

Lathe

Model 2019

Owner's Manual

For Models Manufactured Since 05/2023



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For Stock Number:
2019.001

Manual Version: 1.0.0



READ AND UNDERSTAND ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO ASSEMBLE OR OPERATE THE MACHINE.

FOLLOW THE INSTRUCTIONS AND THINK SAFETY!

THE OWNER OF THIS MACHINE IS SOLELY RESPONSIBLE FOR THE SAFETY OF ANYONE USING THIS MACHINE. SUCH RESPONSIBILITIES INCLUDE BUT ARE NOT LIMITED TO:

- **PROPER ASSEMBLY, OPERATION, INSPECTION, MAINTENANCE, AND RELOCATION OF THE MACHINE.**
- **PROPER TRAINING FOR THE OPERATORS AND ENSURES THIS MANUAL IS AVAILABLE AT ALL TIMES.**
- **USAGE AUTHORIZATION.**
- **USAGE OF SAFETY AND PROTECTION DEVICES.**

OLIVER MACHINERY DISCLAIMS ANY LIABILITY FOR MACHINES THAT HAVE BEEN ALTERED OR ABUSED. OLIVER MACHINERY RESERVES THE RIGHT TO EFFECT AT ANY TIME, WITHOUT PRIOR NOTICE, THOSE ALTERATIONS TO PARTS, FITTINGS, AND ACCESSORY EQUIPMENT WHICH THEY MAY DEEM NECESSARY FOR ANY REASON WHATSOEVER.

**** SAVE THIS MANUAL FOR FUTURE REFERENCE. ****

PROP 65 NOTICE

WARNING: Drilling, sawing, sanding, or machining wood products can expose you to wood dust and/or other chemicals that are known to the State of California to cause cancer, birth defects, or other reproductive harm.

Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement, and other masonry products.
- Arsenic and chromium from chemically treated lumber.

Avoid inhaling wood dust and other harmful chemicals. Use a dust mask and/or other safety devices for personal protection.

For more information, visit <http://www.P65Warnings.ca.gov/wood>

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Introduction

Thank you for choosing Oliver! This manual contains important information on how to set up, operate, and maintain this machine safely. Please take the time to read this manual and ensure you understand all the instructions.

While this manual may provide tips on optimizing the result of your workpiece, the manual is not a substitute for formal woodworking training. Please consult qualified training resources if you need to know how to complete a woodworking task safely.

We made every effort to keep this manual up to date. Instructions, specifications, drawings, and photographs in this manual should match the machine delivered. If you find any discrepancies or anything that seems confusing in this manual, or if some instructions are not available, please check our website for an updated version:

WWW.OLIVERMACHINERY.NET/MANUALS

Alternatively, you can contact our technical support for help:

1-800-559-5065

Before calling, please note down the production date and the machine's serial number on the nameplate located on the cabinet behind the tools rack. This information is needed to provide proper technical support and to determine if an updated manual is available for your machine.

Please let us know how well this manual serves you. If you have any suggestions, please call the number above or email us at:

info@olivermachinery.net

We love to hear from our customers and make improvements.



Specifications

Quick View

Model	2019 Lathe
Stock Number	2019.001
Swing Over Bed	18"
Outboard Swing	35-1/2"
Distance Between Centers with Extension Bed Installed	41"
Index Positions	36
Motor Horsepower	2 HP
Input Power	230V, 1Ph, 15A
Dimensions	61-3/4" (L) x 19-1/2" (D) x 49-1/4" (H)
Footprint	46-1/2" (L) x 16-1/4" (D)
Fully Assembled Weight	415 lbs.
Warranty	1 Year (Motor and electronics) 2 Years (All other parts)

Shipment Info

Package 1	Lathe and accessories
Type	Wood crate with pallet
Dimensions	52" (L) x 29-3/4" (D) x 54" (H)
Weight	520 lbs.
Package 2	Outboard turning banjo (sold separately)
Type	Wood crate
Dimensions	26-3/4" (L) x 19-1/4" (D) x 9-3/4" (H)
Weight	57 lbs.

Product Dimensions

Dimensions	61-3/4" (L) x 19-1/2" (D) x 49-1/4" (H) (With extension bed installed)
	46-1/2" (L) x 19-1/2" (D) x 49-1/4" (H) (Without extension bed)
Footprint	46-1/2" (L) x 16-1/4" (D)
Fully Assembled Weight	415 lbs.

Electricals

Input Power	230V, 1Ph, 60Hz
Full Load Current Rating	15A
Recommended Circuit Size	20A
Power Switch Type	Button Switch
Plug Type	NEMA 6-20
Cord Length & Type	6-1/2' SJT 12AWG Power cord
Variable Frequency Drive Type	Delta ME300
Variable Frequency Drive Size	2.2kW / 3HP Output

Motor

Motor Type	Three-phase variable speed TEFC induction motor
Horsepower	2 HP
Max Speed	3450 RPM
Efficiency	81.7%
Power Factor	80%
Power Transfer Mechanism	Poly-V belt and pulleys
Bearing type	Permanently sealed ball bearing

Lathe Capacity

Swing Over Bed	18"
Swing Over Banjo Base	14"
Outboard Swing	35-1/2"
Distance Between Centers	
- Without Extension Bed	26"
- With Extension Bed	41"

Headstock and Spindle

Spindle Taper	MT #2
Spindle Speed Range	50-950 (Low range) 170-3200 (High range)
Spindle Speed Indicator	LCD
Spindle Direction	Forward / Reverse
Floor to Spindle Center Height	41-1/2"
Inboard Spindle Thread Size	1-1/4 x 8 TPI
Inboard Spindle Thread Direction	Right Hand
Outboard Spindle Thread Size	1-1/4 x 8 TPI
Outboard Spindle Thread Direction	Right hand
Drive Spindle Through Hole Size	5/8"
Spindle Bearings Type	Permanently sealed bearings
Index Positions	36

Tailstock

Tailstock Taper	MT #2
Tailstock Quill Travel	4-3/8"
Tailstock Quill Through Hole Size	3/8"
Tailstock Quill Thread	ACME 29° 20-8teeth/INCH (Left-handed)

Lathe Bed

Main Bed Length	33-7/8"
Extension Bed Length	15"
Bed Gap Size	1-3/4"

Tool Rest and Banjo

Include Tool Rest Type	Cast Iron
Tool Rest Width	12"
Tool Rest Post Diameter	1"
Tool Rest Post Length	2-3/8"
Banjo Usable Length	11-3/4"
Banjo Base Height	2"
Banjo Overall Height	5-3/4"
Outboard Banjo Usable Length	16-3/4"
Outboard Banjo Base Height	3"
Outboard Banjo Overall Height	14-1/2"

Accessories

Spindle Center	Four-Prong Spur Center
Tailstock Center	Live Center
Faceplate	Two 6" Steel Faceplates

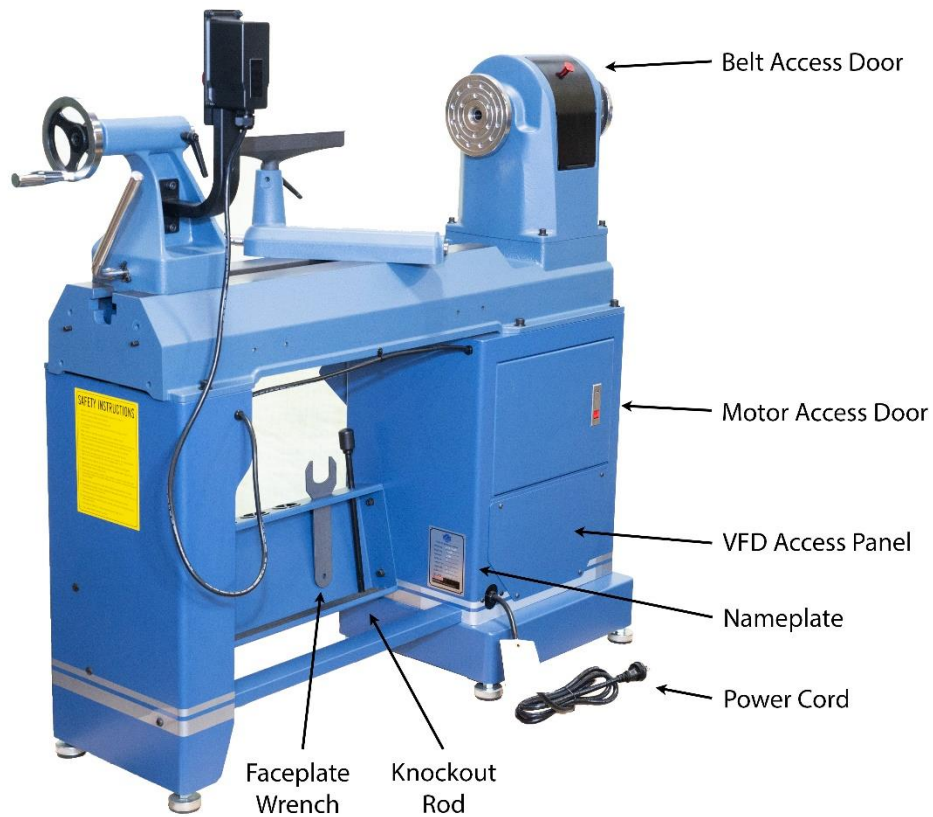
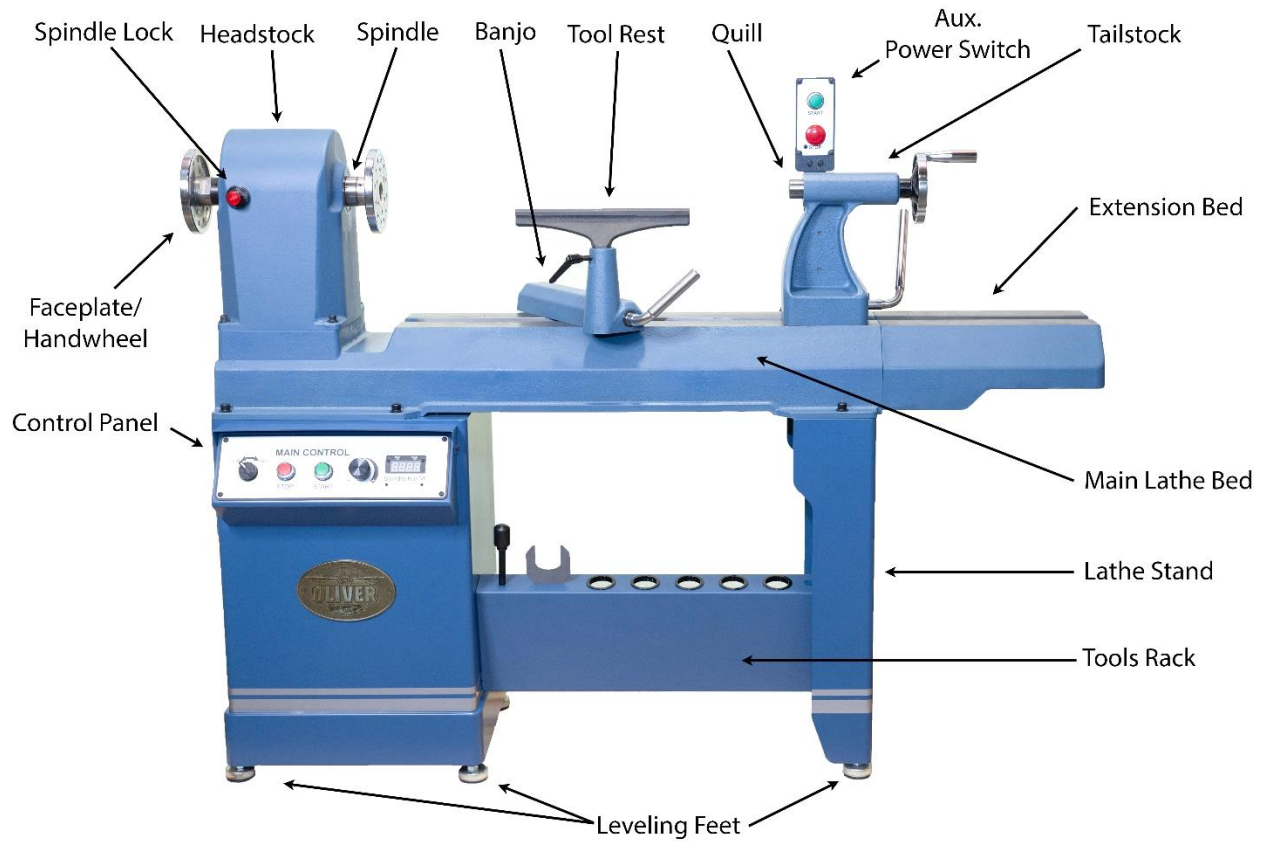
Safety

Sound Rating	74 dB (2' Distance and Max RPM)
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Others




Serial Number Location	On the lathe cabinet behind the tool rack.
Country of Origin	Taiwan

Identification



Safety

Oliver Machinery has made every attempt to provide a safe, reliable, easy-to-use piece of machinery. Safety, however, is ultimately depending on the individual machine operator. **Before operating this machine, please become familiar with the following safety labels and guidelines.**

 DANGER	This indicates an imminently hazardous situation that must avoid, or it WILL cause death or severe injury.
 WARNING	This means if the warning is not taken seriously, it CAN cause death or severe injury.
 CAUTION	This means if the precaution is not taken, it MAY cause injury.
IMPORTANT	This is a tip for properly operating the machine to avoid machine damage.

General Safety Guidelines

1. **FAMILIARIZE** yourself with all safety instructions found in this manual. Know the limitations and hazards associated with this machine. Do not operate or service this machine until you are properly trained.
2. **ELECTRICAL GROUNDING**, when done correctly, reduces the risk of electrocution, shocks, and fire. Make certain that the machine frame is electrically grounded and that a ground lead is included in the incoming electrical service. In cases where a cord and a plug are used, ensure that the grounding plug connects to a suitable ground. Follow the grounding procedure indicated in the electrical code of your area.
3. **DISCONNECT** the machine from power before performing any service, maintenance, or adjustments. A machine under repair should be RED TAGGED to show it should not be used until the repair is complete.
4. **GUARDS**: Keep machine guards in place for all applicable operations. If any guards are removed for maintenance, DO NOT OPERATE the machine until all guards are reinstalled. Check clearance between the guards and the cutter before starting the machine.
5. **ACCESS DOORS/PANELS**: If a machine is equipped with access doors and panels for maintenance and service purposes, the access doors and panels must be closed before starting the machine.
6. **WORKPLACE SAFETY**: Keep the floor around the machine clean. Scrap material, sawdust, oil, and other liquids increase the risk of tripping or slipping. Be sure to clean up the table before starting the machine. Ensure the work area is well-lighted, and a proper exhaust system is used to minimize dust. Use anti-skid floor strips on the floor area where the operator typically stands and mark off the machine work area. Provide adequate workspace around the machine.
7. **REPLACEMENT PARTS**: Use only genuine Oliver Machinery replacement parts and accessories recommended for this machine. Generic parts made by other manufacturers may create a safety hazard and WILL void the factory warranty and other guarantees.
8. **PROPER USE**: Do not use this machine for anything other than its intended use. If used for other purposes, Oliver Machinery disclaims any real or implied warranty and holds itself harmless for any injury or damage which may result from that use.

Safety Guidelines Specific to Woodturning

Preparation Guidelines

1. **USE EYE AND HEAD PROTECTION:** Always wear a safety face shield and goggles that comply with ANSI Z87.1 and CSA Z94.3 standards. Common eyeglasses are not safety glasses and may not provide adequate protection.
2. **REDUCE DUST EXPOSURE.** Always wear a dust mask when turning wood. If a dust collection system is available, place a dust hood close to the workpiece to extract the dust produced.
3. **USE HEARING PROTECTION.** Wear noise-reduction earplugs or earmuffs when the noise level in the work area exceeds the level of exposure allowed in Section 1910.95 of the OSHA Regulations. When in doubt, use the ear protection device.
4. **OTHER PERSONAL PROTECTION ADVISORIES:** Before starting the lathe, remove tie, rings, watch, and other jewelry. Roll up sleeves above elbows. Remove all loose clothing and confine long hair. Protective footwear should be used. Do not wear gloves unless it is instructed to perform specific steps in the manual.
5. **ONLY USE MATERIALS THAT CAN TURN SAFELY ON A WOOD LATHE.** Avoid turning blanks that can disintegrate during operation. Avoid blanks with cracks or loose parts that can break up or cause a catch while turning. Do not turn treated lumber or anything that contains harmful chemicals. This wood lathe operates at a higher speed than a typical metal lathe, and it is not suitable for turning or spinning metals.
6. **Glued Up TURNING.** Use high-quality adhesive to attach segmented/laminated pieces. Make certain that the adhesive is completely cured before turning. A workpiece containing any decorating materials weaker than the wood itself can significantly impact the structural integrity of the workpiece.
7. **USE PROPER LIFTING METHODS.** For mounting heavy blanks, use proper lifting techniques and machinery to lift them and securely mount them on the lathe.
8. **REMOVE LARGE ROUGH EDGES AND CORNERS.** Before roughing a large workpiece, remove the corners along the length of the blank.
9. **SECURE ALL PARTS.** Secure the workpiece, tool rest, banjo, tailstock, chuck, faceplate, drive/live centers, extension bed, and other parts that may come loose while turning. Failure to do so may cause the workpiece to dislodge at high speed or a severe catch.
10. **FACEPLATE.** The faceplate must be at least 1/3 of the diameter of the workpiece. Use strong, epoxy-coated fasteners for a secure mount and easy removal. Pre-drill the mounting holes for hardwood to avoid breaking the fastener and destroying the workpiece.
11. **ADJUST TOOL REST.** Adjust the tool rest so that the cutting tool can be safely presented to the workpiece without excessive overhanging. At the same time, the tool rest must stay far enough from the workpiece, so the tool is not only supported by its bevel. Before starting the motor, rotate the blank for one full revolution to ensure the tool rest is not impeding the rotation of the blank.
12. **REMOVE ADJUSTMENT TOOLS:** Remove the tools for setting up the workpiece for turning. Chuck keys, wrenches, and other tools for setting the workpiece must be removed before starting the lathe.
13. **CHECK CLEARANCE:** Hand rotate the mounted workpiece on the lathe for at least one full revolution to ensure it does not catch on any parts of that lathe.


Operation Guidelines

1. **STAY ALERT** at all times. Do not operate this machine while under the influence of drugs/alcohol or when not feeling well.
2. **ALWAYS START WITH THE LOWEST SPEED AND CORRECT ROTATION DIRECTION.** Before starting the lathe, set the speed to the lowest and check the rotation direction.
3. **SET PROPER SPEED.** Stand on the side of the lathe and gradually increase speed to the desired operating speed. Begin work only when the workpiece is spinning on the lathe without excessive vibration. Use low speed for roughing. Also, use low speed when turning large, heavy, or irregular-shaped workpieces.
4. **USE CORRECT TOOLS.** Never use tools that are not designed for specific type of turning. For instance, using a spindle roughing gouge for bowl turning.
5. **PROPERLY PRESENT TOOL TO WORKPIECE.** Gouges, skewers, scrapers, and other tools require different techniques to operate. To avoid severe catches and injuries, please read the user manual of the turning tools and consult accredited training resources to use the tool properly.
6. **ROUGHING.** Use low speed and take light cuts to remove the rough edges and corners of a workpiece. Support the tool firmly and keep the tool close to the center of the tool rest.
7. **KEEP TOOLS SHARP.** Turning tools can become dull quickly after minutes of use. Make sure the tools are resharpened frequently. Sharp tools can cut with less resistance, reducing the risk of catching and breaking the workpiece.
8. **MEASURE THE WORKPIECE SAFELY.** Do not measure the diameter, thickness, or depth of a workpiece while it is spinning on the lathe. The measurement tool can catch the workpiece and get pulled from the woodturner's hand.
9. **MEASURE WORKPIECE THICKNESS FREQUENTLY.** Pay attention to the change of thickness of the workpiece when turning. Turning a workpiece too thin can cause it to disintegrate and eject from the lathe.
10. **SANDING AND POLISHING.** To reduce the risk of entanglement, avoid using a large piece of sandpaper that can wrap around the workpiece. Do not reach inside deep cavities of a workpiece with a bare hand for sanding.
11. **DUST COLLECTION SYSTEM** is recommended. Install a screen in front of the dust port to avoid large pieces of debris entering the dust collection system and jamming it.
12. **DEBRIS REMOVAL.** When debris is stuck on or inside a workpiece, turn off the lathe and wait for the workpiece to come to a complete stop, then remove the debris with compressed air or a brush.
13. **STOP THE LATHE** when leaving the lathe unattended for any reason. Always set the speed to the lowest before pressing the stop button. Doing so prevents the lathe from starting at an unexpected speed in the future. Wait until the machine comes to a complete stop before leaving the machine. Never attempt to stop the lathe by hand or using another object.

After Operation

1. **CLEAN UP** the work area at least once a day after turning. Woodturning creates a lot of loose chips and debris. Removing the debris reduces the risk of fire, pest infestation, and rusting of tools.
2. **LOCK UP.** Unplug the lathe and lock the workshop to prevent children and unexpected guests from accidentally starting the lathe.

Electricals

	Faulty electrical work can cause electrocution and is a fire hazard.
WARNING	All electrical work must be completed by a licensed electrician and must meet the local electrical code in your area, or the warranty is void.


Minimum Circuit Size Required for Model 2019 Lathe

<i>Stock Number</i>	Operation Voltage	Minimum Circuit Size Required
<i>2019.001</i>	230V	20A

Please ensure the electrical circuit for this machine meets the minimum circuit size requirement. The minimum circuit size requirement applies to a dedicated circuit that provides power to one 2019 Lathe. If more machines share the same circuit, consult a licensed electrician to ensure the designated circuit is correctly sized for safe operation.

If a circuit is available but not meeting the minimum circuit size requirement, a new circuit must be installed for this machine.

Grounding

	Improper grounding can cause electric shock, fire, and equipment damage.
WARNING	

Proper grounding reduces the risk to the operator in the event of electrical malfunction or breakdown. This machine must connect to a grounding conductor, and all grounding connections must meet or exceed the electrical code requirements in your area. Furthermore, all grounds must be verified and meet or exceed the electrical requirement of the machine. If grounding is unavailable, consider using a GFCI protection device as an alternative if this complies with the electric code in your area. When in doubt, consult a licensed electrician in your area.


Electrical Wiring

This machine is wired for 230V with a cord and a NEMA 6-20 plug. Avoid using an extension by placing the machine near the power outlet. If you need an extension cord to connect to a power source, select a durable cord type with high-temperature rating (90C° or above). Use the minimum amount of extension cord as needed.

Minimum cord size (AWG) required based on amperage draw and length of the cord:

<i>Amps</i>	Power Cord Length				
	25 feet	50 feet	75 feet	100 feet	> 100 feet
<i>15 to 20</i>	10	10	10	NR	NR

*NR: Not Recommended

	Use properly sized wires that meet or exceed the power requirement of your machine. Using undersized wires may cause overheating and increase the risk of fire and machine damage.
WARNING	

Setup

Shop Preparation

Space Requirement

The dimensions of this machine are 61-3/4" (L) x 19-1/2" (D). You need additional space for manipulating your workpiece and accessing the back of the lathe.

Load Limits

This machine has a shipping weight of 520 lbs. and a net weight of 415 lbs. The optional outboard turning banjo adds additional weight. Please ensure all lifting tools and building structures have adequate load capacity for transporting and supporting the total weight of this machine, the operator, and related items.



Electricals

Ensure a properly sized circuit and an electrical terminal are available near the machine. If the machine is to be hardwired, there must be a readily accessible power disconnect nearby so that the machine can be disconnected from the power source for service and adjustments. If the machine is to be connected with a cord and a plug, please ensure a matching outlet is installed near the machine.

Please refer to the “Electricals” section in this manual for details regarding electrical requirements.

Lighting

Operate this machine with adequate overhead non-glare lighting. Use supplemental lighting to illuminate portions of the workpiece not reachable by overhead lighting.

Safety Labels

If this machine introduces new safety hazards to your workplace, display proper warning signs in highly visible locations.

Dust Exposure Reduction

Turning and sanding wood on a lathe can produce a lot of wood dust and shavings. Wood dust created by this lathe is a health hazard. Use a dust collection system to reduce wood dust entering the environment. Adding a screen on the dust hood can prevent large shavings from entering and jamming the dust collection system. Check air suction regularly to ensure the dust collection system is working effectively.

Dust masks should be available for using the lathe.

Humidity Control

If the machine is to be placed in a high-humidity area, install a dehumidifier to keep the humidity low. Unpainted parts of machines can rust and bind with other parts in a high-humidity environment. Having a humidity control workspace also prevents wood from getting mold, rot, and bug infestation.

Receiving

Your shipment should come with one wood crate. The outboard turning banjo that is sold separately is shipped in a separate package. Upon receiving your shipment, check for significant damages before signing the delivery confirmation.



IMPORTANT

If items are damaged, please call us immediately at **1-800-559-5065**



CAUTION

You may need to remove the straps on your package. The straps may spring back violently when released and cause injury. Always wear safety goggles and gloves when removing the straps.

Moving the Shipment into the Shop

Your machine will be delivered by freight service, and it will be left outside of your workshop by default. On the day of delivery, please be sure help is available to move the machine to its final location.



WARNING

This lathe has a gross weight of 520 lbs. and a net weight of 415 lbs. Safe moving techniques and proper lifting equipment are required, or serious personal injury may occur.



WARNING

Your shipment may be secured by the straps. Do not lift your shipment by the strap. They are not designed to hold the total weight of your shipment. They may snap without warning and cause severe injury and machine damage.

Unboxing

The crate contains a mostly assembled lathe and three paper boxes with loose parts and accessories.



Inventory

Carefully unwrap the packaging and ensure all components are included in the shipment. Put items in groups for the final assembly.

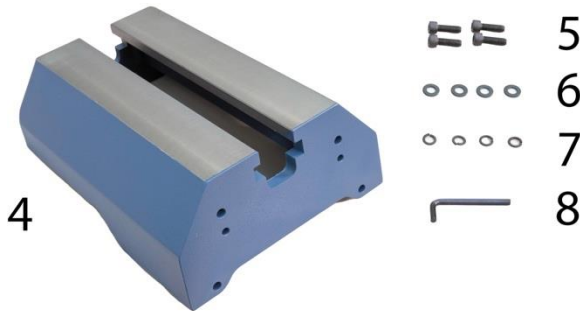
Group 1: Auxiliary Switch



Item	Description	QTY
1	Aux. Power Switch	1
2	Socket Head Cap Screws and Washers	2
3	6mm Hex Wrench	1

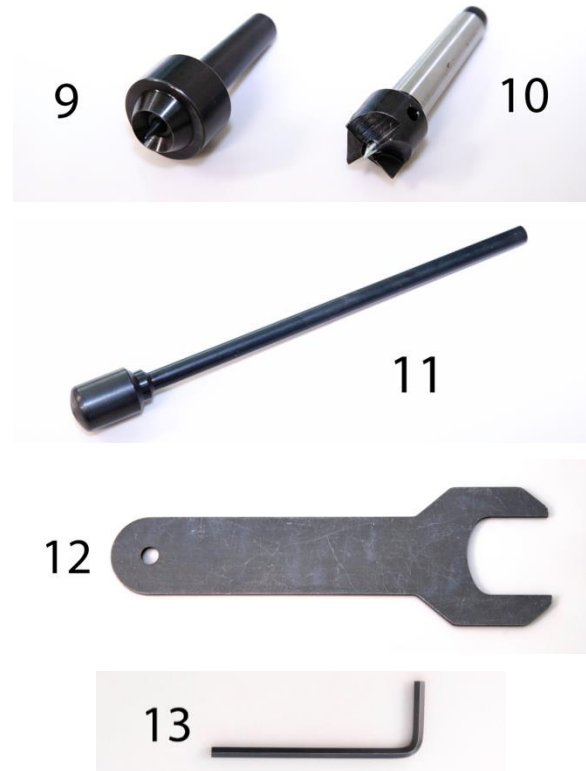
Note: Please keep the switch in the box so it is protected when unloading the lathe from the pallet.

Group 2: Extension Bed



Item	Description	QTY
4	Extension Bed	1
5	Socket Head Cap Screws	4
6	Flat Washer	4
7	Spring Washer	4
8	8mm Hex Wrench	1

Group 3: Accessories



Item	Description	QTY
9	Live Center	1
10	Spur Center	1
11	Knockout Rod	1
12	Faceplate Wrench	1
13	3mm Hex Wrench	1

Group 5: Outboard Turning Banjo (Optional)



Item	Description	QTY
14	Clamping Lever	1
15	Outboard Turning Banjo	1

NOTICE: If you cannot find an item in the list above, please check if it is still attached to the packaging or inside the cabinet. Occasionally, the item may have been pre-installed at the factory. Please refer to the parts list section in this manual to ensure you have all the components to set up this machine.

NOTICE: This machine comes with various standard-sized, non-proprietary parts. If any of these parts are missing, we are happy to deliver them to you. To have the machine up and running as soon as possible, you can also find these parts at your local hardware store.

Additional Items Recommended for Assembly

Item	Purpose
Safety Glasses	Protection
Disposable Gloves	Cleaning
Paper Towel / Rags	Cleaning
Rust Inhibitor	Rust protection.
Lifting Straps / Crane	Lathe installation.

Cleaning

The cast iron lathe beds are covered with machine oil and plastic film to prevent rusting. Remove the plastic film, then wipe off the machine oil with paper towels or rags.

After cleaning, routinely apply rust preventive such as Boeshield® T-9 or paste wax. Do not use rust preventives that contain silicone, which is known to interfere with certain wood finishes and glues.



Assembly

This lathe is mostly assembled in the factory. When all items are ready for the final assembly, lift the lathe from the pallet. A few more items are to be set up before the machine is ready for a test run.

It takes approximately 45 minutes to clean and set up the lathe.

Unloading the Lathe

1. This lathe weighs 415 lbs. and requires several people and proper gear to set up.
2. The lathe can be lifted with a crane and lifting straps. To make the lathe less top-heavy and easier to lift, remove the tailstock and banjo, then install the extension bed (see page 23 for details).
3. Wrap the lifting straps under the main lathe bed and the extension bed, and slowly lift the lathe from overhead. The lathe is much heavier on the headstock side. Adjust the straps to ensure the lathe is balanced when lifted.
4. Lower the lathe gently to the floor to prevent damage.
5. To minimize vibration while turning, ensure the lathe is evenly supported by all six leveling feet. Adjust the leveling feet with a 3/4" wrench as necessary.



Note: The auxiliary switch is packed in a box and is attached to the lathe with a cord. Secure the box when lifting the lathe.



WARNING

2019 Lathe has a net weight of 415 lbs. All lifting devices must be capable of handling the load, or serious personal injury and machine damage may occur.

Install Auxiliary Power Switch

Remount the tailstock. Open the box of the auxiliary switch and mount the switch on the back of the tailstock.



Dust Collection System Usage

Turning wood can generate a lot of wood shavings and dust. When a dust collection system is available, place a dust hood close to the workpiece to extract the dust from the source. Installing a screen in front of the dust hood can prevent large shavings from clogging the dust collection system. Check air suction before using the dust collection system, as blockage of the hose and air leakage can reduce the system's dust removal effectiveness.



Accessories

Outboard Turning Banjo



This extra tall banjo can support the tool rest with an 1" post for outboard turning.

Parts number: A-2019.A001

Touchup Paint



A good coat of paint keeps the machine rust-free. We have pre-mixed spray paint available in Oliver-Blue for purchase.

Accessories are available on our website: **OLIVERMACHINERY.NET**

To order by phone, please call us at **1-800-559-5065**. We are available Monday through Friday, 7:30 AM - 4 PM Pacific Time. You can also email us at **PARTS@OLIVERMACHINERY.NET** to purchase accessories.

Please visit our website at **OLIVERMACHINERY.NET** for additional recommended accessories.



Unapproved accessories may cause the machine to malfunction, resulting in severe injury and machine damage. Only use accessories recommended for this machine.

Controls and Components

Main Control Panel

The control panel allows the operator to adjust the spindle speed and direction:




Stop Button: Stop the motor.

Start Button: Start the motor.

Spindle Speed Dial: Set spindle speed. For safety, always start the lathe with the lowest speed. Set the speed to the lowest before stopping the lathe.

Spindle Speed Readout: A digital readout that shows the spindle speed.

Spindle Direction Switch: Set the spindle rotation direction. Use forward (FOR) for inboard turning and reverse (REV) for outboard turning.



WARNING Make sure any accessory threaded on the spindle is secured to the spindle when running the spindle in reverse direction. Failure to do so can result in the accessory to dislodge from the spindle and cause serious injuries or death.

Ready light: When the green ready light is on, the lathe is ready to run.

Alarm light: When a power outage occurs while the lathe is running, the motor will not start when power resumes. Instead, the red alarm light turns on. To restart the motor after a power failure, press the stop button to reset the alarm, then press the start button to start the motor.



Overload Protection: This lathe is equipped with an overload protection mechanism. If the lathe is overloaded and stops running, press the stop button on the control panel to clear the alarm. Identify the problem and wait five minutes for the motor and components to cool down before resuming the work.

Auxiliary Power Switch

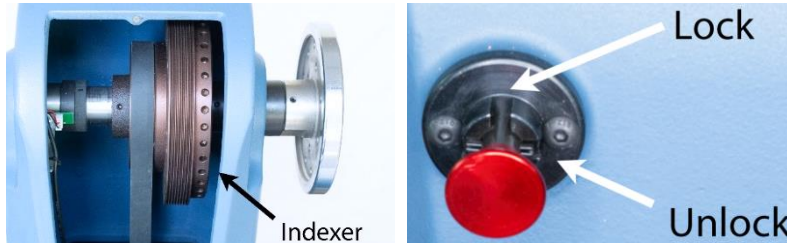
The auxiliary power switch allows the operator to start/stop the lathe near the tailstock.



Indexer and Spindle Lock

This lathe has an indexer with 36 evenly spaced holes, which allows the spindle to be locked in one of the thirty six index positions that are 10 degrees apart. The indexer and spindle lock enable the woodturner to create features on the workpiece that are evenly spaced.

To engage the spindle lock, pull and rotate the red knob so the pin on the shaft aligns with the notch in the lock position. Release the knob and rotate the spindle until the spindle lock engages.



IMPORTANT

Ensure the spindle lock is disengaged before starting the lathe motor. Failure to do so will cause the belt to slip and overheat the belt and the motor.



WARNING

Never engage the spindle lock while the lathe is still in motion. Doing so will stop the lathe abruptly and damage the lathe. The sudden change of speed can cause the workpiece to dislodge from the lathe, which can cause serious injuries or death.

Spindle

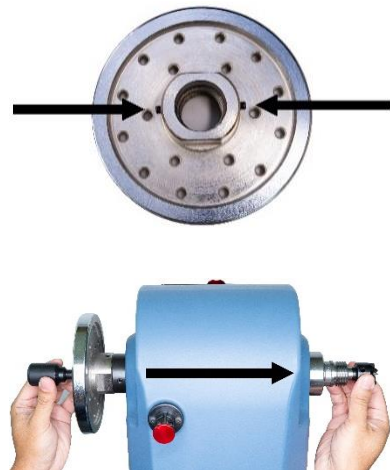
Each end of the spindle has 1-1/4" x 8 TPI right-hand thread for mounting the faceplate and other accessories.

This lathe ships with the faceplate mounted. To remove the faceplate, **loosen the set screws using a 3mm hex wrench first**. Engage the spindle lock, then use the provided faceplate wrench to rotate the faceplate counterclockwise and remove it from the spindle.

IMPORTANT: The set screw on the faceplate can damage the spindle if it is not loosened before removing the faceplate.

The inboard side of the spindle accepts the spur center and other accessories with an MT-2 taper. Before inserting an accessory, make sure the tapered contact surface is clean.

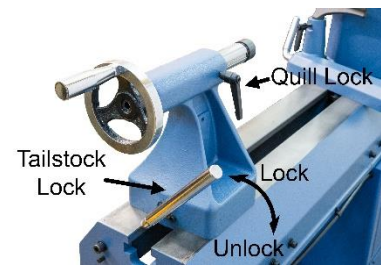
To remove an accessory, insert the knockout rod from the outboard end of the spindle. Hold onto the accessory and use the knockout rod to tap the accessory out from the spindle.



Tailstock and Quill

The sliding tailstock can be mounted on any location on the lathe bed. Lift the lock handle to secure the tailstock on the bed.

The quill on the tailstock is extendable to push the mounted accessory towards the headstock. When the quill is equipped with the live center shipped with this lathe, the tailstock can be used to secure a workpiece on the lathe.



The quill position can be locked by the quill lock. The quill lock has a ratcheting handle, which can be moved to a different position if blocked.

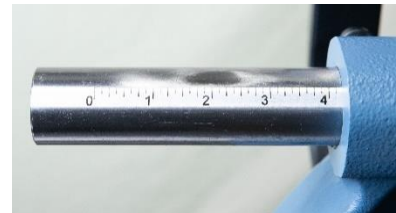
IMPORTANT

Do not apply excessive pressure on the workpiece by over extending the quill. This can cause the spindle bearings to heat up and wear prematurely. Apply just enough pressure to secure the workpiece on the lathe.

Release the quill lock before adjusting the quill position. Failure to do so can damage the quill.

The quill accepts accessories with an MT-2 taper. Before inserting an accessory, make sure the tapered contact surface is clean. To unmount an accessory, retract the quill until it passes beyond the 0" mark on the gauge, and the accessory should detach from the quill.

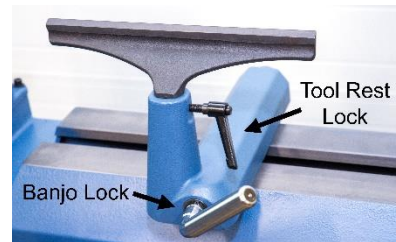
With boring accessories installed, the tailstock can bore a hole into the workpiece. Use the scale on the quill as a depth gauge to make sure the bored hole is not too deep and damage the workpiece.



Banjo and Tool Rest

The banjo supports the tool rest and can be mounted in any position on the bedways. Use the locking lever to clamp the banjo on the bed.

Before turning the workpiece, ensure the height of the tool rest is properly set. Use the clamping lever to secure the tool rest to the banjo. The clamping lever has a ratcheting mechanism and can be lifted and moved to a different position if it is blocked. It can also be mounted on either side of the banjo.



The banjo accepts any tool rests with an 1" post. When purchasing additional banjos, ensure the girth and length of the tool rest post match the tool rest shipped with this lathe.

Extension Bed

Use the extension bed for outboard turning, or use it to extend the main lathe bed to maximize the center-to-center capacity to 41".

To install the extension bed, align the holes on the extension bed with the pins on the mounting point, then secure the extension bed with the four M10 socket head cap screws.

When mounting the extension bed to the main bed, use a straight edge to verify the bedways are flush and level, and the gap between the bedways is aligned.



Test Run

This lathe has been inspected and calibrated before leaving the factory to meet our quality and precision standards. Due to various reasons, the machine may need to be readjusted when it arrives at your workshop. It is recommended to complete the test run before using the lathe for production work. Repeat the test run if the lathe is relocated.

Step 1: Verify that the lathe is mechanically functional.

1. Install the spur center into the headstock and the live center into the tailstock.
2. Move the tailstock towards the headstock until the tips of the centers are about 3" apart.
3. Use the tailstock lock to secure the tailstock on the bed. Rock the tailstock to ensure there's enough clamping force to hold the tailstock in place.
4. Extend the tailstock quill so the tips of the centers are almost touching each other. If the tips of the centers are aligned, the headstock and tailstock are aligned.
5. Retract the tailstock quill beyond the 0" position. Ensure the live center is extracted from the quill.
6. Secure the tool rest on the banjo, then use the banjo lock to clamp the banjo on the lathe bed. Rock the tool rest and make sure it is locked in place. The tool rest must firmly support the lathe tool and must not shift when turning wood.
7. Engage the spindle lock and rotate the spindle to make sure the lock works, then disengage the spindle lock.



Step 2: Verify that all electrical components are functional.

1. Remove all tools and debris from the lathe.
2. Press the STOP button on the control panel.
3. Set the spindle speed to the lowest.
4. Set the spindle direction to forward (FOR).
5. Connect the machine to the power source. The variable frequency drive and its heat dissipation fan should turn on. The green ready light should turn on.
6. Press the START button. The spindle should rotate counterclockwise on the inboard side of the lathe with no excessive noise or vibration.
7. Disconnect the machine from the power source while the machine is running, then reconnect the machine to power. The alarm light should turn on, and the motor should **NOT** restart.
8. Press the STOP button to clear the alarm, then press the START button to restart the machine.
9. Rotate the spindle speed dial to increase the speed to maximum, then reduce the speed back to the lowest. The lathe should run without excessive vibration or noise at any particular speed, and the digital readout should indicate the spindle speed.
10. Press the STOP button to stop the machine.
11. Turn the spindle direction switch to change the direction to reverse (REV).
12. Press the START button to start the motor.
13. The spindle should rotate clockwise on the inboard side of the lathe. Run the lathe at different speeds, and it should run with no excessive noise or vibration.
14. Press STOP on the control panel to stop the motor and end the test run.



Congratulations! Your lathe has completed the test run. If you discover any issues, please refer to the troubleshooting and maintenance sections for adjustment instructions.

Wood 101

Why do we have this section?

Before going through the operation of woodturning and the list of quality issues, it is important to understand the structure of wood and possible wood defects so woodturning can be done safely.

Structure of Wood

The growth rate of trees changes in different seasons and creates tree rings and wood grain that we can see. The tree rings and wood grains represent wood fibers with varying levels of strength and hardness. A woodturner needs to read the wood grain and cut the wood properly to create a fine finish.

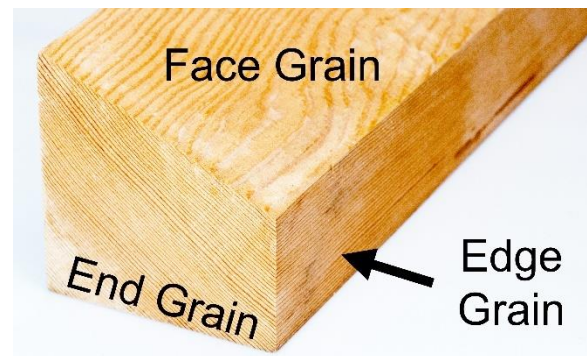
Think of wood as a bunch of straws bundled together. The “straws” are the strong wood fiber that runs along the trunk and branches of a tree. While the wood fibers are strong, the bonding between fibers is not as strong. This makes the wood easier to break up along the grain.

Different Types of Wood Grain

End Grain – This is the face of the wood that we can see the tree ring. When cutting into the end grain with dull tools or if too much pressure is applied, the wood fibers can split and create a tear-out.

Edge Grain - Represents the radial plane of a log and typically has a straight and uniform pattern like a quarter-sawn board.

Face Grain – Represents the tangential plane of the wood with a variable pattern of wood grain.



Wood Defects

Check and Shake

Check is the splitting of wood that happens along the wood grain. Check happens when the wood is drying unevenly, and there is no way to relieve the stress caused by wood shrinkage. Blanks with checks are structurally compromised and can cause a catch. Using proper drying techniques and removing the pith in a blank can prevent checks from developing as wood stabilizes.



Cup shake or ring shake is the kind of wood splitting that occurs along the wood ring. Wood with ring/cup shake is structurally compromised. This type of wood splitting is often hidden from the surface. As more wood is removed from turning, a chunk of wood can suddenly dislodge without warning. Therefore, it is important to inspect the wood for defects before and during the operation and avoid standing in the line of fire.



(Ring Shake Photo Credit: [Tanya J. Laird - https://youtu.be/Mr-dNOQEYi4](https://youtu.be/Mr-dNOQEYi4))

Bug Infestation

Trees are living organisms, and they host many other organisms, including bugs. Bugs can live inside the bark and the wood. While the boreholes of the bug-infested wood give character to a workpiece, the strength of the infested wood is reduced. The boreholes and tunnels in the wood create dips on the blank, making it easier for the woodturner to get a catch. Care must be taken when processing and turning infested wood.



(Infested Wood Photo Credit: Bernacki & Associates Inc. <https://www.bernackiconservation.com/environment-insect-infestation>)

Spalted/Rotted Wood

Microorganisms invade and consume the tree when it is under stress or dies. When different kinds of fungus reside in the same piece of wood, they can form spalted wood when the condition is right. Spalted wood has nice-looking figures, and it is valued by many woodturners. As fungus creates beautiful lines in spalted wood, the wood fibers are consumed, and the structure is weakened, making the blank prone to tear-outs and blow-ups while it is being turned.



(Spalted Wood Photo Credit: Ed Street - <https://www.northernspalting.com/news/spalting-samples/edge-of-spalting/>)

Bark Inclusion

Bark inclusion sometimes can be found in the crotch of a tree – the location where the trunk/branch branches off. As the diameter of the branches grows, the branches fuse together near the tree crotch, and the bark gets included in the wooded section of the crotch.

Bark inclusion gives the workpiece characters but also poses challenges and dangers for turning. Bark can easily detach from wood. If a section of the blank is mostly supported by the bark inclusion, it can easily break off under the stress of turning.



Knotty Wood

Knots are not a defect of the tree. However, the knots make the workpiece more challenging to work with. It introduces a sudden change in grain pattern and wood density. The knot and the surrounding area are prone to tear-outs, and the knot can fly off without warning when the blank is turned at high speed.



Operation

For safety and to produce the best results, please take the following steps when using this lathe.

Before Turning

Material Selection

Blanks with cracks, shakes, loose knots, bark inclusion, bug infestation, or rot damage can break apart or cause severe catches, leading to severe injuries and death. Beginners should avoid turning structurally compromised wood. Turning structurally compromised wood must be done with extreme caution and reduced speed.

Do not turn wood that contains:

- Harmful chemicals, such as arsenic or lead.
- Allergens or sensitizers that can trigger allergic reactions.

Turning these materials will spread dust that causes severe harm to the body.

Workpiece Inspection

Carefully inspect workpieces for foreign objects such as nails, staples, or rock chips. Foreign objects embedded in a blank can damage the lathe tools and may dislodge at high speed during an operation. Use a metal detector to scan for metal objects as needed.

Look for signs of infestation. Wood damaged by bugs or fungus is structurally weakened and can disintegrate while turning. Infested wood can also spread the infestation to other workpieces and wood structures. Before turning, it is best to kiln dry the wood to kill the organisms inside it. Strengthen the wood structure with resin as needed.

Use a wood moisture content meter to check the moisture content of a blank before turning it. Wood shrinks and warps as it is getting dried and stabilized. To create a product that retains its shape, follow the guidelines on this page and dry the wood to the suggested moisture level:

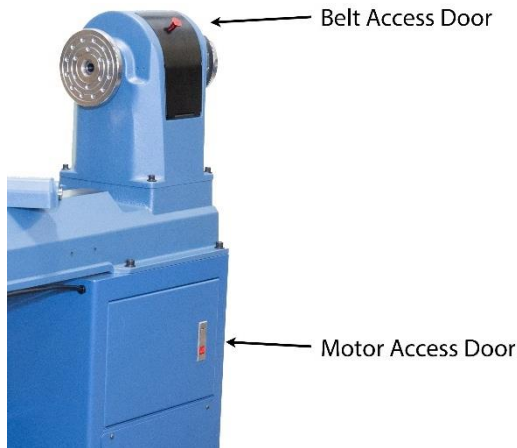
<https://www.wagnermeters.com/moisture-meters/wood-info/acceptable-moisture-levels-wood/#acceptable>

Setting Spindle Speed Range

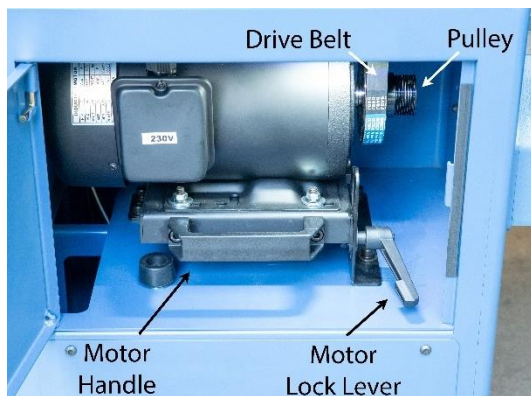
This lathe has two speed ranges and a variable speed dial, which allows the woodturner to set the optimum speed and torque for turning. With the low speed range, the spindle can go between 50-950 RPM with more torque. The high speed range, 170-3200 RPM, is for turning blanks with small diameters.

To adjust the spindle speed range:

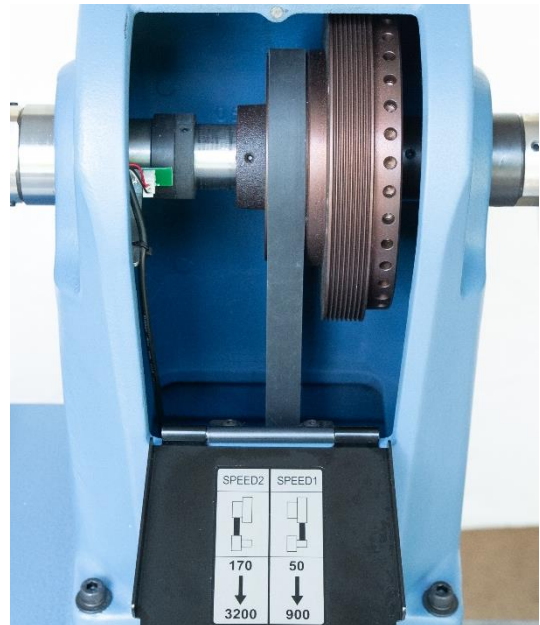
1. **Make sure the lathe is unplugged from the power source.**
2. Open the motor access door and the drive access door.



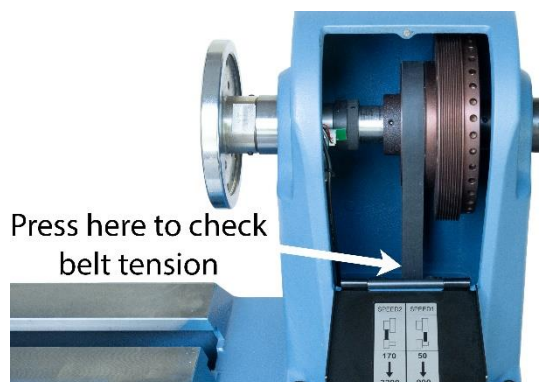
3. Loosen the motor lock lever, then raise and lock the motor at the highest position. This gives the clearance needed to walk the drive belt to a different position on the pulley.



4. Shift the drive belt to the right for the low speed range and left for the high speed range.



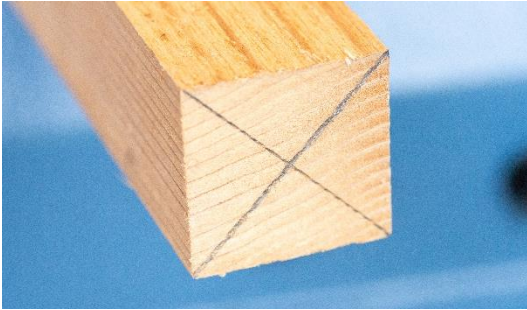
5. Rotate the spindle and walk the belt to the new position on the pulleys. Ensure the drive belt is seated properly on the grooves of both pulleys.
6. Push down on the motor handle to tension the drive belt, then tighten the motor lock to lock the motor in place.
7. Check belt tension. The belt should not deflect by more than 1/4" when pressed down between the pulleys with a finger. Retighten the belt as needed.



Basic Spindle Turning Setup Steps

Mounting the Workpiece

1. Find the center of both ends of the spindle blank by drawing two diagonal lines across the corners.



2. On the end to be mounted to the spur center, align the workpiece center with the spur center, then use a rubber or wood mallet to drive the spur center approximately 1/8" into the wood.

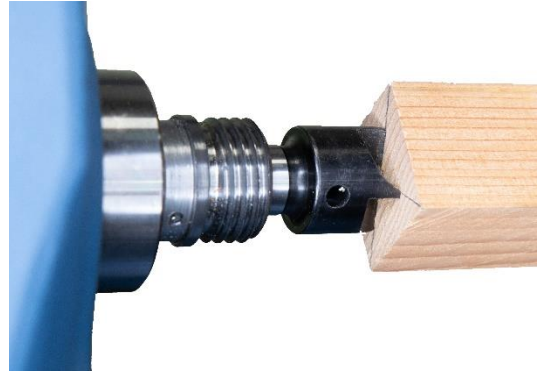


3. If the blank is too hard or too brittle for the spur center to drive into, use a saw to cut two grooves along the diagonal lines drawn, then drill a hole at the center of the blank.



4. On the other end of the workpiece, use an awl to create a hole at the center.

5. Insert the spur center into the spindle and the live center into the quill. Make sure the tapered surface is free of dust and dirt. Extend the quill past the 0" mark on the scale. Otherwise, the centers will not seat properly.
6. Mount the blank on the spur center and make sure the spurs sink back into the indents created earlier.



7. Align the other end of the blank with the live center, then move the tailstock until the live center sinks into the center of the blank. Lock the tailstock and extend the quill to apply just enough pressure to mount the blank securely on the lathe. Excessive pressure can cause the bearings to wear prematurely. Too much pressure can also cause the blank to flex, resulting in a chattered finish.

⚠ WARNING ⚠

The spur center can drive blanks up to 6" in diameter. Driving a big workpiece with a spur center can cause the spur center to slip on the blank and, in some cases, cause the workpiece to dislodge from the lathe, which can cause serious injuries or death.

To turn larger diameter spindles, use a different attachment to drive the blank. Round the edges with sharp corners. This makes the roughing work safer and easier. Consult accredited training resources to understand the risks. Use the right tools and take all precautions.

Adjust and Secure the Tool Rest

Adjust the height and position of the tool rest so its support edge is close to blank and support the tool by its shank.



The tool rest must have enough clearance so the blank can rotate freely, and the cutting tool must not rest on the tool rest by its bevel.



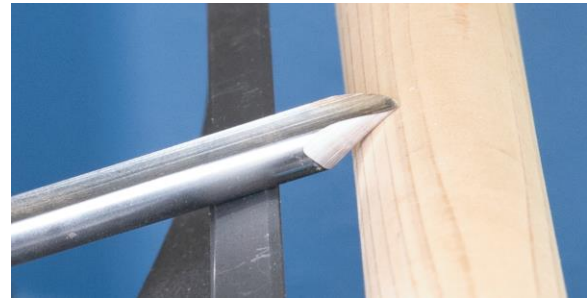
If the tool rest is too far from the blank, the tool will get more vibration and will be difficult to control.



The exact height of the tool rest depends on the tool used for turning and the height of the woodturner. The idea is to allow the tool to cut

on or slightly above the turning axle of the blank, and the woodturner can hold a tool comfortably at the correct angle as shown below:

When using a cutting tool, the tool should point up, so the cutting edge is supported by the bevel.



When using a scraper, the tool should stay level or point slightly downward, so the burr of the scraper is used to remove the material.



Once the tool rest position is set, rotate the blank to confirm there is enough clearance between the blank and the tool rest.

Set Spindle Direction and Speed

Make sure the spindle direction is set to "FOR" and set the lathe speed to the lowest before starting the lathe. When ready, press the "START" button to turn on the motor. Gradually increase the lathe speed until it reaches the desired speed. Make sure there is no excessive vibration and unexpected noise, and then the blank is ready to turn.

TIP: Putting the drive belt to the left side of the pulley enables the lathe to run at high speed. In general, small-diameter spindles should turn at high speed for a fine finish. However, beginners should practice with slower speed. See "Setting Spindle Speed Range" on page 28 for instructions on how to adjust the drive belt.

Basic Face Grain Turning Setup Steps

Mounting the Workpiece

1. This lathe comes with two faceplates for mounting, which is compatible with blanks of 7"-18" in diameter. Prepare a different faceplate for turning blanks out of this range. As a rule of thumb, the faceplate should be at least 1/3 the diameter of the blank to provide adequate support. To avoid the cutting tool striking the faceplate, do not mount a blank smaller than the faceplate.
2. Use a compass or center finder to locate the center of the blank. Flatten the area for mounting the faceplate so the faceplate can sit flat on the blank.
3. Use self-tapping thick steel screws with epoxy coating to mount the faceplate – they are easy to drive and remove. The mounting screws should sink at least 1" into the wood. For heavy blanks, use longer screws, and use the thickest screw that the faceplate can accept to maximize the holding force. If the wood is too hard to drive the long thick screw, predrill the wood for mounting.

Never use thin drywall screws or stainless steel screws, as they can shear easily.



4. Make sure to use enough screws to mount the faceplate and spread the mounting screws evenly. When in doubt, use more screws.



5. Lift the blank with one hand and align the faceplate with the spindle. Rotate the spindle to drive it into the faceplate.



If the blank is heavy, lift and mount it with a crane or get help from other people. Protect the threads of the spindle/faceplate by not grinding them.

6. For roughing heavy or unbalanced blanks, use the tailstock and live center to support the end of the blank. Keep using the tailstock as support until the blank is balanced and it's time to turn the section connected to the tailstock.



7. To remove the blank mounted on the faceplate, engage the spindle lock first. Loosen the faceplate from the spindle using the provided faceplate wrench, then with one hand holding the blank, rotate the spindle to release the faceplate.

Adjust and Secure the Tool Rest

The guidelines for setting up the tool rest are similar to spindle turning. Tool rest should support the tool without too much overhanging and allow the tool to be presented at the right angle.

When using a straight tool rest to turn a round object, the woodturner must extend the tool reasonably further to perform a cut. When setting up the tool rest, identify a section of the blank that is safe to work on with a reasonable amount of tool extended. When that section is finished, stop the lathe and readjust the tool rest.



This article written by Stuart Batty has suggestions for the maximum amount of overhang allowable for various types of woodturning tools:

<https://lathedback.com/wp-content/uploads/2020/04/AAW-Article-Bio-website-article-1.pdf>

For safety, do not over extend the tool to perform a cut. It increases the risk of having a catch and having the tool pulled away from the hand.

Set for Spindle Direction and Speed

Like spindle turning, ensure the spindle direction is set to “FOR” and start from the lowest speed.

Vibration is more prominent when roughing heavy blanks. Keep the speed low when roughing a blank with an irregular shape until the blank is more balanced.

TIP: Putting the drive belt to the right side of the pulley allows the lathe to run at low speed with more torque. High torque is needed to turn a large blank without stalling the lathe.



Never go beyond the speed that is suitable for turning a workpiece. Overspeed can cause the workpiece to explode and dislodge from the lathe, resulting in severe injury or death.

Excessive vibration is a sign that the turning speed is too high.



Check the workpiece frequently while turning, as checks and shakes can develop or expose in the process of turning.

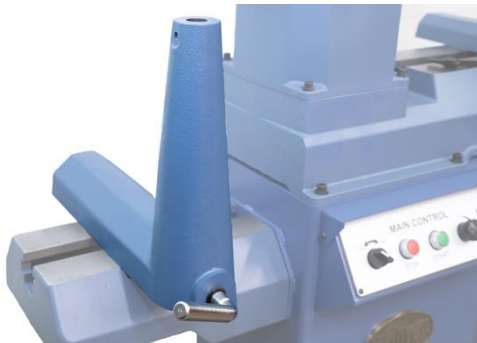
Basic Outboard Turning Setup Steps

Extension Bed and Outboard Turning Banjo

The extension bed can be mounted on the left hand side of the lathe for outboard turning. To install the extension bed, align the holes on the extension bed with the pins on the mounting point. Then secure the extension bed with the four M10 socket head cap screws provided.



The banjo shipped with the lathe is sized for the main lathe bed only. The outboard turning banjo is available as an accessory.



The tool rest shipped with the lathe is compatible with both banjos.

Mounting the Workpiece

The outboard turning setup accepts blanks up to 35-1/2" in diameter. Use the faceplate to mount the blank on the lathe. With outboard turning, the blank is only supported on one end. Therefore, for safety, outboard turning is only suitable for turning lightweight blanks in large diameters, such as a large plate. The blank should be mostly balanced before it is turned.

The included faceplates can support blanks up to 18" in diameter. Acquire a larger faceplate for turning a larger blank. The faceplate size should be at least 1/3 the diameter of the blank.

Set for Spindle Direction and Speed

The spindle on the outboard side is right-hand threaded. To make the faceplate self-tightening on the spindle during the operation, the spindle direction must be set to reverse (REV) for outboard turning.



Outboard turning should be done only when the blank is too big to turn inboard. For safety, use extra low speed and always use reverse spindle direction for outboard turning.

Adjust and Secure the Tool Rest

Since the spindle direction must be in reverse, the tool rest must be positioned on the rear side of the lathe, and the woodturner needs to stand on the back side of the lathe to turn.



Other Techniques and Procedures

Filling Cracks and Gaps

Checks and shakes can develop and be found while turning a piece of wood. Sometimes, it is necessary to use adhesives and fillers to fill the cracks to strengthen a workpiece. Make sure the adhesive is completely cured inside and out before resuming the work.

Sanding

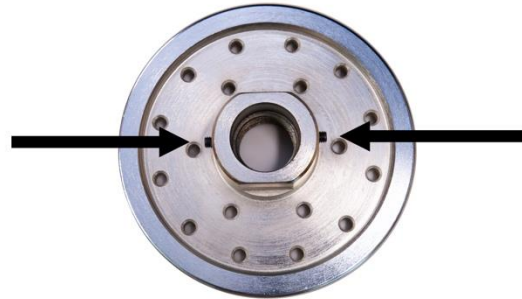
Sanding removes the toolmarks and can fix minor blemishes on the workpiece. Before sanding, remove the tool rest and banjo so there is no risk of getting the hand trap between the workpiece and the tool rest. NEVER wrap the sandpaper around the workpiece to avoid entanglement risk.



Reduce the lathe speed and use light pressure when sanding. Doing so avoids heat build-up that can damage the workpiece and the sandpaper. Remove dust and dirt from the sandpaper to maximize the effectiveness of the abrasive surface.

Keep moving the sandpaper to avoid grooves from forming. When switching to a finer grit, change the sanding direction by 90 degrees to remove the scratch marks from the previous grit.

Running the lathe in reverse sometimes helps to remove the scratch marks created by sandpaper. If a workpiece is mounted on a threaded accessory, it must be locked on the spindle with set screws. The faceplate included with the lathe has two set screws for this purpose.



! WARNING !

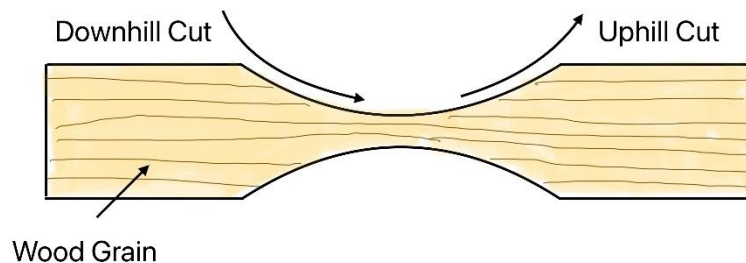
Reduce speed and use extra caution when running the lathe in reverse with threaded accessory mounted. Ensure the threaded accessory is mounted on the spindle with fasteners, or the accessory can dislodge from the spindle during the operation. Such accidents can cause serious injuries or death.

Only use the reverse spindle direction when sanding an outboard-turning workpiece. Otherwise, the workpiece can dislodge from the spindle if the faceplate set screw cannot withstand the torque from the operation.

Common Woodturning Errors

Tearouts and Chipping

When performing an “uphill” cut or scraping the end grain of a workpiece with dull tools, strands of wood fibers are lifted from the workpiece due to lack of support. The lifted wood fiber then gets bent and snapped, tearing the wood structure.



Therefore, to create a high-quality finish, the woodturner should do the following:

- Use sharp tools and sharpen tools often.
- Perform downhill cuts whenever possible.
- Cut the end grain from the side, and peel the edge/face grain after the attached end grain is cut.

Warp and Cracks

This is a common problem when turning wood that is not fully stabilized. Logs that are freshly cut down have high water content. In addition, the sapwood of a fresh log often has a higher moisture content than the heartwood. As water evaporates, sapwood and heartwood shrink at different rates and cause the wood to warp and crack.

To create a product that retains its shape and form, it's important to ensure the blank is fully dried and stabilized. Depending on region and wood species, fully dried wood should have a moisture content of 4-13 percent for indoor use.

Fuzzy Grain

This can occur when turning wood with high moisture content. As the wood dries and shrinks, the grain rises and creates a fuzzy feeling. Fuzzy grain is unavoidable sometimes due to the nature of certain wood types. To mitigate this issue, avoid using wood with high moisture content and use sharp cutters.

Tool Marks

Tool marks can be reduced with optimized lathe settings and better cutting techniques:

Problem	Solution
<i>Making cuts too aggressively for the lathe speed.</i>	<ul style="list-style-type: none">• Do not force a cut. Take the time and let the cutting tool shave off the wood itself.• Increase lathe speed if it's too slow for a workpiece.
<i>Pushing the tool into the wood and flexing it.</i>	<ul style="list-style-type: none">• Use sharp tools and sharpen tools often.• Apply force to hold the tool on the tool rest instead of pushing the tool into the wood. Take the time and let the cutting tool shave off the wood itself.• The structure of the workpiece is not strong enough to withstand the force of cutting. Support the workpiece with a steady rest if possible. Suppose a workpiece is to be turned very thin, take a multi-phase approach so the section farthest from the faceplate/centers/chuck is completed first, and then work towards the mounting point.
<i>Not riding/floating the bevel when performing a cut.</i>	<ul style="list-style-type: none">• Support the cutting edge with the bevel.
<i>The heel of the bevel is burnishing the wood surface.</i>	<ul style="list-style-type: none">• Make sure the tool's bevel is in parallel with the turning surface.• Remove/smooth the heel of the bevel.• Use a bigger grinding wheel to sharpen tools to reduce the curvature of the bevel.

Kent Weakley has good tips on reducing tool marks:

<https://turnawoodbowl.com/10-tool-marks-tricks-wood-bowl-understand-fix-remove/>

Catch

A catch happens when the operator presents the tool to the wood in a way that causes the tool to dig into the wood uncontrollably. A small catch can gouge the workpiece, and a big catch can cause the workpiece to disintegrate or pull the tool away from the operator's hand. It is important to use the right tool for different types of turning and present the tools the way the manufacturer recommends.

The article "Five Ways to Avoid a Catch" by Lyle Jamieson has good illustrations of how a catch happens and how to avoid it.


<https://lylejamieson.com/wp-content/uploads/press-5-ways-to-avoid-a-catch-march1996.pdf>

Using Wrong Cutting Tools

Beware that spindle gouge, spindle roughing gouge, and skews are unsuitable for bowl turning. Tools for spindle work typically have a thin tang, which is not designed to withstand the impact of bowl turning. Likewise, do not use tiny tools for roughing big blanks. Failure to do so can result in severe catches or loss of control of the tools, which can cause severe injuries or death.

Maintenance

Routine maintenance keeps your lathe in top shape. The maintenance schedule below is made for users who use the lathe daily in professional settings. The actual schedule may vary for individual users due to different situations and safety requirements. Use the maintenance record worksheet included in the manual to document all tasks completed.

 WARNING	Disconnect the machine from the power source before performing any maintenance work. After servicing the lathe, remove all wrenches and tools before restarting the machine. Failure to comply can cause serious injury!
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Maintenance Schedule

<i>Interval</i>	Component
<i>Every day before work</i>	Inspect the power cord and plug for signs of aging and damage. Replace as needed.
	Inspect the machine and make sure all mounting bolts are fastened. Make sure the tailstock and the banjo can lock securely on the bedways.
<i>Every day after work</i>	Remove wood shavings and dust from the lathe and dust collection system.
<i>Every week</i>	Apply rust protectant on the bedways.
	Clean and lubricate tool rest.
<i>Every month</i>	Check/adjust drive belt tension. Replace the belt if it shows signs of cracking or glazing.
	Clean and lightly lubricate the tailstock quill.
	Clean and lightly lubricate the underside of the tailstock and banjo.
<i>Every 4-6 months</i>	Remove dust build-up from the motor and the cabinet.
	Recheck the bedways for being level side-to-side and front-to-back.

Cleaning & Lubrication

Tool Rest

The support edge of the tool rest should be smooth and free of rust, grime, and nicks so that the woodturning tool can easily glide across.

If the support edge and post of the tool rest become dirty/rusty, use mineral spirit and a scouring pad to remove grime and rust. Then apply a light coat of machine oil to keep the surface smooth and rust-free.



If there are nicks on the tool rest, lightly run a long, flat file across the entire length of the edge to remove the nicks. Make sure the tool rest edge remains flat and uniform. Wet sand the edge with sandpaper down to 180 grits to produce a smooth edge, and finish with a light coat of machine oil to prevent rusting.



Tailstock Quill

The tailstock quill can accumulate dust and grime over time. The steel surface can become rusty if not protected. To clean the quill, loosen the quill lock. Extend the quill all the way and remove it from the tailstock.



Clean the quill body with mineral spirit and a rag. Use a scouring pad if necessary, and be careful not to remove the readings of the quill's depth gauge.

If the tapered surface of the quill is dirty, remove the debris with mineral spirit and cotton swap. Do not use corrosive chemicals or anything that can mar the tapered surface.

After cleaning, apply a light coat of machine oil or grease.

Bedways & Underside of Tailstock/Banjo

When the bedways and the underside of the tailstock/banjo get dirty or rusty, the tailstock and banjo will be difficult to slide on the bedways. Dirt and dust can be trapped under the tailstock and cause misalignment issues between the headstock and tailstock.

Remove the tailstock and banjo from the bed, then clean the unpainted cast iron surface with mineral spirit and a rag. Use a scouring pad and WD-40 to remove rust as necessary. After cleaning, apply rust protectants such as paste wax or Boeshield® T-9.



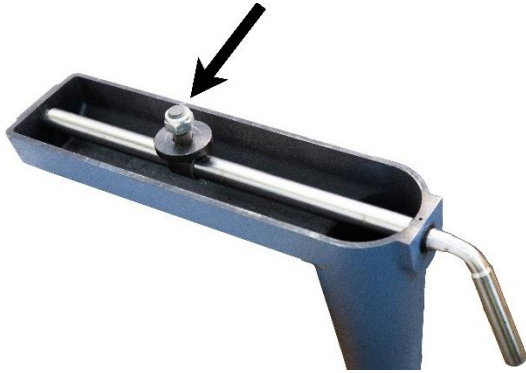
Lubricate the camshaft of the tailstock and banjo with a light coat of machine oil. This can also prevent rust from forming on these parts.



Remove wood dust and shavings frequently, especially when turning green wood. Doing so can prevent unpainted parts from rusting.

Tailstock & Banjo Cam Lock Adjustment

The tailstock and banjo cam lock are adjusted at the factory and should not require further adjustments. If the cam lock becomes too loose and cannot secure the banjo/tailstock in place, adjust the lock nut in small increments until it provides adequate gripping force.



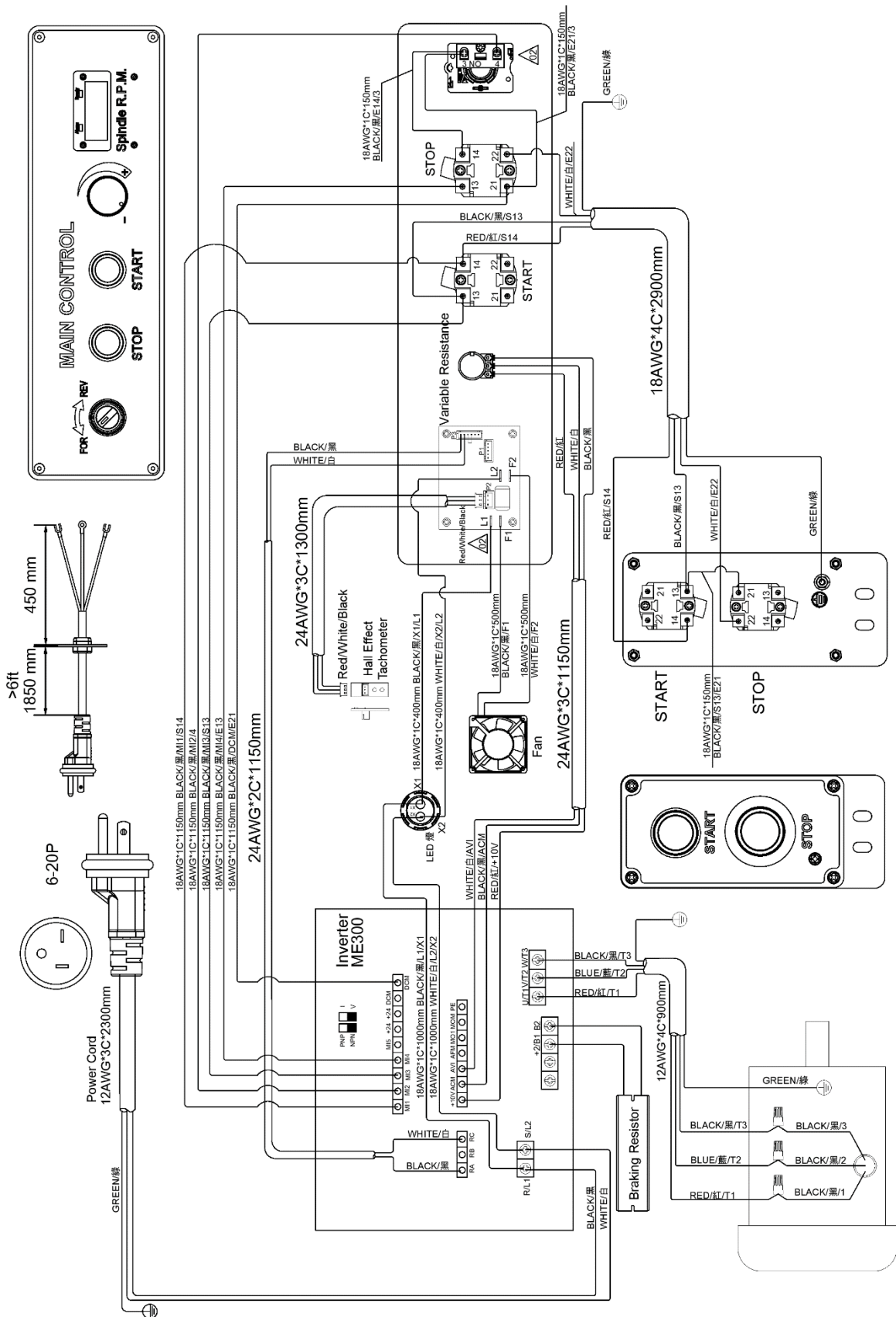
The cam lock for the tailstock and banjo should engage with 1/8 of a turn. Do not overtighten the cam lock, as it can overstress and damage the locking mechanism.

Troubleshooting

Problem	Possible Cause	Possible Solution
Machine does not start.	Machine is not connected to a power source.	<ol style="list-style-type: none"> 1. Make sure the machine is plugged in, and the power disconnect is at the ON position. 2. Check the electrical panel for tripped circuit breaker or blown fuse. 3. Ensure all electrical connections have good contacts.
	Low voltage/current.	Have a licensed electrician check/repair the power circuit.
	Faulty switch/motor/capacitor.	Contact customer service for further assistance.
	Overload protection activated.	Wait for at least five minutes for the motor to cool down. Turn with a less aggressive cut.
Overload protection triggered, tripped circuit breaker, or blown fuse.	Machine is undersized for operation.	Turn with a less aggressive cut.
	Machine is jammed.	Inspect the spindle lock and ensure it is not engaged.
	Too much load on a circuit.	Make sure the power circuit is sized for this machine. If the machine is sharing the circuits with other equipment, ensure the circuit is sized to supply power for all items in the circuit.
	Motor/capacitor issue.	Contact customer service for further assistance.
Machine stalls during operation.	Machine is undersized for operation.	Make lighter cuts.
	Dull lathe tool.	Resharpen/replace lathe tool.
	Belt slipping	Clean the belt and pulleys. Adjust belt tension.
	Motor/capacitor issue.	Contact customer service for further assistance.
Machine stopped during the operation.	Overload protection triggered.	Wait for at least five minutes for the motor to cool down. Turn with a less aggressive cut.

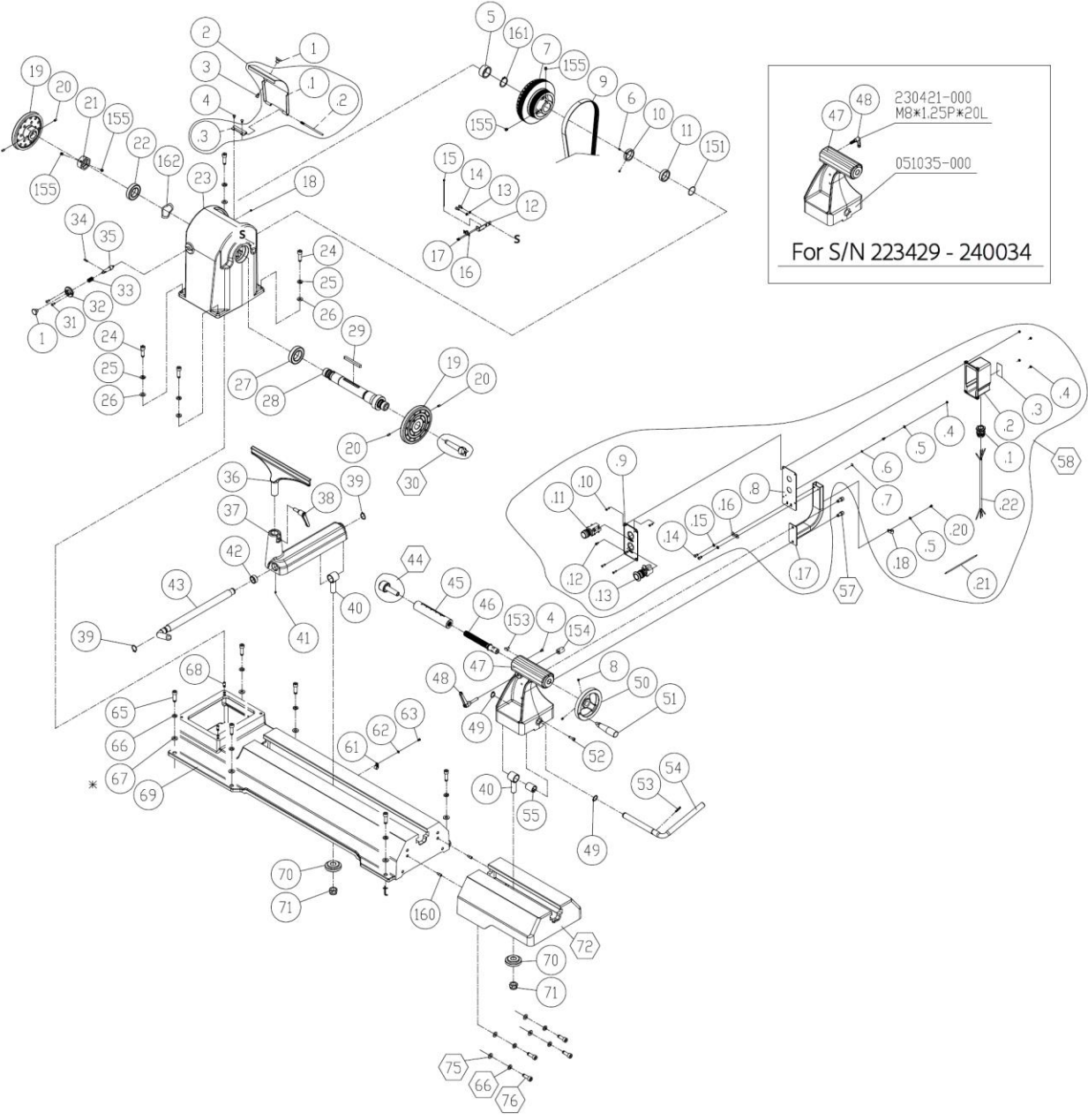
Problem	Possible Cause	Possible Solution
Digital readout is not functional.	RPM is too low to register. If RPM is less than 15, the reading rounds down to 0.	Increase RPM to 15 or above.
	Tachometer or display malfunction.	Contact customer service for further assistance.
Machine vibrates excessively or makes unexpected noise.	Machine stands on an uneven floor.	Adjust the leveling feet.
	Lathe speed is too high for an unbalanced workpiece.	Reduce lathe speed.
	Drive belt worn, slipping, or hitting belt cover.	Clean belt and pulleys. Adjust belt tension. Replace the belt if it shows signs of aging.
	Bent spindle	Replace spindle.
	Improper motor mounting.	Check and adjust motor mounting.
	Loose components.	Tighten the fasteners of the component.
Tailstock/banjo cannot be locked down securely.	Dirty contact surface between the bed and the tailstock/banjo.	Clean the bedways and the bottom of the tailstock/banjo to ensure the contact surface is debris-free.
	Loose cam lock.	Adjust the cam lock bolt at the bottom of the tailstock/banjo to improve grip.
Tool is stuck on the tapered spindle/ tailstock quill.	Tapered accessories are designed to stay mounted on the quill until the quill is fully retracted.	Retract the tailstock quill past the 0" mark on the depth gauge.
	Debris stuck in between the tapered surface.	Use a knockout rod to tap on the stuck tool to remove it.

Wiring Diagram

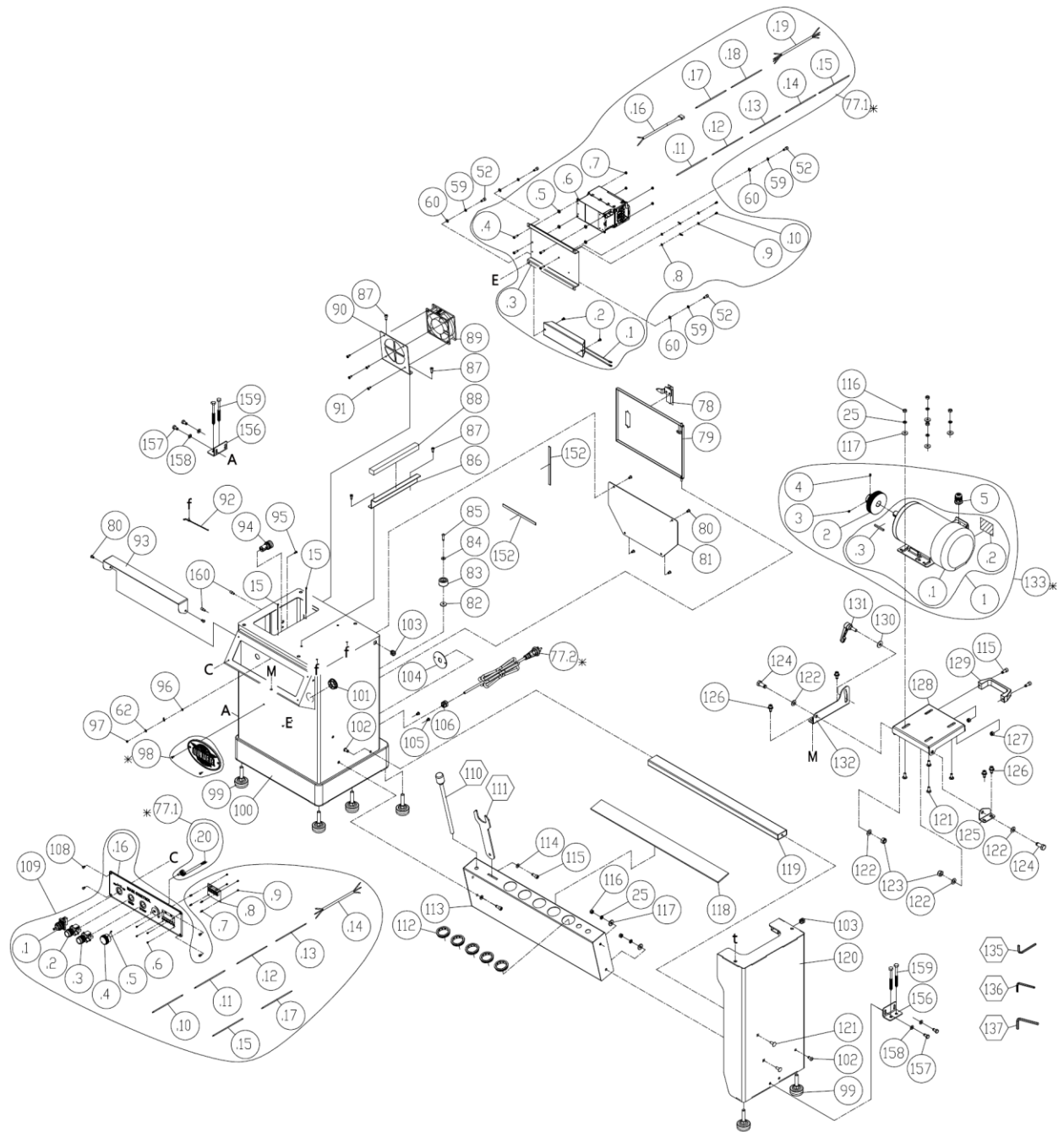


Parts List

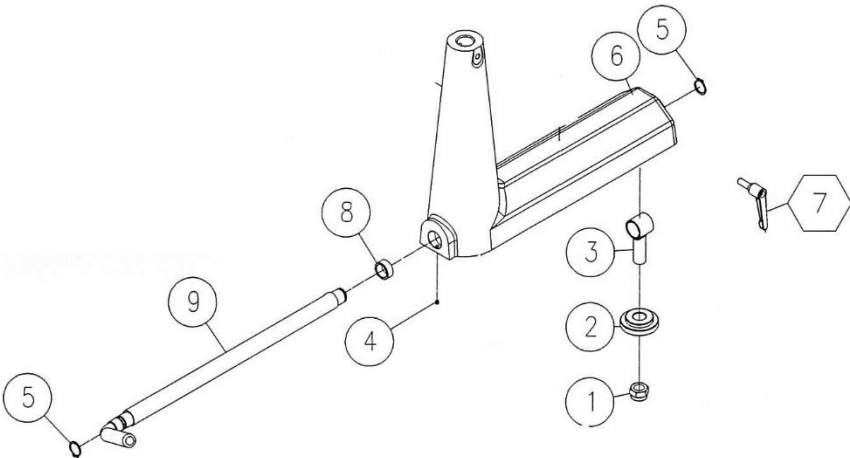
Headstock, Bed, and Tailstock



Motor and Lathe Stand



Banjo (Sold Separately)



Key	Part Number	Descriptions	Specification	QTY
1	300145-922	Handle		2
2	925226-001	Cover Assembly of Headstock		1
.1	175177-000	Cover		1
.2	361509-000	Pin		1
.3	175178-901	Fix Plate		1
3	002602-107	Cap Lock Screw M6*1.0P*8	M6*1.0P*8 (Black)	1
4	000804-103	Round Head Hex Screw M5*0.8P*10	M5*0.8P*10 (Black)	3
5	361529-901	Bushing		1
6	000202-101	Set Screw M5*0.8P*5	M5*0.8P*5 (Black)	2
7	051509-901	Pulley		1
8	001902-109	Set Lock Screw M6*1.0P*6	M6*1.0P*6 (Black)	2
9	014382-000	Poly-V-Belt	540J-8	1
10	380951-902	Sleeve		1
11	660120-000	Magnetic Ring		1
12	175172-000	Sensor Plate		1
13	006302-100	Spring Washer 5.1*9.3	5.1*9.3 (Black)	2
14	000102-103	Cap Screw M5*0.8P*10	M5*0.8P*10 (Black)	2
15	021004-000	Cable Tie ALT-085S-B	ALT-085S-B (Black)	3
16	491261-000	RPM sensor plate		1
17	000301-201	Pan Head Screw M3*0.5P*6	M3*0.5P*6 Electroplated	2
18	660002-000	Magnet		1
19	051535-907	Faceplate	6" Diameter	2
20	001902-101	Set Lock Screw M6*1.0P*10	M6*1.0P*10 (Black)	4
21	360956-902	Tightening Nut	M35*1.5P	1
22	030202-002	Ball Bearing 6007	6007-Rubber sealed on both sides	1
23	051508-000	Headstock		1
24	000104-111	Cap Screw M8*1.25P*35	M8*1.25P*35 (Black)	4
25	006305-100	Spring Washer 8.2*13.7	8.2*13.7 (Black)	10
26	006001-054	Flat Washer 8.5*20*2.0t	8.5*20*2.0t (Black)	4
27	030203-002	Ball Bearing 6008	6008-Rubber sealed on both sides	1
28	361528-000	Spindle		1
29	012005-013	Key 8*7*80	8*7*80	1
30	922506-001	Spur Center		1
31	000804-107	Round Head Hex Screw M5*0.8P*12	M5*0.8P*12 (Black)	2
32	381506-901	Bracket		1
33	280295-000	Compressed Spring		1
34	011002-110	Spring Pin 4*16	4*16 (Black)	1
35	361507-901	Bolt		1
36	070052-902	Tool Rest		1
37	051036-000	Banjo		1
38	921423-001	Adjustable Clamping Lever	3/8"-16UNC-1"L	1
39	010035-000	S Ring STW-22	STW-22 (Black)	2
40	380946-902	Shaft		2
41	001901-101	Set Lock Screw M5*0.8P*5	M5*0.8P*5 (Black)	1
42	380953-902	Sleeve		1
43	360918-907	Lock Shaft		1

Key	Part Number	Descriptions	Specification	QTY
44	922456-001	Live Center Assembly		1
45	361506-000	Quill		1
46	361505-901	Shaft		1
47	051035-000	Tailstock (S/N 223429-240034)		1
47	051533-000	Tailstock (S/N 240035 -)		1
48	230421-000	Adjustable Clamping Lever (S/N 223429-240034)	M8*1.25P*20L	1
48	230440-000	Adjustable Clamping Lever (S/N 240035 -)	M8*1.25P*40L	1
49	010030-000	S Ring STW-19	STW-19	2
50	240072-000	Handwheel		1
51	230114-906	Handle		1
52	000103-105	Cap Screw M6*1.0P*15	M6*1.0P*15 (Black)	5
53	011003-104	Spring Pin 5*25	5*25 (Black)	1
54	360920-907	Lock Shaft		1
55	130190-000	Sleeve		1
57	001803-102	Cap Screw w/Spring Washer M8*1.25P*20/8.2*13.7	M8*1.25P*20/8.2*13.7 (Black)	2
58	950898-001	Sub Switch Assembly		1
.1	021309-000	Strain Relief	PGB16-14B	1
.2	251486-615	Switch Box		1
.3	575656-000	Label		1
.4	008002-100	Hex Nut M4*0.7P(7B*3.2H)	M4*0.7P(7B*3.2H) (Black)	5
.5	006001-001	Flat Washer 4.3*10*1.0t	4.3*10*1.0t (Black)	2
.6	006501-100	4.3*8.5(BW-4)	4.3*8.5(BW-4) (Black)	1
.7	570695-000	Ground Label		1
.8	175169-904	Switch Plate		1
.9	575662-000	Sub Switch Label		1
.10	000805-706	Round Head Hex. Screw	M4*0.7P*16	4
.11	490040-000	Starting Bottom 10A 250VAC/7.5A 380VAC	Green (10A 250VAC/7.5A 380VAC) (Diameter 22)	1
.12	000302-103	Pan Head Screw M4*0.7P*10	M4*0.7P*10 (Black)	1
.13	491260-000	Emergency Stop YK-M1-4*(10A 250V) (7.5A 380V)	Red*ResettableYK-M1-4*(10A 250V) (7.5A 380V)	1
.14	000801-102	Round Head Hex. Screw	M6*1.0P*12 (Black)	2
.15	006303-100	Spring Washer 6.5*10.5	6.5*10.5 (Black)	2
.16	006001-115	Flat Washer 6.2*13*1.5t	6.2*13*1.5t (Black)	2
.17	175171-000	Switch Bracket		1
.18	021103-100	Cable Clip ACC-3-B	ACC-3-B (Black)	1
.20	000302-102	Pan Head Screw M4*0.7P*8	M4*0.7P*8 (Black)	1
.21	471037-148	Power cord	18AWG*1C*150mm S13/Black/E21	1
.22	474001-020	Power cord	SJT18AWG*4C*2900mm	1

Key	Part Number	Descriptions	Specification	QTY
59	006303-100	Spring Washer 6.5*10.5	6.5*10.5 (Black)	4
60	006001-115	Flat Washer 6.2*13*1.5t	6.2*13*1.5t (Black)	4
61	021103-100	Cable Clip ACC-3-B	ACC-3-B (Black)	1
62	006001-001	Flat Washer 4.3*10*1.0t	4.3*10*1.0t (Black)	2
63	000302-102	Pan Head Screw M4*0.7P*8	M4*0.7P*8 (Black)	1
65	000105-104	Cap Screw M10*1.5P*35	M10*1.5P*35 (Black)	6
66	006307-100	Spring Washer 10.2*18.5	10.2*18.5 (Black)	10
67	006001-075	Flat Washer 10.3*22*2.0t	10.3*22*2.0t (Black)	6
68	360355-901	Pin		2
69	051507-000	Bed		1
70	380504-901	Lock Ring		2
71	009101-200	Lock Nut 3/4"-10NC*17mm	3/4"-10NC (27B*17H) Electroplated	2
72	051510-000	Extension Bed		1
75	006001-068	Flat Washer 10*20*2.0t	10*20*2.0t (Black)	4
76	000105-103	Cap Screw M10*1.5P*30	M10*1.5P*30 (Black)	4
77	950921-001	Converter Assembly	2HP*220- 240V*60HZ*3PH*4P*CSA/UL Plug	1
1	950900-001		IN:1PH / OUT:3PH	1
2	453151-010	SJT 12AWG*3C*2300mm(6-20P)	SJT 12AWG*3C*2300mm(6-20P)	1
78	230240-000	Latch		1
79	175175-000	Right Side Cover		1
80	000801-101	Round Head Hex Screw M6*1.0P*10	M6*1.0P*10 (Black)	6
81	175186-000	Electric Box Cover		1
82	006002-030	Flat Washer 6.5*23*4.0t	6.5*23*4.0t Electroplated	1
83	251075-615	Foot		1
84	006003-114	Flat Washer 6.4*16*1.6t	6.4*16*1.6t	1
85	000801-112	Round Head Hex Screw M6*1.0P*25	M6*1.0P*25 (Black) full thread	1
86	175217-000	Cip Guard		1
87	000103-103	Cap Screw M6*1.0P*12	M6*1.0P*12 (Black)	4
88	200119-000	Sponge		1
89	491255-000	Fan	AC220V	1
90	175216-000	Fan Bracket		1
91	000303-803	Pan Head Screw M5*0.8P*10	M5*0.8P*10 Black zinc plated	4
92	230297-615	Fixed Chain		2
93	175182-000	Dust Cover		1
94	491259-000	KE-22DS*110-230V AC	White*KE-22DS*110-230V AC	1
95	000302-103	Pan Head Screw M4*0.7P*10	M4*0.7P*10 (Black)	1
96	006501-100	4.3*8.5(BW-4)	4.3*8.5(BW-4) (Black)	1
97	008002-100	Hex Nut M4*0.7P(7B*3.2H)	M4*0.7P(7B*3.2H) (Black)	1
*98	WT03-10	Label Assembly		1
99	230403-000	Foot Screw		6

Key	Part Number	Descriptions	Specification	QTY
100	175173-000	Left Stand		1
101	021806-000	Easy Fit Grommet	SB-38	1
102	000802-101	Round Head Hex Screw M8*1.25P*16	M8*1.25P*16 (Black)	2
103	020003-000	Strain Relief R-Type SB7R-3	SB7R-3	2
104	174285-904	Strain Relief Mounting Plate	(M6)	1
105	000304-101	Pan Head Screw M6*1.0P*8	M6*1.0P*8 (Black)	2
106	020005-000	Strain Relief R-Type SB8R-3	SB8R-3	1
108	000804-101	Round Head Hex Screw M5*0.8P*8	M5*0.8P*8 (Black)	4
109	950904-001	Front Control Panel Assembly		1
.1	491262-000	Two Position Selector Switch KB2-ED21/Connect-KB2-BE101(1A)	KB2-ED21/Connect - KB2-BE101(1A)	1
.2	491263-000	Stop Switch YS-F1-4*(10A 250V) (7.5A 380V)	Red*YS-F1-4*(10A 250V) (7.5A 380V)	1
.3	490040-000	Starting Bottom 10A 250VAC/7.5A 380VAC	Green (10A 250VAC/7.5A 380VAC) (Diameter 22)	1
.4	300133-911	RPM Knob		1
.5	001904-104	SET Lock Screw	M4*0.7P*8L (Black)	1
.6	000301-101	Round Head Phillips Screw	M3*0.5P*6 (Black)	4
.7	330071-000	Hex. Copper bolt	M3*0.5P*8L	4
.8	491247-000	LCM Display		1
.9	000301-111	Round Head Phillips Screw	M3*0.5P*4 (Black)	4
.10	471037-146	Connect cord	18AWG*1C*150mm 3/Black/E21	1
.11	471037-147	Connect cord	18AWG*1C*150mm 3/Black/E14	1
.12	471037-139	Connect cord	18AWG*1C*400mm L1/Black/X1	1
.13	471037-140	Connect cord	18AWG*1C*400mm L2/白/X2	1
.14	473048-010	Connect cord	24AWG*3C*1300mm	1
.15	471037-152	Connect cord	18AWG*1C*500mm* (Black)(F1)	1
.16	925225-001	Control Plate		1
.17	471037-153	Connect cord	18AWG*1C*500mm* White(F2)	1
110	361508-901	Knockout Rod		1
111	172894-902	Open Wrench		1
112	021809-000	Clip Ring SB-50	SB-50	5
113	175170-000	Tool Rack		1
114	006001-038	Flat Washer 8*16*1.6t	8*16*1.6t (Black)	2
115	000104-106	Cap Screw M8*1.25P*20	M8*1.25P*20 (Black)	4
116	009005-200	Hex Nut 5/16"-18NC (12.7B*6.75H)	5/16"-18NC (12.7B*6.75H) Electroplated	6
117	006002-056	Flat Washer 8.5*23*2.0t	8.5*23*2.0t Electroplated	6
118	200120-000	Sponge		1
119	175183-000	Bracket		1

Key	Part Number	Descriptions	Specification	QTY
120	175184-000	Stand		1
121	003801-107	Screw 5/16"-18NC*3/4"	5/16"-18NC*3/4" (Black) (Head Diameter 18)	6
122	006001-136	Flat Washer 12.2*23*2.0t	12.2*23*2.0t (Black)	4
123	008311-100	Lock Nut M12*1.75P(19B*12H)	M12*1.75P(19B*12H) (Black)	2
124	000005-111	Hex. Screw M12*1.75P*30	M12*1.75P*30 (Black)	2
125	175179-904	Bracket		1
126	001501-101	Cap w/Spring Washer w/Flat Washer M8*1.25P*20/8.2*13.7/8.5*19*2t	M8*1.25P*20/8.2*13.7/8.5*19*2t (Black)	4
127	008306-100	Lock Nut M8*1.25P(13B*9H)	M8*1.25P(13B*9H) (Black)	2
128	175176-008	Motor Plate		1
129	250123-615	Handle		1
130	006001-081	Flat Washer 10.5*27*2.0t	10.5*27*2.0t (Black)	1
131	230343-000	Universal Handle		1
132	175181-904	Bracket		1
133	901360-001	Motor Assembly	2HP*220-240V*60HZ*3PH*4P	1
1	960058-001	Motor	2HP*220-240V*60HZ*3PH*4P	1
.1	606166-000	Motor	2HP*220-240V*60HZ*3PH*4P*6A	1
.2	589057-000	Motor Label	2HP*220-240V*60HZ*3PH*4P	1
.3	012202-006	Key 5*5*50	5*5*50	1
2	381486-901	Motor Pulley		1
3	001902-109	Set Lock Screw M6*1.0P*6	M6*1.0P*6 (Black)	1
4	001902-102	Set Lock Screw M6*1.0P*8	M6*1.0P*8 (Black)	1
5	023705-011	Strain Relief PGB13.5-12B	PGB13.5-12B (with nut)	1
151	043714-000	O Ring FKM AS026	FKM AS026	1
152	200039-615	Pad		2
153	361527-901	Positioning Pin		1
154	330008-000	Nut		1
155	001903-105	Set Lock Screw M8*1.0P*8	M8*1.0P*8 (Black)	4
156	175233-000	Plate		2
157	000003-102	Hex. Screw M8*1.25P*16	M8*1.25P*16 (Black)	4
158	006001-049	Flat Washer 8.5*16*2.0t	8.5*16*2.0t (Black)	4
159	003902-201	Wood Screw 3/8"-16NC*4"	3/8"-16NC*4" Electroplated	4
160	290031-902	Shoulder Screw		4
161	010014-000	S Ring	STW-35	1
162	006714-100	Wave Washer	BWW6305(47.2*60.2) (Black)	1

Outboard Turning Banjo Parts List

Key	Part Number	Descriptions	Specification	QTY
1	009101-200	Lock Nut 3/4"-10NC*17mm	3/4"-10NC*17mm Electroplated	1
2	380504-901	Lock Ring		1
3	380946-902	Shaft		1
4	001901-101	Set Lock Screw M5*0.8P*5	M5*0.8P*5 (Black)	1
5	010035-000	S Ring STW-22	STW-22 (Black)	2
6	051039-000	Side Tool Rest Base		1
7	921423-001	Universal Handle Assembly	3/8"-16UNC-1"L	1
8	380953-902	Sleeve		1
9	360922-907	Lock		1

Warranty and Service

Oliver Machinery makes every effort to assure that its equipment meets the highest possible standards of quality and durability. All products sold by Oliver Machinery are warranted to the original purchaser to be free from defects for a period of two (2) years on all parts excluding electronics and motors which are warranted for one (1) year from the date of shipment. Oliver Machinery's obligation under this warranty shall be exclusively limited to repairing or replacing products or parts or components, at its sole option, determined by Oliver Machinery to be defective. Oliver Machinery shall not be required to provide other form of indemnity or compensation including but not limited to compensatory damages.

This warranty is non-transferable and is only extended to the original purchaser from an authorized distributor.

This warranty does not apply to defects due to direct or indirect misuse, abuse, negligence, accidents, unauthorized repairs, alternation outside our facilities, lack of maintenance, acts of nature, or items that would normally be consumed or require replacement due to normal wear and tear.

OTHER TERMS

To obtain and exercise the warranty right, please call 800-559-5065 or fill out warranty request form online at www.olivermachinery.net.

Warranty parts are shipped via Parcel or Ground. Additional charges will occur and charge to customers if express shipping is required.

DISCLAIMER

Under no circumstances shall Oliver Machinery be liable for death, personal or property injury, or damages arising from the use of its products.

Oliver Machinery reserves the right to make changes without prior notice to its products to improve function or performance or design.

FOR MORE INFORMATION

If you need assistance or have questions beyond what is covered in the scope of this warranty information, please call 800-559-5065 or email us at info@olivermachinery.net.

Appendix

Suggested Lathe Speed Limits for Turning

Woodturning is best conducted at an optimal speed. If the lathe speed is too high, the centrifugal force can cause a workpiece to disintegrate. If the speed is too low, it can result in a poor finish. This speed chart shows the suggested lathe speed limit for turning blanks of various diameters. The speed limits are set assuming the workpiece is a solid piece of wood that is strong, balanced, rounded, and perfectly intact. Blanks that are off-balanced, irregularly shaped, or with less than perfect integrity will require a lower turning speed.

Please note that the suggested speed is only for performing cuts only. Use 50% of the minimum RPM listed in the table for roughing blanks, negative rake scraping, sanding, and polishing.

Use the lathe's lowest speed (50 RPM) for applying finish.

<i>Diameter(in.)</i>	Min RPM	Max RPM	<i>Diameter(in.)</i>	Min RPM	Max RPM
1	3200	3200	11	520	830
2	2860	3200	12	470	760
3	1910	3050	13	440	700
4	1430	2290	14	400	650
5	1140	1830	15	380	610
6	950	1520	16	350	570
7	810	1310	17	330	530
8	710	1140	18	310	500
9	630	1010	19	300	480
10	570	910	20	280	450

 WARNING	Failure to set the lathe speed for safe operation can cause the blank to disintegrate at high speed, which can result in serious injuries or death.
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Useful Links

Tool Sharpening:

- <https://thompsonlathetools.com/sharpening/>
- <https://carterandsontoolworks.com/pages/woodturning-resources>

List of Woodturning Clubs, Craft Schools, and Symposiums:

- <https://www.woodturner.org/Woodturner/Woodturner/AAWConnects/AAW-Connects.aspx>



Oliver Machinery is always adding new Industrial Woodworking products to the line.

For complete, up-to-date product information, visit us online at:

WWW.OLIVERMACHINERY.NET

or call toll-free 1-800-559-5065

**** SAVE THIS MANUAL FOR FUTURE REFERENCE. ****