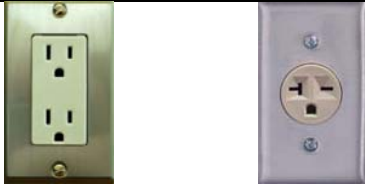

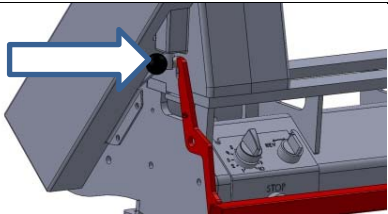
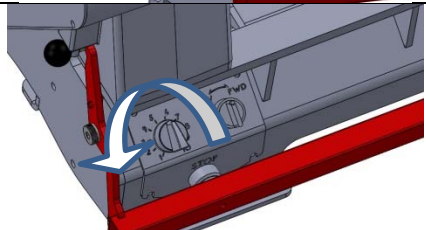
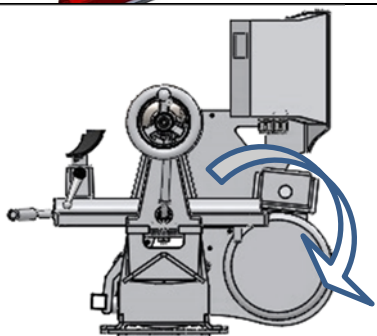




Owner Manual

SCOUT

PLEASE READ BEFORE STARTING YOUR SCOUT

<p>Plug your lathe into a working outlet of the proper voltage. If 110 volts, use the standard household grounded outlet. If 220 volts, use a NEMA 6-20 outlet, rated for 250 volts and 20 Amps. Available at any hardware store.</p> <p>Note: GFI circuits are NOT compatible with your lathe.</p>	 <p>NEMA 5-15, 110 volt NEMA 6-20, 220 volt</p> <p>DO NOT USE GFI CIRCUITS</p>
<p>X DO NOT use the key pad on the inverter to run the lathe. Use the magnetic backed controller.</p> <p>When plugged in, the display will read "Stop". When running, the spindle RPM is displayed.</p> <p>Your inverter may be beige or blue. Both work the same.</p>	 <p>LEAVE THIS ALONE !!</p>
<p>Be sure the spindle lock/index knob is all the way down, otherwise the stop bar lever arm will push the RED stop bar against the stop switch.</p>	
<p>For safety sake, turn the speed dial to the lowest setting every time you start turning.</p> <p>This is a great habit to get into every time you start your lathe.</p>	
<p>For shipping purposes, the junction box on the motor is shipped in the upright position. It may be hit by the banjo when you are working close to the headstock.</p> <p>If this becomes problematic, rotate the motor 90° to get the junction box out of the way. To do this, first unplug the machine and remove the belt guard. Then remove the two bolts holding the motor and rotate it so that the junction box is towards the back. Then reassemble.</p>	

Robust Tools, LLC 101 Business ID Barneveld, Wisconsin 53507

Please read the trouble shooting section. Phone: 608-924-1133 Email: info@turnrobust.com

ROBUST LATHES HAVE BEEN TESTED TO UL STD. 987 and CSA STD. C22.2 No. 105 AND ARE CE COMPLIANT

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WOODTURNING SAFETY

⚠ Failure to follow safety rules may result in serious personal injury.

1. **READ AND UNDERSTAND** the entire owner's manual before attempting assembly or operation.
2. **READ AND UNDERSTAND** the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury. Replace the warning labels if they become obscured or removed.
3. **GET TRAINING:** This Lathe is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a Lathe, do not use until proper training and knowledge have been obtained.
4. **DO NOT USE THIS LATHE FOR OTHER THAN ITS INTENDED USE.** If used for other purposes, Robust Tools LLC disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
5. **KEEP GUARDS IN PLACE** and in working order.
6. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form the habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
7. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents. Keep shop floor free of tripping hazards. Woodturning generates chips and sawdust. Clean up debris and keep your work area clean. Sawdust is a fire hazard.
8. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
9. **KEEP CHILDREN AWAY.** All visitors should be kept a safe distance from work area.
10. **MAKE WORKSHOP KID PROOF** with padlocks, master switches, or by removing starter keys.
11. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
12. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
13. **USE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power, overheating or malfunction. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord. See table below:

Recommended wire size for extension cords based on length	25 feet	50 feet	100 feet
	14 AWG	14 AWG	12 AWG
NOTE: Cords longer than 100 feet are not recommended			

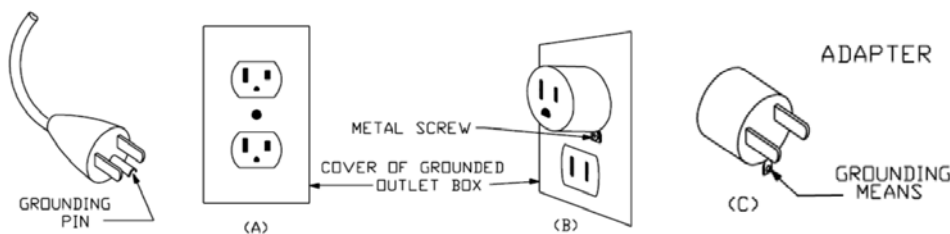
14. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair, including beards.
15. **ALWAYS USE SAFETY GLASSES AND FACE SHIELD.** Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
16. **SECURE WORK.** Use appropriate chucks, faceplates or other work holding devices to hold work when practical.
17. **DON'T OVERREACH.** Keep proper footing and balance at all times.
18. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

19. **DISCONNECT TOOLS** before servicing or when changing accessories, such as blades, bits, cutters, and the like.
20. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
21. **USE RECOMMENDED ACCESSORIES.** Improper accessories may be hazardous. Consult the accessory owner's manual before use. The use of improper accessories may cause risk of injury to persons.
22. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
23. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
24. **DO NOT MODIFY LATHE.** Do not modify lathe or use in a manner for which it was not designed.
25. **DUST WARNING.** The dust generated by some woods and wood products can cause health problems. Operate equipment in well ventilated areas and provide proper dust removal. Use a dust collection system whenever possible. Also use a dust mask or other personal protection.
26. **DISCONNECT FROM POWER.** Disconnect the equipment from power when assembling or maintaining.
27. **CHECK LATHE SET-UP WITH POWER OFF.** Examine the lathe set-up carefully and rotate the work piece by hand to check clearance before turning on power.
28. **NEVER LEAVE LATHE RUNNING UNATTENDED.** Do not leave lathe unless it is turned off and has come to a complete stop.
29. **MAKE ALL ADJUSTMENTS WITH POWER OFF.** Do not make adjustments when the lathe or work piece is turning. Make all adjustments with power off.
30. **TIGHTEN ALL CLAMPS BEFORE OPERATING LATHE.** All clamp handles on the banjo, toolrest, tailstock and auxiliary equipment should be tightened before operating lathe.
31. **CHECK THE WORKPIECE CAREFULLY** for splits, knots or other obstructions which may cause a safety risk while turning. Do not turn unsound wood.
32. **USE SLOW SPEED WHEN STARTING.** Always start out with slow speeds when turning a new or unbalanced work piece.
33. **ADJUST TOOLREST CLOSE TO THE WORK PIECE.** Before turning, rotate the work piece by hand to make sure it clears the toolrest. When turning, occasionally stop the lathe and readjust the toolrest to keep it close.
34. **KEEP TOOL ON TOOLREST.** Lathe tools should remain on the toolrest whenever the tool is in contact with the work piece.
35. **REMOVE TOOLREST WHEN SANDING OR FINISHING.** When sanding or finishing your work piece, remove the toolrest to prevent your fingers from getting pinched.
36. **FASTEN WORK PIECE SECURELY BETWEEN CENTERS.** When turning between centers, make sure the work piece is secure and that tailstock is locked before turning.
37. **USE CAUTION WHEN USING THE LATHE IN REVERSE.** When using reverse, be sure to secure the work holding device (chuck, faceplate, etc.) to the spindle with safety set screws. Reverse is generally only used when sanding.
38. **NEVER STOP A ROTATING WORKPIECE WITH YOUR HAND**
39. **IF GLUING UP A WORKPIECE:** always use a high-quality glue of the type necessary for that particular workpiece.

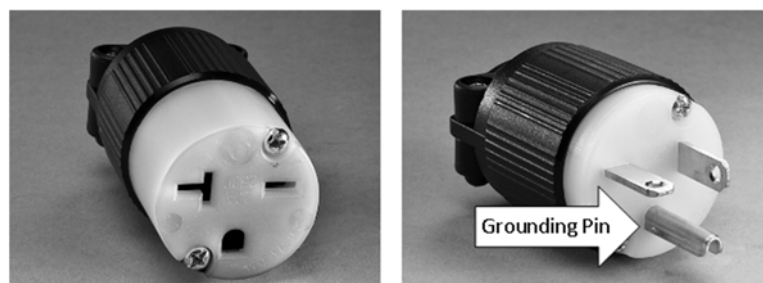
40. **FOLLOW LOCAL ELECTRICAL CODES.** Make sure wiring codes and recommended electrical connections are followed and that the machine is properly grounded
41. **GROUNDING INSTRUCTIONS:** In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. Your lathe is equipped with an electric cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Repair or replace damaged or worn cord immediately.

Lathes wired to run on 110-120 volt circuits are intended for use on a circuit that has an outlet (NEMA 5-15) that looks like the one illustrated in Sketch A in the figure below. The tool has a grounding plug that looks like the plug also illustrated in the figure. A temporary adapter, which looks like the adapter illustrated in Sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.




Lathes wired for operation on a 220-240 volt circuit are intended for use on a circuit that has an grounded outlet and plug that looks like those illustrated below (NEMA 6-20).




*** SAVE THESE INSTRUCTIONS ***

Installation

Consideration	Recommendation
Unpacking	DO NOT LIFT BY THE RED STOP BAR. Your lathe is shipped fully assembled. Robust lathes are heavy. Get help. Use care when removing the lathe from the pallet. Remove any packing grease with a rag.
Lathe Location	The best location is on a level concrete floor close to a power source in an area with good lighting. Provide clearance on all sides of the lathe. Other machines in your shop should not interfere with the operation of the lathe.
Lighting	Your shop and lathe work area should have adequate lighting. A movable spotlight may be helpful. A stand-off is included on top of the inverter bracket for mounting a light.
Bolting to Bench/Floor	If you are providing your own bench or stand, it is recommended that you bolt the lathe securely to it. Your bench or stand should be sturdy and capable of handling the weight of the lathe and the stresses of turning. If you purchased the Robust Universal Stand, bolts are supplied to attach the lathe to it. If you do not plan to move your lathe, you should consider bolting the stand or bench to the floor. First make sure the lathe is level and settled per other instructions in this manual and then use any good quality anchor. If you are bolting to concrete, make sure there are no expansion joints or cracks between the legs. If bolting to a wooden floor, it is best to get over the joists. Settle the lathe both before and after bolting.
Ventilation	Your shop should be adequately ventilated. The amount of ventilation needed varies based on the size of the shop and the amount of work done. The use of dust collectors and filters will minimize risks to your health. Some woods are toxic or will cause allergic reactions.
Electrical	<div> Wiring and outlets should adhere to local electrical codes. Your SCOUT may be wired 110 or 220 volts and should be on a dedicated circuit of at least 15 amps. Avoid using extension cords. </div> <div>  If you are in doubt about the power connection, seek advice from a qualified electrician. </div>
Lathe Height	Most turners like to adjust the height of the lathe legs so the centerline of the lathe spindle is at the elbow height of the turner. Adjust up or down from there to where it is comfortable for you. See instructions for this elsewhere in the manual.

Routine Maintenance

Interval	Maintenance
After each use	Clean the work area and lathe. Clear dust from the inside the headstock, between the lathe bed rails, and under the banjo and tailstock. Clean up any finish or glue from ways.  Some solvents and glues will affect the painted surfaces. Cover up the paint if you don't want it affected by solvent and glues.
Monthly	Remove the banjo and clean and lightly lubricate the cam shaft and cam shaft follower. Lubricate the bed ways with paste wax. Clean and lubricate with one or two drops of light-weight oil the outside of the quill and the tailstock cam shaft. Recheck belt tension. Remove tool rest clamp from banjo and clean and lubricate bushings and holes.
6 Months	Clean and grease tailstock quill threads-- screw the quill all the way out, grease the nut in the quill and crank the quill back in; wipe off excess. Any general-purpose grease is fine. Loosen belt and clean its contact side and the grooves in the pulleys.
Never	The spindle and motor bearings are permanently lubricated and need no maintenance.

Electric Motor

Your lathe is equipped with a 3 phase AC industrial grade motor. The motor is fan cooled. If the lathe has run for a long time on slow speed the motor may stop as the fan is not turning fast enough to cool the motor sufficiently. Allow the motor to cool before continuing.

Variable Frequency Drive or “Inverter”


Your lathe has an industrial grade variable frequency drive (VFD), also known as an “inverter”. It converts normal household current to 3 phase. When you change the spindle speed dial, the drive changes the motor speed.

The inverter is set with parameters by Robust that most turners will like. Do not change any parameters without a thorough understanding of how inverters work, since changing certain settings will prevent your lathe from running properly, if at all. The drive manual, included with the lathe, shows how to change the settings.


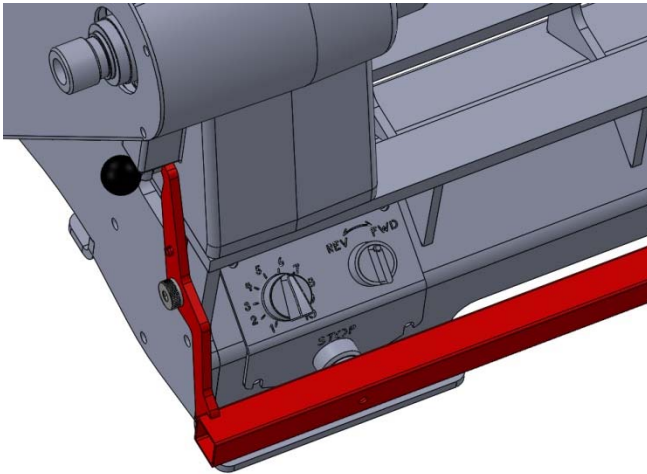



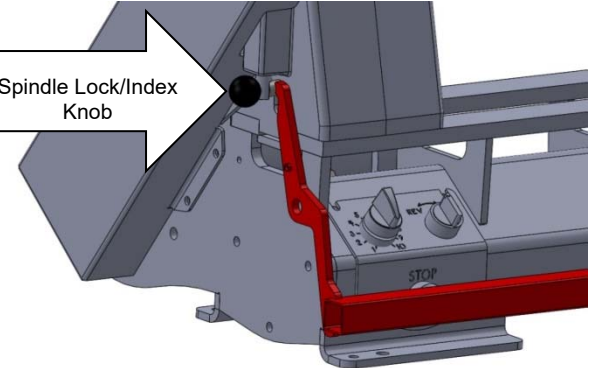
VFD (aka “inverter”) Yours may be beige or blue. They work exactly the same.



NOTE: The buttons on the face of the VFD have been de-programmed and are non-functional. All lathe operations are done with the pendant controller.

 Unplug the lathe when you take an extended break or are finished with your turning session. This also provides maximum protection against power surges and lightning strikes.

Controls



Control	Function	
1-10, Spindle Speed	Determines speed (rpm) of lathe: 1- slowest, 10- fastest.  Set the speed to 1 and gradually increase to the desired level every time you start the lathe.	
REV/FWD	Determines rotational direction of spindle: REV - reverse, FWD - forward  You can change direction when the lathe is running. The spindle will slow down, stop, and change direction. This will not harm the lathe.  When turning in reverse secure your chuck, faceplate, etc. using a set screw (grub screw) in the unthreaded portion of the spindle.	
STOP	Firmly press the STOP button or the RED stop bar anywhere along its length to activate the stop button and stop spindle rotation.	
Spindle Lock - Index Knob	The Spindle Lock/Index Knob is located on the left side of the headstock. Raise it to engage, lower it to disengage. If you want to run the lathe, be sure the spindle lock/index knob is all the way down, otherwise the stop bar lever arm will push the stop bar against the stop switch.  The lathe should not be operated when the Spindle Lock/Index Knob is in the up position.	

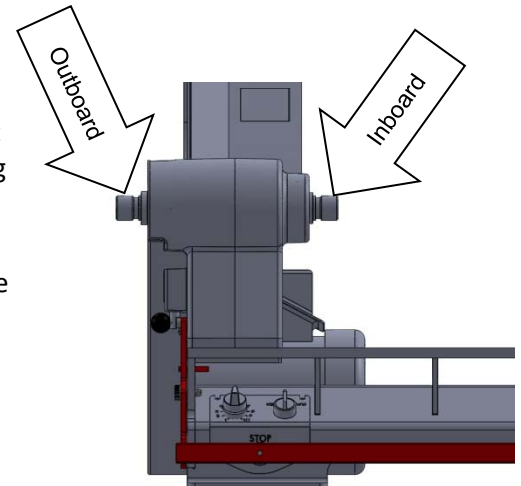
Mounting a Faceplate or Chuck

PLEASE NOTE: Your spindle has RIGHT HAND threads on both the inboard side (towards the bed) and outboard side (away from the bed). Some older lathes, made before reverse was a common feature, had left hand threads on the outboard side to keep work from unscrewing during turning.

NOTE: Your SCOUT came equipped with two faceplates. You can use one as a handwheel.

To mount a face plate or chuck:

1. Turn the lathe **OFF**.
2. Raise the Spindle Lock Knob to the **UP** position to secure the spindle.
3. Screw the faceplate or chuck onto the spindle threads. Some turners like to use a spindle washer before installing a faceplate or chuck.
 For safe operation, the faceplate or chuck body must contact the shoulder on the spindle.
4. Push the Spindle Lock Knob down to release the spindle.
 Some faceplates and chucks are equipped with a set screw to secure them to the spindle. Before tightening this set screw, ensure that it lines up with the groove provided on the spindle.

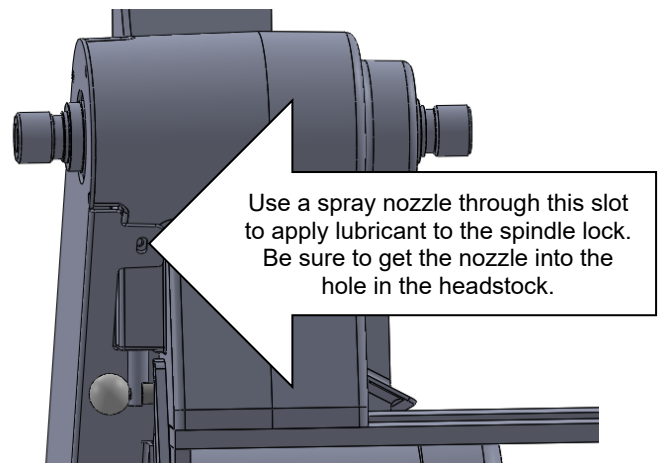
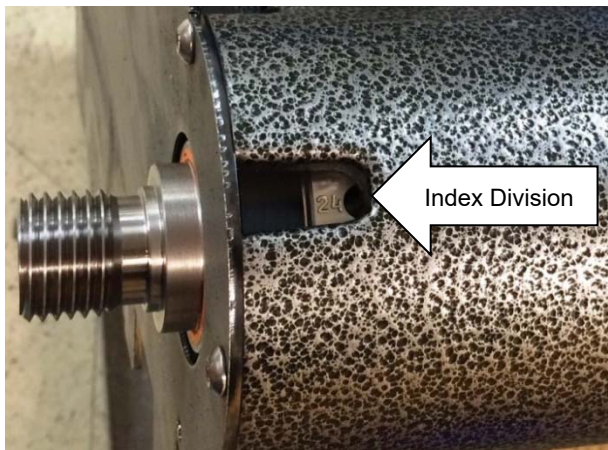


Spindle Lock/Indexing

The spindle lock serves double duty as the index mechanism. There are 24 division (every 15 degrees). The pulley is engraved "1" through "24" and these numbers are visible on the top of the headstock.

When the spindle lock/index knob is raised, the stop bar lever arm will push the **RED** stop bar against the stop switch, preventing you from starting the machine. Lower the knob to disengage the mechanism and to release the stop button.

If the mechanism becomes sticky or hard to move, spray a light lubricant, like WD-40 or similar spray lube through the slot in the guard and into the headstock casting as pictured below. Work the mechanism up and down. Repeat as necessary. Take care you don't get lube on the contact side of the belt or on the pulleys.



Banjo and Toolrest Operation

BANJO: To move the banjo, loosen the Banjo Release Lever to a vertical position, slide the banjo to the desired position, then tighten the Banjo Release Lever left or right.

When locked, the Banjo Release Lever should go just past horizontal: Apr. 4 o'clock or 8 o'clock.

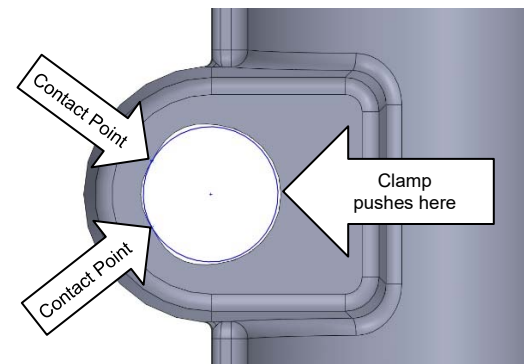
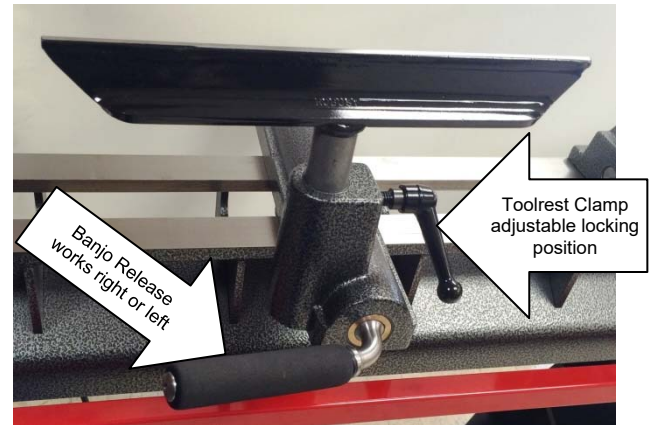
Keep the bottom of banjo and banjo shaft clean and just lightly oiled or waxed. This minimizes build up and drag.

TOOLREST: To adjust the toolrest, loosen the Toolrest Clamp, position the toolrest and tighten the clamp.

TOOLREST CLAMP: To change where the clamp ends up when tightened, simply pull out on the handle, turn it to the desired spot and push it back in. You'll note that the hole for the toolrest is not round. This gives more contact area for holding the toolrest.

- ⚠ Keep the toolrest close to the work. Stop the lathe to adjust the toolrest. Spin the work by hand before starting to make sure all parts of the work piece clear the toolrest.
- ⚠ Gouges and chisels should remain on the toolrest whenever the tool is in contact with the work piece.
- ⚠ Remove the toolrest when sanding or polishing so fingers do not get pinched.

Using the Banjo and Toolrest



The hole for the toolrest is not round !

Tailstock Operation

MOVING AND LOCKING: To move the tailstock along the bed, lift the handle to the unlock the tailstock and slide it to the desired spot. Then push the lever down to lock the tailstock.

CHANGING LOCKING ORIENTATION: The locking lever can be made to lock towards the front or back. To change, simply remove the tailstock from the lathe and rotate the lever to the other side.

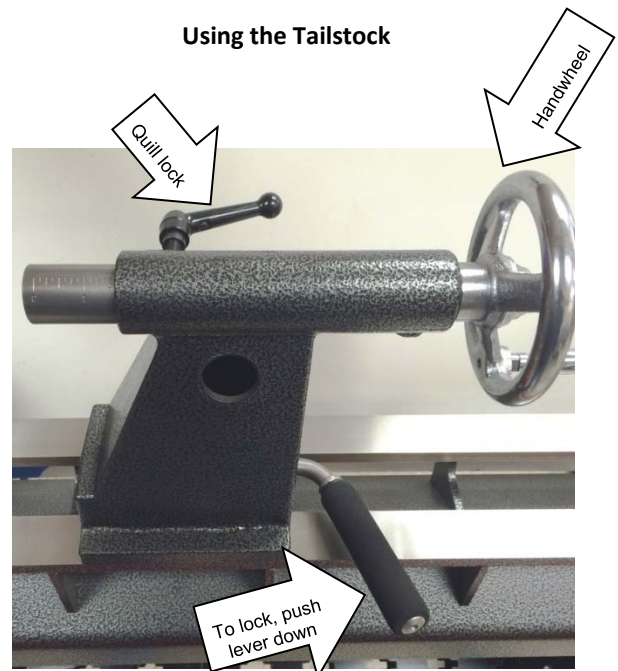
USING THE QUILL: To move the tailstock quill in or out, loosen the Quill Lock and turn the Quill Handwheel. Lock the quill by tightening the quill lock.

HINT: If you adjust the lock handle so it is level when locked, it only takes a ¼ turn to unlock it.

To install an accessory with a #2 Morse Taper first clean both the male and female parts. Use a quick, firm action by hand to seat the taper.

To remove the accessory, turn the Handwheel so the quill goes into the tailstock. The accessory should self-eject. If the accessory is too short to self-eject, use the knock out rod.

Using the Tailstock

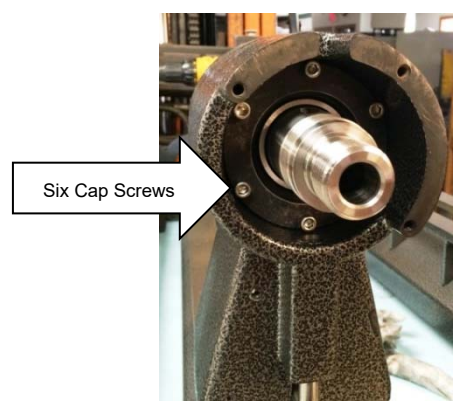
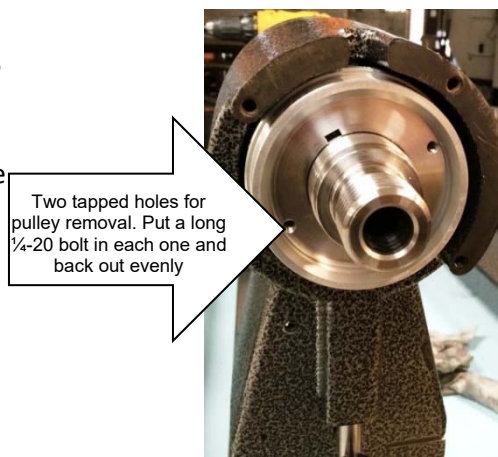
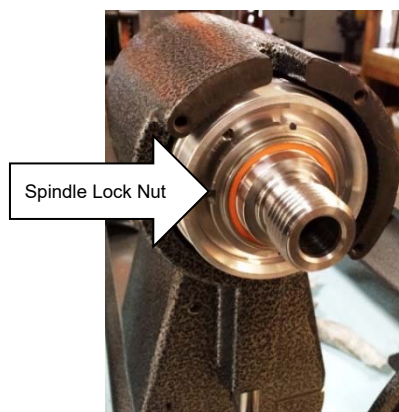


- ⚠ Never loosen the tailstock while the work piece is turning.

SPINDLE REMOVAL

In the rare event you should need to remove the spindle for maintenance, this is the procedure

1. ⚠ Stop the lathe and **disconnect from power**
2. Remove the belt cover.
3. Loosen the belt by loosening the two bolts that hold the motor in place and moving the motor so that the belt is loose. Then remove the belt.
4. Lock the spindle using the spindle lock and remove the nut using a special wrench made for that purpose. A brass punch and hammer used in the slots on the nut will work in a pinch, but is not recommended. Spin the nut counter-clockwise to loosen (it has normal right hand threads).
5. Remove the pulley. To do so, you may need to get two long fully threaded 1/4"-20 bolts and thread into the two holes as shown. Tighten the screws evenly and the pulley will back off the shaft.
6. Remove the six cap screws holding the bearing retainer ring and remove the ring
7. Lightly tap on the inboard side of the spindle with a rubber hammer or block of wood. The spindle with its two pressed on bearings should slide out towards the outboard side.
8. To reassemble, do these operations in reverse.



Tightening the Belt: The belt does not need to be super tight. Poly-groove V-belts do an excellent job of transmitting power. The belt is tightened by pivoting the motor. The motor is attached to the bed frame with two bolts. Loosen both bolts and apply hand pressure to the motor and then tighten the bolts. There should be at least 1/4" of flex in the belt when it is tight. Overtightening the belt reduces belt life and will damage the bearings in both the motor and on the lathe spindle.

Adjusting the Stop Bar: You can change when the stop bar engages the stop switch by adjusting the set screw under the acorn nut on the stop bar. If you are getting nuisance trips because the screw is too close, back it off a bit. If you want the lathe to stop with less pressure applied on the stop bar, turn it in a bit.



Optional Vacuum Adapter

The vacuum adapter is equipped with a #2 Morse Taper on the end and will work both inboard and outboard. To install, simply insert the vacuum adapter into the spindle with a quick, firm motion.

Some lubricant on the O-ring makes this process easier and extends the life of the O-ring. If you do wear out the O-ring, they are a common size and found at any hardware store.

Be sure the Morse Taper in the spindle is clean and burr free before installation. Remove the vacuum adapter with the knock-out rod supplied with your lathe.



The Vacuum Adapter is threaded 1/4" pipe thread for your vacuum line and has a #2 Morse Taper to fit into either end of the spindle.

SCOUT Recommended Woodturning Speeds		
Maximum Diameter in inches (>14-20" only with outboard)	Recommended starting speed for sound and balanced work	Recommended maximum speed for sound and balanced work
20	300	450
18	333	500
16	375	550
14	400	650
12	500	750
10	600	900
8	750	1125
6	1000	1500
4	1500	2250
2	2000	3000
Important Notes: Speeds in this chart are conservative guidelines for sound and balanced work. If your work is unbalanced or contains defects of any kind, much lower speeds should be used. IF THE WOOD HAS STRUCTURAL FLAWS, DO NOT TURN IT.		

DRIVE CENTER: The cup style drive center is perfect for safely driving spindles and small bowls. If you get a catch, the wood just spins on the center. Like our Live Center, the tip is adjustable and reversible. The Bowl Drive threads onto the cup center and provides more surface area for driving larger work.

LIVE CENTER: A precision 40 degree angular contact ball bearing, sealed & lubricated for life, carries both the thrust load and rear radial load. It may feel loose when not under load. This is normal.

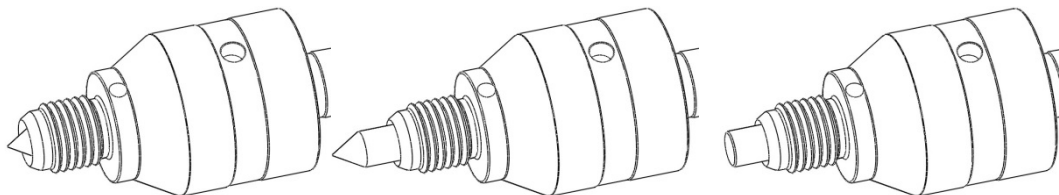
The tips of the both the live and drive centers extend and reverse to accommodate your turning. Both are also threaded 3/4-10 for standard accessories. A 5/16" thru hole accommodates drilling.



Drive center with bowl drive



Live Center



The tips on both the live center and drive center extend and reverse. Tighten in place with the set screw.

Mounting a Work Light

A socket for mounting a work light is provided on top of the headstock. It accepts a 1/2 inch diameter stem, which is the standard size of most work lights, like the Robust lamp.

Recommended bulbs include pig tail style fluorescents and LED lights. Both give higher energy efficiency and cooler operation than incandescent bulbs. A tungsten bulb can cause burns if touched.



BOLTING THE SCOUT TO A BENCH OR STAND

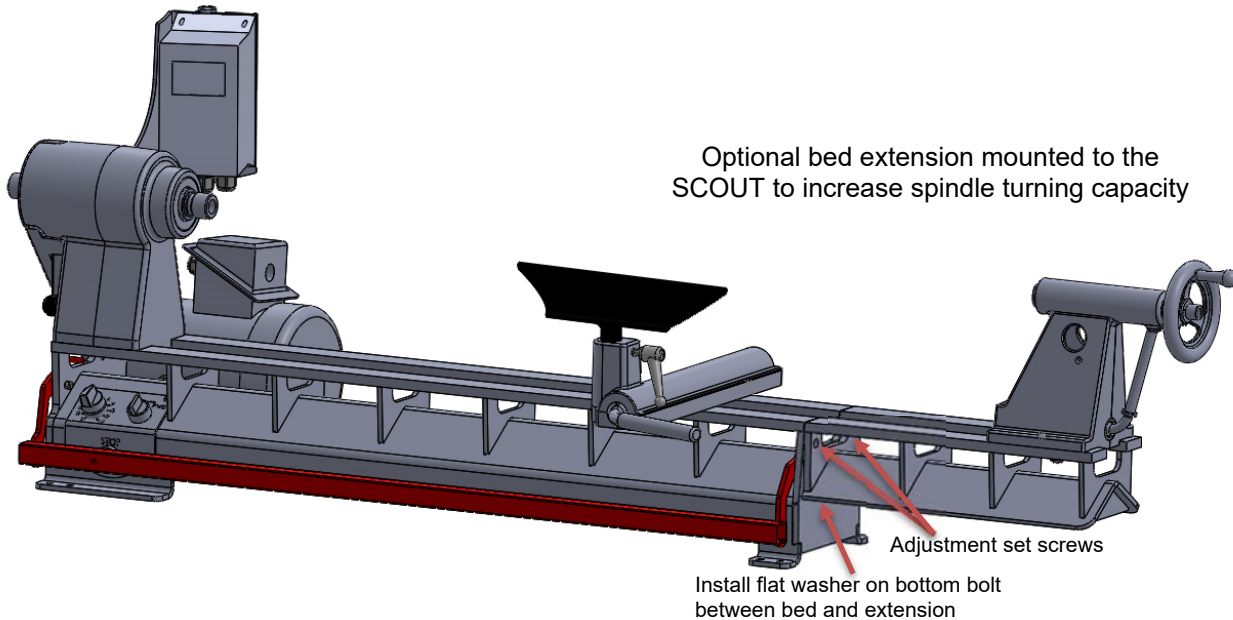
Bolting the lathe down is highly recommended. It is more important that the lathe bed is not twisted than for it to be perfectly level. Twisting the bed will affect center alignment.

Each corner of the lathe bed is equipped with a through hole and a 3/8-16 tapped hole. Before bolting down the lathe, use a bolt or set screw in one of the tapped holes to remove any wobble from how the bed sets. You can also use a shim under corner to accomplish the same thing. Then bolt the lathe down using the through holes to secure it.

If you are using a Robust UNIVERSAL STAND, please see the instructions provided with it.

OPTIONAL BED EXTENSION

To Increase Spindle Capacity: Mounting the optional bed extension to the end of the bed increases spindle capacity by 16". It is mounted using three 3/8-16 bolts. Use the tailstock to help align it. You will need to adjust the set screws slightly for parallelism. A flat washer is provided for the bottom bolt that is placed between the lathe bed and extension.

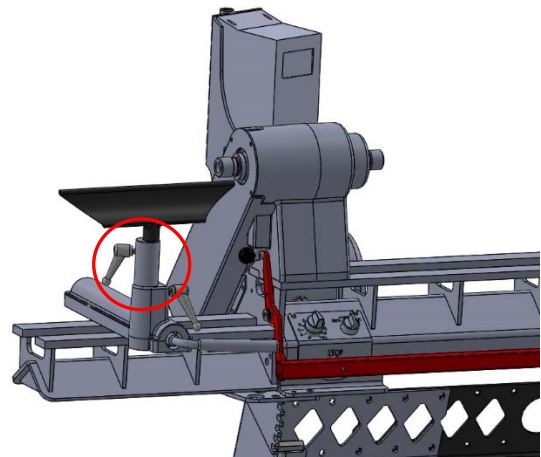


FOR OUTBOARD TURNING: You can turn up to 21" in diameter on the outboard side of the lathe using the optional SCOUT bed extension mounted as shown. It is mounted to the bed using three short 3/8-16 bolts.

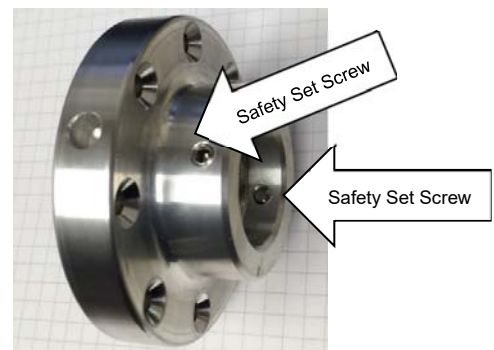
You will need to use the optional toolrest extension to get your cutting tools on center.

Because you are turning without tailstock support in this orientation, special safety considerations need to be addressed:

- ⚠ Make sure the wood is securely fastened to the face plate with quality screws of sufficient length. If a chuck is used be sure the tenon is large and solid.
- ⚠ Tighten all the safety set screws on the faceplate or chuck into the groove on the spindle. See picture to the right. Be sure to back them off before removing the faceplate!
- ⚠ Slow the work down before shutting off the lathe.
- ⚠ Always start with the lathe on its slowest speed each time you turn it on.
- ⚠ Do not use long bolts to mount the extension, as they may damage the switch connections mounted inside the lathe bed.



Outboard turning. You'll also need the toolrest extension circled in red.



Trouble Shooting

FAILURE TO START: Try these steps in order:

- 1) Look at the inverter. Is the display lit up? If not, that means you don't have power. Check that the lathe is plugged in to a working outlet of the correct voltage and that the circuit breaker has not tripped.
- 2) Does the inverter say "STOP"? If so, check your spindle lock. If it is engaged, the stop bar also is pushing against the stop switch and the lathe won't run. Also look for dust or shavings accumulated between the stop bar and stop button which may be holding the stop button in. If this is the case, clean it out with a brush or compressed air.
- 3) Does the inverter say "FLF"? That indicates there is a GFI or GFCI somewhere on the circuit. They are not compatible with the lathe. Time to call an electrician.
- 4) If the inverter is lit up and says anything other than "STOP" it will be displaying an error code. You can look in the manual if you want to know the source. Common sources include overloading the machine when coring or taking heavy cuts and anomalies on the line like a lightning strike or power surge. The solution is simple:

Unplug the machine until the display goes completely blank. The error code will clear and reset the inverter (**a quick power down will not be sufficient**). If you are unable to resolve the situation, call Robust. **If it still will not run, DO NOT attempt to program the drive.**



- 5) If the motor runs, as indicated by a RPM reading on the inverter, but the spindle does not turn, look for a loose or damaged belt under the belt guard.

STOP BAR ADJUSTMENT: You can change when the stop bar engages the stop switch by adjusting the set screw under the acorn nut on the stop bar. If you are getting nuisance trips, back it off a bit. If you want the lathe to stop with less pressure applied on the stop bar, turn it in a bit.

ALIGNMENT: If your centers are out of alignment, look for debris stuck to the bottom of the tailstock. A very small amount can make a big difference. If a thorough cleaning does not re-establish alignment, check to be sure you have not twisted the bed when you bolted it down as described elsewhere in the manual.

BANJO OR TAILSTOCK WILL NOT SLIDE EASILY: Clean the bottoms of these pieces. A light coating of wax is usually OK. Also clean the cam shafts and cam sleeves. A light coating of WD40 or other light lubricant will help these components. Also make sure you are fully loosening the clamp levers before you try to move the component. Adjust the nut on the keeper so that the locking levers go to at least 90 degrees or a little more when locked.

LOSS OF TORQUE: We occasionally get questions about loss of power, especially when coring. Coring takes a lot of horsepower. The cutter blade rubbing or loading up with shavings acts like a disc brake. Go slow and sharpen often. Check for belt tightness. The belt does not need to be over tight. Thumb pressure on the motor or motor mount is normally more than enough to ensure power transmission. Also look for dirt or oil on the belt by loosening it, turning it inside out and cleaning it and the pulleys using a fine brush. Do not apply belt dressing as the belt dressing just collects dust. A dry clean belt works the best. Remember: horsepower is not a substitute for sharp tools and good technique.

SPINDLE THREAD MAINTANCE: Your faceplates and chucks should spin on and off freely. To do so, the threads on your spindle, chucks and faceplates must be clean and burr-free. Every time you put something on the spindle you should clean the spindle threads and the accessory being mounted with compressed air and visually inspect both items for debris. Put a drop of mineral oil (won't stain wood) on the spindle every now and then.

MORSE TAPER MAINTENANCE: Morse tapers need to be clean and burr-free to work properly. If they are not, the inserted component can spin which may damage both the internal and external tapers. The "TaperMate" Morse Taper Cleaner" available at many woodturning supply houses is a good at getting soft debris out of internal tapers. If your spindle or

tailstock tapers have burrs or galls get a Morse taper hand reamer of the appropriate size. Do not attempt to fully restore a shiny internal surface with the reamer, just get the high spots off. Use cutting oil liberally. For the external surfaces, light passes with a smooth-cut file or a little sandpaper is usually all you need. Concentrate on the burrs, and leave good surfaces alone.

SPINDLE LOCK IS STICKY: Blow it out with air and work in some light lubricant like WD-40. There is a hole to squirt oil into the mechanism. See elsewhere in the manual

FINISH: The lathes are powder coated and the parts are either semi-gloss black or Silvervein. Powder coating is quite durable, but not indestructible. Certain solvents can negatively affect the finish. We have been told that Camphor, a wood common in the southeast, can also negatively affect the powder coat finishes. Silvervein is hard to touch up, so if you want to keep the lathe nice, cover surfaces when using glues and finishes.

TAILSTOCK QUILL: The tailstock quill should turn in and out easily. If your quill is not going in and out easily, remove the quill and clean and lubricate the mechanism. Spray grease is handy for the threads and inside of the quill hole. Sometimes burrs will form along the groove that the spindle lock rides in. It doesn't take much of a burr to cause the quill to bind. Take a small file and remove the burr. Filing a small chamfer on the edge of the groove is also a good idea.

LATHE MAINTENANCE TOOL KIT: Here are a few things to have in your tool kit to keep your lathe in good order:

- Paraffin or paste wax for lathe bed and underside of banjo, tailstock and sliding headstock
- Sharp three corner file with one side ground safe for deburring spindle threads
- Bottoming tap the same size as your spindle for cleaning chuck and face plate internal threads
- Spray grease for quill
- Scotch Brite for cleaning lathe bed and underside of banjo, tailstock and sliding headstock
- Small stiff brush for cleaning belt and pulleys
- Mineral oil for lubricating spindle threads
- Light lube oil, like WD-40 or 3-in-1
- TaperMate Morse Taper Cleaner or similar
- Morse taper reamer
- Single cut file (aka: mill file or bastard file). A sharp one.
- General hand tools needed to maintain your lathe (wrenches, screwdrivers, Allen wrench

! Please see our website information section for a more complete discussion of lathe maintenance !

Seven-Year Limited Warranty

WHAT IS COVERED: We will, at any time within seven years from the date of delivery, repair or replace (our option) any mechanical or electrical part which is defective in materials or workmanship on any of our lathes. This includes headstock bearings.

WHO IS COVERED: The initial purchaser and one subsequent owner.

IF YOU HAVE A WARRANTY CLAIM: In all cases, return authorization must first be obtained by calling us. At its option, Robust may send a service person to the owner's location. If the tool must be returned to Robust, the customer is responsible for packaging, shipping and insurance expenses. Insurance on return shipments is important as Robust Tools, LLC cannot be responsible for items that do not arrive or were damaged in shipping. Robust will pay insurance and return shipping to the customer via the lowest cost means.

OTHER WARRANTY INFORMATION: This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance. Robust lathes are designed to turn wood. Working with other materials may void the warranty.

Robust Tools, LLC makes no other warranty, express or implied. No agent, representative, distributor, dealer, or employee of Robust Tools, LLC has the authority to increase or otherwise change the obligations or limitations of this warranty. The obligations of Robust Tools, LLC in its sole discretion under this warranty shall be limited to the repair or replacement of any Robust lathe, tool or accessory that is found to be defective.

Robust Tools, LLC. is not liable for incidental or consequential damages, including injury or death. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary from state to state, province to province, or country to country.

For your own records, you may want to record your information here:

Lathe Model _____ Serial Number _____ Purchase Date _____ Delivery Date _____

The serial # can be found on the back of the lathe on the tailstock end.