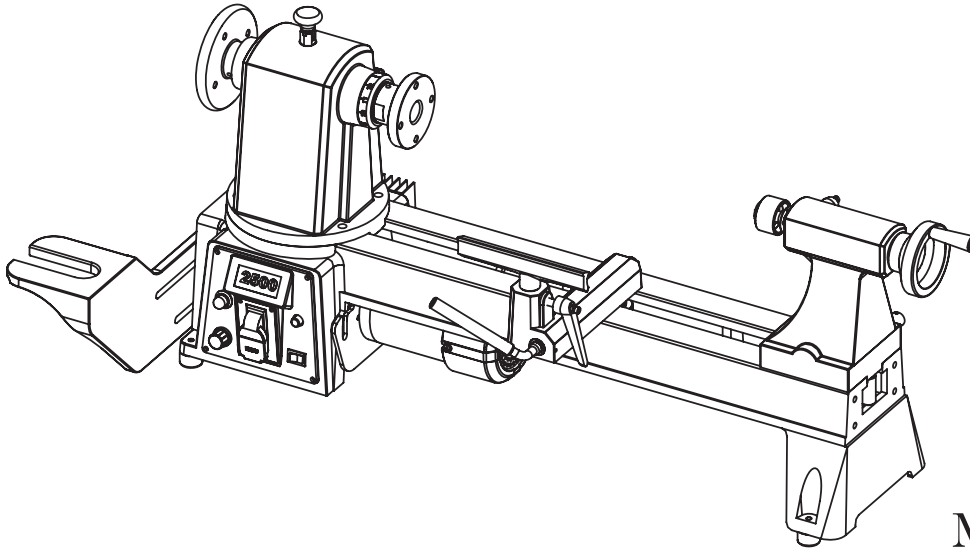




# 12-INCH VARIABLE SPEED WOOD LATHE



Model # 3427  
[bit.ly/wenvideo](http://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 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**



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## TECHNICAL DATA

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Model Number:	3427
Motor:	120 V, 60 Hz, 4.5A, S6 40%
Swing Over Bed:	12 in.
Distance Between Centers:	15-3/4 in.
Speeds:	500 to 2500 RPM
Spindle Taper:	MT2
Tailstock Taper:	MT2
Tool Rest Length:	7-7/8 in.
Dimensions:	32 x 9 x 17 in.
Weight:	72.1 lbs.

## GENERAL SAFETY RULES

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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 WOOD 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 or compressed air to remove chips or debris. Never use your hands to remove excess material and debris.
5. Check the workpiece carefully for splits, knots, nails, or other obstructions. These types of blemishes may cause a safety risk during turning.
6. Adjust the tool rest to the proper height and position for the task at hand. Rotate the workpiece by hand to check clearance with the tool rest 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 apply coolants or water to a spinning workpiece. Never stop a rotating workpiece with your hand.
10. If gluing up a workpiece, always use a high quality glue that meets the needs of the particular workpiece.
11. Rough cut the workpiece to the finished shape before attaching a workpiece to the faceplate. When turning between centers, make sure the headstock and tailstock are tight and snug against the workpiece.

# ELECTRICAL INFORMATION

## GROUNDING INSTRUCTIONS

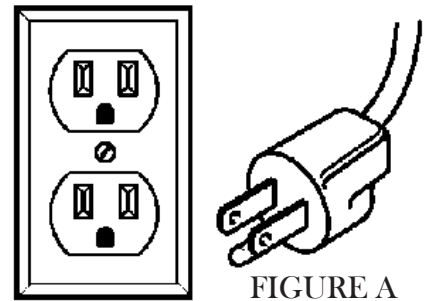
IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides the path of least resistance for an electric current and reduces the risk of electric shock. This tool is equipped with an electric cord that has an equipment grounding conductor and a grounding plug. The plug **MUST** be plugged into a matching 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 in Fig. A. 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.  
Guidelines for using 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.

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

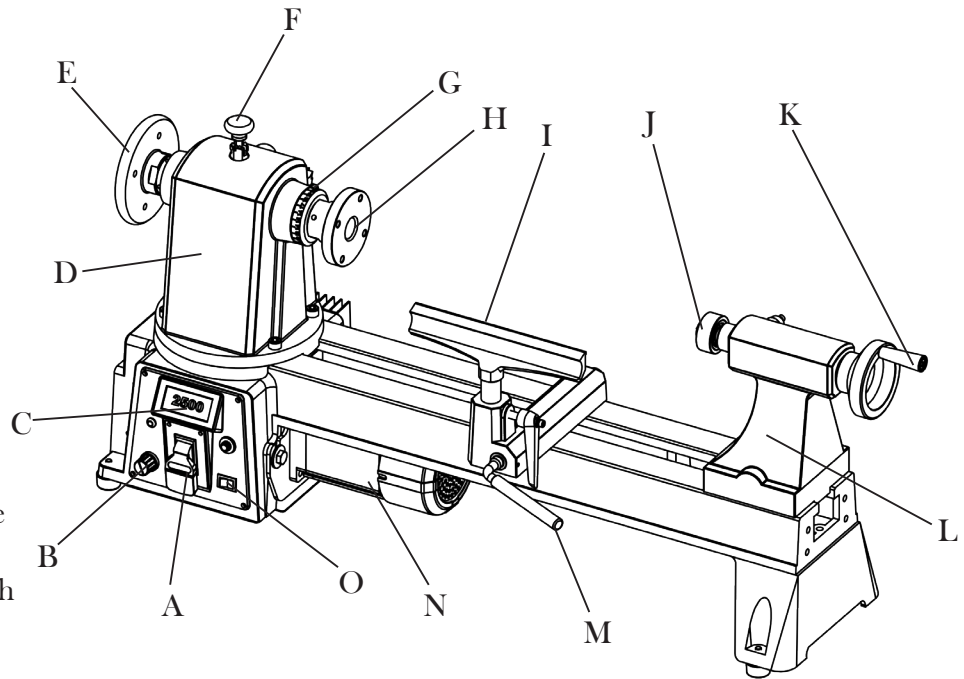
Make sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it. Protect your extension cords from sharp objects, excessive heat and damp/wet areas.

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.

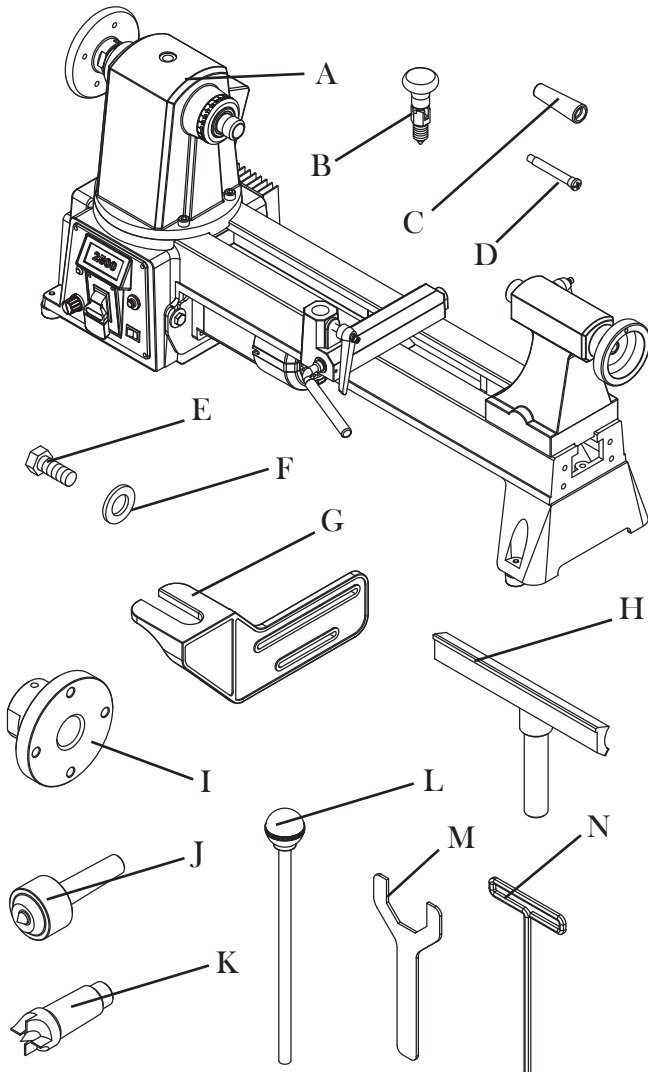
**WARNING:** This tool must be grounded while in use to protect the operator from electric shock.

# KNOW YOUR WOOD LATHE

- A Power Switch
- B Variable Speed Knob
- C Digital Readout
- D Headstock
- E Back Face Plate
- F Spindle Lock
- G Gauge
- H Center Spur
- I Tool Rest
- J Live Center
- K Tailstock Handwheel
- L Tailstock
- M Tool Rest Locking Handle
- N Motor
- O Directional Rotation Switch



## 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.

- A Lathe
- B Spindle Lock
- C Handle
- D Handle Screw
- E Hex Head Bolt
- F Flat Washer
- G Back Tool Rest Support
- H Tool Rest
- I Face Plate
- J Live Center
- K Spur Center
- L Knockout Rod
- M Wrench
- N Hex Wrench

The tools listed below are not included but are required for either assembly or adjustment.

- 17 mm Socket
- Flathead Screwdriver
- Wrench

# ASSEMBLY

## INSTALLING SPINDLE LOCK (FIG. A)

Locate the spindle lock (Fig. A - 1) from the carton and install it onto the headstock with a wrench.

**WARNING: Disengage spindle lock before turning the machine on. The lock should be in it's highest available position to prevent it from colliding with the rotation of the spindle (Fig. E).**

## INSTALLING HANDLE (FIG. B)

Attach the handle screw (Fig. B - 2) through the handle (Fig. B - 1) hole onto the handwheel. Secure it using a screwdriver.

## INSTALLING TOOL REST (FIG. C)

Loosen the locking handle (Fig. C - 3) and insert the tool rest (Fig. C - 1) into the tool rest base (Fig. C - 2). Adjust the height up or down to the desired position and then tighten the locking handle.

## INSTALLING THE FACE PLATE (FIG. D)

1. Make sure the two set screws (Fig. D - 1) in the face plate (Fig. D - 2) have been backed out.

2. Mount the face plate by screwing it clockwise as far as it will go onto the spindle threads.

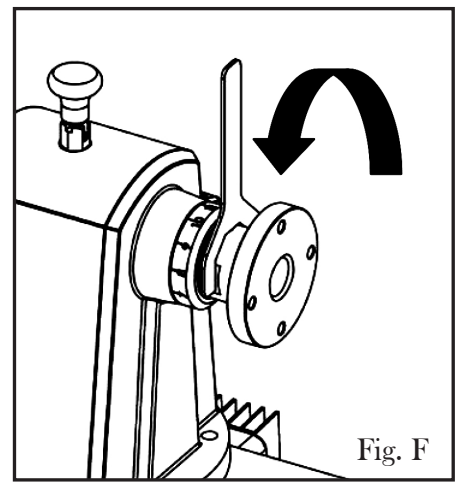
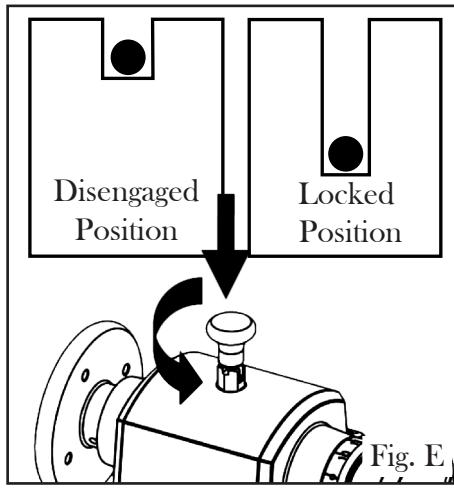
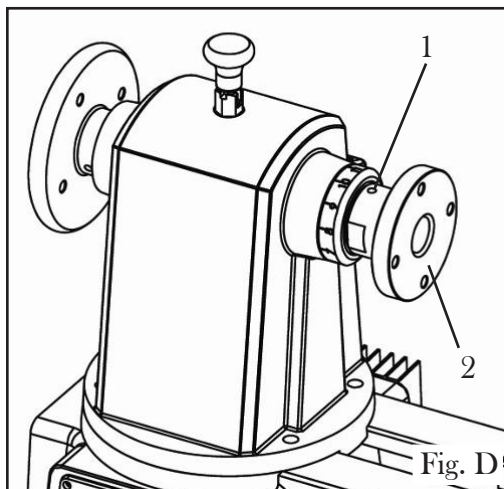
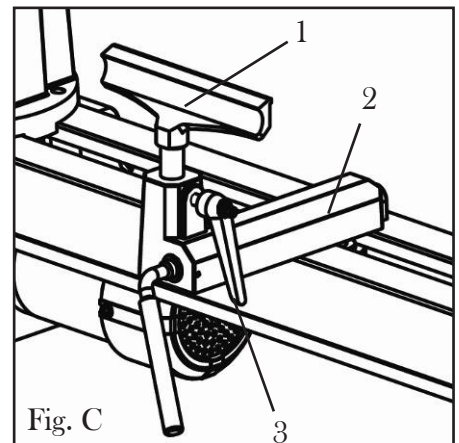
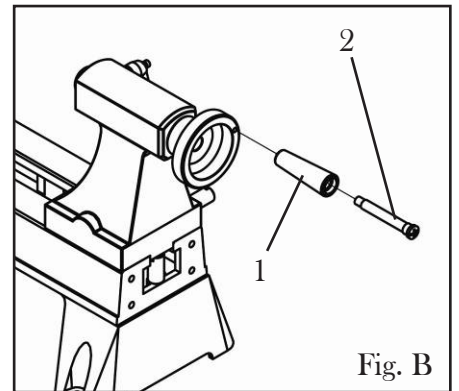
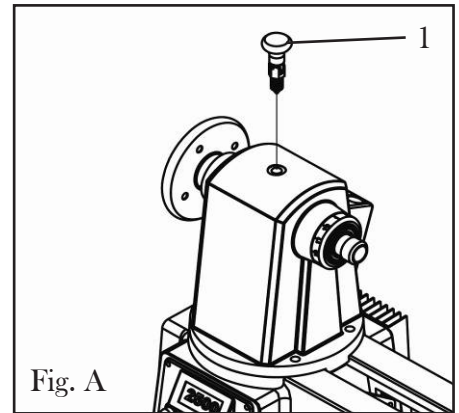
3. Tighten the set screws.

## REMOVING THE FACE PLATE

1. Make sure the two set screws (Fig. D - 1) in the face plate (Fig. D - 2) have been backed out.

2. Adjust the spindle lock to the locked position (Fig. E).

3. Use the provided wrench to unscrew the face plate (Fig. F).



# ASSEMBLY

## INSTALLING THE SPUR CENTER (FIG. F)

1. Make sure the surfaces of both the spur center and the spindle are clean.
2. Drive the spur center (Fig. F - 1) into the workpiece (Fig. F - 2) using a rubber mallet or a piece of scrap wood.
3. Push the spur center into the spindle

Note: It is not necessary to remove the face plate in order to install the spur center.

## REMOVING THE SPUR CENTER (FIG. G)

1. Hold spur center to prevent it from falling. Use a rag to protect your hand from the sharp edges.
2. Insert the knockout rod (Fig. G - 1) through the spindle hole to tap out the spur center (Fig. G - 2).

## INSTALLING THE LIVE CENTER (FIG. H)

1. Rotate the tailstock handwheel (Fig. H - 3) clockwise a few times to advance the quill (Fig. H - 2) forward.
2. Push the live center (Fig. H - 1) into the quill.

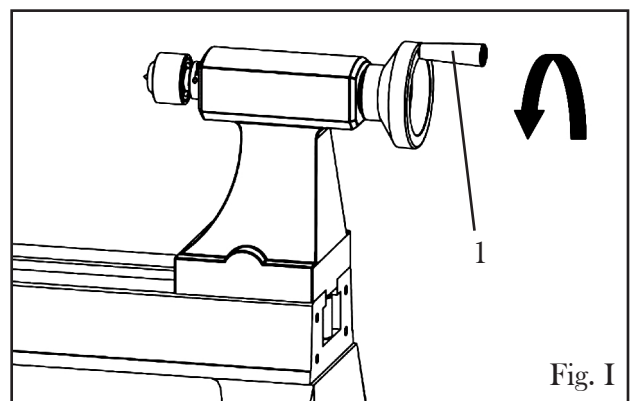
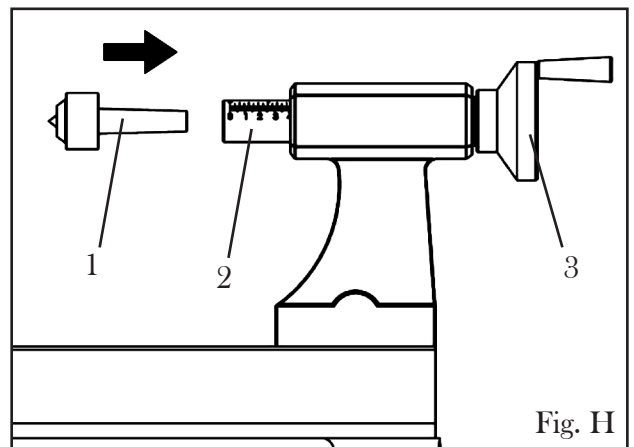
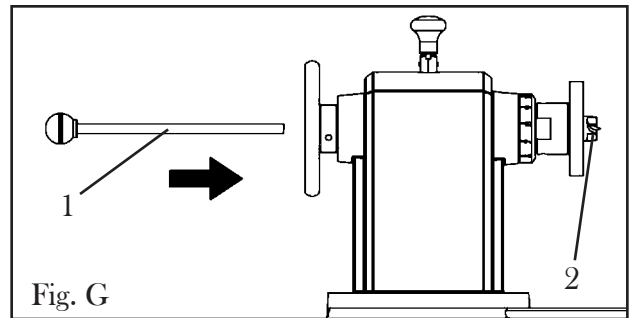
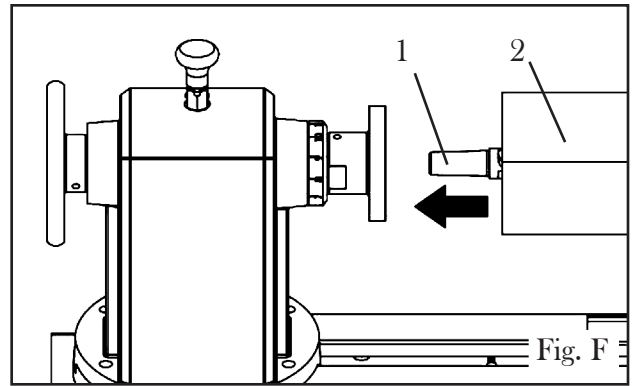
## REMOVING THE LIVE CENTER (FIG. I)

1. Hold the live center to prevent it from falling. Use a rag to protect your hand from the sharp edges.
2. Rotate the handwheel (Fig. I - 1) counterclockwise to retract the quill until the live center is released from the quill.

## INSTALLING TOOL REST (FIG. J)

When a workpiece is larger than the swing capacity on the bed, it can be turned by using the back face plate (Fig. J - 1) and tool rest (Fig. J -6). To mount the tool rest to the back of the lathe:

1. Fit the back tool rest support (Fig. J - 3) to the rear of the lathe using three hex bolts and three flat washers (Fig. J - 2).
2. Remove the clamp (Fig. J - 4) and hex nut (Fig. J - 5) of tool rest base from the underside of the lathe.
3. Move the tool rest base onto the back support. Replace the clamp (Fig. J - 4) and hex nut (Fig. J - 5) onto the thread (alternatively, you can remove the stop at the end of the bed and slide the tailstock and tool rest off).
4. Adjust the hex nut until the tool rest base can be locked onto the back support.





## ASSEMBLY

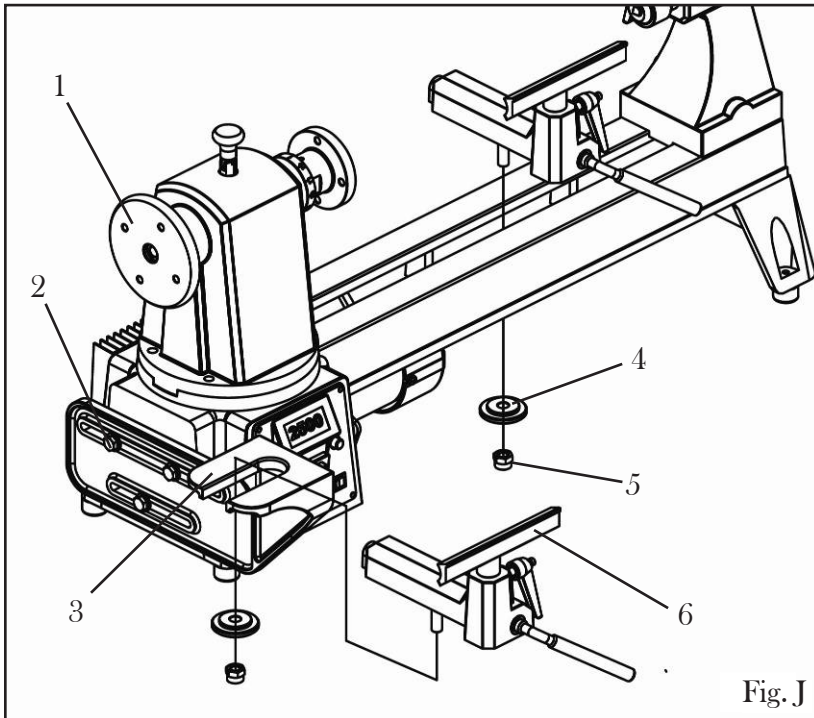


Fig. J

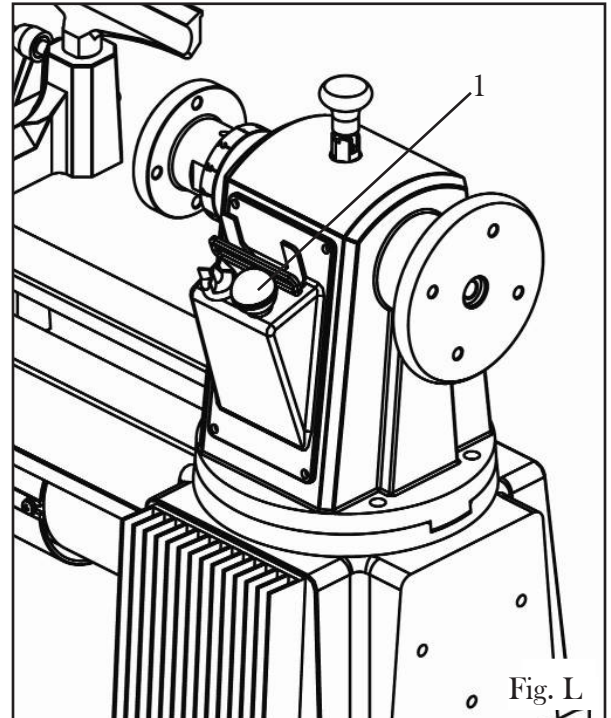


Fig. L

### INSTALLING BED EXTENSION (FIG. K) (SOLD SEPARATELY)

The WEN 3427EX1 Wood Lathe Bed Extension is an optional accessory that can be purchased separately to extend the maximum length of the lathe's capacity from 15.75 inches to 39.4 inches.

1. Fit the bed extension (Fig. K - 3) to the bed using four socket head screws and four flat washers.
2. Remove the end stop screw (Fig. K - 2) from the bed and assemble it onto the bed extension.
3. Make sure the tail stock (Fig. K - 1) slides freely across the connection point.

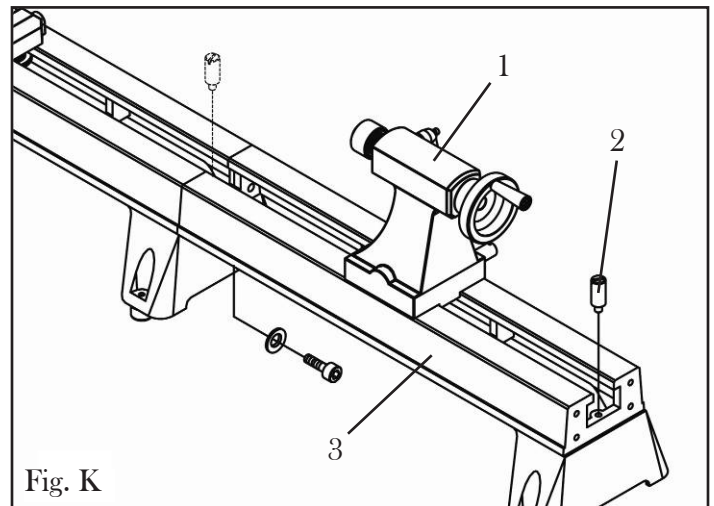


Fig. K

### TOOL RACK (FIG. L)

There is a tool rack (Fig. L - 1) on the back of the head. The wrench, knockout rod and spur center can be placed into this as needed.

### MOUNTING THE LATHE TO A BENCHTOP

For effective and safe operation, the lathe should be mounted to a bench table, removing the feet and using the four threaded holes in its base to bolt it to the surface.

# ADJUSTMENTS

## TOOL REST ADJUSTMENTS

Users can adjust the height, position and angle of the tool rest assembly. Loosen the locking lever (Fig. M - 1) on the tool rest base to slide the base forward and back or to adjust the angle of it. Tighten the locking lever firmly before operating the lathe. Loosen the small locking handle (Fig. M - 2) to raise and lower the tool rest or to also adjust its angle. Tighten the handle before operating the lathe.

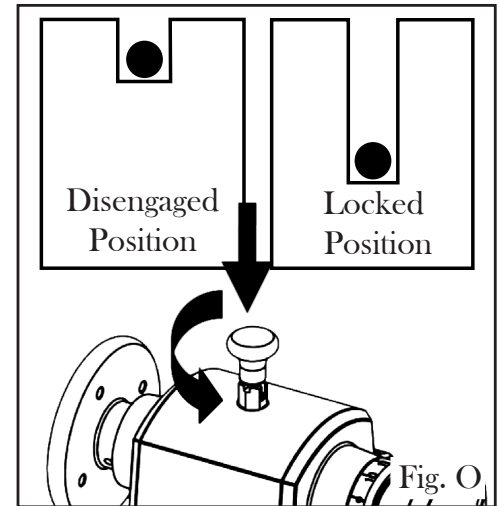
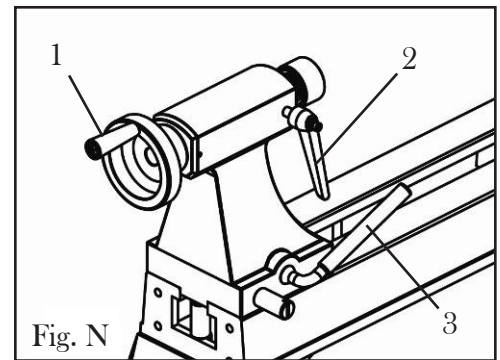
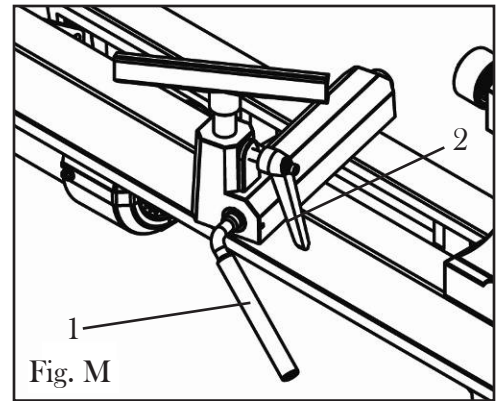
## TAIL STOCK ADJUSTMENTS

Loosen the tail stock locking lever (Fig. N - 3) and slide the tailstock into the desired position. Retighten the locking lever. The quill locking handle (Fig. N - 2) locks and unlocks the tail stock quill. Use the handwheel (Fig. N - 1) to advance and retract the quill.

## INDEXING/SPINDLE LOCK (FIG. O)

Indexing is used to create evenly spaced features in a workpiece while keeping the lathe and spindle locked. For example, when cutting flutes on a spindle blank with a handheld router, you may want evenly spaced features and designs placed around the circumference of the workpiece. The 24 index positions are marked around the center spur to help rotate the workpiece evenly for accurately spaced features.

Place the spindle lock in the locked position to help maintain a certain index point. Make sure to disengage the spindle lock before starting the lathe again.



# OPERATION

## OPERATING CONTROLS (FIG. P)

1. Digital speed display - shows the current speed (RPM) of the spindle.
2. Protection Indicator - if the machine turns off and the protection indicator light begins to blink, it means that the motor was protected from overload. The workpiece may be too big or heavy for the current speed of the lathe. To reset it:
  - Turn off the main switch.
  - Wait two seconds and then turn it back on.
  - Work carefully and reduce the depth of the cut.
  - Start the machine in the lowest speed and increase it slowly.
3. Speed Dial - rotate the dial to set the lathe to the desired speed.
4. Main Switch - turn the lathe off and on. Remove the yellow tab to prevent the machine from operating.
5. Directional Switch - change the rotational direction of the spindle.
6. Circuit Breaker - if the circuit breaker is triggered, turn off the machine and then press this reset button. If the machine does not turn back on, repairs should be carried out by a qualified service technician.

**WARNING:** Always disengage the spindle lock before starting the lathe. Do not start the lathe at maximum speed. Start at the lowest speed and gradually increase to the desired RPM.

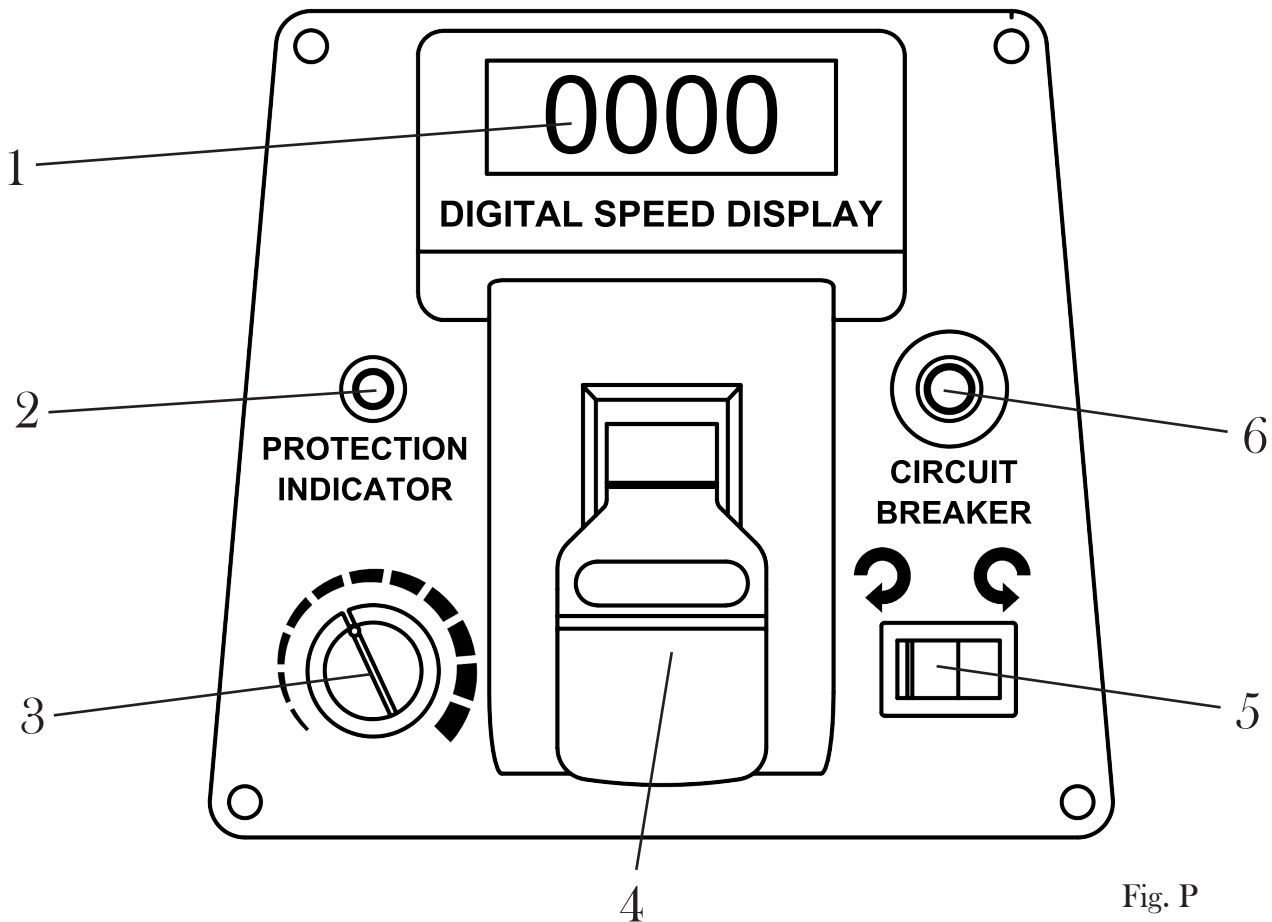
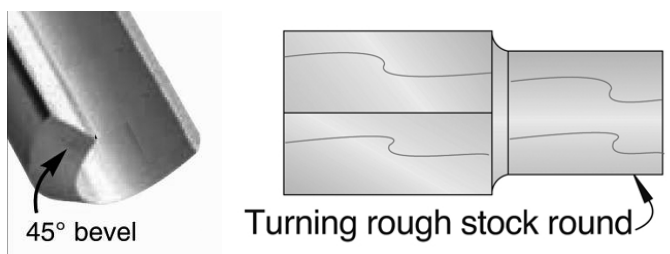


Fig. P

# OPERATION

## TURNING TOOLS

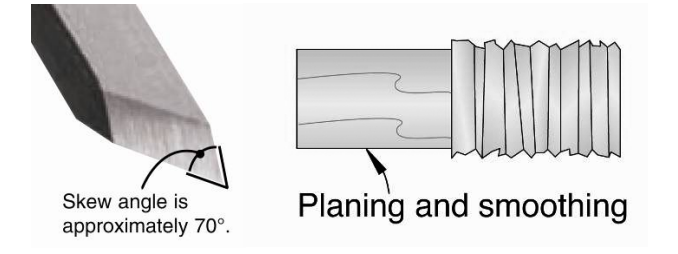
If possible, select only quality high-speed steel turning tools. High-speed steel tools hold an edge and last longer than ordinary carbon steel. As one becomes proficient in turning, a variety of specialty tools for specific applications can be acquired. The following tools provide the basics for most woodturning projects.



45° bevel

Turning rough stock round

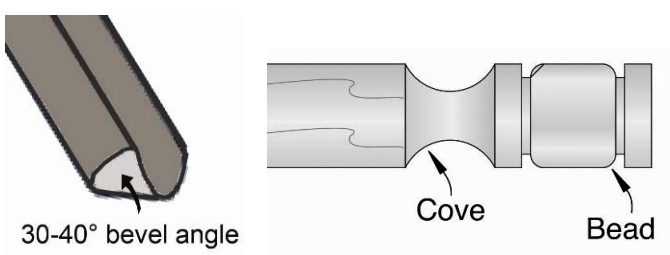
1. Large roughing gouge - use this tool to shape square or out-of-round spindle-turning stock into a cylinder. This can also be used for creating shallow coves.



Skew angle is approximately 70°.

Planing and smoothing

2. Skew chisel - the skew evens out high and low spots to shape the cylinders. Vary the angle at which the tip meets the workpiece to change the aggressiveness of the cut. This can also be used for cutting beads and V-grooves.

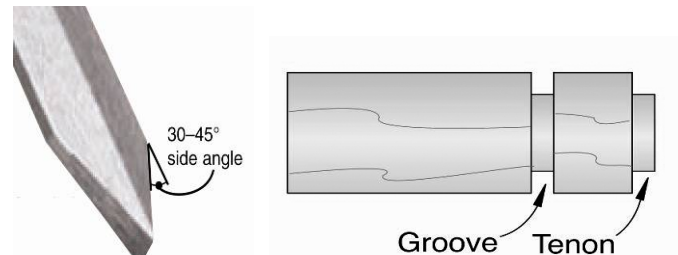


30-40° bevel angle

Cove

Bead

3. Spindle gouge - the spindle gouge cuts coves, beads and free-form contours. It can also be used for producing shallow hollows on faceplate turnings.

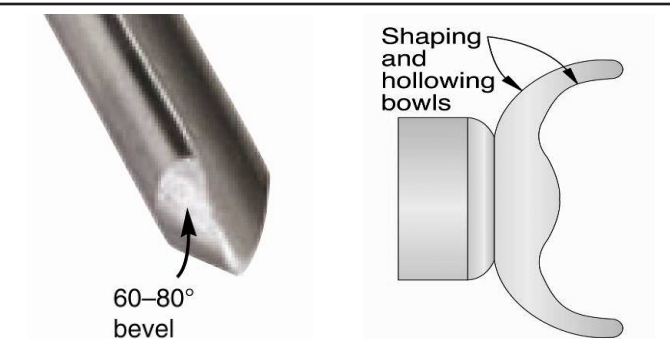


30-45° side angle

Groove

Tenon

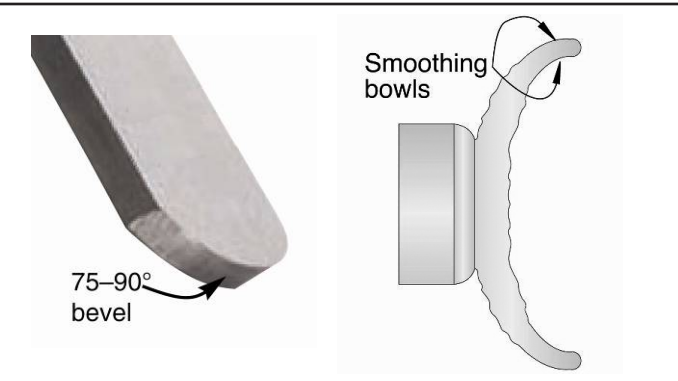
4. Parting tool - use the parting tool to form grooves and tenons and to remove stock. It can also be used for rolling small beads.



60-80° bevel

Shaping and hollowing bowls

5. Bowl gouge - the bowl gouge cuts external and internal profiles on faceplate-mounted stock, such as bowls and platters. It can also be used for creating ultra smooth cuts on bowls and spindles by using it as a shearing scraper.



75-90° bevel

Smoothing bowls

6. Round nose scraper - use this scraper for non-aggressive shaping of spindles and bowls and to smooth out surfaces without removing too much stock.

# OPERATION

## SPINDLE TURNING

Spindle turning takes place between the centers of the lathe. It requires a spur center in the headstock and a live center in the tailstock. A cup center rather than a cone center in the tailstock will often reduce the risk of splitting the stock.

Stock for spindles should be straight grained and free of cracks, knots, nails and other defects. With a combination square, locate and mark the center on each end of the workpiece. Accuracy is not critical on full rounds but is extremely important on stock where square sections are to remain. Put a dimple in the stock with an awl or nail (or use a spring-loaded automatic center punch).

Extremely hard woods may require kerfs cut into the ends of the stock using a band saw, so the wood will accept the spur center and the live center (Fig. Q).

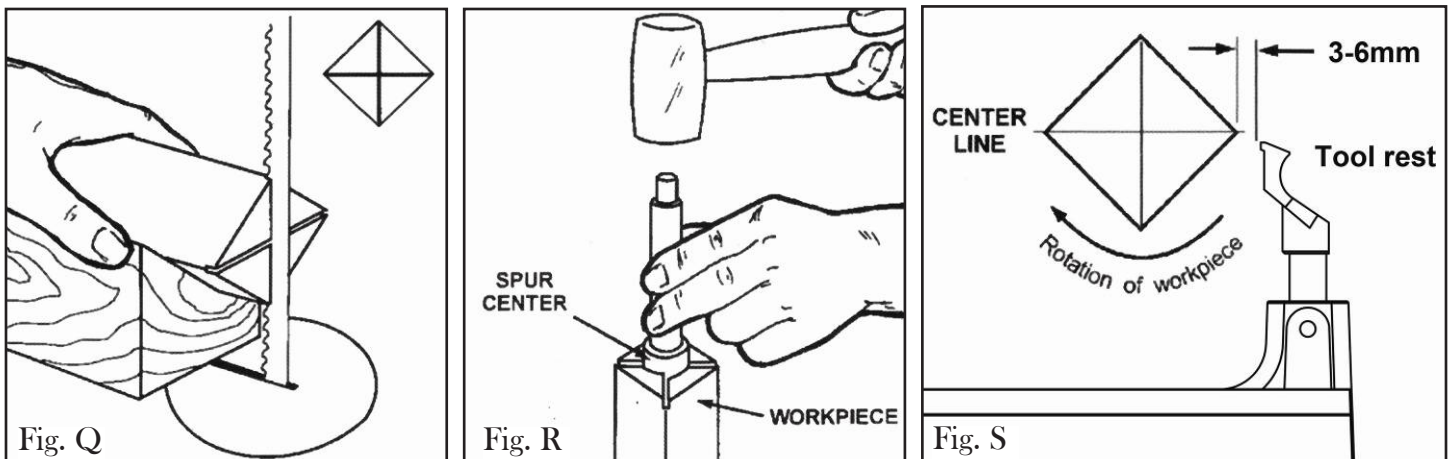
Drive the spur center about .1 inches (3 mm) into the workpiece. Use a wood mallet or dead blow hammer. Be careful that you do not split the workpiece. Never use a steel face hammer and never drive the workpiece onto the spur center while it is mounted on the spindle of the lathe (Fig. R).

Clean the tapered end of the spur center and the inside of the headstock spindle. Insert the tapered end of the spur center (with the attached workpiece) into the headstock spindle. Support the workpiece while bringing the tailstock into position. Lock the tailstock to the bed.

Advance the tailstock quill with the hand wheel in order to seat the live center into the workpiece. Use enough pressure to secure the workpiece between the centers so that it won't fly off, but do not use excessive pressure. Excessive pressure runs the risk of overheating the center bearings and damaging both the workpiece and the lathe.

Tighten the quill locking handle. Move the tool rest into position. It should be parallel to the workpiece, just below the centerline and approximately .1 to .2 inches (3 mm to 6 mm) from the corners of the workpiece to be turned. Tighten the tool rest base to the bed of the lathe (Fig. S).

Before turning on the lathe, rotate the workpiece by hand to check for proper clearance. If clearance is okay and the workpiece is properly centered, start the lathe at the lowest speed. Slowly bring it up to the appropriate speed given the size of the workpiece.



# OPERATION

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## CUTTING TECHNIQUES

Begin with a large roughing gouge. Place the tool on the tool rest with the heel of the tool on the surface to be cut. Slowly and gently raise the tool handle until the cutting edge comes into contact with the workpiece. Beginning about 2 inches from the tailstock end of the workpiece, roll the flute of the tool (the hollowed-out portion) in the direction of the cut. Make long sweeping cuts in a continuous motion to turn the piece to a cylinder (Fig. T).

Keep as much of the bevel of the tool in contact with the workpiece as possible to ensure control and avoid catches. **NOTE:** Always cut downhill, or from the large diameter to the small diameter. Always work towards the end of the workpiece; never start at the cutting end.

Once the workpiece is roughed down to a cylinder, smooth it with a large skew. Keep the skew handle perpendicular to the spindle and use only the center third of the cutting edge for a long smoothing cut (touching one of the points of the skew to the spinning workpiece may cause a catch and ruin the workpiece). Add details to the workpiece with skews, parting tools, scrapers or spindle gouges.

**BEADS** - Make a parting cut for what is to be a bead to the desired depth. Place the parting tool on the tool rest and move the tool forward to make the full bevel of the tool come into contact with the workpiece. Gently raise the handle to make cuts of the appropriate depth. Repeat for the other side of the bead. Using a small skew or spindle gouge, start in the center between the two cuts and cut down each side to form the bead. Roll the tool in the direction of the cut.

**COVES** (Fig. U) - Use a spindle gouge to create a cove. With the flute of the tool at 90 degrees to the workpiece, touch the point of the tool to the workpiece and roll in towards the bottom of the cove. Stop at the bottom, as attempting to go up the opposite side may cause the tool to catch. Move the tool over the desired width of the cove. With the flute facing the opposite direction, repeat the step for the other side of the cove. Stop at the bottom of the cut.

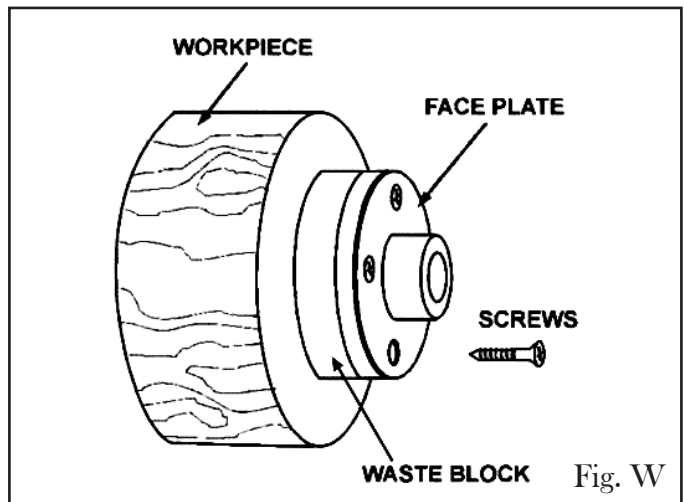
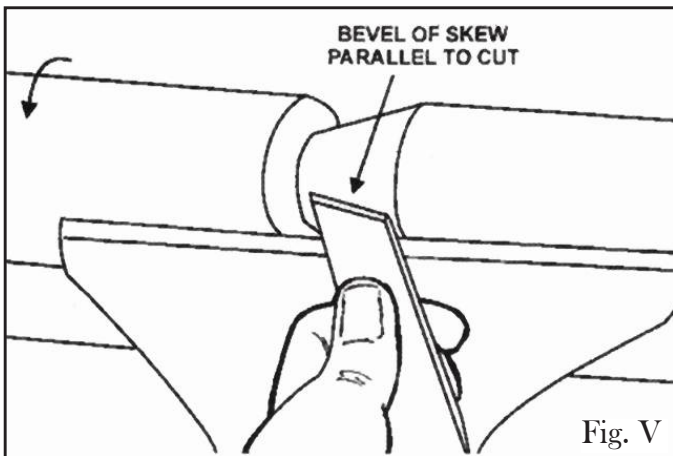
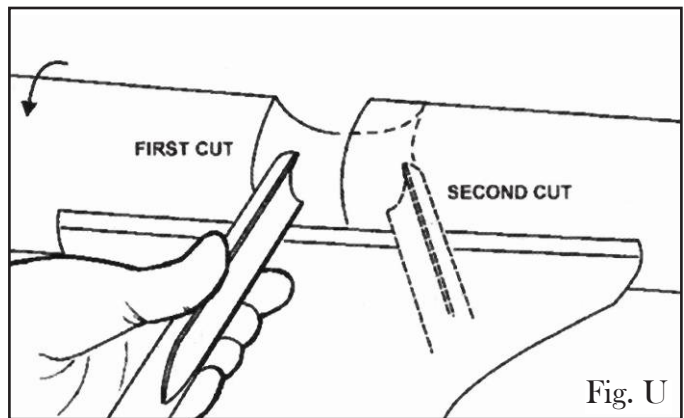
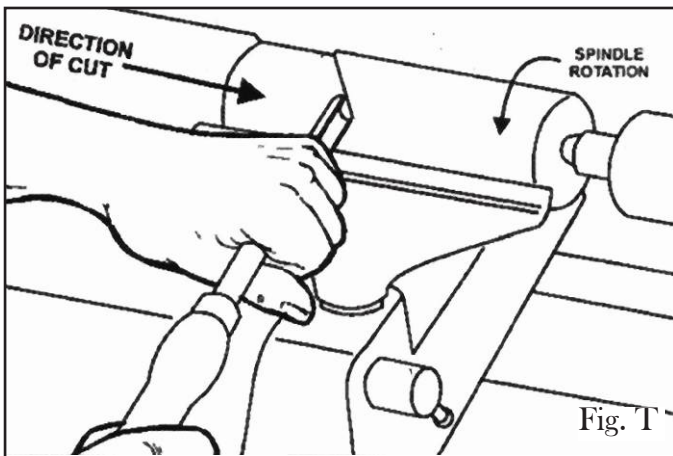
**V-GROOVES** (Fig. V) - Use the point of the skew to create a V-groove in the workpiece. Lightly mark the center of the V with the top of the skew. Move the point of the skew to the right half of the desired width of your cut. With the bevel parallel to the right side of the cut, raise the handle and push the tool in to the desired depth. Repeat from the left side. The two cuts should meet at the bottom and leave a clean V-groove. Additional cuts may be taken to add to either the depth or the width of the cut.

**PARTING OFF** - Adjust the lathe to a slower speed for parting through a workpiece. Place a parting tool on the tool rest and raise the handle until it starts to cut. Continue cutting towards the center of the workpiece. Loosely hold on to the piece in one hand as it separates from the waste wood.

**SANDING** - Leaving clean cuts will reduce the amount of sanding required. Move the tool rest out of the way, adjusting the lathe to a low speed. Begin with fine sandpaper (120 grit or finer), as coarser sandpaper will leave deep scratches and dull the features of the workpiece. Progress through each grit without skipping grits (as in, don't jump from 120 grit to 220 grit). Fold the sandpaper into a pad; do not wrap sandpaper around your fingers or the workpiece.

**FINISHING** - To apply a finish, the workpiece can be left on the lathe. Turn off the lathe and use a brush or paper towel to apply the finish. Remove excess finish before restarting the lathe. Only start it at a very low speed with awareness that fresh coats have a tendency to splash and fling if not given adequate drying time. Allow it to dry and sand again with 320 to 400 grit sandpaper. Apply a second coat of finish and buff.

# OPERATIONS



## MOUNTING ON THE FACE PLATE

Use of the face plate is the most common for holding a block of wood for turning bowls and plates. This is an alternative option for workpieces with diameters that are greater than the 12-inch throat of the lathe.

To mount the stock to the face plate, select a stock that is at least .2 inches (5 mm) larger than each dimension of the finished workpiece. Always select the largest diameter face plate that can be used for the workpiece at hand.

True one of the surfaces of the workpiece for mounting against the faceplate. Using the face plate as a template, mark the location of the mounting holes on the workpiece and drill pilot holes of the appropriate size.

If the mounting screws on the face plate interfere with the workpiece, a glue or waste block can be used (Fig. W). Make sure the block is of the same diameter as the face plate. Both the waste block and the workpiece should have flat surfaces for gluing. Glue the block to the workpiece. Avoid using brown paper or newspaper between the waste block and workpiece. It may work fine if you are using scrapers, but a slight catch with a bowl gouge can separate the two.

While face plates are the simplest, most reliable method of holding a larger block of wood for turning, chucks can also be used. A chuck is not a requirement, but is handy when working on more than one piece at a time. Rather than removing screws, you simply open the chuck and change workpieces. The most popular ones are four jaw scroll chucks (dovetails) with a variety of jaws to accommodate different size tenons. Most also come with a screw chuck as well.

## OPERATION

### TO SHAPE THE OUTSIDE OF THE BOWL (FIG. W)

Odd shaped burls, crotches and other irregular shaped blanks require special preparation before mounting in a chuck or onto a face plate. Remove the bark, if there is any from what appears to be the center of the top of the workpiece. Drive the spur center into the top of the workpiece with a mallet or a dead blow hammer. Slip the spur center into the headstock taper and bring the tailstock with a live center into position. Lock the tailstock to the bed and advance the quill in order to seat the cut center into the workpiece. Tighten the quill locking handle.

Turn the workpiece by hand to ensure proper clearance. Start the lathe at the lowest speed and bring it up to the proper speed for the size of the work being turned. If the machine starts to vibrate, lower the speed until the vibration stops. Rough out the outside of the bowl with the bowl gouge, holding the handle of the tool firmly against your hip.

As the bowl takes shape, work on the bottom (tailstock end) to accommodate attaching a face plate. Turn a short tenon to the size of the hole in the face plate. This will allow centering the workpiece when the face plate is attached. **NOTE:** If you plan to use a chuck, turn a tenon of the appropriate length and diameter to fit your chuck.

Stop the lathe and remove the workpiece. Attach the face plate or chuck. Finish turning the outside of the bowl with a bowl gouge. Leave additional material at the base of the bowl for support while turning the interior. This will be removed later.

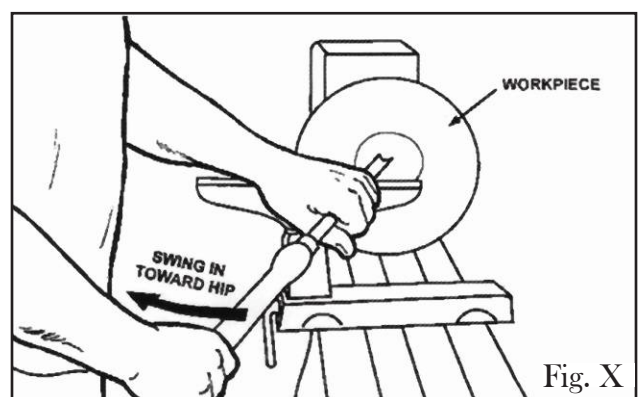
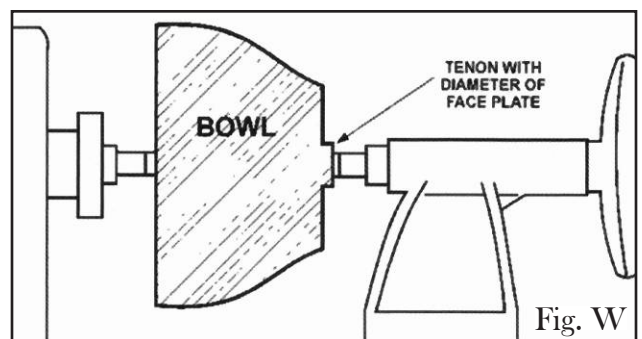
### TO SHAPE THE INSIDE OF THE BOWL (FIG. X)

Stop the lathe and move the tailstock away. Adjust the tool rest in front of the bowl just below the centerline at a right angle to the lathe's turning axis. Rotate the workpiece by hand to check for clearance.

Start by lightly shearing across the top of the workpiece from rim to center. Place a bowl gouge on the tool rest at the center of the workpiece with the flute facing the top of the bowl. The tool handle should be level and pointed toward the four o'clock position.

Use the left hand to control the cutting edge of the gouge, while the right hand swings the tool handle around towards your body. The flute should start out facing the top of the workpiece, rotating it upwards as it moves deeper into the bowl to maintain a clean and even curve. As the tool goes deeper into the bowl, progressively work outwards towards the rim of the bowl. It may be necessary to turn the tool rest into the piece as you get deeper into the bowl. **NOTE:** Try to make one light continuous movement from the rim to the bottom of the bowl to ensure a clean, sweeping curve through the piece. Should there be a few small ridges left, a light cut with a large domed scraper can even out the surface.

Develop the preferred wall thickness at the rim and maintain it as you work deeper into the bowl (once the piece is thin toward the bottom, you cannot make it thinner at the rim). When the interior is finished, move the tool rest back to the exterior to re-define the bottom of the bowl. Work the tight area around the face plate or the chuck with a bowl gouge. Begin the separation with a parting tool, but do not cut all the way through.





## MAINTENANCE

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Keep your machine clean. At the end of each day, clean the machine. Wood contains moisture, meaning that sawdust and wood chips can cause rust if not removed. Regular oil attracts dust and dirt. Teflon lubricant tends to dry and has less of a tendency to accumulate dirt and saw dust. Periodically check that all nuts and bolts are tight.

The drive belt should last for many years depending on usage, but it needs to be inspected regularly for cracks, cuts and general wear. If damage is found, replace the belt before operation.

All bearings are sealed for life and do not require any maintenance. If a bearing becomes faulty, replace it.

The lathe is made from steel and cast iron. All non-painted surfaces will rust if not protected. It is recommended that they are protected by applying wax.

## TROUBLESHOOTING

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PROBLEM	CAUSE	SOLUTION
Motor or spindle stalls and will not start	Excessive cut	Reduce the depth of the cut
	Worn, damaged, or improperly adjusted belt	Adjust or replace the belt.
	Worn spindle bearing	Replace the bearing.
	Motor is protected from overload	Reset the circuit.
Excessive vibration.	Workpiece is warped, out of round, has major flaw, or was improperly prepared for turning	Correct the problem by planing or sawing workpiece, or discard it entirely and restart.
	Worn spindle bearing	Replace the spindle bearings
	Worn drive belt	Replace the drive belt
	Lathe is on an uneven surface	Place the lathe on a flat surface.
Tools tend to grab or dig in.	Dull tools	Keep tools sharp
	Tool rest set too low	Reposition the tool rest height.
	Tool rest set too far from work piece	Reposition the tool rest closer to the workpiece
	Improper tool being used	Use correct tool for operation
Tailstock moves when applying pressure	Cam lock nut needs adjusting	Tighten cam lock nut.
	Lathe bed and tailstock mating surfaces are greasy or oily	Remove the tailstock and clean the surfaces with a cleaner. Apply a light coat of oil to the lathe bed surface.



EXPLODED VIEW & PARTS LIST

No	PART NUMBER	DESCRIPTION	QTY
1	3427-001	Back Face Plate	1
2	3427-002	Set Screw	2
3	3427-003	Set Screw	4
4	3427-004	Screw Bushing	1
5	3427-005	Bearing	1
6	3427-006	Socket Head Screw	2
7	3427-007	Retaining Ring	1
8	3427-008	Headstock	1
9	3427-009	Spindle Lock	1
10	3427-010	Back Cover	1
11	3427-011	Guard Plate	1
12	3427-012	Rivet	1
13	3427-013	Pointer	1
14	3427-014	Retaining Ring	1
15	3427-015	Bearing	1
16	3427-016	Socket Head Screw	4
17	3427-017	Lock Washer	4
18	3427-018	Key	1
19	3427-019	Pan Head Screw	4
20	3427-020	Pan Head Screw	2
21	3427-021	Spindle	1
22	3427-022	Set Screw	2
23	3427-023	Face Plate	1
24	3427-024	Spur Center	1
25	3427-025	Live Center	1
26	3427-026	Quill	1
27	3427-027	Screw Stem	1
28	3427-028	Retaining Ring	1
29	3427-029	Tail Stock	1
30	3427-030	Handle	1
31	3427-031	Set Screw	1
32	3427-032	Tailstock Handle	1
33	3427-033	Handle Screw	1
34	3427-034	Hand Wheel	1
35	3427-035	End Stop Rod	1
36	3427-036	Tailstock Locking Lever	1
37	3427-037	Drawbar	1
38	3427-038	Retaining Ring	1
39	3427-039	End Stop Rod	1
40	3427-040	Locking Lever	1
41	3427-041	Bushing	1
42	3427-042	Drawbar	1
43	3427-043	Set Screw	1
44	3427-044	Locking Handle	1
45	3427-045	Retaining Ring	1
46	3427-046	Tool Rest Base	1
47	3427-047	Tool Rest	1
48	3427-048	Thread Forming Screw	4
49	3427-049	Pan Head Screw	4
50	3427-050	Motor Driver	1
51	3427-051	Box	1
52	3427-052	Pan Head Screw	1
53	3427-053	Dust Cover	1
54	3427-054	Dust Plate	1
55	3427-055	Belt	1
56	3427-056	Spindle pulley	1
57	3427-057	Set Screw	1

No	PART NUMBER	DESCRIPTION	QTY
58	3427-058	Set Screw	1
59	3427-059	Indexing Disc	1
60	3427-060	Set Screw	1
61	3427-061	Speed Detection Plate	1
62	3427-062	Magnet	1
63	3427-063	Hex Nut	1
64	3427-064	Socket Sead Screw	1
65	3427-065	Hex Nut	2
66	3427-066	Sensor Mount	1
67	3427-067	Sensor	1
68	3427-068	Bed	1
69	3427-069	Back Support	1
70	3427-070	Hex Head Bolt	3
71	3427-071	Washer	3
72	3427-072	Self Tapping Screw	4
73	3427-073	Switch Backing Plate	1
74	3427-074	Self Tapping Screw	4
75	3427-075	Digital Speed Display	1
76	3427-076	Display Wire	1
77	3427-077	Switch Box	1
78	3427-078	Pan Head Screw	4
79	3427-079	Protection indicator	1
80	3427-080	Potentiometer	1
81	3427-081	Speed Dial	1
82	3427-082	Circuit Breaker	1
83	3427-083	Switch Wiring	2
84	3427-084	Directionality Switch	1
85	3427-085	Switch Plate	1
86	3427-086	Self Tapping Screw	3
87	3427-087	Power Switch	1
88	3427-088	Foot	4
89	3427-089	Cord Clamp	2
90	3427-090	Pan Head Screw	2
91	3427-091	Motor Pulley	1
92	3427-092	Set Screw	1
93	3427-093	Socket Head Screw	4
94	3427-094	Motor Mounting Plate	1
95	3427-095	Flat Washer	1
96	3427-096	Hex Head Bolt	1
97	3427-097	Hex Head Bolt	1
98	3427-098	Key	1
99	3427-099	Motor	1
100	3427-100	Hex Nut	2
101	3427-101	Clamp	2
102	3427-102	Power Cord	1
103	3427-103	Cord Bushing	1
104	3427-104	Nut	2
105	3427-105	Serrated Washer	2
106	3427-106	Pan Head Screw	2
107	3427-107	Knob	1
108	3427-108	Knockout Rod	1
109	3427-109	Wrench	1
110	3427-110	Hex Wrench	1
111	3427-111	Inner Wire	1
112	3427-112	9 Poles Connector	1
113	3427-113	5 Poles Connector	1

## LIMITED TWO YEAR WARRANTY

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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](mailto: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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