RIKON
POWER TOOLS

70-305

16”x42” Heavy Duty VSR Lathe

Intertek
4001824

Operator’s Manual

Record the serial number and date of purchase in your manual for future reference.

Serial Number: _____ Date of purchase: _____

For technical support or parts questions, email techsupport@rikontools.com or call toll free at (877)884-5167

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SPECIFICATIONS

Motor	1-1/2 HP, TEFC
Motor Speed (no load)	2,900 RPM
Volts, Phase	220 V, 1 Ph
Amps, Hertz	6 A, 60 Hz
Swing Over Bed	16” (46 mm)
Swing Over Tool Rest Base	12” (305 mm)
Distance Between Centers	42” (1067 mm)
Speeds	Infinite 0 - 3,200 RPM
Speed Ranges (2)	0 - 1,200; 0 - 3,200 RPM
Spindle Nose Threading	1-1/4” x 8 TPI
Headstock Taper	MT-2
Tailstock Taper	MT-2
Hole Through Drive Spindle	3/8” (10 mm)
Hole Through Tailstock	3/8” (10 mm)
Tailstock Ram Travel	4" (100 mm)
Number of Indexing Positions	12 (max. 36 possible)
Tool Rest Post Diameter	1” (25.4 mm)
Headstock Rotation	360°
Spindle to Floor Distance	44“ (1118 mm)
Overall Size (LxWxH)	47-1/4” x 77" x 22" (1200 x 1956 x 559 mm)
Base / Stand Size	17-3/8” X 59-1/4” (441 x 1505 mm)
Net Weight	386 lbs (175 kg)

NOTE: The specifications, photographs, drawings and information in this manual represent the current model when the manual was prepared. Changes and improvements may be made at any time, with no obligation on the part of Rikon Power Tools, Inc. to modify previously delivered units. Reasonable care has been taken to ensure that the information in this manual is correct, to provide you with the guidelines for the proper safety, assembly and operation of this machine.

SAFETY INSTRUCTIONS

IMPORTANT! Safety is the single most important consideration in the operation of this equipment. **The following instructions must be followed at all times.** Failure to follow all instructions listed below may result in electric shock, fire, and/or serious personal injury.
There are certain applications for which this tool was designed. We strongly recommend that this tool not be modified and/or used for any other application other than that for which it was designed. If you have any questions about its application, do not use the tool until you have contacted us and we have advised you.

SAFETY SYMBOLS

SAFETY ALERT SYMBOL: Indicates DANGER, WARNING, or CAUTION. This symbol may be used in conjunction with other symbols or pictographs.

DANGER Indicates an imminently hazardous situation, which, if not avoided, could result in death or serious injury.

WARNING Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION Indicates a potentially hazardous situation, which, if not avoided, could result in minor or moderate injury.

NOTICE: Shown without Safety Alert Symbol indicates a situation that may result in property damage.

GENERAL SAFETY

KNOW YOUR POWER TOOL. Read the owner's manual carefully. Learn the tool's applications, work capabilities, and its specific potential hazards.

BEFORE USING YOUR MACHINE

To avoid serious injury and damage to the tool, read and follow all of the Safety and Operating Instructions before operating the machine.

1. Some dust created by using power tools 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 those dust masks that are specially designed to filter out microscopic particles.

2. **READ** the entire Owner's Manual. **LEARN** how to use the tool for its intended applications.

3. **GROUND ALL TOOLS.** If the tool is supplied with a 3 prong plug, it must be plugged into a 3-contact electrical receptacle. The 3rd prong is used to ground the tool and provide protection against accidental electric shock. **DO NOT** remove the 3rd prong. See Grounding Instructions on the following pages.

4. **AVOID A DANGEROUS WORKING ENVIRONMENT. DO NOT** use electrical tools in a damp environment or expose them to rain.

5. **DO NOT** use electrical tools in the presence of flammable liquids or gasses.

6. **ALWAYS** keep the work area clean, well lit, and organized. **DO NOT** work in an environment with floor surfaces that are slippery from debris, grease, and wax.

7. **KEEP VISITORS AND CHILDREN AWAY. DO NOT** permit people to be in the immediate work area, especially when the electrical tool is operating.

8. **DO NOT FORCE THE TOOL** to perform an operation for which it was not designed. It will do a safer and higher quality job by only performing operations for which the tool was intended.

9. **WEAR PROPER CLOTHING. DO NOT** wear loose clothing, gloves, neckties, or jewelry. These items can get caught in the machine during operations and pull the operator into the moving parts. The user must wear a protective cover on their hair, if the hair is long, to prevent it from contacting any moving parts.

10. **CHILDPROOF THE WORKSHOP AREA** by removing switch keys, unplugging tools from the electrical receptacles, and using padlocks.

11. **ALWAYS UNPLUG THE TOOL FROM THE ELECTRICAL RECEPTACLE** when making adjustments, changing parts or performing any maintenance.

SAFETY INSTRUCTIONS

12. **KEEP PROTECTIVE GUARDS IN PLACE AND IN WORKING ORDER.**

13. **AVOID ACCIDENTAL STARTING.** Make sure that the power switch is in the “OFF” position before plugging in the power cord to the electrical receptacle.

14. **REMOVE ALL MAINTENANCE TOOLS** from the immediate area prior to turning “ON” the machine.

15. **USE ONLY RECOMMENDED ACCESSORIES.** Use of incorrect or improper accessories could cause serious injury to the operator and cause damage to the tool. If in doubt, check the instruction manual that comes with that particular accessory.

16. **NEVER LEAVE A RUNNING TOOL UNATTENDED.** Turn the power switch to the “OFF” position. **DO NOT** leave the tool until it has come to a complete stop.

17. **DO NOT STAND ON A TOOL.** Serious injury could result if the tool tips over, or you accidentally contact the tool.

18. **DO NOT** store anything above or near the tool where anyone might try to stand on the tool to reach it.

19. **MAINTAIN YOUR BALANCE. DO NOT** extend yourself over the tool. Wear oil resistant rubber soled shoes. Keep floor clear of debris, grease, and wax.

20. **MAINTAIN TOOLS WITH CARE.** Always keep tools clean and in good working order. Keep all blades and tool bits sharp, dress grinding wheels and change other abrasive accessories when worn.

21. **EACH AND EVERY TIME, CHECK FOR DAMAGED PARTS PRIOR TO USING THE TOOL.** Carefully check all guards to see that they operate properly, are not damaged, and perform their intended functions. Check for alignment, binding or breaking of moving parts. A guard or other part that is damaged should be immediately repaired or replaced.

22. **DO NOT OPERATE TOOL WHILE TIRED, OR UNDER THE INFLUENCE OF DRUGS, MEDICATION OR ALCOHOL.**

23. **SECURE ALL WORK.** Use clamps or jigs to secure the workpiece. This is safer than attempting to hold the workpiece with your hands.

24. **STAY ALERT, WATCH WHAT YOU ARE DOING, AND USE COMMON SENSE WHEN OPERATING A POWER TOOL.**
A moment of inattention while operating power tools may result in serious personal injury.

25. **ALWAYS WEAR A DUST MASK TO PREVENT INHALING DANGEROUS DUST OR AIRBORNE PARTICLES**, including wood dust, crystalline silica dust and asbestos dust. Direct particles away from face and body. Always operate tool in well ventilated area and provide for proper dust removal. Use dust collection system wherever possible. Exposure to the dust may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with dust. Allowing dust to get into your mouth or eyes, or lay on your skin may promote absorption of harmful material. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for the dust exposure, and wash exposed areas with soap and water.

26. **USE A PROPER EXTENSION CORD IN GOOD CONDITION.** When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. The table on the following page shows the correct size to use depending on cord length and nameplate amperage rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the larger diameter of the extension cord. If in doubt of the proper size of an extension cord, use a shorter and thicker cord. An undersized cord will cause a drop in line voltage resulting in a loss of power and overheating.
USE ONLY A 3-WIRE EXTENSION CORD THAT HAS A 3-PRONG GROUNDING PLUG AND A 3-POLE RECEPTACLE THAT ACCEPTS THE TOOL’S PLUG.

27. **ADDITIONAL INFORMATION** regarding the safe and proper operation of this product is available from:

- Power Tool Institute
  1300 Summer Avenue
  Cleveland, OH 44115-2851
  www.powertoolinstitute.org

- National Safety Council
  1121 Spring Lake Drive
  Itasca, IL 60143-3201
  www.nsc.org

- American National Standards Institute
  25 West 43rd Street, 4th Floor
  New York, NY 10036
  www.ansi.org

- ANSI 01.1 Safety Requirements for
  Woodworking Machines and the
  U.S. Department of Labor regulations
  www.osha.gov

28. **SAVE THESE INSTRUCTIONS.** Refer to them frequently and use them to instruct others.

SAFETY INSTRUCTIONS

ELECTRICAL SAFETY

⚠ WARNING: THIS TOOL MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCK.

IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides the path of least resistance for electric current and reduces the risk of electric shock. This tool is equipped with an electric cord that has an equipment grounding conductor and requires a grounding plug (not included). The plug **MUST** be plugged into a matching electrical receptacle that is properly installed and grounded in accordance with **ALL** local codes and ordinances.

DO NOT MODIFY ANY PLUG. If it will not fit the electrical receptacle, have the proper electrical receptacle installed by a qualified electrician.

IMPROPER ELECTRICAL CONNECTION of the equipment grounding conductor can result in risk of electric shock. The conductor with the green insulation (with or without yellow stripes) is the equipment grounding conductor. **DO NOT** connect the equipment grounding conductor to a live terminal if repair or replacement of the electric cord or plug is necessary.

CHECK with a qualified electrician or service personnel if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded when installing or replacing a plug.

USE ONLY A 3-WIRE EXTENSION CORD THAT HAS THE PROPER TYPE OF A 3-PRONG GROUNDING PLUG THAT MATCHES THE MACHINE'S 3-PRONG PLUG AND ALSO THE 3-POLE RECEPTACLE THAT ACCEPTS THE TOOL'S PLUG. *

REPLACE A DAMAGED OR WORN CORD IMMEDIATELY.

This tool is intended for use on a circuit that has a 220 volt electrical receptacle. **FIGURE A** shows the type of the 220v, 3-wire electrical plug and electrical receptacle that has a grounding conductor that is required.

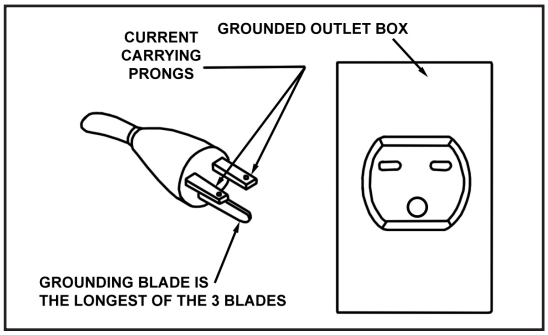


FIG. A

EXTENSION CORDS

⚠ WARNING: THE USE OF AN EXTENSION CORD WITH THIS MACHINE IS NOT RECOMMENDED. For best power and safety, plug the machine directly into a dedicated, grounded electrical outlet that is within the supplied cord length of the machine.

If and extension cord needs to be used, it should only be for a limited operation of the machine. The extension cord should be as short as possible in length, and have a minimum gauge size of 14AWG.

⚠ WARNING: Check extension cords before each use. If damaged replace immediately. Never use a tool with a damaged cord, since touching the damaged area could cause electrical shock, resulting in serious injury.

Use a proper extension cord. Only use cords listed by Underwriters Laboratories (UL). Other extension cords can cause a drop in line voltage, resulting in a loss of power and overheating of tool. When operating a power tool outdoors, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.

MINIMUM RECOMMENDED GAUGE FOR EXTENSION CORDS (AWG)

120 VOLT OPERATION ONLY

	25′ LONG	50′ LONG	100′ LONG	150′ LONG
0 to 6 Amps	18 AWG	16 AWG	16 AWG	14 AWG
6 to 10 Amps	18 AWG	16 AWG	14 AWG	12 AWG
10 to 12 Amps	16 AWG	16 AWG	14 AWG	12 AWG

⚠ WARNING: Keep the extension cord clear of the working area. Position the cord so that it will not get caught on lumber, tools or other obstructions while you are working with your power tool.

*** Canadian electrical codes require extension cords to be certified SJT type or better.**

**** The use of an adapter in Canada is not acceptable.**

Sample of 220 volt plug required for this machine.

NEMA 6-15P

Consult a qualified electrician if the distance of the machine from the electrical panel is greater than 30 feet.

SAFETY INSTRUCTIONS

SPECIFIC SAFETY INSTRUCTIONS FOR WOOD LATHES

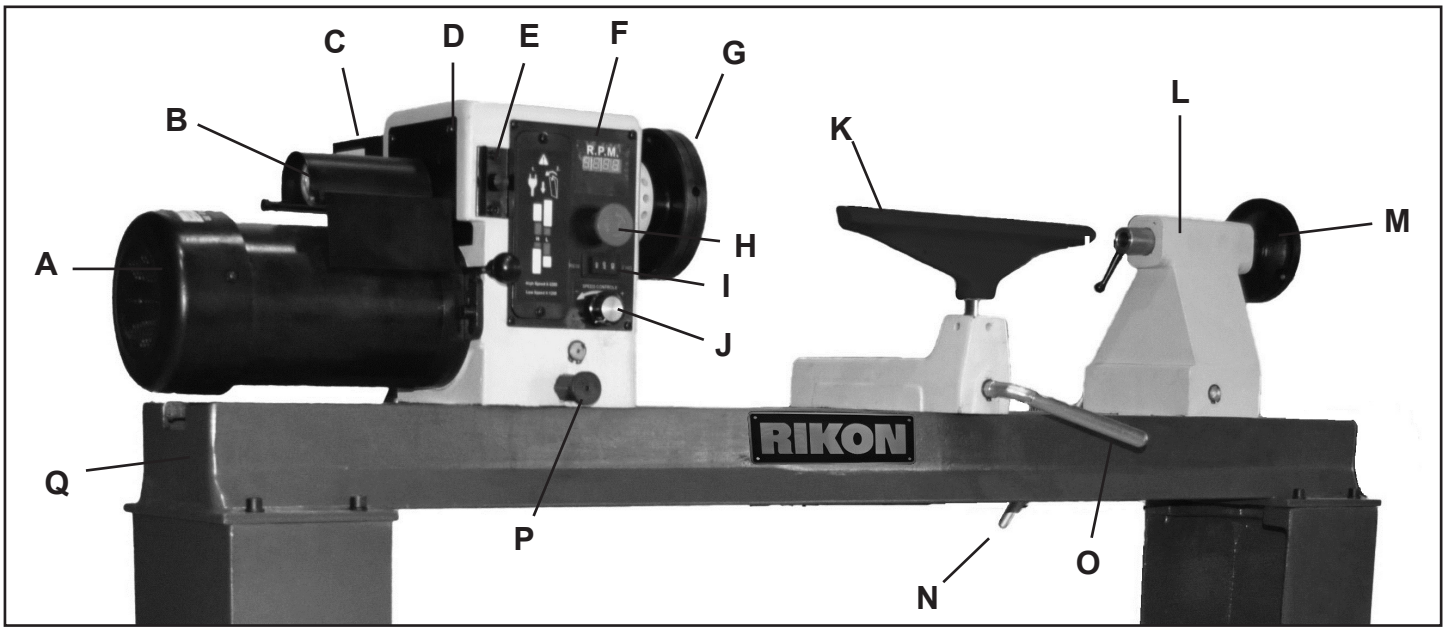
This machine is intended for the shaping, smoothing and finishing of natural, solid woods. The permissible workpiece dimensions must be observed (see Technical Specification). Any other use not as specified, including modification of the machine or use of parts not tested and approved by the equipment manufacturer can cause unforeseen damage.
ATTENTION: Use of this lathe still presents risks that cannot be eliminated by the manufacturer. Therefore, the user must be aware that wood working machines are dangerous if not used with care and all safety precautions are adhered to.

1. Do not operate this machine until you have read all of the following instructions.
2. Do not attempt to operate this machine until it is completely assembled.
3. Do not turn ON this machine if any pieces are damaged or missing.
4. This machine must be properly grounded.
5. If you are not familiar with the operation of the machine, obtain assistance from a qualified person.
6. Always wear approved, safety protective eyewear and hearing protection when operating this machine.
7. Always wear a dust mask and use adequate dust collection and proper ventilation.
8. Do not wear loose clothing or jewelry when operating this machine. Keep long hair tied back.
9. Always make sure the power switch is in the OFF position prior to plugging in the machine.
10. Always make sure the power switch is in the OFF position and the machine is unplugged when doing any cleaning, assembly, setup operation, or when not in use.
11. Use only sharp lathe tools. Dull tools can damage your work and are unsafe to use.
12. When turning between centers, make sure the headstock and tailstock are snug against the workpiece.
13. When face plate turning, rough-cut the workpiece close to the finished shape before screwing it to the face plate.
14. Never jam tools into the workpiece or take too big of a cut.
15. Make sure there are no loose knots, nails, staples, dirt or foreign objects in the workpiece to be turned.
16. Wood should not be warped, cracked or have improperly made or cured glue joints.
17. Test spin the workpiece to ensure that it does not hit the lathe bed or tool rest before turning on the lathe.
18. Start the lathe at slow speeds to check the settings, then increase the speed to your desired level for working.
19. Low speeds are best for roughing stock, and for long or large diameter workpieces.
20. If excessive vibration occurs, stop the lathe to check the workpiece settings between centers or on face plates.
21. For sanding or applying finishes, remove the tool rest from the machine. Use low speeds to avoid heat build-up.
22. Do not engage the spindle lock when the lathe is turning, and be sure to disengage the spindle lock when done working to avoid damage to the machine next time the lathe is turned on.
23. Never stop the machine by grabbing the workpiece, faceplate or hand wheel. Let the machine stop on its own.
24. The use of any accessories or attachments not recommended may cause injury to you and damage your machine.
25. Remove material or debris from the work area. Keep the floor and work area neat and clean.
26. Keep these instructions for future reference.

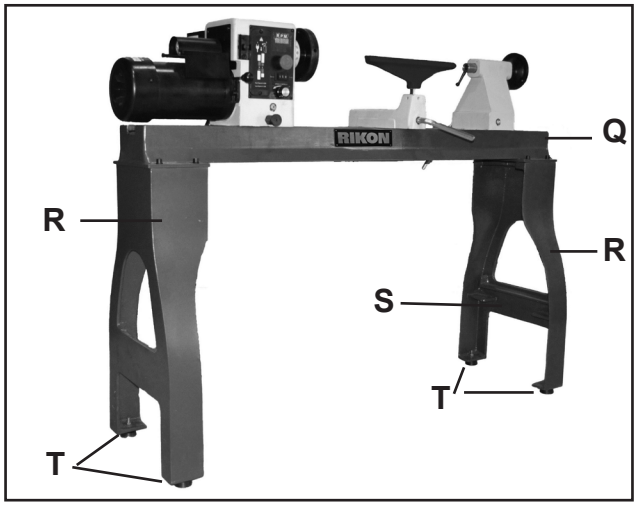
This owner's manual is not a teaching aid and is intended to show assembly, adjustments, and general use.

CALFORNIA PROPOSITION 65 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 and birth defects or other reproductive harm.Your risk from exposure to these chemicals varies, depending on how often you do this type of work. To reduce your exposure, work in a well-ventilated area and with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.
For more detailed information about California Proposition 65, log onto rikontools.com.

GETTING TO KNOW YOUR MACHINE



A. Motor
B. Outboard Hand Wheel (protected)
C. Electronics Frequency Inverter (rear)
D. Headstock
E. Spindle Lock
F. Digital Speed Readout
G. Spindle with Face Plate
H. ON / OFF Switch
I. Forward / Reverse Switch
J. Speed Control Knob
K. Tool Rest & Base Assembly
L. Tailstock Assembly
M. Tailstock Hand Wheel
N. Tailstock Locking Handle
O. Tool Rest Locking Handle
P. Headstock Locking Knob
Q. Lathe Bed
R. Leg
S. Shelf Bracket in Legs
T. Adjustable Feet



CONTENTS OF PACKAGE

Model 70-305 Heavy Duty VSR Wood Lathe is shipped complete in one box.

Unpacking and Clean-up

1. Carefully remove all contents from the shipping carton. Compare the contents with the list of contents to make sure that all of the items are accounted for, before discarding any packing material. Place parts on a protected surface for easy identification and assembly. If any parts are missing or broken, please call RIKON Customer Service (877-884-5167) as soon as possible for replacements. DO NOT turn your machine ON if any of these items are missing. You may cause injury to yourself or damage to the machine.

2. Report any shipping damage to your local distributor.

3. Clean all rust protected surfaces with ordinary house hold type grease or spot remover. Do not use; gasoline, paint thinner, mineral spirits, etc. These may damage painted surfaces. Clean thoroughly under the headstock, tailstock and tool rest body.

4. Apply a coat of paste wax to any machined surfaces to prevent rust. Wipe all parts thoroughly with a clean dry cloth.

5. Set packing material and shipping carton aside. Do not discard until the machine has been set up and is running properly.

CONTENTS OF PACKAGE

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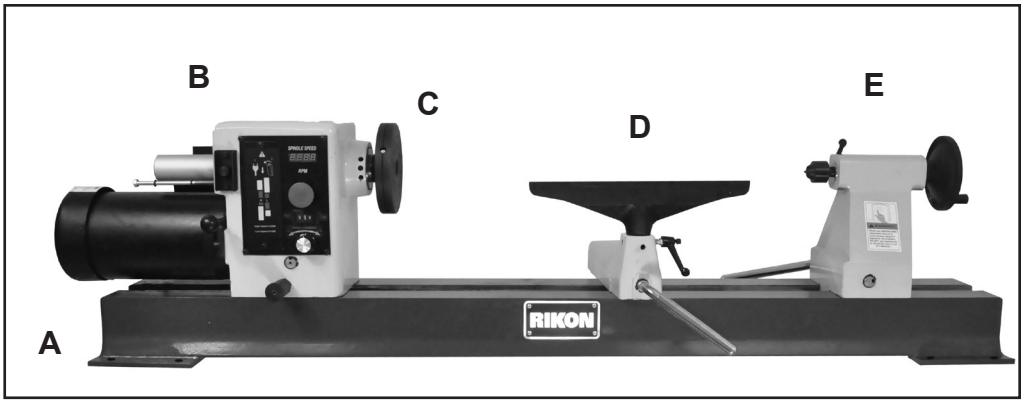
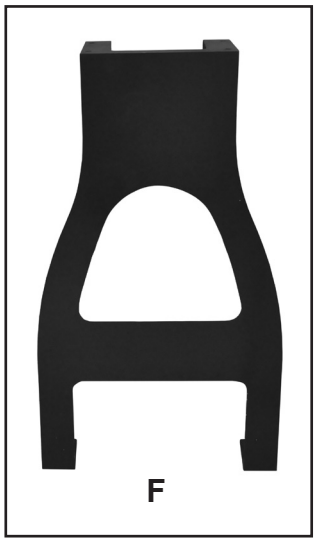
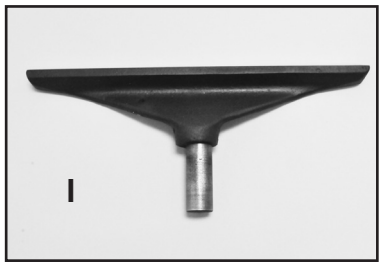
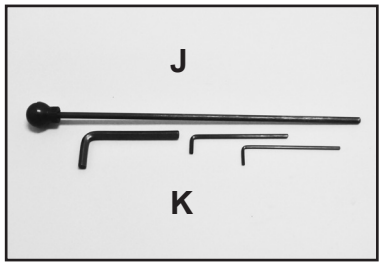
A. Lathe Bed
B. Headstock Assembly
C. Faceplate
D. Tool Rest Base Assembly
E. Tailstock Assembly

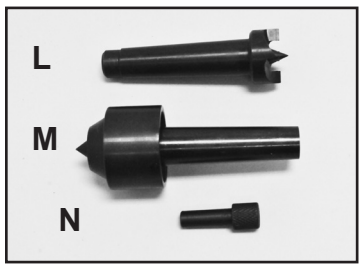


LIST OF LOOSE PARTS









F. Legs (2)
G. Bolts & Washers
H. Adjustable Feet
I. Tool Rest
J. Knockout Bar
K. Hex Wrenches (3, 4, 8mm)
L. Drive / Spur Center
M. Live / Tailstock Center
N. Index Pin
O. Manual & Warranty Card

INSTALLATION

MOVING & INSTALLING THE LATHE

⚠ CAUTION The lathe is VERY heavy- over 385 lbs! It is best to assemble the machine near the area where it will eventually reside.
When moving an assembled lathe, DO NOT use the headstock assembly, motor, tool rest or tailstock as this may damage the machine. Use a forklift, or pallet jack under the lathe's bed or legs to lift and move the machine. Straps or battens placed under the lathe bed can also be used to move the machine.

1. Carefully remove the machine from the shipping pallet. Do not push or lift an assembled lathe by the headstock, tailstock or tool rest assemblies as this may damage the machine. Hold the legs or under the bed when moving.

2. Position the machine on a solid, level foundation that is located in an area that has ample space in front and in back of the lathe for working and moving around the lathe. For best power and safety, the lathe should be plugged directly into a dedicated grounded electrical outlet that is within the supplied cord length of the machine. The use of an extension cord is not recommended.

3. Align the machine so that during use, any turning debris or kickback will not face aisles, doorways, or other work areas that bystanders may be in. Do not locate or use the machine in damp or wet conditions.

4. Once in place in your shop, level the machine with the adjustible feet pads. Or, if the floor is level, secure the machine to the floor with lag screws (not supplied). Remove the feet pads (if installed) and use the holes in the bottom of the leg's feet for this purpose.

ASSEMBLY

⚠ WARNING **THE MACHINE MUST NOT BE PLUGGED IN AND THE POWER SWITCH MUST BE IN THE 'OFF' POSITION UNTIL ASSEMBLY IS COMPLETE.**

⚠ CAUTION The Stand and Bed of the lathe are extremely heavy. It may require additional help to assist with the assembly and installation of the lathe.
It is best to assemble the machine in an open, well lit area near the area where it will eventually reside.

INSTALL THE FEET ONTO THE LEGS

If the lathe is to be free-standing, the four adjustable feet should be installed onto the bottom pads of the leg stand. See below.
If the lathe is to be permanently bolted to the floor, do NOT install the four adjustable feet. The holes in the leg pads will be used for installing the bolts through the leg pads and into the floor.

1. If the lathe is to be free-standing, before attaching the legs to the lathe bed, install the four adjustable feet onto the bottom pads of the legs.

2. The adjustable Feet (#A28) have three hex nuts (#A27) pre-assembled on the threaded shafts. Remove the top nut and leave the bottom two nuts on the shaft. These two nuts will be used to adjust the level of the lathe later on. FIG. 1.

3. Insert the threaded shaft through the hole in the bottom of the leg pad, and re-install the top nut onto the shaft to secure the foot onto the leg. Do not fully tighten the nut at this time.

4. Install the other three adustable feet on the other three leg pads.

5. Once the lathe is assembled and in its final locaton, adjust the feet nut(s) to level the lathe, then tighten the nuts.

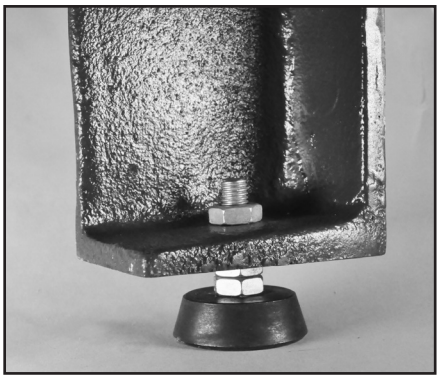
INSTALL THE LATHE BED ONTO THE LEGS

1. Position the two stand legs approximately 59-1/4” apart measuring from the outside edges. Be sure that the shelf brackets on the legs are facing inward, towards each other.

2. Secure Headstock (#B11), Tailstock (#A20), and Tool Rest (#A7) assemblies to the Lathe Bed (#A2) by tightening their locking Lever Handles. See page 11 of this manual on how to make these adjustments.

3. With assistance, lift up the lathe bed assembly and carefully position it onto the stand legs to align the bolt holes.
⚠ CAUTION Lift the lathe body by the bed only, not by the motor, headstock, tailstock, or tool rest assemblies.

FIG. 1



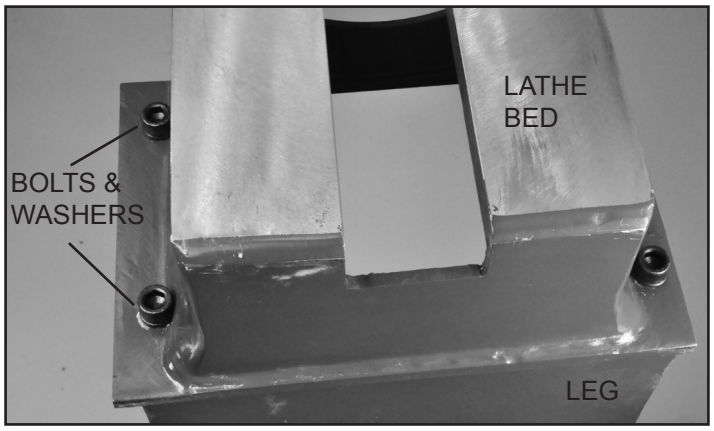


FIG. 2

FIG. 3

4. Secure the lathe bed to the stand legs with the eight Hex Head Bolts (#A23) and Flat Washers (#A24) . FIG. 2.

5. NOTE: A shelf can be added between the legs for storage of tools, turning supplies or for extra weight. Use 2x4s and thick plywood to construct this shelf to your specific design or storage needs. (Plans are not available). FIG. 3.

OPERATION

HEADSTOCK CONTROLS

1. **HEADSTOCK LOCK HANDLE:** (FIG. 4, A) The rear lever locks the headstock head in position on the lathe bed. To move the headstock along the bed, unlock lever handle, then re-tighten handle when the headstock is re-positioned.

2. **HEADSTOCK INDEXING PIN:** (B) The headstock can rotate 360° on the bed to allow the user to turn in six positions - 1 for 'inboard' spindle turning and 6 for 'outboard' faceplate turning (5 with the use of a free-standing tool rest). The Indexing Pin secures the headstock when rotated to one of the six positions. FIG. 5.
   - Unlock the headstock Locking Handle (A).
   - Pull out the front Knob (B) to unlock the plunger and to release the headstock.
   - Rotate the headstock to one of the 6 desired positions, and the Indexing pin will engage the headstock in place.
   - Re-lock the headstock with the locking handle.

3. **HEADSTOCK SPINDLE LOCK:** (C) This push Pin is used to keep the spindle from turning, so that faceplates, chucks or other accessories that have been mounted on the threaded spindle can be mounted, or removed.
⚠ CAUTION Never press the headstock spindle lock while the spindle is turning or damage to the lathe will result.

4. **HEADSTOCK ON/OFF BUTTON:** (D) Slightly rotate the Button so that it pops out and turns the lathe ON. Push the button in to turn the lathe OFF.

5. **HEADSTOCK RPM KNOB:** (E) This knob controls the desired spindle revolutions per minute (RPM). The lathe has two speed ranges - for speed (0-3200) and for torque (0-1200). See the Speed Chart for recommended speeds based on the diameter of the workpieces. FIG. 6.

6. **HEADSTOCK FORWARD / REVERSE SWITCH:** (F) This toggle switch will change the direction that the spindle turns - clockwise (forward) or counter-clockwise (reverse).
⚠ CAUTION Only change rotation direction when the spindle has completely stopped.

7. **HEADSTOCK RPM DIGITAL READOUT:** (G) Displays the spindle's RPM as set by the RPM Knob (E).

8. **HEADSTOCK FACEPLATE:** (H) Faceplates (#B3) are used for turning bowls and plates. There are a number of screw holes on the plate for mounting the workpiece for turning. Thread the faceplate onto the spindle in a clockwise direction, and tighten it in place with the set screws that are located on the back hub of the faceplate.
To remove the faceplate, loosen the set screws. Push in headstock spindle lock and then insert the knockout bar into one of the holes that are around the perimeter of the faceplate. Use the bar for leverage to unthread the faceplate from the spindle.

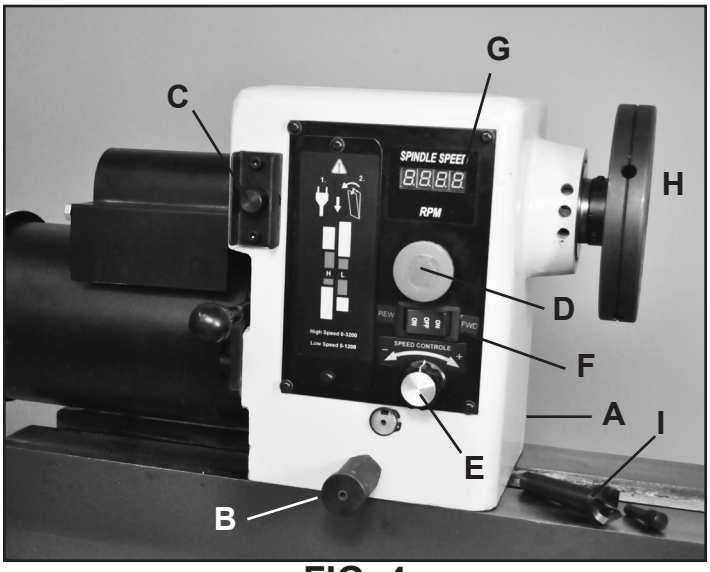


FIG. 4

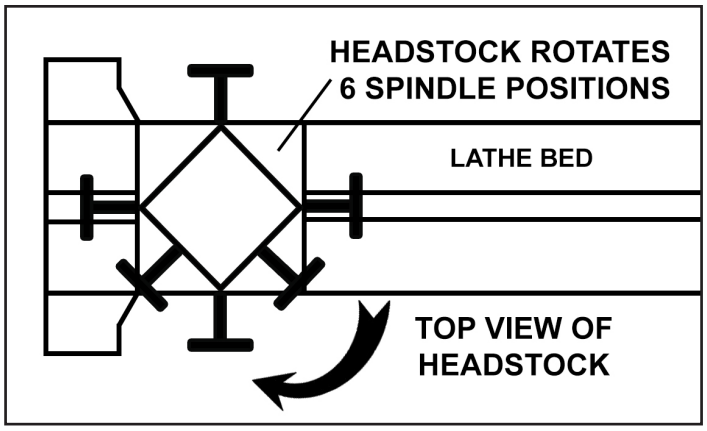


FIG. 5

DIAMETER OF WORK	ROUGHING RPM	GENERAL CUTTING RPM	FINISHING RPM
Under 2"	1520	3200	3200
2 to 4"	750	1600	2480
4 to 6"	510	1080	1650
6 to 8"	380	810	1240
8 to 10"	300	650	1000
10 to 12"	255	540	830
12 to 14"	220	460	710
14 to 16"	190	400	620

FIG. 6

OPERATION

9. **HEADSTOCK SPUR CENTER:** (FIG. 4 & 7, I) The Spur Center (#B1) is used for turning between centers. It fits into the spindle. Both spindle and the spur center have matching MT-2 tapers. The spur center can be removed from the spindle with the Kockout Bar (#B30). Insert the knockout bar through the opposite, outboard left end of the spindle, and then hit the spur center's back end to knock it out of the spindle. NOTE: Be careful and hold the spur center during this process so it does not fly out onto the floor.

10. **HEADSTOCK INDEXING HOLES:** (FIG. 7, A) There are three postioning holes located in the headstock casting, behind the spindle. Insert the Indexing Pin (B) (#B10) into one of these holes, and then make sure that it locates into one of the indexing holes that are in the spindle.
There are 12 holes in the spindle, each 30° apart. The three holes in the headstock casting that accept the indexing pin are 20° apart. The combination of these holes will allow you to mark your workpiece for evenly spaced features up to 36 positions. See page 14.
⚠ CAUTION Never start the lathe with the index pin engaged in the spindle, or damage to the machine will result.

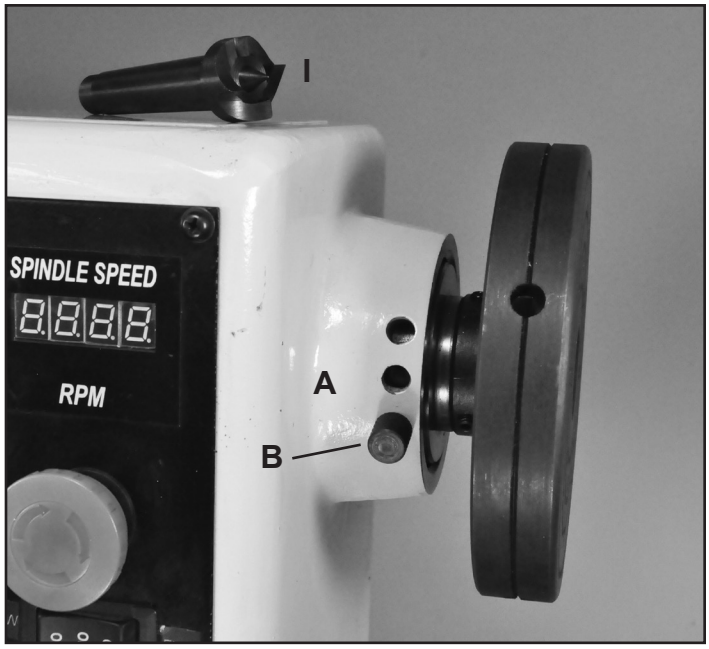


FIG. 7

TOOL REST CONTROLS

11. **TOOL REST BODY LOCK HANDLE:** (FIG. 8, A) This cam action lever handle locks the tool rest body down in position on the lathe bed. Unlock handle to position the tool rest in any location along the lathe bed. Tighten the handle when the tool rest is properly located for safe turning of the workpiece.

12. **TOOL REST LOCK HANDLE:** (B) Locks the tool rest in position for supporting your tools during turning. Unlock the handle to adjust the tool rest at a specific angle, or height. Tighten handle when properly positioned.

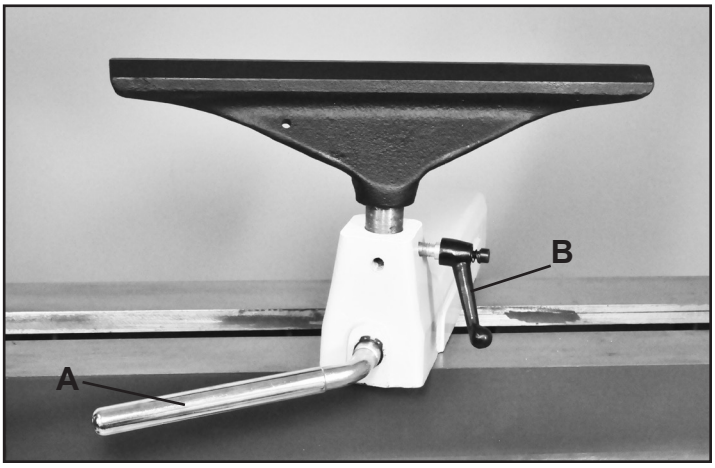


FIG. 8

TAILSTOCK CONTROLS

13. **TAILSTOCK LOCK HANDLE:** (FIG. 9, C) Locks the tailstock in position along the length of the lathe bed. Unlock handle to position the tool rest to move the tailstock. Tighten handle when properly positioned.

14. **TAILSTOCK QUILL LOCK HANDLE:** (D) Secures the tailstock quill in position. Unlock the handle to move the quill, with live center, forward or backwards. Tighten the locking handle when the quill is finally positioned.

15. **TAILSTOCK QUILL HANDWHEEL:** (E) The handwheel advances or retracts the quill. The tailstock quill lock handle (D) must be loose to move the quill.

16. **TAILSTOCK LIVE CENTER:** (F) Used for turning between centers. The Live Center (#A11) and the Quill (#A12) have MT-2 tapers. Remove the live center by retracting the quill until the center loosens, or use the knockout bar.

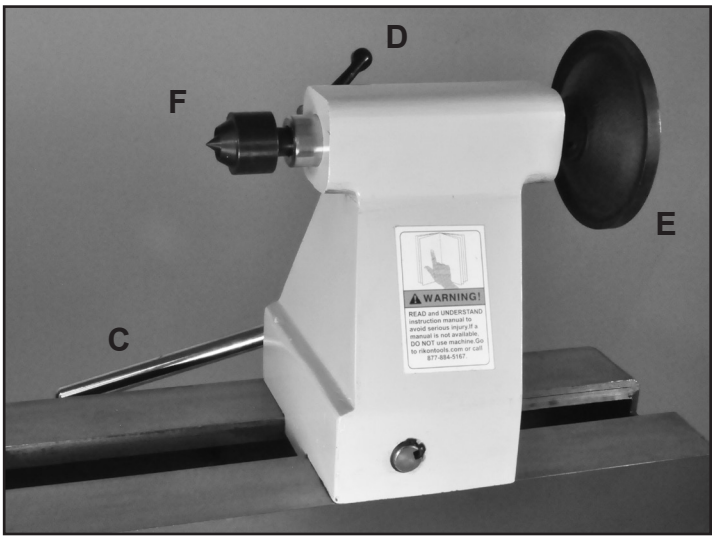


FIG. 9

ADJUSTMENTS

CHANGING SPEEDS

1. Unplug the lathe from the power source.

2. Remove the front Belt Door (#B54) to gain access to the belt and pulleys that are inside of the headstock.

3. Loosen the motor mount Locking Hex Head Screws (#B37 & B36, FIG. 10, A).

4. Lift the Tensioning Handle (#B40, B) to loosen the tension on the Poly V-Belt (#B24). The belt can now be positioned on the pulleys for the desired speed range. FIG. 11 shows the belt positions for the two speeds. NOTE: The 'High' speed range (0-3200 RPM) provides maximum speed. The 'Low' speed range (0-1200 RPM) will provide maximum torque. See the Speed Chart on page 10, FIG. 6, for recommended speeds based on the diameter of the workpieces being turned.

4. With the Poly V-Belt positioned on the pulleys, lower the tensioning handle so that the weight of the motor provides the needed tension on the belt. Then secure the locking handle in place by re-tightening the two hex head screws that were loosened in step 3, above.

5. Re-attach the front Belt Door onto the headstock to protect the belt, pulleys and internal working from dust.

NOTE: The AC Inverter (#B18), located on the rear of the headstock, does not require any programming. It is pre-programmed from the factory. The buttons and knob on the face of inverter should not be changed. Use only the controls on the front of headstock.

ADJUSTING THE LOCKING HANDLES

The locking handles on the tailstock, tool rest and headstock are pre-set at the factory to give ample holding pressure against the lathe bed to keep these lathe assemblies positioned, so that they will not move during use.

If adjustments are needed, the clamping pressure can be changed by turning the large Hex Nuts (#A26, B41) that are located under the lathe bed and below the assemblies. This can be done with an adjustable wrench (not included). FIG. 12 shows the tool rest removed from the lathe bed.

1. Loosen the locking handle so that there is no clamping pressure being exerted on the lathe assembly.

2. With the wrench, slightly turn the Hex Nut to loosen or tighten it on its threaded Clamping Bolt (#A4, A13, B43).

3. Test the clamping pressure with the locking handle, and adjust the nut again, if needed, to set the right pressure.

⚠ WARNING **THE MACHINE MUST NOT BE PLUGGED IN AND THE POWER SWITCH MUST BE IN THE OFF POSITION UNTIL ALL ADJUSTMENTS ARE COMPLETE.**

FIG. 10

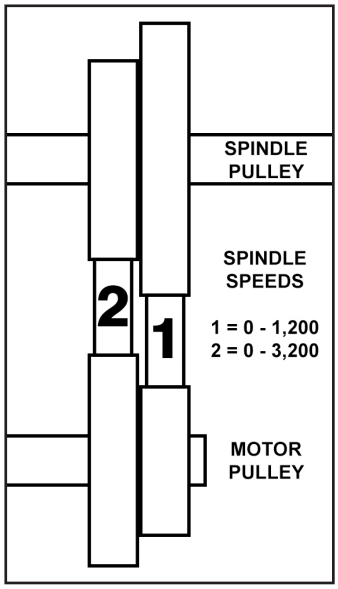


FIG. 11

FIG. 12

ADJUSTMENTS

CHANGING THE BELT

1. Unplug the lathe from the power source.

2. Remove the front Belt Door (#B54, FIG. 13, A) to gain access to the belt and pulleys inside of the headstock.

3. Loosen the front and rear motor mount Locking Hex Head Screws (#B37 & B36, FIG. 13, B).

4. Lift the Tensioning Handle (#B40, C) to loosen the tension on the Poly V-Belt (#B24). The belt can now be removed from the lower pulley.

5. Loosen the Set Screws (#B32) that attach the Hand Wheel (#B29, D) to the spindle, and remove the Hand Wheel.

6. Remove the two Screws (#B27) and two Bolts (#B69) that hold the Cover Plate (#B28, E) and Hand Wheel Cover (#B60, F) in position. Remove the Cover Plate (#B28). This will open up the side of the headstock so that the Drive Belt (#B24) can be removed.

7. Move the belt over the spindle pulleys, around the end of the spindle, and between the Spindle Lock Pin (#B49, G) and spindle to remove the belt from the machine. If more room is needed, the Spindle Pulley (#B26, FIG. 14, H) can be shifted by loosening its set screws (#B25). Return the pulley back to position and secure the set screws once the new belt is installed.

8. Install a new drive belt by reversing the procedure.

9. Reassemble the lathe parts by also reversing the procedure described in steps 7 - 1 above.

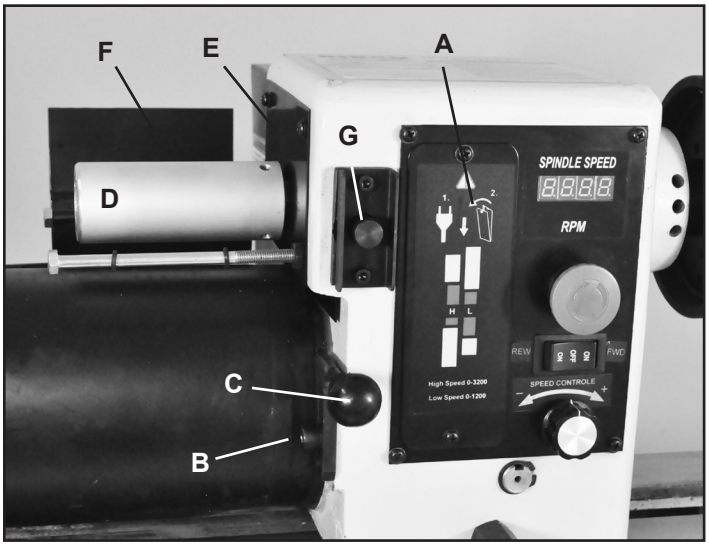


FIG. 13

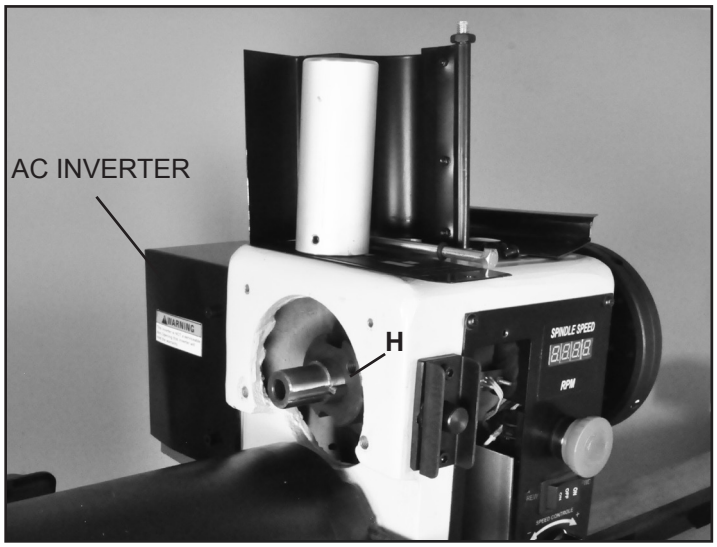


FIG. 14

CHANGING THE BEARINGS

1. Unplug the lathe from the power source.

2. Follow the steps 2-7 above to remove the drive belt.

3. Loosen the Set Screws (#B25) in the Spindle Pulley Assembly (#B26).

4. Carefully knock out the spindle, towards the tailstock. Use a block of wood against the spindle end to prevent any damage when it is hit with a mallet/hammer.

5. Replace the two Bearings (#B6 &B7) in the headstock.

6. Reassemble the lathe parts by reversing the procedure described in steps 4 - 1 above.

NOTE: The lathe's ball bearings are lifetime lubricated, sealed, and do not need any further care. To prevent slipping, keep the drive belt free of oil and grease.

FIG. 15

ADJUSTMENTS

SPINDLE INDEXING ADJUSTMENTS

The Headstock Spindle has 12 indexing holes, each 30° apart, which allows accurate pattern work on projects such as straight fluting, grooving, drilling, detail carving, wood burning patterns, laying out designs and more.

In addition to the 12 indexing holes in the spindle, there are three positioning holes located in the headstock casting, behind the spindle. FIG. 16. These three holes (A, B, C), which accept the indexing pin, are 20° apart. The combination of these 15 total holes will allow you to mark your workpiece for evenly spaced features up to 36 positions.

The Indexing Chart, below, shows how to rotate the spindle to access any of the 12 indexing holes, as well as using the three headstock position holes to increase the indexing possibilities up to 36 settings. The 11 primary settings are listed, however, other indexing/design settings are possible.

Insert the Indexing Pin (#B10) into one of these three headstock positioning holes according to the chart, and the number of setting you need for your workpiece. Make sure that the pin locates and securely enters into one of the indexing holes so that there is no accidental slipping.

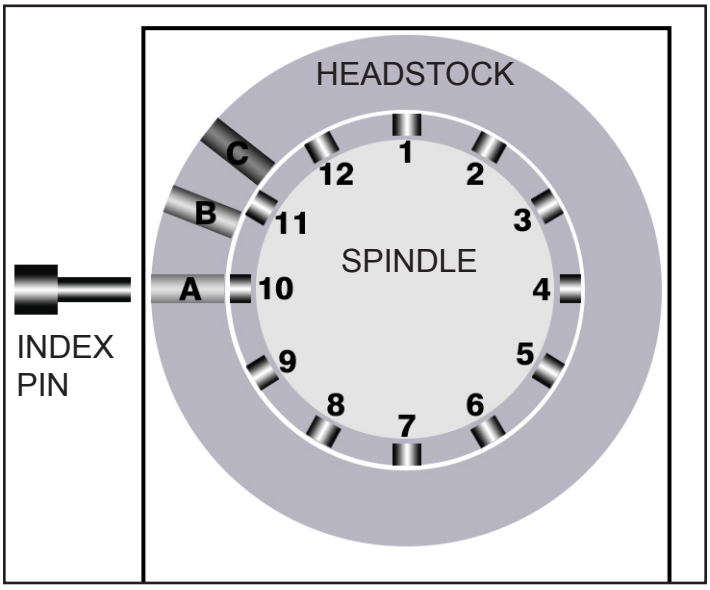


FIG. 16

NOTE: The 9,18 and 36 indexing positions require three settings (A, B, C) with the headstock holes. Set the Indexing Pin in the 'A' setting and then do your work, rotating the spindle to the index settings noted on the chart. Once done, move the index pin to the headstock 'B' setting and work through the next index setting number positions. Finally, move the index pin to the headstock 'C' setting and complete the remaining work with the workpiece rotated to the last spindle index numbers indicated.

⚠ WARNING NEVER START THE LATHE WITH THE INDEX PIN ENGAGED IN THE SPINDLE, OR DAMAGE TO THE MACHINE WILL RESULT.

NUMBER OF INDEX POSITIONS	ANGLE BETWEEN POSITIONS	HEADSTOCK INDEX LETTER	SPINDLE INDEX NUMBER	HEADSTOCK INDEX LETTER	SPINDLE INDEX NUMBER	HEADSTOCK INDEX LETTER	SPINDLE INDEX NUMBER
1	360°	A	1				
2	180°	A	1,7				
3	120°	A	1,5,9				
4	90°	A	1,4,7,10				
6	60°	A	1,3,5,7,9,11				
8*	45°	A	1,4,7,10				
9	40°	A	1,5,9	B	3,7,11	C	1,5,9
12	30°	A	1 to 12				
18	20°	A	1,3,5,7,9,11	B	1,3,5,7,9,11	C	1,3,5,7,9,11
24*	15°	A	1 to 12				
36	10°	A	1 to 12	B	1 to 12	C	1 to 12

* Indexing for 8 and 24 positions requires that the first sequence of settings (A) are made, then the workpiece has to be rotated into position on the lathe for the remaining indexing to be done.

MAINTENANCE

⚠ WARNING: Turn the power switch “OFF” and disconnect the plug from the outlet prior to adjusting or maintaining the machine. DO NOT attempt to repair or maintain the electrical components of the motor. Contact a qualified service technician for this type of maintenance.

1. Before each use:

- Check the power cord and plug for any wear or damage.

- Check for any loose screws, hardware, locking handles, jigs or various lathe accessories.

- Check the area to make sure it is clear of any misplaced tools, lumber, cleaning supplies, etc. that could hamper the safe operation of the machine.

2. Avoid a build-up of wood shavings and dust. Regularly clean all parts of the machine using a soft cloth, brush or compressed air. A general cleaning should be done after every use to avoid future problems and ensure that the machine is in ready condition for its next use.

WARNING: If blowing sawdust, wear proper eye protection to prevent debris from blowing into eyes.

3. Keep the lathe bed free of resin and rust. Clean it regularly with a non-flammable solvent, then coat with a light film of dry lubricant spray, or wax, to enhance passage of the tool rest and tailstock on/over the bed.

4. Keep the lathe tools sharp and make sure the steel is not loose in the handle so that no accidents might occur. Making sure that they are in proper operating condition will ensure that the quality of your turning will be the best possible.

5. Check all lathe accessories (spur centers, live centers, chucks, tool rests, etc) to ensure that they are in perfect working condition.

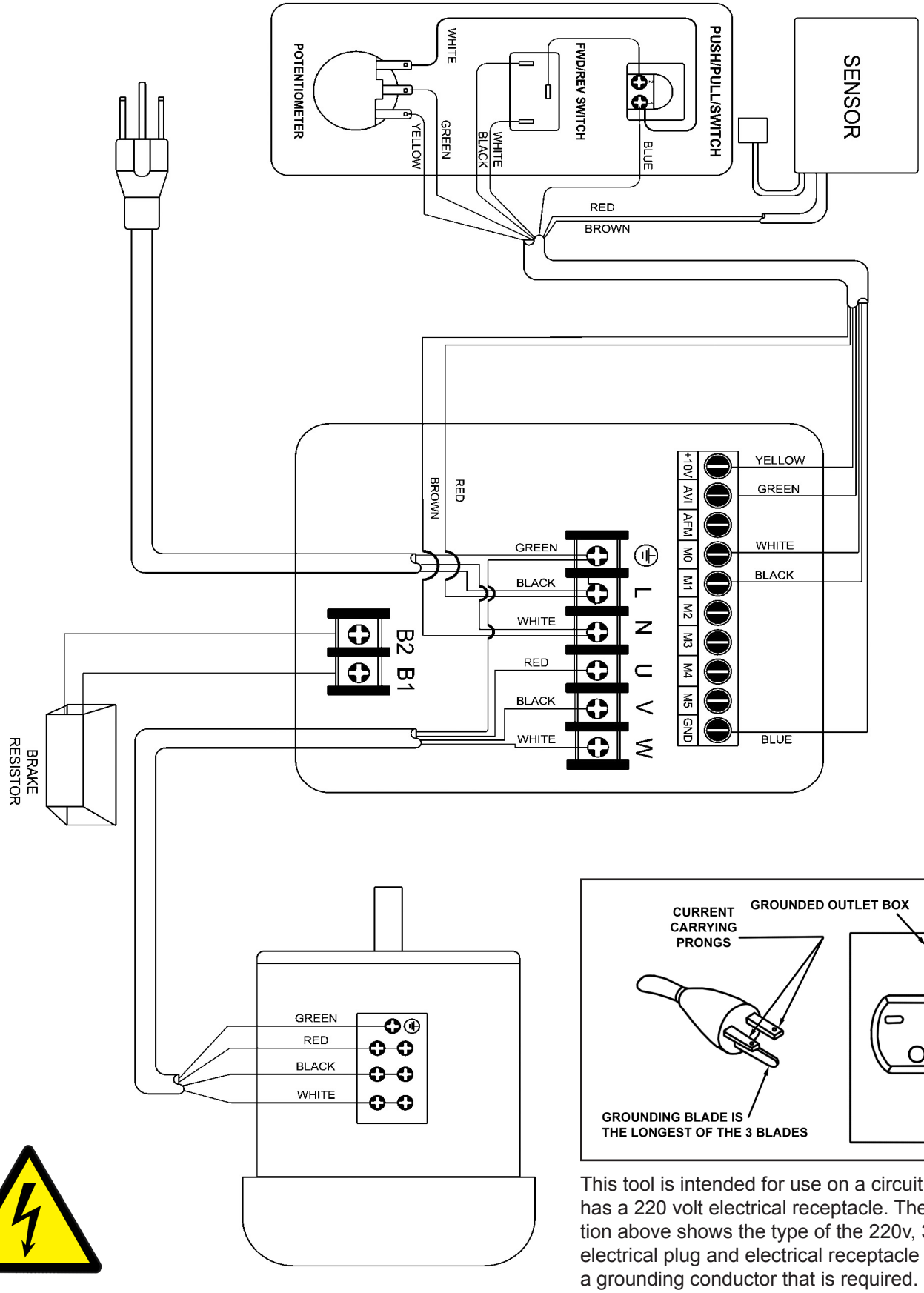
6. The lathe’s ball bearings are lifetime lubricated, sealed, and do not need any further care. Keep the drive belt free of oil and grease.

NOTES

Use this section to record maintenance, service and any calls to Technical Support:

WIRING DIAGRAM

⚠ WARNING: This machine must be grounded. Replacement of the power supply cable should only be done by a qualified electrician. See page 5 for additional electrical information.



This tool is intended for use on a circuit that has a 220 volt electrical receptacle. The illustration above shows the type of the 220v, 3-wire electrical plug and electrical receptacle that has a grounding conductor that is required.

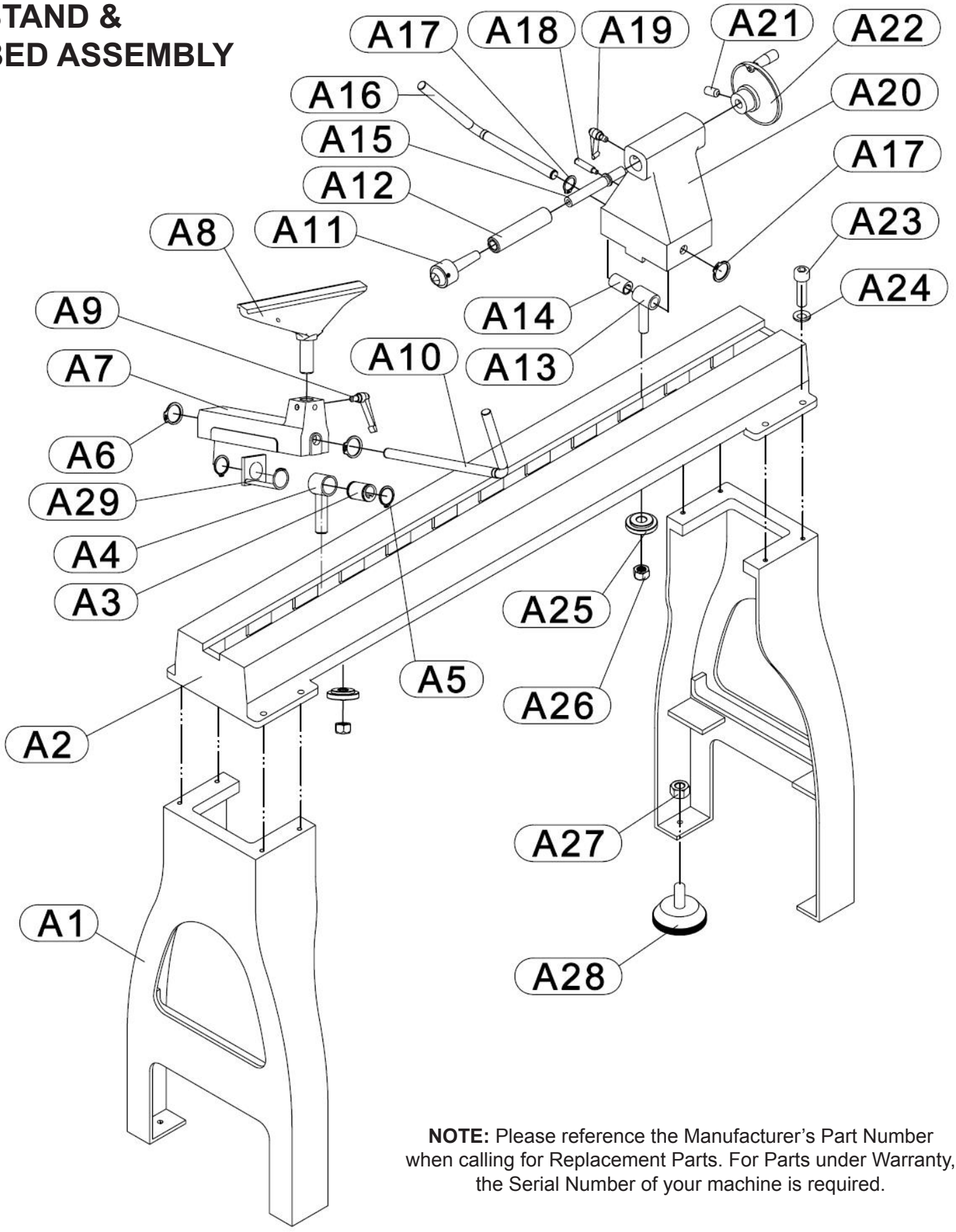
TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	REMEDY
Motor will not start	1. Machine is not plugged in 2. Low voltage 3. Loose connection	1. Plug in machine 2. Check fuses 3. Check plug and all connections
Motor fails to develop full power.	1. Power line is overloaded 2. Undersize wires in supply system 3. Low voltage 4. Worn motor	1. Correct the overload condition 2. Increase supply wire size or eliminate extension cord if one is used 3. Request voltage check from power company and correct low voltage condition 4. Replace the motor
Motor or Spindle Stalls or will not start	1. Excessive depth of cut 2. Loose or broken belt 3. Worn spindle bearings 4. Improper cooling of motor 5. Worn motor	1. Reduce cutting depth 2. Check tension or replace drive belt 3. Replace bearings 4. Clean motor to increase air flow, or reduce motor running time 5. Replace Motor
Excessive Vibration.	1. Workpiece is warped, out of round, has major flaw, or was improperly prepared or centered for turning 2. Worn spindle bearings 3. Worn belt 4. Motor mount bolt or handles are loose 5. Lathe is on an uneven surface	1. Correct problem by planing, band sawing, or discard the workpiece 2. Replace the bearings 3. Replace the belt 4. Tighten all bolts or handles 5. Shim the lathe stand, or adjust the feet on the stand for stability
Tailstock Moves when applying pressure	1. Excessive pressure being applied by the tailstock onto the workpiece 2. Tailstock is not secured in place 3. Lathe bed and tailstock mating surfaces are greasy or oily.	1. Apply only sufficient force with the tailstock to hold the workpiece securely between centers. 2. Tighten tailstock locking lever 3. Remove tailstock and clean bed surfaces with a cleaner degreaser
Tailstock or Tool Rest Base do not lock in place	1. Incorrect adjustment on locking lever mechanism	1. Adjust the nut under the clamping plate to increase (or decrease) the clamping pressure of the lock levers
Machine bogs down during cutting	1. Excessive depth of cut is taken 2. Turning tools are dull	1. Decrease the depth of cut 2. Sharpen the turning tools
Tools tend to grab or dig in.	1. Dull turning tools 2. Tool rest is set too low 3. Tool rest is set too far from the workpiece 4. Improper turning tool is being used	1. Sharpen the tools 2. Reposition the tool rest height 3. Set the tool rest closer to the workpiece 4. Use the correct tool for operation
Digital readout does not work	1. Digital readout sensor out of position	1. Contact Technical Support at 877-884-5167 or email techsupport@rikontools.com

For parts or technical questions contact: techsupport@rikontools.com or 877-884-5167.

PARTS DIAGRAM

STAND & BED ASSEMBLY



NOTE: Please reference the Manufacturer's Part Number when calling for Replacement Parts. For Parts under Warranty, the Serial Number of your machine is required.

PARTS LIST

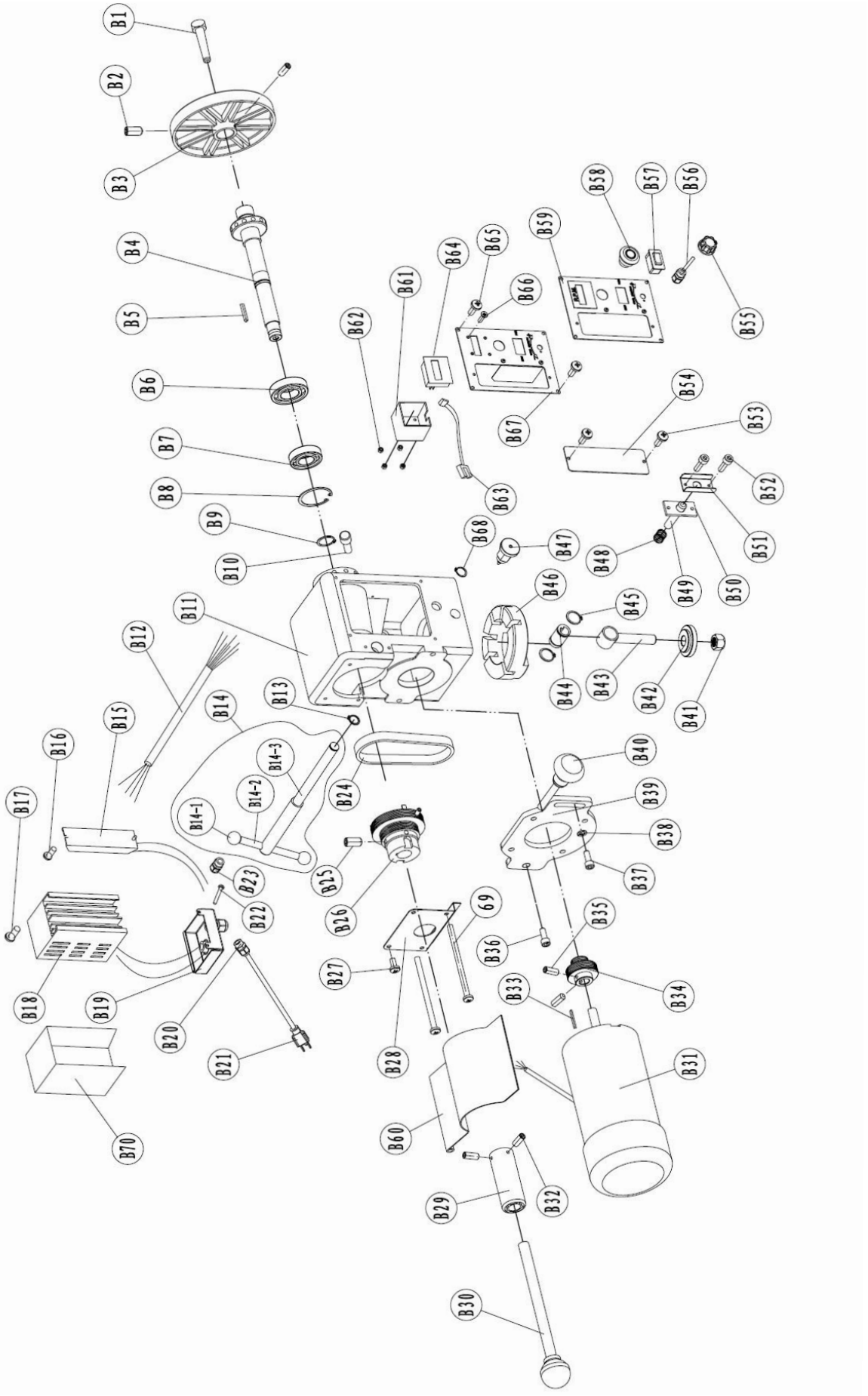
STAND & BED ASSEMBLY

KEY NO.	DESCRIPTION	MFG. PART NO.
A1	Stand Leg	P70-305-A1
A2	Bed	P70-305-A2
A3	Bushing	P70-305-A3
A4	Tool Support Rod	P70-305-A4
A5	C-Ring	P70-305-A5
A6	C-Ring	P70-305-A6
A7	Tool Rest Base	P70-305-A7
A8	Tool Rest	P70-305-A8
A9	Tool Support Handle	P70-305-A9
A10	Lever	P70-305-A10
A11	Center	P70-305-A11
A12	Quill	P70-305-A12
A13	Clamp Bolt	P70-305-A13
A14	Bushing	P70-305-A14
A15	Lead Screw	P70-305-A15
A16	Lever	P70-305-A16
A17	C-Ring C-18	P70-305-A17
A18	Pin	P70-305-A18
A19	Tail Stock Quill Handle	P70-305-A19
A20	Tail Stock	P70-305-A20
A21	Set Screw M6x12	P70-305-A21
A22	Hand Wheel	P70-305-A22
A23	Hex Head Bolt	P70-305-A23
A24	Washer	P70-305-A24
A25	Clamp	P70-305-A25
A26	Nut M18	P70-305-A26
A27	Nut M10	P70-305-A27
A28	Adjustable Foot	P70-305-A28
A29	Tool Support Bracket	P70-305-A29

NOTE: Please reference the Manufacturer's Part Number when calling for Replacement Parts.
For Parts under Warranty, the Serial Number of your machine is required.

PARTS DIAGRAM

HEADSTOCK ASSEMBLY



NOTE: Please reference the Manufacturer's Part Number when calling for Replacement Parts. For Parts under Warranty, the Serial Number of your machine is required.

PARTS LIST

HEADSTOCK ASSEMBLY

KEY NO.	DESCRIPTION	MFG. PART NO.
B1	Spur Center	P70-305-B1
B2	Set Screw M6x15	P70-305-B2
B3	Face Plate	P70-305-B3
B4	Spindle	P70-305-B4
B5	Key 5x5x30	P70-305-B5
B6	Ball Bearing 6207Z	P70-305-B6
B7	Ball Bearing 6206Z	P70-305-B7
B8	C-Ring C-62	P70-305-B8
B9	C-Ring C-30	P70-305-B9
B10	Index Pin	P70-305-B10
B11	Headstock	P70-305-B11
B12	Wire	P70-305-B12
B13	Lever	P70-305-B13
B14	Lever Handle Assembly	P70-305-B14
B14-1	Knob	P70-305-B14-1
B14-2	Threaded Handle	P70-305-B14-2
B14-3	Straight Lock Handle	P70-305-B14-3
B15	Braking Resistor	P70-305-B15
B16	Screw M5x12	P70-305-B16
B17	Screw M5x12	P70-305-B17
B18	Inverter	P70-305-B18
B19	Bracket	P70-305-B19
B20	Strain Relief	P70-305-B20
B21	Power Cord	P70-305-B21
B22	Set Screw M3x12	P70-305-B22
B23	Strain Relief	P70-305-B23
B24	Poly-V Belt HM180J	P70-305-B24
B25	Set Screw M8x15	P70-305-B25
B26	Spindle Pulley	P70-305-B26
B27	Screw M5x12	P70-305-B27
B28	Cover Plate	P70-305-B28
B29	Hand Wheel	P70-305-B29
B30	Knockout Bar	P70-305-B30
B31	Motor	P70-305-B31
B32	Set Screw M6x15	P70-305-B32
B33	Key 5x5x45	P70-305-B33
B34	Motor Pulley	P70-305-B34
B35	Set Screw M6 x15	P70-305-B35
B36	Hex Cap Screw M10x25	P70-305-B36
B37	Hex Cap Screw M10x25	P70-305-B37
B38	Washer 10	P70-305-B38
B39	Motor Assembly Plate	P70-305-B39
B40	Tension Handle & Knob	P70-305-B40
B41	Hex Nut M18	P70-305-B41
B42	Clamp	P70-305-B42
B43	Clamp Bolt	P70-305-B43
B44	Bushing	P70-305-B44
B45	C-Ring C-26	P70-305-B45
B46	Index Bracket	P70-305-B46
B47	Angular Setting Assembly	P70-305-B47
B48	Spring	P70-305-B48
B49	Spindle Lock Pin	P70-305-B49
B50	Plate	P70-305-B50
B51	Bracket	P70-305-B51
B52	Hex Cap Screw M5x15	P70-305-B52
B53	Screw M5x12	P70-305-B53
B54	Belt Door	P70-305-B54
B55	Variable Speed Knob	P70-305-B55
B56	Variable Speed Control	P70-305-B56
B57	FWD/REV Switch - HY60B	P70-305-B57
B58	Push Button Switch - HY57B	P70-305-B58
B59	RPM Plate	P70-305-B59
B60	Hand Wheel Cover	P70-305-B60
B61	Digital Readout	P70-305-B61
B62	Speed Readout	P70-305-B62
B63	Sensor	P70-305-B63
B64	RPM Readout	P70-305-B64
B65	Screw M5x12	P70-305-B65
B66	Screw M3x20	P70-305-B66
B67	Panel Cover	P70-305-B67
B68	C-Ring C-18	P70-305-B68
B69	Screw M8x140	P70-305-B69
B70	Inverter Cover	P70-305-B70

NOTES

Use this section to record maintenance, service and any calls to Technical Support:

WARRANTY

RIKON
POWER TOOLS

5-Year Limited Warranty

RIKON Power Tools Inc. (“Seller”) warrants to only the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship for a period of five (5) years from the date the product was purchased at retail. This warranty may not be transferred.

This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs, alterations, lack of maintenance or normal wear and tear. Under no circumstances will Seller be liable for incidental or consequential damages resulting from defective products. All other warranties, expressed or implied, whether of merchantability, fitness for purpose, or otherwise are expressly disclaimed by Seller. This warranty does not cover products used for commercial, industrial or educational purposes.

This limited warranty does not apply to accessory items such as blades, drill bits, sanding discs, grinding wheels or belts and other related items.

Seller shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty proof of purchase documentation, which includes date of purchase and an explanation of the complaint, must be provided.

The Seller reserves the right to effect at any time, without prior notice, those alterations to parts, fittings, and accessory equipment which they may deem necessary for any reason whatsoever.

To take advantage of this warranty, please fill out the enclosed warranty card and send it to:
RIKON Warranty
16 Progress Rd.
Billerica, MA 01821

The card must be entirely completed in order for it to be valid. If you have any questions please contact us at 877-884-5167 or warranty@rikontools.com.

RIKON
POWER TOOLS

70-305

For more information:
16 Progress Road
Billerica, MA 01821

877-884-5167 / 978-528-5380
techsupport@rikontools.com