Nova Comet II ™ Wood Lathe

INSTRUCTION / PARTS MANUAL

Teknatool INTERNATIONAL

Publication No. 118-0817-007 **Updated 21 August 2017**

Patent Application 593-446

NOVA Comet II™ Wood Lathe
Features at a Glance:

Add-On Bed Extension System

A lathe that meets your woodturning needs, your workshop space, or your budget. Each bed extension is 24.6" /625mm) in length. This feature is appealing for many different reasons.

As a compact lathe (standard configuration), it is great for small turning(s) in small workshop spaces. It can also be used as an extended bed lathe for those wanting to turn longer pieces. One additional bed extension increases the length to 41.1"/1044mm.

Speed Range

The Nova Comet II™ Wood Lathe has a 3-step Electronic Variable Speed range. One of the best in the industry for mini lathe work. Low range: slower speeds from 250 RPM up to 680 RPM for larger spindle and bowl work. Medium range: from 530 RPM up to 1420 RPM for smaller items such as Pen work. Fast range: from 1380 RPM up to 4000 RPM for miniature turning work. Most other mini lathes do not have this fast speed range for true miniature work. Electronic Variable Speed allows you to quickly dial-in the correct speed for the job, material and conditions. In addition, you're not limited to potentially dangerous fixed-speed steps.

Reverse Option

The Nova Comet II™ Wood Lathe has the capability, at the flick of a switch, to change direction into reverse. This feature enables the turner to sand with the lathe in reverse eliminating problem areas which cannot normally be sanded smooth in the forward direction.

Optional Grinder Attachment

At last there is now a lathe which not only saves the turner having to buy a bench grinder or equivalent, but also allows the turner to quickly touch-up chisels as they lose their cutting edge. The optional Versa turn Grinder Attachment on the Nova Comet II™ Wood Lathe provides a safe, economical and practical way of keeping the edge on your tools.

Solid Construction

Well proven design. The critical components of the Nova Comet II™ Wood Lathe are made from cast-iron for strength, rigidity and vibration reduction.

Welcome!

Thank you for choosing NOVA and our Nova Comet II™ Mini Wood Lathe.

Welcome to the NOVA Family of Woodworking Products.

Your choice shows you want the best for your woodturning and recognize the superior and unique benefits the Nova Comet II Wood Lathe offers.

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

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

Please complete and return your warranty registration to us (your warranty registration can also can be completed on our website). Please feel free to contact us about any aspect of our products or services. We consider our customers as our best development and improvement team - we'd love to hear from you!

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

Best Regards,

Brian Latimer

Marketing Director

Teknatool International, Ltd

Contact Teknatool

New Zealand

Teknatool International Ltd

Phone: (+64) 9 477 5600

Fax: (+64) 9 477 5601

Email: service@teknatool.com

Website: www.teknatool.com

United States

Teknatool Innovation and Customer Care Center

Phone: 727-954-3433

Phone: 1-866-748-3025

Fax: 727-623-0902

Email: service@teknatool.com

Website: www.teknatool.com

For service enquiries, you can contact us above, or contact the retailer where you have purchased your NOVA Comet II 12" Midi Lathe.

Table of Contents:

GENERAL SAFETY RULES: 6
ADDITIONAL SAFETY RULES FOR WOOD LATHES: 7
Nova Comet II Wood Lathe Specifications: 8
Setting Up Your Workshop: 9
Workshop Requirements 9
Lathe Stand Recommendations 9
Assembling the Nova Comet II Wood Lathe: 10
Assembling the Tailstock: 11
Adding a Bed Extension: 12
Connecting the Comet II Wood Lathe to a Power Source: 12
Using the Nova Comet II Wood Lathe: 13
Direction of Lathe Rotation: 14
Changing Speeds: 14
Changing Belt Positions: 14
Headstock: 15
Using the Spindle Index: 15
Mounting a Faceplate or Chuck: 16
Tool Rest 16
Tailstock: 17
Adjusting the Tailstock for Turning Between Centers: 17
Using a Drive (spur) Center: 18
Improving the Performance of your Lathe: 18
Learning to Turn: 18
Maintaining the Nova Comet II Wood Lathe: 19
General Maintenance: 19
Lubrication Locations: 19
Cleaning the Tool Slide: 20
Cleaning the Tailstock: 20
Maintenance of the Motor: 20
Belt Replacement Procedure 21
Troubleshooting Guide: 24
Troubleshooting Guide Continued: 25
Nova Comet II Wood Lathe Exploded View 26
Nova Comet II Wood Lathe Parts List 27
Comet II Wood Lathe Accessories: 29
Comet II Wood Lathe Accessories: 30

© Copyright 2000 -2013 by Teknatool International. All Rights Reserved. NOVA Comet II™ and NOVA Versaturn™ are trademarks of Teknatool International Ltd.

The information and specifications contained herein are subject to change. Teknatool is not responsible for errors or omissions herein or for incidental damages in connection with the furnishing or use of this information.

GENERAL SAFETY RULES:

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

1. **FOR YOUR OWN SAFETY, READ THE MANUAL BEFORE OPERATING THE TOOL.** Learn the machine's applications, limitations and the specific hazards particular to it.
2. **ALWAYS USE A FULL FACE SHIELD- Strongly recommended** and must comply with ANSI STANDARD Z87.1 –USA. Everyday eyeglasses usually are only impact resistant and safety glasses only protect eyes. A full face shield will protect the eyes and face. Also use a face and dust mask if the cutting operation is dusty.
3. **WEAR PROPER APPAREL.** Do not wear loose fitting clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts. Non-slip footwear is also recommended. Wear a protective hair covering to contain long hair.
4. **USE EAR PROTECTORS.** Use ear protection, plugs or muffs, for extended periods of operation. Use ear plugs/muffs rated to 103 DBA LEQ (8 hour).
5. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp/ wet locations or expose them to rain. Keep work area well lit.
6. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents. Build-up of sawdust is a fire hazard.
7. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept at a safe distance from the work area.
8. **MAKE WORKSHOP CHILDPROOF** with locks, master switches or by removing starter keys.
9. **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!
10. **MAKE SURE TOOL IS DISCONNECTED FROM THE POWER SUPPLY** while the motor is being mounted, connected, or reconnected.
11. **DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits cutters, etc.
12. **AVOID ACCIDENTAL STARTING.** Make sure switch is in the "Off" position before plugging in the power cord.
13. **NEVER LEAVE MACHINE RUNNING UNATTENDED.** Do not leave tool unless it is turned "Off" and has come to a complete stop.
14. **KEEP GUARDS IN PLACE** and in working order.
15. **USE THE RIGHT TOOL.** Do not use a tool or attachment to do a job for which it was not intended or designed.
16. **USE RECOMMENDED ACCESSORIES.** The use of improper accessories may cause hazards and could result in serious personal injury.
17. **DON'T FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.
18. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
19. **NEVER STAND ON THE TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
20. **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".
21. **DON'T OVERREACH.** Keep proper footing and balance at all times.
22. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
23. **ATTENTION TO WORK.** Concentrate on your work. If you become tired or frustrated, leave it for a while and rest.
24. **SECURE WORK.** Use clamps or a vice to hold your work when practical. It's safer than using your hand and frees both hands to operate the tool.
25. **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(s) should be properly repaired or replaced.
26. **DRUGS, ALCOHOL OR MEDICATION.** Do not operate the tool while under the influence of drugs, alcohol, or any medication(s).
27. **DUST WARNING.** The dust generated by certain woods and wood products can be hazardous to your health. Always operate machinery in well ventilated areas and provide for proper dust removal. Use wood dust collection systems and approved dust masks whenever possible.

Caution:

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

ADDITIONAL SAFETY RULES FOR WOOD LATHES:

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

1. **REMOVE ACCESSORIES WHEN NOT IN USE.** When Versaturn™ accessories are not in direct use, they should be **removed from the lathe** to prevent accidental contact.
2. **BEWARE OF ATTACHMENTS IN OPERATION.** Care must be taken to not accidently come in contact with the accessory attachments as it will be powered whenever the spindle is rotating.
3. **DO NOT MODIFY OR USE THE LATHE FOR USES OTHER THAN FOR WHICH IT WAS INTENDED OR DESIGNED.**
4. **SEEK INSTRUCTION. If you are not thoroughly familiar with the operation of wood lathes,** obtain advice from your supervisor, instructor, or other qualified person. Instruction from a qualified person is strongly recommended.
5. **DO NOT OPERATE THE LATHE** until it is completely assembled and installed.
6. **FOLLOW ELECTRICAL CODES.** Make sure wiring codes and recommended electrical **connections are followed** and that the machine is properly grounded.
7. **KEEP WORK AREA CLEAN. Do n**ot turn **t**he lathe "on" before clearing the lathe of all objects (tools, scraps of wood, etc.). Keep the nearby area an**d floor clear of debris**.
8. **CHECK SET-UP** with the power "Off", examine the set-up carefully and rotate the work piece by hand to check clearances before turning "On" the power.
9. **DO NOT MAKE ADJUSTMENTS when t**he lathe or work p**i**ece is turning. **M**ake all adjus**t**ments with power **"**Off".
10. **TIGHTEN ALL CLAMP HANDLES** on the headstock, t**ailstock, and the tool re**st before operating the lathe.
11. **EXAMINE THE WORK PIECE and** glue joints before turning to make sure it has no defects that would cause i**t to break/split while** turning.
12. **USE THE LOWEST SPEED w**hen turning a new or unbalanced work piece.
13. **TURN AT RECOMMENDED SPEED.** Always operate the lathe at the recommen**ded speeds. Consult this manu**al for suggested speeds.
14. **ADJUST THE TOOL REST** close to the work piece. Before turning, rotate the stock by hand to make sure it clears the tool rest. At intervals, stop the lathe and readjust the tool rest.
15. **KEEP THE TOOL ON THE TOOL REST.** Tools should remain on the Tool Rest whenever the tool is engaged in the work piece.
16. **REMOVE THE TOOL REST** when sanding or polishing so fingers do not get pinched.
17. **DIRECTION OF FEED.** Feed work into blade or cutter only against the direction of rotation of work piece.
18. **USE THE CORRECT LATHE TOOLS.** Do not use spindle turning chisels for faceplate mounted work or vice versa. Spindle turning tools used for faceplate turning may grab the work piece and pull the chisel from your control.
19. **WHEN ROUGHING STOCK** do not jam the lathe tool or chisel into work piece or take too big/deep a cut.
20. **DO NOT POUND THE WORK PIECE** onto headstock drive (spur) center while attaching it to the lathe. Pound the drive (spur) center into the work piece with a soft mallet before installing it in the headstock.
21. **DO NOT USE THE TAILSTOCK** to drive the work piece onto the drive (spur) center when turning between centers. Secure work between the centers with light pressure from the tailstock quill adjustment.
22. **FASTEN STOCK SECURELY BETWEEN CENTERS.** Make sure the tailstock is locked before turning "On" the power.
23. **NEVER LOOSEN TAILSTOCK** spindle or tailstock while work piece is turning.
24. **CORRECTLY USE THE FACEPLATE.** When faceplate turning, make sure work piece is securely fastened to the faceplate and that the 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 the finished shape before installing it on the faceplate.
25. **DO NOT OPERATE THE LATHE IF DAMAGED OR FAULTY.** If any part(s) 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 the operation.
26. **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 01.1 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 Comet II™ Wood Lathe will require the use of a NO VOLT RELEASE. For these applications, the lathe may also fall under additional regulations. Note: In the USA a Low Voltage Control (LVC) is required.

Nova Comet II Wood Lathe Specifications:

Weight:

77.2lbs (35Kgs) Packaged.

Overall dimensions:

Length: 29.3" approx. (744mm)

Height: 14.5" approx. (370mm)

(Top of headstock from bench)

Swing over bed: 12" (305mm)

Distance Between Centers: 16.5" (420mm)*

(*Can be increased with 24.6"/625mm Optional Accessory Extension beds)

Headstock:

Spindle Thread: 1"- 8TPI RH.

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

Through Bore: 3/8" (10mm)

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

Tailstock:

Self-Ejecting

Tailstock Bore: 2MT

Quill Travel: 2" (50mm)

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

Tool Rest:

Length: 6" (150mm)

Shaft Diameter: 5/8" (15mm)

Motor:

3/4 HP (550W) Average Output

DC (Permanent Magnet) Variable Speed Drive.

Speeds:

Low Speed Pulley: 250 RPM – 680 RPM

(Left pulley step looking at spindle from operator side)

Middle Speed Pulley: 530 RPM – 1420 RPM

High Speed Pulley: 1380 RPM – 4000 RPM

Standard Equipment:

Spindle Hand Wheel

Live Tailstock (Revolving Center) 2MT

Drive (Spur) Center: 2MT

3.15" (80mm) Faceplate

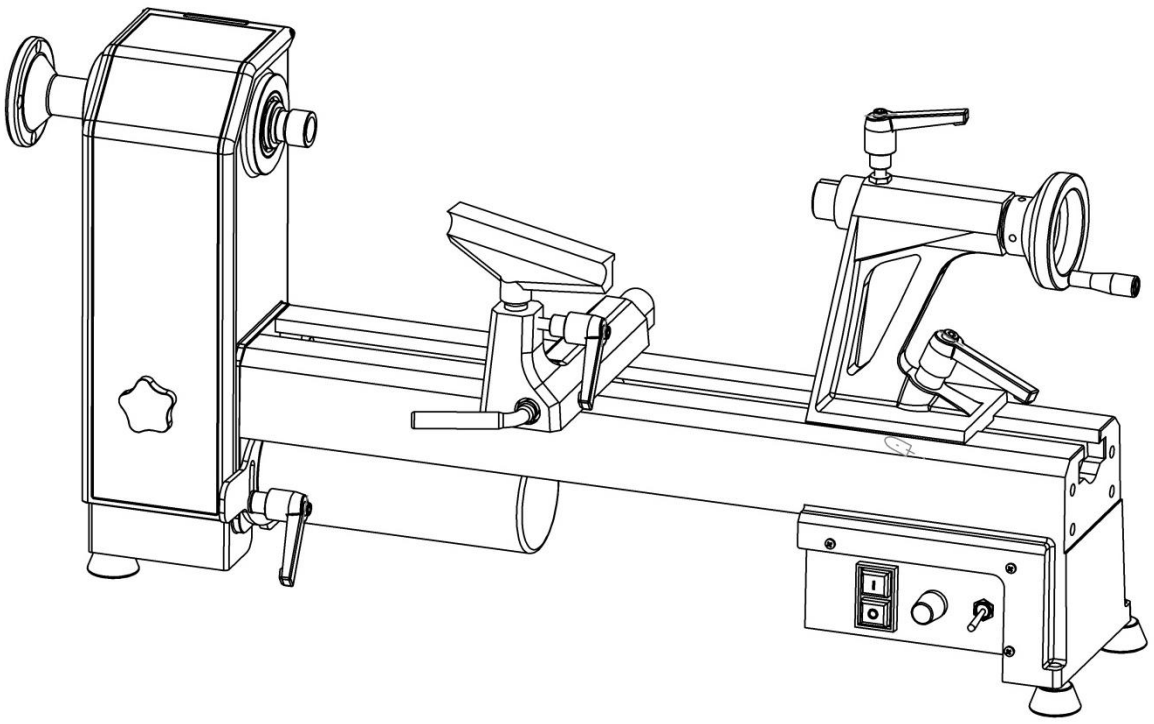
6" (150mm) Tool Rest

Optional Accessories:

Comet II Bed Extension

Nova Versaturn Accessories

Nova G3 Chuck System with reverse direction lock



Setting Up Your Workshop:

Workshop Requirements

Consideration	*Recommendation*
Lathe Location:	Locate the Nova Comet II Wood Lathe close to a power source in an area with good lighting. If you are using it in a workshop, other machines 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 and there should not be shadows cast upon your work. If possible, locate near a window. A moveable spotlight may be helpful.
Electrical:	The Nova Comet II Wood Lathe requires an 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 Comet II Wood Lathe does not normally create a big dust problem, however, the use of dust collectors, masks and filters will minimize the risks to your health.

Lathe Stand Recommendations

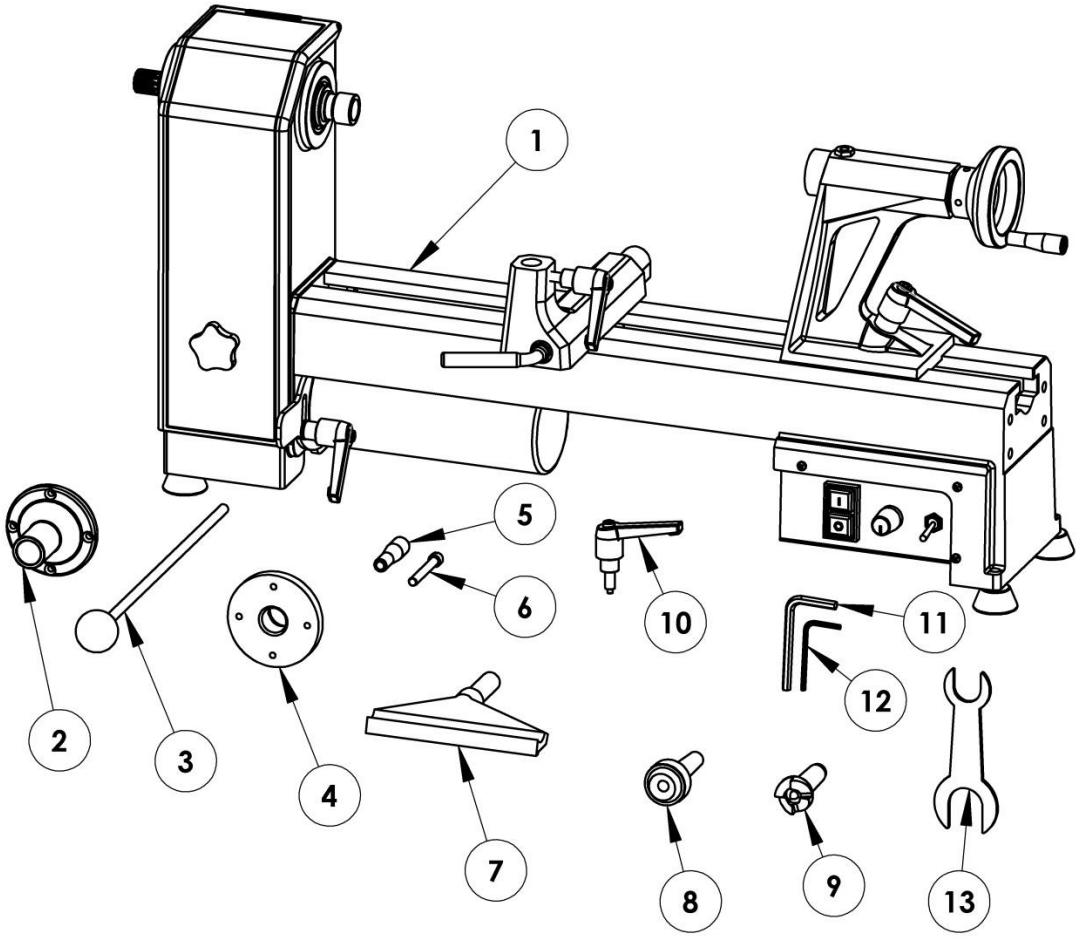
A sturdy/rigid stand is desirable so that the Nova Comet II Wood Lathe can deliver optimum performance. The larger the size of your turnings, the greater the importance of the lathe stand. However, for many smaller projects, simply mounting the Comet II Wood Lathe on a bench top or table will suffice.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

Consideration	*Recommendation*
Lathe Height from Floor:	The height of the stand should be located with 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 sitting on top. If the lathe is to be bolted down and the feet are removed, the lathe should ideally be mounted on spacer blocks to allow extra clearance for the motor. Check for any gaps between the lathe base and stand top before bolting it down. Shim and prepare stand as necessary.
Stand Weight:	The stand should have enough weight and mass so it doesn't move when turning large work pieces. In addition, a heavier stand can absorb vibration.
Stand Legs:	The stand should sit level on the floor and not rock side-to side or front-to back.

Assembling the Nova Comet II Wood Lathe:

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

Nova Comet II Components after Unpacking



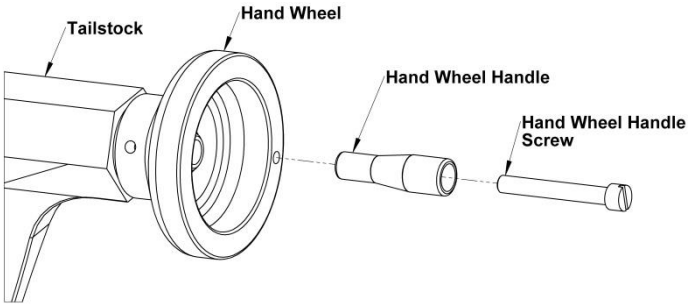
Qty.	Part number	Stock Code	Part description
1	1	46000	Comet II lathe
1	2	46036	LHB (Hand Wheel/Break)
1	3	46032	OP Bar
1	4	46033	Faceplate
1	5	46020	Tailstock Handwheel handle
1	6	46037	Tailstock Handwheel Handle Screw
1	7	46026	Tool Rest
1	8	46503	Live Centre
1	9	46502	Spur Centre
1	10	46025	Tailstock Quill Lock Handle
1	11	AK5	5mm Hex Key (EU only)
1	12	AK3	3mm Hex Key
1	13	46041	Faceplate Spanner

1. Unpack the lathe and its components from the shipping package.
2. Clean any parts coated with the rust preventative compound with a cloth moistened with a petroleum-based solvent or cleanser, such as Kerosene or Mineral Spirits. After all the parts have been cleaned, coat the lathe bed with paste wax or a dry silicon spray.
3. Insert the Tool Rest into the Tool Slide and secure it with the lock handle.
4. Assemble the Tailstock Handle and quill lock as below.
5. Place the Drive Spur Center into the Headstock and the Live Center into the Tailstock. Gently slide the tailstock up to the Headstock until the two points nearly touch. They should align. If not, see page 25 for alignment procedures. Also consider loosening the bolts holding the headstock to the bed and aligning the headstock so the two points, head and tailstocks, align vertically and horizontally.
6. Screw the LHB (Hand wheel) onto the outboard end of the Spindle

Assembling the Tailstock:

1. Insert the Hand Wheel handle screw into the Hand Wheel Handle.
2. Using a flat head screw driver, screw the hand wheel handle onto the rear face of the Hand Wheel and tighten.

Installing the Hand Wheel Handle

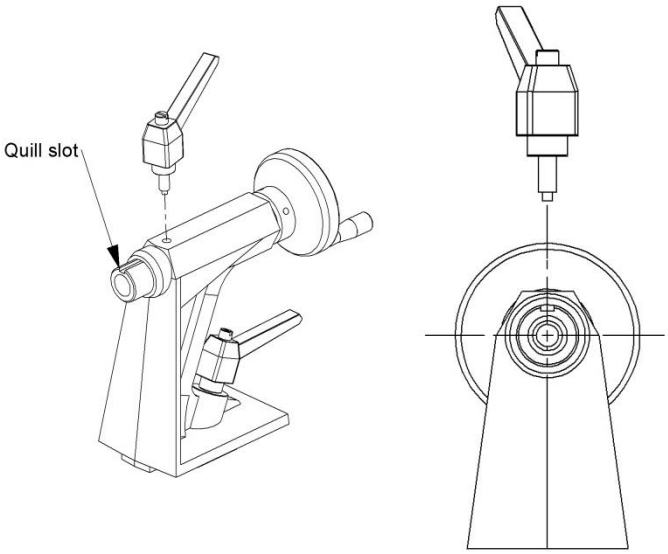


Installing the lock Handle

3. Align the quill so that the slot is facing upward and parallel with the top of the tailstock.
4. Install the locking handle into the top of the tailstock so that it will enter into the slot of the quill.

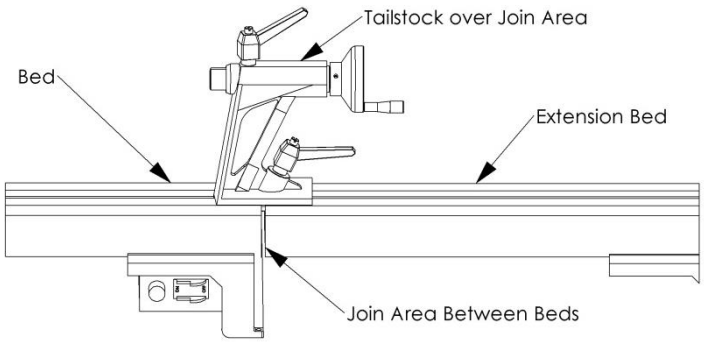
Make sure the locking handle is in the correct position by trying to rotate the quill.

If it cannot be rotated, the locking handle and quill are in the correct positions.



Adding a Bed Extension:

Each cast-iron Bed Extension adds 24.6”/625mm to the lathe's length.



1. Clean the joining ends of both bed sections with a petroleum-based solvent. Make sure there are no dents or burrs on either of the mating surfaces. Remove burrs and high spots with a smooth file.
2. Place the two mating faces together and install the Four M10 cap screws. Note: only install finger tight at this time.

Warning!
Do not use a metal hammer to pound on the Bed Extension. This may damage the bed, affect accuracy and tailstock action. In addition, it may prevent you from adding another Bed Extension.

3. Move the tailstock until it is on top of the area where the Bed Extension face meets the Lathe Bed face (see illustration). The Bed Extension may need to be manipulated up, down or sideways in order for the tailstock to fit.
4. With the Lathe Bed and Bed Extension in alignment, tighten the Tailstock Locking Handle down in its current position.
5. Tighten the two M10 cap screws that were previously installed.
6. Check to ensure that the Tailstock moves freely over the mating joint and also over the full length of the add-on Bed Extension. If there is a ridge between the two mating surfaces, repeat steps 1-5 again.

Connecting the Comet II Wood Lathe to a Power Source:

The electric motor, switch, cord and controllers are supplied with the Comet II Wood 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 a 3-wire, with 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 power tool.

Using the Nova Comet II Wood Lathe:

The Variable-Speed DC (Direct Current) Motor

⚠ **The DC motor contains brushes that contact the commutator. <u>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</u>. 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 weather days.**

The motor is one of the most important elements in the lathe. The Comet II Wood Lathe uses a high quality and powerful DC motor to provide the best turning performance. It has been pre-wired in such a way that it 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.

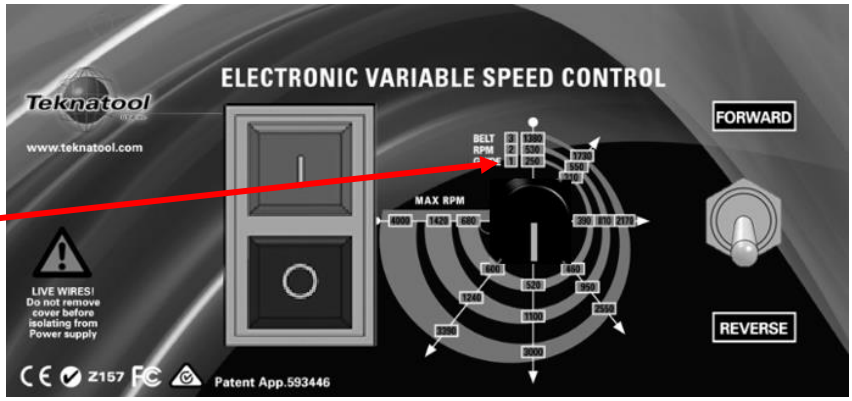
The motor is nominally rated at 3/4 HP (550watts), however, can produce a higher output.

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.

Speed Band	Type of Work	RPM Range
1	Slow Speed: Large faceplate and spindle work.	250 – 680
2	Medium speed: Small faceplate and smaller diameter spindle work.	530 – 1420
3	Fast speed: Small turning and miniature turning work.	1380 – 4000

The Controller also has approximate speeds in relation to the speed control Knob for each belt setting



The speed range is achieved with a Variable Speed Controller. A micro-processor 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 components occur.**

Direction of Lathe Rotation:

The “ON/OFF” toggle switch on the motor controller has three positions. “ON Forward”, “OFF” and “ON Reverse”. To use the lathe, the switch must be in either of the two “ON” positions.

Changing Speeds:

- When starting, set the Variable Speed Knob to about ¼ of the speed range and slowly increase the speed to the desired RPM.
- 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 RPM once the motor is in motion.
- Rapid RPM changes from low up to high speed are not recommended.

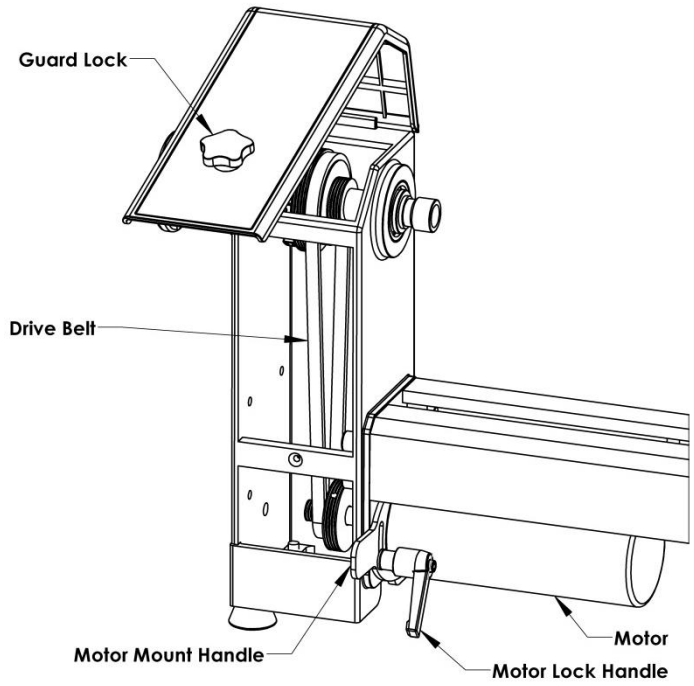
1. To change the belt position, ensure the machine is switched “Off” and unplugged.

2. Unlock the Belt Guard by unscrewing the guard lock knob (or guard lock fastener in some markets). Then lift the front of the guard upward.

3. Free the motor by loosening the Motor Lock Handle.

4. Lift the Motor Mount Handle slightly to get the belt off of the pulley. The motor adjustment range (up/down) is approximately 3/4" (20mm).

5. Install the belt on the desired step, top and bottom.



6. Tension the belt by pressing down on the Motor Mount Handle. Pressing down with 2 fingers or the thumb will provide adequate pressure. Slightly higher pressure may be required for larger work.

Caution: Too much pressure on the motor pulley will damage the motor bearings, break the belt or motor shaft.

7. When the correct tension has been made and while holding the motor at the correct tension, tighten the Motor Lock Handle.

Caution: Don't use too much pressure on the Motor Lock Handle. - It needs to be tightened a little more than finger tight.

8. Lower Belt Guard to the closed position and re-lock the Cover.

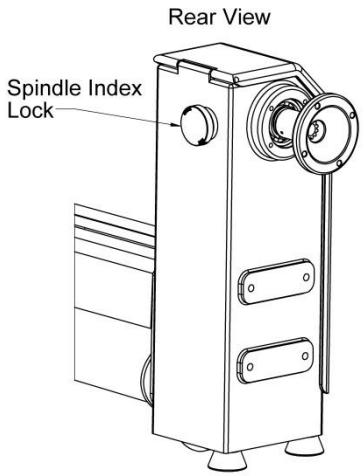
Changing Belt Positions:

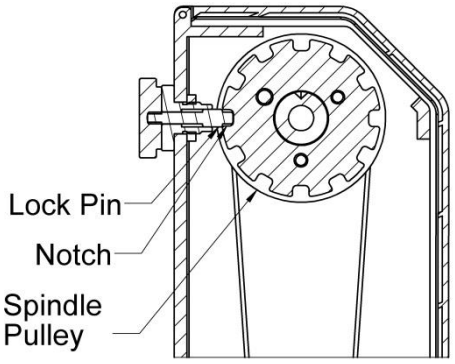
Headstock:

The Headstock houses the motor pulley, headstock pulley, bearings, a belt and the spindle. The Headstock Spindle accepts centers and accessories with an No. 2 Morse taper (#2 MT). The thread size or pitch is 1" 8 TPI, RH.

Using the Spindle Index:

The Spindle Index Lock is located on the back of the Headstock. This locking system works by inserting a pin into one of 12 notches, 30 degrees apart, in the pulley attached to the spindle.

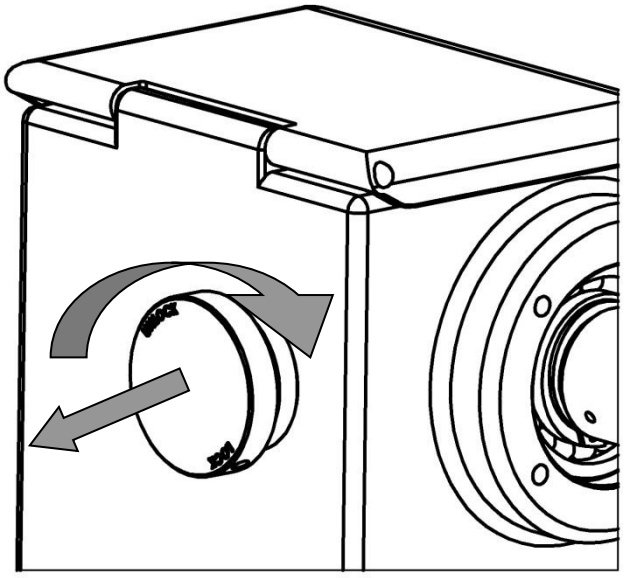




Warning!
Make sure the Index Pin is out before operating the lathe. The Index Pin should be lifted into the unlocked indentation in the knob to prevent it from engaging while the spindle is turning.

To lock the spindle:

1. Turn “Off” the lathe and wait for the spindle to stop.
2. Pull the Index Knob and turn it until the “LOCK’ is upright and the pin drops into the hole. To lock the spindle, the Locking Pin must engage into a Notch in the Spindle Pulley.



To unlock the spindle:

1. Pull the Index Knob and turn it until the “UNLOCK” is upright.
2. Check to verify that the spindle can rotate freely and that the Index Knob has dropped into unlocked indentation to prevent it from engaging while the spindle is turning.

Mounting a Faceplate or Chuck:

1. With the lathe turned “Off” and unplugged, use the Spindle Index Lock to hold the Headstock Spindle in position.

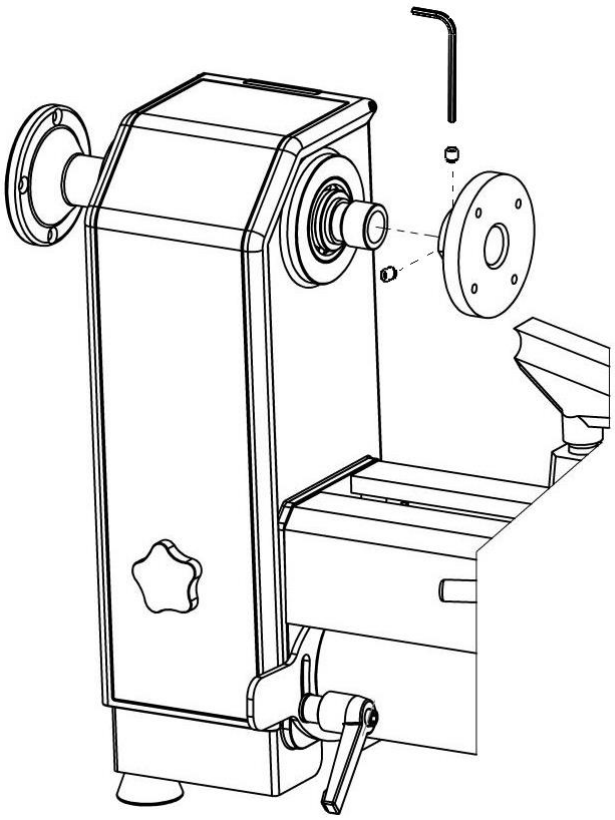
2. Use Allen key to release all safety screws on the side of the faceplate or chuck before installing or removing them.

3. Install the Faceplate or Chuck onto the spindle threads. A spindle washer may be used in between the Faceplate or Chuck to make removal easier.

Warning!
The Faceplate or Chuck body must contact the shoulder on the spindle bearing.

4 Use Allen key to tighten up all safety screws on the side of the faceplate or chuck. Disengage the Spindle Index Lock before turning “On” the lathe.

6. Similarly, use the Spindle Index Lock to remove the Faceplate or Chuck.



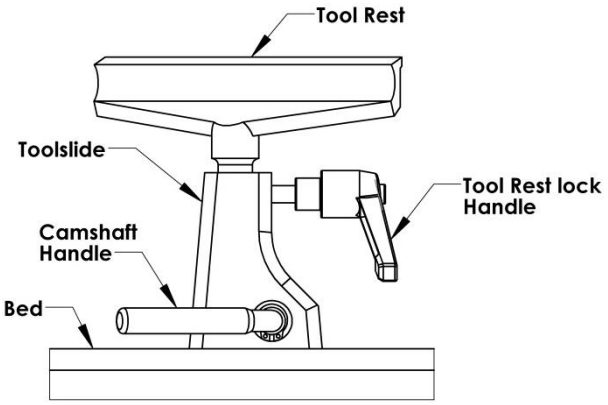
Tool Rest

1. To move the Tool Slide along the bed, loosen the Camshaft Handle, move the Tool Slide to the desired position and tighten the Camshaft Handle.

2. To adjust the Tool Rest, loosen the Tool Rest Lock Handle, position the Tool Rest, and tighten the Tool Rest Lock Handle.

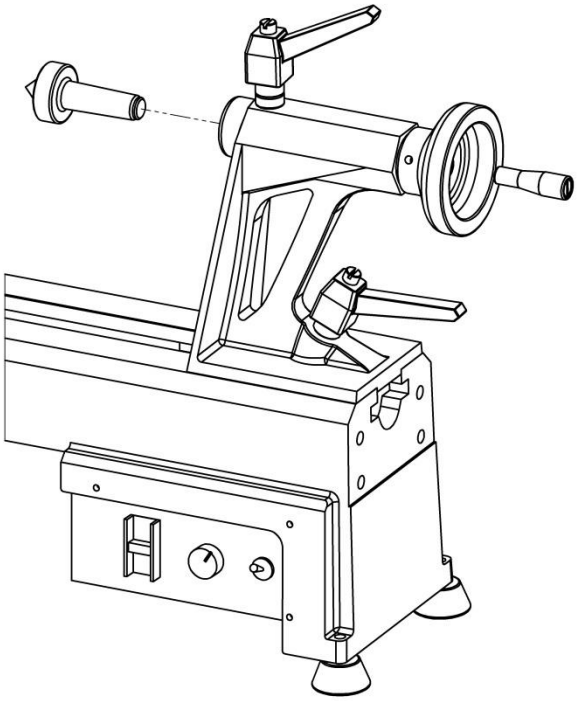
3. Adjust the Tool Rest close to the work piece. Exact positioning may be varied to suit the turner. Before turning, rotate the stock, by hand, to make sure it clears the Tool Rest. At intervals, stop the lathe and readjust the Tool Rest.

Warning!
Lathe tools and chisels should remain on the Tool Rest whenever the tool is in contact with the work piece.
Remove the Tool Rest 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 Tailstock Lock Arm.

2. To move the Tailstock Quill in or out, loosen the Quill Lock Knob and turn the Hand wheel clockwise or counterclockwise. Lock the Quill in place with the Quill Lock Knob.

3. The Tailstock Quill accepts centers and accessories with a 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, simply wind the quill into the Tailstock until the taper is ejected. Or insert the Knock Out Bar through the Tailstock Quill hole. While holding the taper so it doesn't fall, lightly tap it out.

5. The Tailstock Quill is hollow allowing you to bore holes through turnings while a hollow center is used.

Adjusting the Tailstock for Turning Between Centers:

1. Mount the Drive (spur) Center to the work piece and insert the Drive (spur) Center into the Headstock Spindle, as described overleaf under "Using a Drive Spur Center".

Warning!
Do not use the Tailstock Quill adjustment to drive the work piece into the Drive (spur) Center. This can create an unsafe and loose work piece. In addition, could prematurely damage the Quill.

2. Mount the live center into the Tailstock Quill using a quick, firm action by hand.

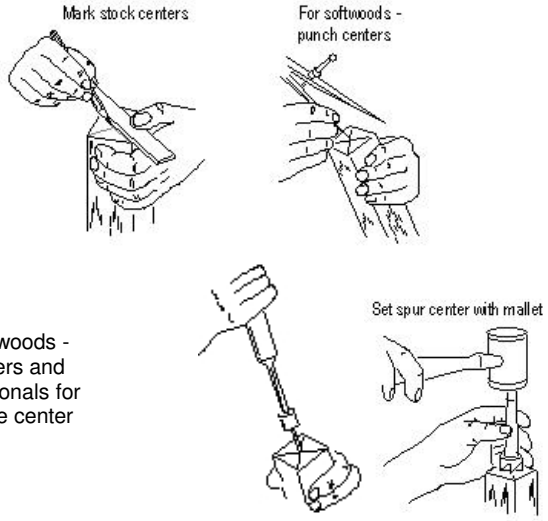
3. While holding the work piece, slide the Tailstock to meet the work piece and lock the Tailstock in place. Turn the Hand wheel to apply light holding pressure to the work piece. The work piece should turn easily by hand, yet not be loose. Tighten the Quill Lock Handle.

Using a Drive (spur) Center:

1. Mark centers as shown in the adjacent drawings. Mount the Drive (spur) Center to the work piece as shown and then insert the Drive (spur) Center and work piece into the Headstock Spindle.

Warning!
Do not pound work piece onto the Drive (spur) Center while it is mounted in the Headstock as you may damage the Headstock.

2. To remove the Drive (spur) Center, insert a 10 mm (3/8-inch) diameter steel rod through the Headstock Spindle hole. While holding the center so it doesn't fall, lightly tap it out.



Improving the Performance of your Lathe:

To get the best performance out of your lathe it is a good practice to keep your 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 load on the motor allowing for better output. Consequently, turning conditions are improved and cleaner finishes are achievable.

For improved turning, it is recommended having 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 recommended to have an angle between the tool tip and the work piece. This angle allows shavings of wood to be 'scooped' off in strips. Also note that the type of wood and grain will affect the removal of material from your work piece.

To gain maximum torque from the motor, it is advised that the belt be ran on the smallest motor pulley diameter. Use the middle step for other general work.

Learning to Turn:

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 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

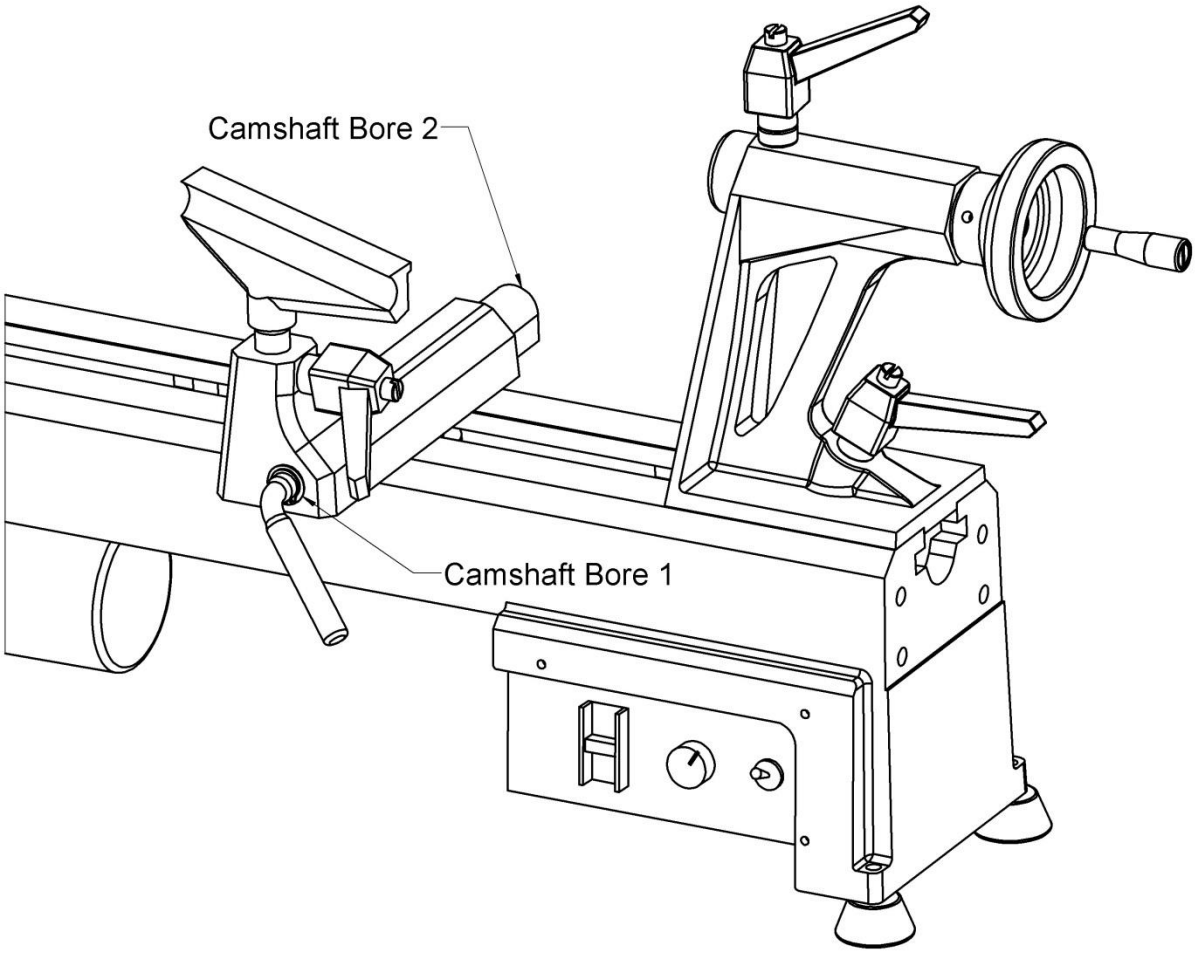
Woodcraft in the USA offers woodturning instruction courses. For more information, visit Woodcraft's website at www.woodcraft.com.

Maintaining the Nova Comet II Wood Lathe:

General Maintenance:

Interval	*Maintenance*
After each use:	Clean the work area and lathe. Vacuum scraps and dust from the inside of the Headstock, between the Lathe Bed Rails, and under the Tool Slide and Tailstock. Do not neglect this especially if the work piece was 'green' with excess moisture. Failure to clean-up after green turning can cause rust marks and pitting of the surfaces of the lathe.
Monthly:	Wax exposed cast-iron parts with a good quality paste wax or dry 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, Index pin Shaft, and the Tool Slide Camshaft (remove plastic plug) and the Tool Slide Camshaft Bores.

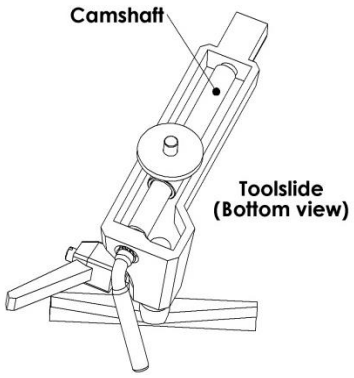
Lubrication Locations:



Cleaning the Tool Slide:

If the Tool Slide becomes hard to move and adjust, cleaning and lubricating is required.

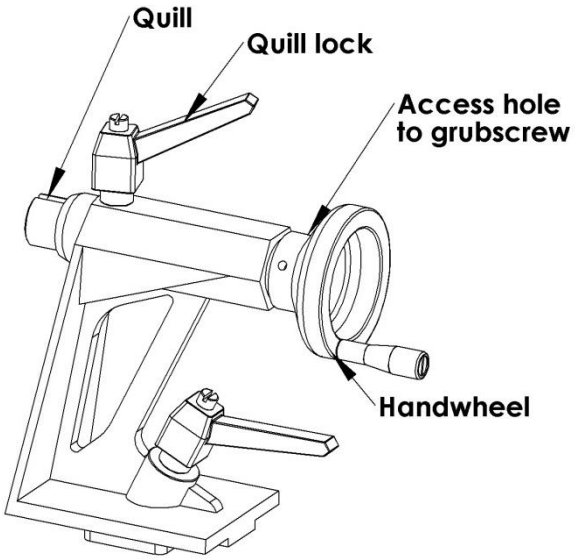
1. To make the Tool Slide move freely along the bed, make sure the Bed Rails are clean. Apply some paste wax to the Bed Rails.
2. If the Tool Slide is hard to move towards or away from you, remove the Tool Slide from the lathe bed. Clean the Tool Slide Camshaft (round eccentric rod) with a petroleum-based solvent. Lubricate the rod with a light-weight oil or a dry silicone spray.
3. Place the Tool Slide back onto the Lathe Bed.



Cleaning the Tailstock:

If the Tailstock Quill becomes hard to use or the Hand Wheel is hard to turn, cleaning and lubricating is required.

1. Remove the Quill Lock by unscrewing it fully.
2. To remove the Quill, hold the Quill in one hand while rotating the Hand wheel with the other hand until the Quill is free of the internal thread.
3. Remove the 6mm grub screw from the Tailstock Hand wheel.
4. Remove the Hand wheel and internal threaded shaft from the Tailstock Body.
5. Wipe clean all parts, including the inside of the Tailstock.
6. Lubricate the Quill and Tailstock Quill Slot with a light-weight oil and apply a small amount of grease to the Quill Threads.
7. 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.

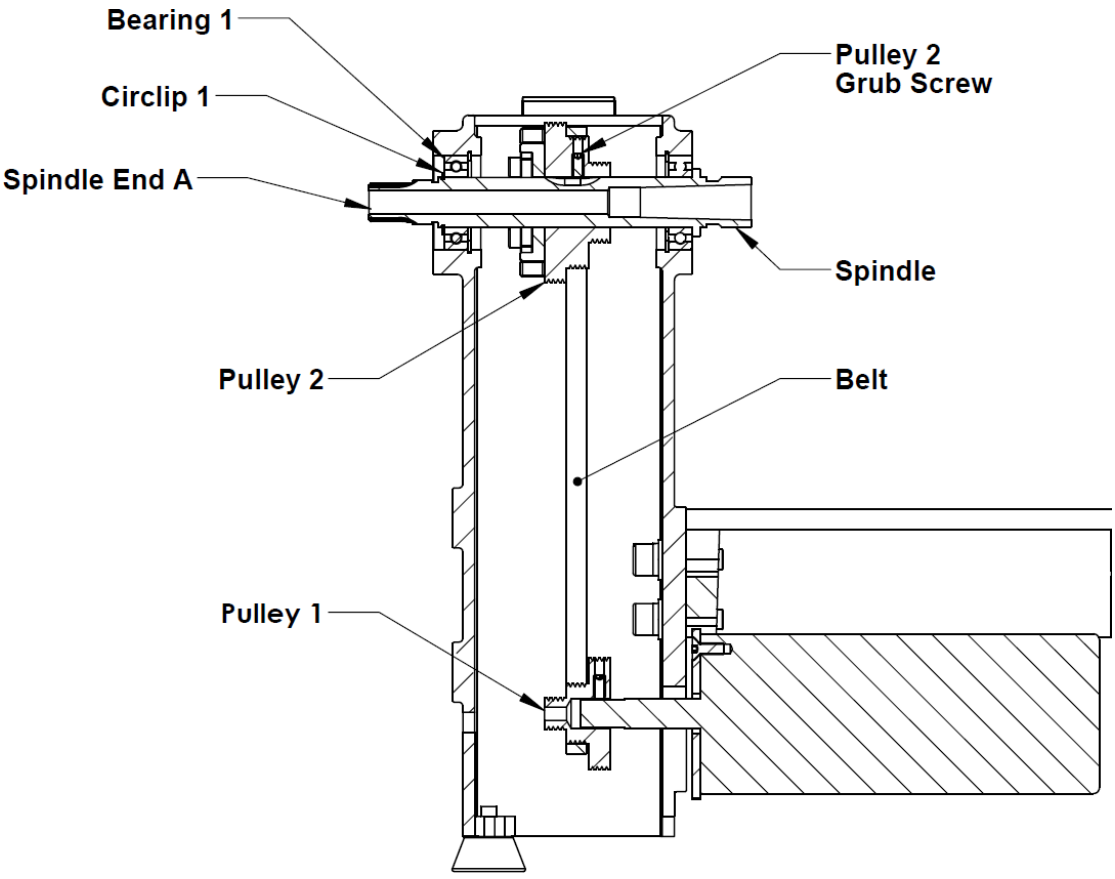
The Motor Brushes should be checked every five years and replaced when the brush length is less than 6mm (1/4").

For motor or electronic problems, the machine should be taken to the nearest Teknatool Service Center. See the contact details at the front of this manual. In the USA, contact our Teknatool Service Center at 1-866-748-3025.

Belt Replacement Procedure

Note: the belt used on the Comet II™ lathe is a Poly-vee belt

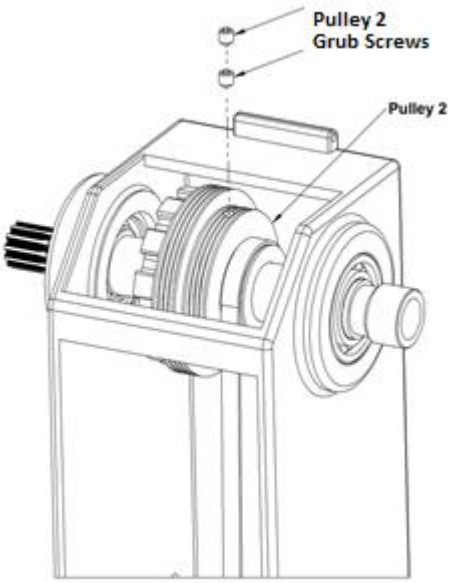
Overview:



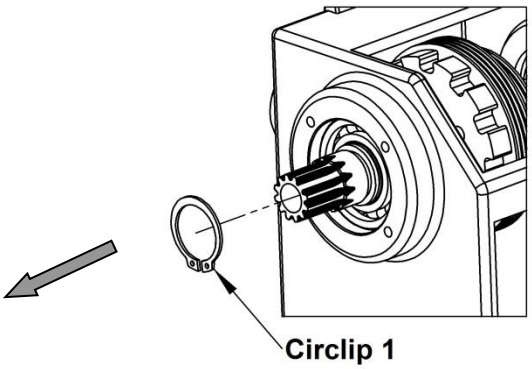
1. Remove all accessories, handwheels, chucks and faceplates etc.

2. Loosen motor mount and take the belt off **Pulley 1**. Let the belt rest on the outer tracks of **Pulley 2**.

3. Unscrew 2 grub screws from the middle track of **Pulley 2**.



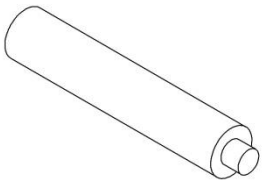
4. Remove **Circlip 1** from the **Spindle**.

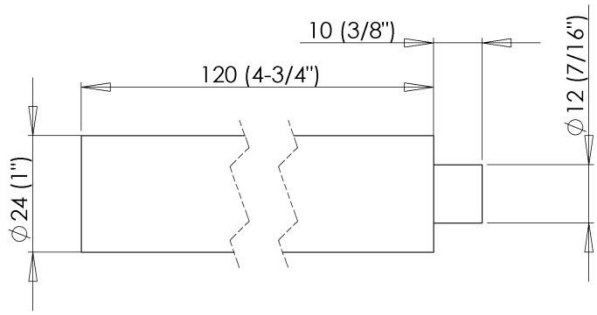


5. Knockout tool requirements:

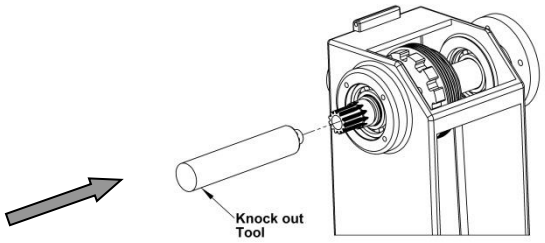
   The knockout tool can be any round shaft less between 14mm & 24mm (9/16" & 1").

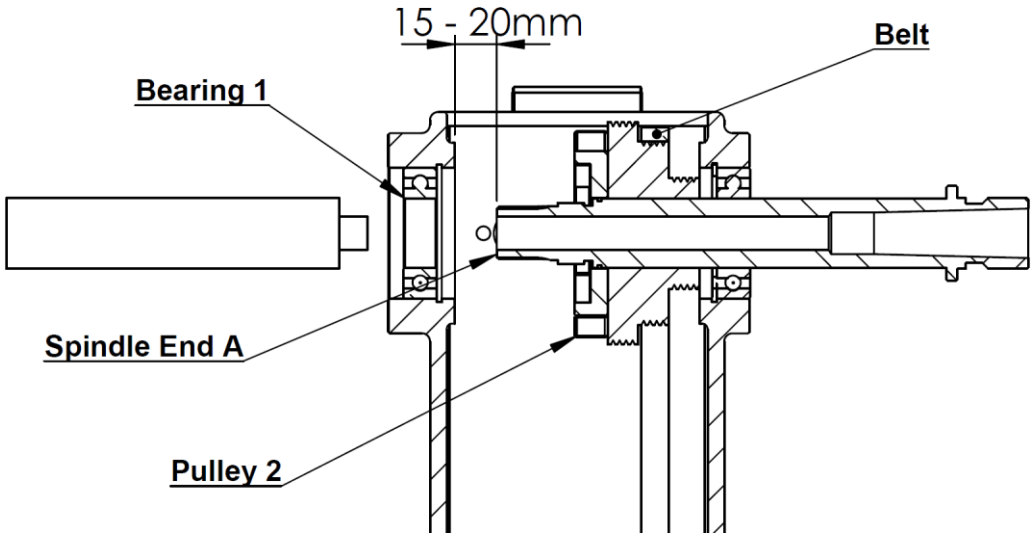
   An ideal knock out tool can be turned to dimensions in drawing to right.





6. Using the knock out tool and a small mallet or hammer, tap out the spindle from **Spindle end A** until **Spindle end A** is approximately 15 – 20mm (3/4") from the inside of **Bearing 1**.





7. Remove the old belt and place the new belt over the **Spindle End A** and on to **Pulley 2**.

   NOTE: Make sure the **new Belt** and **Pulley 2** are all on the spindle.

8. Using a wooden mallet or plastic hammer, start to tap the **Spindle** back into the headstock.

   NOTE: Before **Spindle end A** enters **Bearing 1**, double check that the **new Belt** and **Pulley 2** are on the spindle.

9. As the **Spindle end A** starts to enter **Bearing 1**, move **Pulley 2** back along the **Spindle**. Gently tap the **spindle** until the groove for the **Circlip 1** can be reached for installing **Circlip 1**.

10. Reinstall **Circlip 1**.

11. On the **Spindle** there is a small horizontal grove for the **Pulley 2 Grub Screw** to sit in. Align the grub screw hole in **Pulley 2** with this horizontal grove and re-align the steps of **Pulley 2** with **Pulley 1**.

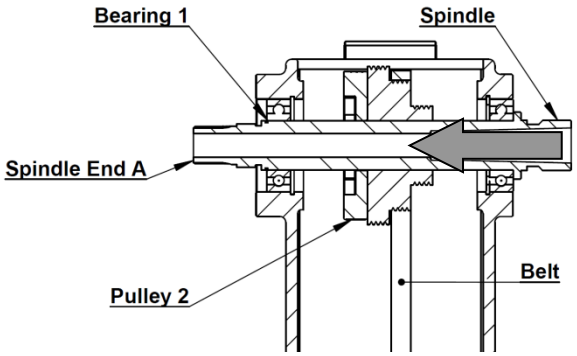
    Insert **Pulley 2 Grub Screw** in to **Pulley 2** and tighten snug.

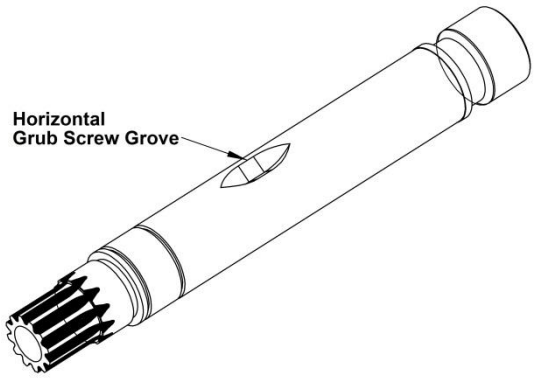
12. Install the belt on the slowest speed steps, tension correctly and tighten the motor lock handle

13. Lower and lock the cover and test the new belt at the slowest speed at first, to make sure **Pulley 2** is not slipping on the **Spindle** and that the two pulleys are aligned correctly.

    If it is slipping or the belt comes off or starts to work its way off, repeat step 13**.**

    Otherwise the lathe is now ready for use.





Troubleshooting Guide:

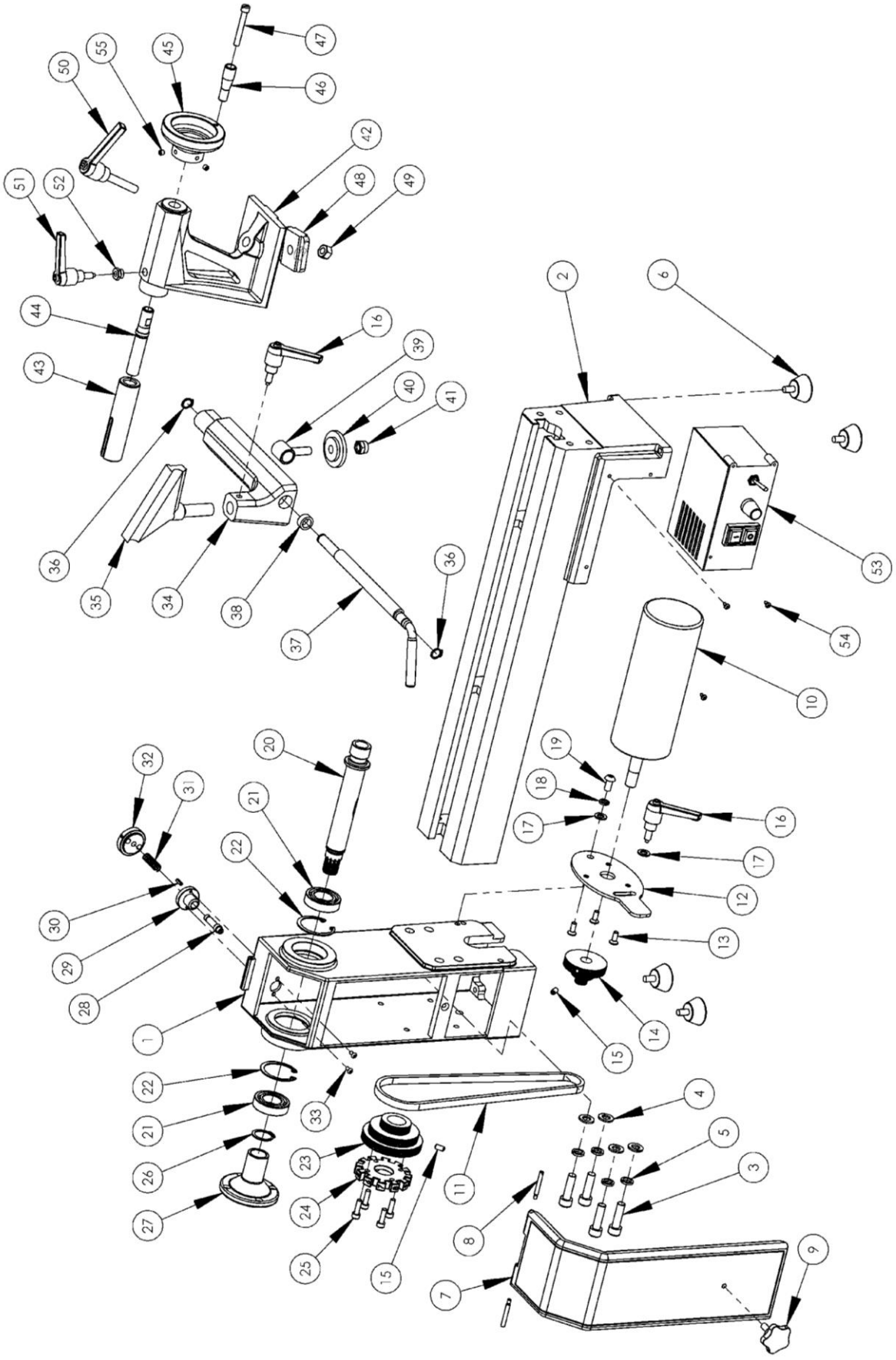
Problem	*Possible Cause and Solution*
Excessive vibration.	Out of balance, or large work piece. Reduce the lathe speed to the lowest speed possible and turn the work piece to a true circle. Work piece is not held in the center. Check work piece mounting and correct. Work piece is not secure or held tight enough. Check work piece mounting and correct. Lathe incorrectly bolted to stand or bench. Refer to this manual for Lathe Stand recommendations. Stand or bench not well constructed, too light or standing incorrectly on the floor. Make sure the stand is solidly constructed with leveling screws or feet. 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. 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 screw is tight once in position. Headstock Pulley or Motor Pulley is loose. Check that the pulley set screws are tight. The Headstock Belt Guard is loose or rattling. Check that the Belt Guard Lock is tight. Ensure motor adjustment locknut and M5 lock nut are tight. Motor vibrates. Many single-phase motors produce minor noise or vibrations and 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.
Faceplate or chuck running out of true:	Dirt build-up on the rear of the Faceplates or Chucks. Clean off all build-up and dirt. Faceplates and Chucks must mount securely against the inner bearing ring surface of the spindle.
Turning tools not sliding smoothly across Tool rest:	Damaged surface on Tool rest Face caused by sharp edged tools. File the Tool Rest using a fine tooth file and polish with extra fine sandpaper. Also remove the sharp edges from the corners of the turning tools.
Spur drive center or live center not holding into the spindle taper or quill taper when turning:	Small end of the Morse taper is damaged due to dropping or hitting. File or polish away any damage. Check that inside of tapers have not been scored. Grease or oil inside of the Morse Tapers. Wipe clean the inside of the Tapers. Insufficient pressure when installing the center. Use a quick, firm action by hand, to install a taper. Do not tap in using any solid object.

Troubleshooting Guide Continued:

Problem	*Possible Cause and Solution*
Tailstock and headstock center not lining up correctly:	Bed incorrectly bolted to stand causing twist. Ensure stand and lathe are correctly assembled. Tailstock base is not flush with bed. Check for debris on both surfaces.
Motor doesn't run:	Check for compromised electrical cords. Remove plug from power outlet socket. Check an appliance that you know works in the power outlet socket. If it fails, check the breaker/fuse in breaker/fuse box corresponding to that socket. If socket is operating, then the Control Unit of the Comet II Wood Lathe may have failed. Contact your nearest service center for a replacement.
Tailstock hand wheel hard to turn or will not turn:	Quill lock may be locked. Unlock the Quill Lock. If necessary, lightly tap a block of wood against the Hand wheel Handle. Tap the handle in a clockwise direction as viewed from the Tailstock end. Build-up of dust and/or wood resin on the Quill or inside of the Hand wheel 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 Hand wheel.
Tailstock quill hard to move:	Quill Lock may be locked. Unlock the Quill Lock. The Quill may be damaged. Turn the handle to expose the Quill and check for marks along the Quill, especially on the edges of the slotted keyway. Remove any high spots with a smooth file and test the Quill travel. Replace the Quill, if necessary.
Tailstock not sliding smoothly on bed ways:	Dirty bed ways and underside of Tailstock Body. Clean bed ways and underside of Tailstock Body with a petroleum-based solvent.
Tailstock binds:	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.
Tailstock jumps where bed sections join:	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 center or e-mail us at service@teknatool.com.

Nova Comet II Wood Lathe Exploded View



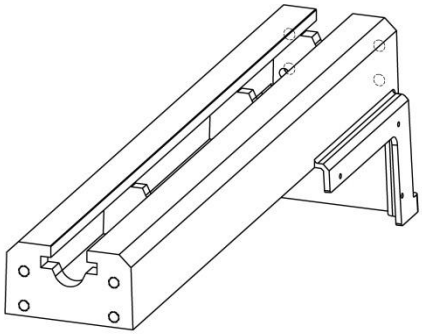
Nova Comet II Wood Lathe Parts List

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	46001	Headstock	1
2	46015	Bed	1
3	C10035	Hex Capscrew M10X35	4
4	FW10	10mm Flat Washer	4
5	SW10	10mm Spring Washer	4
6	46007	Rubber Feet	4
7	46002	Headstock Guard	1
8	46042	Headstock Guard Pin	1
9	46009	Headstock Guard Lock	1
10	46008/46034	Motor 115V / 230V	1
11	46010	Drive Belt	1
12	46003	Motor Mount Plate	1
13	K0616	Hex Countersunk Screw M6X16	3
14	46005	Motor Pulley	1
15	G0612	Grub Screw M6X12	3
16	46031	Lock Handle M8X20	2
17	FW8	8mm Flat Washer	2
18	SW8	8mm Spring Washer	2
19	C06015	Hex Cap Screw M6X15	1
20	46006	Spindle	1
21	6005ZZ	Spindle Bearings 6005	2
22	IC47	Headstock Bearing Retaining Circlip	2
23	46004	Spindle Pulley	1
24	46013	Spindle Index Wheel	1
25	C0620	Hex Cap Screw M6X20	4
26	EC25	Spindle Bearing Retaining Circlip	1
27	46036	Spindle Hand wheel (LHB)	1
28	46011	Index Pin	1
29	46012	Index Pin Housing	1
30	TP0412	4x12mm Tension Pin	1
31	46014	Index Pin Spring	1
32	46043	Index Pin Knob	1

33	MPB0408	M4x8 Pan Head screw	2
34	46027	Tool Slide	1
35	46026	Tool Rest	1
36	EC12	Tool Slide Camshaft Circlip	2
37	46028	Tool Slide Camshaft	1
38	46035	Tool Slide Camshaft Bushing	1
39	46029	Tool Slide Cam	1
40	46030	Tool Slide Lock Plate	1
41	NN10	M10 Nyloc Nut	1
42	46017	Tailstock	1
43	46019	Tailstock Quill	1
44	46018	Tailstock Quill Lead Screw	1
45	46021	Tailstock Hand wheel	1
46	46020	Tailstock Hand wheel Handle	1
47	46037	Tailstock Hand wheel Handle Screw	1
48	46023	Tailstock Lock Plate	1
49	NH10	M10 Nut	1
50	46022	Tailstock Lock Handle	1
51	46025	Tailstock Quill Lock Handle	1
52	46024	Tailstock Quill Lock Handle Insert	1
53	46016/46040	Motor Controller	1
54	STPB0412	Motor Controller Pan Head Screw	3
55	G0606	M6x6 Grub screw	2

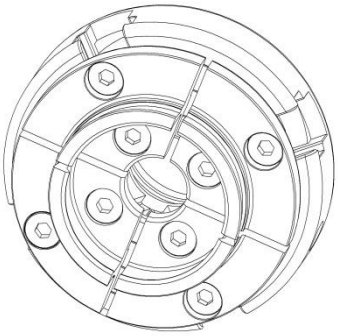
Comet II Wood Lathe Accessories:

Add-On Bed Extension # 47001
Extend the bed of your Nova Comet II Wood Lathe for greater capacity between centers. One additional bed extension adds 24.6”/625mm to the lathes length.

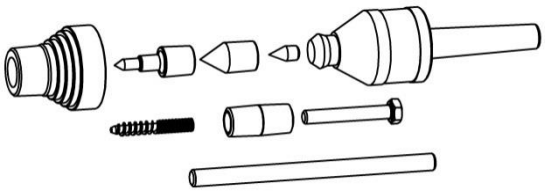


Nova G3 Reversible Chuck # 48232
A self-centering chuck to securely hold round or square work pieces for centerless turning. The special Tuff Lock gearing delivers amazing holding power in both the contraction and expansion mode. It includes a screw chuck, and a lock for reversing work. A wide variety of optional jaws are available to hold almost any work piece.

Note: This chuck has been designed for the NOVA Comet II Midi Lathe only. It cannot be used on any other chuck.



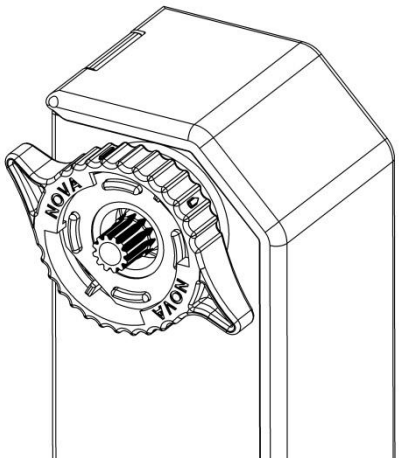
Revolving Center System # 5015
A multi-function live center system to expand your options when turning between centers. It includes quick-change tapers, a hollow-cup center point, threaded center, cone center, and an extension center. Made with three bearings for durability and precision machined for a high quality finish.



NOVA Versaturn™ Accessories range

The NOVA Versaturn™ Adaptable Technology is **exclusive to NOVA**. With the addition of the Versaturn™ Coupler, these accessories enable you to turn your NOVA Comet II Wood Lathe into a:
- Whetstone grinder
- Belt Sander
- Flexible Shaft Rotating Tool
- Grinding Wheel
- Sanding Disk
- Wire Brush

Note: Each accessory is sold separately and cannot be fitted to any other lathe.



For more details about NOVA’s lathe accessories, please contact your local retailer or contact us directly. You may also visit our website at www.teknatool.com.

Comet II Wood Lathe Accessories:

NOVA Versaturn Grinding Wheel Accessory
 # 47002

6"x 3/4 White Aluminium Oxide Wheel (60 Grit) ideal for grinding most wood working tools. Variable speed adjustment up to 3000rpm which enables you to select just the right speed to grind, without burning the tool edge.Requires the NOVA Versaturn Coupler to enable this to be mounted onto the NOVA Comet II Midi Lathe. Exclusive to the NOVA Comet II.Quick to lock and unlock into place using the NOVA VersaturnTM Coupler Accessory (47000) Protective Case with eye shield and toolrest included. 1 Year Warranty,

NOVA Versaturn Wire Wheel Accessory

 # 47004
Exclusive to the NOVA Comet II Midi Lathe. Requires the NOVA VERSATURN™ Coupler to attach to your Comet II Midi Lathe. Quick to lock and to unlock into place using the NOVA VERSATURN™ Coupler.
Variable Speed Adjustment up to 3000rpm, which enables you to select just the right speed.
Perfect accessory for cleaning or texturing parts in your workshop or on location.
1-Year warranty

Teknatool Warranty:

Teknatool Two Year Limited Warranty

This Teknatool product is backed by a 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. Teknatool will pay return product by most cost effective surface transport to customer. Any special freight services above this will be at customer cost. All motors, electrical parts and electronics are covered by a ONE YEAR warranty from the date of purchase.

Teknatool will not be responsible for any asserted defect, which has resulted from normal wear, misuse, abuse, Power surges or excess voltage fluctuation, 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. In North America warranty covers Continental USA only. For Alaska,Hawaii and other areas, warranty covers replacement of parts only and excludes transport costs.

Register your warranty with Teknatool faster online.
Visit our website on www.teknatool.com to register your warranty today!

Nova Comet II Woodlathe Manual

Publication Code: 118-0817-007

© Copyright Teknatool International 2000-2016. Patent App. 593-446. NOVA Comet II and NOVA Versaturn are trademarks of Teknatool International Ltd. All rights reserved.