

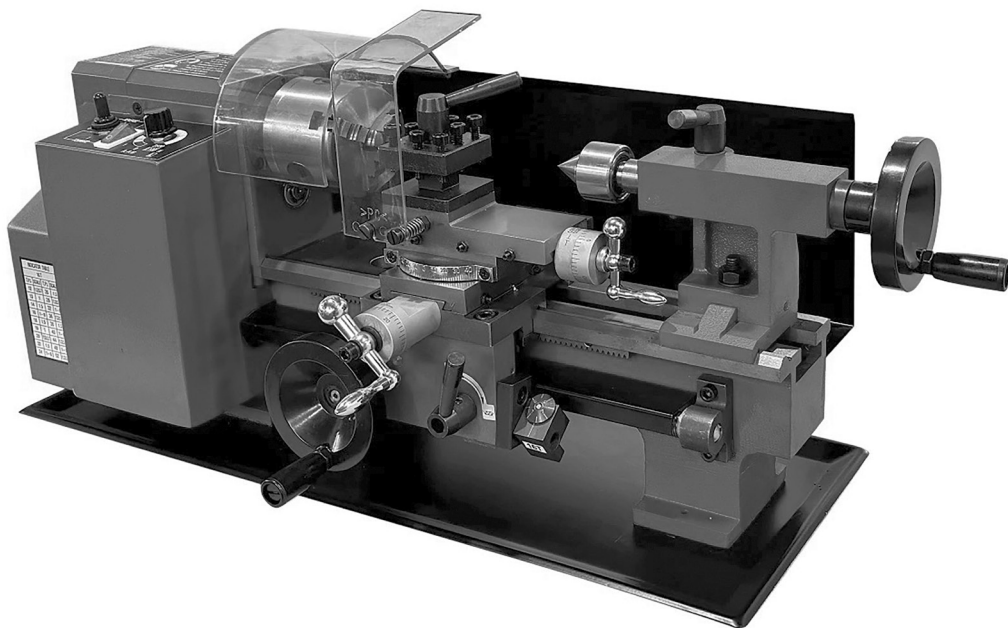
Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

24c

CENTRAL[®] MACHINERY

7" X 12" MINI LATHE



Visit our website at: <http://www.harborfreight.com>
Email our technical support at: productsupport@harborfreight.com

93799

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠ WARNING






**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

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CENTRAL[®] MACHINERY

WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

General Tool Safety Warnings

WARNING

Read all safety warnings and instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.

Table A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH			
	25'	50'	100'	150'
0 – 6	18	16	16	14
6.1 – 10	18	16	14	12
10.1 – 12	16	16	14	12
12.1 – 16	14	12	Do not use.	

9. **USE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
10. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
11. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. **DON'T OVERREACH.**
Keep proper footing and balance at all times.
14. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. **DISCONNECT TOOLS** before servicing; when changing accessories, such as blades, bits, cutters, and the like.
16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
18. **NEVER STAND ON TOOL.**
Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
20. **DIRECTION OF FEED.**
Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

Grounding Instructions

SAFETY

SETUP

OPERATION

MAINTENANCE



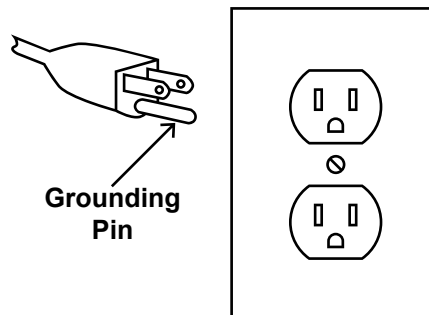
⚠️ WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION READ AND FOLLOW THESE INSTRUCTIONS:

110-120 VAC Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

6. Repair or replace damaged or worn cord immediately.



**125 VAC 3-Prong Plug and Outlet
(for up to 125 VAC and up to 15 A)**

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 VAC 3-Prong Plug and Outlet**. The tool has a grounding plug that looks like the plug illustrated above in **125 VAC 3-Prong Plug and Outlet**.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this tool to a different outlet.

Lathe Safety Warnings

For Your Own Safety Read Instruction Manual Before Operating Lathe

1. Wear eye protection.
2. Do not wear gloves, necktie, or loose clothing.
3. Tighten all locks before operating.
4. Rotate workpiece by hand before applying power.
5. Rough out workpiece before installing on faceplate.
6. Do not mount split workpiece or one containing knot.
7. Use lowest speed when starting new workpiece.
8. **DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED. Moving guards must move freely and close instantly.**
9. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
10. When servicing use only identical replacement parts.
11. Do not depress the spindle lock when starting or during operation.
12. Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.

- 13. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- 14. Industrial applications must follow OSHA guidelines.
- 15. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

- 16. Avoid unintentional starting. Prepare to begin work before turning on the tool.
- 17. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
- 18. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Vibration Safety

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

- 1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.

- 2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
- 3. Use tools with the lowest vibration when there is a choice between different processes.
- 4. Include vibration-free periods each day of work.
- 5. Grip workpiece as lightly as possible (while still keeping safe control of it). Let the tool do the work.
- 6. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.



SAVE THESE INSTRUCTIONS.

CENTRAL[®]
MACHINERY

Motor	120 VAC / 60 Hz / 3/4 HP
Speed Ranges	0 - 1100 RPM (Low) 0 - 2500 RPM (High)
Drive	Gear and Belt
Swing Over Bed	7"
Distance Between Centers	12"
Spindle Bore	3/4"
Quill Travel	2"
Cross Slide Travel	2-3/4"
Cross Slide Swing	4-1/2"
Work Tolerance	.005"
Bed Dimensions	19-7/8" L x 3-1/4" W
Saddle Travel	6-7/8"
Compound Travel	2-7/8"
Speed Ranges	0-1100 (low) 0-2500 (high)
Chuck Dimensions	80mm, 3 Jaw

SAFETY

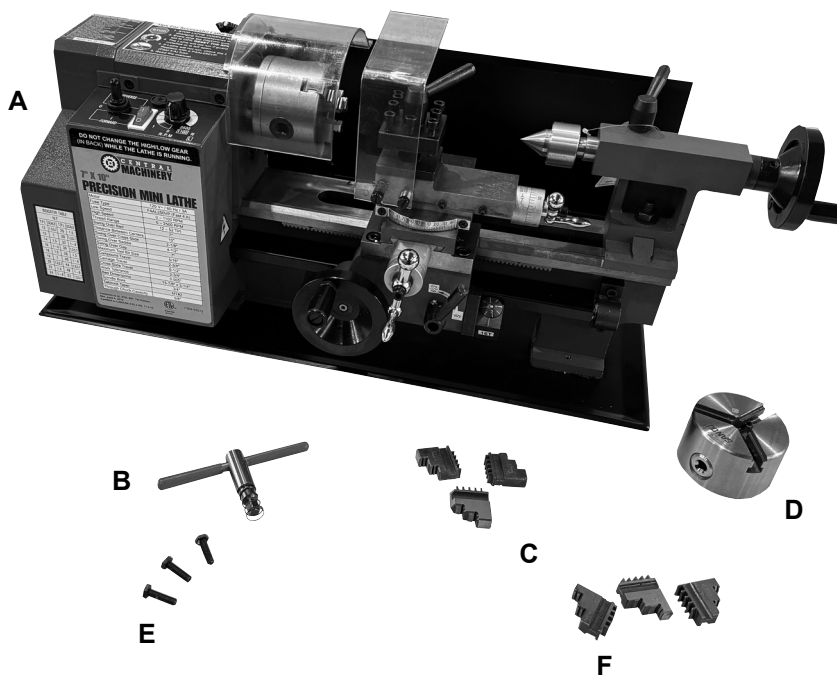
SETUP

OPERATION

MAINTENANCE

Main Components

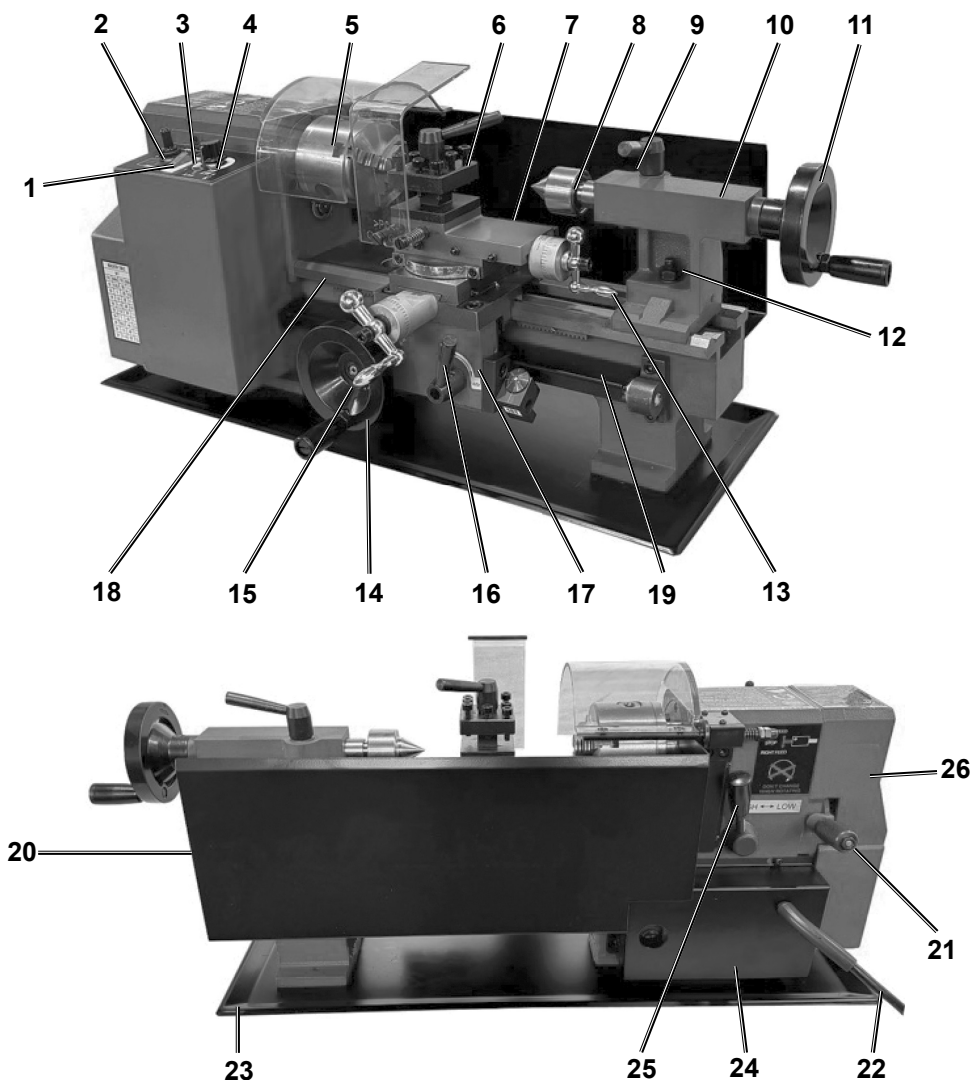
	Description	QTY
A	Lathe	1
B	Chuck Key	1
C	External Jaws	3
D	Chuck	1
E	Chuck Set Screws	3
F	Internal Jaws	3



Mini Lathe Features

Note: Refer to the parts list and assembly diagram at the end of manual.

Part	Description
1	Power Switch
2	Forward/OFF/Reverse Switch
3	Fuse
4	Speed Control Knob
5	Chuck
6	Tool Rest
7	Compound Rest
8	Live Center
9	Tailstock Quill Lock Handle
10	Tailstock
11	Tailstock Quill Adjust Handwheel
12	Tailstock Nut
13	Compound Rest Crank
14	Feeding Control Wheel
15	Cross Feeding Crank
16	Automatic Feeding Handle
17	Automatic Feeding Label
18	Bed Way
19	Lead Screw
20	Rear Splash Guard
21	Feeding Direction Selector
22	Power Cord
23	Chip Tray
24	Motor Cover
25	H/L Gearshift Lever
26	End Cover



SAFETY

SETUP

OPERATION

MAINTENANCE

Setup - Before Use:



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:

Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

Attaching Rubber Feet

1. Unthread Bolts from bottom of Chip Tray.
2. Slide Rubber Feet onto Bolts and re-thread them into bottom of Lathe through the Chip Tray holes.
3. Tighten securely.

Mounting to a Workbench

1. Unthread Bolts from bottom of unit.
2. Measure and drill holes in workbench.
3. Install using M6-1 bolts and washers (sold separately) to secure Lathe and Chip Tray to workbench.

Installing Handwheel Handles

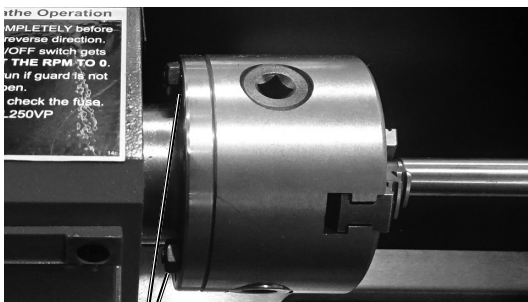
1. Use a flathead screwdriver and a 14mm open ended wrench to thread handles onto wheels.

Installing Guards

1. Attach Chuck Guard to the Hinge using two Screws.
2. To attach the Protective Cover, slide Screw through protective cover, washer, spring and nut.
3. Thread screw into Compound Rest.
4. Slide notch in Protective Cover over end of Slotted Screw.

Adjusting the Mini Lathe

1. Clean off protective grease on Mini Lathe.
2. Make sure the three Chuck Mounting Bolts (4) on the chuck are tight.
3. Turn the chuck by hand and check that it rotates freely.



Chuck Mounting Bolts

4. Move the Feeding Direction Selector (located on the back of lathe) to the middle.



5. Make sure the Switch is in the OFF position.

Forward/Reverse Switch



Speed Control Knob

On/Off Switch-
Power Lamp

WARNING: Adjust the speed control knob by turning it to zero. Before turning on the mini lathe each time it is to be used, this speed control knob must be at zero.

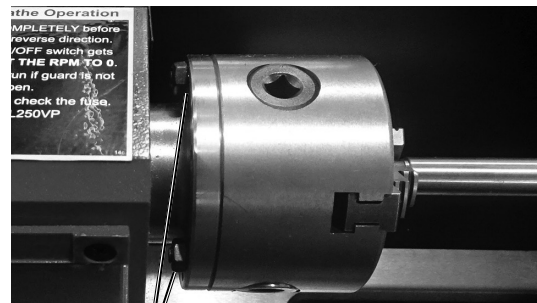
6. Plug in the electrical cord and turn the Switch to the ON position and run the lathe for 3 minutes. When the lathe is on, the Power Lamp will remain on. Check that the lathe operates normally.
7. Check Compound Rest Crank and the Cross Feeding Crank to see that they work properly. If the cranks are too tight or too loose, turn the adjusting screws located on both sides.

WARNING: The mini lathe must be completely stopped before changing forward/reverse direction.

Chuck Replacement

Note: Place a cloth or piece of wood on the bedway at bottom of Chuck to avoid damage caused by dropping chuck.

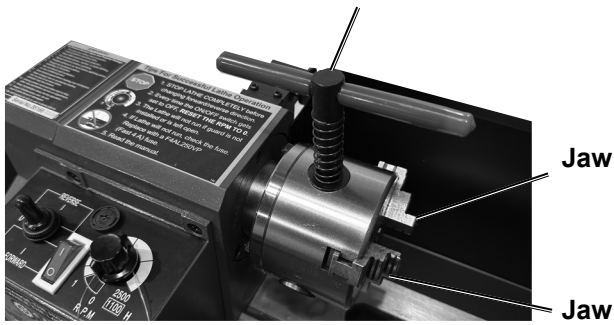
1. Loosen the M6 Nuts (6) on the three Chuck Mounting Bolts (4) to replace chuck.



Chuck Mounting Bolts

Jaw Replacement

1. Unplug Lathe.
2. Place a towel under the Chuck to protect the Bed Way from any Jaws that may drop.
3. Insert the Chuck Key (7) into the side of the Chuck and turn clockwise while carefully sliding each Jaw out of it's slot as it becomes free.

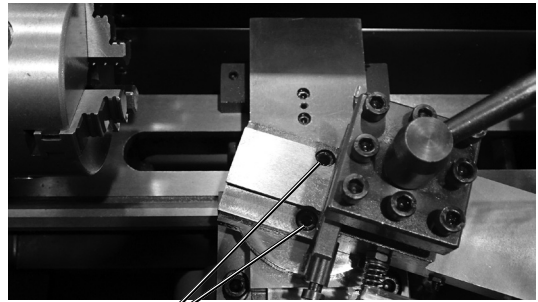
Chuck Key

4. Locate the groove marked #1 then rotate the Chuck Key clockwise until the lead thread of the scroll is in groove #1.
5. Slide Jaw #1 into the groove and slightly rotate the Chuck Key counterclockwise, then clockwise to engage the lead thread into Jaw.
6. Slide Jaw #2 into the groove and continue turning the Chuck Key clockwise to advance lead thread into next Jaw.
7. Repeat process for Jaw #3.

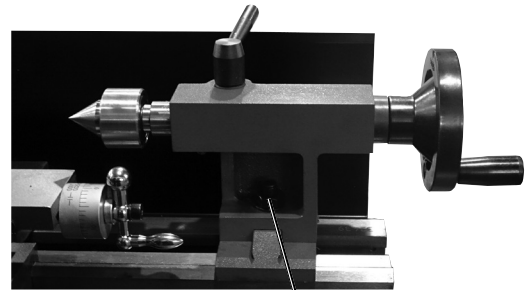
Note: When mounting a workpiece, loosen all three jaws at the same time to protect the inside threads.

Compound Rest Adjustment

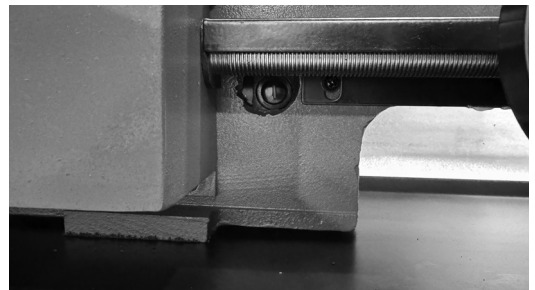
1. Turn Compound Rest Crank counterclockwise to slide the top section of the Compound Rest so the two screw holes (67) are exposed on the lower section of the Compound Rest.
2. Adjust to required angle, then tighten screws.

**Set Screw****Tailstock Rest Adjustment**

1. To change position or replace tailstock, loosen nut (268).

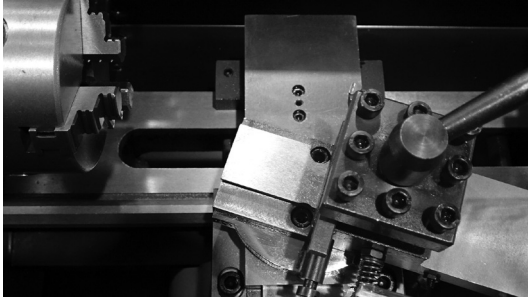
**Nut****Carbon Brush Replacement**

1. Remove brush covers on the Motor Controller and the right bottom side of Speed Controller.

**Motor Cover****Speed Controller Brush Cover**

Tool Post Adjustment

1. Loosen the lever to adjust the tool post position.



2. Re-tighten lever after adjusting.
3. To replace a cutter, loosen the socket head screws.

Automatic Feeding

1. Adjust the feeding direction selector to the desired direction.



Feeding Direction Selector

2. Press down the handle and continue automatic feeding procedure.



Handle

Note: When feeding, never try to change the feeding direction.

Threading

1. Set the feeding direction selector to the desired thread direction.



Feeding Direction Selector

2. Press the handle down to match the calibrations of the thread dial indicator and continue the automatic threading procedure.



Handle

Thread Dial Indicator

Note: When threading, never try to change the threading direction.

Operating Instructions



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:

Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY:

DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.

Moving guards must move freely and close instantly.

Workpiece and Work Area Set Up

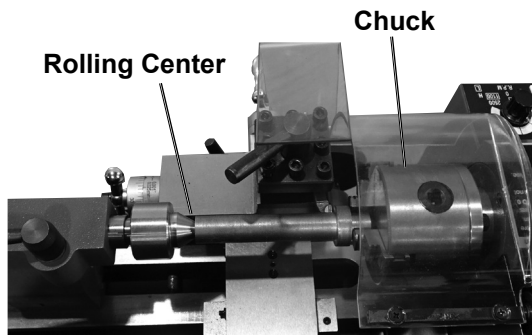
1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
3. There must not be objects, such as utility lines, nearby that will present a hazard while working.

General Operating Instructions

Note: Make sure that the Switch is in the off-position, then plug in the tool.

1. Turn on the tool.
2. Use the Chuck to hold the workpiece firmly then use the Rolling Center (143) to fix the other end.

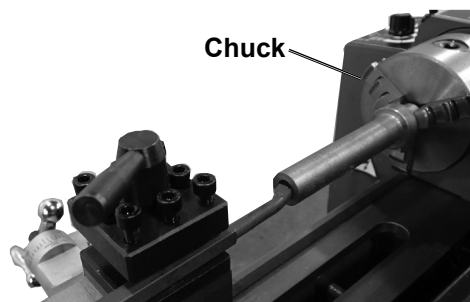
Note: Changing the rolling center to drilling chuck starts the drilling immediately.



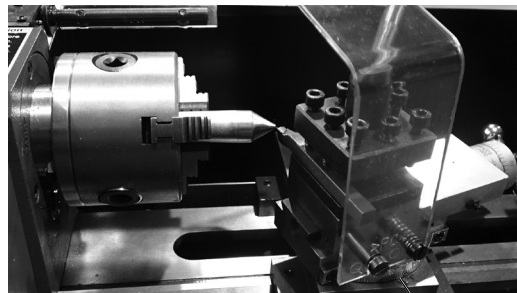
Note: Change the tool post angle and adjust the compound rest for internal cutting.

3. Use the Chuck to firmly hold the workpiece and bring cutter into position for face cutting or internal cutting.

Note: The edge of the cutter must be at the same height as the center.



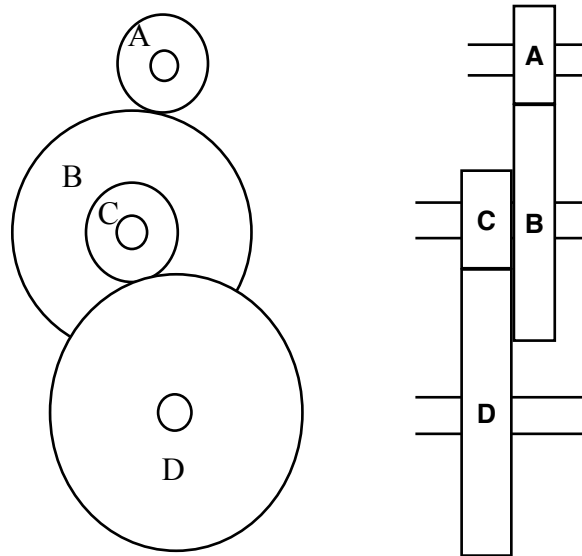
4. Adjust the angle of the Compound Rest (105) for bevel cutting.



5. To prevent accidents, turn off the tool and unplug the tool from its electrical outlet after use. Clean, then store the tool indoors out of children's reach.

Setup Instructions for Threading Gears

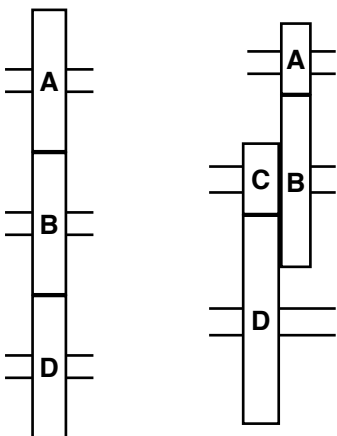
By changing the gear setup it is possible to cut any thread size. The factory setup for Mini Lathe gears is as follows:



Position A = 20T
 Position B = 80T
 Position C = 20T
 Position D = 80T

To change the thread size, use the gear box settings from the table below:

CHANGE GEAR BOX

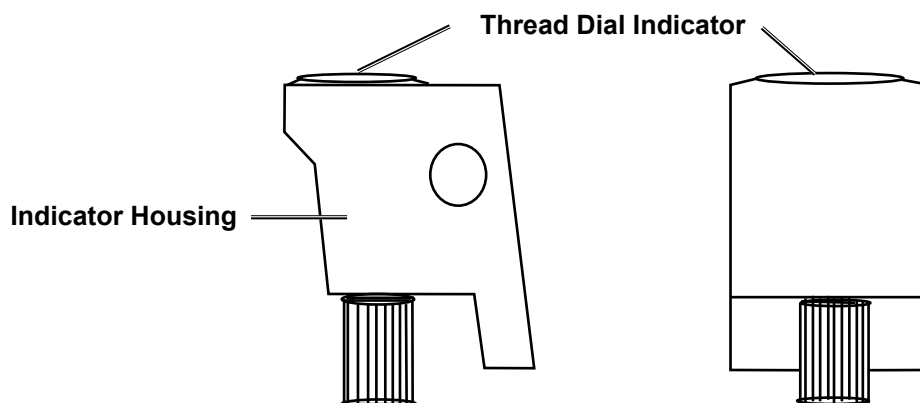


Thread Per Inch	Change Gear Box			
	A	B	C	D
12	40	65	/	30
13	40	65	60	30
14	40	65	/	35
16	40	65	/	40
18	40	65	/	45
19	40	50	60	57
20	40	65	/	50
22	40	65	/	55
24	40	65	/	60

Thread Per Inch	Change Gear Box			
	A	B	C	D
26	40	60	/	65
28	20	65	/	35
32	20	65	/	40
36	20	65	/	45
38	20	60	60	57
40	20	65	/	50
44	20	65	/	55
48	20	65	/	60
52	20	60	/	65

When Lathe is ON and the Spindle is revolving, the threaded bar and the Thread Dial Indicator will also be revolving as shown below.

Before operating, ensure that the alignment mark on the Housing is aligned with the Thread Dial Indicator.



Maintenance and Servicing



Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠️ WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:

Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:

Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE**, inspect the general condition of the tool. Check for:
 - loose hardware,
 - misalignment or binding of moving parts,
 - cracked or broken parts,
 - damaged electrical wiring, and
 - any other condition that may affect its safe operation.
2. **AFTER USE**, wipe external surfaces of the tool with clean cloth. Use a brush to clear off filings and debris; do NOT use compressed air.
3. Wipe a light coat of machine oil on exposed metal parts to prevent rust.
4. **⚠️ WARNING! If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

Troubleshooting

Problem	Possible Causes	Likely Solutions
Motor and Electrical		
Lathe will not start or a breaker trips on startup.	<ol style="list-style-type: none"> 1. Cord not connected. 2. No power at outlet. 3. Fuse has blown. 4. Chuck Guard safety interlock not in place. 5. PC Board (182) faulty. 6. Power Switch (178), Forward/OFF/Reverse Switch (181) and/or Speed Control Knob (180) not working. 7. Internal damage or wear (such as wiring or motor.) 	<ol style="list-style-type: none"> 1. Check that cord is plugged in. 2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads. 3. Check for short, replace fuse 4. Rotate Pin (251) so it seats in Rotate Plate (252). 5. Inspect PC Board, have replaced if needed. 6. Check and replace as needed. 7. Have technician service tool.
Lathe stalls.	<ol style="list-style-type: none"> 1. Incorrect workpiece material (metal). 2. Drive Pulleys slipping on shaft. 3. Removing too much material per pass. 	<ol style="list-style-type: none"> 1. Use metal suited for Lathe. 2. Tighten or replace Pulleys (27,148). 3. Remove less material per pass.
Lathe operates slowly.	Extension cord too long or wire size too small.	Eliminate use of extension cord. If an extension cord is needed, use shorter/heavier gauge cord.
Performance decreases over time	<ol style="list-style-type: none"> 1. Accessory dull or damaged. 2. Carbon Brushes worn or damaged. 	<ol style="list-style-type: none"> 1. Keep cutting accessories sharp. Replace as needed. 2. Replace Carbon Brushes.
Excessive noise or rattling.	<ol style="list-style-type: none"> 1. Pulley setscrews missing or loose. 2. Motor fan hitting cover. 3. Belt (if equipped) too loose (slipping) or too tight (bearing damage). 4. Internal motor damage or wear. 	<ol style="list-style-type: none"> 1. Check Pulley keys and setscrews. Replace or tighten as needed. 2. Tighten fan cover or replace as needed. 3. Properly tension belt. 4. Have technician service tool.
Overheating.	<ol style="list-style-type: none"> 1. Motor overloaded. 2. Forcing machine to work too fast. 3. Accessory dull or damaged. 4. Incorrect RPM or feed rate. 5. Gear setup is too tight, gears bind. 6. Blocked motor housing vents. 7. Motor being strained by long or small diameter extension cord. 	<ol style="list-style-type: none"> 1. Reduce load on motor. Loosen drive Belt 2. Allow machine to work at its own rate. 3. Keep cutting accessories sharp. Replace as needed. 4. Check that RPM feed rate chart for appropriate rates for operation. 5. Adjust gears so there is a small amount of play and the gears move freely and smoothly when the Chuck is rotated by hand. 6. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. 7. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load.

Tool Performance



**Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply before service.**


SAFETY

SETUP

OPERATION

MAINTENANCE

Trouble Shooting (continued)

Problem	Possible Causes	Likely Solutions
Whole unit vibrates excessively while in use.	<ol style="list-style-type: none"> 1. Workpiece unbalanced. 2. Loose or damaged belt(s). 3. Drive Pulleys not aligned. 4. Worn or broken gear. 5. Chuck loose or unbalanced. 6. Spindle bearings worn. 	<ol style="list-style-type: none"> 1. Re-center workpiece. 2. Tighten or replace the belt. 3. Align Drive Pulleys (27, 148). 4. Inspect gears and replace if needed. 5. Tighten Nuts (6) or have a qualified technician rebalance Chuck. 6. Have a qualified technician replace bearings.
Uneven surface finish.	<ol style="list-style-type: none"> 1. Incorrect RPM or feed rate for job. 2. Dull or incorrect tool for job. 3. Gibs need adjustment. 4. Tool positioned too high. 	<ol style="list-style-type: none"> 1. Adjust RPM and/or feed rate. 2. Sharpen and/or change tool. 3. Tighten Gibs (94 and/or 107). 4. Lower position of tool.
Unable to remove tapered tool from Tailstock.	Quill not fully seated in Tailstock or taper was inserted without first removing debris.	Turn quill handwheel until taper is forced out of quill. In the future make sure that the quill is fully seated in the tailstock and that the tool is wiped free of debris before installing.
Cross Slide, Compound Slide and/or carriage feed do not move smoothly.	<ol style="list-style-type: none"> 1. Gibs need adjusting. 2. Handwheel or crank handles are too loose. 3. Leadscrew worn or needs adjustment, 	<ol style="list-style-type: none"> 1. Loosen or tighten the Gib Screws (99 and/or 106). 2. Tighten Handwheel and/or crank handle. 3. Tighten Leadscrew fasteners or have lead screw replaced by a qualified technician.
Difficulty moving Cranks of Cross Slide, Compound Slide and/or Carriage Handwheel.	<ol style="list-style-type: none"> 1. Debris jammed around Gibs. 2. Gibs adjusted too tight. 3. Bedways need lubrication. 	<ol style="list-style-type: none"> 1. Remove Gibs, clean Gibs and all adjacent areas. Re-lubricate, then reinstall Gibs. 2. Loosen Gib Screws (99 and/or 106) and lubricate bedways. 3. Lubricate bedways.
Cutting Tool or machine components vibrate excessively during operation	<ol style="list-style-type: none"> 1. Tool Rest (112) too loose. 2. Cutting tool jutting too far out of Tool Post or not secure. 3. Gibs need adjustment. 4. Cutting tool need sharpening. 5. RPM or feed rate incorrect for job. 	<ol style="list-style-type: none"> 1. Clean any debris around Tool Post, then securely tighten Tool Post. 2. Remove and reinstall cutting tool so that at least two screws hold it securely in place and no more than 1/3 of the tool extends beyond the Tool Post. 3. Adjust Gib Screws (99 and/or 106). 4. Sharpen or replace tool. 5. Check and adjust for recommended RPM and/or feed rate.
Finished piece uneven from one end to the other.	Chuck and Tailstock are not aligned.	Realign Tailstock.
Difficulty moving Chuck Jaws.	Debris lodged between Jaws and Chuck.	Remove Jaws. Clean and lubricate Chuck threads, then reinstall Jaws.
Carriage will not feed.	<ol style="list-style-type: none"> 1. Gear or gears not engaged. 2. Damaged gears. 3. Feed Handle screw loose. 	<ol style="list-style-type: none"> 1. Check gears and adjust positions. 2. Check and replace damaged gears. 3. Tighten feed handle screw.
 <p>Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.</p>		

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PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 792363937993 when ordering parts.

Parts List

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Part	Description	Qty
1	Bed Way	1
2	3 Jaw Chuck	1
3	Spindle	1
4	Chuck Mounting Bolt M6x25	3
6	Nut M6	5
7	Key 5x40	1
8	Key 4x8	2
9	Screw M5x12	6
10	Cover	2
11	Ball Bearing 80206	2
12	Spacer	1
13	Headstock Casting	1
14	H/L Gear 21T/29T	1
15	Spacer	1
16	Spur Gear 45T	1
17	Nut M27x1.5	1
18	Set Screw M5x8	1
19	Steel Ball 5	2
20	Compression Spring	3
21	Set Screw M6x8	3
22	Retaining Ring 12	2
23	Ball Bearing 80101	2
24	H/L Gear 12T/20T	1
25	Parallel Key 4x45	1
26	H/L Gear Shaft	1
27	Pulley	1
28	Retaining Ring 10	2
29	Timing Belt Lx136	1
30	Shifting Fork	1
31	Shifting Arm	1
32	Shifting Knob	1
33	Shifting Lever	1

Part	Description	Qty
34	Shifting Grip	1
35	Handle	1
36	Handle Mount	1
37	Spring	1
38	Indicator	1
39	Pinion 25T	1
40	Support Screw	2
41	Pinion 20T	1
42	Fixed Cover	1
43	Screw M6x20	2
45	Gear 45T	1
46	Shaft	1
47	Parallel Key 3x8	1
48	Mount	1
49	Screw M5x18	2
50	Gearwheel 20T	2
51	Washer M6	4
52	Screw M6x8	3
53	Cover	1
54	Screw M5x45	2
55	Thread Cutting Chart	1
56	Screw M5x8	8
57	Washer M4	2
58	Bush w/Key	1
59	Gearwheel 80T	2
60	Shaft	1
61	Support Plate	1
62	Washer 8	3
63	Nut M8	3
64	Shaft	1
65	Dial Label 16T	1
66	Shaft	1

Parts List (continued)

Part	Description	Qty
67	Screw M6x16	9
68	Dial Indicator Body	1
69	Set Screw M4x10	3
70	Apron	1
71	Gib Strip	1
72	Washer	2
73	Screw M4x8	4
74	Shaft	1
75	Half Nut Base	2
76	Angle Block	1
77	Screw M4x10	2
78	Groove Cam	1
79	Handle	1
80	Shaft	1
81	Feeding Gear 11T/54T	1
82	Feeding Gear 24T	1
83	Screw M6x10	4
84	Wheel	2
85	Knob	2
86A	Handle Large	1
86B	Handle Small	1
87	Dial	2
88	Bracket	1
89	Feeding Screw	1
90	Nut M5	4
91	Screw M6x12	6
92	Slide Plate	2
93	Saddle	1
94	Gib Strip	1
95	Feeding Nut Imperial	1
96	Swivel Disk	1

Part	Description	Qty
97	Screw M8x20	6
98	Nut M4	6
99	Screw M4x16	3
100	Cross Slide	1
101	Screw M5x10	2
105	Compound Rest(B)	1
106	Screw M4x14	3
107	Gib Strip	1
108	Compound Rest(A)	1
109	Position Pin	1
110	Screw M6x25	8
111	Clamping Lever	1
112	Tool Rest	1
113	Stud M10x65	1
114	Cross Feed Screw	1
115	Bracket	1
116	Screw M4x12	2
119	Washer	1
120	Model Label	1
121	Dial Indicator Label	1
122	Switch Label	1
123	Control Box	1
124	Plug w/Cord	1
125	Rubber Foot	4
126	Chip Tray	1
127	Bracket	1
128	Key M3x16	1
129	Lead Screw	1
131	Bracket	1
133	Screw M3x10	3
134	Rack	1

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Part	Description	Qty
135	Clamp Plate	1
136	Washer M10	1
137	Screw M5x16	1
138	Tailstock Casting	1
139	Tailstock Screw	1
140	Bracket	1
141	Screw M4x10	2
142	Tailstock Quill	1
143	Rolling Center	1
144	Stud M8x40	1
145	Clamp	1
146	Handle	1
148	Pulley	1
150	Motor	1
151	Motor Cover	1
152	Cable Gland	1
153	Rear Splash Guard	1
154	F/N/R Label	1
155	High-Low Label	1
156	Top Warning Label	1
157	Gearwheel 30T	1
158	Gearwheel 35T	1
159	Gearwheel 40T	2
160	Gearwheel 45T	1
161	Gearwheel 50T	1

Part	Description	Qty
162	Gearwheel 55T	1
163	Gearwheel 57T	1
164	Gearwheel 60T	1
165	Gearwheel 65T	1
166	External Jaws (set) (not shown)	1
167	3-Jaw Chuck Key (not shown)	1
170	Screw M4x8	1
171	Clamp Block	1
172	Check Ring 8	1
173	Screw M5x10	4
174	Protector	1
175	Screw M5x10	2
176	Nut M6	4
177	Screw M6x25	2
178	Power Switch	1
179	Fuse Box	1
180	Variable Speed Control Knob	1
180A	Potentiometer	1
181	Forward/Off/Reverse Switch	1
182	P.C.Board	1
184	Screw M5x10	1
185	Spring Washer 5	1
186	Washer 5	2
187	Key 3x16	1
188	Spacer	1

Parts List (continued)

Part	Description	Qty
190	Spring	2
191	Washer 8	1
192	Spring Washer 6	2
193	Screw M8 x 55	2
194	Screw M4 x 38	1
195	Nut M4	1
196	Tailstock Plate	1
197	Screw M5 x 16	1
198	Flange	1
199	Screw M5x25	1
200	Key 3x12	1
201	Chuck Protect Cover	1
202	Hinge	1
205	Spring Washer M6	1
206	Large Washer M6	1
207	Spring	1
208	Washer 6	2
209	Screw M3x4	4
210	Switch Cover	1
211	Screw M5x16	2
212	Fixed Cover	1
235	Protective Cover	1
236	Slotting Screw	1
237	Compression Spring	1
238	Slotting Screw M6x30	1

Part	Description	Qty
239	Small Washer 6	1
240	Nut M6	1
251	Round Pin	1
252	Rotate Plate	1
253	Screw ST2.9x4.5	2
254	Cover	1
255	Micro Switch	1
256	Dustproof Sleeve	1
257	Protective Cover for Leadscrew	1
258	Screw M5x8	3
265	Spring Washer 6	2
266	Large Washer 6	2
267	Screw M6x25	2
268	Nut M10	1
269	Screw M5x14	2
270	Leadscrew Support	1
271	Nut M4	2
272	Protective Cover	1
273	Screw M4x6	2
300	Screw	1
301	Label	1
302	Label	1
303	Plate	1
304	Screw M6x12	1
309	Washer 10	1

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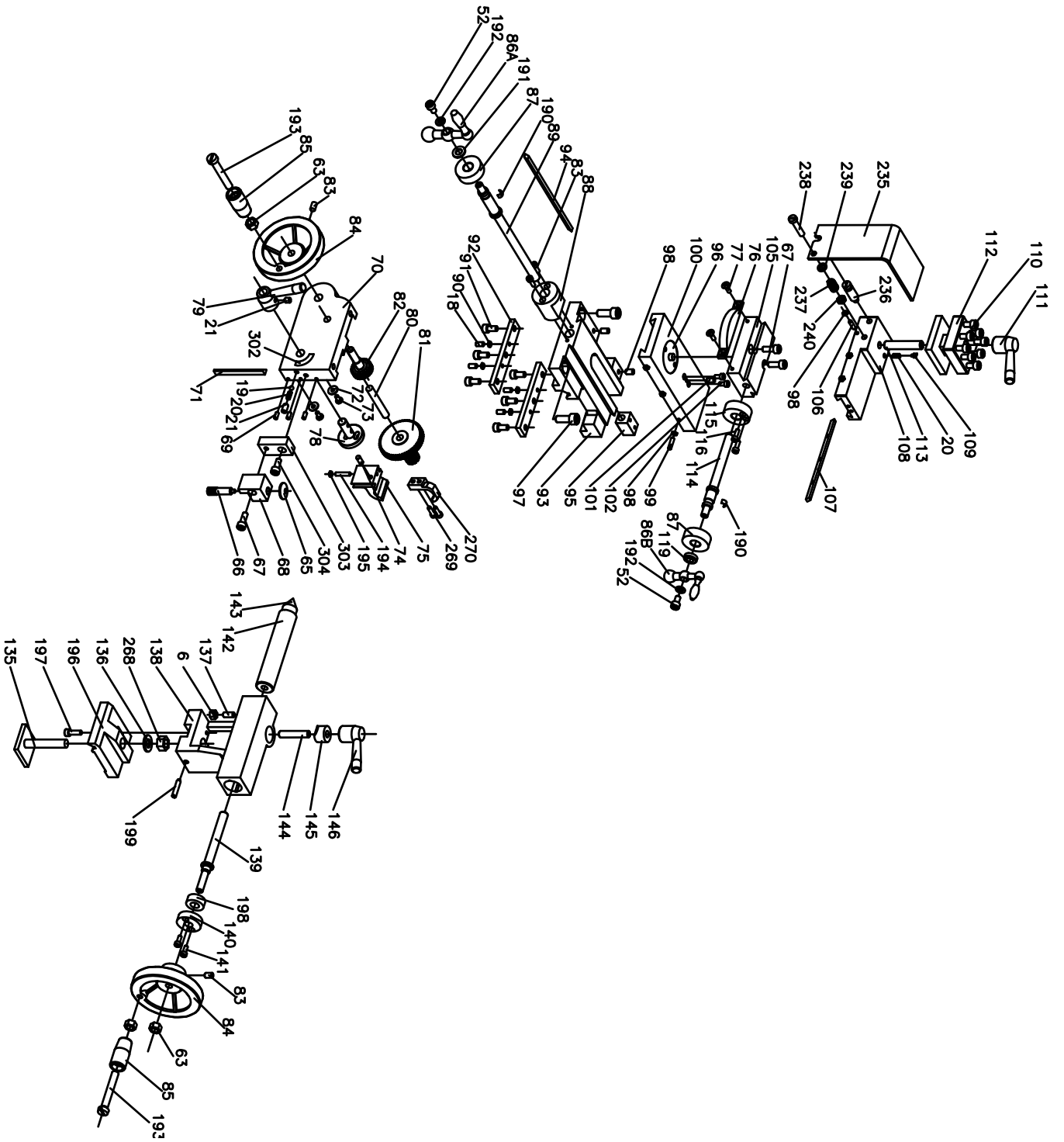
Assembly Diagram

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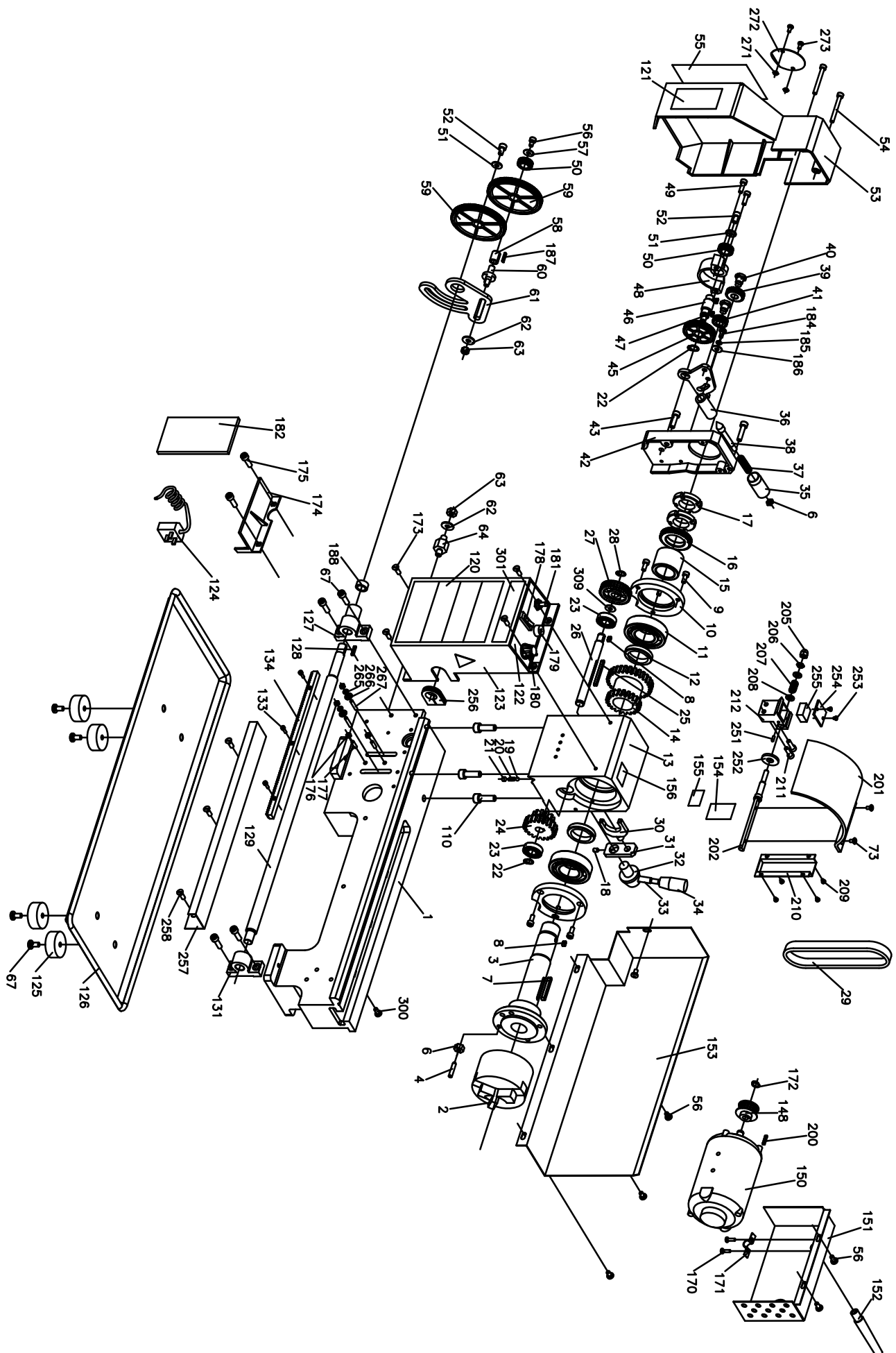
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Assembly Diagram



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Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We 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 product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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