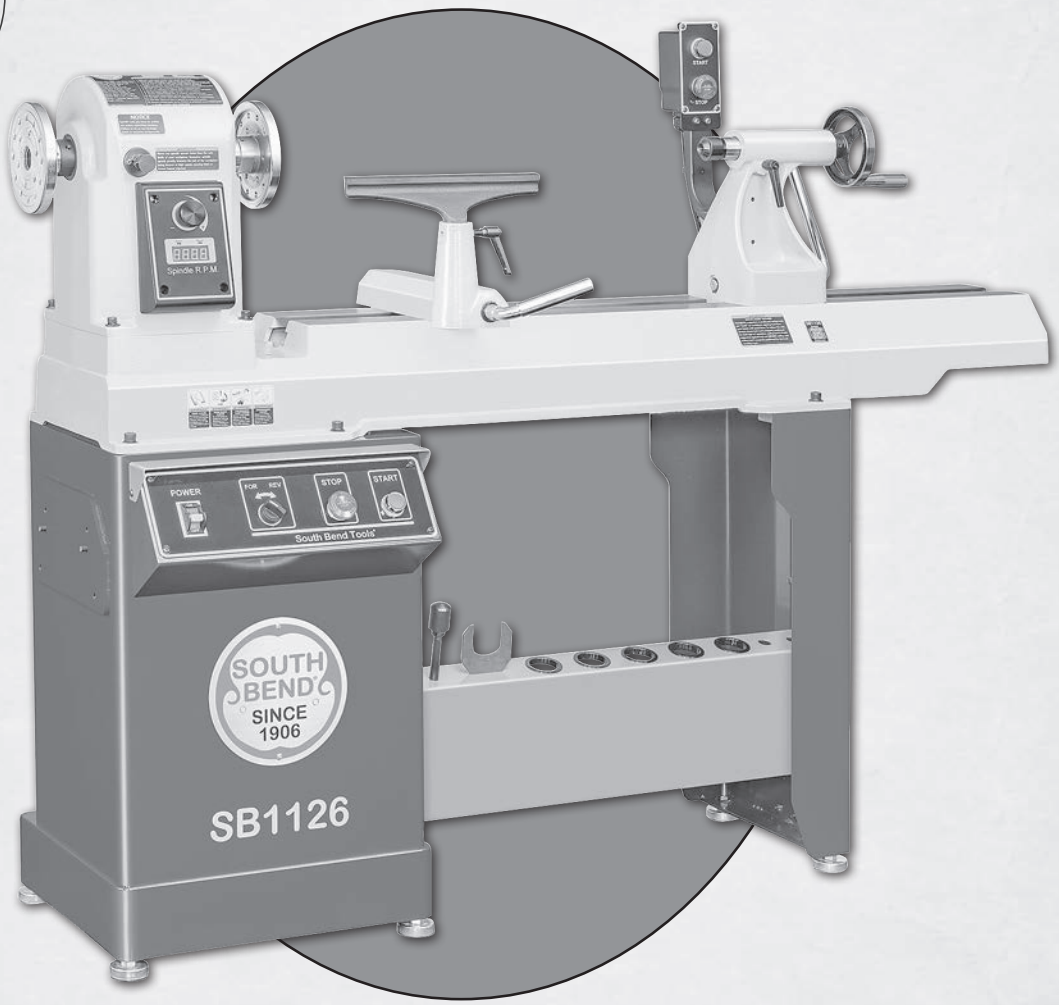
18" X 40" VARIABLE-SPEED WOOD LATHE

MODEL SB1126

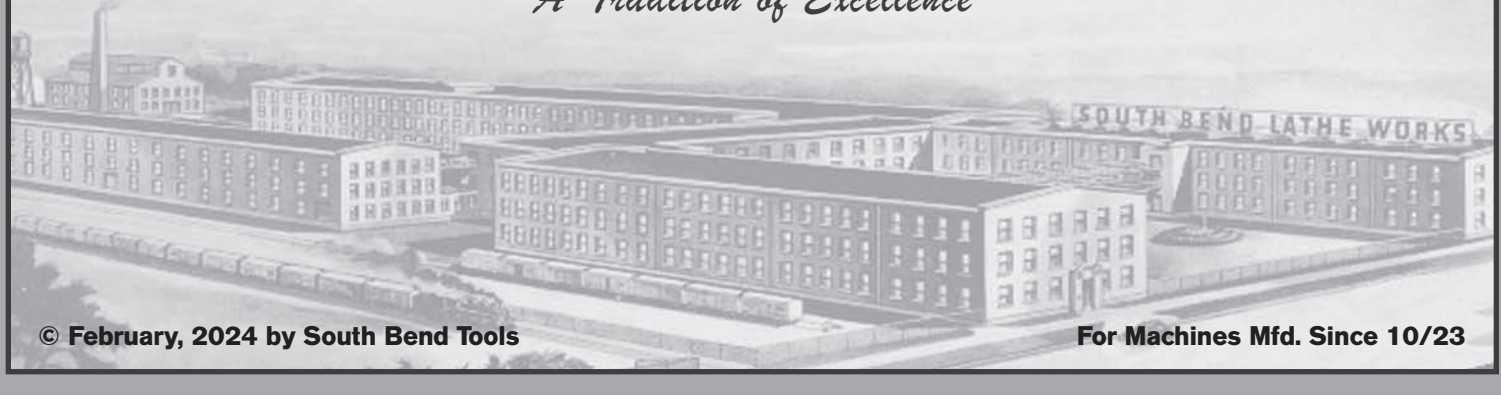


****Keep for Future Reference****

OWNER'S MANUAL

South Bend Tools®

A Tradition of Excellence



For Machines Mfd. Since 10/23

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals 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.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as a dust mask or respirator that is specially designed to filter out microscopic particles.

Table of Contents

Scope of Manual

This manual helps the reader understand the machine, how to prepare it for operation, how to control it during operation, and how to keep it in good working condition. We assume the reader has a basic understanding of how to operate this type of machine, but that the reader is not familiar with the controls and adjustments of this specific model. As with all machinery of this nature, learning the nuances of operation is a process that happens through training and experience. If you are not an experienced operator of this type of machinery, read through this entire manual, then learn more from an experienced operator, schooling, or research before attempting operations. Following this advice will help you avoid serious personal injury and get the best results from your work.

Manual Feedback

We've made every effort to be accurate when documenting this machine. However, errors sometimes happen or the machine design changes after the documentation process—so the manual may not exactly match your machine. If a difference between the manual and machine leaves you in doubt, contact our customer service for clarification.

We highly value customer feedback on our manuals. If you have a moment, please share your experience using this manual. What did you like about it? Is there anything you would change to make it better? Did it meet your expectations for clarity, professionalism, and ease-of-use?

South Bend Tools
c/o Technical Documentation Manager
P.O. Box 2027
Bellingham, WA 98227
Email: manuals@southbendtools.com

Updates

For your convenience, any updates to this manual will be available to download free of charge through our website at:

www.southbendtools.com

Customer Service

We stand behind our machines. If you have any service questions, parts requests or general questions about your purchase, feel free to contact us.

South Bend Tools
P.O. Box 2027
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Phone: (360) 734-1540
Fax: (360) 676-1075 (International)
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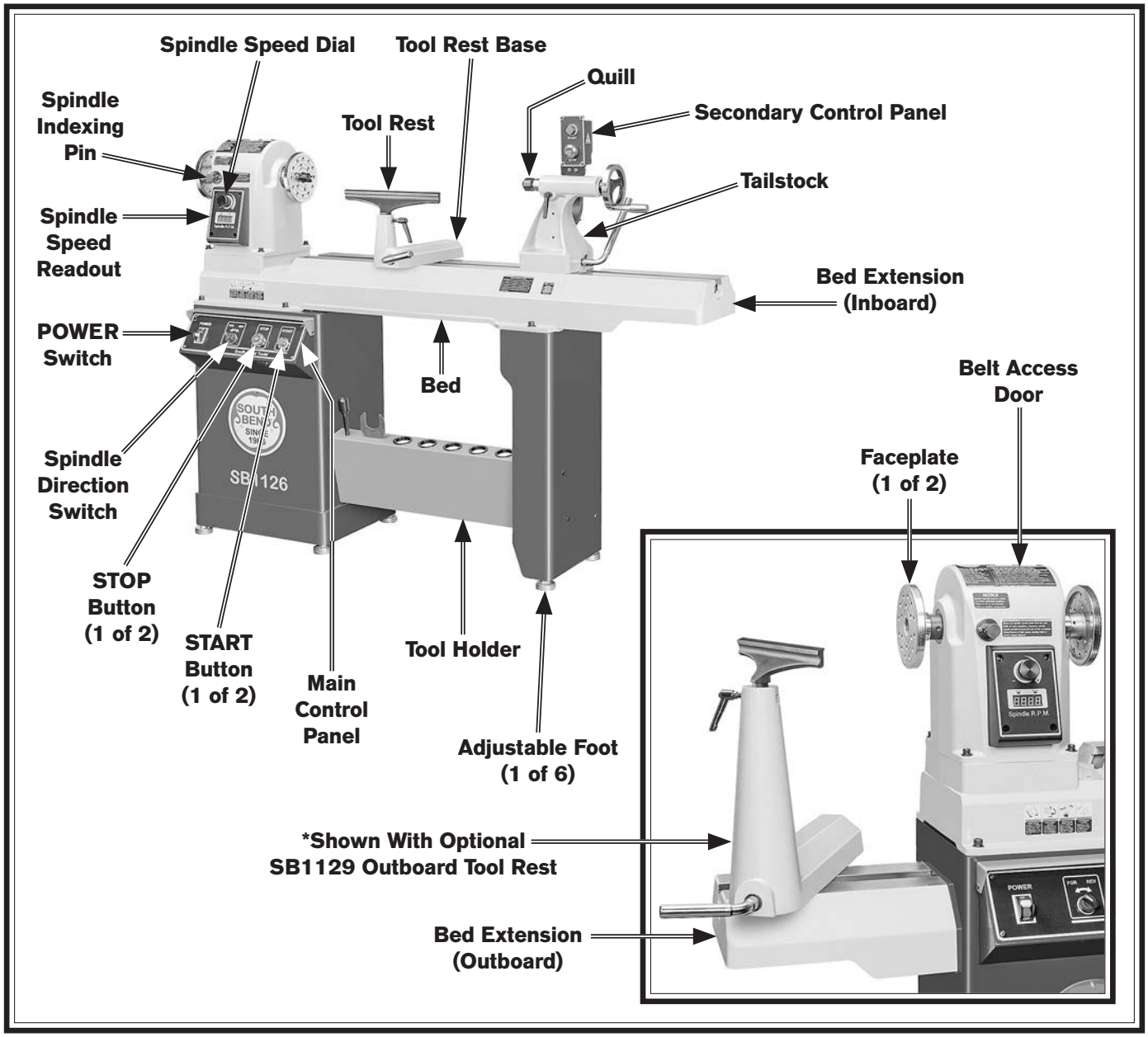
Identification



⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating Lathe

a) Wear eye protection.
b) Do not wear gloves, necktie, or loose clothing.
c) Tighten all locks before operating.
d) Rotate workpiece by hand before applying power.
e) Rough out workpiece before installing on faceplate.
f) Do not mount split workpiece or one containing knots.
g) Use lowest speed when starting new workpiece.

Description of Controls & Components

Refer to the following figures and descriptions to become familiar with the basic controls and components used to operate this machine.

Main Controls

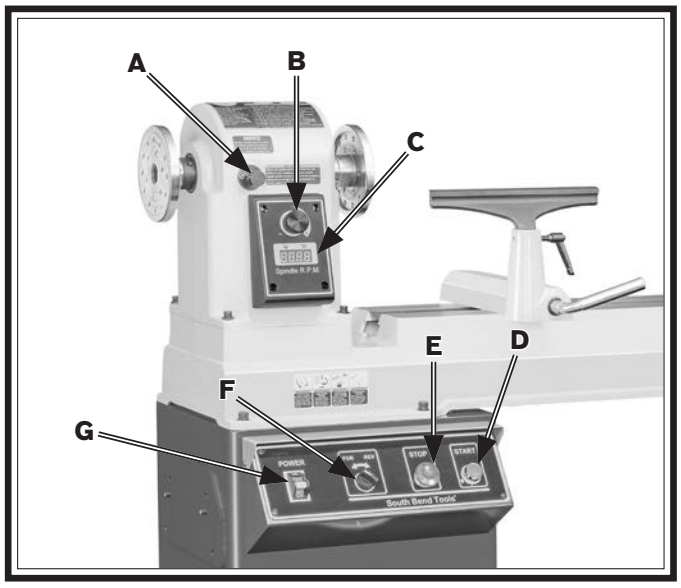


Figure 1. Main controls layout.

A. Spindle Indexing Pin: Locks spindle in place for indexing operations. Pull pin out and turn right to unlock spindle. Turn pin left and seat in indexing hole to lock spindle.

B. Spindle Speed Dial: Adjusts spindle speed from low to high within range governed by pulley belt position.

C. Spindle Speed Readout: Indicates spindle speed in revolutions per minute (RPM).

— Alarm light above display indicates a VFD fault when illuminated. To reset, press STOP button on main control panel and move POWER switch to OFF position.

— When illuminated, Ready light indicates machine is connected to power and VFD is functioning normally.

D. START Button (1 of 2): Turns motor ***ON***.

E. STOP Button (1 of 2): Stops motor and disables START button and speed controls while it remains depressed. Enable START button by turning STOP button clockwise until it pops out.

F. Spindle Direction Switch: Toggles spindle direction between forward (FOR) and reverse (REV).

G. POWER Switch w/Disabling Key: Turns power to machine ***ON*** or ***OFF***. Remove yellow key to disable switch.

Tool Rest

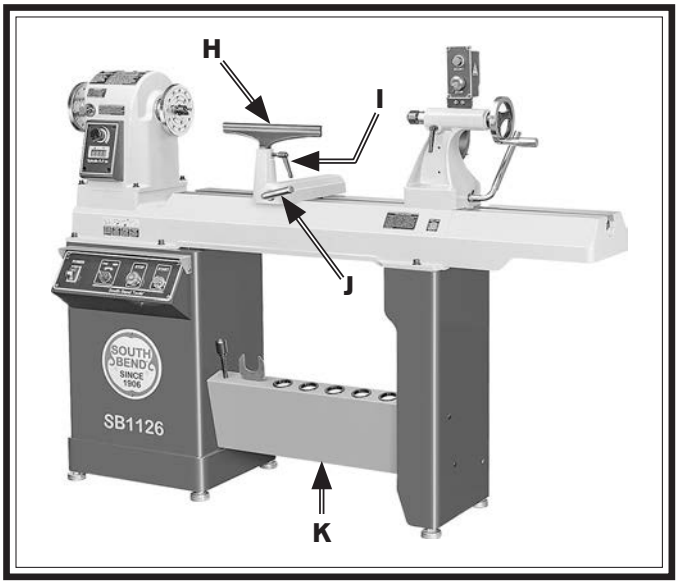


Figure 2. Tool rest & bed extension components.

H. Tool Rest: Provides stable platform for cutting tools.

I. Tool Rest Lock Handle: Secures tool rest in position.

J. Tool Rest Base Lock Lever: Secures tool rest base in position along bed.

K. Tool Holder: Holds tooling and supporting equipment.

Bed Extension

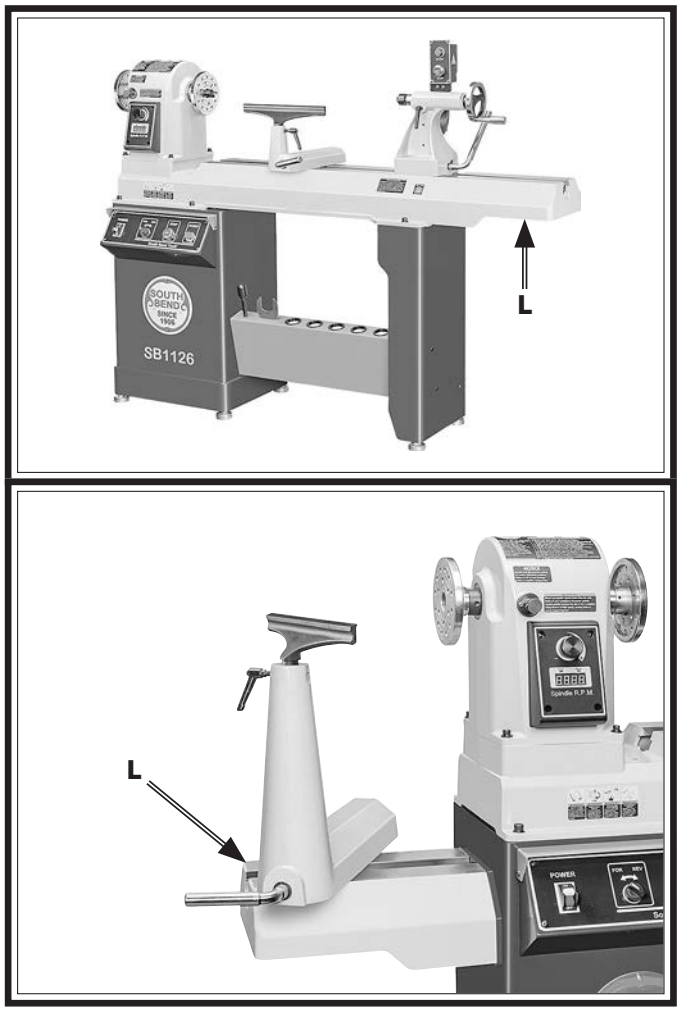


Figure 3. Bed extension installed in inboard and outboard positions (shown with optional SB1129).

L. Bed Extension: Can be installed on inboard end of bed to support tool rest and tailstock, or outboard end for oversized turning operations.

Tailstock

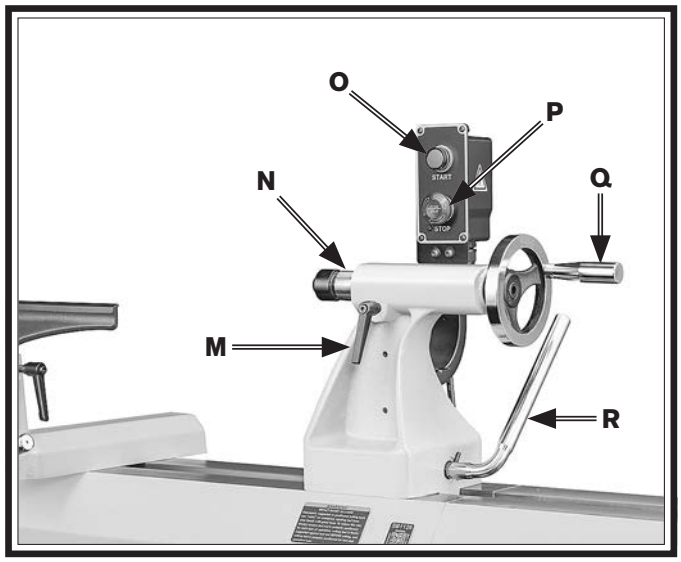


Figure 4. Tailstock controls.

M. Quill Lock Handle: Secures quill in position.

N. Quill: Holds centers or tooling. Can be moved toward or away from spindle.

O. START Button (1 of 2): Turns motor *ON*.

P. STOP Button (1 of 2): Stops motor and disables START button and speed controls while it remains depressed. Enable START button by turning STOP button clockwise until it pops out.

Q. Tailstock Handwheel: Moves quill toward or away from spindle.

R. Tailstock Lock Lever: Secures tailstock in position along bed.

⚠WARNING

Like all machinery there is a potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

SOUTH BEND SINCE 1906

Product Specifications

P.O. Box 2027, Bellingham, WA 98227 U.S.A.
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www.southbendtools.com

SOUTH BEND SINCE 1906

Model SB1126
18" x 40" Variable-Speed Wood Lathe

Product Dimensions

Weight	420 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	69-1/2 x 23-1/2 x 50 in.
Footprint (Length x Width)	46-1/2 x 16-1/2 in.

Shipping Dimensions

Type	Wood Crate
Content	Machine
Weight	615 lbs.
Length x Width x Height	52 x 30 x 54 in.
Must Ship Upright	Yes

Electrical

Power Requirement	220V, Single-Phase, 60 Hz
Full-Load Current Rating	18A
Minimum Circuit Size	20A
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	72 in.
Power Cord Gauge	12 AWG
Plug Included	Yes
Included Plug Type	6-20
Switch Type	ON/OFF Push Button
Inverter (VFD) Type	Delta ME300
Inverter (VFD) Size	3 HP

Motors

Main

Horsepower	3 HP
Phase	3-Phase
Amps	8.5A
Speed	1720 RPM
Type	TEFC Induction
Power Transfer	Belt
Bearings	Sealed & Permanently Lubricated

Main Specifications

Operation Information

Swing Over Bed	18 in.
Swing Over Tool Rest Base	14-3/8 in.
Outboard Swing Over Bed	26 in.
Distance Between Centers	26 & 40 in.
Swing Over Gap	21-3/8 in.
Max. Distance Tool Rest to Spindle Center	9-5/8 in.
No of Spindle Speeds	Variable
Spindle Speed Range	50 - 3200 RPM
Floor to Center Height	43 in.
Headstock Rotation	Fixed

Spindle Information

Spindle Taper	MT#2
Spindle Thread Size	1-1/4" x 8 TPI
Spindle Thread Direction	Right Hand
Spindle Bore	5/8 in.
Type of Included Spindle Center	Spur
Indexed Spindle Increments	10 deg.
No of Indexes	36
Outboard Spindle Thread Direction	Right Hand
Outboard Spindle Size	1-1/4 in.
Outboard Spindle TPI	8

Tool Rest Information

Tool Rest Width	12 in.
Tool Rest Post Diameter	1 in.
Tool Rest Post Length	2-1/2 in.
Tool Rest Base Height	5-3/4 in.

Tailstock Information

Tailstock Quill Travel	4 in.
Tailstock Taper	MT#2
Type of Included Tailstock Center	Live

Construction

Bed	Precision-Ground Cast Iron
Frame	Steel
Stand	Steel
Base	Steel
Headstock	Cast Iron
Tailstock	Cast Iron
Paint Type/Finish	Powder Coated

Other Related Information

Bed Width	6-7/8 in.
Faceplate Size	6 in.

Other

Country of Origin	Taiwan
Warranty	2 Years
Approximate Assembly & Setup Time	15 Minutes
Serial Number Location	ID Label
ISO 9001 Factory	Yes

Understanding Risks of Machinery

Operating all machinery and machining equipment can be dangerous or relatively safe depending on how it is installed and maintained, and the operator's experience, common sense, risk awareness, working conditions, and use of personal protective equipment (safety glasses, respirators, etc.).

The owner of this machinery or equipment is ultimately responsible for its safe use. This responsibility includes proper installation in a safe environment, personnel training and usage authorization, regular inspection and maintenance, manual availability and comprehension, application of safety devices, integrity of cutting tools or accessories, and the usage of approved personal protective equipment by all operators and bystanders.

The manufacturer of this machinery or equipment will not be held liable for injury or property damage from negligence, improper training, machine modifications, or misuse. Failure to read, understand, and follow the manual and safety labels may result in serious personal injury, including amputation, broken bones, electrocution, or death.

The signals used in this manual to identify hazard levels are as follows:

⚠DANGER	*Death or catastrophic harm WILL occur.*	**⚠CAUTION**	*Moderate injury or fire MAY occur.*
⚠WARNING	*Death or catastrophic harm COULD occur.*	***NOTICE***	*Machine or property damage may occur.*

Basic Machine Safety

Owner's Manual: All machinery and machining equipment presents serious injury hazards to untrained users. To reduce the risk of injury, anyone who uses THIS item MUST read and understand this entire manual before starting.

Personal Protective Equipment: Operating or servicing this item may expose the user to flying debris, dust, smoke, dangerous chemicals, or loud noises. These hazards can result in eye injury, blindness, long-term respiratory damage, poisoning, cancer, reproductive harm or hearing loss. Reduce your risks from these hazards by wearing approved eye protection, respirator, gloves, or hearing protection.

Trained/Supervised Operators Only: Untrained users can seriously injure themselves or bystanders. Only allow trained and properly supervised personnel to operate this item. Make sure safe operation instructions are clearly understood. If electrically powered, use padlocks and master switches, and remove start switch keys to prevent unauthorized use or accidental starting.

Guards/Covers: Accidental contact with moving parts during operation may cause severe entanglement, impact, cutting, or crushing injuries. Reduce this risk by keeping any included guards/covers/doors installed, fully functional, and positioned for maximum protection.

Entanglement: Loose clothing, gloves, neckties, jewelry or long hair may get caught in moving parts, causing entanglement, amputation, crushing, or strangulation. Reduce this risk by removing/securing these items so they cannot contact moving parts.

Mental Alertness: Operating this item with reduced mental alertness increases the risk of accidental injury. Do not let a temporary influence or distraction lead to a permanent disability! Never operate when under the influence of drugs/alcohol, when tired, or otherwise distracted.

Safe Environment: Operating electrically powered equipment in a wet environment may result in electrocution; operating near highly flammable materials may result in a fire or explosion. Only operate this item in a dry location that is free from flammable materials.

Electrical Connection: With electrically powered equipment, improper connections to the power source may result in electrocution or fire. Always adhere to all electrical requirements and applicable codes when connecting to the power source. Have all work inspected by a qualified electrician to minimize risk.

Disconnect Power: Adjusting or servicing electrically powered equipment while it is connected to the power source greatly increases the risk of injury from accidental startup. Always disconnect power BEFORE any service or adjustments, including changing blades or other tooling.

Secure Workpiece/Tooling: Loose workpieces, cutting tools, or rotating spindles can become dangerous projectiles if not secured or if they hit another object during operation. Reduce the risk of this hazard by verifying that all fastening devices are properly secured and items attached to spindles have enough clearance to safely rotate.

Chuck Keys or Adjusting Tools: Tools used to adjust spindles, chucks, or any moving/rotating parts will become dangerous projectiles if left in place when the machine is started. Reduce this risk by developing the habit of always removing these tools immediately after using them.

Work Area: Clutter and dark shadows increase the risks of accidental injury. Only operate this item in a clean, non-glaring, and well-lighted work area.

Properly Functioning Equipment: Poorly maintained, damaged, or malfunctioning equipment has higher risks of causing serious personal injury compared to those that are properly maintained. To reduce this risk, always maintain this item to the highest standards and promptly repair/service a damaged or malfunctioning component. Always follow the maintenance instructions included in this documentation.

Unattended Operation: Electrically powered equipment that is left unattended while running cannot be controlled and is dangerous to bystanders. Always turn the power ***OFF*** before walking away.

Health Hazards: Certain cutting fluids and lubricants, or dust/smoke created when cutting, may contain chemicals known to the State of California to cause cancer, respiratory problems, birth defects, or other reproductive harm. Minimize exposure to these chemicals by wearing approved personal protective equipment and operating in a well ventilated area.

Difficult Operations: Attempting difficult operations with which you are unfamiliar increases the risk of injury. If you experience difficulties performing the intended operation, STOP! Seek an alternative method to accomplish the same task, ask a qualified expert how the operation should be performed, or contact our Technical Support for assistance.

Additional Wood Lathe Safety

⚠WARNING

Serious injury or death can occur from getting entangled in, crushed between, or struck by rotating parts on a lathe! Rotating workpieces can come loose and strike operator or bystanders with deadly force if they are improperly secured, rotated too fast, or are not strong enough for the rotational forces required for turning. Improper tool setup or usage can cause tool kickback or grabbing, resulting in impact injury or entanglement. To reduce the risk of operator (or bystander) injury or death, anyone operating this machine MUST completely heed the hazards and warnings below.

Verify Workpiece Integrity. Verify each workpiece is free of knots, splits, nails, or foreign material to ensure it can safely rotate on spindle without breaking apart or causing tool kickback.

Properly Prepare Workpiece. Before mounting, cut off waste portions to balance workpiece for safe rotation and removal of large edges that can catch on tooling.

Secure Locks. Verify tool rest, headstock, and tailstock are secure before turning lathe ***ON***.

Secure Workpiece. Use proven setup techniques and always verify workpiece (and centers/tooling holding workpiece) are well-secured before starting lathe. Only use high-quality fasteners with non-tapered heads for faceplate attachment.

Adjust Tool Support. An improperly supported tool may be grabbed or ejected. Adjust tool rest approximately ¼" away from workpiece and ⅛" above workpiece center line to provide proper support for turning tool. Firmly hold turning tool with both hands against tool rest.

Remove Adjustment Tools. Remove all chuck keys, wrenches, and adjustment tools before turning lathe ***ON***. These items can become deadly projectiles when spindle is started.

Check Clearances. Before starting spindle, verify workpiece has adequate clearance by hand-rotating it through its entire range of motion.

Test New Setups. Test each new setup by starting spindle rotation at lowest speed and standing to side of lathe until workpiece reaches full speed and you can verify safe rotation.

Wear Proper PPE. Always wear a face shield and safety glasses when operating lathe. Do not wear gloves, necktie or loose clothing. Keep long hair away from rotating spindle.

Use Correct Speeds. Select correct spindle speed for workpiece size, type, shape, and condition. Use low speeds when roughing or when turning large, long, or non-concentric workpieces. Allow spindle to reach full speed before turning.

Avoid Tool Kickback. This occurs when turning tool is grabbed or ejected from workpiece with great force. Commonly caused by poor workpiece selection/preparation, improper tool usage, or improper machine setup or tool rest adjustment.

Safely Perform Roughing. Use correct tool. Take light cuts, use low speeds, and firmly support tool with both hands.

Use Sharp Tools. Sharp tools cut with less resistance than dull tools. Using dull tools increases the risk of tool kickback or grabbing.

Safely Stopping Rotation. Always allow rotating workpiece to stop on its own. Never put hands or another object on workpiece to stop it.

Safely Measure Workpiece. Only measure mounted workpiece after it has completely stopped. Trying to measure a spinning workpiece increases entanglement risk.

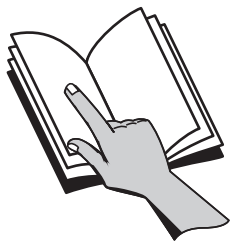
Sanding/Polishing. To reduce entanglement risk, remove tool rest before sanding. Never completely wrap sandpaper around workpiece.

Preparation Overview

The purpose of the preparation section is to help you prepare your machine for operation. The list below outlines the basic process. Specific steps for each of these points will be covered in detail later in this section.

The typical preparation process is as follows:

1. Unpack the machine and inventory the contents of the box/crate.
2. Clean the machine and its components.
3. Identify an acceptable location for the machine and move it to that location.
4. Level the machine using the adjustable feet.
5. Assemble the loose components and make any necessary adjustments or inspections to ensure the machine is ready for operation.
6. Connect the machine to the power source.
7. Test run the machine to make sure it functions properly and is ready for operation.



⚠WARNING

Incorrect use of this machine can result in death or serious injury. For your own safety, read and understand this entire document before using.

⚠WARNING

Wear safety glasses during the entire setup process!

Required for Setup

The items listed below are required to successfully set up and prepare this machine for operation.

For Lifting

- A forklift or other power lifting device (rated for a minimum of 775 lbs.)
- Lifting straps or chains (rated for a minimum of 775 lbs.)

For Power Connection

- A power source that meets the minimum circuit requirements for this machine. (Refer to the **Power Supply Requirements** section for details.)
- A qualified electrician to ensure a safe and code-compliant connection to the power source.

For Assembly

- Safety Glasses (for each person)
- Additional Person
- Precision Level
- Combo Wrench ¾"
- Hex Wrench 4mm
- Disposable Gloves (As Needed)
- Disposable Rags (As Needed)
- Cleaner/Degreaser (As Needed)

Power Supply Requirements

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed.

To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by an electrician or qualified service personnel in accordance with applicable electrical codes and safety standards.

⚠WARNING

Electrocution or fire may occur if machine is not correctly grounded and attached to the power supply. Use a qualified electrician to ensure a safe power connection.

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Rating at 220V ..... 18 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements in the following section.

⚠WARNING

Serious injury could occur if you connect the machine to power before completing the setup process. DO NOT connect to power until instructed later in this manual.

Circuit Requirements

This machine is prewired to operate on a power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage 208V/220V/230V/240V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Circuit Rating ..... 20 Amps
Plug/Receptacle (included) ..... NEMA 6-20

A power supply circuit includes all electrical equipment between the main breaker box or fuse panel in your building and the incoming power connections inside the machine. This circuit must be safely sized to handle the full-load current that may be drawn from the machine for an extended period of time. (If this machine is connected to a circuit protected by fuses, use a time delay fuse marked D.)

⚠CAUTION

For your own safety and protection of property, consult an electrician if you are unsure about wiring practices or applicable electrical codes.

Note: *The circuit requirements in this manual are for a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure the circuit is properly sized.*

Grounding Requirements

This machine must be grounded! In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current in order to reduce the risk of electric shock.

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (similar to the figure below). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

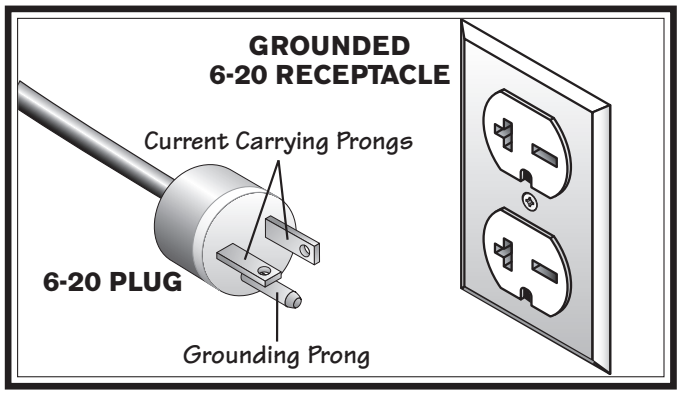
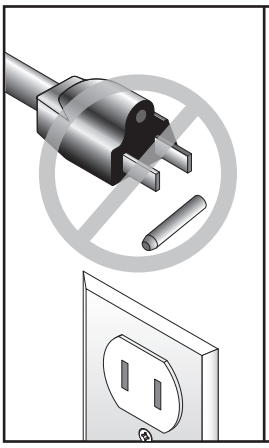


Figure 5. NEMA 6-20 plug and receptacle.



⚠CAUTION

DO NOT modify the included plug or use an adapter if it will not fit your receptacle. Instead, have a qualified electrician install the proper receptacle on a power supply circuit that is grounded and meets the requirements for this machine.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with an electrician or qualified service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded.

If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

We do not recommend using an extension cord with this machine. If you must use one, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle listed in the **Circuit Requirements** for the applicable voltage, and meet the following requirements:

Minimum Gauge Size ..... 12 AWG
Maximum Length (Shorter is Better) ..... 50 ft.

Unpacking

This item was carefully packaged to prevent damage during transport. If you discover any damage, please immediately call Customer Service at (360) 734-1540 for advice. You may need to file a freight claim, so save the containers and all packing materials for possible inspection by the carrier or its agent.

Inventory

Wood Crate (Figure 6)	Qty
A. Lathe Assembly	1
—Headstock (Mounted)	1
—Tool Rest Base w/Tool Rest (Mounted)	1
—Tailstock (Mounted)	1
—Faceplate 6" (Mounted)	2

Cardboard Box (Figure 7)	Qty
B. Bed Extension	1
C. Spur Center MT#2	1
D. Live Center MT#2	1
E. Knockout Tool	1
F. Spindle Wrench 1¾"	1
G. Center Holder	1
H. Hex Wrenches 3, 4, 6, 8mm	1 Ea.
I. Secondary Control Panel	1
J. Hardware (Not Shown)	
—Cap Screws M10-1.5 x 30	4
—Lock Washers 10mm	4
—Flat Washers 10mm	4
—Cap Screws M8-1.25 x 20	2
—Lock Washers 8mm	2
—Button Hd Cap Screws M6-1 x 12	2

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

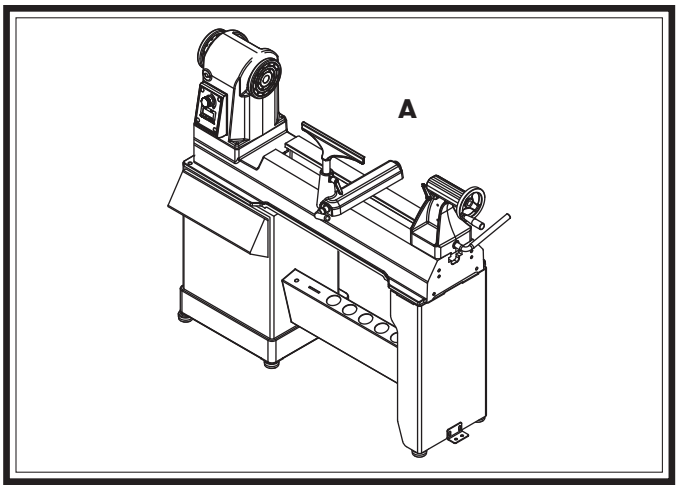


Figure 6. Wood crate inventory.

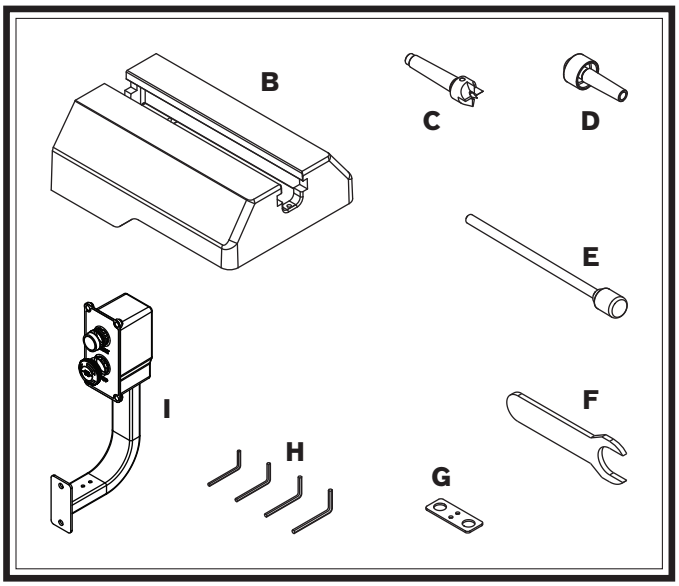
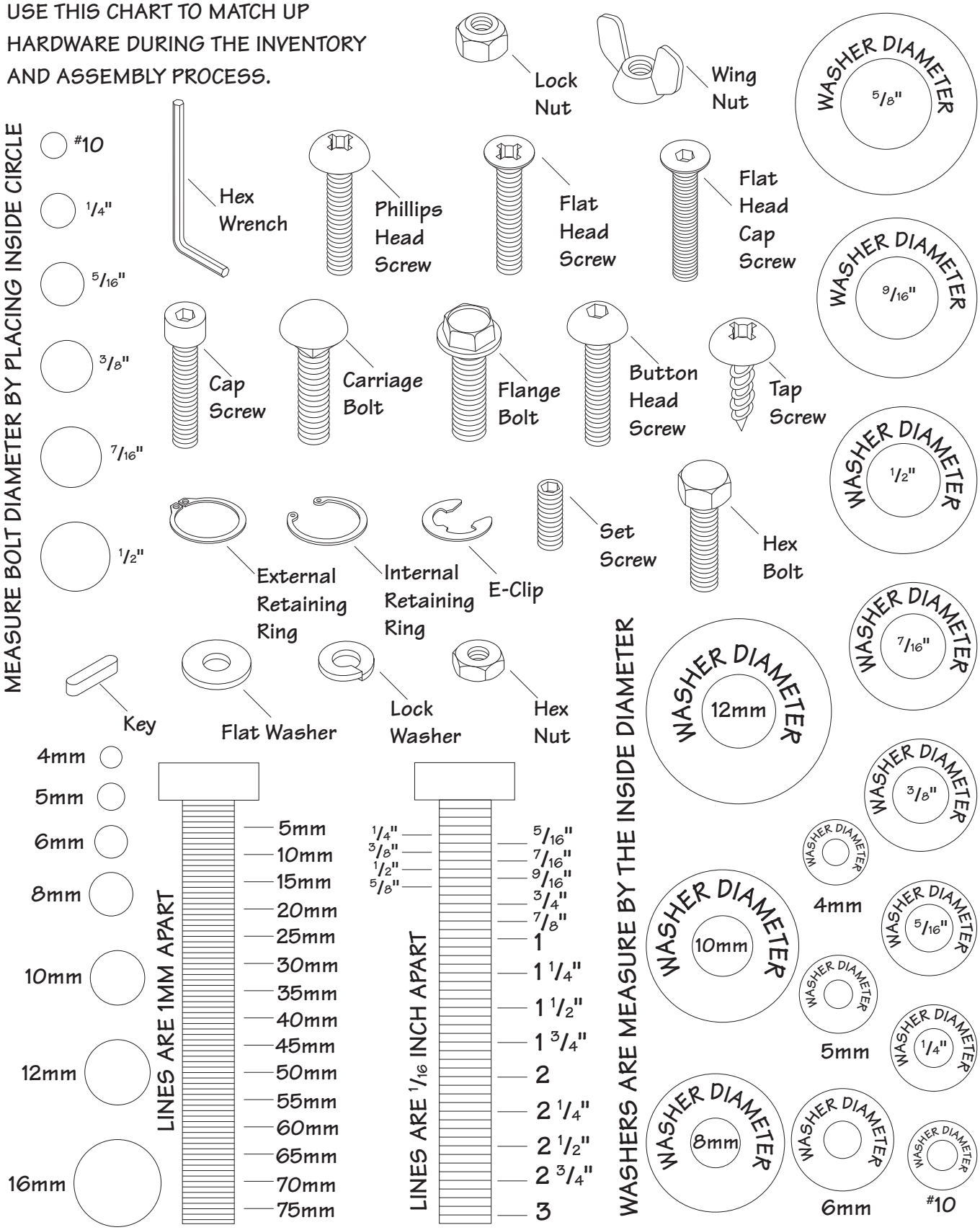


Figure 7. Cardboard box inventory.

Hardware Recognition Chart



Cleaning & Protecting

The unpainted surfaces are coated at the factory with a heavy-duty rust preventative that prevents corrosion during shipment and storage. The benefit of this rust preventative is that it works very well. The downside is that it can be time-consuming to thoroughly remove.

Be patient and do a careful job when cleaning and removing the rust preventative. The time you spend doing this will reward you with smooth-sliding parts and a better appreciation for the proper care of the unpainted surfaces.

Although there are many ways to successfully remove the rust preventative, the following process works well in most situations.

Before cleaning, gather the following:

- Disposable rags
- Cleaner/degreaser (certain citrus-based degreasers work extremely well and they have non-toxic fumes)
- Safety glasses & disposable gloves

Note: *Automotive degreasers, mineral spirits, or WD•40 can be used to remove rust preventative. Before using these products, though, test them on an inconspicuous area of a painted surface to make sure they will not damage it.*

⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used for cleaning. Avoid using these products to remove rust preventative.

⚠CAUTION

Many cleaning solvents are toxic if inhaled. Minimize your risk by only using these products in a well ventilated area.

NOTICE

Avoid chlorine-based solvents, such as acetone or brake parts cleaner that may damage painted surfaces. Always follow the manufacturer's instructions when using any type of cleaning product.

Basic steps for removing rust preventative:

1. Put on safety glasses and disposable gloves.

2. Coat all surfaces that have rust preventative with a liberal amount of your cleaner or degreaser and let them soak for a few minutes.

3. Wipe off the surfaces. If your cleaner or degreaser is effective, the rust preventative will wipe off easily.

   Note: *To clean off thick coats of rust preventative on flat surfaces, such as beds or tables, use a PLASTIC paint scraper to scrape off the majority of the coating before wiping it off with your rag. (Do not use a metal scraper or it may scratch the surface.)*

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant or light oil to prevent rust.

T23692—Orange Power Degreaser

A great product for removing the waxy shipping grease from the ***non-painted*** parts of the machine during clean up.

Order online at www.grizzly.com OR Call 1-800-523-4777

Figure 8. T23692 Orange Power Degreaser.

Location

Physical Environment

The physical environment where your machine is operated is important for safe operation and longevity of parts. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous or flammable chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature is outside the range of 41°–104°F; the relative humidity is outside the range of 20–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave access to a means of disconnecting the power source or engaging a lockout/tagout device.

Lighting

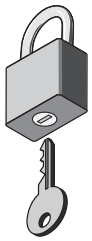
Lighting around the machine must be adequate enough to perform operations safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

Weight Load

Refer to the **Machine Specifications** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual.



⚠CAUTION

Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.

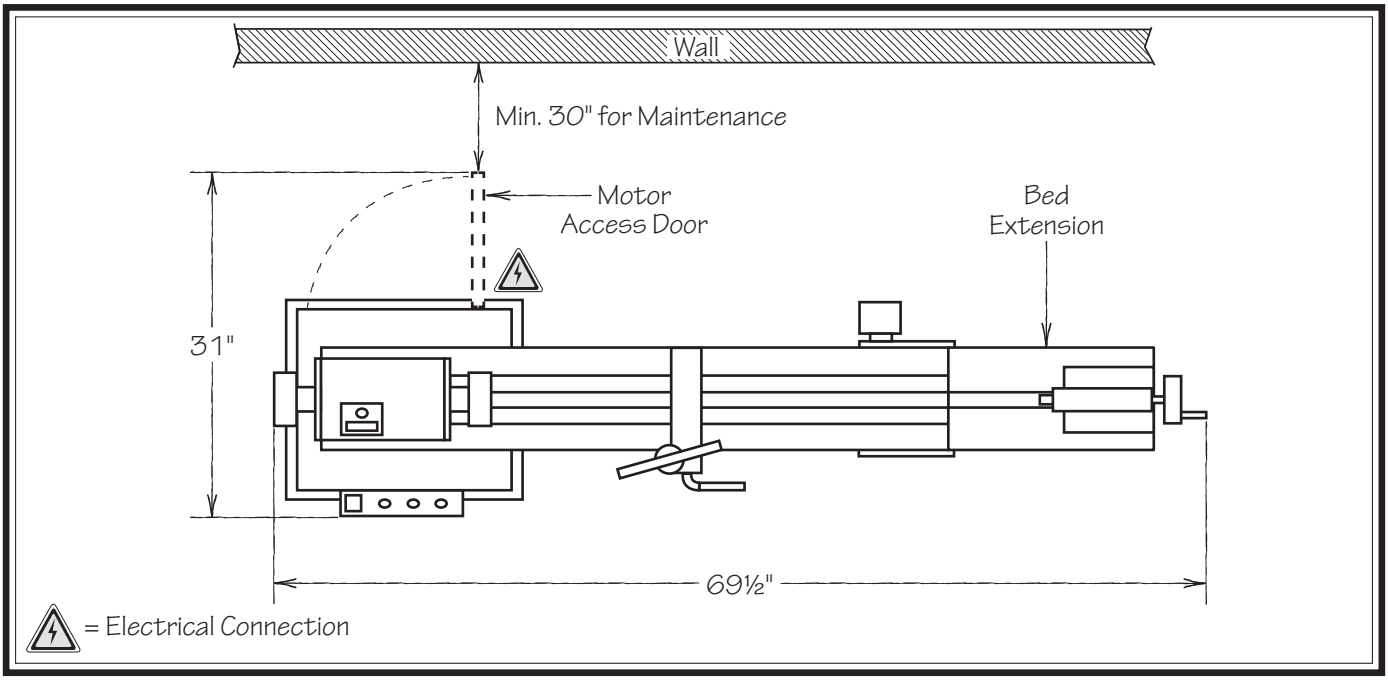
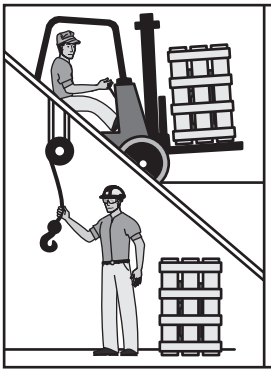


Figure 9. Working clearances.

Lifting & Moving



⚠WARNING

This machine and its parts are heavy! Serious personal injury may occur if safe moving methods are not used. To reduce the risk of a lifting or dropping injury, ask others for help and use power equipment.

The Model SB1126 requires the use of lifting equipment such as a forklift, engine hoist, or boom crane. DO NOT attempt to lift or move machine without necessary assistance from other people. Each piece of lifting equipment must be rated for **at least 775 lbs.** to support dynamic loads that may be applied while lifting. Review **Power Supply Requirements** on **Page 12**, then prepare a permanent location for the machine.

NOTICE

Position lifting straps towards headstock side of machine for balance. Headstock side is heavier than opposite side and may tip machine over if not fully supported.

To lift and move machine:

1. Move crate to desired location.

2. Remove crate top and sides, any blocks around machine base, then unbolt machine from shipping pallet.

3. Remove any support straps, parts inside machine, plastic wrap, and tie straps securing machine components.

4. With help from an additional person, position bed extension on alignment pins on right-hand end of bed (see **Figure 10**).

5. Secure bed extension with (4) M10-1.5 x 30 cap screws, 10mm lock washers, and 10mm flat washers (see **Figure 10**).

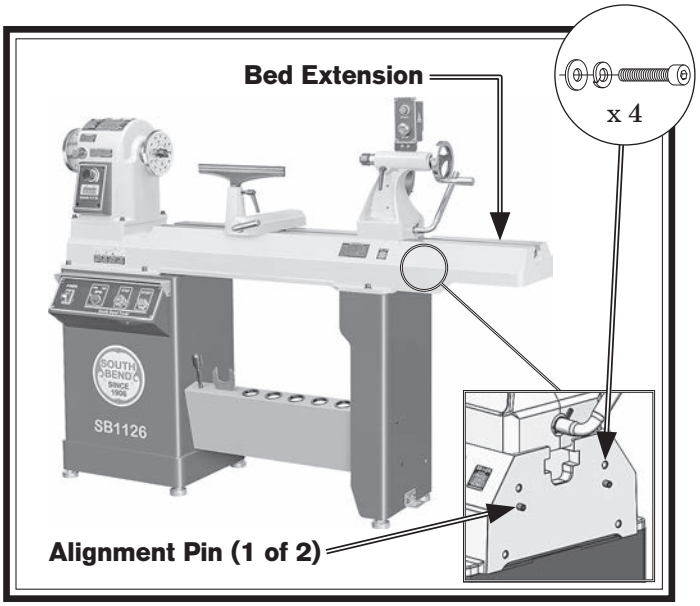


Figure 10. Bed extension installed on bed.

6. Move tailstock and tool rest base to far end of bed extension (see instructions in **Adjusting Tailstock** on **Page 23**, and **Adjusting Tool Rest** on **Page 27**), then lock them in place (see **Figure 11**).

7. Route lifting straps under bed as shown in **Figure 11**.

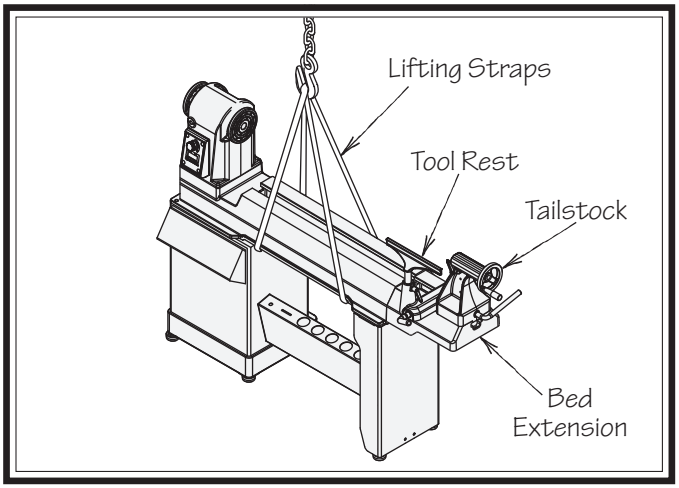


Figure 11. Location of lifting equipment and machine components.

8. With help from another person, use lifting equipment to raise machine just enough to clear shipping pallet, then remove pallet.

9. Lower machine into place, then adjust (6) adjustable feet to level machine.

Assembly

The machine must be fully assembled before it can be operated. Before beginning the assembly process, see **Required for Setup** on **Page 11** and gather all listed items. To ensure the assembly process goes smoothly, first clean any parts that are covered or coated in heavy-duty rust preventative (if applicable).

To assemble machine:

1. Attach secondary control panel to tailstock using (2) M8-1.25 x 20 cap screws and 8mm lock washers (see **Figure 12**).

2. Attach center holder to secondary control panel using (2) M6-1 x 12 button head cap screws (see **Figure 12**).

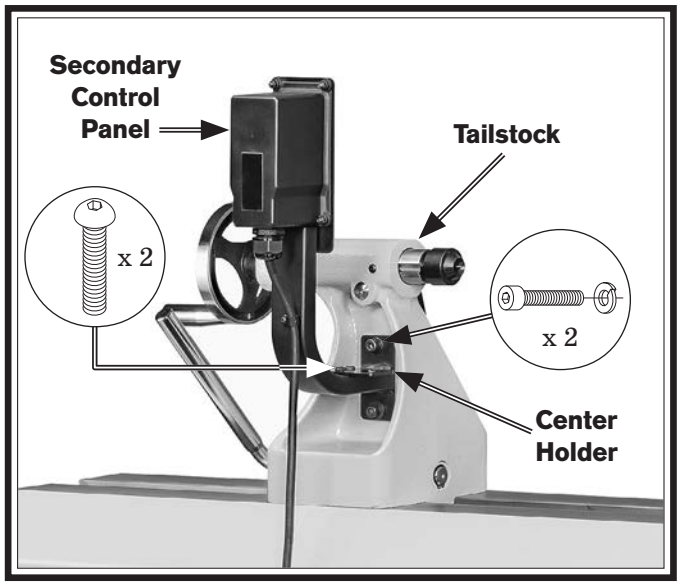


Figure 12. Secondary control panel installed.

3. Place tools and centers in tool holder as desired (see **Figure 13**).

Note: *Centers can also be placed in the center holder installed in **Step 2**.*

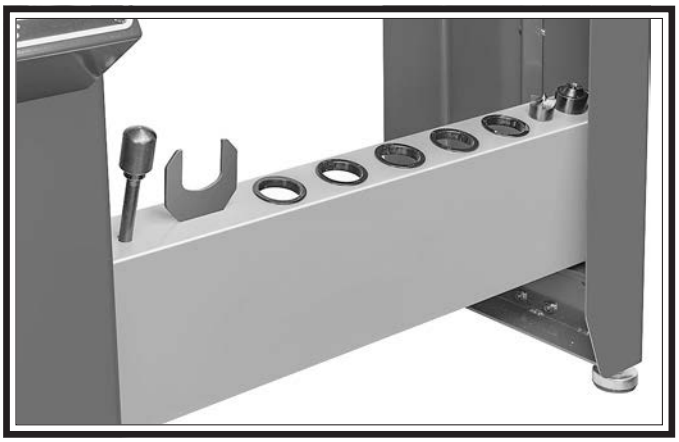


Figure 13. Tool holder with tools.

Note: *For installing bed extension on outboard side of machine, see instructions in **Outboard Turning** on **Page 33**.*

Test Run

After all preparation steps have been completed, the machine and its safety features must be tested to ensure correct operation. If you discover a problem with the operation of the machine or its safety components, do not operate it further until you have resolved the problem.

Note: *Refer to* ***Troubleshooting*** *on* ***Page 43*** *for solutions to common problems that may occur. If you need additional help, contact our Tech Support at (360) 734-1540.*

The test run consists of verifying the following:

- Motor powers up and runs correctly.
- STOP buttons work correctly.
- POWER switch disabling key works correctly.

⚠WARNING

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, machine until the information is understood.

⚠WARNING

DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run machine:

1. Clear all setup tools away from machine.

2. Turn spindle speed dial all the way counterclockwise, disengage spindle indexing pin, and move POWER switch to OFF position.

3. Connect machine to power by inserting power cord plug into a matching receptacle.

4. Twist each STOP button clockwise until it springs out (see **Figure 14**). This resets buttons so spindle can start.

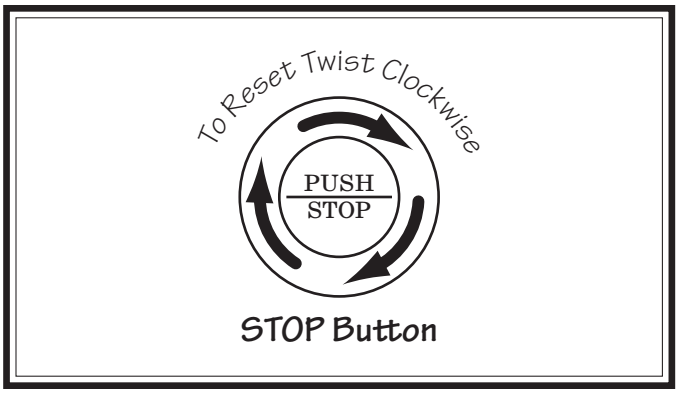


Figure 14. Resetting STOP button.

5. Move power switch to ON position, turn spindle direction switch to FOR, then press START button to start spindle rotation (see **Figure 15**).

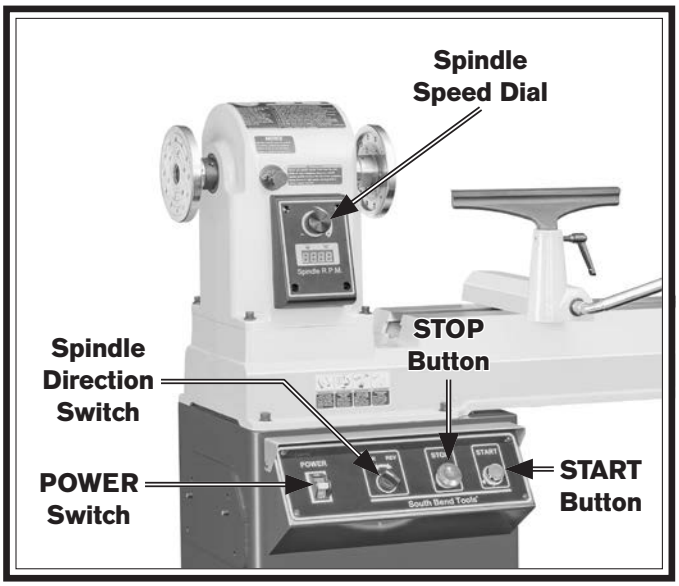


Figure 15. Location of main controls.

6. Verify motor starts up and runs smoothly without any unusual problems or noises.

   — When operating correctly, machine runs smoothly with little or no vibration or rubbing noises.

   — Investigate and correct strange or unusual noises or vibrations before operating machine further. Always disconnect machine from power when investigating or correcting potential problems.

7. Turn spindle speed dial all the way counterclockwise, then press STOP button on main control panel.

8. WITHOUT resetting STOP button, press START button. Machine should not start.

— If machine *does not* start, STOP button safety feature is working correctly.

— If machine *does* start (with STOP button pushed in), immediately disconnect power to machine. The STOP button safety feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

9. Twist main control panel STOP button clockwise until it springs out.

10. Turn spindle direction switch to REV, then press START button to start spindle rotation.

11. Verify spindle is operating correctly by slowly turning spindle speed dial clockwise.

— When operating correctly, spindle runs smoothly with little or no vibration or rubbing noises.

— Investigate and correct strange or unusual noises or vibrations before operating machine further. Always disconnect machine from power when investigating or correcting potential problems.

12. Turn spindle speed dial all the way counterclockwise, then press STOP button on secondary control panel (see **Figure 16**).

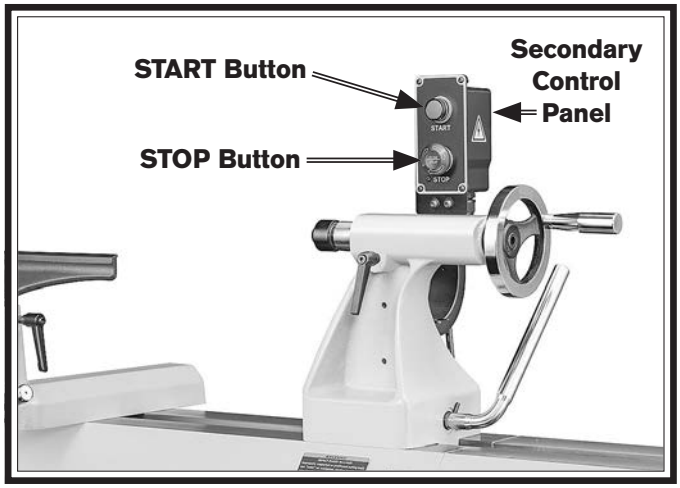


Figure 16. Location of secondary controls.

13. WITHOUT resetting STOP button, press START button. Machine should not start.

— If machine *does not* start, STOP button safety feature is working correctly.

— If machine *does* start (with STOP button pushed in), immediately disconnect power to machine. The STOP button safety feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

14. Twist STOP button on secondary control panel clockwise until it springs out.

15. Move POWER switch to OFF position.

16. Remove key from POWER switch, as shown in **Figure 17**.

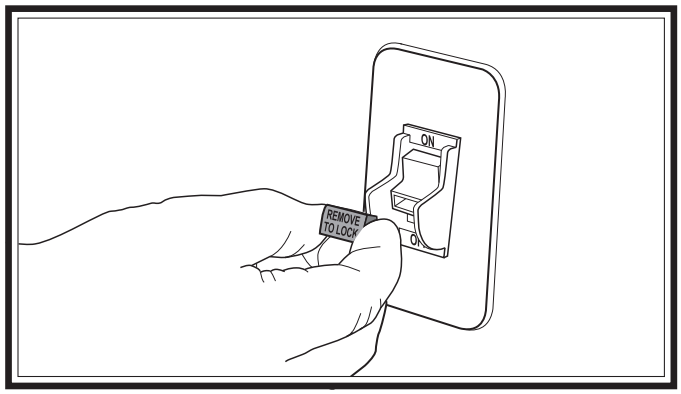


Figure 17. Removing key from POWER switch.

17. Move POWER switch to ON position and try to turn machine ***ON*** by pressing START button.

— If machine *does not* turn ***ON***, switch disabling feature is working correctly.

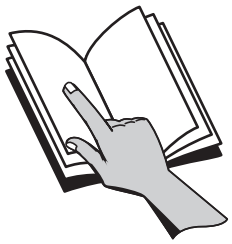
— If machine *does* turn ***ON***, immediately disconnect power to machine. Switch disabling feature is not working correctly. Call Tech Support for help.

18. Move POWER switch to OFF position and insert key.

Operation Overview

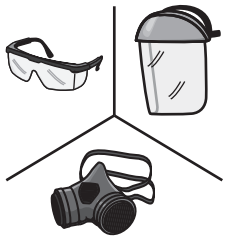
The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so they can more easily understand the controls discussed later in this manual.

Note: *Due to the generic nature of this overview, it is not intended to be an instructional guide for performing actual machine operations. To learn more about specific operations and machining techniques, seek training from people experienced with this type of machine, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.*



⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.



⚠WARNING

To reduce risk of eye injury from flying chips or lung damage from breathing dust, always wear safety glasses, a face shield, and a respirator when operating this machine.

NOTICE

If you are not experienced with this type of machine, WE STRONGLY RECOMMEND that you seek additional training outside of this manual. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this section, South Bend Tools will not be held liable for accidents caused by lack of training.

To complete a typical operation, the operator does the following:

1. Examines workpiece to make sure it is suitable for turning. No extreme bows, knots, or cracks should exist.
2. Prepares and trims up workpiece with a bandsaw or table saw to make it roughly concentric.
3. Installs workpiece between centers, or attaches it to faceplate or chuck.
4. Adjusts tool rest according to type of operation, and sets minimum clearance between workpiece and lip of tool rest to ¼"gap.
5. Rotates workpiece by hand to verify spindle and workpiece rotate freely throughout full range of motion.
6. Verifies pulley speed range is set for type of wood and size of workpiece installed.
7. Verifies spindle speed dial is turned all the way counterclockwise so spindle does not start in high speed.
8. Ties back long hair and clothing, and puts on safety glasses, face shield, and respirator.
9. Turns spindle direction switch to FOR or REV, starts spindle rotation, adjusts spindle speed, and carefully begins turning operation, keeping chisel against tool rest entire time it is cutting.
10. Stops spindle rotation and turns machine ***OFF*** when operation is complete.

Stock Inspection & Requirements

Some workpieces are not safe to turn or may require modification before they are safe to turn. Before turning, inspect all workpieces for the following:

- **Workpiece Type:**
  This machine is intended for turning natural wood products. Never attempt to turn any composite wood materials, plastics, metal, stone, or rubber workpieces; turning these materials can lead to machine damage or severe injury.

- **Foreign Objects:**
  Nails, staples, dirt, rocks and other foreign objects are often embedded in wood. While cutting, these objects can become dislodged and hit the operator, cause tool grab, or break the turning tool, which might then fly apart. Always visually inspect your workpiece for these items. If they can't be removed, DO NOT turn the workpiece.

- **Large/Loose Knots:**
  Loose knots can become dislodged during the turning operation. Large knots can cause a workpiece to completely break in half during turning and cause machine damage and injury. Choose workpieces that do not have large/loose knots.

- **Excessive Warping:**
  Workpieces with excessive bowing or twisting are unstable and unbalanced. Never turn these workpieces at high speed, or instability will be magnified and the workpiece can be ejected from the lathe causing injury. Only turn concentric workpieces!

- **Wet or "Green" Stock:**
  Turning wood with a moisture content over 20% can cause increased wear on tooling.

Adjusting Tailstock

The Model SB1126 tailstock is equipped with a cam-action clamping system to secure it to the lathe bed. When the lever is tightened, a clamping plate lifts up underneath the bed and secures the tailstock in place. The tailstock can be positioned anywhere along the lathe bed.

⚠WARNING

If clamping plate is not tight enough for lock lever to fully secure tailstock base, it could unexpectedly slip during operation and workpiece could be ejected at high speed. Failure to heed this warning could result in serious personal injury.

To adjust tailstock:

1. Loosen tailstock lock lever and move tailstock to desired position along bed, as shown in **Figure 18**.

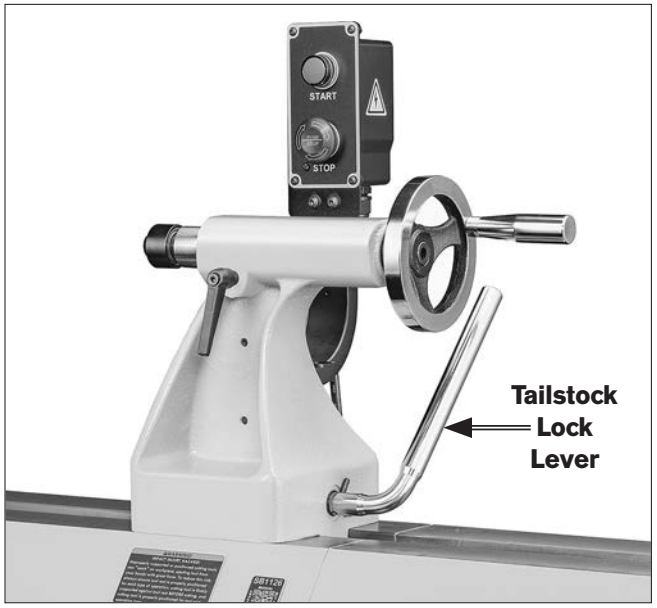


Figure 18. Tailstock lock lever location.

2. Tighten tailstock lock lever to secure tailstock to bed.

   Note: *Large clamping plate and hex nut underneath tailstock will require occasional adjusting to ensure proper clamping pressure of tailstock to bed. Turn this hex nut in small increments to fine-tune clamping pressure.*

Installing/Removing Tailstock Center

The included live center installs into the tailstock quill with an MT#2 tapered fit (see **Figure 19**).

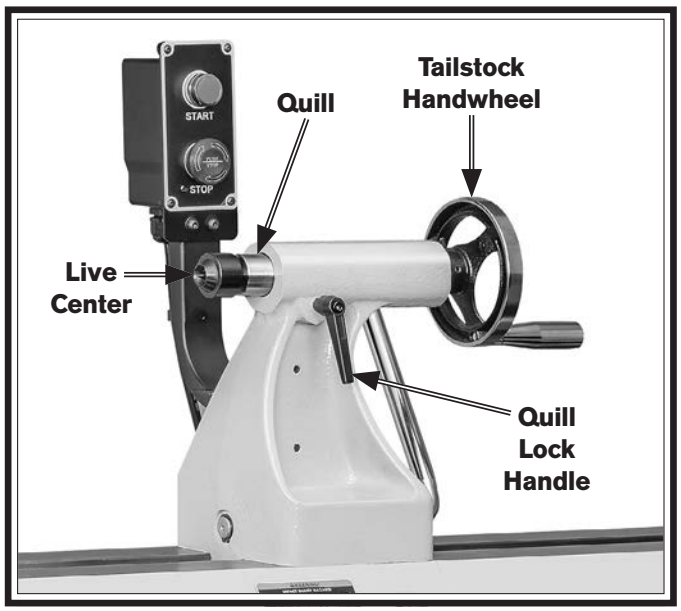


Figure 19. Location of tailstock components.

Items Needed	Qty
Heavy Leather Gloves	1 Pr.
Clean Shop Rags	As Needed
Disposable Gloves	As Needed
Acetone/Lacquer Thinner	As Needed

Installing Tailstock Center

1. Loosen quill lock handle and rotate handwheel until quill extends about 1".

2. Make sure mating surfaces of center and quill are free of debris and oily substances before inserting center to ensure a good fit and reduce runout.

3. Firmly insert tapered end of center into tailstock quill (see **Figure 20**).

4. Make sure quill set screw is aligned with quill keyway to ensure tailstock center and quill will not freely rotate under load (see **Figure 20**).

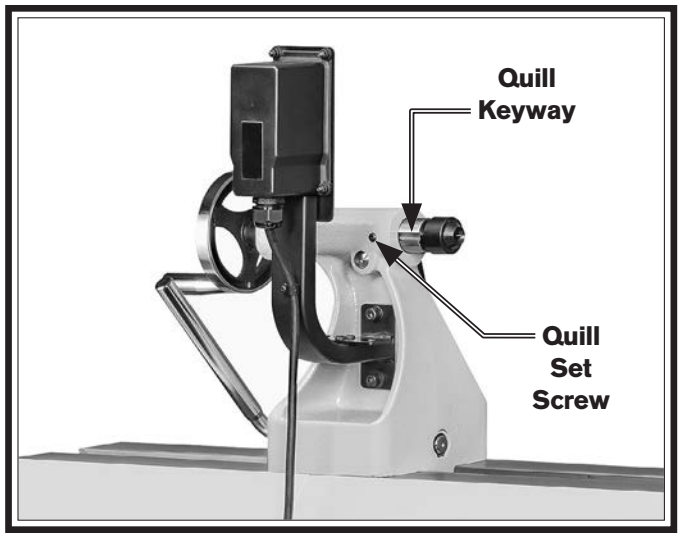


Figure 20. Quill set screw aligned with quill keyway.

5. Make sure center is securely installed by attempting to pull it out by hand—a properly installed center will not pull out easily.

6. Secure quill in place by tightening quill lock handle.

Removing Tailstock Center

1. Loosen quill lock handle.

2. Hold a clean rag under spindle or wear a glove to catch center when you remove it.

3. Rotate tailstock handwheel counterclockwise—tailstock quill will retract back into quill, causing center to be forced out.

⚠WARNING

Tailstock quill must always be locked in place during lathe operation. Before tightening quill lock handle, quill keyway must be properly aligned. Otherwise, workpiece can be ejected from lathe at high speed causing serious personal injury or death.

Installing/Removing Headstock Center

The included spur center installs into the headstock spindle with an MT#2 tapered fit.

Note: *The process of installing/removing the headstock center is the same for both the outboard and inboard ends of the headstock.*

Items Needed	Qty
Knockout Tool	1
Heavy Leather Gloves	1 Pr.
Clean Shop Rags	As Needed
Acetone/Lacquer Thinner	As Needed

Installing Headstock Center

1. DISCONNECT MACHINE FROM POWER!

2. Make sure mating surfaces of center and spindle are free of debris and oily substances before inserting center to ensure a good fit and reduce runout.

3. Firmly insert tapered end of center into spindle, then push it in with a quick, firm motion (see **Figure 21**).

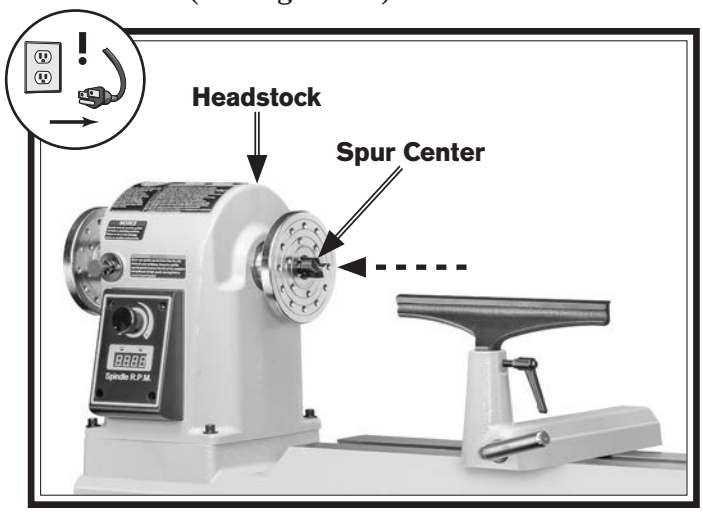


Figure 21. Center installed in headstock spindle.

4. Make sure center is securely installed by attempting to pull it out by hand—a properly installed center will not pull out easily.

Removing Headstock Center

1. DISCONNECT MACHINE FROM POWER!

2. Hold a clean rag under spindle or wear heavy leather gloves to catch center when removed.

3. Insert knockout tool through opposite end of spindle and firmly tap back of center, catching it as it falls (see **Figure 22**).

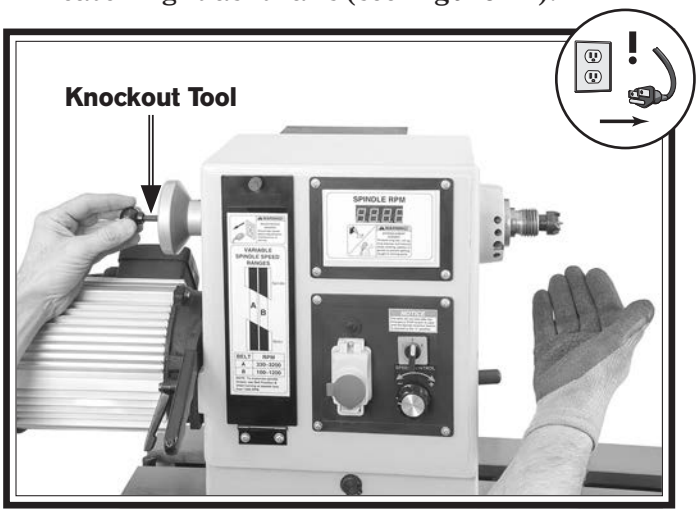


Figure 22. Example of removing headstock center with knockout tool.

Removing/Installing Faceplate

These instructions cover removing and installing the faceplate. To mount a workpiece to your faceplate, see **Faceplate Turning** on **Page 32**.

Tools Needed	Qty
Hex Wrench 3mm	1
Spindle Wrench 1¾"	1

Removing Faceplate

1. DISCONNECT MACHINE FROM POWER!

2. Engage spindle indexing pin on headstock (see **Figure 23**).

3. Loosen (2) set screws on faceplate, as shown in **Figure 23**.

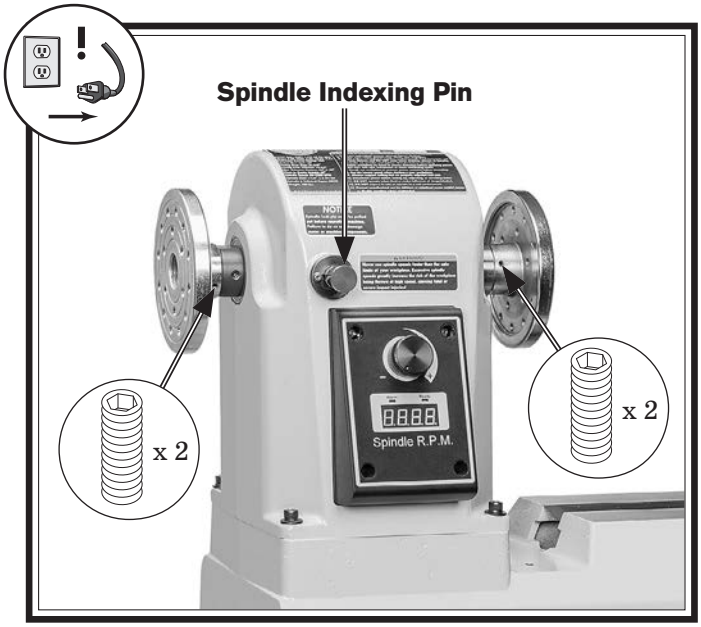


Figure 23. Faceplates installed on spindle shaft.

4. Rotate faceplate counterclockwise until it is removed.

   Note: *If spur center is installed, it will be remain in place during this process.*

5. Disengage spindle indexing pin before resuming operations.

⚠WARNING

To prevent faceplate and workpiece separating from spindle during operation, headstock faceplate MUST be firmly threaded onto spindle and secured in place by fully tightening (2) faceplate set screws. If these instructions are not properly performed, serious personal injury could occur.

⚠WARNING

Do not start lathe with indexing pin inserted into spindle; otherwise machine damage, property damage, or serious personal injury could occur.

Installing Faceplate

1. DISCONNECT MACHINE FROM POWER!

2. Engage spindle indexing pin on headstock (see **Figure 23**).

3. Loosen (2) set screws on faceplate, then thread faceplate clockwise onto spindle shaft until faceplate is secure against shoulder on spindle shaft (see **Figure 23**).

4. Tighten (2) set screws on faceplate to secure.

5. Disengage spindle indexing pin before resuming operations.

Adjusting Tool Rest

The tool rest assembly consists of two components: the tool rest base (or banjo) and the tool rest. The tool rest base moves forward/backward and along the length of the lathe bed. The tool rest rotates and moves up and down in the tool rest base. Locks for both components allow you to secure the tool rest in position after making these adjustments.

When adjusting the tool rest, position it as close as possible to the workpiece without actually touching it. This maximizes support where the cutting occurs and minimizes leverage, reducing the risk of injury if a "catch" occurs. Many woodturners typically set the height of the tool rest ⅛" above or below the centerline of the workpiece, depending on their height, the type of tool they are using, and the type of operation they are performing.

As a rule of thumb: For most (spindle) turning operations, the cutting tool should contact the workpiece slightly above centerline. For most inside (bowl) turning operations, the cutting tool should contact the workpiece slightly below centerline.

Keeping all these factors in mind, your main goal when adjusting the tool rest should be providing maximum support for the type of tool being used, in a position that is safe and comfortable for you.

⚠WARNING

Improperly supported or positioned cutting tools can "catch" on workpiece, ejecting tool from your hands with great force. To reduce this risk, always ensure tool rest is properly positioned for each type of operation, cutting tool is firmly supported against tool rest BEFORE cutting, and cutting tool is properly positioned to cut at the correct angle for tool and operation type.

To adjust tool rest:

1. Loosen tool rest base lock lever and move tool rest assembly to desired position on lathe bed, as shown in **Figure 24.**

   Note: *To maximize support, tool rest base should always be locked on both sides of bed. Never pull tool rest so far back that it is only secured on one side.*

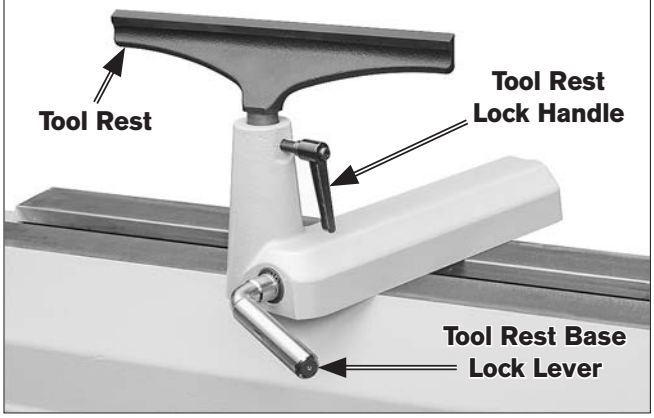


Figure 24. Tool rest assembly components.

⚠WARNING

If clamping plate is not tight enough for lock lever to fully secure tool rest base, or lock handle is not tight enough to fully secure tool rest, they could unexpectedly slip during operation and draw turning tool and your hand into spinning workpiece. Failure to heed this warning could result in serious personal injury.

2. Rotate tool rest base lock lever until it feels tight to secure tool rest base on bed.

   Note: *Large clamping plate and hex nut underneath tool rest base will require occasional adjusting to ensure proper clamping pressure of tool rest assembly to bed. Turn this hex nut in small increments to fine tune clamping pressure as needed.*

3. Loosen tool rest lock handle (see **Figure 24**).

4. Position tool rest in desired location.

5. Tighten tool rest lock handle to secure tool rest in position.

Changing Speed Range

The Model SB1126 has two speed ranges for varied turning operations. These ranges are selected by changing belt positions on the motor and spindle pulleys (see **Figure 25**).

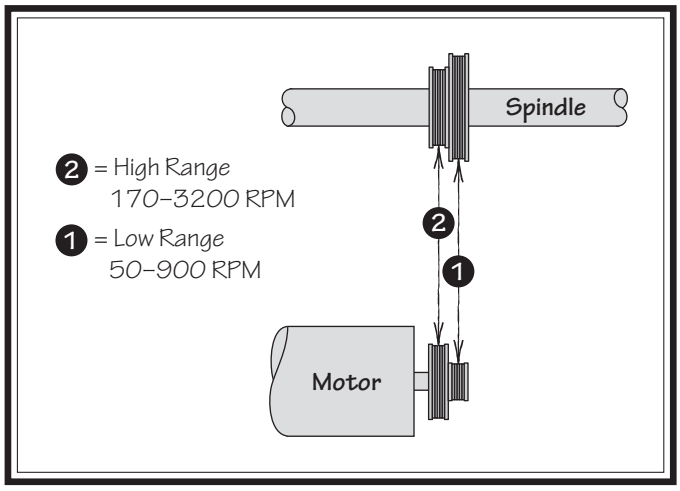


Figure 25. Speed range belt positions.

High range **(2)** is best when turning a workpiece where a clean finish is required and only light cuts are made. Low range **(1)**, which has more torque, is best when turning a workpiece where a lot of material must be removed and a rough finish does not matter. Use low range for spindle speeds of 900 RPM or less. Use the speed dial to adjust spindle speed within each range.

Refer to the chart below to choose the appropriate RPM for your operation. Choose the speed range that will include the selected RPM.

Workpiece Diameter	Roughing RPM	Cutting RPM	Finishing RPM
Under 2"	1520	3200	3200
2–4"	760	1600	2480
4–6"	510	1080	1650
6–8"	380	810	1240
8–10"	300	650	1000
10–12"	255	540	830
12–14"	220	460	710
14–16"	190	400	620

⚠WARNING

Always choose correct spindle speed for an operation. Using wrong speed may lead to workpiece being thrown at high speed, causing severe or fatal impact injuries.

To change speed range:

1. DISCONNECT MACHINE FROM POWER!

2. Open belt access and motor access doors on rear of machine (see **Figure 26**).

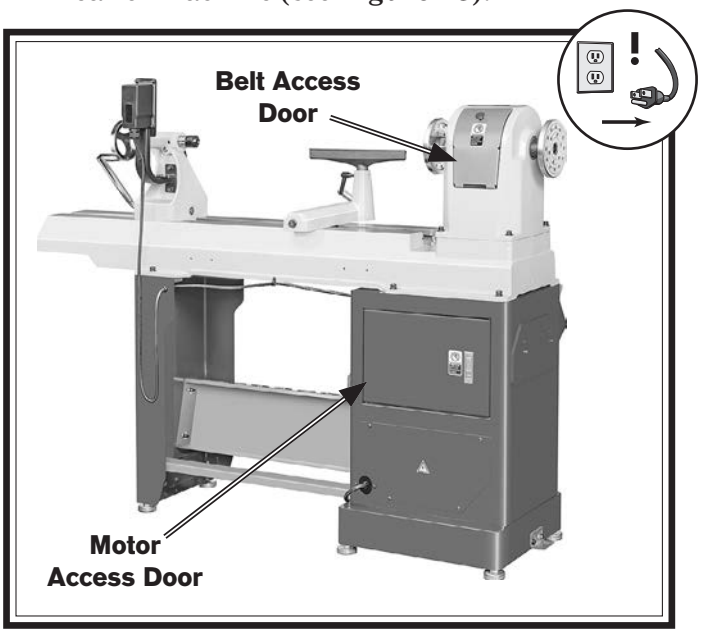


Figure 26. Belt and motor access locations.

3. Loosen belt-tension lock handle on motor mount (see **Figure 27**).

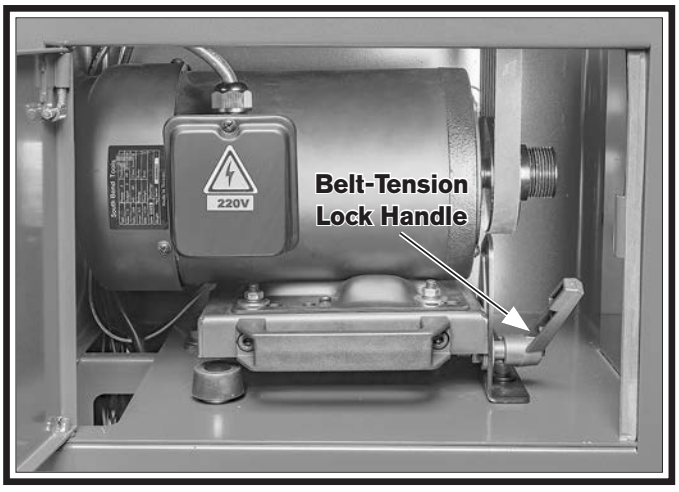


Figure 27. Belt-tension lock handle location.

4. Lift motor assembly all the way up, then tighten belt-tension lock handle to hold motor in place.

5. Roll belt onto desired set of pulleys, as shown in **Figure 25** on **Page 28**.

6. Loosen belt-tension lock handle and lower motor.

7. Apply downward pressure on motor assembly to properly tension drive belt, then tighten belt-tension lock handle.

   Note: *When properly tensioned, belt should deflect about 1/8" when moderate pressure is applied to belt mid-way between upper and lower pulley, as shown in* ***Figure 28****.*

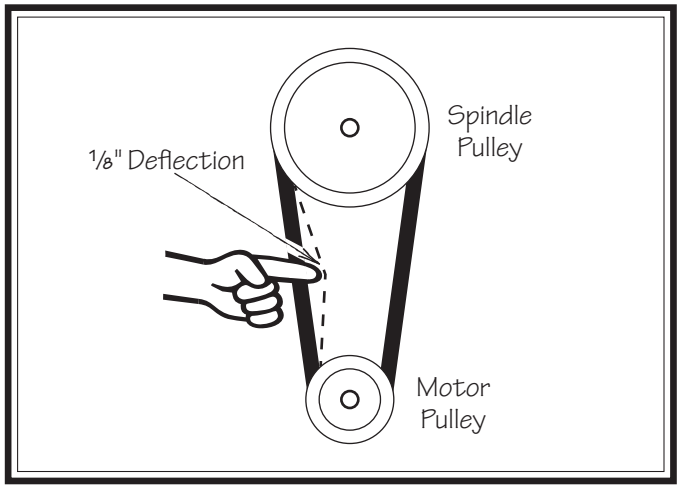


Figure 28. Testing belt deflection.

8. Close belt access and motor access doors on rear of machine.

Indexing

⚠WARNING

Do not start lathe with indexing pin inserted into spindle; otherwise machine damage, property damage, or serious personal injury could occur.

Indexing on a lathe is typically used for workpiece layout and other auxiliary operations that require equal distances around the workpiece circumference, such as clock faces or inlays.

By inserting the spindle indexing pin into one of the 36 indices of the spindle, the workpiece can be positioned in 10° increments, as shown in the figures below.

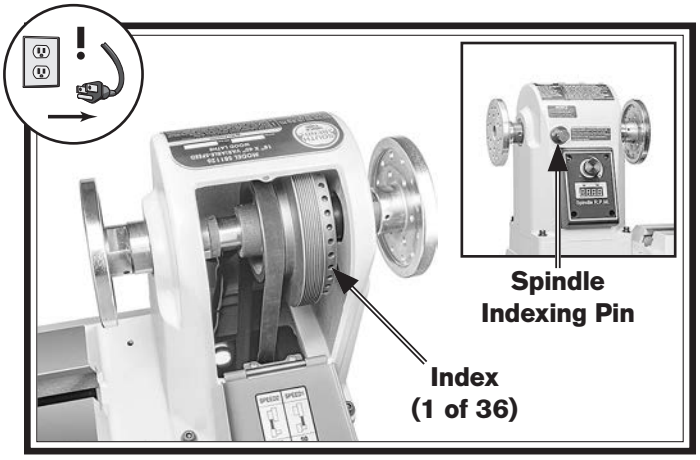


Figure 29. Spindle indexing pin and indices.

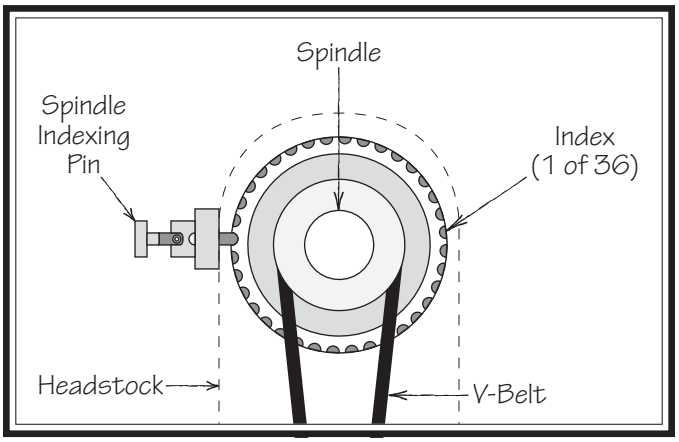


Figure 30. Indexing configuration.

Spindle Turning

⚠WARNING

To reduce risk of eye injury from flying chips or lung damage from breathing dust, always wear safety glasses, a face shield, and a respirator when operating this machine.

Spindle turning is the operation performed when a workpiece is mounted between centers in the headstock and tailstock, as shown in **Figure 31**. Bowls, table legs, tool handles, and candlesticks are typical projects where this operation is used.

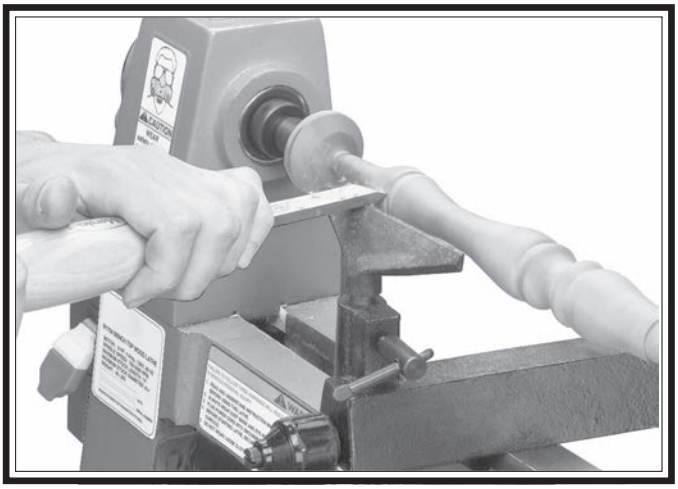


Figure 31. Typical spindle turning operation.

Tools Needed	Qty
Precision Ruler	1
Wood Mallet	1
Power Drill	1
Drill Bit ¼"	1
Tablesaw/Bandsaw	1

Spindle Turning

1. Find center point of both ends of workpiece by drawing diagonal lines from corner to corner across ends (see **Figure 32**).

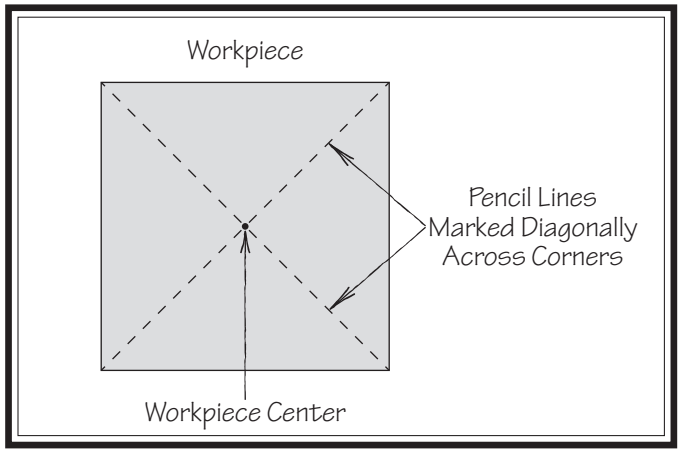


Figure 32. Workpiece marked diagonally from corner to corner to determine center.

2. Make a center mark by using a wood mallet and tapping point of spur center into center of workpiece on both ends.

3. Using a ¼" drill bit, drill a ¼" deep hole at center mark on end of workpiece to be mounted on headstock spur center.

4. To help embed spur center into workpiece, cut ¼" deep saw kerfs in headstock end of workpiece along diagonal lines marked in **Step 1**.

5. If your workpiece is over 2" x 2", cut corners off workpiece lengthwise to make turning safer and easier (see **Figure 33**).

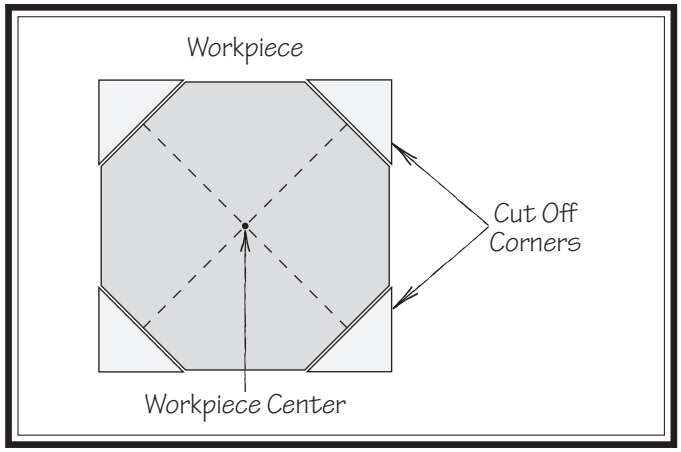


Figure 33. Corners of workpiece removed.

6. Drive spur center into headstock-end center mark of workpiece with a wood mallet to embed it at least ¼" into workpiece (see **Figure 34**).

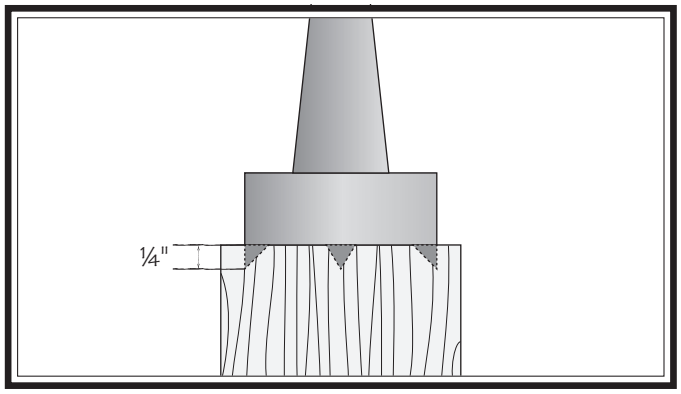


Figure 34. Spur center properly embedded.

7. With workpiece still attached, insert spur center into headstock spindle (see **Installing/ Removing Headstock Center** on **Page 25** for additional instructions).

Note: *Use tool rest to support opposite end of workpiece so that workpiece and spur center do not separate during installation.*

8. Install live center into tailstock quill and tighten quill lock handle to lock quill in position (see **Page 24** for additional instructions).

9. Slide tailstock toward workpiece until point of live center touches workpiece center mark, then lock tailstock in this position.

10. Loosen quill lock handle and rotate tailstock handwheel to push live center into workpiece at least ¼".

⚠WARNING

Do not press workpiece too firmly with tailstock, or bearings will bind and overheat. Do not adjust tailstock too loosely, or workpiece will spin off lathe. Use good judgment and care, otherwise serious personal injury could result from workpiece being ejected at high speeds.

11. Properly adjust tool rest to workpiece (see **Adjusting Tool Rest** on **Page 27**).

12. Before beginning lathe operation, rotate workpiece by hand to ensure there is safe clearance on all sides.

⚠WARNING

Keep lathe tool resting on tool rest the ENTIRE time it is in contact with workpiece or when preparing to make contact between lathe tool and workpiece. Otherwise, spinning workpiece could force lathe tool out of your hands or entangle your hands with workpiece. Failure to heed this warning could result in serious personal injury.

Spindle Turning Tips

- When turning the lathe ***ON***, stand away from the path of the spinning workpiece until the spindle reaches full speed and you can verify that the workpiece will not come loose.
- Use the slowest speed when starting or stopping the lathe.
- Select the right speed for the size of the workpiece that you are turning (refer to **Changing Speed Range** on **Page 28**).
- Keep the turning tool on the tool rest the ENTIRE time that it is in contact with the workpiece.
- Learn the correct techniques for each tool you will use. If you are unsure about how to use the lathe tools, read books or magazines about lathe techniques, and seek training from experienced and knowledgeable lathe users.

Faceplate Turning

⚠WARNING

To reduce risk of eye injury from flying chips or lung damage from breathing dust, always wear safety glasses, a face shield, and a respirator when operating this machine.

Faceplate turning is when a workpiece is mounted to the faceplate, which is then mounted to the headstock spindle, as shown in **Figure 35**. This type of turning is usually done with open-faced workpieces like bowls or plates.

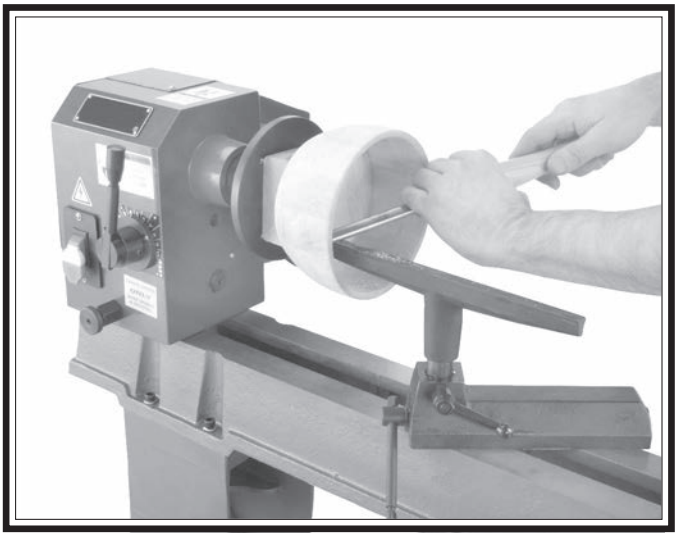


Figure 35. Typical faceplate turning operation.

Mounting Workpiece on Faceplate

Items Needed	Qty
Precision Ruler	1
Drill Bit ¼"	1
Power Drill	1
Tablesaw/Bandsaw	1
Wood Screws	As Needed

To mount workpiece on faceplate:

1. Mark workpiece center in same manner as described in **Spindle Turning** on **Page 30**.

   Note: *Cut off corners of workpiece to make it as close to "round" as possible, as described in **Step 5** of **Spindle Turning** on **Page 30**.*

2. Center faceplate on workpiece and attach it (see **Figure 36**) with wood screws.

Figure 36. Typical attachment of faceplate to workpiece.

NOTICE

Only use screws with non-tapered heads (see Figure 37) to attach faceplate to the workpiece. Screws with tapered heads can split faceplate or snap off during operation.

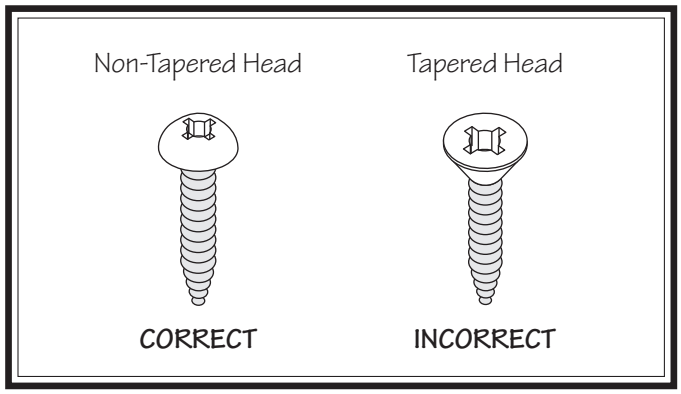


Figure 37. Correct and incorrect screw types.

3. Thread and secure faceplate onto headstock spindle.

   — If wood screws cannot be placed in workpiece, faceplate can be mounted to a backing block attached to workpiece (see **Mounting Workpiece on Backing Block** on **Page 33**).

Mounting Workpiece on Backing Block

Items Needed	Qty
Scrap Wood	As Needed
Precision Ruler	1
Power Drill	1
Drill Bit ¼"	1
Clamp	1
Wood Glue	As Needed

To mount workpiece on backing block:

1. Make backing block from a suitable size piece of scrap wood.

   Note: *Faces of backing block must be flat and parallel with each other, or uneven surfaces will cause workpiece to spin eccentrically, causing unnecessary vibration and runout. It is best to mount backing block to faceplate and turn other surface flat prior to mounting.*

2. Locate and mark center of workpiece and backing block.

3. Drill a ¼" hole through center of backing block.

4. Look through hole in backing block to line up center with workpiece, then glue and clamp backing block to workpiece.

   Note: *Allow glue to cure according to manufacturer's instructions.*

5. Follow **Steps 1–3** under **Mounting Workpiece on Faceplate** (see **Page 32**) to attach backing block to faceplate.

Outboard Turning

⚠WARNING

To reduce risk of eye injury from flying chips or lung damage from breathing dust, always wear safety glasses, a face shield, and a respirator when operating this machine.

Outboard turning is a variation of faceplate turning and is accomplished by removing the bed extension and installing it on the outboard end of the lathe, allowing for a larger turning capacity. Another method would be to use a floor-mounted tool rest, which would provide the maximum possible amount of swing.

Items Needed	Qty
Additional Person	1
Hex Wrench 8mm	1
Bed Extension	1
Model SB1129 Outboard Tool Rest Base	1
Tool Rest	1
Cap Screws M10-1.5 x 30	4
Lock Washers 10mm	4
Flat Washers 10mm	4

To outboard turn:

1. DISCONNECT MACHINE FROM POWER!

2. With help from an additional person, remove bed extension (if installed) and position on alignment pins on outboard end of machine (see **Figure 38**).

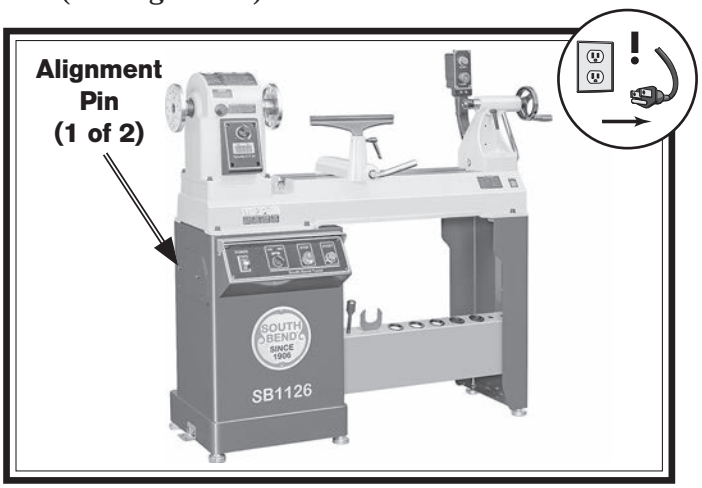


Figure 38. Location of alignment pins.

3. Secure bed extension with (4) M10-1.5 x 30 cap screws, 10mm lock washers, and 10mm flat washers (see **Figure 39**).

4. Install Model SB1129 Outboard Tool Rest Base on bed extension (see **Figure 39**).

Note: *To maximize support, tool rest base should always be locked on both sides of bed. Never pull tool rest so far back that it is only secured on one side.*

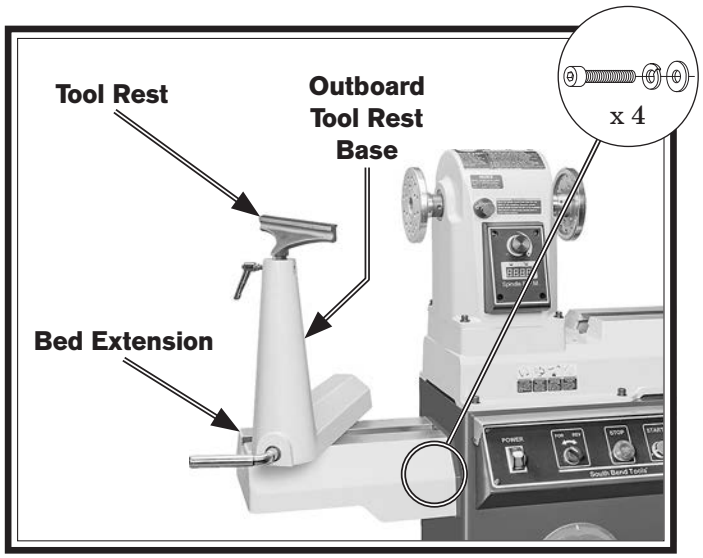


Figure 39. Outboard bed extension installed with optional SB1129 tool rest base.

5. Remove tool rest from SB1126 tool rest base and install in outboard tool rest base.

⚠WARNING

When outboard turning, ALWAYS use a tool rest on bed extension or a floor-mounted tool rest, and keep tool in contact with rest during all turning operations. Failure to do so could cause tool to be pulled out of operator's control and ejected at high speed.

Sanding/Finishing

After the turning operations are complete, the workpiece can be sanded and finished before removing it from the lathe (see **Figure 40**).

Note: *Whenever sanding or finishing, move tool rest holder out of the way to increase personal safety and gain adequate working room.*

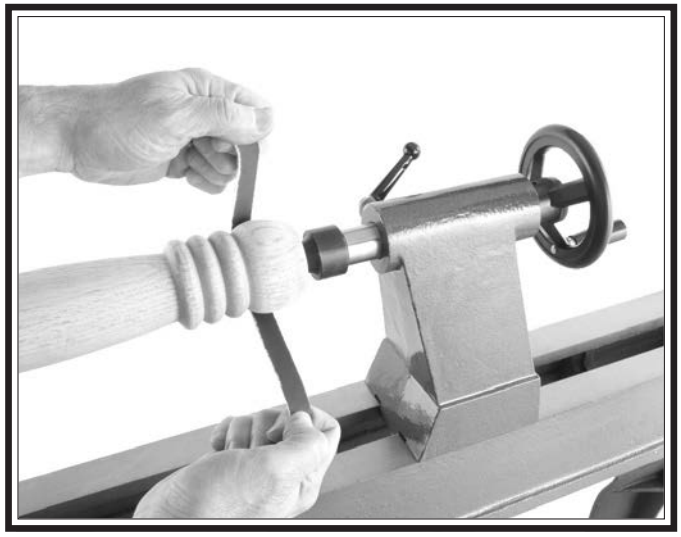
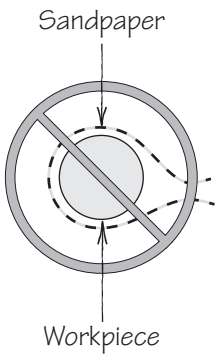


Figure 40. Typical sanding operation.



⚠WARNING

Wrapping sandpaper completely around workpiece could pull your hands into moving workpiece and may cause serious injury. Never wrap sandpaper or finishing materials completely around workpiece.

Selecting Turning Tools

Lathe tools come in a variety of shapes and sizes, and usually fall into five major categories:

Gouges

- Mainly used for rough cutting, detail cutting, and cove profiles. The rough gouge is a hollow, double-ground tool with a round nose, and the detail gouge is a hollow, double-ground tool with either a round or pointed nose.

Figure 41. Example of a gouge.

Skew Chisel

- A versatile tool that can be used for planing, squaring, V-cutting, beading, and parting off. The skew chisel is flat, double-ground with one side higher than the other (usually at an angle of 20°–40°).

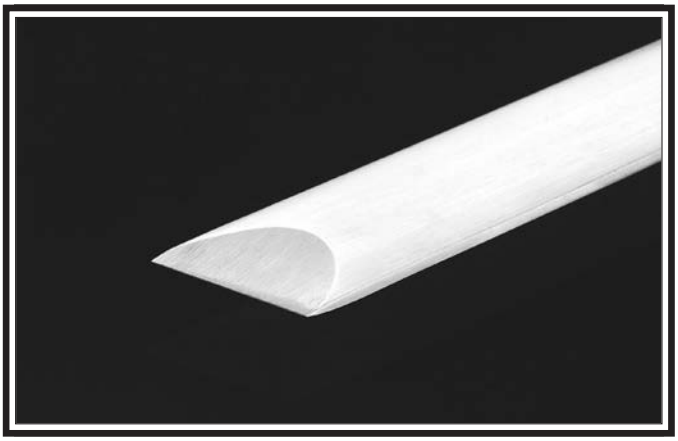


Figure 42. Example of a skew chisel.

Scrapers

- Typically used where access for other tools is limited, such as hollowing operations. This is a flat, double-ground tool that comes in a variety of profiles (round nose, spear point, square nose, etc.) to match many different contours.

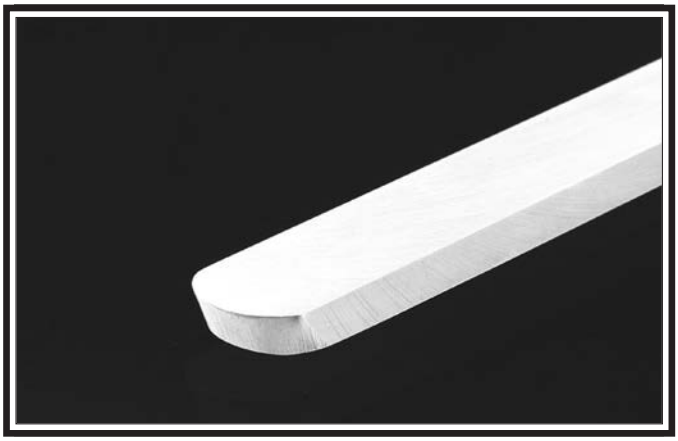


Figure 43. Example of a round nose scraper.

Parting Tools

- Used for sizing and cutting off work. This is a flat tool with a sharp pointed nose that may be single- or double-ground.

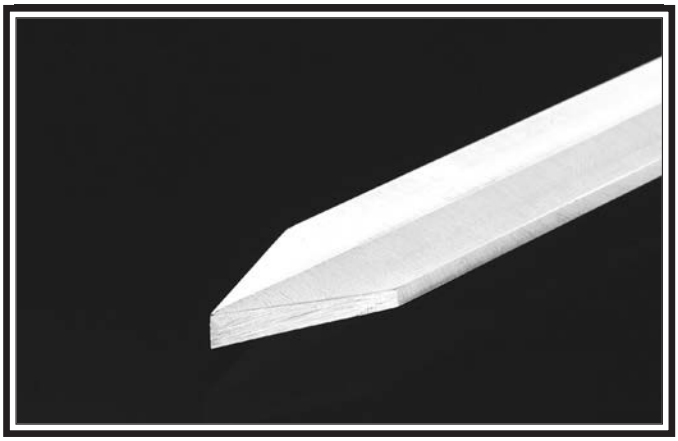


Figure 44. Example of a parting tool.

Specialty Tools

- These are unique, special function tools to aid in hollowing, bowl making, cutting profiles, etc.

Accessories

This section includes the most common accessories available for your machine, which are available through our exclusive dealer, **Grizzly Industrial, Inc.**, at **grizzly.com**.

⚠WARNING

Installing unapproved accessories may cause machine to malfunction, resulting in serious personal injury or machine damage. To reduce this risk, only install accessories recommended by South Bend or Grizzly.

NOTICE

Refer to Grizzly's website or latest catalog for additional recommended accessories.

Recommended Metal Protectants

G5562—SLIPIT® 1 Qt. Gel
G5563—SLIPIT® 11 Oz. Spray

Figure 45. Recommended products for protecting unpainted cast iron/steel part on machinery.

T30024—Powered Respirator Kit

Breathing wood dust could cause severe respiratory illnesses. This kit is a lightweight, comfortable, and easy-to-carry device for protecting the airway from small particulates.

Figure 46. T30024 Powered Respirator Kit.

T32323—Woodturners Face Shield

Featuring a quick adjustment headpiece, this face shield is perfect for any woodturning project. Made of durable poly-carbonate, this shield provides security from flying chips and debris from the front and sides.

Figure 47. T32323 Woodturners Face Shield.

D3789—Lathe Chisel Set, 6-Pc.
Beautiful black walnut handles are contoured to fit your hands in any position, and high-speed steel (HSS) blades hold their edges for producing continuous ribbons of wood. Includes all of the standard lathe tools plus a 22¾" long ½" bowl gouge for all-day leverage and control. This set also comes with a sturdy aluminum case.

Figure 48. D3789 Lathe Chisel Set.

T25611—The Missing Shop Manual: Lathe
The Missing Shop Manual explains the basics of safety and setup, and will help you get the most for your money by getting the most from your equipment. From sharpening your tools to faceplate, bowl, and spindle turning, you'll discover the techniques and tips you need to maximize your lathe's performance.

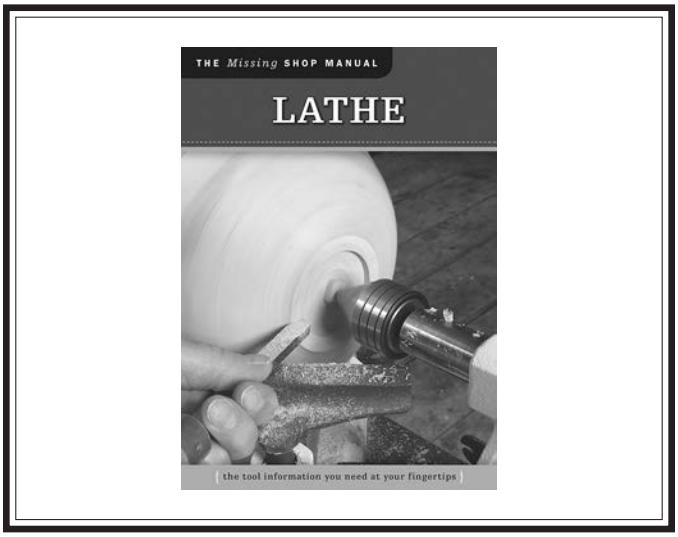
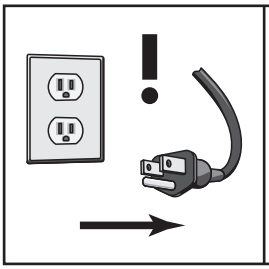


Figure 49. T25611 The Missing Shop Manual: Lathe.

SB1129—Outboard Tool Rest Base
Designed specifically for the SB1126 18" x 40" Variable-Speed Wood Lathe, this tool rest base makes outboard turning easier and safer. Sized for tool rests with a 1" post diameter, the Model SB1129 includes an outboard tool rest base and lock lever, as well as a tool rest lock handle (tool rest not included). Provides a 15" outboard swing over tool rest base that allows the turner to keep the turning tool as close as possible to the shape of the workpiece for better tool control and increased safety.

Figure 50. SB1129 Outboard Tool Rest Base.

Maintenance Schedule



⚠WARNING

Always disconnect machine from power before performing maintenance or serious personal injury may result.

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

To minimize your risk of injury and maintain proper machine operation, shut down the machine immediately if you ever observe any of the items below, and fix the problem before continuing operations:

Ongoing

- Loose faceplate or mounting bolts.
- Damaged center or tooling.
- Worn or damaged wires.
- Loose machine components.
- Any other unsafe condition.

Daily

- Clean off dust buildup.
- Clean and lubricate lathe bed, spindle, and quill.

Monthly

- Belt tension, damage, or wear.
- Clean out dust buildup from machine interior.

Cleaning

Cleaning the Model SB1126 is relatively easy. Vacuum excess wood chips and sawdust, and wipe off the remaining dust with a dry cloth. If any resin has built up, use a resin dissolving cleaner to remove it. Treat all unpainted cast iron and steel with a non-staining lubricant after cleaning.

Unpainted Cast Iron

Protect the unpainted cast iron surfaces on the bed by wiping the bed clean after every use—this ensures moisture from wood dust does not remain on bare metal surfaces. Keep beds rust-free with regular applications of products like SLIPIT® **(Page 36)**.

Bare metal surfaces can quickly develop surface rust if not coated. Machinery stored near windows in direct sunlight or where paints, thinners, or certain gasses are open to the air can experience bleaching, discoloring of paint or yellowing of clear plastic guards.

Lubrication

Since all bearings on the Model SB1126 are sealed and permanently lubricated, simply leave them alone until they need to be replaced. DO NOT lubricate them.

Wipe a lightly oiled shop rag on the outside of the headstock spindle. DO NOT allow any oil to get on the inside mating surfaces of the spindle.

Use the tailstock handwheel to extend the quill out to the furthest position and apply a thin coat of white lithium grease to the outside of the quill. DO NOT allow any oil or grease to get on the inside mating surfaces of the quill.

Machine Storage

All machinery will develop serious rust problems and corrosion damage if it is not properly prepared for storage. If decommissioning this machine, use the steps in this section to ensure that it remains in good condition.

Items Needed	Qty
Large Tarp or Plastic Sheet	1
Disposable Gloves	As Needed
Disposable Rags	As Needed
Desiccant Bags	As Needed
Cleaner/Degreaser	As Needed
Metal Protectant	As Needed

Preparing Machine for Storage

1. Disconnect all power sources to machine.

2. Thoroughly clean all unpainted, bare metal surfaces, then coat them with a lightweight grease or rust preventative. Take care to ensure these surfaces are completely covered but that grease or rust preventative is kept off of painted surfaces.

   Note: *If machine will be out of service for only a short period of time, use way oil or a good grade of medium-weight machine oil (not auto engine oil) in place of grease or rust preventative.*

3. Loosen or remove V-belt so it does not become stretched while the machine is not in use (see instructions in **Replacing/ Tensioning V-Belt** on **Page 40**).

4. Place generous quantities of desiccant bags inside cabinet, electrical boxes, and headstock.

5. Completely cover machine with a tarp or plastic sheet that will keep out dust and resist liquid or moisture. If machine will be stored in/near direct sunlight, use a cover that will block UV rays.

Removing Machine from Storage

1. Remove cover from machine and any desiccant bags from interior.

2. Tension or install V-belt (see instructions in **Replacing/Tensioning V-Belt** on **Page 40**).

3. Follow all procedures for setup and testing as instructed in **PREPARATION** on **Page 11**.

Replacing/Tensioning V-Belt

The V-belt stretches as the lathe is used. Most of the stretching will occur during the first 16 hours, but may continue with further use. If the lathe loses power while making a cut, the V-belt may be slipping and need tensioning. If the V-belt shows signs of excessive wear or damage, replace it before further use.

Items Needed	Qty
Additional Person	1
Replacement V-Belt (PSB1126009)	1
Spindle Wrench 1¾"	1
Hex Wrenches 3, 4mm	1 Ea.
Dead Blow Hammer	1
Wood 2x4 (6" Length)	1

Replacing V-Belt

1. DISCONNECT MACHINE FROM POWER!

2. Open belt access and motor access doors on rear of machine.

3. Loosen belt-tension lock handle on motor mount (see **Figure 52**).

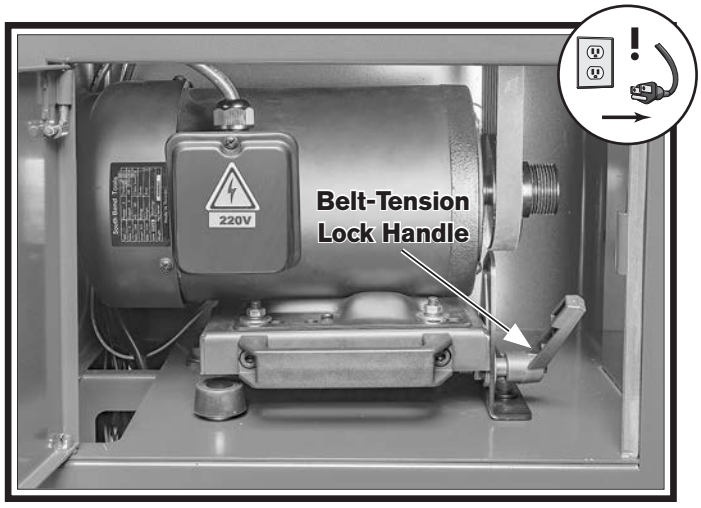


Figure 51. Belt-tension lock handle location.

4. Lift motor assembly all the way up, then tighten belt-tension lock handle to hold motor in place.

5. Roll V-belt off of pulleys and let hang out of the way for now.

6. Loosen (4) set screws securing outboard faceplate and spindle collar on spindle, then remove outboard faceplate and spindle collar (see **Figure 52**).

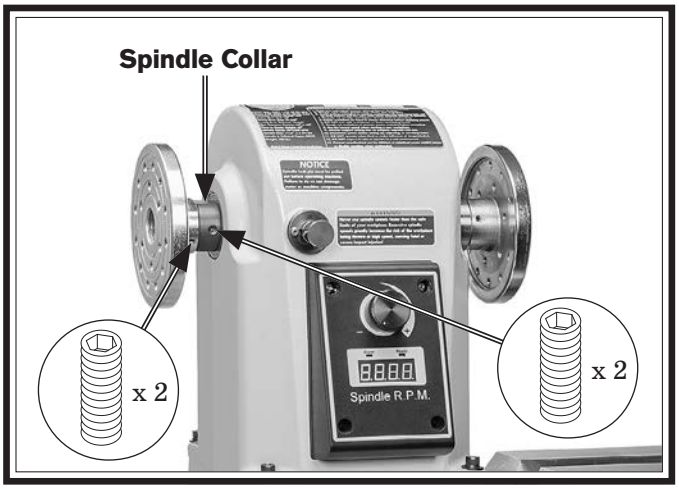


Figure 52. V-belt removal components.

7. Remove (2) cap screws and lock washers securing spindle speed sensor, then move sensor out of the way (see **Figure 53**).

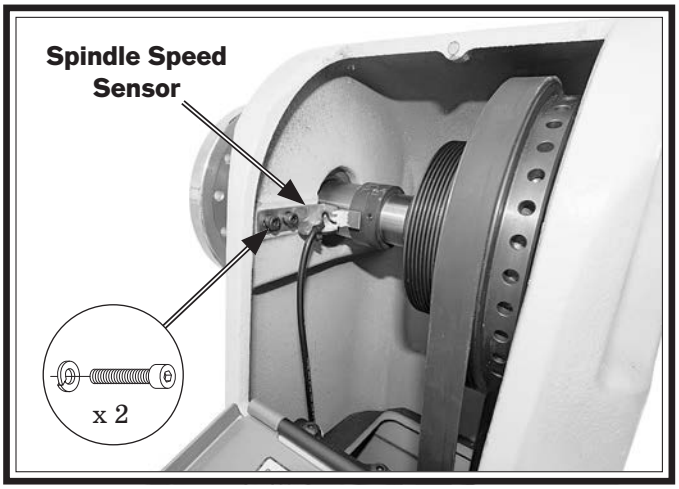


Figure 53. Spindle speed sensor location.

8. With help from an additional person, push spindle shaft through headstock towards bed (see **Figure 54**).

Note: *Your assistant will need to support spindle shaft and pulley until V-belt replacement is complete.*

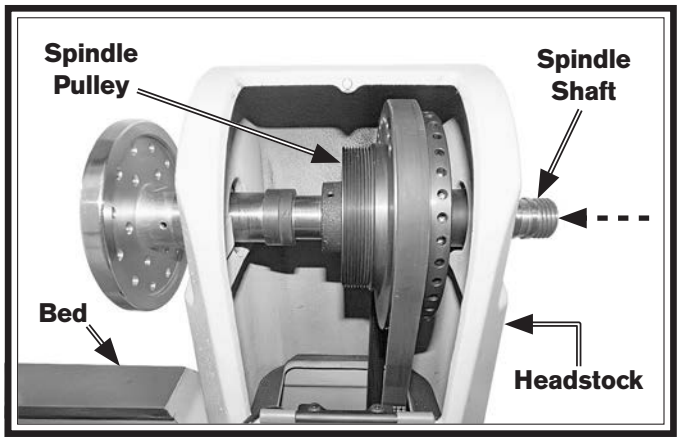


Figure 54. Spindle shaft components.

9. Pull V-belt off spindle pulley and remove from machine.

10. Install replacement V-belt on spindle pulley and verify grooves in V-belt are seated in grooves on spindle pulley.

Note: *Spindle speed range is determined by position of V-belt on pulleys (see **Changing Speed Range** on **Page 28**).*

11. With help from an additional person, push spindle shaft back through headstock towards outboard end of lathe, or use a dead blow hammer and wood block to gently tap spindle shaft.

Note: *If spindle shaft bearings were unseated during **Step 8**, re-seat bearings at this time.*

12. Install spindle speed sensor and verify there is a minimum clearance of ⅛" between tip of sensor and spindle shaft.

13. Install spindle collar and outboard faceplate.

14. Roll V-belt over motor pulley and verify grooves in V-belt are seated in grooves on motor pulley.

15. Perform **Steps 4–5** of **Tensioning V-Belt** on this page.

Tensioning V-Belt

1. DISCONNECT MACHINE FROM POWER!

2. Open belt access and motor access doors on rear of machine.

3. Loosen belt-tension lock handle and lower motor.

4. Apply downward pressure on motor assembly to properly tension drive belt, then tighten belt-tension lock handle.

Note: *When properly tensioned, belt should deflect about ⅛" when moderate pressure is applied to belt mid-way between upper and lower pulley, as shown in **Figure 55**.*

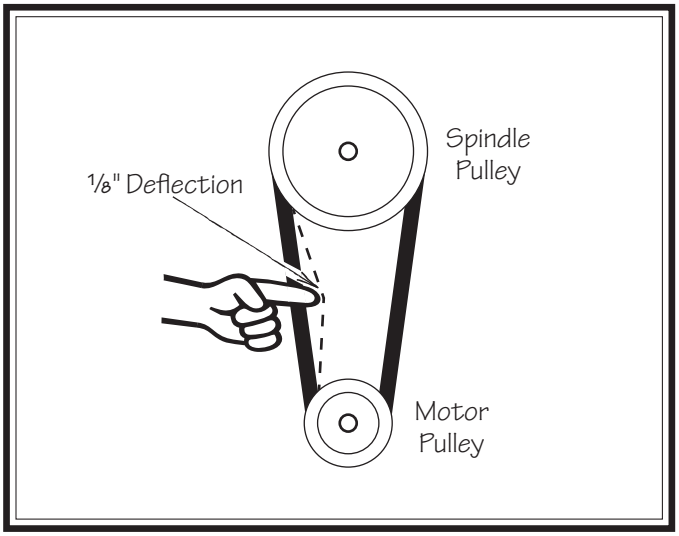


Figure 55. Checking V-belt tension.

5. Close belt access and motor access doors on rear of machine.

Aligning Pulleys

The motor and spindle pulleys are aligned at the factory and should not require any adjustment. If they become misaligned over time, it is important that they be re-aligned in order to extend belt life and maximize the transfer of power from the motor to the spindle.

The motor pulley can be adjusted by loosening the set screws, sliding the motor pulley in or out, then retightening the set screws to lock the motor pulley in place.

Tools Needed	**Qty**
Straightedge 48"	1
Hex Wrench 3mm	1

To align pulleys:

1. DISCONNECT MACHINE FROM POWER!

2. Open belt access and motor access doors on rear of machine.

3. Place a straightedge against both pulleys and check to make sure they are aligned (see **Figure 56**).

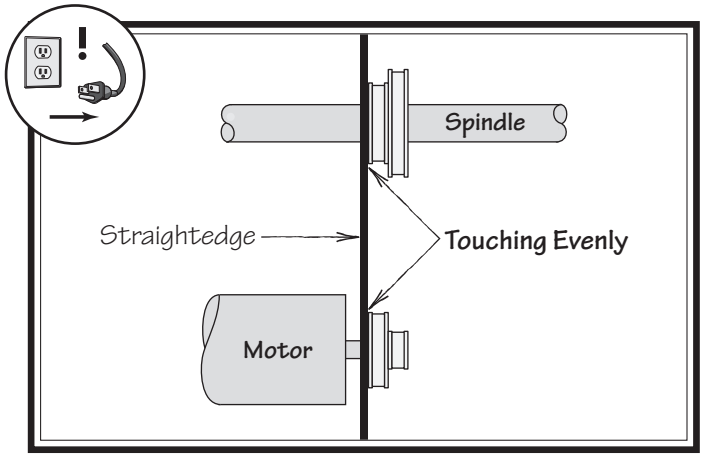


Figure 56. Example of V-belt pulleys aligned.

— If pulleys *are* aligned, no adjustment is needed. Proceed to **Step 7**.

— If pulleys *are not* aligned, go to **Step 4**.

4. Loosen (2) set screws on motor pulley shown in **Figure 57**.

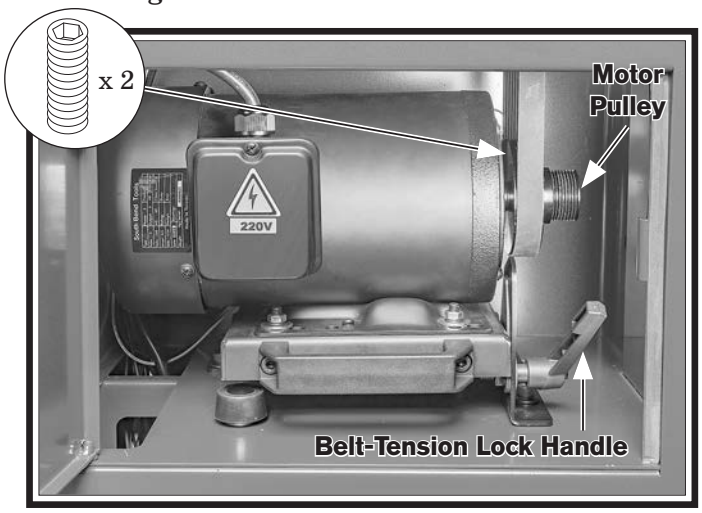


Figure 57. Location of motor pulley alignment components.

5. Adjust motor pulley as needed until both pulleys are aligned.

6. Tighten and secure (2) set screws on motor pulley.

7. Close belt access and motor access doors on rear of machine.

If you need replacement parts, or if you are unsure how to do any of the solutions given here, feel free to call us at (360) 734-1540.

Symptom	Possible Cause	Possible Solution
Machine does not start, or power supply breaker immediately trips after startup.	**1.** Main power switch in OFF position.	**1.** Turn main power switch to ON position.
	2. STOP button depressed/at fault.	**2.** Rotate STOP button head to reset. Replace if at fault.
	3. Switch disabling key removed.	**3.** Install switch disabling key.
	4. Incorrect power supply voltage or circuit size.	**4.** Ensure correct power supply voltage and circuit size.
	5. Motor speed potentiometer at fault.	**5.** Test/replace if at fault.
	6. Power supply circuit breaker tripped or fuse blown.	**6.** Ensure circuit is free of shorts. Reset circuit breaker or replace fuse.
	7. Motor wires connected incorrectly.	**7.** Correct motor wiring connections **(Page 47)**.
	8. Wiring broken, disconnected, or corroded.	**8.** Fix broken wires or disconnected/corroded connections.
	9. START button or POWER switch at fault.	**9.** Inspect/replace if at fault.
	10. Circuit board at fault.	**10.** Inspect/replace if at fault.
	11. Spindle direction switch at fault.	**11.** Test/replace switch.
	12. Inverter/VFD at fault.	**12.** Inspect inverter/VFD; replace if at fault.
	13. Motor or motor bearings at fault.	**13.** Replace motor.
Machine stalls or is underpowered.	**1.** Workpiece material unsuitable for machine.	**1.** Only cut wood and ensure moisture is below 20% **(Page 23)**.
	2. Feed rate/cutting speed too fast.	**2.** Decrease feed rate/cutting speed.
	3. Motor speed potentiometer at fault.	**3.** Test and replace if at fault.
	4. Belt slipping/pulleys misaligned.	**4.** Clean/tension/replace belt **(Page 40)**; ensure pulleys are aligned **(Page 42)**.
	5. Motor wires connected incorrectly.	**5.** Correct motor wiring connections **(Page 47)**.
	6. Pulley slipping on shaft.	**6.** Tighten/replace loose pulley/shaft.
	7. Machine undersized for task.	**7.** Use sharp chisels; reduce feed rate or depth of cut.
	8. Motor overheated.	**8.** Clean motor, let cool, and reduce workload.
	9. Extension cord too long.	**9.** Move machine closer to power supply; use shorter extension cord.
	10. Motor speed potentiometer at fault.	**10.** Test and replace if at fault.
	11. Spindle direction switch at fault.	**11.** Test/replace switch.
	12. Motor or motor bearings at fault.	**12.** Replace motor.

Symptom	Possible Cause	Possible Solution
Machine has vibration or noisy operation.	**1.** Motor or component loose.	**1.** Replace damaged or missing bolts/nuts or tighten if loose.
	2. Stand feet not adjusted properly.	**2.** Adjust stand feet to stabilize machine.
	3. V-belt worn, loose, pulleys misaligned or belt slapping cover.	**3.** Inspect/replace belt. Realign pulleys if necessary **(Page 42)**.
	4. Pulley loose.	**4.** Secure pulley on shaft **(Page 42)**.
	5. Motor mount loose/broken.	**5.** Tighten/replace.
	6. Spindle loose, improperly installed or damaged.	**6.** Tighten loose spindle, re-install spindle ensuring mating surfaces are clean, replace damaged spindle.
	7. Spindle bearings at fault.	**7.** Test by rotating spindle; rotational grinding/loose shaft requires bearing replacement.
	8. Motor bearings at fault.	**8.** Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.
Poor surface finish quality.	**1.** Dull tooling or wrong tool used for task.	**1.** Sharpen tooling, select correct tool for operation.
	2. Tool height is not correctly adjusted to ⅛" above spindle centerline.	**2.** Adjust tool rest so tool is ⅛" above spindle centerline **(Page 27)**.
	3. Spindle speed incorrect.	**3.** Adjust for appropriate spindle speed **(Page 28)**.
	4. Excessive vibration.	**4.** Troubleshoot possible causes/solutions using table on **Page 44**.
Excessive vibration upon startup (when workpiece is installed).	**1.** Workpiece mounted incorrectly.	**1.** Remount workpiece; verify centers are embedded in centerline of workpiece **(Pages 24–25)**.
	2. Workpiece warped, out of round, or flawed.	**2.** Cut workpiece to correct, or use a different workpiece.
	3. Spindle speed too fast for workpiece.	**3.** Reduce spindle speed **(Page 28)**.
	4. Workpiece hitting stationary object.	**4.** Stop lathe and correct interference problem.
	5. Tailstock or tool rest not securely clamped to lathe bed.	**5.** Check lock levers and tighten if necessary **(Pages 23 & 27)**.
	6. Belt pulleys are not properly aligned.	**6.** Align belt pulleys **(Page 42)**.
	7. Lathe is resting on an uneven surface.	**7.** Shim stand or adjust feet to eliminate wobbles.
	8. Motor mount bolts are loose.	**8.** Tighten motor mount bolts.
	9. Belt is worn or damaged.	**9.** Replace belt **(Page 40)**.
	10. Spindle bearings are worn or damaged.	**10.** Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Symptom	Possible Cause	Possible Solution
Turning tool grabs or digs into workpiece.	1. Wrong turning tool being used. 2. Turning tool is too dull. 3. Tool rest height not set correctly. 4. Tool rest is set too far from workpiece.	1. Use correct turning tool **(Page 35)**. 2. Sharpen or replace turning tool. 3. Correct tool rest height **(Page 27)**. 4. Move tool rest closer to workpiece.
Tailstock moves under load.	1. Tailstock mounting bolt/lock nut is loose. 2. Bed or clamping surface is excessively oily or greasy.	1. Tighten mounting bolt/lock nut **(Page 23)**. 2. Clean bed or clamping surface to remove excess oil/grease.
Spindle lacks turning power or starts up slowly.	1. Belt is slipping. 2. Pulleys loose. 3. Workpiece too heavy for spindle.	1. Tighten/adjust belt **(Page 40)**. 2. Tighten pulley set screw; re-align/replace shaft, pulley set screw, and key **(Page 42)**. 3. Remove excess material before remounting; use lighter workpiece.
Quill does not move when handwheel is turned.	1. Keyway is not aligned with quill set screw.	1. Align quill keyway and quill set screw and slightly tighten screw to engage keyway **(Page 24)**.
DRO does not display; reading incorrect.	1. Wiring broken, disconnected, or corroded. 2. Speed potentiometer at fault. 3. Speed sensor at fault. 4. Circuit board at fault.	1. Fix broken wires or disconnected/corroded connections. 2. Test/replace if at fault. 3. Verify spindle speed sensor has a minimum clearance of ⅛" from spindle shaft. Test/replace if at fault. 4. Inspect/replace if at fault.
Motor braking resistor does not function; VFD displays "BR" error code.	1. Wiring broken, disconnected, or corroded. 2. Motor braking resistor at fault. 3. Inverter/VFD at fault.	1. Fix broken wires or disconnected/corroded connections. 2. Test/replace if at fault. 3. Inspect inverter/VFD; replace if at fault.

Electrical Safety Instructions

These pages are accurate at the time of printing. In the constant effort to improve, however, we may make changes to the electrical systems of future machines. Study this section carefully. If you see differences between your machine and what is shown in this section, call Technical Support at (360) 734-1540 for assistance BEFORE making any changes to the wiring on your machine.

Shock Hazard: It is extremely dangerous to perform electrical or wiring tasks while the machine is connected to the power source. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. For your own safety, disconnect machine from the power source before servicing electrical components or performing any wiring tasks!

Wire Connections: All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

Modifications: Using aftermarket parts or modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire.

Motor Wiring: The motor wiring shown in these diagrams is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the motor junction box.

Circuit Requirements: Connecting the machine to an improperly sized circuit will greatly increase the risk of fire. To minimize this risk, only connect the machine to a power circuit that meets the minimum requirements given in this manual.

Capacitors/Inverters: Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

Wire/Component Damage: Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components before completing the task.

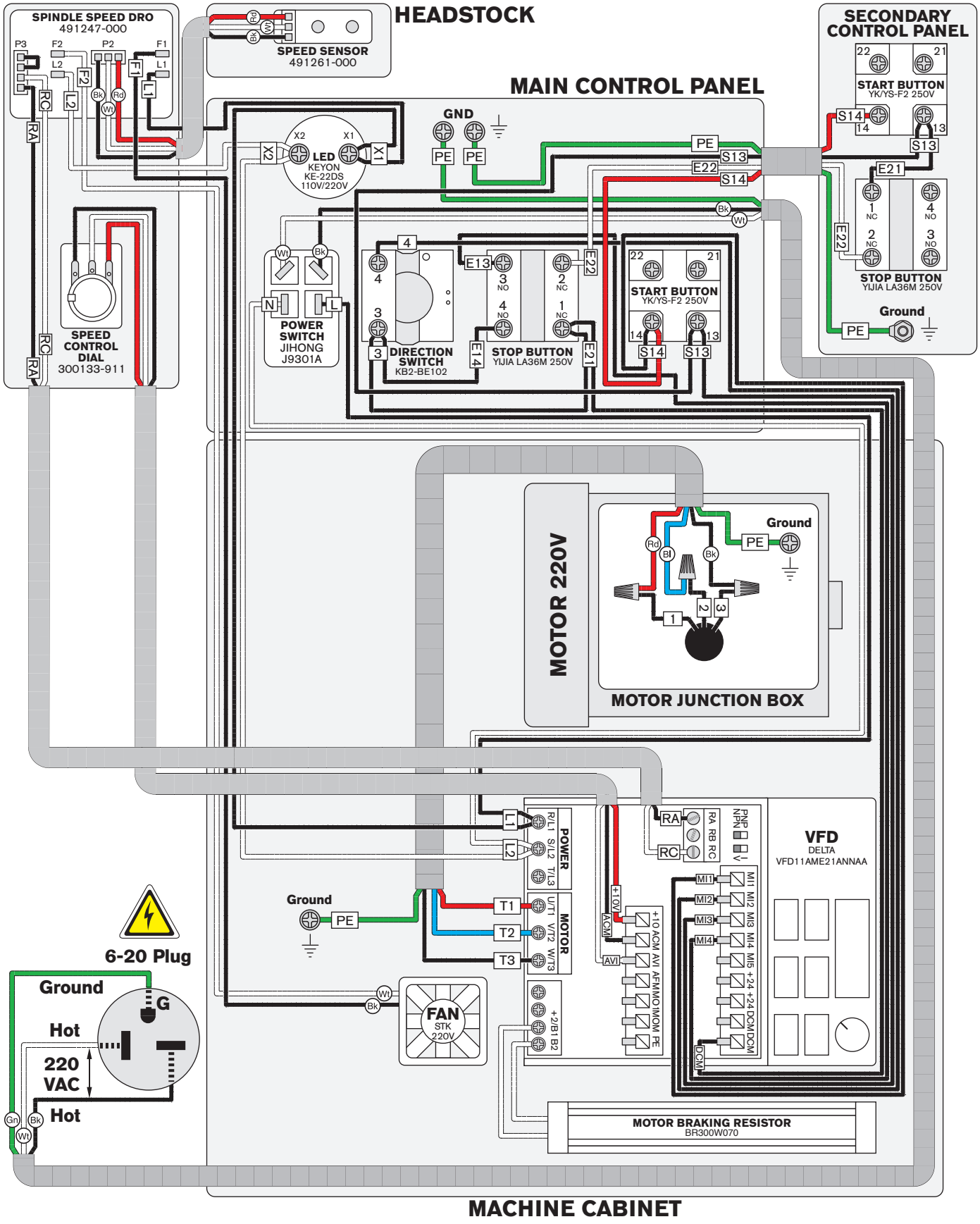
Experiencing Difficulties: If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (360) 734-1540.

WIRING DIAGRAM COLOR KEY

BLACK (Bk)	BLUE WHITE (Bw)	RED (Rd)	PINK (Pk)	WHITE (Wt)
BLUE (Bl)	GREEN (Gn)	LIGHT BLUE (Lb)	PURPLE (Pu)	YELLOW GREEN (Yg)
BROWN (Br)	GRAY (Gy)	ORANGE (Or)	TURQUOISE (Tu)	YELLOW (Yl)

NOTICE: **The photos and diagrams included in this section are best viewed in color. You can see them in color at www.southbendtools.com.**

Wiring Diagram



Electrical Components

Figure 58. Main control panel wiring.

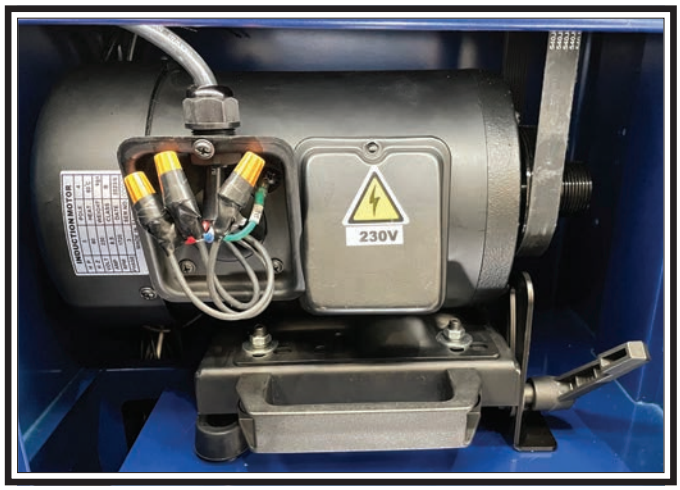


Figure 59. Motor junction box wiring.

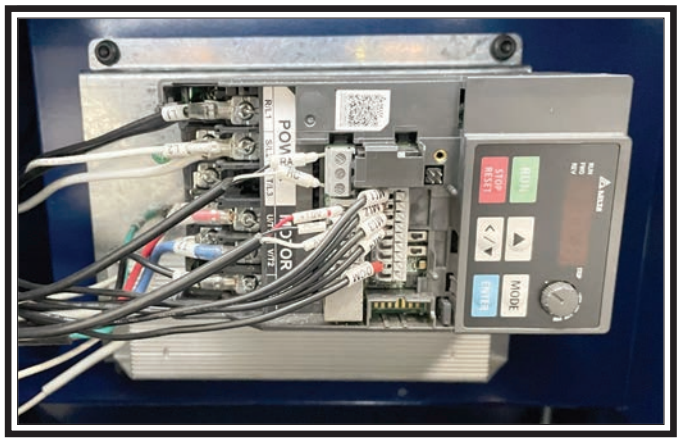


Figure 60. VFD wiring.

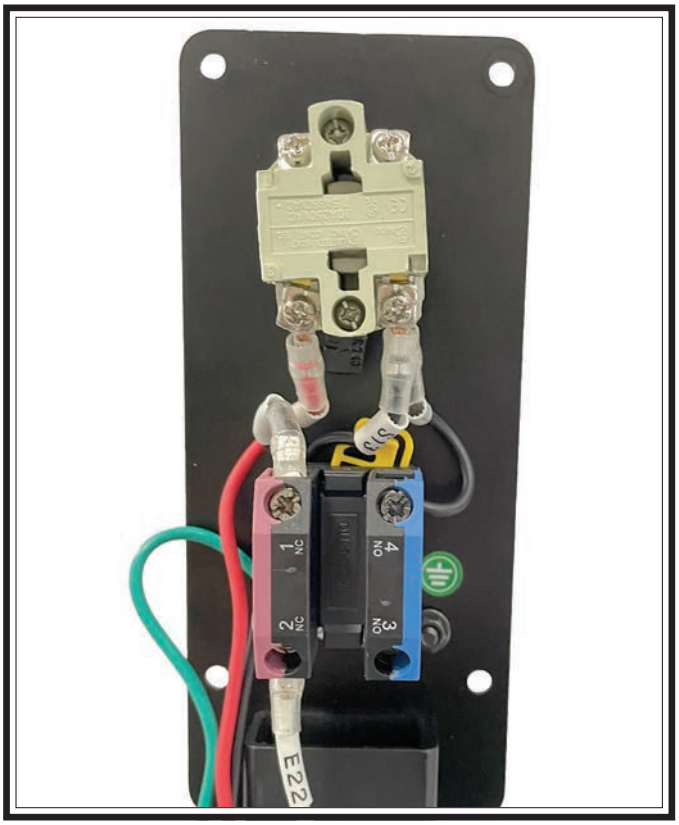


Figure 61. Secondary control panel wiring.

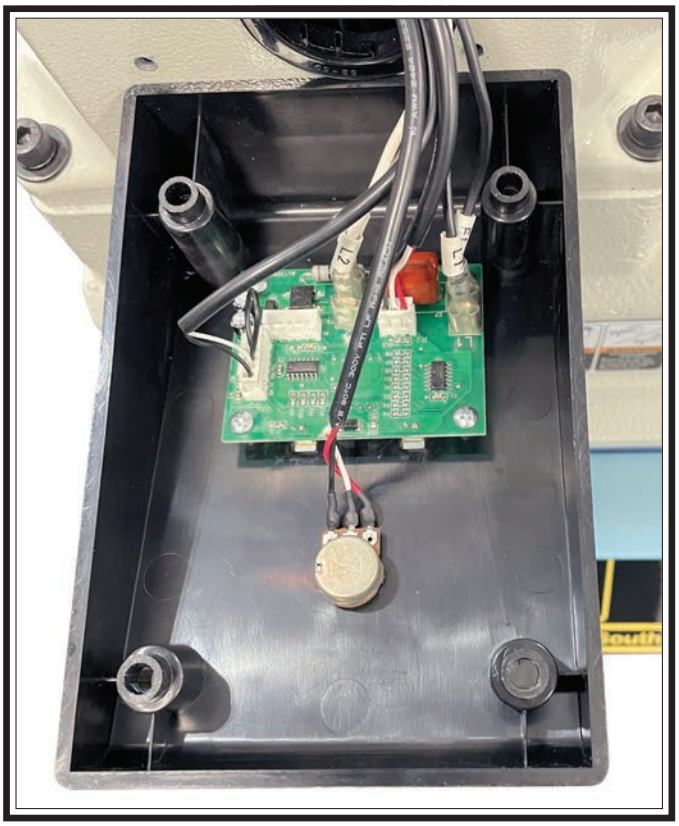
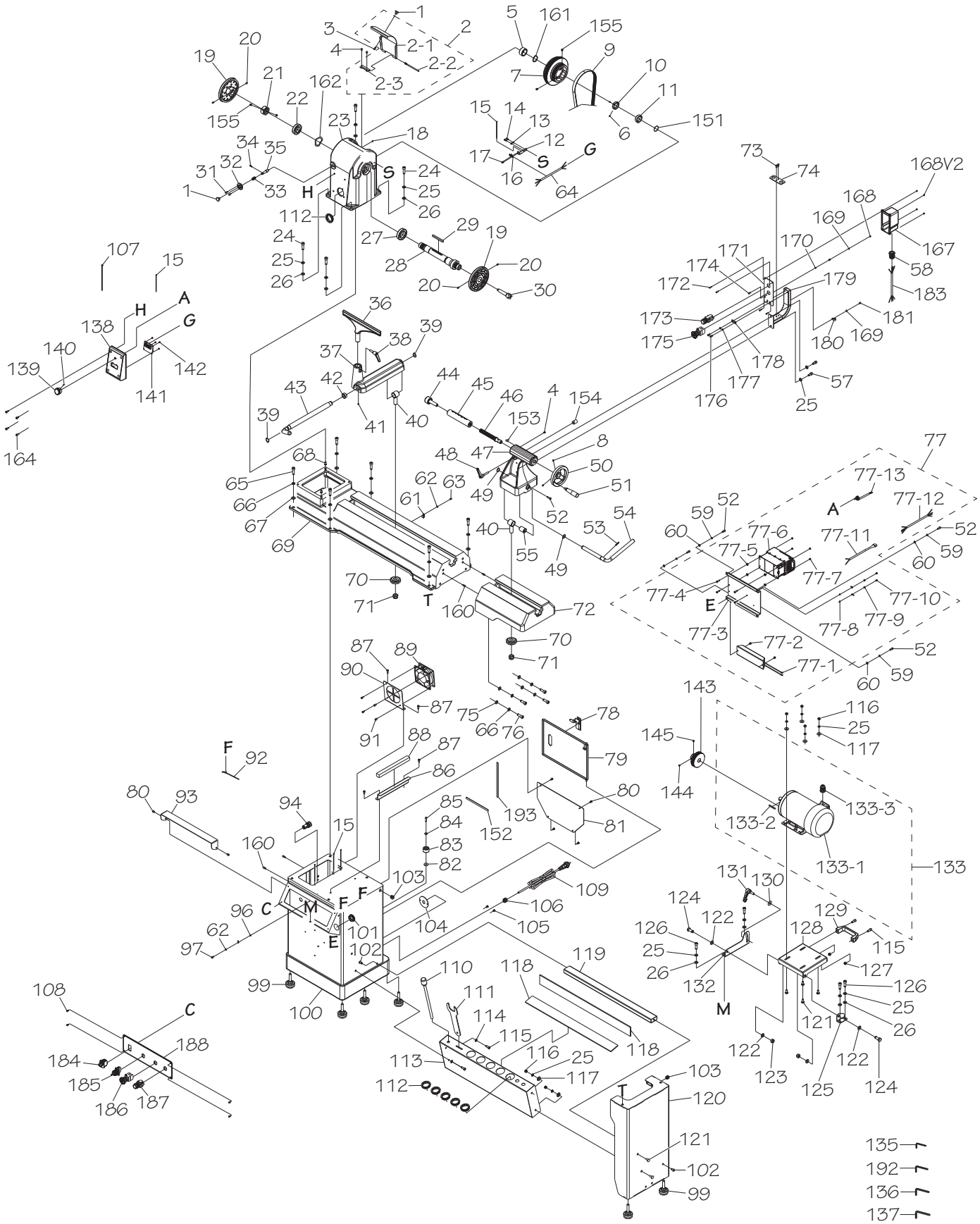


Figure 62. Speed control wiring.

Main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Main Parts List

REF	PART #	DESCRIPTION
1	PSB1126001	KNOB M6-1, D25, ROUND
2	PSB1126002	BELT ACCESS ASSEMBLY
2-1	PSB1126002-1	BELT ACCESS DOOR
2-2	PSB1126002-2	HINGE PIN
2-3	PSB1126002-3	DOOR BRACKET
3	PSB1126003	CAP SCREW M6-1 X 8
4	PSB1126004	BUTTON HD CAP SCR M5-.8 X 10
5	PSB1126005	SPACER 35 X 45 X 20
6	PSB1126006	SET SCREW M5-.8 X 5
7	PSB1126007	SPINDLE PULLEY
8	PSB1126008	SET SCREW M6-1 X 6
9	PSB1126009	V-BELT 540J-8
10	PSB1126010	COLLAR 35 X 45 X 10
11	PSB1126011	MAGNETIC SPACER 35 X 45 X 15
12	PSB1126012	DETECTOR MOUNTING BRACKET
13	PSB1126013	LOCK WASHER 5MM
14	PSB1126014	CAP SCREW M5-.8 X 10
15	PSB1126015	CABLE TIE ALT-085S-B
16	PSB1126016	SPEED SENSOR 491261-000
17	PSB1126017	PHLP HD SCR M3-.5 X 6
18	PSB1126018	DOOR MAGNET 1/4"
19	PSB1126019	FACEPLATE 6"
20	PSB1126020	SET SCREW M6-1 X 10
21	PSB1126021	LOCK COLLAR M35-1.5
22	PSB1126022	BALL BEARING 6007-2NSE
23	PSB1126023	HEADSTOCK
24	PSB1126024	CAP SCREW M8-1.25 X 35
25	PSB1126025	LOCK WASHER 8MM
26	PSB1126026	FLAT WASHER 8MM
27	PSB1126027	BALL BEARING 6008-2NSE
28	PSB1126028	SPINDLE
29	PSB1126029	KEY 8 X 7 X 80
30	PSB1126030	SPUR CENTER
31	PSB1126031	BUTTON HD CAP SCR M5-.8 X 12
32	PSB1126032	SPINDLE LOCK BRACKET
33	PSB1126033	COMPRESSION SPRING 1.2 X 13 X 20MM
34	PSB1126034	ROLL PIN 4 X 16
35	PSB1126035	SPINDLE LOCK SHAFT
36	PSB1126036	TOOL REST 12"
37	PSB1126037	TOOL REST BASE
38	PSB1126038	ADJUSTABLE HANDLE 3/8-16 X 1, 3L
39	PSB1126039	EXT RETAINING RING 22MM
40	PSB1126040	ROD END BOLT M16-2 X 60
41	PSB1126041	SET SCREW M5-.8 X 5
42	PSB1126042	TOOL REST BUSHING
43	PSB1126043	TOOL REST BASE LOCK LEVER
44	PSB1126044	LIVE CENTER
45	PSB1126045	QUILL
46	PSB1126046	LEADSCREW
47	PSB1126047	TAILSTOCK
48	PSB1126048	ADJUSTABLE HANDLE M8-1.25 X 40, 75L
49	PSB1126049	EXT RETAINING RING 19MM
50	PSB1126050	HANDWHEEL TYPE-35 127D X 18B, 3/8-16
51	PSB1126051	REVOLVING HANDLE 90 X 24, 3/8-16 X 16
52	PSB1126052	CAP SCREW M6-1 X 15

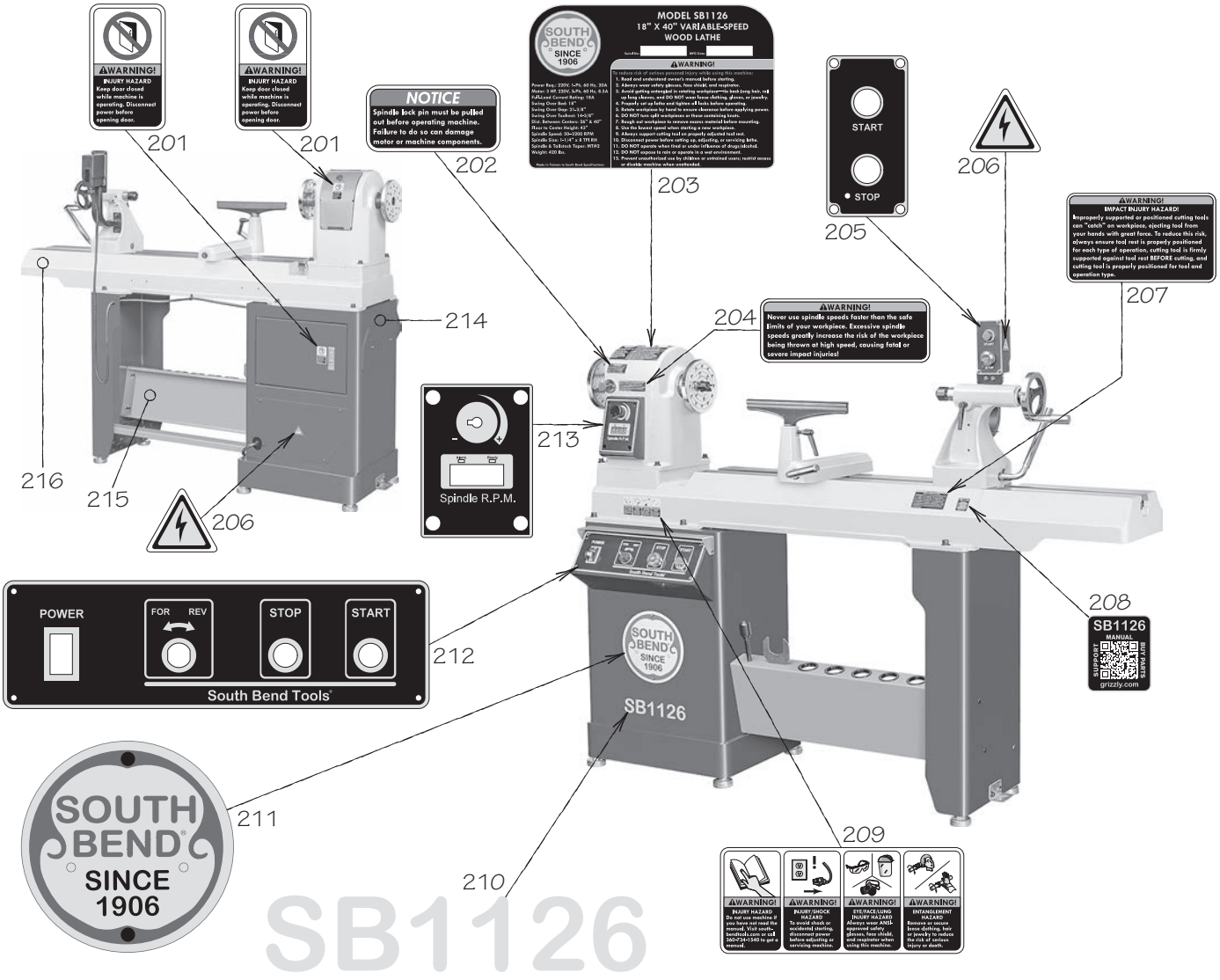
REF	PART #	DESCRIPTION
53	PSB1126053	ROLL PIN 5 X 25
54	PSB1126054	TAILSTOCK LOCK LEVER
55	PSB1126055	QUILL BUSHING
57	PSB1126057	CAP SCREW M8-1.25 X 20
58	PSB1126058	STRAIN RELIEF TYPE-3 PG16
59	PSB1126059	LOCK WASHER 6MM
60	PSB1126060	FLAT WASHER 6MM
61	PSB1126061	CABLE CLAMP ACC-3-B
62	PSB1126062	FLAT WASHER 4MM
63	PSB1126063	PHLP HD SCR M4-.7 X 8
64	PSB1126064	SENSOR CORD 24G 3W 41"
65	PSB1126065	CAP SCREW M10-1.5 X 35
66	PSB1126066	LOCK WASHER 10MM
67	PSB1126067	FLAT WASHER 10MM
68	PSB1126068	DOWEL PIN
69	PSB1126069	MAIN BED
70	PSB1126070	LOCK COLLAR
71	PSB1126071	LOCK NUT 3/4-10
72	PSB1126072	EXTENSION BED
73	PSB1126073	BUTTON HD CAP SCR M6-1 X 12
74	PSB1126074	CENTER HOLDER
75	PSB1126075	FLAT WASHER 10MM
76	PSB1126076	CAP SCREW M10-1.5 X 30
77	PSB1126077	INVERTER/VFD ASSEMBLY
77-1	PSB1126077-1	BRAKING RESISTOR BR300W070
77-2	PSB1126077-2	PHLP HD SCR M5-.8 X 8
77-3	PSB1126077-3	INVERTER/VFD MOUNT
77-4	PSB1126077-4	PHLP HD SCR M5-.8 X 20, NYLON
77-5	PSB1126077-5	FLAT WASHER 6.1 X 12.5 X 3.5MM
77-6	PSB1126077-6	INVERTER/VFD DELTA VFD11AME21ANNAA
77-7	PSB1126077-7	HEX NUT M5-.8
77-8	PSB1126077-8	EXT TOOTH WASHER 4MM
77-9	PSB1126077-9	FLAT WASHER 4MM
77-10	PSB1126077-10	PHLP HD SCR M4-.7 X 8
77-11	PSB1126077-11	VFD CORD 24G 2W 57"
77-12	PSB1126077-12	VFD CORD 14G 4W 35"
77-13	PSB1126077-13	POTENTIOMETER SONGUEI 16K4(F)
78	PSB1126078	DOOR LATCH
79	PSB1126079	CABINET DOOR
80	PSB1126080	BUTTON HD CAP SCR M6-1 X 10
81	PSB1126081	ELECTRICAL ACCESS COVER
82	PSB1126082	FENDER WASHER 6.5 X 23 X 4MM
83	PSB1126083	MOTOR FOOT
84	PSB1126084	FLAT WASHER 6MM
85	PSB1126085	BUTTON HD CAP SCR M6-1 X 25
86	PSB1126086	CHIP BREAKER
87	PSB1126087	CAP SCREW M6-1 X 12
88	PSB1126088	FOAM GASKET
89	PSB1126089	ELECTRICAL FAN STK 220V
90	PSB1126090	FAN BRACKET
91	PSB1126091	PHLP HD SCR M5-.8 X 10
92	PSB1126092	ADJUSTABLE KNOT-BALL ZIP TIE 6"
93	PSB1126093	DUST SHIELD
94	PSB1126094	LED KEYON KE-22DS 110V/220V
96	PSB1126096	EXT TOOTH WASHER 4MM

Main Parts List (Cont.)

REF	PART #	DESCRIPTION
97	PSB1126097	PHLP HD SCR M4-.7 X 10
99	PSB1126099	ADJUSTABLE FOOT M12-1.75 X 50
100	PSB1126100	CABINET
101	PSB1126101	GROMMET 38MM, LOCKING
102	PSB1126102	BUTTON HD CAP SCR M8-1.25 X 16
103	PSB1126103	STRAIN RELIEF TYPE-1 5/8
104	PSB1126104	CORD PLATE
105	PSB1126105	PHLP HD SCR M6-1 X 8
106	PSB1126106	STRAIN RELIEF TYPE-1 3/4
107	PSB1126107	CABLE TIE ALT-150M-B
108	PSB1126108	BUTTON HD CAP SCR M5-.8 X 8
109	PSB1126109	POWER CORD 12G 3W 118" 6-20P
110	PSB1126110	KNOCKOUT TOOL
111	PSB1126111	SPINDLE WRENCH 1-3/4"
112	PSB1126112	GROMMET 50MM, LOCKING
113	PSB1126113	TOOL HOLDER
114	PSB1126114	FLAT WASHER 8MM
115	PSB1126115	CAP SCREW M8-1.25 X 20
116	PSB1126116	HEX NUT 5/16-18
117	PSB1126117	FENDER WASHER 8MM
118	PSB1126118	FOAM PAD
119	PSB1126119	CROSSBEAM
120	PSB1126120	SIDE STAND
121	PSB1126121	CARRIAGE BOLT 5/16-18 X 3/4
122	PSB1126122	FLAT WASHER 12MM
123	PSB1126123	LOCK NUT M12-1.75
124	PSB1126124	HEX BOLT M12-1.75 X 30
125	PSB1126125	MOTOR L-BRACKET
126	PSB1126126	CAP SCREW M8-1.25 X 20
127	PSB1126127	LOCK NUT M8-1.25
128	PSB1126128	MOTOR MOUNTING BRACKET
129	PSB1126129	MOTOR MOUNT HANDLE
130	PSB1126130	FENDER WASHER 10MM
131	PSB1126131	ADJUSTABLE HANDLE M10-1.5 X 25, 95L
132	PSB1126132	MOTOR SUPPORT BRACKET
133	PSB1126133	MOTOR ASSEMBLY
133-1	PSB1126133-1	MOTOR 3HP 220V 3-PH
133-2	PSB1126133-2	KEY 5 X 5 X 50
133-3	PSB1126133-3	STRAIN RELIEF TYPE-3 PG13.5
135	PSB1126135	HEX WRENCH 3MM
136	PSB1126136	HEX WRENCH 6MM
137	PSB1126137	HEX WRENCH 8MM

REF	PART #	DESCRIPTION
138	PSB1126138	SPEED CONTROL HOUSING
139	PSB1126139	SPEED CONTROL DIAL
140	PSB1126140	SET SCREW M4-.7 X 8
141	PSB1126141	DRO 491247-000
142	PSB1126142	TAP SCREW M3 X 8
143	PSB1126143	MOTOR PULLEY
144	PSB1126144	SET SCREW M6-1 X 6
145	PSB1126145	SET SCREW M6-1 X 8
151	PSB1126151	O-RING 31.5 X 1.8
152	PSB1126152	CUSHION STRIP
153	PSB1126153	WELD NUT 5MM
154	PSB1126154	CAM NUT 8MM
155	PSB1126155	SET SCREW M8-1 X 8
160	PSB1126160	ALIGNMENT PIN
161	PSB1126161	EXT RETAINING RING 35MM
162	PSB1126162	WAVY WASHER 35MM
164	PSB1126164	BUTTON HD CAP SCR M6-1 X 15
167	PSB1126167	SWITCH BOX
168	PSB1126168	HEX NUT M4-.7 V1
168V2	PSB1126168V2	LOCK NUT M4-.7 V2.02.24
169	PSB1126169	FLAT WASHER 4MM
170	PSB1126170	EXT TOOTH WASHER 4MM
171	PSB1126171	SECONDARY CONTROL PANEL FACEPLATE
172	PSB1126172	BUTTON HD CAP SCR M4-.7 X 15
173	PSB1126173	START BUTTON YK YS-F2 250V 22MM GRN
174	PSB1126174	PHLP HD SCR M4-.7 X 10
175	PSB1126175	STOP BUTTON YIJIA LA36M 250V 22M
176	PSB1126176	BUTTON HD CAP SCR M6-1 X 12
177	PSB1126177	LOCK WASHER 6MM
178	PSB1126178	FLAT WASHER 6MM
179	PSB1126179	SWITCH ARM
180	PSB1126180	CABLE CLAMP ACC-3-B
181	PSB1126181	PHLP HD SCR M4-.7 X 8
183	PSB1126183	TAILSTOCK CORD 18G 4W 114"
184	PSB1126184	POWER SWITCH JIHONG J9301A 220V
185	PSB1126185	DIRECTION SWITCH KB2-BE102
186	PSB1126186	STOP BUTTON YIJIA LA36M 250V 22M
187	PSB1126187	START BUTTON YK YS-F2 250V 22MM GRN
188	PSB1126188	CONTROL PANEL FACEPLATE
192	PSB1126192	HEX WRENCH 4MM
193	PSB1126193	CUSHION STRIP

Machine Labels



REF	PART #	DESCRIPTION
201	PSB1126201	KEEP DOOR CLOSED LABEL
202	PSB1126202	SPINDLE LOCK NOTICE LABEL
203	PSB1126203	MACHINE ID LABEL
204	PSB1126204	SPINDLE SPEED WARNING LABEL
205	PSB1126205	SECONDARY CONTROL PANEL LABEL
206	PSB1126206	ELECTRICITY LABEL
207	PSB1126207	IMPACT WARNING LABEL
208	PSB1126208	QR CODE LABEL

REF	PART #	DESCRIPTION
209	PSB1126209	COMBO WARNING LABEL
210	PSB1126210	MODEL NUMBER LABEL
211	PSB1126211	SOUTH BEND NAMEPLATE 203MM
212	PSB1126212	MAIN CONTROL PANEL LABEL
213	PSB1126213	SPEED CONTROL PANEL LABEL
214	PSB1126214	TOUCH-UP PAINT, SB DARK BLUE
215	PSB1126215	TOUCH-UP PAINT, SB LIGHT BLUE
216	PSB1126216	TOUCH-UP PAINT, SB GRAY

⚠WARNING

The safety labels provided with your machine are used to make the operator aware of the machine hazards and ways to prevent injury. The owner of this machine MUST maintain the original location and readability of these safety labels. If any label is removed or becomes unreadable, REPLACE that label before using the machine again. Contact South Bend Tools at (360) 734-1540 or www.southbendtools.com to order new labels.

Warranty

This quality product is warranted by South Bend Tools to the original buyer for **2 years** from the date of purchase. This warranty does not apply to consumable parts, or defects due to any kind of misuse, abuse, negligence, accidents, repairs, alterations or lack of maintenance. We do not reimburse for third party repairs. In no event shall we be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our products.

We do not warrant or represent that this machine complies with the provisions of any law, act, code, regulation, or standard of any domestic or foreign government, industry, or authority. In no event shall South Bend's liability under this warranty exceed the original purchase price paid for this machine. Any legal actions brought against South Bend Tools shall be tried in the State of Washington, County of Whatcom.

This is the sole written warranty for this machine. Any and all warranties that may be implied by law, including any merchantability or fitness, for any purpose, are hereby limited to the duration of this warranty.

Thank you for your business and continued support.

For further information about this warranty, visit **https://www.grizzly.com/forms/warranty**, or scan the QR code below to be automatically directed to our warranty page.

WARRANTY

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