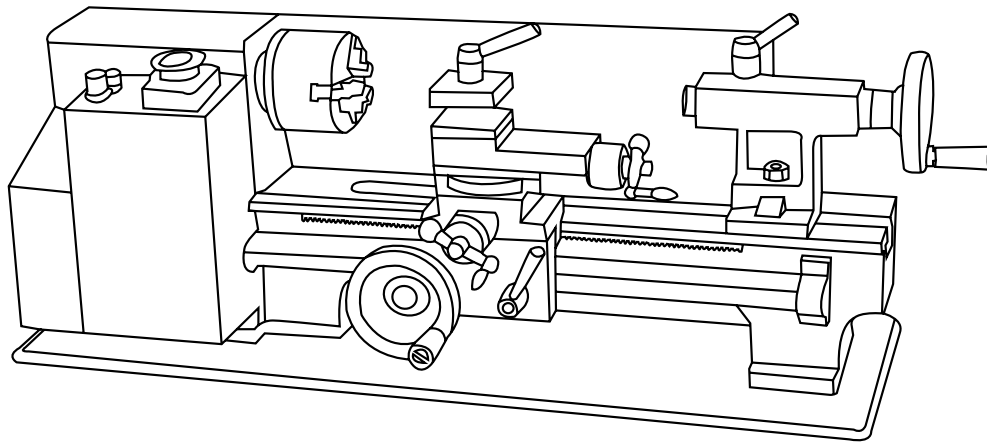




VARIABLE SPEED 7 X 12 IN. METAL LATHE



Model # 3455
bit.ly/wenvideo

IMPORTANT:

Your new tool has been engineered and manufactured to WEN's highest standards for dependability, ease of operation, and operator safety. When properly cared for, this product will supply you years of rugged, trouble-free performance. Pay close attention to the rules for safe operation, warnings, and cautions. If you use your tool properly and for its intended purpose, you will enjoy years of safe, reliable service.



NEED HELP? CONTACT US!

Have product questions? Need technical support?
Please feel free to contact us at:



800-232-1195 (M-F 8AM-5PM CST)



techsupport@wenproducts.com



WENPRODUCTS.COM

TABLE OF CONTENTS

| | |
|--|----|
| Technical Data | 2 |
| General Safety Rules | 3 |
| Specific Safety Rules For Metal Lathes | 4 |
| Electrical Information | 6 |
| Know Your Lathe | 7 |
| Assembly | 8 |
| Operation | 9 |
| Maintenance | 19 |
| Troubleshooting Guide | 20 |
| Exploded View & Parts List | 22 |
| Warranty | 25 |

TECHNICAL DATA

| | |
|---------------------------|--------------------------|
| Model Number: | 3455 |
| Motor: | 110V, 60Hz, 4A |
| Output Power: | 250W |
| Swing Over Bed: | 7 in. (180 mm) |
| Distance Between Centers: | 12 in. (300 mm) |
| Spindle Bore: | .79 in. (20 mm) |
| Cross Slide Travel: | 2-1/2 in. (65 mm) |
| Compound Slide Travel | 2.16 in. (55 mm) |
| Speeds: | 100 to 2500 RPM |
| Spindle Taper: | MT3 |
| Tailstock Taper: | MT2 |
| Longitudinal Feed Rate: | .1 to .2 mm |
| Screw Threads: | 15 to 52 TPI in 18 steps |
| Weight: | 81 lbs. |

GENERAL SAFETY RULES

Safety is a combination of common sense, staying alert and knowing how your item works. **SAVE THESE SAFETY INSTRUCTIONS.**



WARNING: To avoid mistakes and serious injury, do not plug in your tool until the following steps have been read and understood.

1. **READ** and become familiar with this entire instruction manual. **LEARN** the tool's applications, limitations, and possible hazards.
2. **AVOID DANGEROUS CONDITIONS.** Do not use power tools in wet or damp areas or expose them to rain. Keep work areas well lit.
3. **DO NOT** use power tools in the presence of flammable liquids or gases.
4. **ALWAYS** keep your work area clean, uncluttered, and well lit. **DO NOT** work on floor surfaces that are slippery with sawdust or wax.
5. **KEEP BYSTANDERS AT A SAFE DISTANCE** from the work area, especially when the tool is operating. **NEVER** allow children or pets near the tool.
6. **DO NOT FORCE THE TOOL** to do a job for which it was not designed.
7. **DRESS FOR SAFETY.** Do not wear loose clothing, gloves, neckties, or jewelry (rings, watches, etc.) when operating the tool. Inappropriate clothing and items can get caught in moving parts and draw you in. **ALWAYS** wear non-slip footwear and tie back long hair.
8. **WEAR A FACE MASK OR DUST MASK** to fight the dust produced by operation.



WARNING: Dust generated from certain materials can be hazardous to your health. Always operate the tool in a well-ventilated area and provide for proper dust removal. Use dust collection systems whenever possible.

9. **ALWAYS** remove the power cord plug from the electrical outlet when making adjustments, changing parts, cleaning, or working on the tool.
10. **KEEP GUARDS IN PLACE AND IN WORKING ORDER.**
11. **AVOID ACCIDENTAL START-UPS.** Make sure the power switch is in the OFF position before plugging in the power cord.
12. **REMOVE ADJUSTMENT TOOLS.** Always make sure all adjustment tools are removed from the tool before turning it on.
13. **NEVER LEAVE A RUNNING TOOL UNATTENDED.** Turn the power switch to OFF. Do not leave the tool until it has come to a complete stop.
14. **NEVER STAND ON A TOOL.** Serious injury could result if the tool tips or is accidentally hit. **DO NOT** store anything above or near the tool.

GENERAL SAFETY RULES

15. **DO NOT OVERREACH.** Keep proper footing and balance at all times. Wear oil-resistant rubber-soled footwear. Keep the floor clear of oil, scrap, and other debris.
16. **MAINTAIN TOOLS PROPERLY.** ALWAYS keep tools clean and in good working order. Follow instructions for lubricating and changing accessories.
17. **CHECK FOR DAMAGED PARTS.** Check for alignment of moving parts, jamming, breakage, improper mounting, or any other conditions that may affect the tool's operation. Any part that is damaged should be properly repaired or replaced before use.
18. **MAKE THE WORKSHOP CHILDPROOF.** Use padlocks and master switches and ALWAYS remove starter keys.
19. **DO NOT** operate the tool if you are under the influence of drugs, alcohol, or medication that may affect your ability to properly use the tool.
20. **USE SAFETY GOGGLES AT ALL TIMES** that comply with ANSI Z87.1. Normal safety glasses only have impact resistant lenses and are not designed for safety. Wear a face or dust mask when working in a dusty environment. Use ear protection such as plugs or muffs during extended periods of operation.

SPECIFIC RULES FOR METAL LATHES

1. This lathe is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a lathe, do not use it until proper training and knowledge have been acquired.
2. Always wear eye protection and a face shield/dust mask when using the lathe.
3. Make sure all tools, chisels and accessories are sharp enough for the task at hand before using them. Always use the right tool at the correct speed and feed rate.
4. Turn off and unplug the machine before doing any cleaning or maintenance. Use a brush to remove chips or debris. Never use your hands to remove excess material and debris.
5. Check the workpiece carefully for inconsistencies or obstructions. These types of blemishes may cause a safety risk during turning.
6. Rotate the workpiece by hand to check clearance before turning the machine on.
7. Select the appropriate speed for the task at hand. Start at a low speed and allow the lathe to ramp up to the operating speed before engaging any chisels, tools or other carving accessories.
8. Never stop a rotating workpiece with your hand.
9. When turning between centers, make sure the headstock and tailstock are tight and snug against the workpiece.
10. Always use a brush or rag to clear away chips from the workpiece. Using your hand can cause serious injury.

SPECIFIC RULES FOR LATHES

11. Always remove the key from the chuck jaws before operation.
12. Always wear a full face mask. If a tool or workpiece breaks off, it can create a hazard to users and onlookers.
13. Always use the right cutting tool. An improper tool could break or cause unwanted strain on the machine.
14. Never attempt to stop the lathe with your hand. You will lose your hand.
15. Always use the proper feed rate for your workpiece. An overly fast feed rate can damage the lathe or the workpiece.
16. Secure the workpiece properly, make sure the chuck is tight and secure on the workpiece before beginning to turn. A loose workpiece can shoot out and severely injure you or anyone around.
17. Use a tailstock to support long work stock. Anything more than 2.5 times as long as it is thick needs the tailstock to support it.
18. Never operate the lathe with damaged parts.
19. Never turn a workpiece at RPMs that are too high for the work material. This can cause the cutting tool to break and launch off, injuring you or a bystander.
20. Never reverse motor direction while the machine is running.
21. Never change the lead screw feed direction while the machine is running.
22. Always ensure proper clearance between the workpiece and the cross slide, compound slide, and tool post.
23. Always disengage automatic feed after a cutting pass, even if it is the final cut. You can forget and hurt yourself upon next use.
24. Always tie up long hair. Do not wear any loose/hanging clothing. Even aprons can be hazards when improperly secured.
25. Remove any and all jewelry, rings, watches, etc. to avoid getting them caught in the lathe.

ELECTRICAL INFORMATION

GROUNDING INSTRUCTIONS

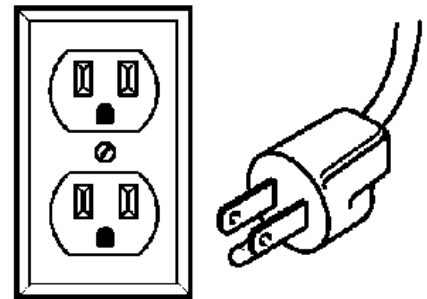
IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides the path of least resistance for an electric current and reduces the risk of electric shock. This tool is equipped with an electric cord that has an equipment grounding conductor and a grounding plug. The plug **MUST** be plugged into a matching outlet that is properly installed and grounded in accordance with **ALL** local codes and ordinances.

DO NOT MODIFY THE PLUG PROVIDED. If it will not fit the outlet, have the proper outlet installed by a licensed electrician.


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

CHECK with a licensed electrician or service personnel if you do not completely understand the grounding instructions or whether the tool is properly grounded.

USE ONLY THREE-WIRE EXTENSION CORDS that have three-pronged plugs and outlets that accept the tool's plug as shown. Repair or replace a damaged or worn cord immediately.



CAUTION: In all cases, make certain the outlet in question is properly grounded. If you are not sure, have a licensed electrician check the outlet.

 **WARNING:** This tool is for indoor use only. Do not expose to rain or use in damp locations. This tool must be grounded while in use to protect the operator from electric shock.

GUIDELINES FOR EXTENSION CORDS

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. The table below shows the correct size to be used according to cord length and nameplate ampere rating. When in doubt, use a heavier cord. The smaller the gauge number, the heavier the cord.

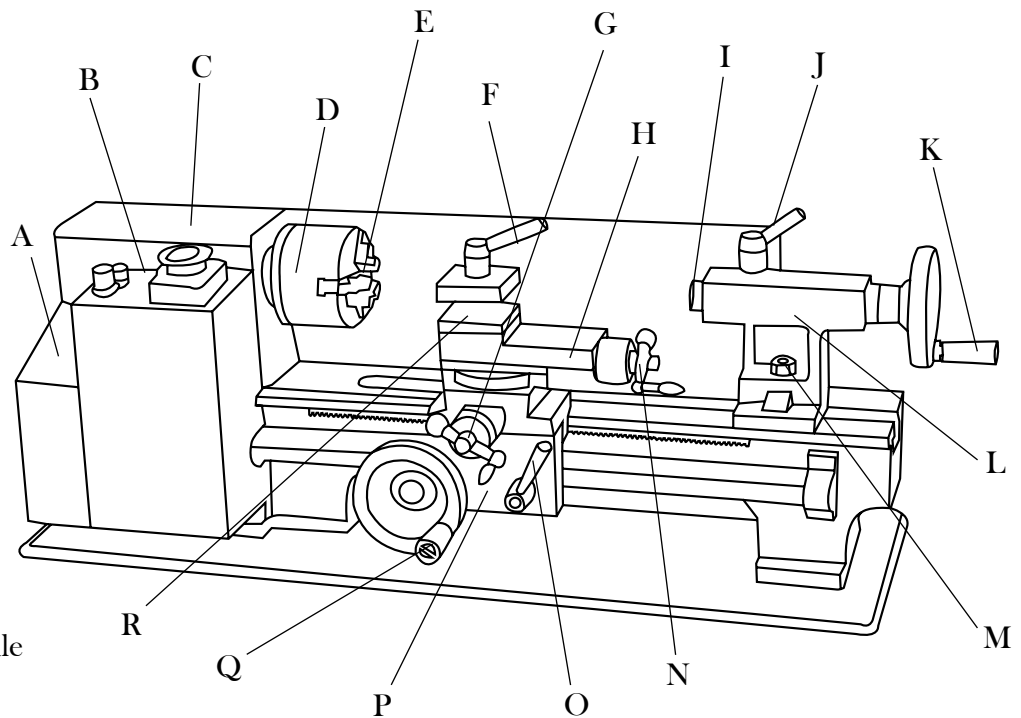
Make sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it. Protect your extension cords from sharp objects, excessive heat and damp/wet areas.

| AMPERAGE | REQUIRED GAUGE FOR EXTENSION CORDS | | | |
|----------|------------------------------------|----------|----------|----------|
| | 25 ft. | 50 ft. | 100 ft. | 150 ft. |
| 4A | 18 gauge | 16 gauge | 16 gauge | 14 gauge |

Use a separate electrical circuit for your tools. This circuit must not be less than a #12 wire and should be protected with a 15 A time-delayed fuse. Before connecting the motor to the power line, make sure the switch is in the **OFF** position and the electric current is rated the same as the current stamped on the motor nameplate. Running at a lower voltage will damage the motor.

KNOW YOUR LATHE

- A - Running Gear Cover
- B - Lathe Control Panel
- C - Head Stock
- D - Spindle
- E - 3-Jaw Chuck
- F - Tool Post Lock
- G - Cross Slide Handle
- H - Compound Slide
- I - Quill
- J - Quill Lock
- K - Tailstock Hand Wheel
- L - Tailstock
- M - Tailstock Lock Nut
- N - Compound Slide Handle
- O - Automatic Feed Lever
- P - Cross Slide
- Q - Manual (Carriage) Feed Handle
- R - Tool Post



NOT PICTURED (See page 8 for locations):
 High/Low Speed Range Lever (behind headstock)
 Forward/Neutral/Reverse Lever (behind headstock)

LATHE CONTROL PANEL (FIG. A)

Before operating your lathe, become familiar with the controls.

A. VARIABLE SPEED CONTROLLER: Allows the adjustment of the lathe's speed from 0 to 2500 RPM.

B. EMERGENCY SHUTOFF: Stops power to the unit when pressed during operation. Button must be UP (clasp released) to permit operation. Eye guard must also be DOWN to permit operation. Raising eye guard before or during operation causes motor fault.

C. SPINDLE DIRECTION SELECTOR: Allows the user to select the direction of the spindle between clockwise (forward), neutral (O), and counterclockwise (reverse). Forward = toward operator (clockwise when viewed from the headstock end; opposite for reverse).

DO NOT CHANGE THE SPINDLE DIRECTION WHILE THE UNIT IS RUNNING! IT WILL DAMAGE THE LATHE!

D. FUSE CAP: Contains the fuse (4A) that protects the unit from circuit overloads. The fuse can be removed by turning 1/4-turn counterclockwise with Phillips-head screwdriver, then pulling fuse and cap out.

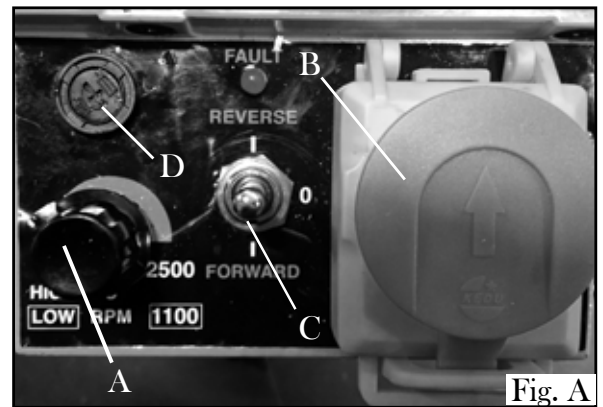


Fig. A

KNOW YOUR LATHE

BEHIND HEADSTOCK (FIG. B)

A) : Allows the user to shift the spindle speed range from HIGH (0-2500 RPM) to LOW (0-1100 RPM).

DO NOT SHIFT FROM HIGH TO LOW WHILE THE LATHE IS RUNNING!

B) LEAD SCREW DIRECTION LEVER:

Change the direction of the lead screw rotation between forward, reverse, and neutral. This is spring-loaded, so it needs to be pulled OUT (away from lathe body), position adjusted, and then released

DO NOT CHANGE DIRECTION OF THE LEAD SCREW WHILE THE LATHE IS RUNNING!

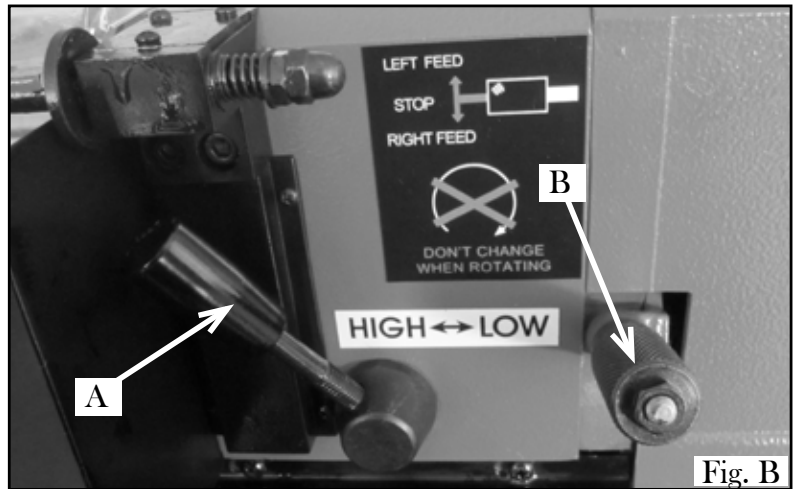


Fig. B

ASSEMBLY

UNPACKING

Carefully unpack the lathe and all its parts. Compare against the list below. Do not discard the carton or any packaging until the lathe is completely assembled.



WARNING: If any part is missing or damaged, do not plug in the tool until the missing or damaged part is replaced.

| | |
|--|--------------------------------------|
| Lathe | Plastic Handles w/ Nuts and Bolts |
| Rubber Feet (4) | No. 2 Morse Taper Center (Tailstock) |
| M6 Pan Head Screws (4) | External Jaws for 3-Jaw Chuck (3) |
| Hex Keys (4) | 8 x 10 mm Wrench |
| Chuck Key | 14 x 17 mm Wrench |
| Plastic Oil Container (Oil not included) | Gear Set |
| Spare Fuse | Face Shield |

TO ASSEMBLE

NOTE: Before assembling, carefully wipe off all grease and rust-protectant coating with a soft cloth. Use kerosene to fully remove the grease and coating. Apply a light coat of good-quality paste wax to prevent rusting and ensure ease of movement between parts.

Attach the plastic handles to the rims of the manual feed and tailstock feed handles respectively. Ensure the nuts are tight and the handles spin freely about the bolts without excessive end play.

The carriage, cross-slide and compound slide adjustments are all factory set to ensure smooth movement in both directions. However the adjustments may have been misaligned during transportation. This will be indicated by stiff or erratic movement. Refer to “Settings and Adjustments” for adjustment methods.

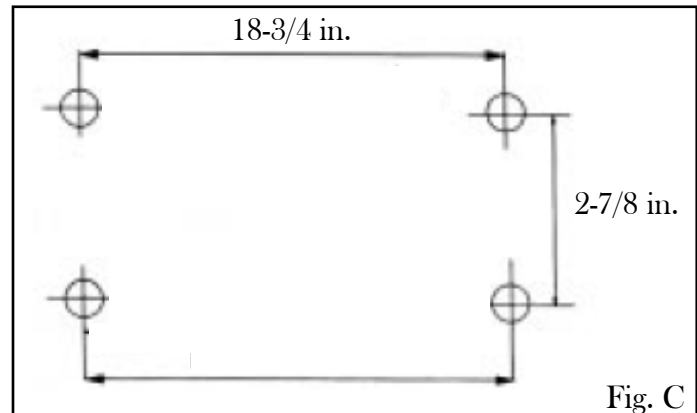
All hex keys and wrenches necessary to carry out various adjustments are supplied together with a chuck key for the 3-jaw chuck. The fuse socket (Fig. A) is located on the main control panel.

The four M6 pan-head screws are used to attach the chip tray and rubber feet to the tapped holes in the underside of the lathe body. Insert the screws through the feet, through the chip tray, and tighten in the threaded holes. We strongly recommend that to provide maximum stability and safety, users should secure the lathe to a firm foundation as described under “Mounting the Lathe” below.

OPERATION

MOUNTING THE LATHE (FIG. C)

The lathe should be mounted on a strong, heavy workbench. Take the necessary precautions when moving the lathe. Assistance may be required. Bolt the machine firmly to the workbench using the tapped holes. To do this remove the M6 screws securing the rubber feet in place. Drill four M6 clearance holes in the worktop and find washers and M6 screws long enough to securely hold the unit in place.



HEADSTOCK

The headstock contains the motor, pulleys and the drive belt that turn the spindle used to create your workpiece. The spindle has a MT3 taper for use in conjunction with a face plate or turning clamp. The spindle has a flange attached with 6 holes arranged to mount different fixtures, such as chuck jaws and face plates. The speed of the spindle is adjusted via the Variable Speed Controller on the control panel. The speed ranges can be swapped between two ranges with the lever on the back of the headstock. Do not change the speed range during operation.

CARRIAGE

The carriage is the portion of the lathe that moves the Cross Slide and Compound Slide across the bed. It can be manually fed, or driven with the lead screw by engaging the half nuts with the automatic feed lever.

CROSS SLIDE

The cross slide is used to move the tool post and cutting tool across the bed, perpendicular to the lead screw and the center axis of the spindle. The cross slide is adjusted via a handle with precision tick marks, each indicating 0.001". This scale will rotate with the handle when it is turned to feed the cross slide back and forth. Before beginning turning, perform the following steps to adjust and zero your cross slide:

1. Turn the handle counterclockwise to back the cross slide 0.015" away from your starting point, then slowly turn the handle clockwise until the cross slide returns to the starting position. This removes any play in the slide to help make the scale more accurate.
2. Now hold the handle steady and with your other hand rotate the scale so the "0" lines up with the "0.000" mark on the cross slide. From this point the slide will remain accurate as long as you only move it forward (toward the splash guard on the back of the lathe).
3. Any time you back the slide away from your workpiece you will have to repeat steps 1 and 2 before moving the cross slide forward again for the next cut.

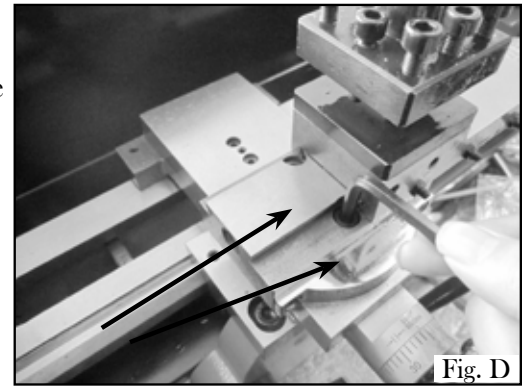
OPERATION

COMPOUND SLIDE

The compound slide works similarly to the cross slide with a small handle and a scale with tick marks every 0.001". The compound slide can be fed back and forth with this handle, similar to the cross slide. In addition it can also be rotated to an angle of your choice and fed back and forth along this angle.

ADJUSTING THE COMPOUND SLIDE

1. Rotate the handle to move the compound slide back and expose the two screws shown in Fig. D. Loosen these two screws with one of the included hex wrenches.
2. Rotate the compound slide to the desired angle and retighten the bolts to lock it in place.
3. Turn the handle until your slide is at its starting point. Then back the slide 0.015" from the starting point.
4. Slowly turn the handle to feed the slide forward until it returns to the starting point.
5. Hold the handle in place and rotate the scale so the "0" and "0.000" lines match and the scale is properly zeroed.
6. Repeat steps 3-5 for each cut and each time you adjust the slide in order to get the most accurate cuts.



CARRIAGE FEED

The feed of the carriage along the axis of the spindle can be done manually, or automatically by the lead screw and gear train.

TO MANUALLY FEED THE CARRIAGE

Disengage the half nuts from the lead screw by pulling UP on the feed lever. Use the handle on the carriage to move it along the bed. Turning it clockwise will move it away from the spindle and turning it counter-clockwise will move it towards the spindle.

TO AUTOMATICALLY FEED THE CARRIAGE

1. Set the carriage to your starting point.
2. While the unit is still turned off, set the Lead Screw Direction Lever to any direction, as long as it is not neutral. Choose your preferred direction based on the sticker next to the Lever.
3. Turn the lathe on and set it to the necessary RPM using the Variable Speed Controller
4. Push the feed lever down to engage the lead screw and the automatic feed function.
5. Once the pass of the tool is finished pull up on the lever to disengage the lead screw and the automatic feed.

NOTE: increasing the spindle speed using the Variable Speed Controller (Fig. A - A) will also increase the lead screw feed rate proportionally.

ADJUSTMENTS

TAILSTOCK

The tailstock is located on the bed opposite of the headstock. It can be moved along the bed by loosening the 17 mm nut (Fig. E - Item E) and pushing the tailstock to the desired position. When it is in the desired spot, tighten the 17 mm nut to lock it in place. The tailstock is equipped with an MT2 taper to use with appropriate tools, like the included center, or a properly tapered drill chuck or drill bit. The tailstock arrives properly aligned to the headstock from the factory. This allows the use of dead or live centers, as well as on center drilling to be performed on the workpiece. If you need to create a taper to the workpiece it is necessary to offset the tailstock (see “Offsetting Your Tailstock” section on page 12 for more info).

TAILSTOCK COMPONENTS (FIG. E):

A. Tailstock Handle: Feeds the quill in and out of the tailstock into the workpiece. Use to push a center into the workpiece to hold it level horizontally, or to feed a drill into the workpiece to create a hole.

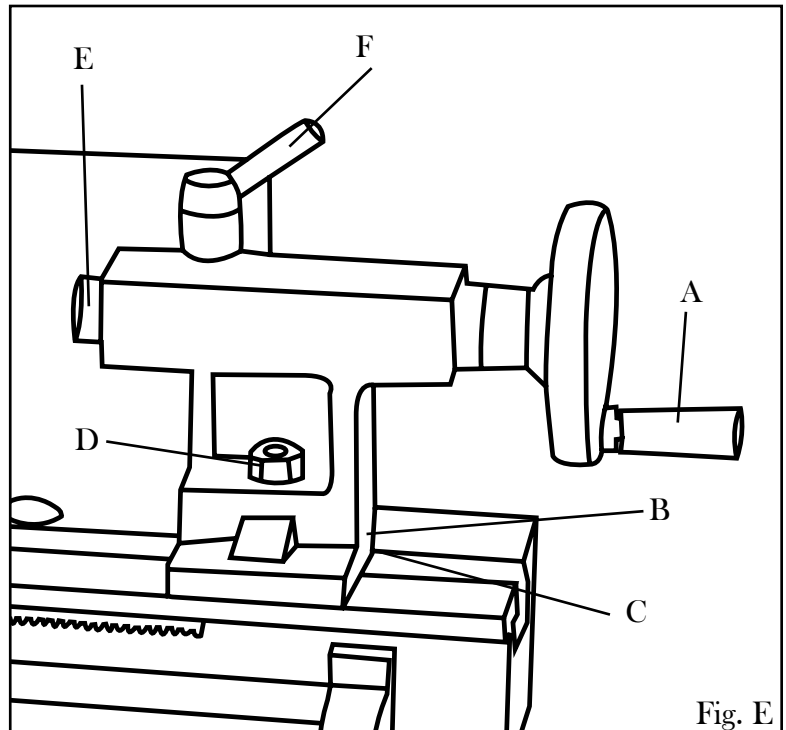
B. Offset Setscrew: Locks the tailstock position to allow for offset alignment

C. Offset Cap Screw: Allows tailstock alignment to be adjusted to right or left of center (underside of tailstock)

D. Tailstock Lock Nut: Secures the tailstock in place on the bed

E. Quill: Holds MT2 tapered tools in the tailstock

F. Quill Lock: Secures the quill in place



USING A CENTER WITH THE TAILSTOCK

If you are turning a workpiece with stock that hangs more than 2.5 times its diameter beyond the chuck jaws, it is necessary to support the other end with a center and the tailstock. For projects that allow low RPM turning, a dead center is okay. If higher RPMs are necessary, it is recommended to invest in a live center. To install:

1. Check the center and tailstock quill for any dirt, dust, debris or oil. Wipe both down, as excessive oil or dirt will not allow the tapers to interlock.
2. Turn the tailstock handle until the quill protrudes approximately 1/2" inch from the tailstock.
3. Slide the center into the quill until it is snug, the tapers will keep the center in place. Keep the quill extended between 0 and 1.5 on the quill scale to keep it secure.
4. To remove the center use the tailstock handle to retract the quill into the tailstock completely. This forces the center out of the quill. Hold the head of the center with your hand to catch it as the center becomes loose.

OPERATION

OFFSETTING YOUR TAILSTOCK

WARNING: The tailstock comes from the factory properly aligned with the headstock.

The tailstock can also be used in an offset position to help turn tapers on a work piece. Adjusting the tailstock into an offset position requires removing the tailstock from the bed and adjusting the offset screw on the bottom of the tailstock. To properly offset the tailstock follow these steps (Refer to Fig. E on page 11):

1. Use a 17mm wrench or socket to loosen the lock nut that holds the tailstock in place. Then slide the tailstock off the bed.
2. Loosen the offset setscrew (Fig. E, item B) on the back of the tailstock, below the handle.
3. Loosen the offset cap screw (Fig. E, item C) on the bottom of the tailstock. Only loosen it enough so the tailstock can slide.
4. Slide the tailstock back onto the bed and adjust it to the desired offset.
5. Tighten the offset setscrew to hold the tailstock at the proper offset position.
6. Slowly and carefully slide the tailstock off the bed and tighten the offset cap screw on the bottom.
7. Slide the tailstock back onto the bed, lock it in to the desired position and check your tolerances to make sure it is in the desired offset.
8. Repeat the previous steps in order to adjust the offset to the exact position necessary for your turning work piece.

TOOL POST

The tool post is used to hold your cutting tools and run the cutting edge along the workpiece you are turning. The tool post can hold four tools at a time and has 4 preset stops at 90 degree intervals. It can also be set at any angle in between these four presets. To install a cutting tool into the tool post follow these steps:

1. Determine which cutting tool will create the desired cut profile.
2. Loosen the screws in the top of the tool post on the edge you will place the cutting tool. Make sure the tool will be secured by a minimum of two of these screws.
3. Place the tool under the screws and loosely tighten them, making sure it is perpendicular (or at the proper angle) to the axis of the workpiece.
4. Align the tip of the tool with the centerline of the workpiece. If the workpiece centerline is higher, place shims under the tool to raise its height. This machine uses 5/16" (7.93mm) tools. To determine if the tool tip is even with the centerline check the tool tip against the tip of the center in the tailstock. If the two tips are even or the tool tip is below the center tip, the tool is the proper height. If the two tips are even or the tool tip is below the center tip, the tool is the proper size for the lathe. If the tool tip is below the center tip, it will need to be shimmed up to the height of the center tip, otherwise you will see a small "button" on the workpiece when parting off. If the tool tip is higher than the center tip, the tool is the wrong size for this lathe.

OPERATION

GEAR TRAIN (FIG. F)

WARNING: Before making any of these adjustments, turn off and unplug the lathe from its power source.

The gear train is located on the headstock opposite the spindle. The drive gears are located under a cover secured by two socket head cap screws. The gear train is used to drive the lead screw that allows the auto-feed function to operate. As the gear train turns, it turns the lead screw which moves the carriage across the bed of the lathe. The direction is set using the lead screw direction lever. Adjusting it to forward will send the carriage towards the headstock. Reverse sends it away, and neutral disengages the lead screw so the saddle can be manually fed.

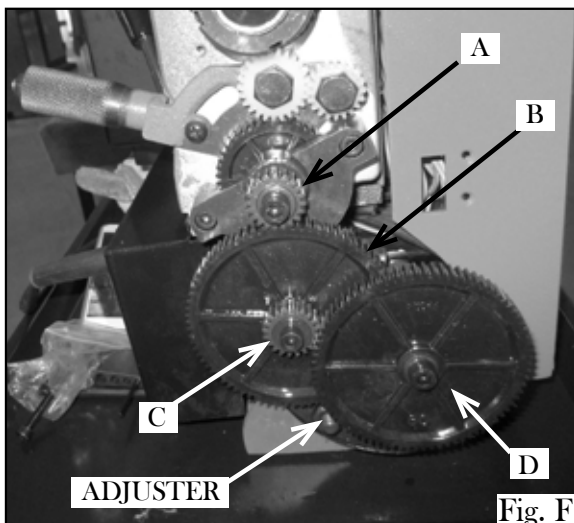
The feed rate of the lead screw can be set by changing the gears in the gear train (Fig. F). Switching the diameter of the gears and the order of the gears will change the torque and speed of lead screw, allowing for different threads to be turned with the lathe. The Threading Chart to the right shows the gear arrangements to use to achieve different threads per inch (TPI) or metric pitches when using the lead screw.

To change the gears to match up with these gear charts follow these steps:

1. Remove the gear cover to expose the drive gears.
2. Loosen the adjustment nut at the bottom of the gear train to disengage the gears from one another. Loosen the socket head cap screws that hold each gear (or gear pair) on its shaft. Remove the necessary gears and replace them with the appropriate gears. That is, the gears that have the proper number of teeth in the positions called for (30, 40, 60, and 65 teeth). Note that some configurations do not require gears in every position, and some require you to move the bushings from one shaft to another for gears to properly fit in place.
3. Position the gears so their teeth will mesh together properly once the adjuster is tightened.

| METRIC THREAD PITCH CHART | | | | |
|---------------------------|----------------|----|----|----|
| Pitch | Gear Size (mm) | | | |
| | A | B | C | D |
| 0.4 | 20 | 50 | 40 | 60 |
| 0.5 | 20 | 50 | / | 60 |
| 0.6 | 40 | 50 | 30 | 60 |
| 0.7 | 40 | 50 | 35 | 60 |
| 0.8 | 40 | 50 | 40 | 60 |
| 1.0 | 20 | 60 | / | 30 |
| 1.25 | 50 | 40 | / | 60 |
| 1.5 | 40 | 60 | / | 40 |
| 1.75 | 35 | 60 | / | 30 |
| 2.0 | 40 | 60 | / | 30 |

| THREADS PER INCH (TPI) | | | | |
|------------------------|----------------|----|----|----|
| TPI | Gear Size (mm) | | | |
| | 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 |
| 26 | 40 | 60 | / | 65 |
| 28 | 20 | 65 | / | 35 |
| 32 | 20 | 65 | / | 40 |
| 36 | 20 | 65 | / | 45 |
| 38 | 20 | 50 | 60 | 57 |
| 40 | 20 | 65 | / | 50 |
| 44 | 20 | 65 | / | 55 |
| 48 | 20 | 65 | / | 60 |
| 52 | 20 | 60 | / | 65 |



OPERATION

CREATING NORMAL TURNING

Before starting a turning, always plan your work ahead of time. Create a drawing or plan with all of the dimensions you desire for the workpiece. Make sure to have all the measuring tools you will need to double and triple check your cuts. Ensure that the feed rate, depth of cut (DOC), and spindle speed (RPM; depends on material, cutting tool material and profile, DOC, desired surface finish, workpiece geometry, etc.) are all proper for your operation. To avoid stalling the motor, we recommend that the DOC never exceed 0.5mm (0.0196 in), and should be kept below 0.25mm (about 0.01 in) whenever possible. Reduce spindle speed when taking a deeper cut.

Place the work into the chuck or attach to the faceplate. If necessary, use the tailstock center to support the opposite end. If the tailstock is not needed, it can be removed completely by loosening the nut and sliding the tailstock off the bed.

After you have the work planned out, select the necessary cutting tools for the feature you wish to create and mount them to the tool post. Make sure the tool tips are aligned with the center line of the workpiece, or slightly below them (double check the tool mounting procedure in the “Tool Post” section on page 12).

Mark the end point for the cut on the work piece using a scribe. Line up the cutting tool with the end point and feed in the cross slide until it just touches the surface of the workpiece. Then turn the spindle by hand to make sure there is no interference between the carriage, cross slide, tool post, cutting tool, or chuck. It may be necessary to adjust the compound slide or the workpiece in the chuck to get the proper amount of clearance.

When you have assured there is adequate clearance, back the cross slide away from the work piece and move the carriage away from the head stock. Next zero out the cross-slide:

1. Feed the cross slide and the cutting tool to the starting position of the cut.
2. Back the cross slide 0.015” away from the work piece.
3. Slowly feed the cross slide back to the starting point.
4. Hold the handle to move the cross slide in place with one hand, and turn the dial of the gauge to make the 0 and the 0.000 marks line up. The cross slide and cutting tool are now zeroed out.
5. If you have to back feed the cross slide at all repeat steps 1 through 4.

NOTE: Before each pass of the cutting tool, it is recommended to add oil to the work piece to reduce heat and friction. Make sure to periodically add oil to the work piece as needed while turning.

USING MANUAL FEEDING

Double check the following before you begin turning:

1. The auto-feed lever is in the UP position, so the carriage half nuts are disengaged from the lead screw.
2. The Auto Feed Direction Lever is in NEUTRAL.
3. You are in the appropriate speed selection of HIGH/LOW for the material you are turning.

(CONTINUED ON NEXT PAGE)

OPERATION

(CONTINUED FROM LAST PAGE)

To know the proper RPM will take some experience. Harder metals should use a slower RPM while softer can use a little faster RPM. If you are unsure, it is better to go slower than risk damage to the work, the cutting tool or the lathe by using too high of an RPM. Feed rate and DOC are also very important. A deeper DOC needs a slower feed rate and slower RPM, and vice versa.

Once you are ready to begin, switch the machine ON and set the RPM to your desired level. Slowly feed the cutting tool into the work piece using the carriage handle. Slowly feed the cutting tool across the work piece until you reach the marked end point. Retract the cross slide and cutting tool at this point one or two full revolutions. Return the carriage to the starting point, and then feed the tool back in the same number of revolutions plus a small additional feed rate in. Repeat this process until you have the desired amount of material cut away.

USING AUTOMATIC FEED

Once you have the cross slide set in position double check the following:

1. The Auto Feed Direction Lever is set to FORWARD.
2. The auto feed lever is disengaged from the lead screw.
3. You are in the appropriate speed selection range of HIGH/LOW.

| FACTORY SETTINGS | |
|------------------|----|
| A | 20 |
| B | 80 |
| C | 20 |
| D | 80 |

4. The gear train is in the proper configuration, as this determines the feed rate of the lead screw. The factory setting is okay for normal turning, but if you have been cutting screw threads you will need to reset the gear train to the proper configuration.

TO PERFORM THE CUT WITH THE AUTOMATIC FEED

Note: Ensure the DOC is appropriate for the cutting tool material, workpiece material, etc.

1. Position the cutting tool past the end of the work piece away from the tail stock. Make sure the tool is set to the proper cutting depth. Always do shallow cuts, as cutting too deep too fast will damage the work piece, your cutting tool, and your lathe. It is recommended to keep the cuts to 0.010" (0.25mm) or less at a time.
2. Double check that all the feed levers are in the proper direction.
3. Turn the unit on, set the spindle speed to the desired rate. Push the autofeed lever down to engage the half nut with the lead screw.
4. Watch your cutting tool. When it reaches the end, quickly press UP on the auto feed lever and make sure it stays disengaged from the lead screw.
5. Retract the cutting tool one or two turns using the cross slide handle. Feed the carriage back to the starting point, and feed the tool back in one or two turns plus the additional cutting depth.
6. When ready for the next pass, engage the auto feed lever and repeat the previous steps until you have removed the desired amount of material.

OPERATION

BEVEL CUTTING

In order to perform a bevel cut, it is necessary to use the compound slide as well as the cross slide. To align the compound slide for a bevel cut, align it to the proper angle following the procedure in the “Compound Slide” section on page 10.

Once the compound slide is aligned to the proper angle, follow these steps to create the bevel:

1. Mark your end point of the bevel if necessary using the methods for a normal turning.
2. Set and zero out the cross slide to the proper starting point.
3. Turn the lathe on and set the spindle to the appropriate RPM.
4. Use the handle on the compound slide to feed the cutting tool along the end of the workpiece. This will create the bevel cut at the angle you set it to.
5. Back off the cutting tool 2 turns and reset the compound slide to the starting point. Feed the cutting tool back in to the cutting depth.
6. Repeat until your bevel is the desired length and position.

| THREAD DIAL | |
|-------------|------------|
| TPI | SCALE |
| 12 | 1, 3, 5, 7 |
| 13 | 1 |
| 14 | 1 or 5 |
| 16 | 1 - 8 |
| 18 | 1 or 5 |
| 19 | 1 |
| 20 | 1, 3, 5, 7 |
| 22 | 1 or 5 |
| 24 | 1 - 8 |
| 26 | 1 or 5 |
| 28 | 1, 3, 5, 7 |
| 32 | 1 - 8 |
| 36 | 1, 3, 5, 7 |
| 38 | 1 or 5 |
| 40 | 1 - 8 |
| 44 | 1, 3, 5, 7 |
| 48 | 1 - 8 |
| 52 | 1, 3, 5, 7 |

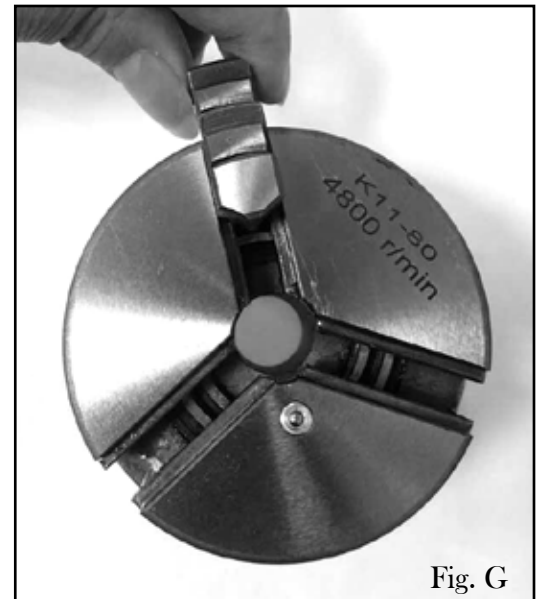
TO CUT THREADS

1. Adjust the compound slide so the tool is at the appropriate angle for the desired thread.
2. Place the tool tip so that it is vertically centered and perpendicular to the workpiece.
3. Engage the thread dial with the lead screw. The thread dial is located next to the auto-feed lever on the carriage. There is a socket-head cap screw on the side; loosen the screw using one of the included hex wrenches and adjust the body of the thread dial so that its gear meshes with the threads on the lead screw. Tighten the socket head cap screw, ensuring that the gear stays engaged with the lead screw threads.
4. Use the gear ratio charts to determine the proper gear ratio and install the proper gears (See “Gear Train” on page 13).
5. Turn the lathe on and set the RPM using the Variable Speed Controller. Make sure the lead screw is feeding in the proper direction by engaging the feed lever. When you are sure it is going in the right direction disengage the feed lever and turn off the lathe. Ensure that the carriage is beyond the end of the workpiece.
6. Read the settings off the thread dial chart (left) to get the proper setting for the thread dial. Make sure the thread dial always engages the half nut on the same mark for every pass of the cutting tool. If you don't do this you may cut off threads created in your previous cut. That is, the lever needs to be pushed down at the same point in order to cut threads correctly. If you engage the lever when the dial is not pointing to an indicator mark, you may stall the lead screw, which will cause it to drop into Neutral and stop.

OPERATION

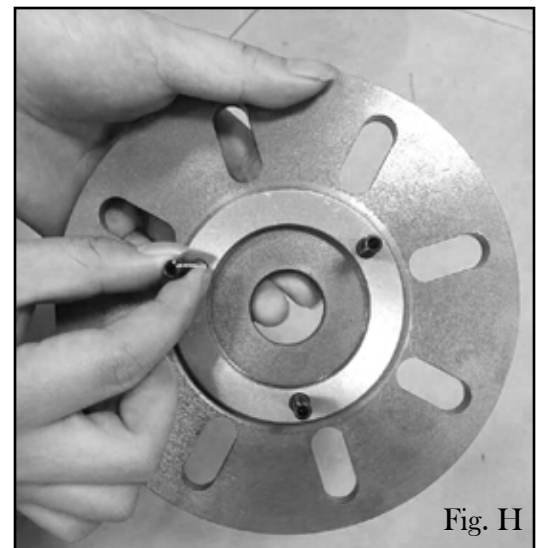
CHANGING THE JAWS IN YOUR CHUCK (FIG. G)

1. Make sure your lathe is turned off and unplugged.
2. Insert the chuck key into the square hole of the chuck. Turn the chuck key counterclockwise until all of the jaws come out of the chuck.
3. Clean out each slot in the chuck making sure all dirt and debris are removed.
4. Each jaw has a number or letter (1, 2, 3 or A, B, C) that corresponds to a number in the slot.
5. Take Jaw #1 and insert the chuck key into the chuck. Turn the key clockwise while looking directly at the chuck so you can see inside the slot. You will see the beginning of a lead thread on the scroll of the chuck pass the opening heading counter-clockwise.
6. Insert Jaw #1 into this slot and turn the chuck key until the thread engages the jaw.
7. Repeat these steps for jaws 2 and 3. Make sure to always insert the jaws in order.



REMOVING A CHUCK OR FACEPLATE

1. Turn off and unplug your lathe! It is recommended to place a piece of plywood over the bed underneath the spindle in order to protect the bed if you drop the chuck/faceplate.
2. Hold the chuck or faceplate with your hand while using a 10mm wrench with your other hand to loosen and remove the three hex nuts on the back of the spindle plate.
3. Pull the chuck/faceplate slowly off the spindle. It may be necessary to tap the back surface of the faceplate/chuck with a rubber mallet to get it off the spindle.
4. Make sure to keep track of the studs used for positioning the chuck/faceplate, and set the piece aside.



INSTALLING THE CHUCK OR FACEPLATE (FIG. H)

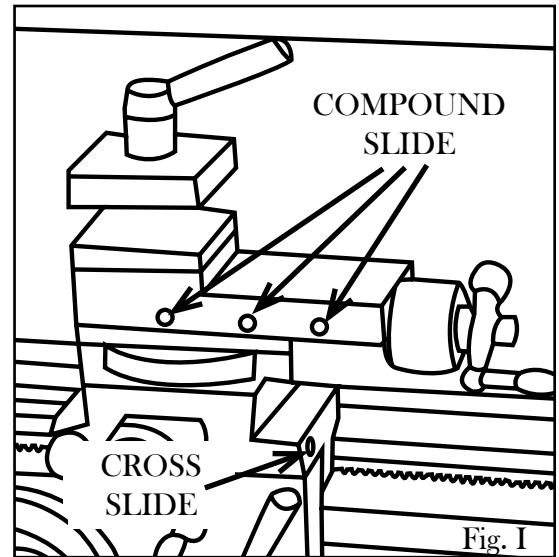
1. Insert the guide studs into the chuck/faceplate you wish to install. To do this, make sure the studs extend at least 1/2" from the surface of the chuck/faceplate.
2. Align the studs with the holes on the spindle and secure the chuck/faceplate in place with the nuts using a 10mm wrench.

OPERATION

ADJUSTING THE GIBS (FIG. 1)

Although the factory setting should be fine, if you are having trouble feeding the compound or cross slide, you may want to adjust the gib screws. To adjust the gib you will need a 2mm and a 7mm hex wrench. Follow these steps to adjust the gibs:

1. Turn off and unplug the lathe.
2. Loosen the three locknuts.
3. Test the sliding movement. Tighten and loosen the set screws as necessary. The slides should move smoothly without play. Readjust the set screws as needed.
4. Tighten the locknuts to keep the gibs set



REPLACING MOTOR BRUSHES

To replace the brushes for the lathe's motor:

1. Turn off and unplug the lathe.
2. Remove the front and rear brush caps from the motor. One can be accessed through the hole in the front of the bed. The other can be accessed from the back of the headstock, where the motor is exposed.
3. Pull out the motor brushes and dispose of the old ones.
4. Insert the new motor brushes. Ensure there is good contact between the new brushes and the motor commutator.
5. Reattach the brush caps.

Note: Both brushes should be replaced simultaneously.

MAINTENANCE

Before each use make sure to check all of the parts of the lathe for any loose bolts or connections. Leave the gear cover on to prevent chips from interfering with the geartrain. Make any adjustments to connections as necessary to ensure all the parts are connected and will stay together during operation. Check all of the cutting tools to make sure they are sharp. If the edge is dull or has any nicks or cuts either sharpen it or replace it. Dull or damaged cutting tools are a hazard and should never be used.

Every time you use your lathe, make sure to check that all work surfaces are clean and undamaged. If there are any chips or dents in the surface, work them out with an oil stone. Check that all of the moving parts pass over each smoothly and can be moved without any interference.

Use your oil can to squirt a few drops of oil into the oilways of both bearings on the ends of the leadscrew. Do the same for the oil way on the compound slide. The opening for this oilway is located between the two hex screws to adjust the slide.

After use make sure to clean away all metal shavings. Use a rag or brush to wipe away. It is recommended to wear gloves while doing this to prevent getting any small metal shavings stuck in your hand. Make sure to wipe all of the debris and dirt off the machine. Do not use an air compressor, as this can force shavings into the moving parts of the lathe and cause damage. Make sure to remove all cutting tools and store in a safe place. Once the lathe is clean it is recommended to lightly oil all of the surfaces to prevent any corrosion and keep the parts moving smoothly.

AFTER EACH USE

1. Clean all machine surfaces, including the chuck, and apply a thin layer of oil.
2. Put oil in each bearing on the lead screw.
3. Clean and oil the sliding surfaces of the bed, cross slide and compound slide.

EVERY 4 TO 6 MONTHS

1. Apply white lithium grease to the cross slide and compound slide lead screws.
2. Apply white lithium grease to all the drive gears.
3. Apply white lithium grease to the tailstock quill and screw.
4. Grease all of the transmission gears with a spray on grease.

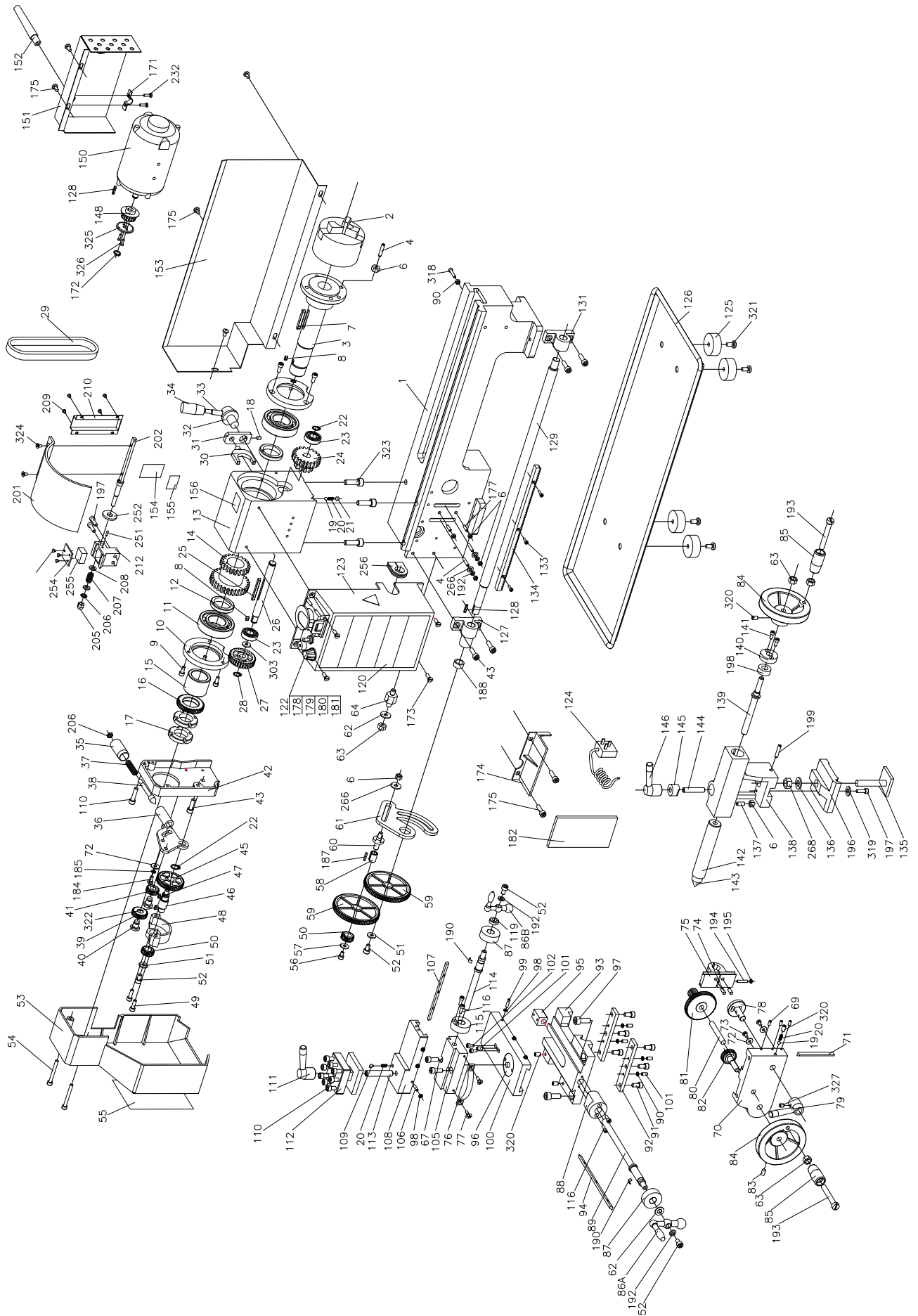
TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| Machine won't start. | <ol style="list-style-type: none"> 1. Emergency button is stuck down. 2. Fuse blown. 3. Damaged wiring. 4. PCB Board Damaged. 5. Motor ON/OFF Switch Faulty. 6. Spindle directional switch is bad. 7. Motor is bad. 8. Brushes are bad. 9. Face shield isn't down. | <ol style="list-style-type: none"> 1. Try and release the button or replace it. 2. Replace Fuse. 3. Check for any visible damage, and check with a multimeter for correct wiring. 4. Check PCB board for damage, replace if necessary. 5. Replace Switch. 6. Replace Switch. 7. Test motor, repair or replace as needed. 8. Replace the brushes. 9. Lower the face shield. |
| Machine stalls out during use | <ol style="list-style-type: none"> 1. Material of workpiece is too hard. 2. PCB board is faulty. 3. Variable speed knob is bad. 4. Motor Brushes are bad. 5. Belt slipping on the pulley. 6. Motor bearings went bad. 7. Machine is too small for the job. 8. Spindle rotation switch is bad. | <ol style="list-style-type: none"> 1. Make sure the metal isn't too hard for the unit. 2. Inspect and replace if necessary. 3. Test and replace. 4. Replace brushes. 5. Tighten pulleys, replace if needed. 6. Test by rotating the shaft manually, grinding noise or loose shaft indicates need to replace. 7. Make sure cutting tools are sharp, use lower feed rate and lubricant. Decrease the spindle speed and DOC. If problem persists the tool may be too small. 8. Test switch, replace if needed. |
| Grinding or clicking noise from headstock | <ol style="list-style-type: none"> 1. Set screws in the pulley aren't tight. 2. Motor fan contacting cover. | <ol style="list-style-type: none"> 1. Tighten set screws. 2. Check fan connection, tighten if necessary, or replace fan/cover. |
| Motor Overheats | <ol style="list-style-type: none"> 1. Motor is overloaded by work being done. 2. Air circulation through motor is cut off. | <ol style="list-style-type: none"> 1. Reduce load on the motor, lower the RPM, cutting depth and feed rates. 2. Clean all motor vents. |
| Motor bogs down during turning operation | <ol style="list-style-type: none"> 1. Cut or feed rate too high. 2. RPM too high for the turning being done. 3. Cutting tool is dull or damaged. 4. Gears in the gear train are too tight. | <ol style="list-style-type: none"> 1. Reduce cut and feed rate. 2. Reduce RPM. 3. Sharpen or replace. 4. Adjust the gears to have a very small amount of play. Test the chuck's rotation by hand. |
| Machine vibrates when started and when allowed to run | <ol style="list-style-type: none"> 1. Workpiece unbalanced. 2. Loose or broken belts. 3. Pulleys misaligned. 4. Broken Gear. 5. Chuck or faceplate unbalanced. 6. Spindle bearings worn out. | <ol style="list-style-type: none"> 1. Center the workpiece and reinstall 2. Tighten or replace. 3. Align pulleys. 4. Inspect the gears and replace if needed. 5. Rebalance or replace if needed. 6. Replace bearings. |
| Poor Surface Finish | <ol style="list-style-type: none"> 1. Feed rate or RPM wrong. 2. Dull cutting tool. 3. Too much play in gibs. 4. Cutting tool set too high. | <ol style="list-style-type: none"> 1. Set the proper feed rate and RPM. 2. Sharpen cutting tool. 3. Tighten Gibs (See Fig. I, page 18). 4. Remove tool or use a smaller tool. |

TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| Can't remove center or chuck from tailstock | <ol style="list-style-type: none"> 1. Quill isn't retracted completely into tailstock. 2. Debris in the quill. | <ol style="list-style-type: none"> 1. Turn the quill handle until the tool is forced out. 2. Always clean taper surfaces. Try and force out with WD40 and handle. |
| Cross slide, compound slide, or carriage have poor feed | <ol style="list-style-type: none"> 1. Gibs are out of alignment. 2. Handles are loose. 3. Lead screw worn out or needs greasing. 4. Bedways are worn and need greasing. 5. Dirt, shavings or grime in bedways. | <ol style="list-style-type: none"> 1. Adjust gib screws (See Fig. I, page 18). 2. Tighten handles. 3. Tighten fasteners on lead screw. 4. Grease bedways. 5. Clean bedways. |
| Surface finish uneven from end to end | <ol style="list-style-type: none"> 1. Headstock and tailstock are misaligned. | <ol style="list-style-type: none"> 1. Realign the tailstock and headstock. |
| Chuck jaws getting stuck and hard to move | <ol style="list-style-type: none"> 1. Debris in the chuck jaws. | <ol style="list-style-type: none"> 1. Remove jaws and clean out the chuck threads, lubricate. |
| Carriage difficult to feed or won't move | <ol style="list-style-type: none"> 1. Gibs are too tight. 2. Chips or debris in the bedway. 3. Carriage lock tightened down. 4. Bedways dry. 5. Half nuts not engaged with lead screw. 6. Gears broken. 7. Loose feed handles. | <ol style="list-style-type: none"> 1. Loosen gibs. 2. Clean bedways. 3. Release carriage lock. 4. Lubricate bedway. 5. Engage half nuts with lead screw. 6. Replace broken gears. 7. Tighten handle. |
| Gear change lever won't shift | <ol style="list-style-type: none"> 1. Gears misaligned. | <ol style="list-style-type: none"> 1. Rotate spindle until the gears rotate into place. |

EXPLODED VIEW & PARTS LIST



EXPLODED VIEW & PARTS LIST

| No | Part Number | Description | QTY |
|----|-------------|-----------------------------------|-----|
| 1 | 3455-001 | Bed Way | 1 |
| 2 | 3455-002 | 3 Jaws Chuck | 1 |
| 3 | 3455-003 | Spindle | 1 |
| 4 | 3455-004 | Set Screw M6 × 25 | 5 |
| 6 | 3455-005 | Nut M6 | 10 |
| 7 | 3455-006 | Key M5 × 40 | 1 |
| 8 | 3455-007 | Key M4 × 8 | 2 |
| 9 | 3455-008 | Screw M5 × 12 | 6 |
| 10 | 3455-009 | Cover | 2 |
| 11 | 3455-010 | Ball Bearing 6206ZZ | 2 |
| 12 | 3455-011 | Spacer | 2 |
| 13 | 3455-012 | Head Stock Casting | 1 |
| 14 | 3455-013 | High Low Transmission Gear 21/29T | 1 |
| 15 | 3455-014 | Spacer | 1 |
| 16 | 3455-015 | Spur Gear 45T | 1 |
| 17 | 3455-016 | Nut M27×1.5 | 2 |
| 18 | 3455-017 | Set Screw M5×8 | 1 |
| 19 | 3455-018 | Steel Ball | 2 |
| 20 | 3455-019 | Compression Spring | 3 |
| 21 | 3455-020 | Set Screw M6×6 | 1 |
| 22 | 3455-021 | Retaining Ring M12 | 2 |
| 23 | 3455-022 | Ball Bearing | 2 |
| 24 | 3455-023 | Transmission Gear 12T/20T | 1 |
| 25 | 3455-024 | Key M4 × 45 | 1 |
| 26 | 3455-025 | H/L Gear Shaft | 1 |
| 27 | 3455-026 | Pulley | 1 |
| 28 | 3455-027 | Retaining Ring M10 | 1 |
| 29 | 3455-028 | Timing Belt 136 | 1 |
| 30 | 3455-029 | High/Low Shifting Fork | 1 |
| 31 | 3455-030 | High/Low Shifting Arm | 1 |
| 32 | 3455-031 | High/Low Shifting Knob | 1 |
| 33 | 3455-032 | High/Low Shifting Lever | 1 |
| 34 | 3455-033 | High/Low Shifting Grip | 1 |
| 35 | 3455-034 | Handle | 1 |
| 36 | 3455-035 | Handle Mount | 1 |
| 37 | 3455-036 | Compressive Spring | 1 |
| 38 | 3455-037 | Indicator | 1 |
| 39 | 3455-038 | Pinion 25T | 1 |
| 40 | 3455-039 | Support Screw | 2 |
| 41 | 3455-040 | Pinion 20T | 1 |
| 42 | 3455-041 | Cover | 1 |
| 43 | 3455-042 | Screw M6×20 | 5 |
| 45 | 3455-043 | Gear 45T | 1 |
| 46 | 3455-044 | Shaft | 1 |
| 47 | 3455-045 | Key 4 × 8 | 1 |
| 48 | 3455-046 | Mount | 1 |
| 49 | 3455-047 | Screw M5 × 18 | 2 |
| 50 | 3455-048 | Pinion 20T | 2 |
| 51 | 3455-049 | Washer M6 | 2 |
| 52 | 3455-050 | Screw M6 × 8 | 4 |
| 53 | 3455-051 | Cover | 1 |
| 54 | 3455-052 | Screw M5 × 45 | 2 |
| 55 | 3455-053 | TPI Cutting Chart | 1 |
| 56 | 3455-054 | Screw M5 × 8 | 1 |

| No | Part Number | Description | QTY |
|-----|-------------|----------------------------|-----|
| 57 | 3455-055 | Washer M5 | 1 |
| 58 | 3455-056 | Bush W/Key | 1 |
| 59 | 3455-057 | Gear 80T | 2 |
| 60 | 3455-058 | Shaft | 1 |
| 61 | 3455-059 | Support Plate | 1 |
| 62 | 3455-060 | Washer M8 | 2 |
| 63 | 3455-061 | Nut M8 | 4 |
| 64 | 3455-062 | Shaft | 1 |
| 67 | 3455-063 | Screw M5×16 | 2 |
| 69 | 3455-064 | Screw M4×10 | 3 |
| 70 | 3455-065 | Apron | 1 |
| 71 | 3455-066 | Gib Strip | 1 |
| 72 | 3455-067 | Washer | 3 |
| 73 | 3455-068 | Screw M4 × 8 | 2 |
| 74 | 3455-069 | Shaft | 2 |
| 75 | 3455-070 | Half Nut Base | 2 |
| 76 | 3455-071 | Angle Block | 1 |
| 77 | 3455-072 | Screw M4×10 | 2 |
| 78 | 3455-073 | Groove Cam | 1 |
| 79 | 3455-074 | Handle | 1 |
| 80 | 3455-075 | Shaft | 1 |
| 81 | 3455-076 | Feeding Gear (A) 11T/54T | 1 |
| 82 | 3455-077 | Feeding Gear (B) 24T | 1 |
| 83 | 3455-078 | Screw M6 × 10 | 1 |
| 84 | 3455-079 | Wheel | 2 |
| 85 | 3455-080 | Knob+Screw M8 × 55 +Nut M8 | 2 |
| 86A | 3455-081 | Three Ball Handle (big) | 1 |
| 86B | 3455-082 | Three Ball Handle | 1 |
| 87 | 3455-083 | Dial | 2 |
| 88 | 3455-084 | Bracket | 1 |
| 89 | 3455-085 | Feeding Screw | 1 |
| 90 | 3455-086 | Nut M5 | 5 |
| 91 | 3455-087 | Screw M6×12 | 6 |
| 92 | 3455-088 | Slide Plate | 2 |
| 93 | 3455-089 | Saddle | 1 |
| 94 | 3455-090 | Gib Strip | 1 |
| 95 | 3455-091 | Feeding Nut | 1 |
| 96 | 3455-092 | Swivel Disk | 1 |
| 97 | 3455-093 | Screw M8 × 20 | 2 |
| 98 | 3455-094 | Nut M4 | 8 |
| 99 | 3455-095 | Screw M4 × 16 | 3 |
| 100 | 3455-096 | Cross Slide | 1 |
| 101 | 3455-097 | Screw M5 × 10 | 5 |
| 102 | 3455-098 | Screw M4 × 8 | 2 |
| 105 | 3455-099 | Compound Rest | 1 |
| 106 | 3455-100 | Screw M4 × 14 | 3 |
| 107 | 3455-101 | Gib Strip | 1 |
| 108 | 3455-102 | Compound Rest (A) | 1 |
| 109 | 3455-103 | Positioning Pin | 1 |
| 110 | 3455-104 | Screw M6 × 25 | 9 |
| 111 | 3455-105 | Clamping Lever | 1 |
| 112 | 3455-106 | Tool Rest | 1 |
| 113 | 3455-107 | Stud M10 × 65 | 1 |
| 114 | 3455-108 | Cross Feeding Screw | 1 |

EXPLODED VIEW & PARTS LIST

| No | Part Number | Description | QTY |
|------|-------------|-----------------------|-----|
| 115 | 3455-109 | Bracket | 1 |
| 116 | 3455-110 | Screw M4 × 12 | 4 |
| 119 | 3455-111 | Nut M18 | 1 |
| 120 | 3455-112 | Label | 1 |
| 122 | 3455-113 | Information Label | 1 |
| 123 | 3455-114 | Electronics Cover | 1 |
| 124 | 3455-115 | Plug | 1 |
| 125 | 3455-116 | Rubber Foot | 4 |
| 126 | 3455-117 | Chip Tray | 1 |
| 127 | 3455-118 | Bracket | 1 |
| 128 | 3455-119 | Key | 2 |
| 129 | 3455-120 | Lead Screw | 1 |
| 131 | 3455-121 | Bracket | 1 |
| 133 | 3455-122 | Screw M3×10 | 3 |
| 134 | 3455-123 | Rack | 1 |
| 135 | 3455-124 | Clamp Plate | 1 |
| 136 | 3455-125 | Washer M10 | 1 |
| 137 | 3455-126 | Screw M5 × 16 | 1 |
| 138 | 3455-127 | Tailstock Casting | 1 |
| 139 | 3455-128 | Tailstock Screw | 1 |
| 140 | 3455-129 | Bracket | 1 |
| 141 | 3455-130 | Screw M4 × 10 | 4 |
| 142 | 3455-131 | Tailstock Quilt | 1 |
| 143 | 3455-132 | Center | 1 |
| 144 | 3455-133 | Stud M8 × 40 | 1 |
| 145 | 3455-134 | Clamp | 1 |
| 146 | 3455-135 | Handle | 1 |
| 148 | 3455-136 | Pulley | 1 |
| 150 | 3455-137 | Motor | 1 |
| 151 | 3455-138 | Motor Cover | 1 |
| 152 | 3455-139 | Power cord Guard | 1 |
| 153 | 3455-140 | Rear Splash Guard | 1 |
| 154 | 3455-141 | H/L Label | 1 |
| 155 | 3455-142 | H/L Label | 1 |
| 156 | 3455-143 | Warning Label | 1 |
| N.P. | 3455-144 | Gear 30T | 1 |
| N.P. | 3455-145 | Gear 35T | 1 |
| N.P. | 3455-146 | Gear 40T | 2 |
| N.P. | 3455-147 | Gear 45T | 1 |
| N.P. | 3455-148 | Gear 50T | 1 |
| N.P. | 3455-149 | Gear 55T | 1 |
| N.P. | 3455-150 | Gear 57T | 1 |
| N.P. | 3455-151 | Gear 60T | 1 |
| N.P. | 3455-152 | Gear 65T | 1 |
| N.P. | 3455-153 | Cover | 1 |
| N.P. | 3455-154 | Key | 1 |
| 171 | 3455-155 | Clamp Block | 1 |
| 172 | 3455-156 | Retaining Ring Ø9 | 1 |
| 173 | 3455-157 | Screw M5 × 10 | 4 |
| 174 | 3455-158 | Protector | 1 |
| 175 | 3455-159 | Screw M5 × 10 | 7 |
| 177 | 3455-160 | Screw M6 × 25 | 2 |
| 178 | 3455-161 | Emergency Stop Switch | 1 |
| 179 | 3455-162 | Fuse Box | 1 |

| No | Part Number | Description | QTY |
|------|-------------|-----------------------------|-----|
| 180 | 3455-163 | Variable Speed Control Knob | 1 |
| 181 | 3455-164 | Toggle Switch | 1 |
| 182 | 3455-165 | PC Board | 1 |
| 184 | 3455-166 | Screw M5×10 | 1 |
| 185 | 3455-167 | Spring washer 5 | 1 |
| 187 | 3455-168 | Key 3*16 | 1 |
| 188 | 3455-169 | Small spacer | 1 |
| 190 | 3455-170 | Spring | 2 |
| 192 | 3455-171 | Washer 8 | 4 |
| 193 | 3455-172 | Screw M8*55 | 2 |
| 194 | 3455-173 | Screw M4*38 | 1 |
| 195 | 3455-174 | Nut M4 | 1 |
| 196 | 3455-175 | Plate of tailstock | 1 |
| 197 | 3455-176 | Screw M5*16 | 3 |
| 198 | 3455-177 | Sleeve | 1 |
| 199 | 3455-178 | Screw M5*25 | 1 |
| 201 | 3455-179 | Chuck guard | 1 |
| 202 | 3455-180 | Shaft | 1 |
| 205 | 3455-181 | Screw M6 | 1 |
| 206 | 3455-182 | Nut M6 | 2 |
| 207 | 3455-183 | Compression Spring | 1 |
| 208 | 3455-184 | Washer 6 | 2 |
| 209 | 3455-185 | Screw M3*4 | 4 |
| 210 | 3455-186 | Switch Cover | 1 |
| 212 | 3455-187 | Block | 1 |
| N.P. | 3455-188 | Screw M4×16 | 7 |
| N.P. | 3455-189 | Clamp Cover | 1 |
| N.P. | 3455-190 | Screw | 1 |
| N.P. | 3455-191 | Compression Spring | 1 |
| N.P. | 3455-192 | Screw M6×30 | 1 |
| N.P. | 3455-193 | Washer | 1 |
| 251 | 3455-194 | Cylinder Pin | 1 |
| 253 | 3455-195 | Screw | 3 |
| 254 | 3455-196 | Cover | 1 |
| 255 | 3455-197 | Micro switch | 1 |
| 256 | 3455-198 | Dust sheet | 1 |
| 257 | 3455-199 | Lead Screw Cover | 1 |
| 258 | 3455-200 | Washer 4 | 3 |
| 266 | 3455-201 | Washer 6 | 3 |
| 268 | 3455-202 | Screw 10 | 1 |
| 270 | 3455-203 | Support Pin | 1 |
| 272 | 3455-204 | Protective Cover | 1 |
| 303 | 3455-205 | Washer | 1 |
| 318 | 3455-206 | Screw M5*20 | 1 |
| 319 | 3455-207 | Washer | 1 |
| 320 | 3455-208 | Screw M6×10 | 4 |
| 321 | 3455-209 | Screw M6×16 | 4 |
| 322 | 3455-210 | Key | 1 |
| 323 | 3455-211 | Screw M8×25 | 3 |
| 324 | 3455-212 | Screw M4×8 | 2 |
| 325 | 3455-213 | Flange | 1 |
| 326 | 3455-214 | Screw | 2 |
| 327 | 3455-215 | Screw M6×8 | 1 |

LIMITED TWO YEAR WARRANTY

WEN Products is committed to build tools that are dependable for years. Our warranties are consistent with this commitment and our dedication to quality.

LIMITED WARRANTY OF WEN CONSUMER POWER TOOLS PRODUCTS FOR HOME USE
GREAT LAKES TECHNOLOGIES, LLC (“Seller”) warrants to the original purchaser only, that all WEN consumer power tools will be free from defects in material or workmanship for a period of two (2) years from date of purchase. Ninety days for all WEN products, if the tool is used for professional use.

SELLER’S SOLE OBLIGATION AND YOUR EXCLUSIVE REMEDY under this Limited Warranty and, to the extent permitted by law, any warranty or condition implied by law, shall be the repair or replacement of parts, without charge, which are defective in material or workmanship and which have not been misused, carelessly handled, or misrepaired by persons other than Seller or Authorized Service Center. To make a claim under this Limited Warranty, you must make sure to keep a copy of your proof of purchase that clearly defines the Date of Purchase (month and year) and the Place of Purchase. Place of purchase must be a direct vendor of Great Lakes Technologies, LLC. Third party vendors such as garage sales, pawn shops, resale shops, or any other secondhand merchant void the warranty included with this product. Contact techsupport@wenproducts.com or 1-800-232-1195 to make arrangements for repairs and transportation.

When returning a product for warranty service, the shipping charges must be prepaid by the purchaser. The product must be shipped in its original container (or an equivalent), properly packed to withstand the hazards of shipment. The product must be fully insured with a copy of the warranty card and/or the proof of purchase enclosed. There must also be a description of the problem in order to help our repairs department diagnose and fix the issue. Repairs will be made and the product will be returned and shipped back to the purchaser at no charge.

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THIS LIMITED WARRANTY APPLIES ONLY TO PORTABLE ELECTRIC TOOLS, BENCH POWER TOOLS, OUTDOOR POWER EQUIPMENT AND PNEUMATIC TOOLS SOLD WITHIN THE UNITED STATES OF AMERICA, CANADA AND THE COMMONWEALTH OF PUERTO RICO. FOR WARRANTY COVERAGE WITHIN OTHER COUNTRIES, CONTACT THE WEN CUSTOMER SUPPORT LINE.

