# #LIXGA Router Index Guide
User Manual
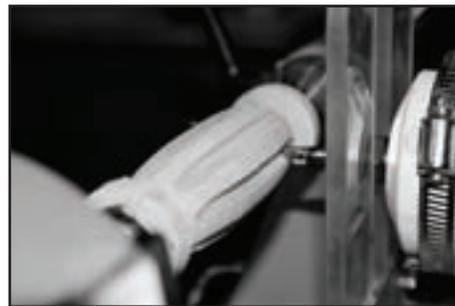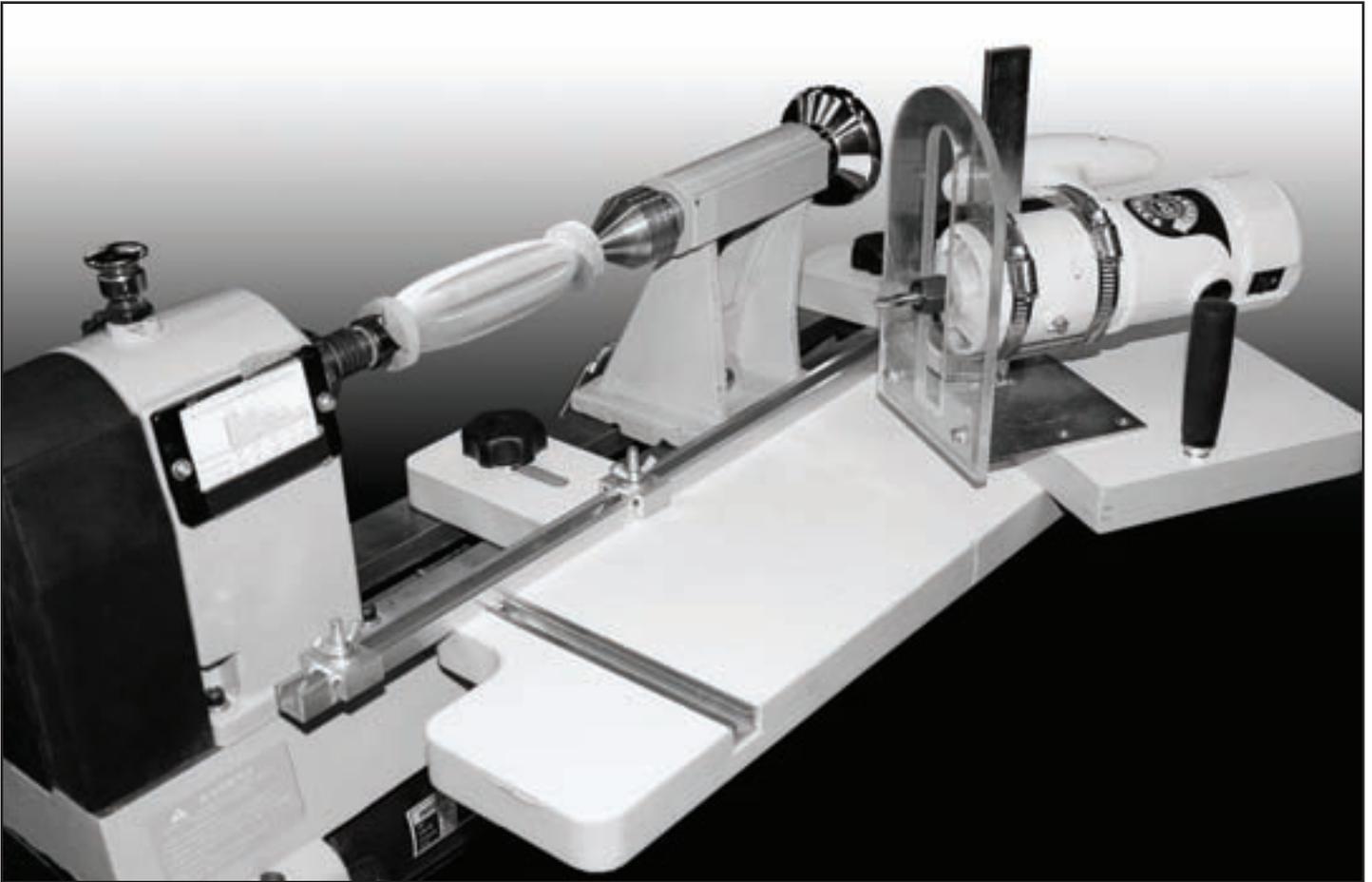
Cuts flutes on your turning projects
Mounts to lathes with indexing feature or indexing attachment

WARRANTY

The #LIXGA Router Index Guide is warranted against defects in materials and workmanship for a period of two (2) 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 it's parts at PSI Woodworking Products' discretion. Excluded are parts, which have been misused, abused, altered, or consumed by normal operation of the machine. Also excluded are direct or consequential damages to the persons, property, and/or materials. Your invoice serves as proof of purchase and must be referenced prior to return authorization. Contact your dealer where you purchased your #LIXGA for service or repair issues.

DATE PURCHASED_____INVOICE NO._____

SAFETY INSTRUCTIONS

1. Read and understand this instruction manual.
2. NEVER connect plug to power source until all the assembly steps have been completed.
3. Check that your supply voltage and grounding are correct for both lathe and router.
4. Do not use the lathe in a damp or wet location.
5. Make sure the lathe belt, pulley, and control box and router are adequately guarded at all times.
6. Keep the work area clean, well lit and adequate ventilation in the workspace.
7. Keep young children and bystanders a safe distance from the lathe and router.
8. Do not wear loose clothing, jewelry or neckties, which could get caught in revolving parts.
   It is recommended that long hair be restrained.
9. Safety eye wear should be worn at all times. Also, it is recommended to use a face or dust mask during lathe or router operation.
10. Attach all work pieces securely to the lathe, whether between centers, on faceplates, or in chucks, etc.
11. For best results use sharp router bits.
12. Always use an appropriate travel speed for the wood and projects being fluted or turned
    - Slow speeds for larger bowls, faster speeds for smaller spindles.
13. Always check that the index/spindle lock knob is disengaged prior to turning on the lathe.
14. Always check that indexing spindle lock knob is engaged when cutting a flute with the router.

Indexing Requirements

NOTE: Check your lathes operating manual to understand how the index feature works on your lathe.

If your indexing accessory or lathe has 24 grooves, the turning's sections can be made in multiples of 24, 12, 8, 6, 3 and 2. For example, to make 8 equal sections, mark your work at 1, 4, 7, 10, 13, 16, 19 and 22. Advance the indexing pin to lock the head stock spindle in place until it engages.

Always back the index pin out before advancing to the next indexing position on the lathe

Example of Indexing 8 equal sections
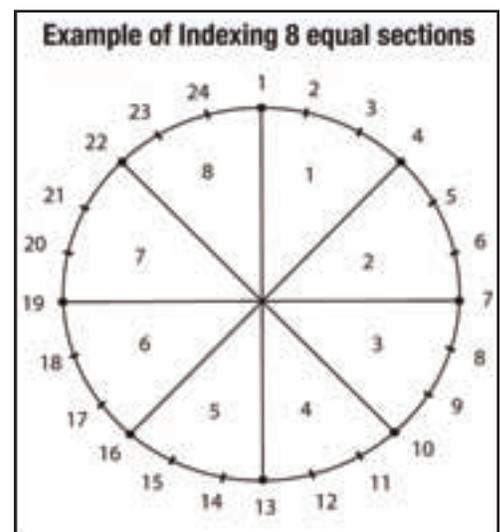
ROUTER INDEX GUIDE

For making Flutes on turnings using the Indexing Features found on Modern Mini / Midi Lathes

Requirements:
• Trim Router with about 3" diameter body & 3" flat portion for mounting
• Split bed Lathe with 18" bed.
• Spur Center and Live Tailstock center installed Lathe or lathe accessories with indexing capability.
• Lathe swing variable 8" - 16". Bed minimum length 16-1/2"

Figure 1 Fluting Guide Platform Components
1) Guide Platform
2) Platform guide Bar
2b) Platform guide bar screw and lock nuts (2 sets)
3) Stop Collars and mounting hardware (2)
4) Mounting bolts with Knob and washers
5) Bed Mounting Grips (2 sets)

Router Transport Assembly
6) Transport Base
7) Trim Router Clamps (2)
8) Height Adjustment Post and Guard

9) Cutting Guard
10) Router Carrier Handles (2)

Other Accessories
11) "T" handle allen wrench
12) Round Nose Router Bit (not shown)
13) "V" Groove Router Bit (not shown)
14) Trim Cutter Router Bit (not shown)
Not included
15) Trim Router with body about 3" diameter (PSI item #LIXROUT or equivalent)

Note: Before you mount up the Fluting guide, you should first turn a spindle to the approximate profile of your finished project. Use the toolrest and traditional lathe tools. You can turn the spindle straight or with a taper depending on the final profile of your project.
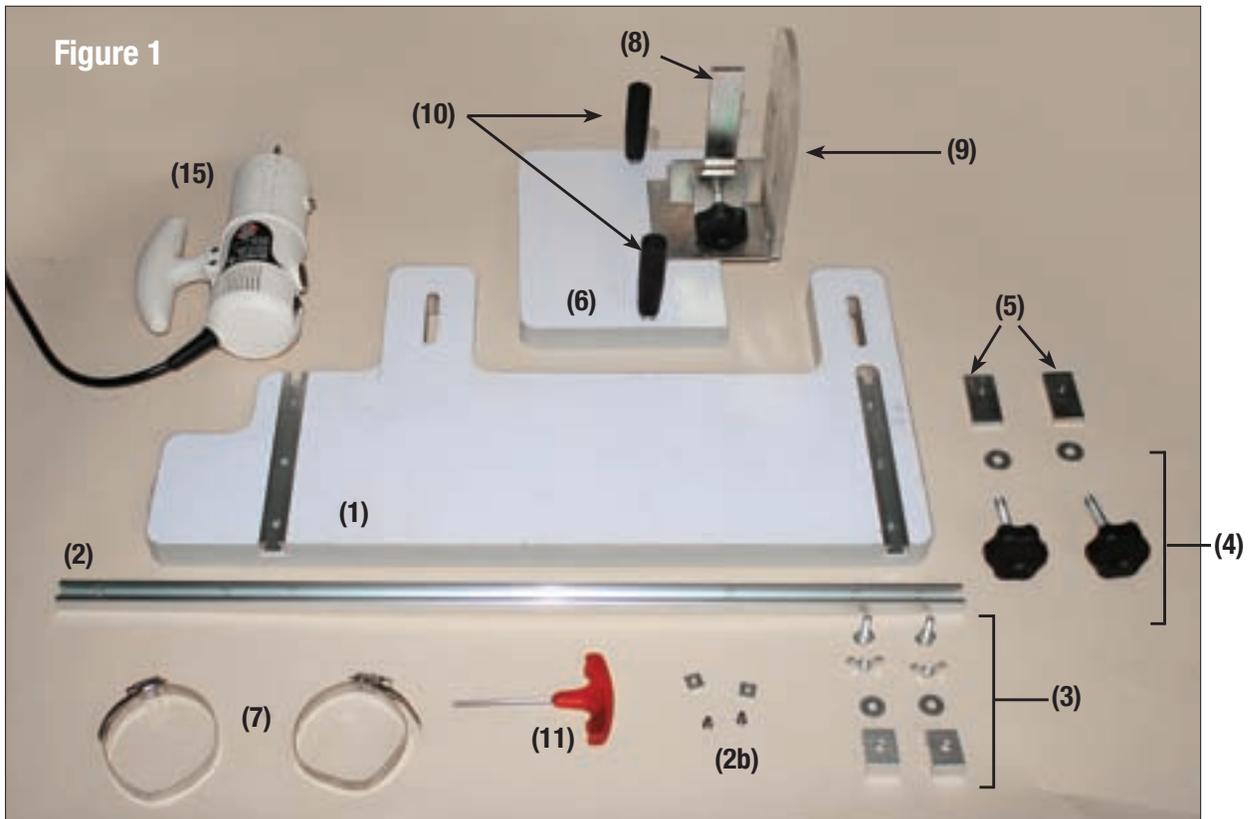

Figure 1
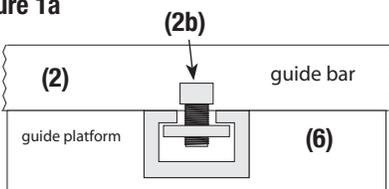
Figure 1a

Mounting guide bar to platform



Figure 1b
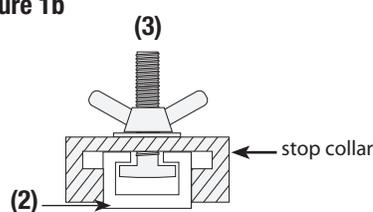
Mounting stop collar to guide bar

Figure 1c
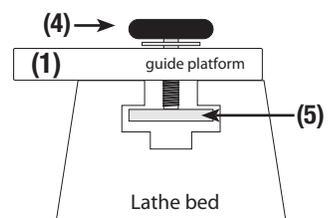
Mounting base to lathe bed

Figure 2 Router Transport Assembly


Height Adjustment Post and Guard

Trim Router Clamps

Router Carrier Handles
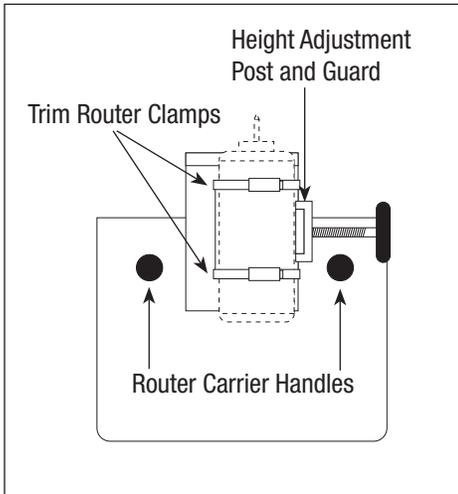
Figure 3A Short Spindle Mount (spindle 0-11")

Mounting Knobs

Headstock

Tailstock

- shorter spindle -
0 -11"

Fluting Guide Platform
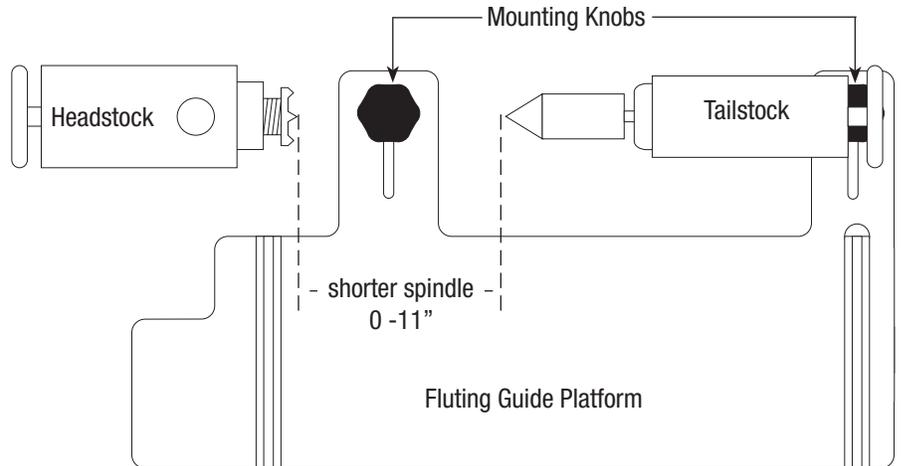
Figure 3B Long Spindle Mount (spindle 11"-16")

Mounting Knobs

Headstock

Tailstock

longer spindle
11"-16"
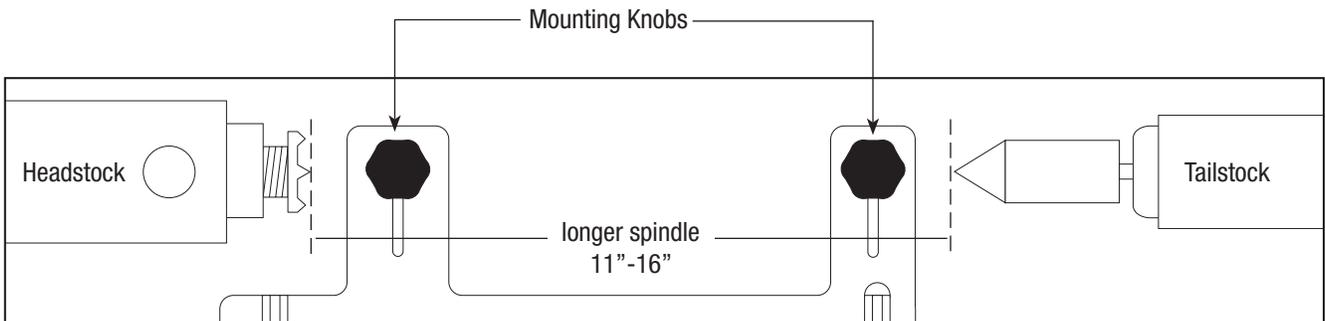
Assembly and Mounting

Assemble Router Transport components as shown in **(Fig 2)**. The clamps on the router transport will accept a trim router with a diameter to 3" with a 3" flat area. Clamp and tighten your Trim Router into the Router Clamps as shown in **(Fig 2)**. The Router Carrier and Height Adjustment Post will allow you to adjust the height of the router do not lock in place yet.

If your spindle workpiece is 0" -11", mount the Guide Platform per **(Fig 3A)**. If 11"-16", then mount per **(Fig 3B).** Loosely mount the base to the lathe using the Bed Mounting Grips in the lathe ways **(Fig 1C)**. Align the Guide Platform with your lathe bed to be as straight as possible along the bed of the lathe. At this point it is not essential for the base to be exactly straight. Tighten the Bed Grips using the Knobs on the Mounting bolts.

Set up

Set the Router Height **(Fig 4)**. With the "V" bit inserted into the router, align the point of the bit with the tailstock live center. Raise the router as necessary by sliding the Router Carrier up or down the Height Adjustment Post. Tighten Router Carrier in position when the bit is aligned with the Lathe's live Center

Figure 4

point. Position the Router Transport base to be parallel with the lathe bed. Mark a line along the base of the Router Transport onto the Guide Platform **(Fig 5)**.
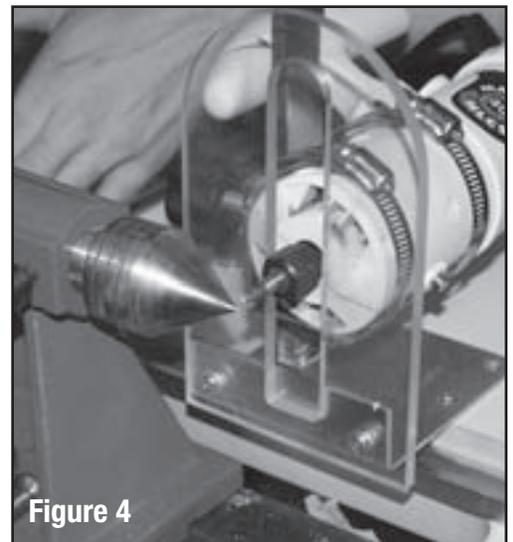
If you plan to flute a perfectly straight spindle align the router bit at the tailstock center point and mark a line on the platform the same as done at the tailstock. Connect the lines with a straight edge. This "parallel reference line" defines a "zero diameter" spindle … straight spindles of any diameter can be determined from this line.

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Figure 5: Determine parallel reference line (zero diameter)

Headstock

Index locking knob

Align bit to center points

Tailstock

Draw parallel reference line

Mark at the front of transport platform
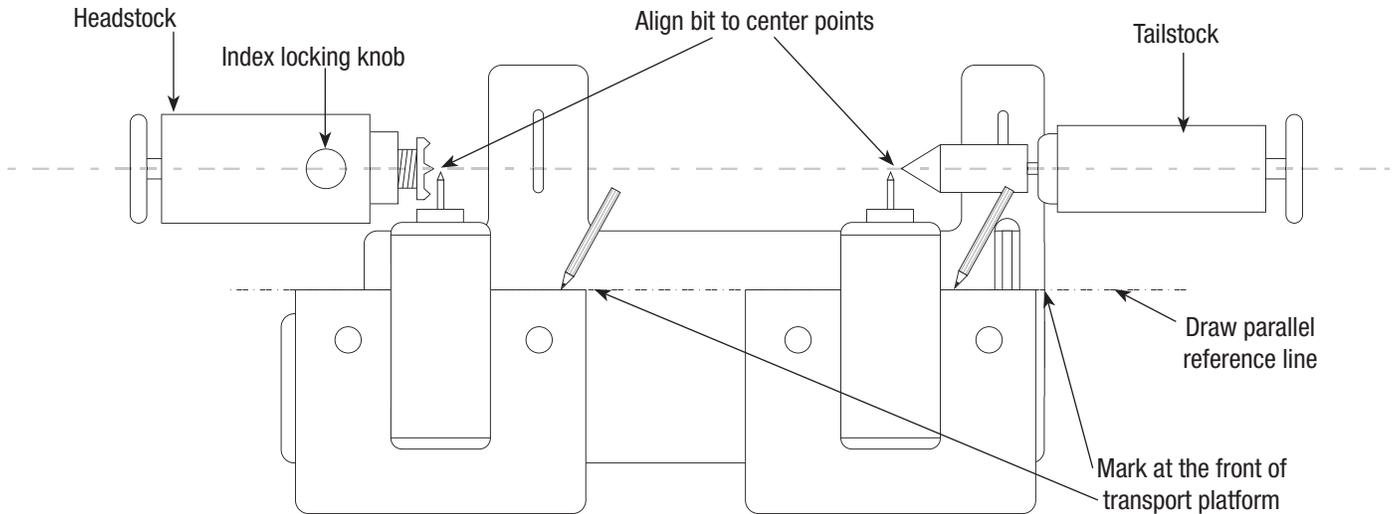
Optional - Making A Straight "Clean-Up" Cut

If you intend to use the fluting guide to make a straight cut - mount a straight bit into your router. Mount your turning, either straight or conical between centers on your lathe. Press the router bit into the work at both headstock and tailstock ends of the turning - at each end mark the platform at the base of the carrier **(Fig 6)**.

Draw a temporary reference line as shown **(Fig 6)**. If your spindle is going to be perfectly straight, measure from the parallel reference line to this temporary reference line. If necessary re-draw the temporary reference line to be parallel with the parallel reference line. Determine your depth of cut. Do not exceed 1/16" **(Fig 6)**. Draw a final clean-up line as shown.

Figure 6 - Determine clean-up line (optional)

parallel reference line

Headstock

Index locking knob

Tailstock

Press but to front of spindle - mark initial clean up line

1/16" max

final clean-up line

for straight cuts final clean-up line is equal distance from parallel reference line

draw temporary reference line

Repeat on right side
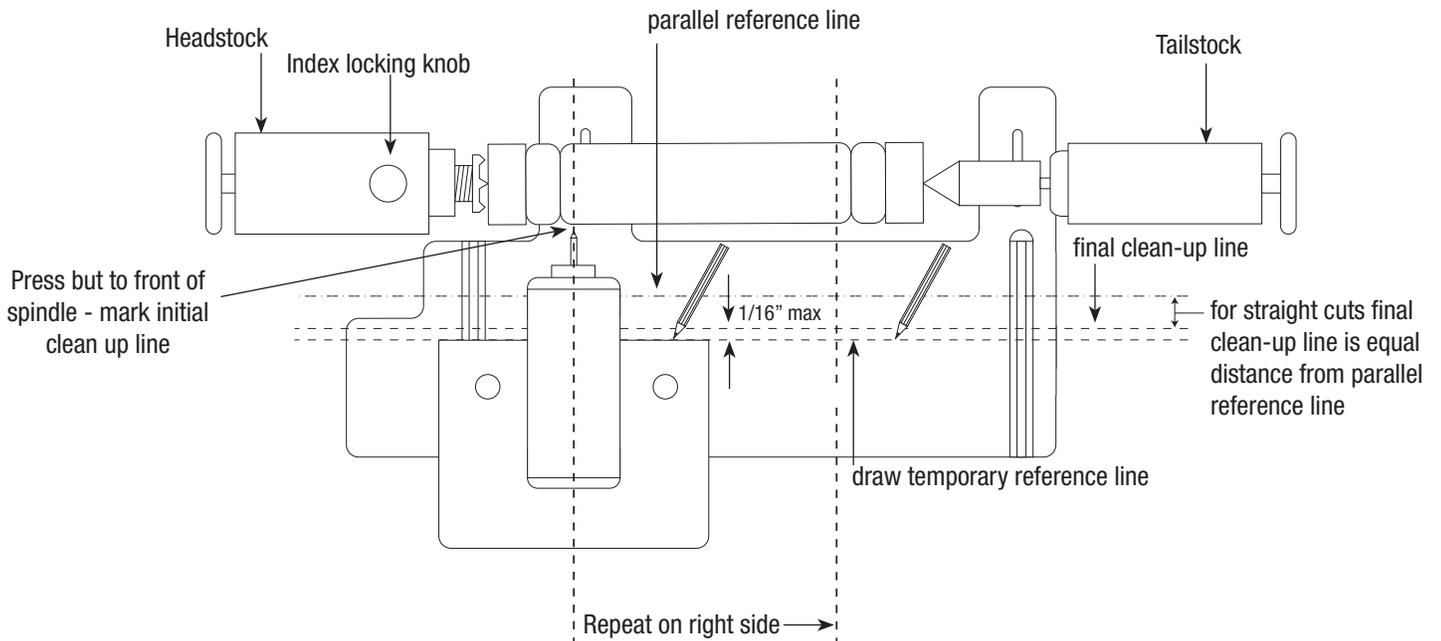
Slide the Platform Guide bar into the "T" slots in the Platform Base **(Fig 1a)**. Position the Guide Bar at the final clean-up line. Lock the Guide Bar in place using the "T" handled alan wrench **(Fig 7)**.

Position the Transport Base at the left side of the spindle, set the left stop collar **(Fig 7)**. Set the stop collar **(Fig 1b)** on the right side in a similar fashion. Turn on your lathe and router. Holding the Guide Handles, slowly slide the Transport Assembly forward into the spindle until the transport base hits the guide bar. Slide the Transport to the right, **(Fig 8)** pressing the base of the Transport along the Guide Bar. Do not press the Transport Base too hard against the Guide Bar. Continue until you've routed the entire length of the spindle. The result should be a perfectly rounded spindle (either straight or tapered.) Sand the spindle to a smooth finish.

Figure 7 - Mount Platform Guide for clean-up cut (optional)

Headstock

Index locking knob

Tailstock

Trim cut router bit

Align and lock platform guide bar in place at final clean-up line

Final clean-up line

Platform guide bar

Stop Collar
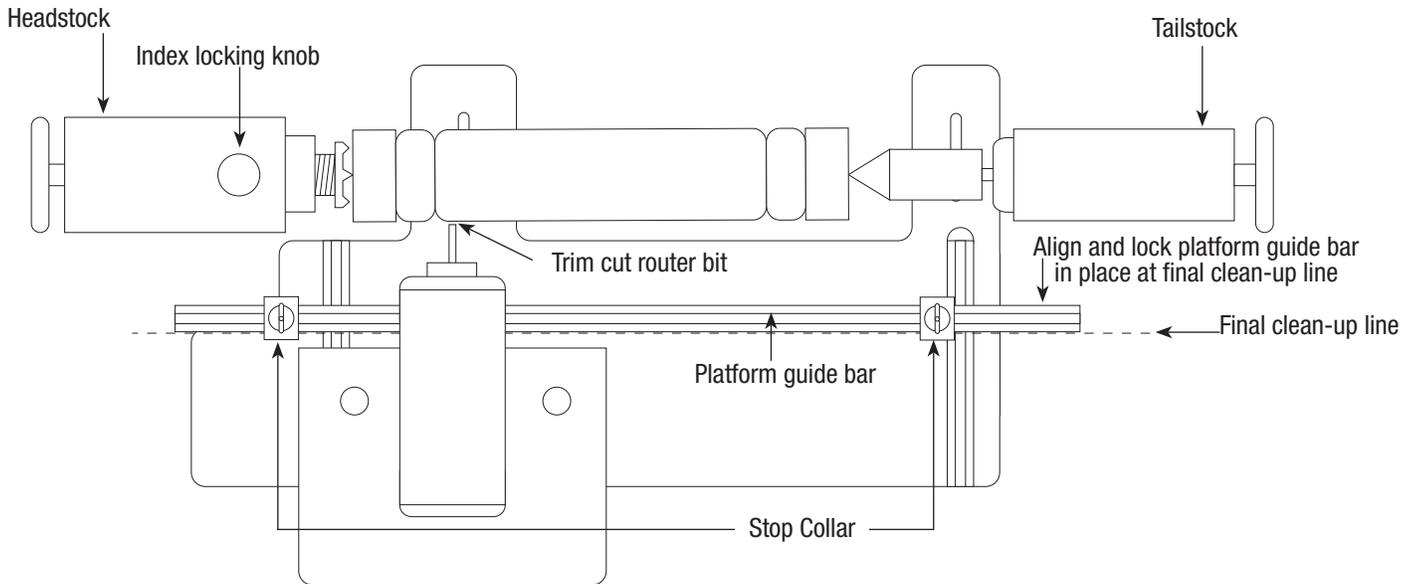
Figure 8 - Make clean-up cut (optional)

Headstock

Index locking knob

Make clean-up cut with lather turned on

Lock platform guide bar in place

Hold handles - move along guide to end of spindle at the stop collar
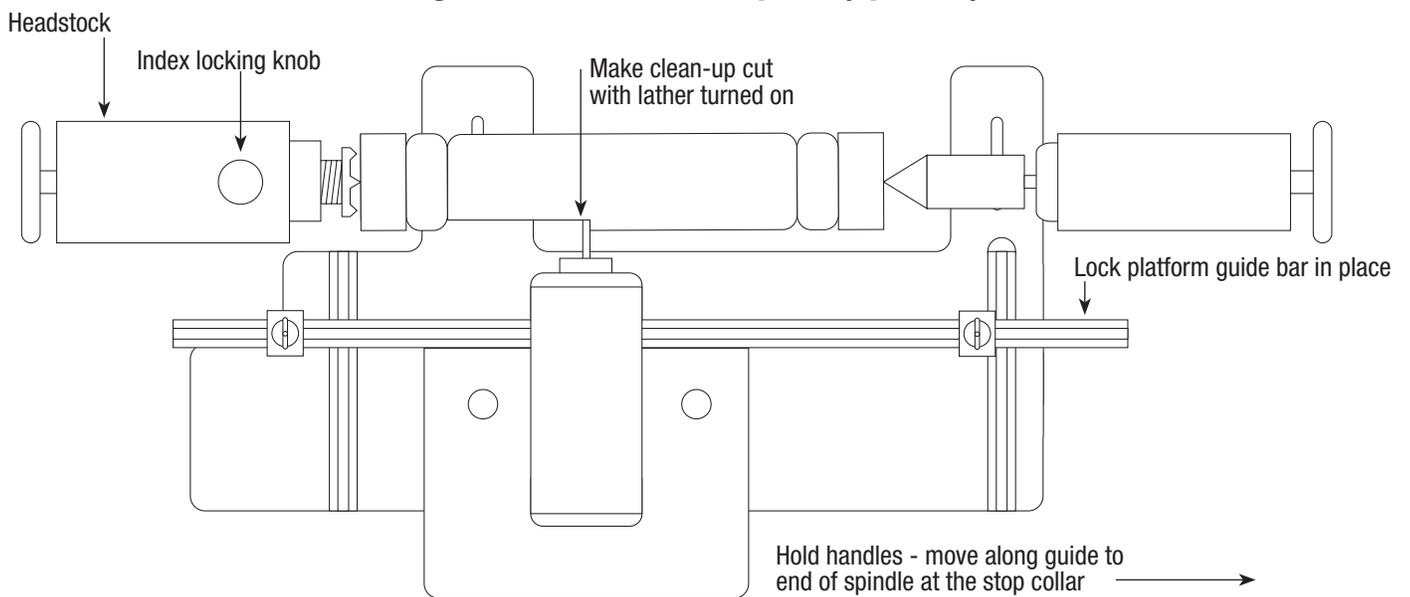
Figure 9 - Set up for cutting flutes

Headstock

Index locking knob

Mark spindle at the beginning and end for flute cuts

Tailstock

Change bit

Position guide to cut flutes

depth of cut

Flute reference line

re-position stop collar

Repeat on right side of spindle
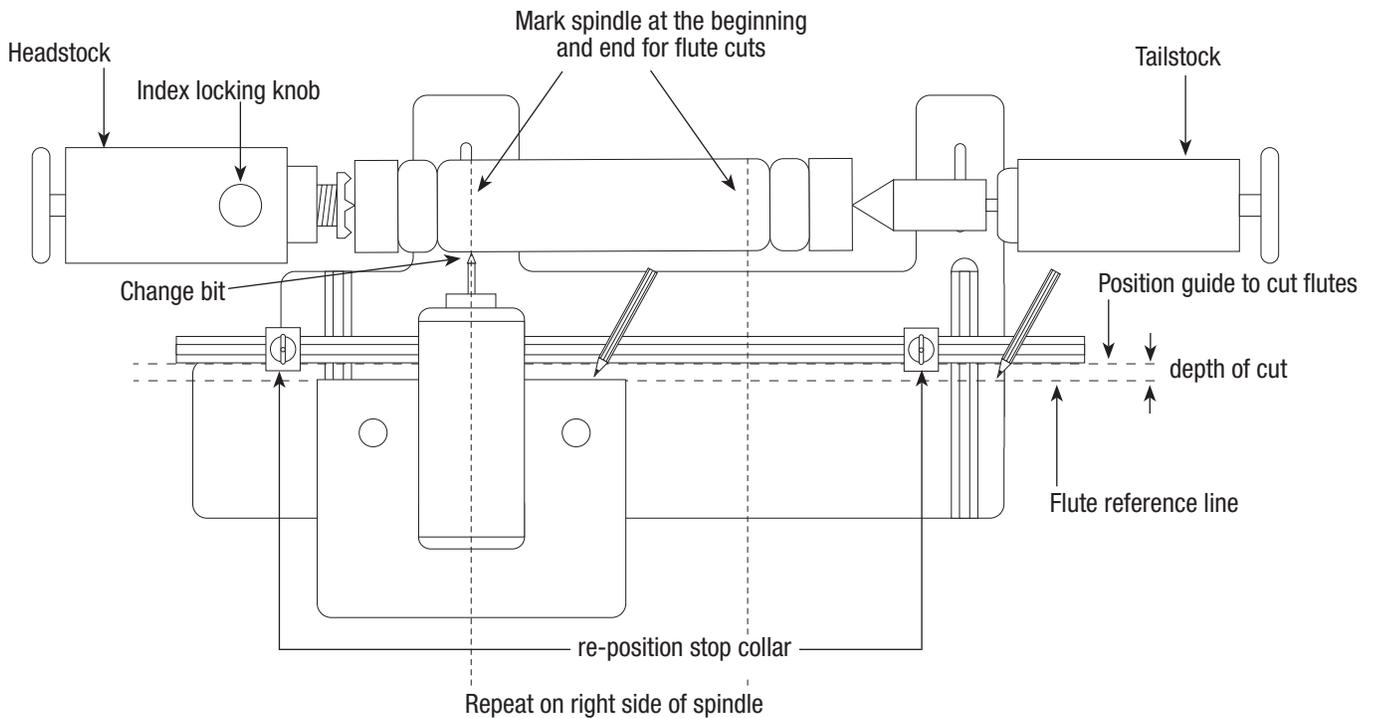
Cutting Flutes

Determine the number of flutes you want for your spindle. Depending on the number of flutes, you will dial the index number on your lathe (or indexing accessory) and lock your headstock in place prior to cutting a flute.

Insert a "V" groove or Round Nose bit into your router depending on the profile you want on your fluted spindle.

Position the point of the bit at the beginning of your flute on the left side of your spindle (**Fig 9**). Mark the front of the transport base onto the Platform. Mount and lock the stop collar to limit the left hand distance of the Transport. Do the same on the right side - mark the front of the transport and set the right hand Stop Collar. Draw a reference line between the marks on the left and right side

Determine the depth of your flute **(Fig 9)**. Advance the Guide bar to that distance in front of the reference line. Lock the Guide Bar in place securely. Don't make the cut too deep (1/16" max). If too shallow, you can always cut a deeper flute over a shallow flute but you can't make a deeper flute shallow.

Make sure your lathe spindle is locked in place, and everything else is secure. For your safety Unplug your Lathe.

Figure 10 - Cut flutes
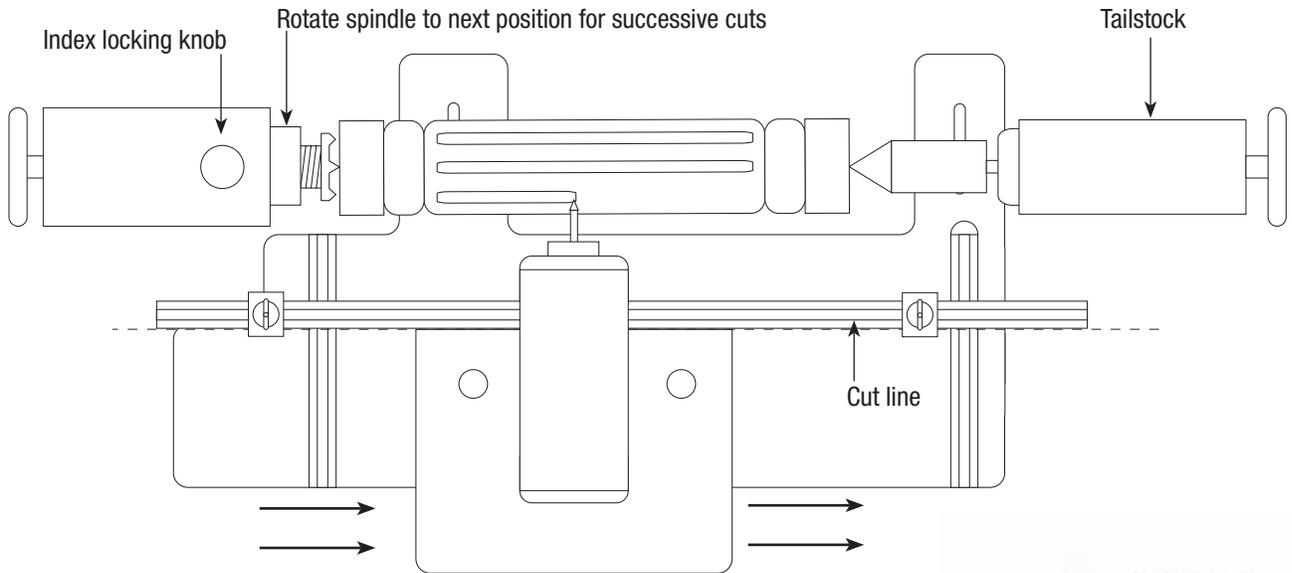
Move the Router Transport to the far left against the left hand Stop Collar **(Fig 10)**. Keep the router backed off of the spindle. Turn on the router. Carefully push the Transport forward along the left hand Stop Collar and press the router into the spindle at the left. Once you've hit the Guide Bar, slide the Transport to the right **(Fig 10)** while pressing forward against the Guide Bar. Do not press too hard. Slide to the Right until the base hits the Right Stop Collar.

Turn off the router. Unlock the Index Stop pin and advance and index your Lathe or indexing accessory to the next indexing stop. Continue to index and Flute with your router until you've fluted around the entire spindle.

When done, hand sand your turning as needed.