#LIXGA2 Fluting Guide User Manual







Cuts flutes on your turning projects Mounts to lathes with indexing feature or indexing attachment



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WARRANTY

The #LIXGA2 Router Index Guide and Router 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 #LIXGA2 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.
- 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.

NOTE: Refer to Appendix #1 for Router Information



FLUTING GUIDE

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

- 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

- 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) 1/4" Core Router Bit (not shown)
- 15) ROCKY30PS Router Refer to Appendix A



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.

* For Router Accessories see Appendix A



Mounting guide bar to platform

Mounting stop collar to guide bar

Mounting base to lathe bed

Figure 2 Router Transport Assembly



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



Assembly and Mounting

Assemble Router Transport components as shown in (Fig 2). The clamps on the router transport mount the ROCKY30PS Trim Router. Clamp and tighten the 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 core 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



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.

Figure 5: Determine parallel reference line (zero diameter)



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)

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)

Figure 8 - Make clean-up cut (optional)



Figure 9 - Set up for cutting flutes



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 the core bit into your router.

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.



Appendix A Instructions for ROCKY30PS Router

TECHNICAL DATA

Warranty	2 Years
Item number/name	9056/#ROCKY30PS
Motor	120 volts, 60 HZ, 6 Amps
Rated power	1 HP
No load speed	10,000 – 30,000 RPM
Bit shank diameter	1/4"

SAFETY

This tool is supplied with a molded 15 Amp Plug and polarized 2 wire power cable. Before using the tool, inspect the cable and the plug to make sure that neither is damaged. If any damage is visible, have the tool inspected/repaired by a suitably qualified person.

• It is good practice to leave the router unplugged until work is about to begin. Make sure to unplug the machine when it is not in use or unattended. Always disconnect by pulling on the plug body and not the cord. Once you are ready to begin working, install the cutter and remove all tools used in the installation operations (if any) and place them safely out of the way.

• Make sure you are in a comfortable stance before you start to work, balanced, not reaching etc.

• Wear the appropriate safety clothing, goggles, gloves, masks, etc. If the work operation appears to be excessively noisy, wear ear protection. If you wear your hair in a long style, wearing a hat, cap, or safety helmet will minimize the possibility of your hair being caught up in the rotating parts of the tool. Likewise, consideration should be given to the removal of rings and wristwatches, since these are liable to be a 'snag' hazard.

• Check that your cutting bits are undamaged and are kept clean and sharp, this will maintain their optimal operating performance and lessen the loading on the tool.

• Before connecting the router to the power supply, check the tool for obvious signs of damage, paying particular attention to the plug and the power cord. Make sure the router bit is sharp and clean. Make sure the tools you use fit the router bit. DO NOT risk damaging the tool by using the wrong size collet wrenches, allen keys, etc.

• Check that there are no foreign objects, e.g. old nails, screws, small stones, etc., embedded in the work piece.

• Ensure the machine is switched off ('0' showing) (Never turn on the power unless you are actually holding the machine). Plug the power cord into a correctly rated switched outlet. If you are working outside, check that any extension cords in use are rated for outside work.

• Make sure the machine is in a safe position, the cutter bit is not in contact with anything, and the 'cutting depth' is locked. Give the machine a quick "burst" to ensure that everything is working correctly, checking especially for vibrations that might indicate that the cutter is incorrectly installed. If a vibration is present, disconnect the machine, re-install the cutter, and test again.

When unpacking and checking contents, separate all loose parts from the packaging material and check each item to make sure all items are accounted for before discarding any packing material. If any parts are missing, do not attempt to use this router, plug in the power cord, or turn the switch on until missing parts are obtained and installed correctly.

ASSEMBLY & ADJUSTMENTS

This tool is equipped with the following electronic functions:

- Constant Speed Control: Electronic circuit allows the motor to maintain a constant speed, even under full load conditions.
- Soft Start: The features minimizes start up "torque twisting" by allowing the motor to gradually come up to speed.

ON/OFF SWITCH:

The power switch is located on the side of the top cover of the motor housing. Pushing the rocker switch to the "I" position turns on the power. Pushing the rocker to the "O" position interrupts the power and turns the tool off.

WARNING! - Never use the tool if its switch cannot turn it on or off smoothly

WARNING! - Never use the tool without the motor installed in router transport assembly.

VARIABLE SPEED DIAL:

The ROCKY30PS has a variable speed control to correctly match the router bit speed to the type of bit and material that is being used. There is a dial on the top of the motor housing to change the speed. The speed is selected by rotating the variable speed dial between the lowest setting (1), and the highest setting (6).

- 1. Motor
- 2. 1/4" Collet
- 3. Collet Wrench
- 4. Spare Carbon Brushes



- 1 10,000 rpm (minimum)
- 2 12,000 rpm
- 3 17,000 rpm
- 4 22,000 rpm
- 5 27,000 rpm
- 6 30,000 rpm (maximum)





Changing Collet Insert:

The ROCKY30PS is supplied with a 1/4" collet insert. To change the collet insert, loosen and remove the collet nut and insert the desired collet for the bit you intend to install in the router. Replace the collet nut but do not tighten fully unless there is a router bit inserted into the collet as it is possible to permanently distort the collet insert by doing this. This could make inserting bits into the collet difficult or cause you to need to replace the collet insert.

Inserting a Router Bit into the Collet:

With the collet nut loose, slide the router bit into the collet insert. Make sure that you have at least 3/4" of the router bit shank inserted into the collet. Do not bottom out the bit in the collet. If you insert the shank to the bottom of the collet bore, make sure to pull it our at least 1/16" to 1/8" to allow the collet insert to properly secure the router bit in the collet. There is a button on the motor housing that will lock the spindle to allow you to tighten and loosen the collet nut using the supplied wrench. It will be necessary for the spindle to rotate until the spindle lock pin engages the locking hole on the spindle. Before tightening the bit, make sure the flutes of the bit are completely visible outside the collet. Otherwise, it can result in broken bits and possible injury. The power cord should be unplugged from the power source when making bit changes to prevent the router from being turned on by accident.

WARNING! Never use dull or damaged bits. Damaged bits can break without warning. Dull bits may overload the motor, cut slowly and are difficult to control. They will also overheat and possibly break.

OPERATIONS

1. Before operation:

- 1) Before turning the tool ON, check to make sure the router bit and any fasteners used to attach accessories are properly tightened.
- 2) Avoid cutting your fingers. Make sure all of your fingers are far back from the work piece before operation. Keep you hand far away from moving parts.
- 3) Before starting the tool, make sure that the bit does not touch the work piece.
- 4) Before cutting the work piece, let the tool turn for a while without load.

2. During operation:

1) Always hold the carrier with two hands during start up and operation.

3. After operation:

1) When the cut is complete, turn the tool OFF, wait until it comes to a complete stop and remove it from the work piece.

4. Working procedure:

Before attempting to work on an actual project, make a few practice cuts on some scraps of material. Use the same type of material you will be using in your actual project to see how the cutters will work. After making the test cut, make any necessary adjustments to the cutting depth, motor speed or feed rate to achieve the best results.

MAINTENANCE

1. Do not clean the tool by using highly volatile liquids such as solvent, gasoline or petroleum product, etc, because the chemical substances contained in these liquids may damage the plastic.

2. Always re-tighten collet and all adjustments before starting the tool after a bit or accessory has been changed. Loose bits and adjustments can cause unexpected shifting of the tool, resulting in loss of control and injury from the bit or tool being thrown.

3. When the carbon brushes have been worn to their limitation, they should be replaced. Both carbon brushes should be replaced at the same time.

4. WARNING! Use only as recommended with this manual to avoid injury to the operator and damage to the tool.

ROCKY30PS ROUTER PARTS LIST

1	ZLIX01	Top Cover	1
2	ZLIX02	Name Plate	1
3	ZLIX03	Speed Controller	1
4	ZLIX04	Self-tapping Screw M4x18mm	2
5	ZLIX05	Strain Relief	1
6	ZLIX06	Terminal Block	1
7	ZLIX07	Power Supply Cord	1
8	ZLIX08	Cord Guard	1
10	ZLIX10	Motor Housing	1
11	ZLIX11	Brush Holder Cap	2
12	ZLIX1	2 Carbon Brush	1
13	ZLIX13	Brush Holder	2
14	ZLIX14	Switch	1
15	ZLIX15	Field	1
16	ZLIX16	Self-tapping Screw M4x65mm	2
20	ZLIX20	Wave Washer 6mm	1
21	ZLIX21	Ball Bearing	1
22	ZLIX22	Resin Washer	1
23	ZLIX23	Armature Assembly`	1
24	ZLIX24	Fan	1
25	ZLIX25	Retaining Ring	1
26	ZLIX26	Ball Bearing	1





