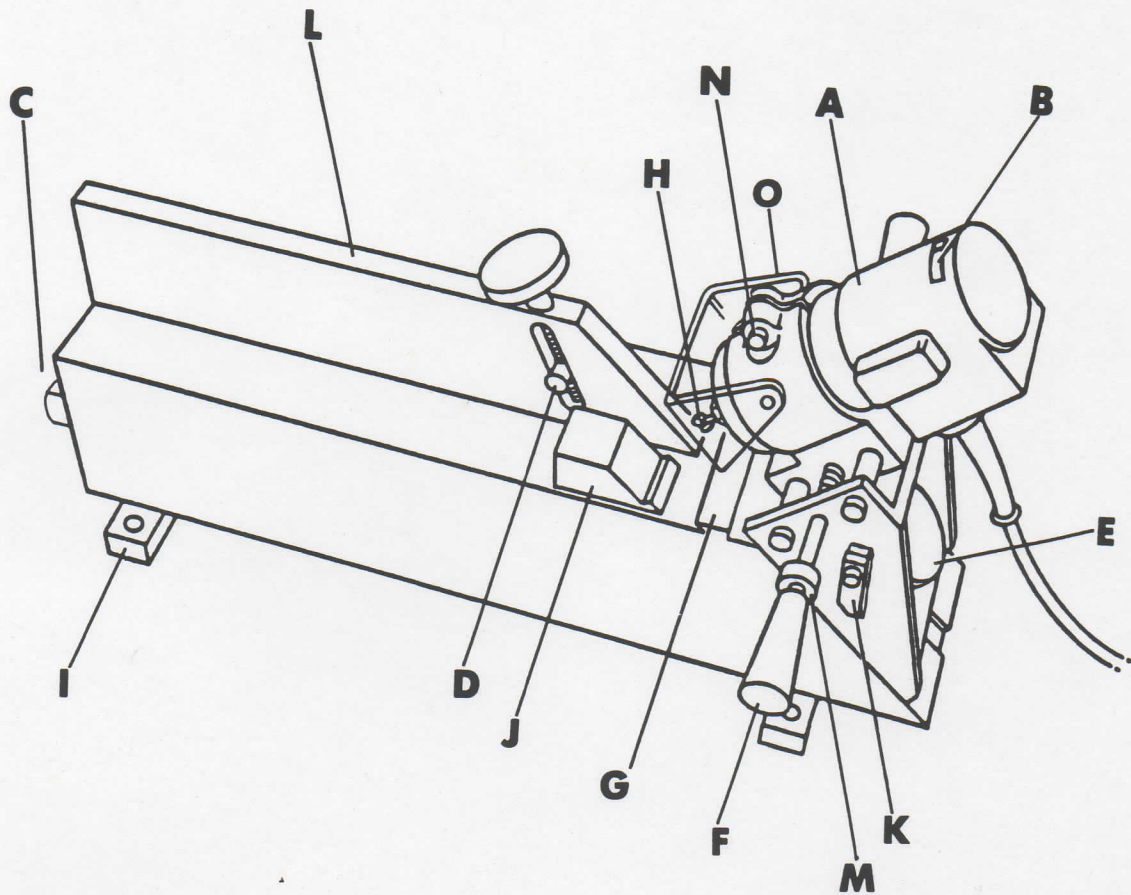
**SECURE MACHINE TO WORK SURFACE.**

**DO NOT ADJUST WHEN MOTOR IS ON — WAIT UNTIL BIT STOPS TURNING.**

**DO NOT FORCE BIT INTO FRAME.**

**BE SURE BIT IS TIGHT BEFORE OPERATING MACHINE.**

**MAIN COMPONENTS**



Use this illustration for reference when reading the manual.

- |                           |                            |
|---------------------------|----------------------------|
| A. Router Motor           | H. Router Bit              |
| B. On/Off Switch          | I. Mounting Feet           |
| C. Vacuum Attachment      | J. Set-Up Die              |
| D. Moulding Clamp         | K. Depth Stops             |
| E. Height Adjustment Knob | L. Center Fence            |
| F. Push Handles           | M. Stop Collars            |
| G. Material Stop          | N. Router Adjustment Screw |
|                           | O. Safety Shield           |

**Thumbnail Machine: U.S. Patent No. 4,742,856**  
**Thumbnail Inserts: Patent Pending**



## UNPACKING AND SET UP

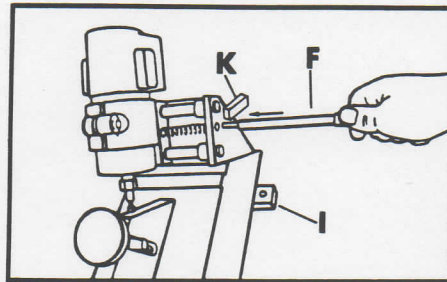
Upon removal of your Thumbnail machine from its package, be sure to check the motor housing and base carefully for any signs of damage that may have occurred during shipping. Any damage must be reported to the carrier immediately.

Choose a suitable location upon which to mount your Thumbnail machine. This would be a solid bench or table that will provide a comfortable working height for the operator.

### CAUTION

The Thumbnail machine must be clamped or bolted down before operating. DO NOT attempt to operate the machine before it is securely fastened by the mounting feet (I).

Install push handles (F): Locate the 2 handles. Insert handles on each side of the router assembly and tighten by hand.



Once the handles have been installed, flip the depth stops (K) down and push the router motor fully from left to right. Make certain that the router bit clears all parts of the equipment.

### SUPPLYING ELECTRICITY

Ideally, your Thumbnail Machine should be connected directly to a grounded electrical outlet. If an extension cord is necessary it must be a 3 prong grounded wire and meet the specifications printed below.

Length of Cord in Feet				
115V	25 Ft.	50 Ft.	100 Ft.	150 Ft.
230 V	50 Ft.	100 Ft.	200 Ft.	300 Ft.
0-2	18	18	18	16
2-3	18	18	16	14
3-4	18	18	16	14
4-5	18	18	14	12
5-6	18	16	14	12
6-8	18	16	12	10
8-10	18	14	12	10

Table indicates wire gauge

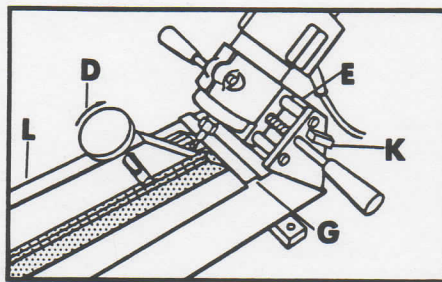
### CONNECTING THE VACUUM

The vacuum attachment (C), located on the backside of the base may be connected to your shop system.

## INSTRUCTIONS FOR USE

Before using your Thumbnail Machine, practice with scrap pieces of moulding until you are comfortable with the process.

Select two scrap pieces of moulding whose bottom and side faces both measure approximately 1". Place them on the base against the material stop (G) as shown.

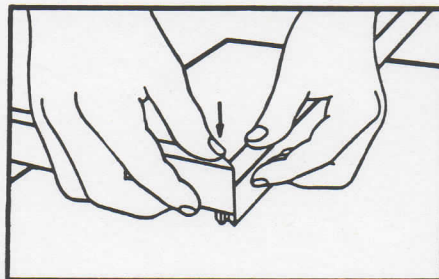


While holding the moulding against both the material stop and the center fence (L), tighten moulding clamp (D) down onto the rabbet of the moulding.

Loosen height adjustment (E) and move the motor housing up or down so the bit is at the center or tallest portion of the moulding. Flip up the inner depth stop (K) on each side to rout the proper depth for a  $\frac{5}{8}$ " Thumbnail. Switch the motor on (and vacuum if available) and use *one* continuous motion to move the router left and right as far as the depth stops allow. **KEEP HANDS AND HAIR AND LOOSE CLOTHING AWAY FROM BIT WHEN OPERATING. USE EYE PROTECTION. DO NOT FORCE BIT INTO FRAME.**

Switch the machine off and remove the moulding.

Apply a small amount of glue to the moulding faces. Insert a  $\frac{5}{8}$ " Thumbnail insert, tapered end first, into one of the routed pieces and place it face up on a smooth, solid surface. Position the routed groove of the second piece directly over the Thumbnail insert and push straight down on the second piece.



The two sticks of moulding may be adjusted to create a perfect face. We recommend you join three sides of the frame, let it sit a moment to allow glue to set, then complete the frame. Use of a hard, flat work surface is essential. Be sure that all four corners are set – i.e. glue is dry – before continuing.



### **CLEANLINESS**

Take care not to let sawdust build up around the material stop, air passages in the motor housing, or on the shafts on which the motor slides. Periodically apply a light weight machine oil to these shafts and wipe away excess.

The router motor has been lubricated with a sufficient amount of high grade lubricant for the life of the unit under normal operating conditions.

### **REPLACING THE ROUTER BIT**

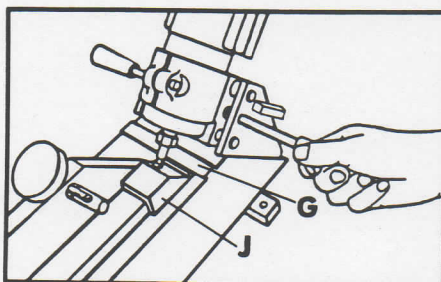
The life of the router bit will vary depending on your volume and the type of wood you join. The bit should be replaced as soon as increased resistance is felt on the push handles or as soon as the routed groove becomes coarse.

#### **TO CHANGE THE BIT:**

1. Disconnect the electrical supply.
2. Use a small stick of moulding (approx. 1 1/2" long) as a wedge to place between motor housing and frame in order to keep the router bit to the left or right of the center fence.
3. Using the wrenches provided, place one on the nut around the router bit and one on the shaft of the motor. Loosen and remove the bit.

#### **CAUTION: NEW BIT WILL BE EXTREMELY SHARP.**

4. Insert the new bit and place the set up die (J) against the material stop (G) as shown. Tighten the material clamp slightly to secure the die in place.



5. Let the new bit drop down until it touches the set-up die and tighten nut to secure the bit in the motor. Remove die before sliding motor back to its center position.
6. Reconnect electric supply.
7. Assemble a test corner following the procedure described on page 5.

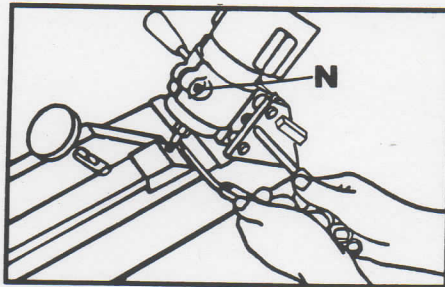
## ADJUSTMENTS

### IF CORNER IS TOO LOOSE/TOO TIGHT:

1. Disconnect electrical supply.
2. Recheck depth of router bit with set-up die. Tip of bit should touch surface of set-up die. Make adjustments if necessary and assemble a test corner. If you prefer a "tighter" or "looser" corner, follow guidelines below.

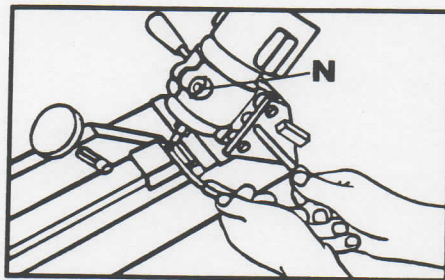
### TO MAKE CORNER TIGHTER:

- 3A. Place a standard automotive feeler gauge (approx. .0015-.002) *between die and material stop* and reset depth of bit by loosening allen screw (N) that clamps motor in place.



### TO MAKE CORNER LOOSER:

- 3B. Place standard automotive feeler gauge (approx. .0015-.002) *between die and router bit* and reset the depth of bit by loosening allen screw (N) that clamps motor in place.



### ADJUSTING THE HEIGHT OF ROUTED GROOVE:

The stop collars (M) located on the push handles may be adjusted to fine tune the height of the channel cut into the moulding. The height of the channel should be approximately  $\frac{1}{16}$ " taller than the Thumbnail being used.

Moving the stops in (toward the router), will decrease the height of the channel, as moving them out, (towards the push handles), will increase the height of cut.



**WHAT MOULDING CAN I JOIN WITH MY THUMBNAIL SYSTEM?**

The Thumbnail System will join practically any wood moulding profile from approximately  $\frac{3}{8}$ " wide to  $2\frac{1}{4}$ " wide. The router works especially well on hardwoods such as cherry, oak, ramin, maple, chestnut, etc. It also provides the best method of joining mouldings with delicate finishes that may be marked by hold-down plungers or hammer blows.

**HOW ABOUT DIFFERENT WOOD GRAIN PATTERNS?**

Because the groove for the Thumbnail insert is being cut by a high speed router, the direction of the wood grain, in hard or soft woods, does not affect the performance of the machine.

**WHICH THUMBNAIL INSERT SHOULD I USE?**

In most cases you would use a Thumbnail insert that is approximately  $\frac{2}{3}$  the height of the moulding. This will give it the most support while the glue is setting. Use the gauge on the material stop as a reference. You will soon be able to judge by eye the Thumbnail insert to use for each moulding profile.

**WHERE SHOULD THE THUMBNAIL INSERT BE POSITIONED IN THE MOULDING?**

For the most support, you will generally want to position the Thumbnail insert in the tallest part of the moulding.

**WHICH STOPS SHOULD I USE?**

For  $\frac{3}{8}$ " Thumbnail insert, flip up both inner and outer depth stops

For  $\frac{5}{8}$ " Thumbnail insert, flip up inner depth stops

For  $\frac{15}{16}$ " Thumbnail insert, flip both depth stops down

## **TROUBLE SHOOTING**

### **PROBLEM**

- Corner too loose

### **SOLUTION**

- Check that moulding was placed firmly against material stop.

- Clean away sawdust from material stop.

- Router bit needs adjustment. See page 7

- Corner too tight

- Router bit needs adjustment. See page 7

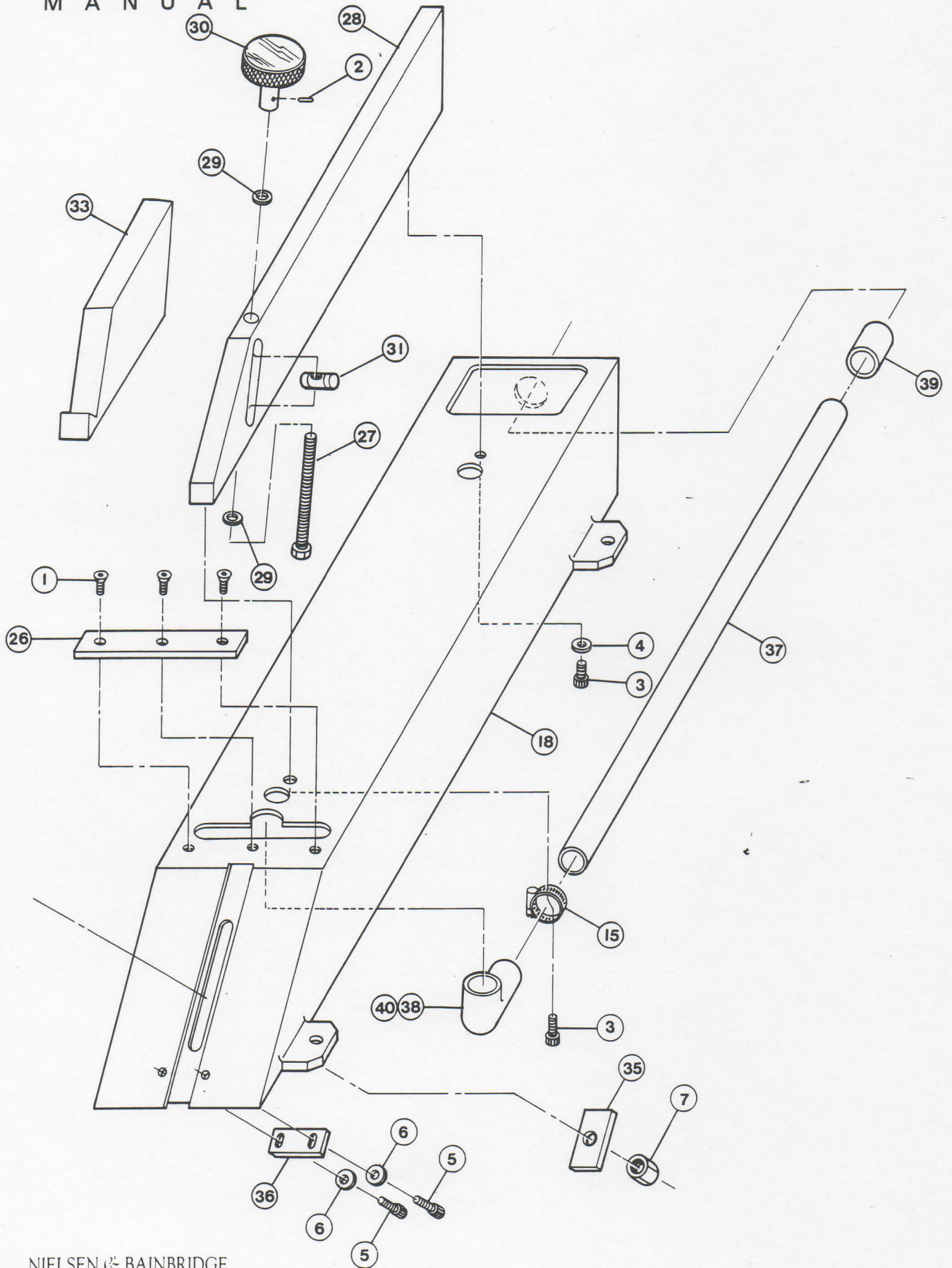
- Odor of burning wood

- Router is being moved too slowly during routing.

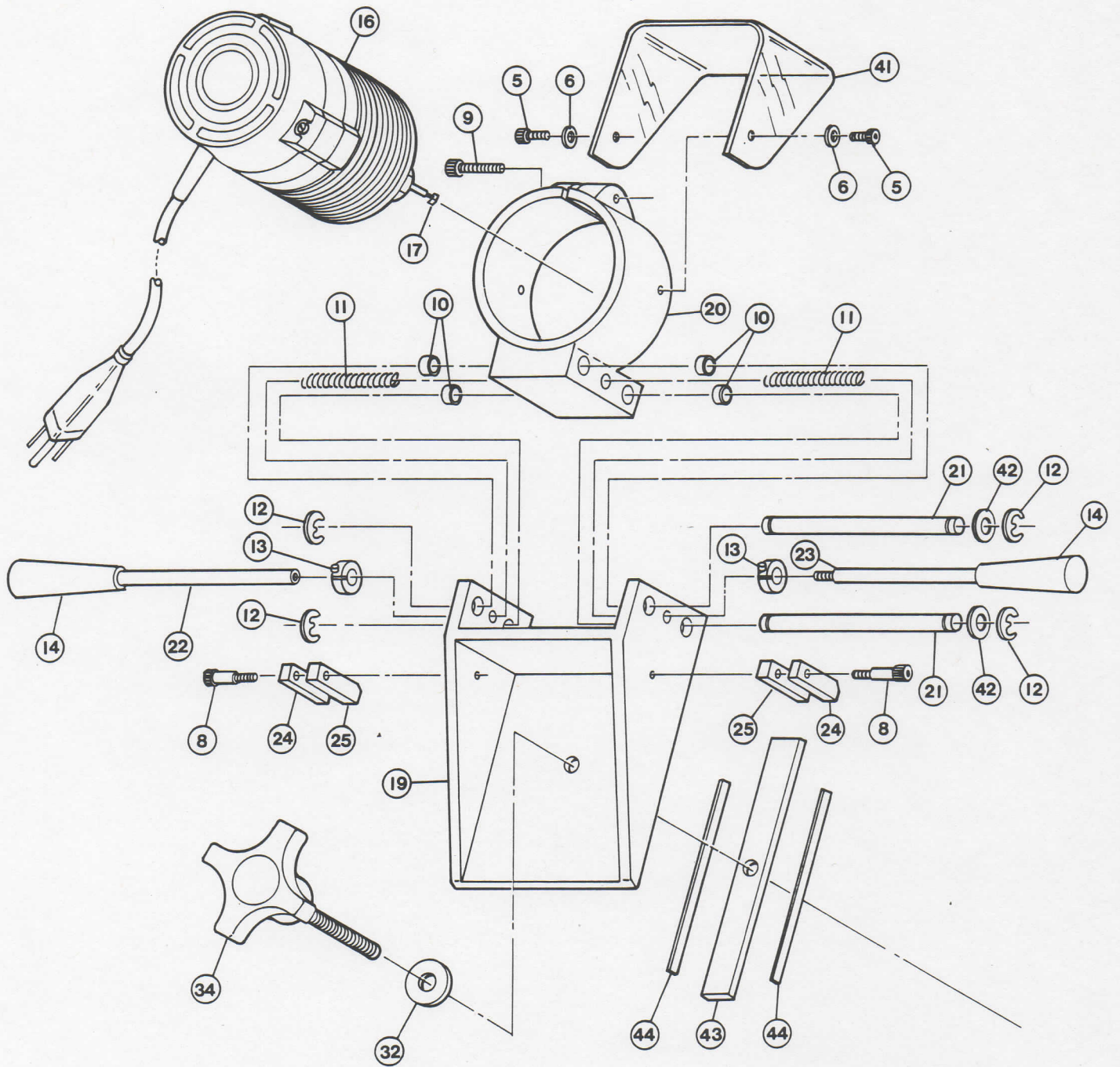
- Dull bit — replace with new bit. See page 6

# Thumbnail<sup>®</sup>

OPERATING  
MANUAL









DIA. NO.	PART NUMBER	DESCRIPTION	QUANTITY ON MACHINE
0	TN 1000	ASSY—THUMBNAIL (U.S. Patent No. 4,742,856)	—
1	TNP 000	FLAT HD. SOC. HD. CAP SCREW #10-24 x 3/8" LG-BLACK	3
2	TNP 001	SPRING PIN-1/8" DIA. X 1/2" LG	1
3	TNP 002	SOC. HD. CAP SCREW-1/4-20 x 5/8" LG-BLACK	2
4	TNP 004	FLAT WASHER 1/4 x 1/16" THK-ZINC PLATED	1
5	TNP 006	SOC. HD. CAP SCREW #10-24 x 1/2" LG-BLACK	4
6	TNP 007	FLAT WASHER #10 x 1/16" THK-ZINC PLATED	4
7	TNP 008	ELASTIC LOCK NUT 3/8"-16-ZINC PLATED	1
8	TNP 009	SHOULDER BOLT S.H.C.S. #10-24-1/4" DIA. x 5/8" LG SHOULDER	2
9	TNP 010	SOC. HD. CAP SCREW 1/4-20 x 1" LG-BLACK	1
10	TNP 011	BUSHING-5/8" O.D. x 1/2" I.D. x 1/2" LG	4
11	TNP 012	SPRING-ASSOC. SPRING	2
12	TNP 013	RETAINING RING	4
13	TNP 014	STOP COLLARS 3/8" I.D. x 1 1/16" O.D. x 5/16" WIDE	2
14	TNP 016	HANDLE 1/4-20 FEMALE METAL INSERT	2
15	TNP 017	CLAMP	1
16	TNP 018	MOTOR	1
17	TNP 100	ROUTING BIT	1
18	TNP 019	FRAME	1
19	TNP 020	BRACKET, ANGLE	1
20	TNP 021	BRACKET, ROUTER	1
21	TNP 022	SHAFT, SLIDE	2
22	TNP 023	ROD, PUSH-PULL	1
23	TNP 024	ROD, PUSH-PULL	1
24	TNP 025	STOP, 1/4"	2
25	TNP 026	STOP, 3/8"	2
26	TNP 027	MATERIAL STOP	1
27	TNP 028	BOLT, FENCE CLAMP	1
28	TNP 029	CENTER FENCE	1
29	TNP 030	NYLON WASHER, FENCE CLAMP BOLT	2
30	TNP 031	KNOB, FENCE CLAMP	1
31	TNP 032	MATERIAL CLAMP	1
32	TNP 033	NYLON WASHER, MOTOR ADJ.	1
33	TNP 041	SET-UP DIE	1
34	TNP 034	KNOB, MOTOR ADV. 3/8"-16 x 1 1/2" LG THREADED STUD	1
35	TNP 035	PLATE, MOTOR T-SLOT CLAMP	1
36	TNP 036	STOP, MOTOR SLIDE	1
37	TNP 037	PIPE-1/2" PVC	1
38	TNP 038	90° ELBOW 1/2" PVC	1
39	TNP 039	COUPLING 1/2" PVC	1
40	TNP 040	PVC PIPE ADHESIVE	—
41	TNP 043	SAFETY SHIELD	1
42	6708	SPRING WASHERS	2
43	TNP 044	MIDDLE INSERT	1
44	TNP 045	SIDE INSERTS	2



Nielsen & Bainbridge warrants new Thumbnail Routing Machines to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase by original user/consumer. The Router Motor is warranted for a period of six (6) months. Each Thumbnail Machine will be thoroughly inspected before shipment to ensure conformance to specifications.

If a Thumbnail Machine malfunctions or is inoperable within the warranty period because of a defect in material or workmanship, we will repair, or at our option, replace the defective unit at no cost to the original user or consumer/purchaser.

This warranty excludes and does not cover the router bit; defects or malfunctions due to repairs by persons not authorized by us; by mishandling, improper adjustment, modifications or damages.

To obtain repair or replacement under this warranty, contact Bainbridge Customer Service Department.

This warranty is in lieu of all other warranties expressed or implied. Nielsen & Bainbridge expressly disclaims all other warranties, including the warranties of merchantability and fitness for a particular purpose.

The manufacturer neither assumes nor authorizes any representative or other person to assume for it, any other liabilities in connection with the sale, maintenance, or repair of the machine.

In no event shall Nielsen & Bainbridge be liable for any damages or losses, incidental or consequential, direct or indirect, arising out of the use of this product.

BAINBRIDGE  
50 Northfield Ave.  
Edison, NJ 08818  
201-225-9100

West Coast Operation  
2210 E. Artesia Blvd.  
Long Beach, CA 90805  
213-422-2628