

## INSTRUCTIONS

**WARNING! ALWAYS UNPLUG ROUTER  
BEFORE CHANGING INSERTS  
OR MAKING ADJUSTMENTS.**

**Router** . . . Use a router or laminate trimmer that has good bearings. A micro-adjustment feature is helpful, since in setting the depth of the router bit a few thousandths of an inch make the difference between a good and a bad thread.

**Dowels** . . . Select dowel stock with care. Dowels more than .015 oversize will be too large to fit the inserts and *drastically* undersize dowels will produce uneven threads. Hardwood dowels work best and they may be obtained accurately sized from **THE BEALL TOOL Co.** if you cannot find them locally. Dowel stock has a higher moisture content than other lumber and is consequently less stable. Using your dowels as soon after purchase as possible will help insure that they do not change size or shape. A crank handle like the one shown on the included

template will assist in advancing the dowel smoothly during the threading process.

**Mounting** . . . The threader table may be held in a vise or holes may be drilled in its maple front to provide for a variety of mounting arrangements. Be sure to mount the table solidly so that it will not move or jiggle when being used. When attaching the threading insert to the table, make sure that the screw is very tight, checking it periodically to make sure that vibration has not loosened it.

**Thread Shape** . . . Wood structure will not permit very sharp threads such as those seen on metal. **THE BEALL WOOD THREADER** is designed to produce threads with blunt crests that will not chip out. To obtain the strongest and cleanest threads,

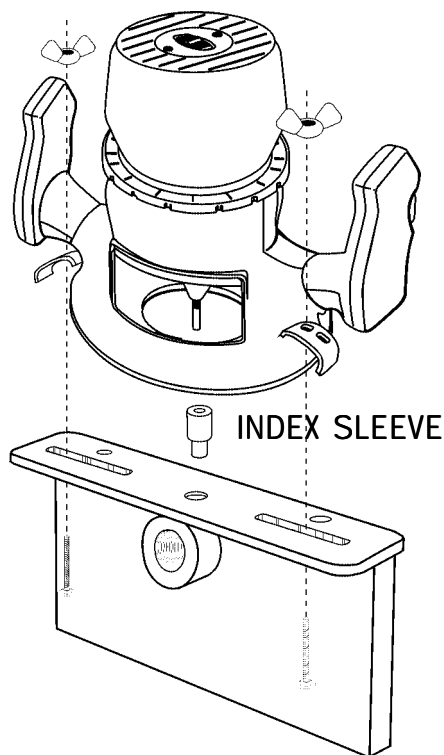
try to maintain the widest crest that will still turn smoothly through the tapped hole or nut. Varying the depth of the router bit and experimenting with different settings will demonstrate that a very slight adjustment makes a great difference in thread shape.

**Chipping of Threads . . .** Severe chipping is usually caused by misalignment of the router. If it is not exactly centered, chipping will occur. ***It is vital to carefully center the router using the aluminum index sleeve and to make sure that the router is very securely attached to the top of the table. Use pliers to make sure that the wing nuts are tight: otherwise the router may vibrate off center.*** A dull bit or poor dowel stock may also cause chipping.

**Tapping . . .** Tapping is done by hand. Drill pilot holes for taps 1/8" under the size of the dowel you are using: for a 1" dowel use a 7/8" drill, for a 3/4" use a 5/8" drill, for a 5/8" use a 1/2" and for a 1/2" dowel use a 3/8" drill. Clamp stock to be tapped in a vise and turn the tap through it with the aid of a tap handle or adjustable wrench. (It is easier to keep the tap running straight if a "T" handle tap wrench is used.) Tap only through the grain. End grain cannot be tapped successfully.

## Setting up THE BEALL Wood THREADER

1. Make sure the threader table is mounted securely.
2. Install special carbide bit in router, adjusting its depth so that it extends about 3/4" below the router base. Tighten router motor securely in its housing.
3. Install Delrin™ insert in threader housing by placing the small 3/8" #10 flat head machine screw through bottom rear of insert and using the 1/8" allen wrench provided to screw it tightly into the underside of the aluminum table. A small dimple in the bottom of the table will fit into a 1/8" hole in the insert top and align it properly. (When doing production runs of thread, it is a good idea to check the tightness of the machine screw securing the insert to the table periodically, as vibration may cause it to loosen. Or -- apply a bit of temporary Loctite™ to help hold it in place.)
4. Put the knurled index sleeve in the hole in the top of the insert as shown in the drawing.
5. Place the router on the table with the bit through the index sleeve, thereby centering the router in the threader.
6. Clamp router onto table using carriage bolts, hold-downs,



washers and wing nuts as shown. Tightening the wing nuts with pliers will help insure that your router remains centered.

7. Loosen router in its housing (leaving housing clamped securely to table) and lift it up sufficiently to remove index sleeve. **If sleeve is not removed before using, it will turn in the hole and the resulting friction will cause heat, possibly melting the Delrin™ insert and ruining your day. The index sleeve is to be used *only* for set-up.**

8. Adjust router depth so that the tip of the carbide bit can just be seen projecting down into the

insert center hole about 1/32."

9. Turn on router, pushing dowel into front opening as far as it will go. To thread, turn dowel clockwise through insert at about one turn per second. If the dowel binds up or is hard to turn, back it out and lower the router bit slightly. If it turns through but the thread is too sharp and is chipped, raise the router bit slightly. Very small depth adjustments are called for in this process, with a few thousandths of an inch making the difference between a good thread and a bad one. It may be helpful to make a nut (see **Tapping**, below) first in which you can test your threads

for fit. Some trial and error is necessary to get the router depth just right, so be prepared to waste part of a dowel in experimentation, especially the first time you set up **THE BEALL WOOD THREADER.**

### **Tapping**

1. If you are making nuts, lay them out on a flat board which is just the width of the nut plus a pencil line; then center punch, drill, countersink and tap before cutting them out. You can lay out nuts yourself with a compass and straight edge or you can use **THE BEALL HEX NUT TEMPLATE.** Always tap wood across the grain: end grain does not hold a thread well.

2. Drill a hole 1/8" under the size of the dowel you have threaded. For example, if the threaded dowel is 1", drill a 7/8" hole; use a 5/8" drill for a 3/4" dowel, a 1/2" drill for a 5/8" dowel and a 3/8" drill for a 1/2" dowel.

3. Countersink the holes. This step is optional, but it will prevent chip-out and make your finished work look more professional.

4. Clamp the stock to be tapped securely in a vise and turn the tap through the hole with the aid of a tap handle or adjustable wrench, being careful to keep the tap perpendicular to your work. (If your tap turns hard, applying

some paste wax or silicon to it may be helpful.)

5. Cut out the nuts with a band saw keeping just outside the layout line and sand them; then chamfer them if you like. (To chamfer, screw the nut onto a threaded dowel; hold the dowel at an angle to your belt sander and rotate the nut evenly against the belt. A v-block clamped at 45° to the sander table will support the dowel while it is being turned and produce a nicer chamfer.)

6. To tap a blind hole, begin the tapping procedure as usual using the piloted tap to insure a good start. When the tap will go no farther, turn it back out of the hole, and using the wrench included in the kit, remove the screw which secures the pilot to the tap body. Re-insert the now pilotless tap in the hole and turn it until it stops; it will tap to within 7/16" of the bottom of the hole.

7. **Good luck and happy threading!**

## **THE BEALL TOOL Co.**

541 SWANS ROAD, N.E.  
NEWARK, OHIO 43055  
PHONE (614)345-5045  
TOLL FREE (800)331-4718  
FAX (614)345-5880