



WOOD LATHE

Model: DL356



CAUTION: Read the instruction manual before using the appliance

Instruction Manual & Parts List

This manual has been prepared for the owner and operators of Model HM1324 (DL356), Its purpose, aside from machine operation, is to promote safety through the use of accepted correct operating and maintenance procedures. Completely read the safety and maintenance instructions before operating or servicing the machine. To obtain maximum life and efficiency from your wood lathe, and to aid in using the machine safely, read this manual thoroughly and follow instructions carefully.

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GENERAL SAFETY RULES

1. Keep work area clear. Cluttered areas and benches invite injuries.
2. Consider work area environment. Do not expose tools to rain. Do not use tools in damp or wet location. Keep work area well lit .Do not use tools in the presence of flammable liquids or gases.
3. Guard against electric shock. Avoid body contact with earthed or grounded surfaces. (e.g. pipes, radiator, ranges, refrigerators).
4. Keep other person away. Do not let persons, especially children, involved in the work touch the tool or the extension cord and keep them away from work area.
5. Store idle tools. When it's not use, tools should be stored in a dry locked up place, out of reach of children.
6. Do not force the tool. It will do the job better and safer at the rate for which it was intended.
7. Use the right tool Do not force small tools to do the job of a heavy duty tool. Do not use tools for purposes not intended, for example do not use circular saws to cut tree limbs or logs.
8. Dress properly. Do not wear loose clothing or jewelry, they can be caught in moving parts. Non-skid footwear is recommended when working outdoors. Wear protective hair covering to contain long hair.

9. Use protective equipment. Use safety glass. Also use face or dust mask if cutting operations is dusty.
10. Connect dust extraction equipment. If devices are provided for connection of dust extraction and collection facilities ensure there are connected and properly used.
11. Do not abuse the cord. Never yank the cord to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges.
12. Secure work. Where possible use clamps or a vice to hold the work. it is safer than using your hands.
13. Do not overreach. Keep proper footing and balance at all times.
14. Maintain tools with care. Keep tools sharp and clean for better and safer performance. Follow instruction for lubricating and changing accessories. Inspect tool cords periodically and if damaged have them repaired by an authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean and free from oil and grease.
15. Disconnect tool, When not in use , before servicing and when changing accessories such as blades, bit and cutters, disconnect tools from the power supply.
16. Remove adjusting keys and wrenches. Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
17. Avoid unintentional starting. Ensure switch is "off" position when plugging in.
18. Use outdoor extension leads. When tool is used outdoor only extension cords intended for outdoor use and so marked.
19. Stay alert. Watch what you are doing, use common sense and do not operate tool when you are tired.
20. Check damaged parts. Before further use of the tool, it should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, breakage of parts, mounting and any other condition that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorised service center unless otherwise indicated in this instruction manual. Have defective switches replaced by an authorised service center. Do not use tool if switch does not turn it on and off.
21. Warning: the use of any accessory or attachment other than a recommended in this instruction manual may present a risk of personal injury.
22. Have your tool repaired by a qualified person. This electric tool complies with the relevant safety rules. Repairs should only be carried out by qualified persons using original spare parts, otherwise this may result in considerable danger to the user.
23. Save these instructions.

ADDITIONAL SAFETY RULES FOR WOOD LATHES

1. DO NOT OPERATE THIS MACHINE UNTIL it is assembled and installed according to the instructions.
2. OBTAIN ADVICE from your supervisor, instructor, or another qualified person if you are not familiar with the operation of this machine.
3. FOLLOW ALL WIRING CODES and recommended electrical connections.
4. ROUGH CUT THE WORKPIECE as close as possible to the finished shape before installing it on the faceplate.
5. EXAMINE THE WORKPIECE FOR FLAWS and test glue joints before mounting the workpiece on machine. DO NOT mount a split workpiece or one containing a knot.
6. SECURELY FASTEN THE WORKPIECE to the faceplate prior to faceplate turning. Use the appropriate size faceplate to properly support the workpiece. Do not let the screw fasteners interfere with the turning tool at the finished dimension of the workpiece.
7. NEVER DRIVE THE WORKPIECE into the drive center while the drive center is in the headstock. Set the drive center into the workpiece with a soft mallet prior to installing it on the

headstock.

8. SNUG THE TAILSTOCK CENTER against the workpiece and lock it. Lubricate the tailstock center if it is not a ball bearing center.
9. PROPERLY ADJUST THE TOOL REST HEIGHT.
10. ADJUST THE TOOL REST so it is as close to the workpiece as possible.
11. TIGHTEN ALL CLAMP LOCKING HANDLES before operating.
12. ROTATE THE WORKPIECE BY HAND to check clearance before turning the machine "ON".
13. CLEAR THE LATHE BED OF ALL OBJECTS (tools, scraps of wood, etc.) before turning the machine "ON". FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS INJURY.
14. EXAMINE THE SET-UP CAREFULLY before turning the machine "ON".
15. STAND CLEAR, AND KEEP ALL OBSERVERS AND PASSERSBY clear of rotating path of workpiece to avoid injury from flying debris.
16. USE THE LOWEST SPEED when starting a new workpiece. NEVER EXCEED recommended speeds.
17. NEVER ADJUST THE TOOL REST while the workpiece is turning.
18. NEVER LOOSEN THE TAILSTOCK SPINDLE or the tailstock while workpiece is turning.
19. MOVE THE CUTTING TOOL INTO THE WORK-PIECE SLOWLY, and cut small amounts when roughing.
20. REMOVE THE TOOL REST before sanding or polishing.
21. NEVER PERFORM LAYOUT, assembly, or set-up work on the table/work area when the machine is running.
22. TURN THE MACHINE "OFF" AND DISCONNECT THE MACHINE from the power source before installing or removing accessories, before adjusting or changing set-ups, or when making repairs.
23. TURN THE MACHINE "OFF", disconnect the machine from the power source, and clean the table/work area before leaving the machine. LOCK THE SWITCH IN THE "OFF" POSITION to prevent unauthorized use.
24. ADDITIONAL INFORMATION regarding the safe and proper operation of power tools.

Grounding Instructions

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

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor, with insulation having an outer surface that is green with or without yellow stripes, is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service person if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Use only three wire extension cords that have three-prong grounding plugs and three-pole receptacles that accept the tool's plug.

Repair or replace a damaged or worn cord immediately.

Specifications

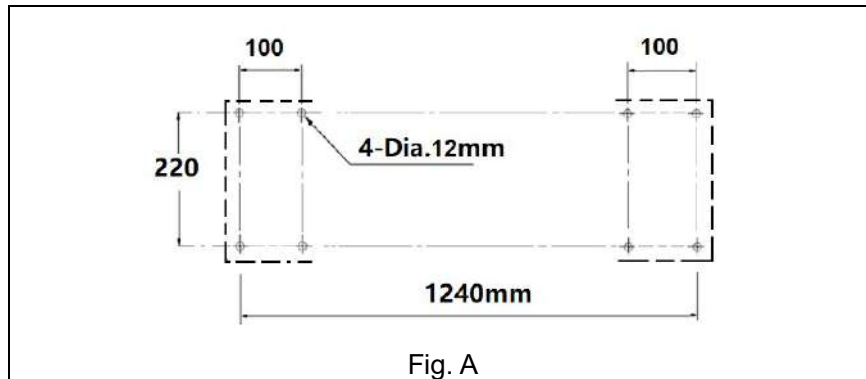
Stock Number.....	DL356
Over Bed.....	328mm
Swing Over Tool Rest Base	230mm
Distance Between Centers.....	610mm
Spindle Speeds.....	0-3560RPM
Spindle Nose	1" - 8TPI
Drive Spindle Through Hole.....	15mm (5/8")
Tailstock Spindle Through Hole.....	10mm (3/8")
Tailstock Spindle Travel	52mm(2")
Tool Rest	228mm (9")
Face Plate.....	100mm(4")
Headstock Rotation	0° & 180°
Headstock Taper	MT-2
Tailstock Taper	MT-2
Spindle Center to Floor (approx.)	1100mm(43-1/2")
Motor.....	750W
	220V 60Hz 750W 1PH
Net Weight (approx.).....	112kgs.
Shipping Weight (approx.).....	134kgs.
Noise.....	80dB



WARNING

**Read and understand the entire contents of this manual before attempting assembly or operation!
Failure to comply may cause serious injury!**

Transport and installation



For packing reasons the machine is not completely assembled.

Contents of the Shipping Containers

Foreword

The Woodlathe adjustable speed wood lathes is a big capacity machine, designed for industry, commercial shops, and schools, or wherever a demand exists for continued accuracy and long life through safe, heavy-duty operation.

- 1. Lathe
- 1. Tailstock
- 1. Headstock
- 1. Tool Rest Body
- 1. Accessory Package
- 1. Owner's Manual



Accessory Package Box

- 1. Live Center
- 1. Rod for Live Center
- 1. Spur Center
- 1. Face Plate
- 1. Tool rest
- 1. Knockout Rod Headstock

Unpacking and Clean-Up

1. Remove the shipping container. Do not discard any shipping material until the lathe is set up and running properly.
2. Remove hex cap bolts from skid bottom and move the lathe off the skid and into position.
3. Clean all rust protected surfaces with a cleaner degreaser. Clean thoroughly under the headstock, tailstock and tool rest body.
4. Carefully remove the leg set from the carton and set aside.

CAUTION: The Woodlathe is a heavy machine. Use a hoist to handle the main frame of the machine.



FIG B

Assembly

1. Secure tool rest to tool rest body (B, Fig. 1) by tightening handle (C, Fig. 1).
2. Slide the tailstock and tool rest to the headstock end of the lathe bed. See "Controls and Features" section of this manual on how to move the tailstock and tool rest.

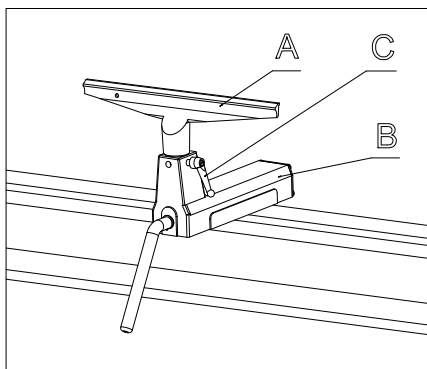


Fig.1



Fig.2

3. Lift the tailstock end of the lathe up far enough to slide a few pieces of scrap wood under the leg, see Figure 2.
5. Thread adjustable feet (A, Fig. 2) into stand leg (B, Fig. 2). There is a flat spot on the shaft near the foot that will accommodate a wrench. Thread a hex nut (C, Fig. 2) onto shaft and leave loose for now.
6. Remove the scrap pieces of wood and slide the tailstock, tool rest and headstock down to the tailstock end of the lathe bed.
6. Mount the two adjustable feet in the same manner as above and move the headstock, tool rest and tailstock into their normal positions.
7. Adjust the feet so that the lathe rests evenly on the floor, and tighten the nuts.

Controls & Features

1. **Headstock Lock Handle:** Locks head in position by screws below the headstock. Unlock screws to position the head 180 degree for outboard turning. Tighten screws when properly positioned.
2. **Headstock Indexing Pin:** Turn the knurled knob counter-clockwise to unlock the plunger. Pull the knob out to release the headstock. Unlock the headstock locking handle and rotate the headstock. Turn knurled knob clockwise until it stops to lock plunger.
3. **Headstock Spindle Lock:** Push pin in to keep the spindle from turning.
CAUTION! Never press the headstock spindle lock while the spindle is turning!
4. **Headstock REW/FWD and Off Buttons:** Press the REW or FWD button to turn "ON" the lathe. Press the off button in to turn the lathe "OFF".
5. **Headstock RPM Knob:** Turn knob to desired RPM.
6. **Headstock RPM Readout:** Displays the spindles RPM.
8. **Headstock Spur Center:** Used for turning between centers. Spindle taper is MT-2. Remove spur center by inserting drift rod through the opposite end of the spindle and knocking spur center out.
9. **Headstock Faceplate:** Used for turning bowls and plates. There are a number of screw holes for mounting the work piece. Thread the faceplate onto the spindle in a clockwise direction, and tighten two set screws. Remove the faceplate by loosening two set screws. Push in headstock spindle lock and use the provided rod in faceplate holes to unthread the faceplate.
10. **Headstock Indexing Hole:** Thread indexing pin into the indexing hole making sure that it locates in the spindle hole. There are 12 holes in the spindle 30° apart. There are three holes in the headstock casting that accept the indexing pin. These holes are 20° apart. The combination of holes will allow you to mark your workpiece for evenly spaced features.
CAUTION! Never start the lathe with the index pin engaged in the spindle!
11. **Tool Rest Body Lock Handle:** Locks the tool rest body in position. Unlock handle to position the tool rest in any location along lathe bed. Tighten handle when properly positioned.
12. **Tool Rest Lock Handle:** Locks the tool rest in position. Unlock the handle to position tool rest at a specific angle, or height. Tighten handle when properly positioned.
13. **Tailstock Lock Handle:** Locks the tailstock in position. Unlock handle to position the tool rest in any location along lathe bed. Tighten handle when properly positioned.
14. **Tailstock Quill Lock Handle:** Locks the tailstock quill in position. Unlock handle to position the quill. Tighten handle when properly positioned.
15. **Tailstock Quill Handwheel:** Turn the handwheel to position the quill. The tailstock quill lock handle must be loose to position quill.
16. **Tailstock Live Center:** Used for turning between centers. Quill taper is MT-2. Remove live center by retracting the quill until live center loosens. Remove, or add different tips to the live center by inserting the provided rod through the holes in the center's shaft. Unscrew the tip and change as needed.

Lathe Tools

If possible, select only high quality, high speed steel turning tools with long handles. 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.

Roughing Gouge - used for rapidly cut raw wood into round stock, see Figure 3.

Deep Fluted Bowl Gouge - used for turning bowls and plates, see Figure 3.

Spindle Gouge - used for turning beads, coves and other details, see Figure 3.

Spear - fine scraping and delicate operations, such as the forming of beads, parallel grooves and shallow vees, etc, see Figure 3.

Skew - used to make vees, beads, etc., see Figure 3.

Square Scraper - used for diameter scraping and featureless scraping, etc, see Figure 3.

Large Domed Scraper - used to reduce ridges on the interior of bowls, round edges of bowls, etc, see Figure 3.

Parting Tool - used to cut directly into the material, or to make a cut off. Also used for scraping and to set diameters, see Figure 3.

For safety and best performance, **keep tools sharp**. If a tool stops cutting, or requires excessive pressure to make a cut, it needs to be sharpened. A number of brand name sharpening jigs and fixtures are available, however, a woodturner should learn to sharpen tools freehand.

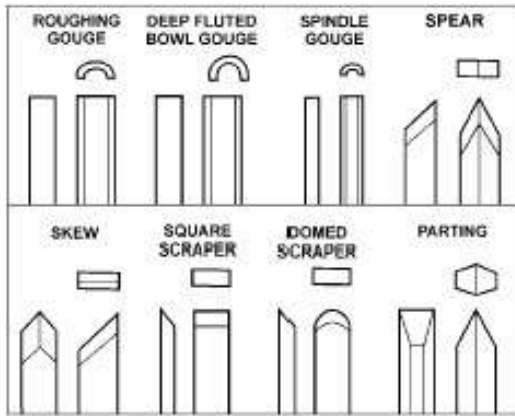


FIG. 3

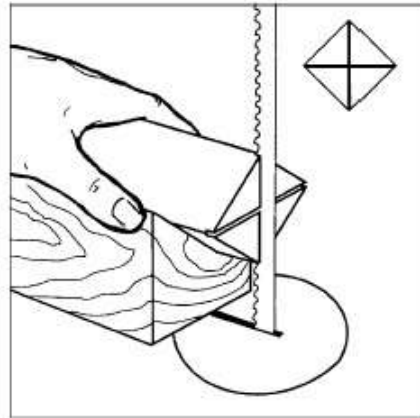


FIG. 4

Mounting Work piece Between Centers

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.

1. With a ruler locate and mark the center on each end by going corner to corner. Accuracy is not critical on full rounds but extremely important on stock where square sections are to remain. Put a dimple in each end of the stock with an awl, or nail.
2. Extremely hard woods may require kerfs cut into the spur drive end of stock, see Figure 4. You may need to drive the spur center into the stock with a wood mallet. **Note:** Never drive stock onto spur while it is mounted in the lathe spindle.
3. Install workpiece by inserting the attached spur center into the spindle taper on the headstock.
4. Bring tailstock into position, lock it to the bed, and advance quill with the handwheel in order to seat the live center into the workpiece. Lock the quill in place. Make sure the live center point is centered on your mark.
5. Move tool rest into position. It should be parallel to workpiece, approximately at the centerline, and approximately 1/8" from the closest part of the workpiece. Lock tool rest body and tool rest in place.

6. Rotate workpiece by hand to check for proper clearance from tool rest. **Note:** You may want to trim off the corners of a square workpiece to make turning a little easier.
7. Start lathe at **lowest** speed and bring it up to the appropriate RPM for the size of stock.

The position of the tool rest can be varied to suit the work and operator. After you become experienced with setting the tool rest changing the position will become second nature for the workpiece and comfort of the user.

Stock Selection

Stock for spindles should be straight grained and free of checks, cracks, knots and other defects. It should be cut 1/8" to 1/4" larger than the finished diameter and may require additional length to remove ends if required. Larger stock should have the corners removed to produce an octagon making the piece easier to rough down to a cylinder, see Figure 14.



FIG.5



FIG.6

Roughing Out

1. Use a large roughing gouge and begin cutting about 2" from the tailstock end of the workpiece. Place the tool on tool rest with heel of the tool on surface to be cut.
2. Slowly and gently raise tool handle until cutting edge comes into contact with the workpiece. Work to the right towards the end of the workpiece. You never want to start at the end of a workpiece.
3. Now continue to work the rest of the workpiece. Roll the flute (hollowed-out portion) of the tool in the direction of the cut, see Figure 5. Make long sweeping cuts in a continuous motion to rough the piece down to a cylinder. Keep as much of the bevel of tool as possible in contact with workpiece to ensure control and avoid catches. **Note:** Always cut down-hill, or from large diameter to small diameter. Always work *toward* the end of a workpiece, never start cutting at the end.
4. Once the workpiece is roughed down to a cylinder, smooth it with a large skew. Place the cutting point near the center of the chisel and high on the workpiece, see Figure 6. Touching one of the points of the skew to the spinning workpiece may cause a catch and ruin the workpiece.



FIG.7

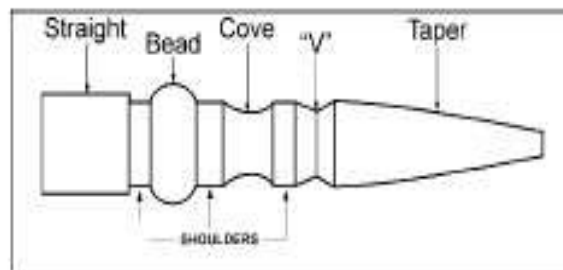


FIG.8

5. Add details to the workpiece with skew, spindle gouge, etc.

Coves

1. Use a spindle gouge. With the flute of the tool at 90 degrees to workpiece, touch the center of the cutting edge to the workpiece and roll in towards the bottom of the cove. **Stop at the bottom;** attempting to go up the opposite side may cause the tool to catch.
2. Move tool over the desired width of cove.
3. With the flute facing the opposite direction, repeat step 1 for other side of cove. Stop at bottom of cut, see Figure 9.

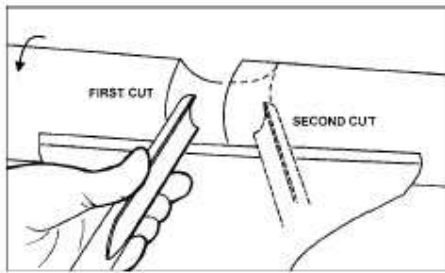


FIG.9

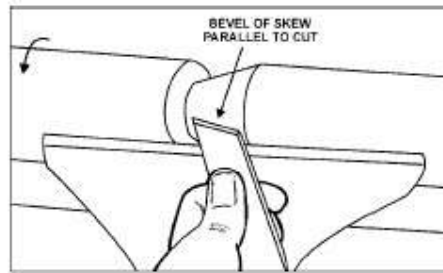


FIG.10

"V" Cuts

1. Use the long point of the skew. **Note:** Do not press the long point of the skew directly into the workpiece to create the "V"; this will result in a burned, or burnished "V" with fibers being rolled up at both sides.
2. Lightly mark the center of the "V" with the tip of the skew.
3. Move the point of skew to the right half of the desired width of your cut, see Figure 10.
4. With the bevel parallel to the right side of the cut, raise the handle and push the tool in to the desired depth.
5. Repeat from the left side. The two cuts should meet at the bottom and leave a clean "V" cut.
6. Additional cuts may be taken to add to either the depth or width of the cut.

Parting

1. Place parting tool on tool rest and raise the handle until it starts to cut and continue to cut to the desired depth.
2. If the cut is deep a clearance cut should be made along side the first cut to prevent the tool tip from burning.

Beads

1. Place parting tool on tool rest and move tool forward to make the full bevel of tool come in contact with workpiece. Gently raise handle to make cut to appropriate depth.
2. Repeat for other side of the bead.
3. 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 direction of cut.

Sanding & Finishing

Leaving clean cuts will reduce the amount of sanding required. Adjust lathe to a finishing speed, and begin with fine sandpaper (120 grit or finer). Coarser sandpaper will leave deep scratches that are difficult to remove, and dull crisp details. Fold the sandpaper into a pad; do not wrap sandpaper around your fingers or the workpiece.

To apply a finish, the workpiece can be left on the lathe. Turn off lathe and use a brush, or cloth to apply the finish. Remove excess finish before restarting lathe. Allow to dry and sand again with 320, or 400 grit sandpaper. Apply additional coats of finish and buff.

Face Plate & Bowl Turning

Face plate turning is normally done on the inboard side of the headstock over the bed, see Figure 11. You must move headstock to the end of the lathe bed for larger workpieces.

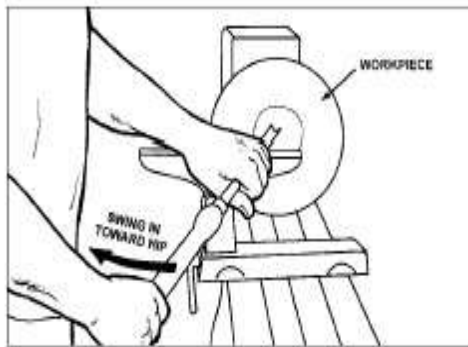


FIG.11

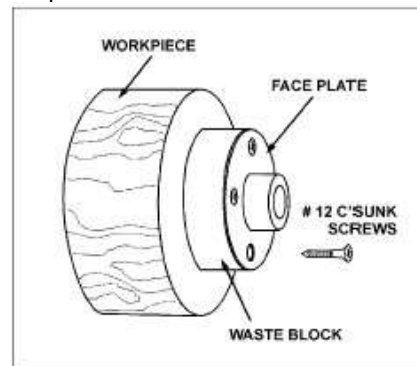


FIG.12

Mounting Stock

Use of a face plate is the most common method for holding a block of wood for turning bowls, and plates, see Figure 12.

1. Select stock at least 1/8" to 1/4" larger than the dimension on the desired finished workpiece.
2. True one surface of workpiece for mounting against the face plate. It is best to leave extra stock against the face plate that can be cut off when the workpiece is finished.
3. Using the face plate as a template, mark the location of the mounting holes, and drill pilot holes of the appropriate size. If the mounting screws on the face plate interfere with the workpiece, a waste block can be mounted to the face plate and then the waste block mounted to the workpiece by gluing or screwing, see Figure 12.
4. Both waste block and workpiece should have good flat surfaces.
5. Push in the spindle lock and thread face plate and workpiece onto spindle. Tighten set screws in face plate when secure.

Face Plate or Chuck

While faceplates are the simplest, most reliable method of holding a 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 with a variety of jaws to accommodate different size tenons. Most also come with a screw chuck as well.

Wood Selection

Firewood is the cheapest, most widely available stock to use while learning to turn bowls. Develop skill with each tool before attempting to make a finished piece. It is best to start with dry wood, without worrying about drying or distortion. Once turning becomes comfortable, try green wood which cuts very easily. As the turner gains experience, he or she will find extraordinary grain and figure in the form of burls, crotches and bark inclusions.

Checks & Cracks

Green wood will check and crack. For best results, leave logs in as long lengths as you can handle. As the material starts to dry, surface cracks will develop on the ends of the log. Cut off two to three inches and you should find good, sound wood. Also cut the log in half along the pith to avoid having it in the finished piece. Most checks radiate from the pith. As you turn bowls from green wood, make sure you maintain a consistent wall thickness throughout the piece. Leaving a piece thick in some areas and thin in others will cause the wood to dry unevenly and promote checks and cracks.

Distortion

Distortion is a problem associated with turning green wood. It will vary from one type of wood to the next. Typically, fruitwoods tend to distort more than others. It also varies with the time of year the tree was cut and how the logs are stored.

Tools for Bowl Turning

The deep fluted bowl gouge is the most essential and versatile tool for most bowl and faceplate style turning. The bowl gouge is heavier and easier to control than other types of gouges. It also allows removal of wood much faster and with less vibration than other gouges. Most average sized bowl work can be accomplished with a 3/8" or 1/2" bowl gouge. A 1/4" bowl gouge is best suited for smaller bowls and light finishing cuts.

Larger 3/4" and 1" bowl gouges are only used for extremely large pieces. Large domed scrapers can also be used to help clean up the interior surfaces of bowls. A light touch with the scraper slightly tilted will eliminate some of the ridges left by a bowl gouge.

To Shape Outside of Bowl

1. Odd shaped burls, crotches and other irregular shaped blanks require special preparation before mounting in a chuck, or onto a faceplate. Remove the bark, if there is any, from what appears to be the center of the top of workpiece.
2. Drive spur center into the top of workpiece with a wood mallet.
3. Slip spur center into headstock taper and bring the tailstock, with a live center into position. Lock tailstock to bed and advance spindle in order to seat the cup center into workpiece, see Figure 13. Tighten quill lock.
4. Position tool support just below the centerline and about 1/4" from the workpiece. **Note:** For larger outboard turning, an optional outboard turning stand is used to place the tool support.
5. Turn workpiece by hand to ensure proper clearance.
6. Start lathe at lowest speed and bring it up to the maximum safe speed for the size of work to be turned, If the machine starts to vibrate, lower the speed until vibration stops.
7. Rough out the outside of the bowl with the 1/2" deep fluted bowl gouge, holding the tool firmly against your hip. For best control, use your whole body to move the gouge through the workpiece.
8. As the bowl takes shape, work on the bottom (tailstock end) to accommodate attaching a face plate,

see Figure 13.

9. Turn a short tenon (about 1/8" long) the size of the hole in the faceplate, see Figure 13. This will allow centering the workpiece when the faceplate is attached. **Note:** If you plan to use a chuck, turn a tenon of appropriate length and diameter to fit your chuck.
10. Stop the lathe, remove workpiece and attach face plate, or chuck.
11. Finish turning the outside of bowl with 1/2" or 3/8" bowl gouge. Leave additional material at base of bowl for support while turning interior. This will be removed later.

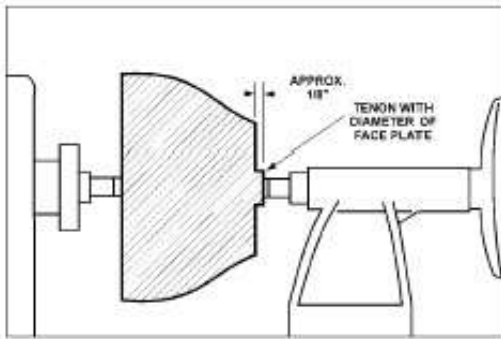


FIG.13

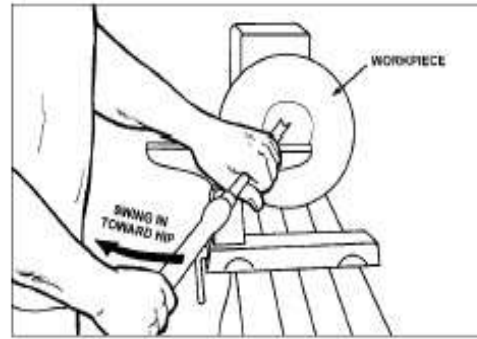


FIG.14

To Shape Interior of Bowl

1. Stop lathe and move tailstock away. Remove center from tailstock to prevent bumping it with elbow.
2. Adjust tool support in front of the bowl just below centerline, at a right angle to the lathe bed.
3. Rotate workpiece by hand to check clearance.
4. Face off top of bowl by making a light shearing cut across the workpiece, from rim to center.
5. Place 1/2" bowl gouge on tool rest at center of the workpiece with the flute facing top of bowl. The tool handle should be level and pointed toward four o'clock, see Figure 14.
6. Use left hand to control cutting edge of gouge, while right hand swings tool handle around toward your body, see Figure 20. The flute should start out facing top of workpiece, and rotate upward as it moves deeper into the bowl to maintain a clean even curve. As tool goes deeper into bowl, progressively work out toward rim. It may be necessary to turn the tool rest into the work piece as you get deeper into the bowl. **Note:** Try to make one, very light continuous movement from the rim to the bottom of the bowl to ensure a clean, sweeping curve through the workpiece. Should there be a few small ridges left, a light cut with a large domed scraper can even out the surface.
7. Develop wall thickness at the rim and maintain it as you work deeper into the bowl. When the interior is finished, move tool support to exterior to re-define bottom of bowl. General rule of thumb: the base should be approximately 1/3 the overall diameter of the bowl.
8. Work the tight area around faceplate or chuck with 1/4" bowl gouge.

Sanding and Finsihing

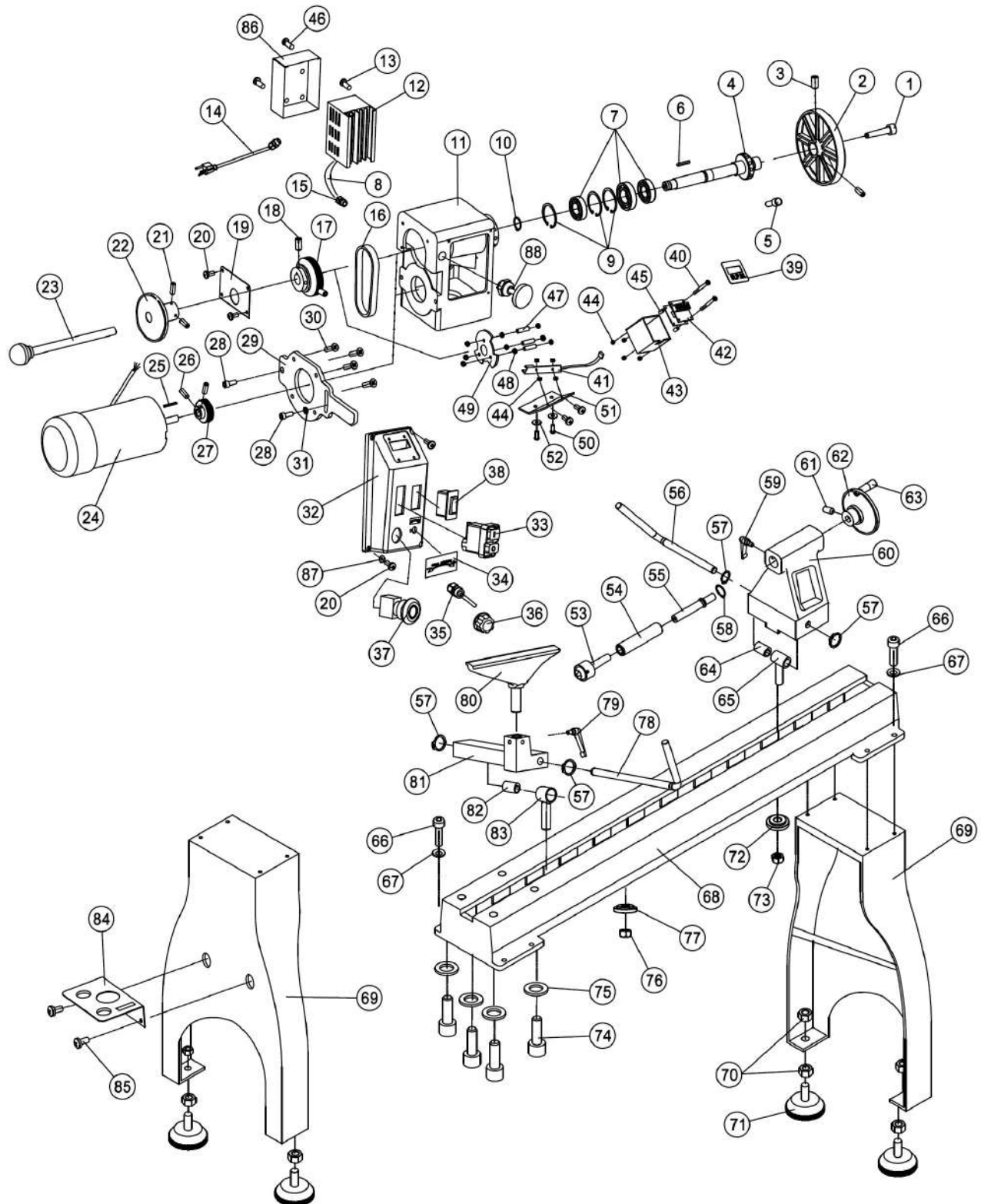
1. Remove the toolrest and adjust lathe speed to the appropriate finishing speed. High speed can build friction while sanding and cause heat check in some woods.
2. Begin with fine sandpaper 120 grit and progress through each grit, using only light pressure. Coarser sandpaper tends to leave deep scratches that are hard to eliminate. Use power-sanding techniques to avoid concentric sanding marks around your finished piece. Avoid rounding over the rim and foot with

- sandpaper. Try to keep details crisp. Finish sanding with 220 grit.
3. Remove sanding dust with tack rags, or compressed air and, with lathe turned off, apply first coat of finish. Let stand for several minutes, wipe off excess. Allow to dry before sanding again with 320 or 400 grit sandpaper.
 4. Turn lathe back on and make a separation cut through the base. Stop at about 3" and use a small fine tooth saw to separate the bowl from the waste.
 5. Apply additional finish coats and allow to dry before buffing.

Troubleshooting

Problem	Possible Cause	Solution
Excessive Vibration.	<ol style="list-style-type: none"> 1. Workpiece warped, out of round, has major flaw, or was improperly prepared for turning 2. Worn spindle bearings 3. Worn belt 4. Motor mount bolt or handle loose 5. Lathe on uneven surface 	<ol style="list-style-type: none"> 1. Correct problem by planing, bandsawing, or scrap workpiece all together 2. Replace bearings 3. Replace belt 4. Tighten bolt or handle 5. Shim lathe bed, or adjust feet on stand
Motor or Spindle Stalls or Will not Start	<ol style="list-style-type: none"> 1. Excessive cut 2. Worn motor 3. Broken belt 4. Worn spindle bearings 5. Improper cooling on motor 	<ol style="list-style-type: none"> 1. Reduce cut depth 2. Replace motor 3. Replace belt 4. Replace bearings 5. Clean sawdust from motor fan
Motor fails to develop full power.	<ol style="list-style-type: none"> 1. Power line overloaded 2. Undersize wires in supply system 3. Low voltage 4. Worn motor 	<ol style="list-style-type: none"> 1. Correct overload condition 2. Increase supply wire size 3. Request voltage check from power company and correct low voltage condition 4. Replace motor
Tools tend to grab or dig in.	<ol style="list-style-type: none"> 1. Dull tools 2. Tool support set too low 3. Tool support set too far from workpiece 4. Improper tool being used 	<ol style="list-style-type: none"> 1. Sharpen tools 2. Reposition tool support height 3. Reposition tool support closer to workpiece 4. Use correct tool for operation
Tailstock Moves When Applying Pressure	<ol style="list-style-type: none"> 1. Excessive pressure being applied by tailstock. Note: The screw action of the tailstock is capable of applying excessive pressure to workpiece and headstock. Apply only sufficient force by tailstock to hold workpiece securely in place. Excessive pressure can cause damage to machine. 2. Lathe bed and tailstock mating surfaces are greasy or oily. 	<ol style="list-style-type: none"> 1. Slide tailstock down to the right side of the lathe against the stop. Move headstock into position and apply pressure to workpiece with tailstock. 2. Remove and clean surfaces with a cleaner degreaser
Digital readout does not work	<ol style="list-style-type: none"> 1. Digital readout sensor out of position 	<ol style="list-style-type: none"> 1. Open the belt access and position the sensor so that it reads the bolts

EXPLODED VIEW & PARTS LIST

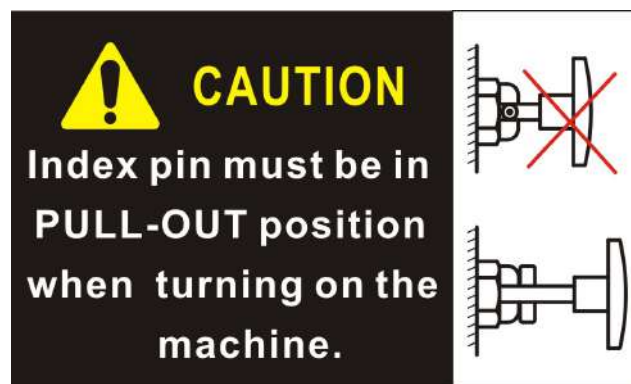


Part List for Wood Lathe

Index No.	Part No	Description	Size	Q'TY
1	DL356-001	Spur Center		2
2	DL356-002	Face Plate		1
3	DL356-003	Set Screw	M6x10	10
4	DL356-004	Spindle		1
5	DL356-005	Index Pin		1
6	DL356-006	Key	5x5x30	1
7	DL356-007	Ball Bearing	6205RZ	3
8	DL356-008	Cord –Inverter to Panel Plate		1
9	DL356-009	C-Ring	52	3
10	DL356-010	C-Ring	25	1
11	DL356-011	Headstock		1
12	DL356-012	Inverter		1
13	DL356-013	Hex Socket Cap Screw	M5x25	4
14	DL356-014	Power Cord		1
15	DL356-015	Strain Relief		1
16	DL356-016	Poly-V Belt	7PJ414	1
17	DL356-017	Spindle Pulley		1
18	DL356-018	Set Screw	M6x10	2
19	DL356-019	Cover Plate		1
20	DL356-020	Pan Head Machine Screw	M5x10	8
21	DL356-021	Set Screw	M8x10	2
22	DL356-022	Hand wheel for Spindle		1
23	DL356-023	Knockout Rob		1
24	DL356-024	Motor Assembly		1
25	DL356-025	Key	5x5x30	1
26	DL356-026	Set Screw	M8x10	2
27	DL356-027	Motor Pulley		1
28	DL356-028	Hex Socket Cap Screw	M8x25	2
29	DL356-029	Motor Assembly Plate		1
30	DL356-030	Cap Screw	M5x12	4
31	DL356-031	Flat Washer	8	2
32	DL356-032	Switch Box		1
33	DL356-033	Switch	DZ04-2B (dongke)	1
34	DL356-034	Speed Control Label		1
35	DL356-035	Variable Speed Control		1

Index No.	Part No	Description	Size	Q'TY
36	DL356-036	Variable Speed Knob		1
37	DL356-037	Push Button Switch		1
38	DL356-038	FWD/REV Switch	HY60B(KEDU)	1
39	DL356-039	RPM Label		1
40	DL356-040	Pan Head Machine Screw	M3x40	4
41	DL356-041	Sensor		1
42	DL356-042	Digital Readout		1
43	DL356-043	Digital Readout Box		1
44	DL356-044	Hex Nut	M3	4
45	DL356-045	Plastic Sleeve		4
46	DL356-046	Pan Head Machine Screw	M4x65	2
47	DL356-047	Set Screw	M5x20	3
48	DL356-048	Hex Nut	M5	6
49	DL356-049	Speed Readout Plate		1
50	DL356-050	Pan Head Machine Screw	M4x10	2
51	DL356-051	Plate for Sensor		1
52	DL356-052	Flat Washer	4	2
53	DL356-053	Center		1
54	DL356-054	Quill		1
55	DL356-055	Lead Screw		1
56	DL356-056	Lever for Tailstock		1
57	DL356-057	C-Ring	C-18	4
58	DL356-058	C-Ring	C-15	1
59	DL356-059	Tail Stock quill Handle		1
60	DL356-060	Tail Stock		1
61	DL356-061	Set Screw	M8x10	1
62	DL356-062	Hand wheel for Tailstock		1
63	DL356-063	Hand wheel Bar		1
64	DL356-064	Bushing for Tailstock		1
65	DL356-065	Clamp Bolt for Tailstock	M18x50	1
66	DL356-066	Hex Socket Cap Screw	M8x25	8
67	DL356-067	Lock Washer	8	8
68	DL356-068	Bed Way		1
69	DL356-069	Steel Stand		2
70	DL356-070	Hex Nut	M10	12
71	DL356-071	Adjustable Foot	M10x60	4
72	DL356-072	Clamp for tailstock		1
73	DL356-073	Hex Nut for tailstock	M18	1
74	DL356-074	Hex Socket Cap Screw	M8x25	8
75	DL356-075	Lock Washer	8	8
76	DL356-076	Lock Hex Nut	M18	1
77	DL356-077	Clamp for Tool Rest	M18x50	1
78	DL356-078	Lever for Tool Rest		1
79	DL356-079	Tool Rest Lock Handle	M10x25x80	1
80	DL356-080	Tool Rest		1
81	DL356-081	Tool Rest Base		1
82	DL356-082	Bushing for Tool Rest		1
83	DL356-083	Clamp Bolt for Tool Rest		1
84	DL356-084	Tool Bracket		1
85	DL356-085	Hex Socket Cap Screw	M10x16	2
86	DL356-086	Inverter Box		1
87	DL356-087	Flat Washer	5	4

The diagram illustrates the electrical connections for a speed-controlled motor system. It includes a control panel with a push/pull switch, forward/reverse switch, two potentiometers, and a forward/reverse terminal block. These are connected to an inverter, which is powered by a 230V, 1-phase power supply. The inverter's output is connected to a three-phase motor. A sensor and speed reader are also connected to the inverter for feedback control.



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