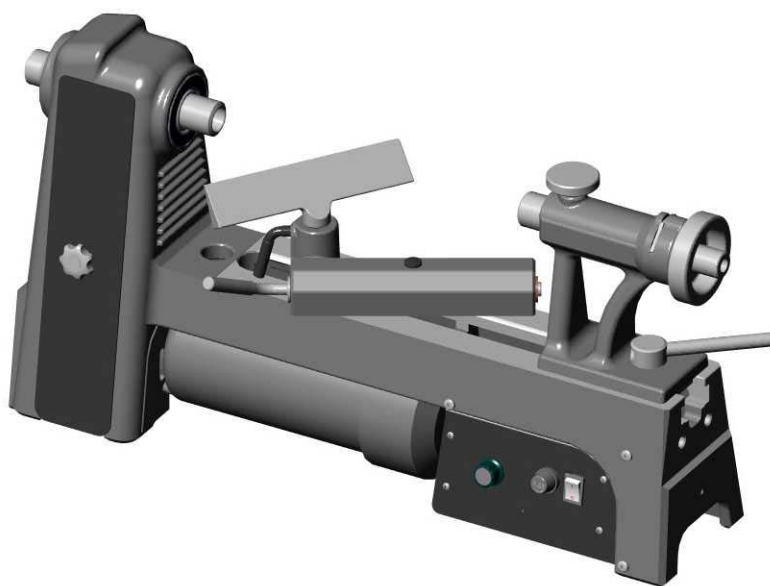


OPERATING MANUAL

***Nova
Mercury™
Woodlathe***



WOODCRAFT®
Helping You Make Wood Work®

Part No. 100-0109-002 Updated 14 October 2003

Nova Mercury Lathe Features at a glance

Add on Bed System

A lathe that meets your woodturning needs, your workshop space, or your pocket! Each segment is 12" in length. This feature appeals for many different reasons:

As a compact lathe (standard configuration) it is great for small turning workshop spaces or as a portable unit.

As an extended bed lathe for those wanting to do longer spindles. One additional segment increases the between center capacity to 23" (580mm). Two additional segments would give a 35" (890mm) capacity.

Outboard Turning

The Mercury is a mini lathe ideal for all inboard work up to 8" (200mm) diameter but you can stretch this capacity outboard.

The physical capacity of the outboard rest is about 14" but we recommend that you turn bowls up to 10" (250mm) diameter.

This gives it a capability in the 'midi' lathe range. You could occasionally do slightly larger bowls but would need to pay close attention to correct cutting techniques.

Speed Range

The Nova Mercury lathe has a 3 step variable electronic speed range, one of the very best available for mini lathe work. Low range: slower speeds from around 200rpm up to 1750 rpm for larger spindle and bowl work. Medium range: up to 3670rpm for smaller items (eg pen work). Fast range: up to 5350rpm required for all miniature turning work. Most other mini lathes do not have this fast speed range for true miniature work.

Electronic variable speed allows you to dial in the correct speed for the job and the conditions and not be limited to fixed speed steps.

Solid Construction

Well proven design, the Nova Mercury is made from Cast Iron components for strength and rigidity. The headstock and bed is a one piece casting for maximum rigidity – no fastenings or joins to rattle or cause vibration, as with many other mini designs.

Welcome

Thank you for choosing our Nova Mercury Mini Lathe and welcome to the Teknatool Product family. Your choice shows you want the best for your woodturning and recognise the superior and unique benefits the Nova Mercury offers.

We strive to achieve the best value for your purchase - providing quality where it counts, innovative features and a wide variety of accessories (some unique to Teknatool). In addition - comprehensive, ongoing support: latest manual editions downloadable from our website, free newsletters to keep you updated and woodturning projects specially designed for your lathe and accessories.

In addition, especially for Mercury owners (many of whom are beginner turners) we are going to build some special support features into our website.

Please send in your warranty registration to us (also can be sent to us via our website) and feel free to contact us about any aspect of our products or service - we regard our customers as our best development and improvement team - we'd love to hear from you!


Once again, welcome to our 'Teknatool Family'. We hope you enjoy our products and they enhance the creative pleasure you get from your woodturning!


Best Regards




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South Africa

The Hardware Centre

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Fax: (27) 011 791 0850

This is the list of Countries/Resellers that currently stock and sell the Nova Mercury Woodlathe. In addition, Teknatool sells a more limited range into many other countries. Contact us for details, or see our website.

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GENERAL SAFETY RULES



Warning! Failure to follow these rules may result in serious personal injury.

- FOR YOUR OWN SAFETY, READ THE MANUAL BEFORE OPERATING THE TOOL.** Learn the machine's application and limitations plus the specific hazards peculiar to it.
- ALWAYS USE A FULL FACE SHIELD- Strongly recommended (must comply with ANSI STANDARD Z87.1 -USA) Everyday eye-glasses usually are only impact resistant and safety glasses only protect eyes. A full face shield will protect the eyes and face. Also use face or dust mask if cutting operation is dusty**
- WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts. Non slip footwear is recommended. Wear protective hair covering to contain long hair.
- USE EAR PROTECTORS.** Use ear muffs for extended period of operation. Use muffs rated to 103 DBA LEQ (8 hour).
- DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
- KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents. Build up of sawdust is a fire hazard.
- KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
- MAKE WORKSHOP CHILDPROOF** with locks, master switches, or by removing starter keys.
- GROUND ALL TOOLS.** This tool is equipped with a three prong plug, it should be plugged into a three hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never remove the third prong.
- MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while the motor is being mounted, connected, or reconnected.
- DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits cutters, etc.
- AVOID ACCIDENTAL STARTING.** Make sure switch is in the Off position before plugging in power cord.
- NEVER LEAVE MACHINE RUNNING UNATTENDED.** Do not leave tool unless it is turned off and has come to a complete stop.
- KEEP GUARDS IN PLACE** and in working order.
- USE RIGHT TOOL.** Do not use a tool or attachment to do a job for which it was not designed.
- USE RECOMMENDED ACCESSORIES.** The use of improper accessories may cause hazards.
- DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
- MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
- REMOVE ADJUSTING KEYS AND WRENCHES.** Form a habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- DON'T OVERREACH.** Keep proper footing and balance at all times.
- DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
- ATTENTION TO WORK.** Concentrate on your work. If you become tired or frustrated, leave it for awhile and rest.
- SECURE WORK.** Use clamps or a vice to hold work when practical. It's safer than using your hand and frees both hands to operate tool.
- CHECK DAMAGED PARTS.** Before further use of the tool, any part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, mounting, and any other conditions that may affect its operation. Any damaged part should be properly repaired or replaced.
- DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drugs, alcohol, or any medication.
- DUST WARNING.** The dust generated by certain woods and wood products can be injurious to your health. Always operate machinery in well ventilated areas and provide for proper dust removal. Use wood dust collection systems whenever possible.

Primary Caution:

Extreme care must be taken when handling the spindle threads. These are sharp and should not be used to lift the lathe or to stop or manually rotate the spindle.

ADDITIONAL SAFETY RULES FOR WOODLATHES



Warning! Failure to follow these rules may result in serious personal injury.

1. **DO NOT MODIFY OR USE LATHE FOR USES OTHER THAN FOR WHICH IT WAS DESIGNED.**
2. **SEEK INSTRUCTION.** If you are not thoroughly familiar with the operation of woodlathes, obtain advice from your supervisor, instructor, or other qualified person. Instruction from a qualified person is strongly recommended.
3. **DO NOT OPERATE LATHE** until it is completely assembled and installed.
4. **FOLLOW ELECTRICAL CODES.** Make sure wiring codes and recommended electrical connections are followed and that the machine is properly grounded.
5. **KEEP WORK AREA CLEAN.** Do not turn the lathe On before clearing the lathe of all objects (tools, scraps of wood, etc.). Keep the nearby area and floor clear of debris.
6. **CHECK SET-UP** with power Off. Examine the set-up carefully and rotate the work piece by hand to check clearance before turning on power.
7. **DO NOT MAKE ADJUSTMENTS** when the lathe or work piece is turning. Make all adjustments with power Off.
8. **TIGHTEN ALL CLAMP HANDLES** on the headstock, tailstock, and toolrest before operating lathe.
9. **EXAMINE WORK PIECE** and glue joints before turning to make sure it has no defects that would cause it to break when turning.
10. **USE LOWEST SPEED** when turning a new or unbalanced work piece.
11. **TURN AT RECOMMENDED SPEED.** Always operate the lathe at the recommended speeds. Consult this manual for suggested speeds.
12. **ADJUST TOOLREST** close to the work piece. Before turning, revolve the stock by hand to make sure it clears the rest. At intervals, stop the lathe and readjust the toolrest.
13. **KEEP TOOL ON TOOLREST.** The lathe tool or chisel should be on the toolrest before the lathe is turned On. Tools should remain on the toolrest whenever the tool is engaged in contact with the work piece.
14. **REMOVE TOOLREST** when sanding or polishing so fingers do not get pinched.
15. **DIRECTION OF FEED.** Feed work into blade or cutter only against the direction of rotation of workpiece.
16. **USE CORRECT LATHE TOOLS.** Do not use spindle turning chisels for faceplate mounted work, and vice versa. Spindle turning tools used for faceplate turning may grab the work piece and pull the chisel from your control.
17. **WHEN ROUGHING STOCK** do not jam the lathe tool or chisel into work piece or take too big a cut.
18. **DO NOT POUND WORK PIECE** into headstock drive (spur) center when turning between centers. Pound the drive center into the work piece with a soft mallet before installing it between centers in the lathe.
19. **DO NOT USE TAILSTOCK** to drive work piece into the drive (spur) center when turning between centers. Secure work between centers with light pressure from the tailstock quill action.
20. **FASTEN STOCK SECURELY BETWEEN CENTERS.** Make sure the tailstock is locked before turning on the power.
21. **NEVER LOOSEN TAILSTOCK** spindle or tailstock while work piece is turning.
22. **CORRECTLY USE FACEPLATE.** When faceplate turning, make sure work piece is securely fastened to the faceplate and that appropriate size faceplate is used to support the work piece. Any screw fasteners must not interfere with the turning tool at the finished dimension of the work piece. Rough-cut the work piece as close as possible to finished shape before installing on faceplate.
23. **DO NOT OPERATE LATHE IF DAMAGED OR FAULTY.** If any part of your lathe is missing, damaged or broken, in any way, or any electrical component fails, shut off the lathe and disconnect the lathe from the power supply. Replace missing, damaged, or failed parts before resuming operation.
24. **ADDITIONAL SAFETY INFORMATION** regarding the safe and proper operation of this product is available from the National Safety Council, 444 N. Michigan Avenue, Chicago, IL 60611 in the Accident Prevention Manual of Industrial Operations and also in the Safety Data Sheets provided by the NSC. Also refer to the American National Standards Institute ANSI O1.1 Safety Requirements for Woodworking Machines and the U.S Department of Labor OSHA 1910.213 Regulation.

Important Note:

For Schools and Industrial applications the Nova Mercury Lathe will require the use of a NO VOLT RELEASE. For these applications the lathe may also fall under additional regulations.

Nova Mercury Woodlathe Specifications

Weight: 59lbs (24.58Kgs) Packaged.

Overall dimensions:

Length: 20.5" approx. (525mm)

Includes projection of outboard spindle.

Height: 11.5" approx. (285mm)

Top of headstock from bench.

Swing over bed: 8" (200mm)

Distance Between Centers: 11" (280mm)*

(*Can be increased with 12" (300mm) extension beds)

Swing Outboard: 14" (355mm)*

(*Normal operational capacity is around 10" /250mm)

Headstock:

Spindle Thread: 1" 8TPI RH.

Headstock Bore: No.2 Morse Taper (2MT)

Outboard Spindle Thread: 1" 8TPI LH

Through Bore: 3/8" (10mm)

Traverse Hole through Spindle: 3/8"
(10mm)

(Accepts up to 3/8" steel rod to act as
spindle lock)

Tailstock:

Tailstock Bore: 2MT

Quill Travel: 2.5" (63mm)

Hole Through Tailstock: 3/8" (10mm)

Toolrest:

Length: 6" (150mm)

Shaft Diameter: 5/8" (15mm)

Motor:

1/2 HP (Average Output) DC
(Permanent Magnet Type) Variable
Speed Drive.

Speeds:

Low Speed Pulley: 140rpm - 1750rpm

*(Left position pulley looking at spindle from
operator side)*

Middle Speed Pulley: 320rpm - 3670rpm

High Speed Pulley: 470rpm - 5350rpm

Standard Equipment:

Live (Revolving Center) 2MT

Spur Center 2MT

2 1/2" (60mm) Faceplate

6" (150mm) Toolrest

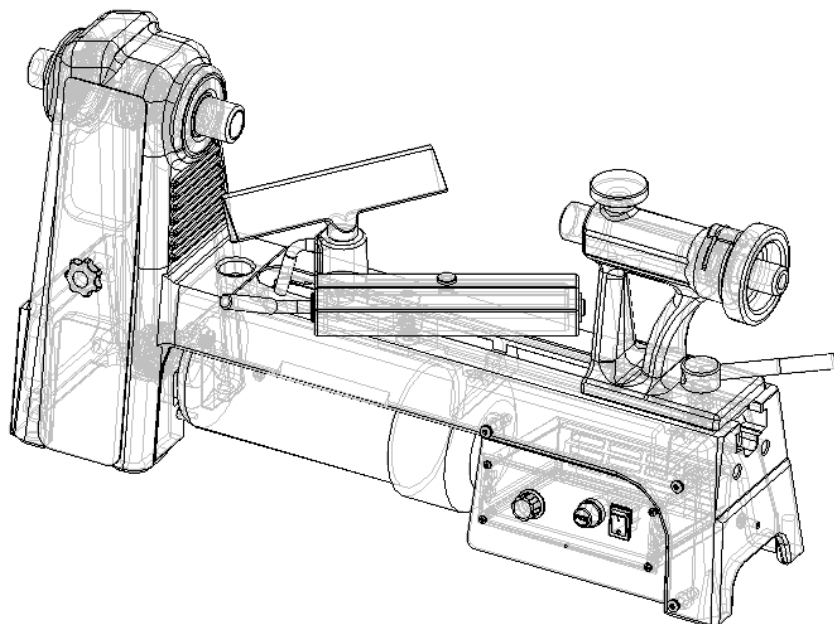
Optional Accessories:

Mercury Bed Extension

Mercury Outrigger
(work weight limits. 4-5lbs)(1.8-2.3kgs)

Nova Chuck System

Nova Compac Chuck



Setting Up Your Workshop

Workshop Requirements

<i>Consideration</i>	<i>Recommendation</i>
Lathe Location	Locate the Nova Mercury close to a power source in an area with good lighting. Allow for outrigger room should this accessory be purchased. If you are using it in a workshop other machines in your shop should not interfere with the operation of the lathe.
Lighting	Your room or workshop should have adequate lighting. The work area of the lathe should be well lit; there should not be shadows cast on your work. If possible, locate near a window. A movable spotlight may be helpful.
Electrical	The Nova Mercury requires the appropriate outlet nearby to power the motor. Wiring and outlets should adhere to local electrical codes. If in doubt, seek advice from an electrician. Minimize use of extension cords.
Ventilation	Your room or workshop should be adequately ventilated. The degree of ventilation will vary based on the size of the room and the amount of work done. The Nova Mercury lathe does not normally create a big dust problem however the use of dust collectors and filters will minimize risks to your health.

Lathe Stand Recommendations

A sturdy and rigid stand is desirable so that the Nova Mercury Woodlathe can deliver optimum performance. The larger the size of your turnings, the greater the importance of the lathe stand design. However for many smaller projects simply mounting the mercury on a bench top or table will suffice. For security it should be clamped in place.

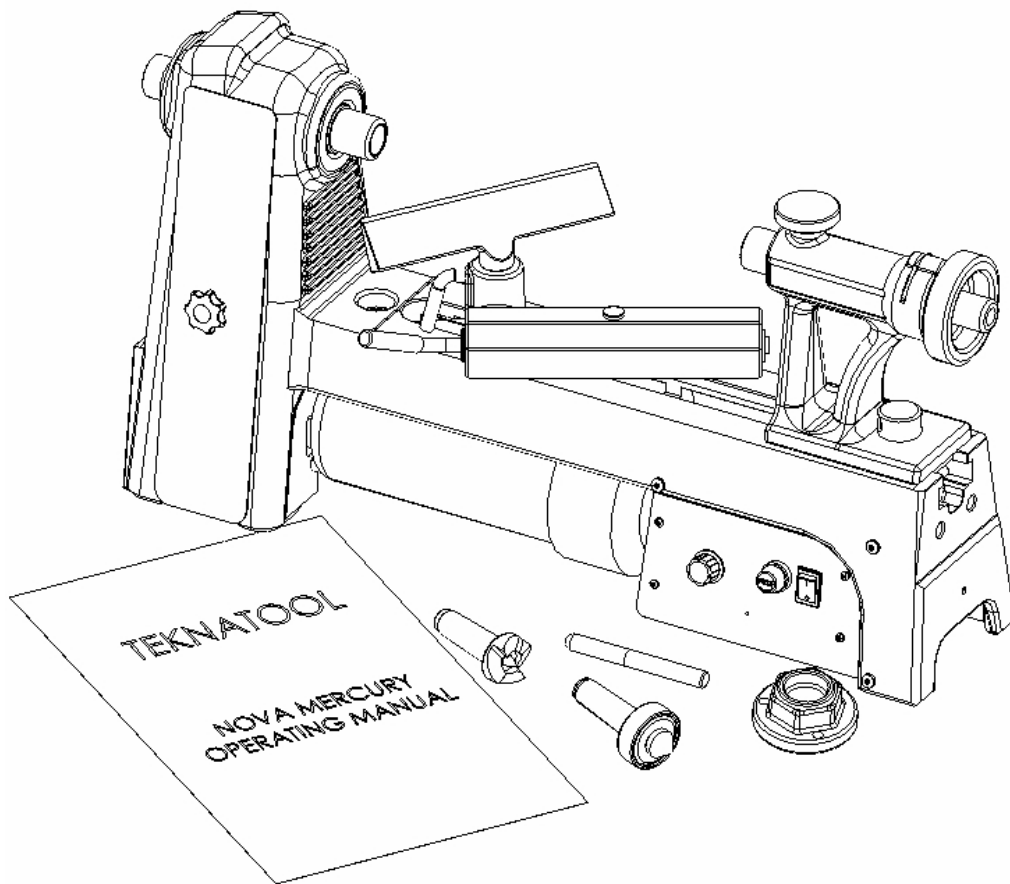
<i>Consideration</i>	<i>Recommendation</i>
Lathe Height from floor	The height of the stand should locate the centerline of the lathe spindle at the elbow height of the turner.
Stand Top	The stand top should be flat so the lathe does not twist when it is bolted down. Check for any gaps between lathe feet and stand top before bolting down. Shim and prepare stand as necessary. Ideally the lathe should be mounted on spacer blocks to provide extra clearance for motor and shavings.
Stand Weight	The stand should have enough weight and mass so it doesn't move when turning large work pieces, and so that the stand can absorb vibrations.
Stand Legs	The stand should sit level on the floor and not rock.

Assembling the Nova Mercury

1. Unpack the lathe and components from the shipping package.
2. Clean any parts coated with rust preventative with a cloth moistened with a petroleum-based solvent or cleanser, such as Kerosene. Coat the lathe bed with paste wax or use a silicon spray.

Caution: Extreme care must be taken when handling the spindle threads. These are sharp and should not be used to lift the lathe or to stop or manually rotate the spindle.

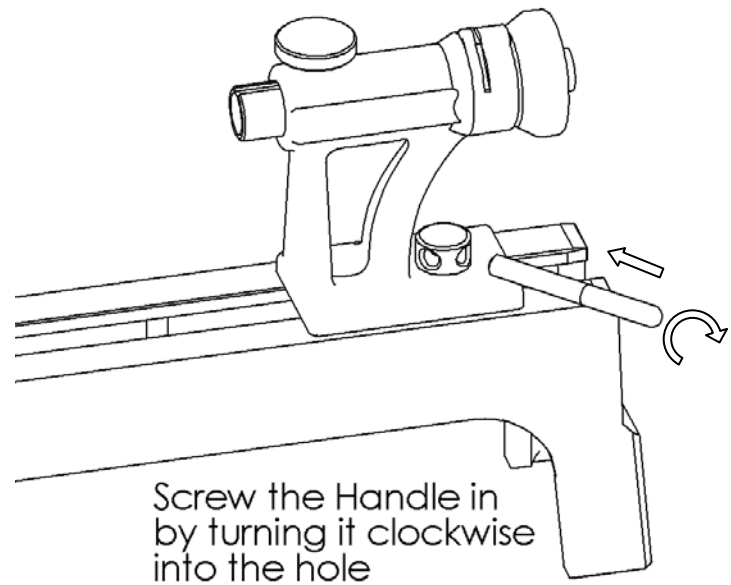
Nova Mercury Components after Unpacking *(The Bench fastening kit is not illustrated)*



3. Insert the toolrest into the toolslide and fasten up with the toolrest lock arm.
4. Assemble the Tailstock handle.

Assembling the Tailstock Handle

Screw the handle into the locking stud clockwise until it is tight.

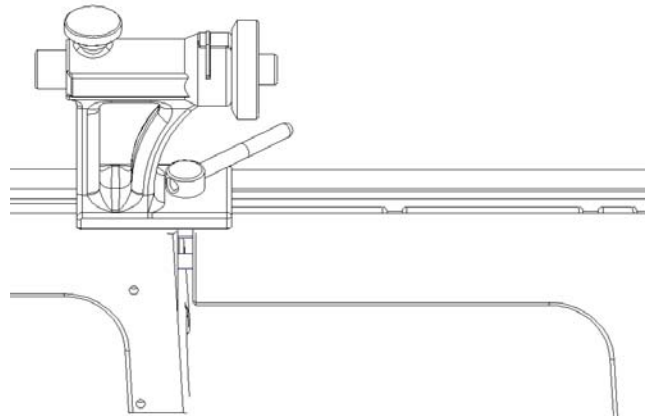


Installing Handle

Adding an Extension Bed

Each cast iron extension bed adds 300 mm (12 in.) to the lathe's capacity to turn between centers.

1. Clean the joining ends of both bed sections with a petroleum-based solvent. Make sure there are no dents or burrs on either mating surface. Remove burrs and high spots with a smooth file.
2. Bring the 2 mating faces together and fit the 2 M10 cap screws, doing them up "finger tight".

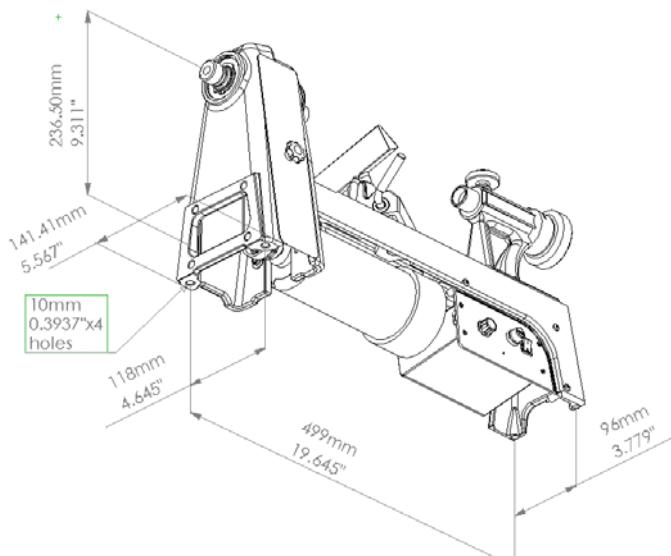


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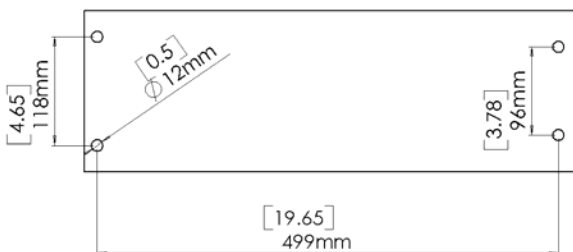
Do not use a metal hammer to pound on the extension bed. This may damage the bed, affect accuracy and tailstock action, and may prevent you from adding another extension bed.

3. Bring the Tailstock along until it is on top of the join area where the bed extension face meets the lathe bed face. The bed extension may need to be manipulated up-and-down and sideways in order for the Tailstock to fit.
4. Clamp the Tailstock down in its current position.
5. Do the M10 cap screws up tight.
6. Check that the tailstock moves freely over the mating joint and also over the full length of the add-on extension. If there is a ridge between the two mating surfaces then repeat steps 1-5 again or failing that use a smooth file to file the surfaces flush.

Mounting the Lathe to a Support Surface



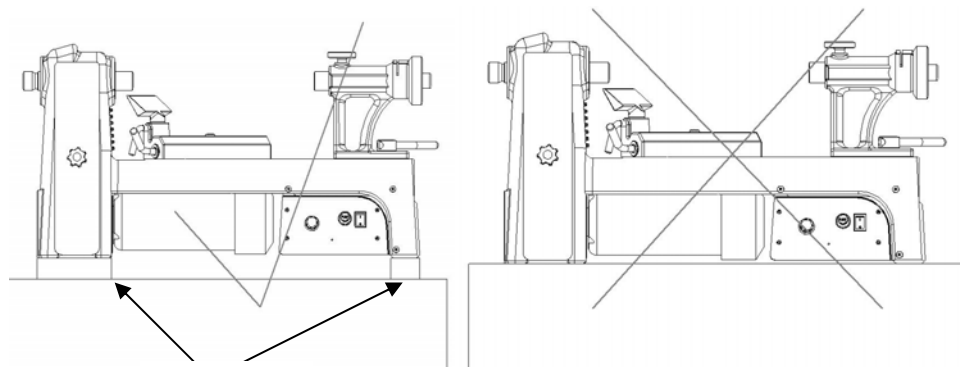
1. Place the lathe on the stand or bench top (as illustrated). Locate the front edge of the lathe approximately 25 mm (1 in.) from the front of the stand/bench top. Locate the left edge of the lathe approximately 10mm (3/8") in from the edge of the stand/bench top. This provides a comfortable reach when turning and allows the optional outrigger unit to be easily installed.
2. It will be useful to include spacer blocks under the headstock and tailstock end of the lathe. This will create a gap under the motor so wood shavings, chips and dust can be removed. The alternative is that the 4 Rubber & Steel washers that are supplied with the Bench fastening kit be used with the Steel washer on top of each Rubber washer. This will also work as a vibration dampener.
3. If necessary, mark the four hole locations (as illustrated) and drill 12mm (1/2-inch) holes.
4. Place a spirit level along the top of the lathe bed. Any movement of the bubble as the lathe is secured, indicates a twist on the bed. For the lathe to operate correctly the bed must be level when the bed and stand top.



I have available as

ing down to a thin sheetmetal bench or M10x70

Hex bolts or bolting down on a heavy wooden bench up to 2" thickness. The bolts are supplied in kit form with four of each length bolt. Disregard the bolts not required.



Packers

The lathe must be mounted 1 to 1 1/2" on packers or the 4 x Rubber & Steel spacer washers to avoid wood shavings from entering the motor housing.

Connecting the Mercury to Power Source

The electric motor, switch, cord and controllers are supplied with the Mercury lathe. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with local electrical codes.

The power cord should be 3-wire, having a grounding conductor and a grounding pin.



Warning!

Improper connection of the motor can result in a risk of electrical shock.

If it is necessary to use an extension cord, the cord should be grounded. Use the correct wire size for the extension cord, for a given cord length, to avoid power loss and over-heating.




IMPORTANT: For best protection of the Lathe use a surge protected plug outlet rated to at least 15 amps.

Ground Fault Interrupters (GFI's) or Residual Current Detectors (RCD's) are helpful and are a recommended protection device for any powertool. They can be used in conjunction with a DVR lathe without any problems.

Using the Nova Mercury Lathe

The Variable Speed DC Motor

 The DC motor contains brushes that contact the commutator. It is very important to allow between 30 to 45 minutes of 'run-in' time of these brushes before any turning or significant load is applied. This should be done in the higher rpm range. A clicking or swishing noise in the motor is normal which will reduce as the brushes wear in. During normal operation 5 minutes of warm up may also be required on cold mornings.

The motor is one of the most important elements in the lathe. The Mercury lathe uses a high quality and powerful DC (direct current) motor to provide the best turning characteristics. It has been wired in such a way that allows the lathe spindle to rotate in a counter-clockwise direction (when facing the spindle).

We use a permanent magnet DC motor (PMDC) which produces the most torque for conventional motors.

The motor is nominally rated at 1/2 Hp (180watts) but can produce a higher output than this.


Belt and Variable Speed Range

Coupled with the high torque DC motor we also use a 3-step pulley to provide optimum power bands. The label on the controller displays the ranges as 1, 2 and 3. With the unit facing the operator, Band 1 is the left most drive-belt position for the slower turning. Band 2 is in the middle and Band 3 on the right.

Optimal Speeds on Each Band		
Speed Band	Type of Work	RPM Range
1	Slower Speed Range: Larger faceplate & spindle work	140-1750
2	Medium Speed Range: Small faceplate work (up to 5") & smaller diameter spindle work	320-3670
3	Fast Speed Range: Small turning & miniature turning work	470-5350

Total Speed Ranges Available			
Belt Step	1	2	3
RPM	Slow	Medium	Fast
	140	320	470
	200	510	760
	510	1170	1780
	810	1780	2770
	1110	2400	3650
	1430	3000	4600
	1640	3570	5000
	1750	3670	5350

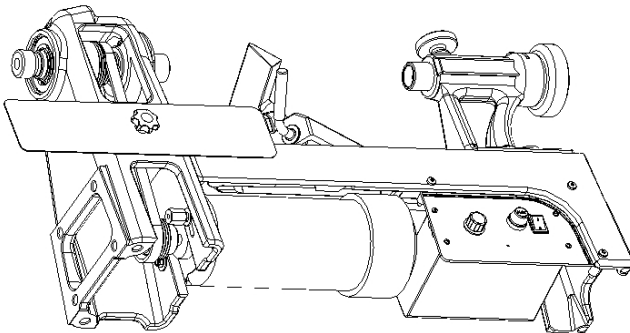
The speed ranges are achieved with a variable speed controller. A microprocessor chip in conjunction with other electronic components allows the input power to be manipulated. In return smooth variable DC power can be delivered from the controller to the motor.

 This is a Y type appliance where all electrical workings and attachments are **NOT** to be altered, replaced or worked on. Any work in this area is to be done by **TEKNATOOL International Only**. Please contact Teknatool International should any damage to the electrical workings occur.

Changing Speeds

1. When starting set the knob to about $\frac{1}{4}$ of the speed range and slowly bring the speed to the desired revolutions.
2. Starting the motor at the lowest possible setting may cause it to fail due to loading. However the lowest setting can be achieved by reducing the revolutions once the motor is in motion.
3. Rapidly turning the knob from low up to high speed is not recommended.

Changing Belt Positions



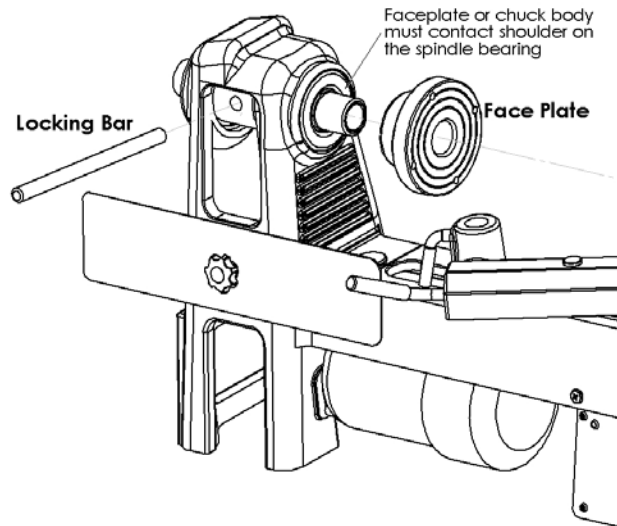
1. To change the belt position, ensure the machine is switched off.
2. Unlock belt guard by loosening knob. Rotate the guard so that it is sitting horizontal to bed (see picture).
3. Loosen the Motor mount locknut by hand or using a $\frac{1}{2}$ "AF spanner.
4. Lift the Motor slightly to get the belt off the pulley. The motor adjustment range is approximately 20mm ($\frac{3}{4}$ ").
5. Fit the belt to the desired step.
6. Tension the belt by pressing down on the motor with the hand. Pressing down with 2 fingers or the thumb will be adequate pressure. Slightly tighter pressure may be required for larger work.
Caution: Too much pressure on the motor will damage the motor bearings or break the motor shaft.
7. When the correct tension has been made, while holding the motor at the correct tension, tighten the motor mount locknut by hand and then using a $\frac{1}{2}$ "AF spanner.
Caution: Don't use too much tension on nut - It needs to be tightened only a little more than finger tight with a $\frac{1}{2}$ "AF spanner. (AF: across flats)
8. Swing belt guard to close position and re-lock knob.

Headstock

The headstock houses the motor pulley, headstock pulley, bearings, a belt and the spindle. The headstock spindle accepts centers and accessories with no. 2 Morse taper (#2 MT), plus threaded faceplates and chucks. The thread size is 1" 8 TPI RH and 1"8 TPI LH.

Mounting a faceplate or chuck

1. Use the locking bar to hold the headstock spindle in position.
2. Screw the faceplate or chuck onto the spindle threads. A spindle washer in-between may be used to make removal easier. As you tighten the faceplate or chuck body more force will need to be applied on the locking bar to hold the spindle stationary.



Warning!

The faceplate or chuck body must contact the shoulder on the spindle bearing.

3. Remove the spindle locking bar before turning on the lathe.
4. Similarly use the bar to dismount.

Using a spur center

1. Mount the spur center to the work piece as shown and then insert the spur center and work piece into the headstock spindle.



Warning!

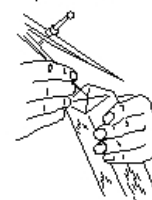
Do not pound work piece into headstock drive center when turning between centers or you may damage the headstock.

2. To remove the center, insert a 10 mm (3/8-inch) diameter wooden dowel or steel rod through the headstock spindle hole. While holding the center so it doesn't fall, tap it out.

Mark stock centers



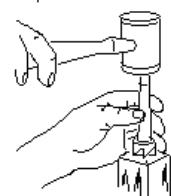
For softwoods - punch centers



For hardwoods - drill centres and saw diagonals for spur drive center



Set spur center with mallet



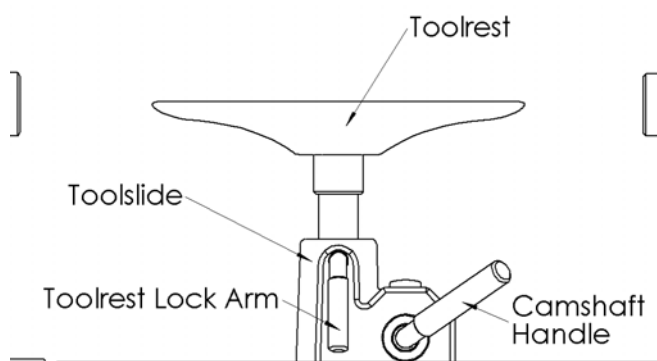
Toolrest

1. To move the toolslide along the bed, loosen the Camshaft Handle, move the slide to the desired position, and tighten the handle.
2. To adjust the toolrest, loosen the Toolrest Lock Arm, position the toolrest, and tighten the Lock Arm.
3. Adjust the toolrest close to the work piece. Exact positioning may be varied to suit the turner. Before turning, revolve the stock by hand to make sure it clears the rest. At intervals, stop the lathe and readjust the toolrest.



Warning!

Lathe tools and chisels should remain on the toolrest whenever the tool is in contact with the work piece. Remove the toolrest when sanding or polishing so fingers do not get pinched.



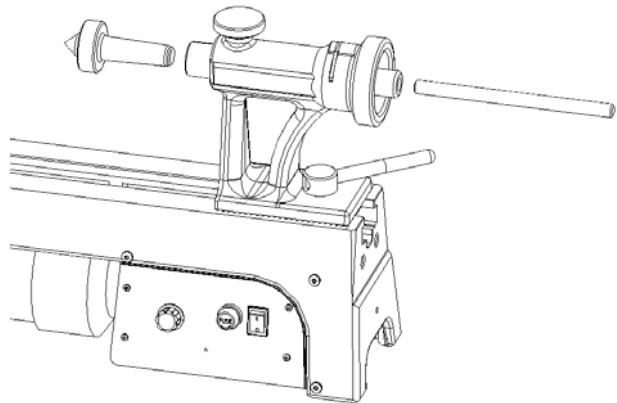
Tailstock



Warning!

Never loosen the tailstock quill or tailstock while the work piece is turning.

1. To move the tailstock along the bed, loosen the Tailstock Lock Arm, slide the tailstock to the desired position, and tighten the Lock Arm.
2. To move the tailstock quill in or out, loosen the Quill Lock Knob and turn the Handwheel. Lock the quill in place with the Quill Lock Knob.
3. The tailstock quill accepts centers and accessories with no. 2 Morse taper (#2 MT). To install a taper use a quick, firm action by hand. Do not pound the taper in.
4. To remove a taper, insert the knock out bar through the tailstock quill hole. While holding the taper so it doesn't fall, tap it out.
5. The tailstock quill is hollow, allowing you to bore holes through turnings if a hollow center is used.



Adjusting the Tailstock for Turning Between Centers

1. Mount the spur center to the work piece and insert the spur center into the headstock spindle, as previously described under "Using a Spur Center".



Warning!

Do not use the tailstock quill action to drive the work piece into the spur center. This can create an unsafe and loose work piece.

2. Mount the live center into the tailstock quill using a quick, firm action by hand.
3. While holding the work piece, slide the tailstock to meet it and lock the tailstock in place. Turn the Handwheel to apply light holding pressure to the work piece; it should turn easily by hand, yet not be loose. Tighten the Quill Lock.

Improving the Performance of your Lathe

To get the best performance out of your lathe it is good woodturning practice to keep all chisels and tools sharp. This can be achieved by regularly grinding the cutting edges on a grinder with the aid of a sharpening guide. Keeping the edges sharp significantly reduces the loading on the motor allowing for better output. Consequently turning conditions are improved and cleaner finishes are obtainable.

For improved turning it is desirable to have wood removed in shavings as opposed to chips. The position of your tool to the work-piece is very important in achieving this.

It is advisable to have an angle between the tool tip and the work-piece. The angle allows shavings of wood to be 'scooped' off in strips. It must also be noted that the type of wood and grain will affect the removal of wood from your work-piece.

To gain maximum torque from the motor it is advised that the belt is run on the smallest motor pulley diameter i.e. closest to the Outtrigger. Use the middle step for other general work.

Learning Turning

The last section outlined some simple guidelines and recommendations to get you started. However the art and technique of turning is a subject beyond the scope of this operating manual. It is recommended that you receive hands-on instruction on lathe turning and/or refer to books and videos on the subject. For reference, some woodturning books are:

Woodturning A Foundation Course
by Keith Rowley

Creative Woodturning
by Dale Nish

Turning Wood With Richard Raffan
by Richard Raffan

The Fundamentals of Woodturning
by Mike Darlow

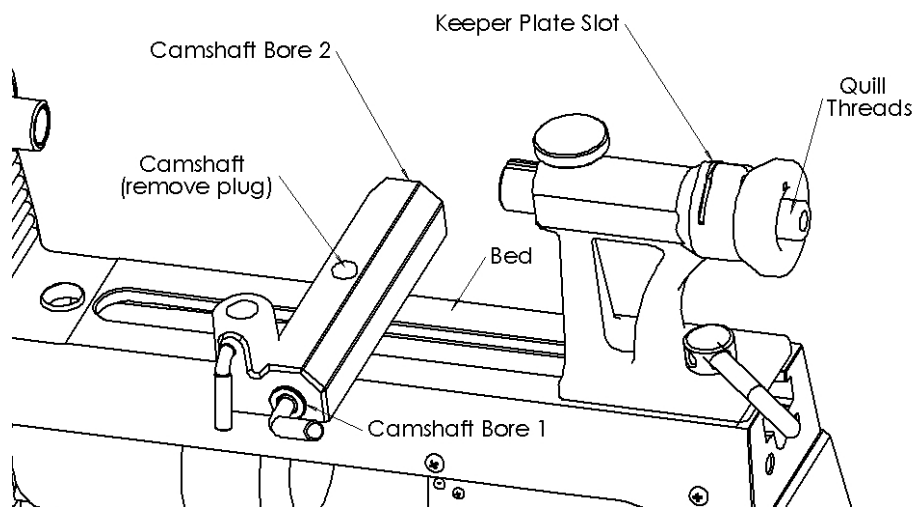
Woodcraft in the USA offer woodturning instruction courses. For more information visit Woodcrafts website at www.woodcraft.com

Maintaining the Nova Mercury

General Maintenance

<i>Interval</i>	<i>Maintenance</i>
After each use	Clean the work area and lathe. Vacuum scraps and dust from the inside the headstock, between the lathe bed rails, and under the toolslide and tailstock.
Monthly	Wax exposed cast iron parts with a good quality paste wax or silicone spray, especially the bed rails. Buff out the wax thoroughly. Check tightness of nuts and bolts; especially the grub screw (set screw) on the motor pulley and the lathe mounting bolts. Lubricate, with one or two drops of light-weight oil, the tailstock quill threads, index pin shaft, and the toolslide camshaft (remove plastic plug) and toolslide camshaft bores.
6 Months	Grease tailstock quill threads. Turn the handwheel so the quill threads are exposed, apply grease to the threads, crank the handwheel back and forth to work in the grease, wipe off any excess. Lubricate the tailstock slot with one or two drops of light-weight oil.

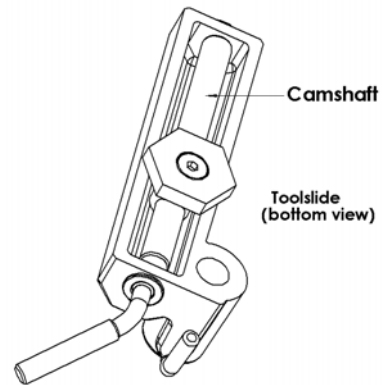
Lubrication Locations



Cleaning the Toolslide

If the toolslide becomes hard to move and adjust, cleaning and lubricating are required.

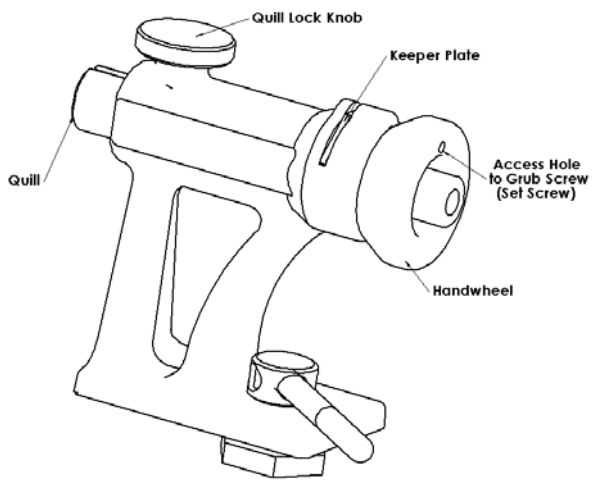
1. To make the toolslide slide more freely along the bed, make sure the bed rails are clean. Apply some paste wax to the rails.
2. If the toolslide is hard to move towards or away from you, remove the toolslide from the lathe bed. Clean the toolslide camshaft (round eccentric rod) with a petroleum-based solvent. Lubricate the rod with a light-weight oil or a silicone spray.
3. Slide the base back onto the lathe bed.



Cleaning the Tailstock

If the tailstock quill becomes hard to use or the Handwheel is hard to turn, cleaning and lubricating are required.

1. Remove the 6mm grub screw from the tailstock. If necessary, turn the Handwheel (to 12 o'clock) to expose the set screw. You will see a hole in the face of the handwheel that gives access for an Allen key/wrench. A 3mm A/F (across flats) Allen key is required (not supplied).
2. Using a screwdriver, remove the keeper plate from the tailstock body.
3. Remove the quill and Handwheel from the tailstock body.
4. Wipe clean all parts including the inside of the tailstock.
5. Lubricate the quill and tailstock slot with a light-weight oil and apply a small amount of grease to the quill threads.
6. Reassemble.



Maintenance of the Motor

Keep the motor free of saw dust and wood chips especially around the fan housing.

Periodically check for any abnormal noise or excessive heat.

The Brushes should be checked every five years and replaced when brush length is less than 6mm (1/4").

For motor or electronic problems the machine should be taken to the nearest service center. See the contact details at the front of this catalogue. In USA contact Woodcraft 1-800-535-4486.

Troubleshooting Guide

<i>Problem</i>	<i>Possible Cause and Solution</i>
<i>Excessive vibration.</i>	<p>Out of balance, or large work piece. Reduce lathe speed to the lowest speed possible and turn the work piece to a true circle.</p> <p>Work piece is not held in the center. Check work piece mounting and correct.</p> <p>Work piece is not secure or held tight enough. Check work piece mounting and correct.</p> <p>Lathe incorrectly bolted to stand or bench. Refer to this manual for lathe stand recommendations.</p> <p>Stand or bench not well constructed too light, or standing incorrectly on the floor. Make sure the stand is solidly constructed.</p> <p>Over tensioning of belt is a primary cause of vibration. The drive belt is running badly, over tensioned, or damaged. Apply a spray-on belt dressing on the belt grooves, readjust belt tension, or replace the belt.</p> <p>Motor pulley is not in correct alignment with the headstock pulley. Loosen the motor pulley grub screw and align the pulleys. Ensure motor pulley grub screws are tight once in position.</p> <p>Headstock pulley or motor pulley is loose. Check that the pulley set screws are tight.</p> <p>The headstock guard is loose or rattling. Check that the belt guard knob is tight.</p> <p>Ensure motor adjustment locknut and M5 nyloc nut are tight.</p> <p>Motor vibrates. Many single-phase motors produce minor noise or vibrations; these usually cannot be altered. Sometimes new brushes take time to wear in and a reduction in noise can be noticed after a few hours of running.</p>
<i>Faceplate or chuck running out of true.</i>	<p>Dirt build-up on the rear of the faceplates or chuck. Clean off all build up and dirt. Faceplates and chucks must mount securely against the inner bearing ring surface of the spindle.</p>
<i>Turning tools not sliding smoothly across Toolrest.</i>	<p>Damaged surface on toolrest face caused by sharp edged tools. File the toolrest using a fine smooth file and polish with extra fine sandpaper. Also remove the sharp edges from the corners of turning tools.</p>
<i>Spur drive center or live center not holding into the spindle taper or quill taper when turning.</i>	<p>Small end of Morse taper is damaged due to dropping or hitting. File or polish away any damage. Check that inside of tapers have not been scored.</p> <p>Grease or oil inside of Morse tapers. Wipe clean the inside of the tapers.</p> <p>Insufficient pressure when installing the center. Use a quick, firm action by hand to install a taper. Do not knock in using any solid object.</p>

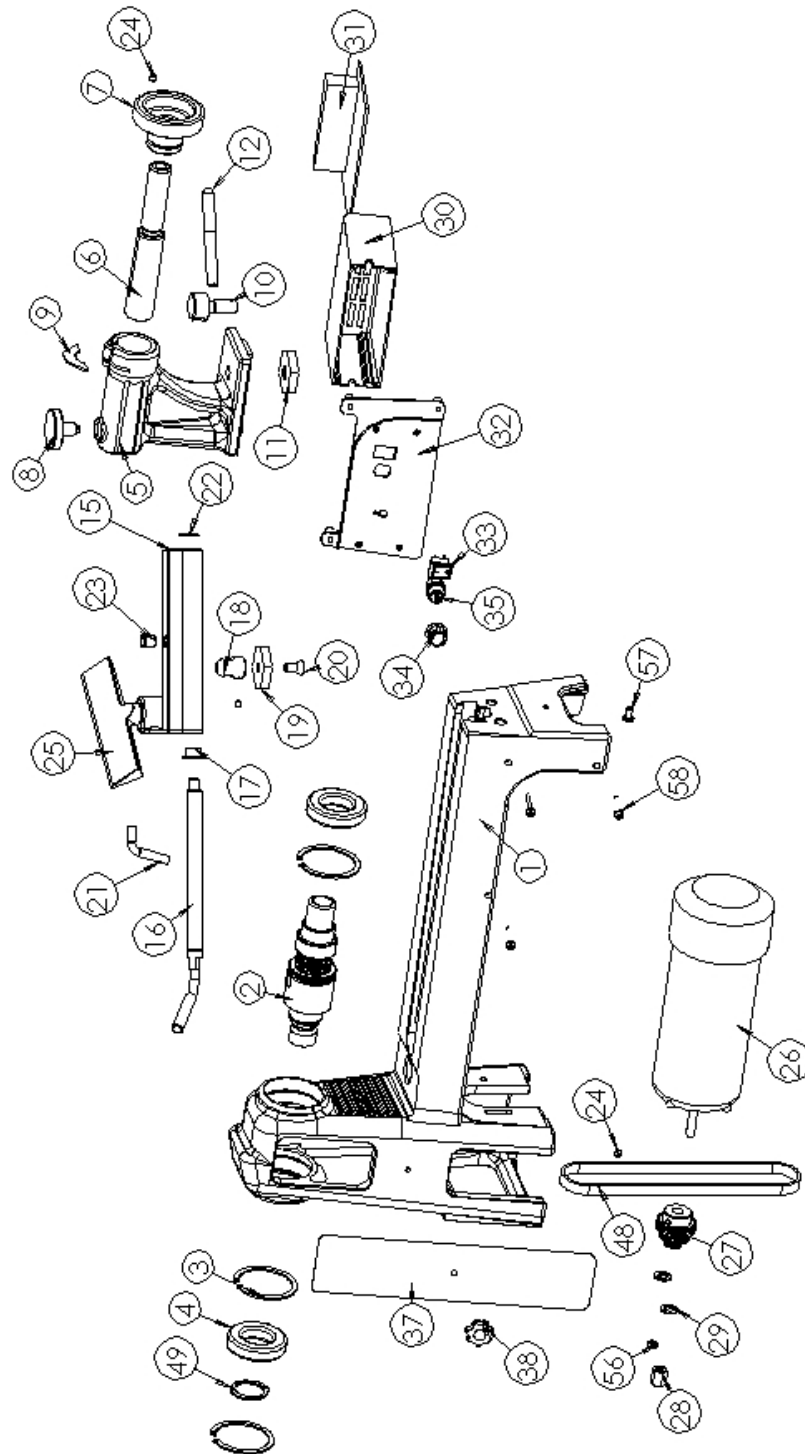
Troubleshooting Guide

<i>Problem</i>	<i>Possible Cause and Solution</i>
<i>Tailstock and headstock center not lining up correctly.</i>	Bed incorrectly bolted to stand causing twist. Ensure stand and lathe are correctly installed. Tailstock base is not flush with bed. Check for debris on both surfaces
<i>Motor doesn't run.</i>	Check for severed electrical cords. Remove plug from power outlet socket. Check an appliance that you know works in the power outlet socket. If it fails then check fuse in switch board corresponding to that socket. If socket is operating then the control unit of the Mercury Lathe may have blown. Contact your nearest service centre for replacement.
<i>Tailstock handwheel hard to turn or will not turn.</i>	Quill lock is locked; unlock the quill lock. If necessary, lightly tap a block of wood against the handwheel handle; tap the handle in a clockwise direction as viewed from the tailstock end. Build up of dust and wood resin on the quill or inside of the handwheel thread. Remove, clean, and lubricate the quill and tailstock as described under "Cleaning the Tailstock". The quill has been retracted too far and is locked against the handwheel.
<i>Tailstock quill hard to move.</i>	Quill lock is locked; unlock the quill lock. The quill is damaged; turn the handle to expose the quill and check for marks along the quill, especially on the edges of the slotted keyway Remove the high spots with a smooth file and test the quill travel. Replace the quill if necessary.
<i>Tailstock not sliding smoothly on bed ways.</i>	Dirty bed ways and underside of tailstock body. Clean bed ways and underside of tailstock body with a petroleum-based solvent.
<i>Tailstock binds.</i>	The inside of the bed has a high spot. File the area with a smooth flat file until the tailstock moves freely. The tailstock adjustment plate has a rough spot or a burr. Remove the tailstock and file the plate with a smooth flat file.
<i>Tailstock jumps where bed sections join.</i>	The machined flat surfaces are not flush. File the area with a smooth flat file until the tailstock moves freely.

For other technical issues contact your local service centre or e-mail us at service@teknatool.com. In the USA contact Woodcraft technical at tech@woodcraft.com or phone 1800-535-4486

Nova Mercury Woodlathe Exploded View

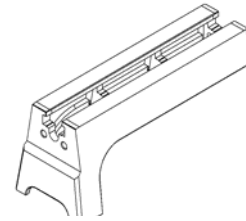
See parts list on page 25



Mercury Accessories

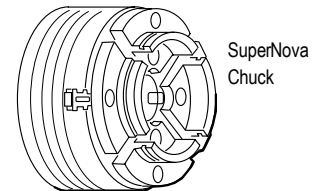
Add On Bed Extension # 38012

Extend the bed of your Nova Mercury Woodlathe for greater capacity for turning between centers. Each bed unit adds 300 (12 in)



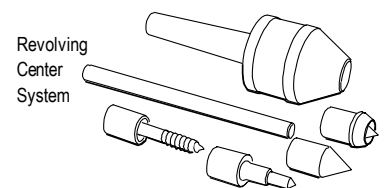
SuperNova Chuck

A next-generation, self-centering chuck to securely hold round and square work pieces for centerless turning. The special Tuff Lock gearing delivers amazing holding power in both the contraction and expansion mode. It has an open-back for easy cleaning and can be tightened one-handed with an articulated key. It includes a screw chuck. A wide variety of optional jaws are available to hold almost any work piece.



Revolving Center System # NCLS or # NLCS1

A multi-function live center system to expand your options when turning between centers. It includes quick-change tapers: a hollow cup center point, threaded center, cone center, and an extension center. Made with three bearings and precision machined for a high quality finish.



Outrigger Unit #38011

Extend the bowl turning capacity of the Nova Mercury Woodlathe to around 10" in diameter. This unit is made from cast iron, is easy to position and control, and mounts to the headstock end of the lathe.

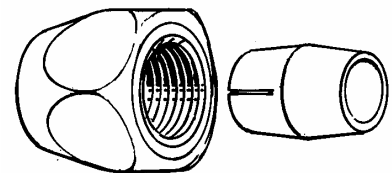
Collet Quill

NCQS (pre Dec 02) # 29013 (post Dec 02)

The Collet Quill is a handy drill holder that screws onto your Mercury Tailstock Quill (and Headstock spindle for post Dec 02 Mercury lathes).

It has two advantages over normal drill chucks:

1. Virtually no overhang. MT Drill Chucks take up considerable bed length, which restricts drilling options.
2. Better support for Drilling Point. Drill length can be shortened so only the optimum drill length is used for the drilling job. Without the Morse taper, the drill tip is centred more accurately with less tendency to wander.



For further details about Teknatool's lathe accessories please contact your local retailer for more information, or contact us directly. Visit our website at www.teknatool.com.


Teknatool Warranty

Teknatool Five Year Limited Warranty

This Teknatool product is backed by a FIVE YEAR warranty from the date of purchase. Teknatool International Ltd will repair or replace, at its expense and option, this Teknatool product which in normal use has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to an authorized Teknatool service center with proof of purchase of the product within TWO YEARS and provides Teknatool with reasonable opportunity to verify the alleged defect by inspection. Furthermore, Teknatool International Ltd. extends this two year period for three additional years, excluding labor costs and drive belts, provided the aforementioned conditions are met. Motors and electronic controls are not covered under this warranty; these are warranted by their respective manufacturer.

Teknatool will not be responsible for any asserted defect which has resulted from normal wear, misuse, abuse, or repair or alteration made by anyone other than an authorized service facility or representative. Under no circumstances will Teknatool International Ltd. be liable for incidental, special, indirect, and consequential damages or expenses, including loss of profits or loss of operations. This warranty is Teknatool International Ltd. sole warranty. There are no other warranties, whether written or verbal, whether expressed or implied by law, trade, custom, or otherwise, whether of merchantability, fitness for purpose, or otherwise, except for remedies available to customers under the Consumer Guarantees Act or other legislation.

OVERSEAS CUSTOMERS: Our Teknatool Distributors and agents will issue their own warranty to cover this product. Terms may vary from those stated above; please check with your dealer.

 Note: Did you know you can register your warranty with Teknatool online? Visit our website on www.teknatool.com to register your warranty faster today! Or you can fill out the card below, cut, fold, seal and post.



Teknatool Warranty Card

Return this card to validate your warranty, or register online at www.teknatool.com.

Name: _____

Address: _____

Email Address: _____

Teknatool Product Model _____

Serial Number (on headstock cover) _____

Date of Purchase _____

Reseller _____

Would you like to be on our mailing list and receive complimentary copies of our Teknatool Newsletter? (Personal information is kept confidential.)

Yes, by normal mail Yes, by email No

To help us provide services and products that are better tailored to your needs, please answer the following:

- Where did you purchase the product? (check one)
 Local Woodturning Specialty Manufacturer
 Local General Woodworking Mailorder Catalog
 Other (specify) _____
 - Did you receive all information you required and expected?
 Yes No
If no, explain: _____
 - What other products did you buy along with lathe purchase?
 Lathe Chuck Finishes Power Tools
 Lathe Chisels Abrasives Other Products
 Lathe Accessories (list) _____
 - Why did you buy the Nova Lathe?
 Features Quality Warranty Store Advice
 Price NZ Made Accessories Product Support
 Recommended Reputation of Brand
 - Rate your woodturning and woodworking experience:
 Beginner Intermediate Advanced
- Comments _____

 Note: To locate your unique lathe serial number, locate the number stamped on the headstock guard sticker.

Steps to registering your Warranty by Mail:

1. Fill out the information on page 30, duplicate your serial number here for your future reference:

Serial Number: _____

- 2. Cut along the dotted line as indicated by the scissors icon.
- 3. Take the cut out, and fold along dotted line as shown.
- 4. Seal edges with sellotape/glue/tape etc.
- 5. Affix appropriate Postage Stamps for postage to New Zealand and post.
- 6. *Optional:* List your return address details in the event of mishandled post.



Affix
Postage

Post To:

TEKNATOOL INTERNATIONAL

Warranty Registration

PO Box 180034 Luckens Point

Henderson

Auckland 1008

NEW ZEALAND

Fold
Here

Fold
Here

Return Address:

Seal Along Edge

Seal Along Edge



Nova Mercury Woodlathe Manual

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