#### **Available Accessories**



241 Monteith Ave, Stratford, ON, N5A 2P6, Canada Phone: 1-519-271-7611

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1-800-565-7288

www.oneway.ca

# 1236SD Lathe

Owner's Manual

#### **SPINDLE ADAPTORS**

Two spindle adaptors are available for those people who already have a large sized ONEWAY Lathe. These adaptors allow the use of accessories which are threaded M33 \* 3.5 on both the inboard and outboard side of the 1224 Lathe

1" - 8 to M33 \* 3.5 Part No. 2961 3/4 - 16 to M33 \* 3.5 Part No. 2962

#### **CURVED TOOLRESTS**

Two configurations of curved toolrest are available. One is a general purpose toolrest (post is on the end), which is for the inside of bowls and can also be used for the outside of bowls. The other is an exterior toolrest (post is in the middle) which is for the outside of bowls only.

A wide range of woodturning accessories are available from ONEWAY. For more information contact your local dealer, call for a catalog, or check out our website.

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POWER AND PRECISION FOR TODAY'S WOODTURNER

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#### **Manufacturers Limited Warranty**

This Oneway product is backed by a warranty period of 5 years from the date of purchase. Non-manufactured parts (i.e. Drive, Motor, Bearings etc) are not covered under this warranty; please refer to the relevant Warranty information provided with the lathe.

Oneway hereby agrees to repair or replace, any defects due to faulty material or workmanship, provided that:

1. Oneway has reasonable opportunity to verify the alleged defect by inspection.

Oneway reserves the right to charge customers for replacement parts until the defect is verified whereupon a full refund will be issued.

- 2. The warranty period has not elapsed. Proof of purchase date (sales receipt etc.) is required prior to any repair taking place.
- 3. The product has not been altered or modified in any way.
- 4. The product has not been subjected to misuse, abuse, negligence, or was not used in a "normal" manner.
- 5. All transportation costs incurred in returning the product to Oneway Manufacturing is pre-paid by the customer.
- 6. Defective parts will be returned using the Candian or U.S Postal Service (ground) or relevant Postal Service (surface) if overseas, packaged appropriately, and labelled "Defective Goods Returning to Manufacturer".

Important: Please call us prior to returning the defective parts.

This warranty does not cover any costs or damages arising directly or indirectly from the operation of this product.

No other guarantee, written or verbal, is authorized by Oneway Manufacturing.

Our policy is one of continuous improvement. We therefore reserve the right to change the specification and/or design without notice.

#### Notes

#### ONEWAY 1236SD LATHE MANUAL

Congratulations on your purchase of a ONEWAY 1236SD Lathe. This manual describes general use and features of the ONEWAY 1236SD Lathe. It is not meant to be a woodturning instruction book. If you are new to turning, we recommend seeking out a qualified instructor in your area. There are many national and local woodturning organizations that can recommend instructors. If you are unable to take lessons, there are many excellent books and videos available. Proper instruction will ensure that you work safely and that you can use your new lathe at it's optimum.

#### **Lathe Specifications**

Distance between centres - 36" Overall length of lathe - 62" Swing over bed - 12-1/2" Swing over banjo - 9.0" Stainless Steel Toolrest - 9" Blade, 1" Diameter Post Weight with motor & legs - 485 lbs. Spindle Taper - #2 Morse Taper Tailstock Taper - #2 Morse Taper Spindle Thread - 1" - 8 Threads per inch Right Hand Backthread for vacuum attachments - 3/4 - 16 TPI RH

#### **Other Specifications**

- Included: 3" faceplate, #2 MT Live Centre and #2 Safe Driver, Options when purchasing this Stainless Steel Toolrest, Lathe machine include: Knock out Rod, Open Ended Wrench, 4 levelling pads, 6 & 8 • 1 HP 110 volt MM hex keys.
- Lathe runs extremely quietly
- •Spindle Height- Adjustable
- All painted surfaces are powder coated

62" \* 28.25" Footprint:

- 1 HP 220 volt standard

#### The Bed

Bedways and ribs are welded to a 4-1/2 inch diameter \* 1/4 inch wall tube. The assembly is stress relieved and precision machined.

Bedways are offset so chips and debris fall straight thru without sacrificing rigidity.

Almost perfect torsional rigidity is achieved - many times more than twin tube or cast iron bed designs.

#### The Headstock

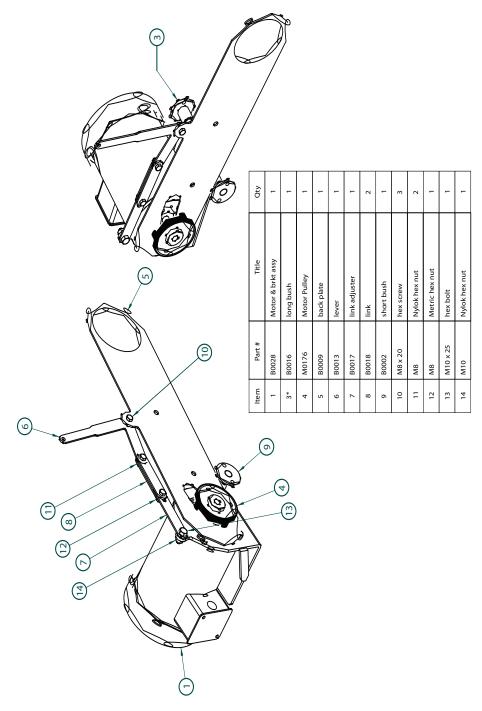
- Features a four bearing spindle: At the front are two deep groove ball bearings custom fitted with ground spacers, and locked to the shaft with a lock nut in the housing. This minimizes radial and axial play of the spindle. The rear bearings float axially to allow for heat expansion. Bearings are no maintenance greased for life.
- The spindle is 1-5/8" at maximum diameter and drilled thru 3/8" with number 2 morse taper at the inboard end. It is made from high strength alloy steel, hardened and ground to precision tolerance of  $\pm 0.0003$  inches.
- A special self supporting wrench is used to remove accessories from the spindle such as faceplates and chucks.
- 24 position indexing is standard.

#### The Spindle

The spindle is 1" - 8 TPI with a groove machined for a lock screw. This design contributes to the safety of this machine, as it reduces the possibility of chucks or faceplates accidentally unscrewing from the spindle, especially when the machine is used in reverse. It is also safer when sand-

ing and braking.





### Qty 7 7 4 7 ∞ 4 upper cover plate cover weldment hook latch Assy 3/16 x 1/2 Rivet hinge assy hex nut screw spaenaur #8-32 x .50 B0076 B0040 # 8-32 B0054 41026 Item 9 7 2

## Banjo - Toolrest Base

The BANJO/TOOLREST BASE is *ONEWAY's* own proven design that assures even, powerful locking anywhere on the bed (patented feature). The sliding cam is supported by a cam support block which rests on a ledge machined in the toolrest base. To ensure continuing smooth operation, lubricate the mechanism whenever it seems to be getting sticky. The banjo handle will clamp either to the left or right. Generally the handle is adjusted so that when it is clamped, the handle is clear of the bed. This allows the banjo to be clamped in all positions over the bed. The clamp handle position can be adjusted via the Nylock Nut, underneath the banjo.(part 18 page 20)

#### How do I adjust the Toolrest clamp lever?

The toolrest clamp lever can be adjusted to clamp in any position. To change the position of this lever, unscrew the four screws that hold the clamp nut(part 9 page 20) in place, rotate it to the desired position and re-fasten the nut with the screws. Note that there are eight holes in the clamp nut, allowing adjustments of 1/8 rotational increments. The handle clamp position is an individual preference, but the 4 O'clock position is a good place to start.

#### What is a sliding Cam assembly?

This assembly consists of: a rotating square shaft, a short sliding cam and a support block for the sliding cam. The square shaft rotates the sliding cam.

The cam is supported on a cam support block

Rotating Square
Shaft

Sliding
Cam
Support
Block

Support Ledge

which in turn is supported on a ledge machined in the tool rest base. The block moves with the sliding cam and supports the shaft. Deflection of the cam shaft is eliminated and there is no longer a clamping difference anywhere on the lathe bed. Unclamp is always at the 12 o'clock position and clamping may be adjusted to be repeatable anywhere between 10 & 6

o'clock with RH and LH clamping always at the same angle.

B0041

#### **Bearings**

There are four spindle bearings in the headstock. These bearings are sealed and lubricated from the factory and should never need adjustment or lubrication. The bearings and the spindle in your lathe are designed to take normal woodturning forces for a long time. The best way to ensure long bearing life is to never hammer against the spindle.

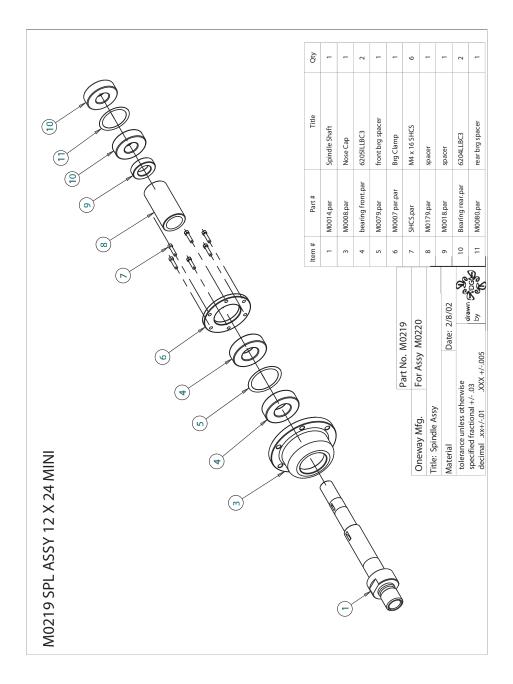
Due to the size and the preload on the bearings the lathe may run quite warm when it is new. As the bearings break in they will run cooler but will still get warm. Each lathe is run in at the factory and checked for excess temperatures, but it is a good idea to keep the speed below 2000 rpms for the first 30 hours of operation. This allows excess grease in the bearings to escape and for the seals to break in. When replacing the bearings it is best to replace the front bearings with a matched set from ONEWAY Mfg. The rear bearings can be replaced by any equivalent bearing.

#### Replacing the Bearings

To replace the bearings you must remove the spindle. The first step is to take the belt off the motor pulley. Remove the nut on the back side of the spindle and slide off the pulley. Remove the six bolts in the spindle nose cap. Grab

the nose cap and the entire spindle assembly should slide out. If it is tight, take two of the bolts you just removed and put them into the two tapped holes in the nose cap. Tighten them alternately and this will jack out the spindle. If you do not have a proper set of bearing tools, it is a good idea to send the spindle back to ONEWAY to prevent damage to the spindle and to the new bearings.





# M0220 Date: 2/08/02 For Assy 12 x 24 mini Part No. M0220 Title M6 X 25 BHCS Title: Headstock assy M6 X25 BHCS.par Oneway Mfg. Jam nut.par ١e٧

M0220

#### **The Tailstock**

The tailstock on the ONEWAY is precision machined with a number two morse taper which allows the use of stronger live centres and larger drills. The lead screw is a 3/4" diameter 6 pitch acme thread and the barrel has a 3" bearing length. A 4" handwheel and the high lead on this screw allows rapid in and out feeds for drilling.

The quill is 1-1/8" diameter with 3" travel. The quill lock is the knurled brass knob located on the top of the tailstock. It should be snugged up when using a live centre. The lock does not have to be tightened excessively. This lock does not stop the quill from backing off, that is done by the feed screw mechanism. The lock removes any play between the quill and the bore, to help reduce vibration when working between centres.

The super rigid tailstock clamp is designed so that no flexing will occur under clamp pressure. This will ensure that the clamp will hold firmly while requiring no adjustment for the life of the lathe, and will retain the ease of movement of the tailstock along the bed.

The Morse Taper in the tailstock is greatly affected by how clean the taper is. Even a small amount of dust, or oil, will significantly reduce the drive force that can be exerted by the tailstock before accessories will spin in the taper. Always wipe any accessory and the taper with a clean rag before putting the accessory into the tailstock.

## Installation and Removal of Accessories in the Headstock:

To install an accessory into the tailstock, wind the barrel out 1". Put the accessory in the barrel, and snap it into the taper. Most accessories are self-ejecting. To remove the accessory, wind the barrel back until the accessory pops out.

#### **Assembly & Setup**

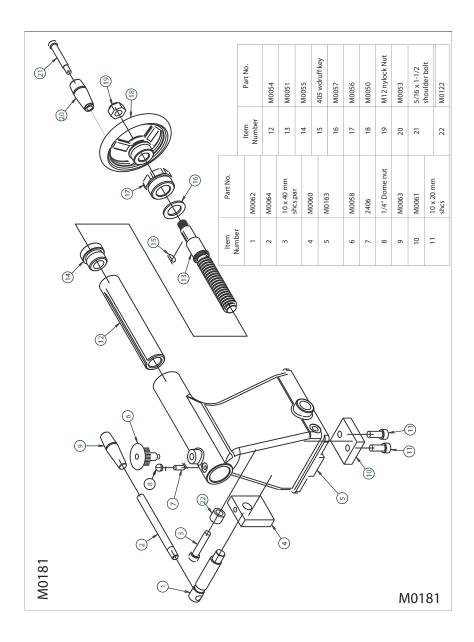
The 1236 SD lathe comes completely preassembled. All that needs to be done is to unbolt the lathe from the crate and to slide it off and into position. Once the lathe is in position it should be adjusted to height. The 1236SD lathe can be used in two postions upright and down. The adjustable legs should be used to set the height in the upright position and the height of the chair that will be used with the lathe should be adjusted to match the lathe in the down position. If the lathe will only be used in the down position the adjustable legs can be used to set that height correctly. On both ends of the lathe there are four bolts that hold the leg sections together and a height adjusting screw. With the leg bolts still in, lower the adjusting screw at each end until they are down and snug. Remove the 4 bolts that hold each leg together. Use the adjusting screw to raise or lower the lathe until it is at the height that you want. Alternate each end of the lathe for height adjustment in 1 inch increments, do not adjust the height at one end more than that without moving the other end. Once the height is set tighten the bolts that hold the legs together.

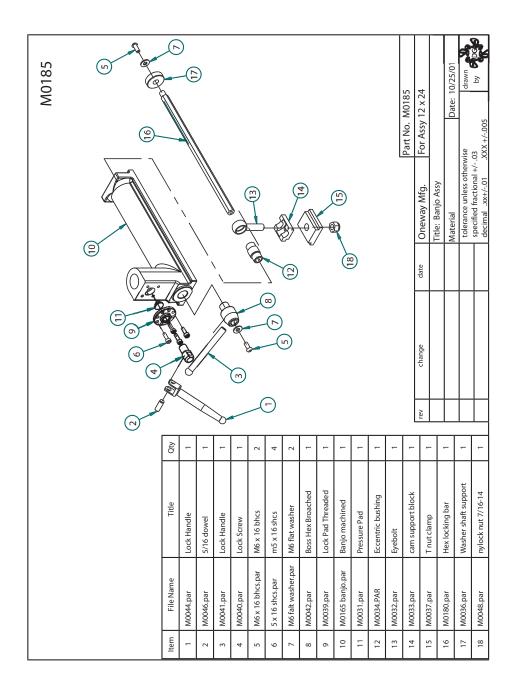
#### Rotation

The 1236 SD lathe is unique because it can be used in two postions, upright or conventional and down. To change the position of the bed first make sure that there are no loose items lying on the lathe bed. Loosen each of the four clamps that hold the bed in position. Stand in front of the lathe and grasp the headstock and tailstock and lower (or lift) the lathe into position. There is a large amount of weight to move but the lathe is pivoting about the center of gravity so it will not be heavy. Once the lathe is in the correct position you will feel it come up against a stop. Retighten the clamps and the lathe is ready to use. To use the lathe in the upright position it is best to remove the down banjo. This is easiest to do when the lathe is in the upright position.

#### **Using the Lathe in the Down Position**

Turning while seated does involve making some adjustments to your normal working procedurs. When the lathe is in the down position gravity works against the tailstock and down banjo so that they do not move as easily as when the lathe is in the up position. To move the tailstock easily grab the top of the tailstock and lift it slightly and then slide it. The down banjo needs to be moved with two hands. After unclamping, do not release the clamp handle. With the left hand grasp the down banjo and the use both hands to slide it. Once the down banjo is close to where it needs to be and locked into position





fine adjustments can be made with the banjo instead of moving the whole bracket mechanism.

While seated you will also find that your body tends to get in the way more than when standing. One of the easiest ways to evercome this is to use shorter handled tools. You should also use a chair with wheels. This will allow you to avoid unneccesary movement and to move easily when you must. Turning the inside of bowls can also be more difficult if it is done while seated. If you are using a short bevel gouge and turning a steep sided bowl you will hit the handle of the tool on the lathe bed. To minimize problems you can take a couple of steps. First thing you can do is to use gouges with longer bevels, this will help keep the handle away from the lathe bed. Secondly you can avoid steep sided bowl. Of course both of these options dictate how and what you are doing on the lathe. If neither of these options is desireable the inside of the bowl can be completed with the lathe in the upright position.

#### **Changing the Speed Range**

The 1236SD lathe has full electronic variable speed and two speed ranges. Using the appropriate range will allow the lathe to perform at its optimum. Always use the slow speed range if it allows the rmp's to go high enough for the work you are doing. To change the speed range there are two access points in the belt cover to allow you to change pulleys. To release the tension on the belt there is a red handle behind the headstock. Pull it up to release tension on the belt and then open the belt access areas. Put the belt onto the appropriate pulley. For low range put the belt onto the large headstock pulley and the small motor pulley, for high range put the belt onto the large motor pulley and the small headstock pulley. Once the belt is on the correct pulley push down on the red handle and push it until it stops, this will lock the motor in place with the correct tension.

#### The Drive

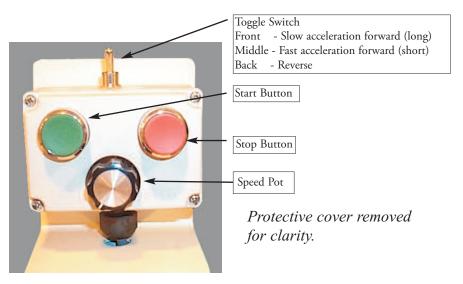
# AC Electronic Variable 0 - 4000 RPM with Full Speed Reverse

- The drive package is fully electronic with speed from 0 4000 RPM. Lathes are available with one of two options:
  - 1. 1 HP -- requiring 110 Volt
  - 2. 1 HP -- requiring 220 Volt
- Speed ranges are 0-2000 & 0-4000. Changing range is easy and can be completed in under one minute.
- Minimum continuous speed 150 RPM
- The drive motor is mounted directly below the headstock.
- Drive pulley is 2 step 6 groove poly V.
- The controller comes programmed ready for use with built-in ramp up, ramp down and dynamic braking. This is a top quality drive, single phase AC in three phase out.

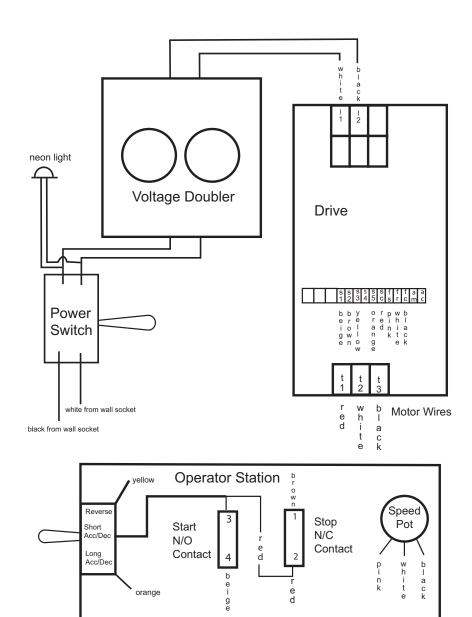
#### **Drive Controls**

On the Drive Box there is a toggle switch which has two settings: Power on & Power off

#### **Pendant Controls**



#### **Wiring Diagram**



### **APPENDIX**

Wiring Diagram
M0185 - Banjo Assy
M0181 - Tailstock Assy
M0220 - Headstock Assembly
M0219 - Spindle Assembly
M0195 - Belt Cover Assembly
M0083 - Motor Mount Assembly

#### **Common Problems & How to Avoid Them**

- 1. The most common cause of the unit shutting itself off is stopping large pieces too quickly which causes excess voltage and the drive tripping out (self-protection). If you press the STOP button and the lathe does not brake, but coasts to a stop, this is what has happened. Refer to the section "If Your Drive Does Trip Out" below, to reset your drive. The drive can also trip itself out if the speed is changed while turning a piece. Keep in mind that as a piece gets more in balance and you increase the speed, even though you have reduced the weight, the increased speed makes stopping more difficult. This is why the lathe might stop normally when you first start a piece but might trip out later when you increase the speed. You can also reduce braking problems by selecting the proper pulley. It is much easier for the drive to stop the lathe if the lathe is on the largest headstock pulley (slowest speed) than if the lathe is on the smallest (fastest speed) headstock pulley. Long acceleration is selected by putting the toggle switch on top of the pendant control box into the forward position.
- 2. The drive unit also monitors the amount of current and the length of time that current has been flowing. If the motor has been drawing excess current for too long, the drive will shut down to protect the motor. This can happen if the lathe has been running slowly for a long time. To prevent this problem, use the largest headstock pulley (slowest speed) suitable for the job to keep the motor speed high.
- 3. Sudden high power demands can cause the drive to shut down also. For example, if you have a very large catch, the drive may shut down.

#### If Your Drive Does Trip Out

The Drive unit that controls the motor is a very sophisticated drive that constantly monitors the motor, incoming power, and itself. If the unit detects a condition that will cause damage to any part of the drive system, it will shut itself down and the motor will coast to a stop. If this happens, the lathe will not respond to any input from the pendant control. To reset the Drive, turn the power off, LET THE LATHE SIT FOR 30 SECONDS, and then turn the power back on.

**Maintenance & Lubrication** 

**Notes** 

ONEWAY Lathes, like any mechanical device, needs lubrication to function at its optimum. Woodturning creates dust and turning wet wood sprays water and chemicals onto the lathe. Some of these chemicals are acidic and can quickly rust the bed. To minimize bed and tailstock quill rust, apply a heavy duty paste wax. Doing this will not noticeably affect clamping. After turning, the lathe should be wiped down - particularly the bed. Wiping an oily rag over exposed metal will help keep your lathe functioning better and last longer. Oil on the bed should be wiped off before using the lathe so the tailstock and banjo clamp tightly.

There are two areas on the lathe that require lubrication: the tailstock and the banjo clamping. The tailstock quill is a precision fit and to maintain factory performance it should be kept lightly oiled at all times. Wind the quill all the

way out, put a few drops of it in. Putting oil on the help ensure long life and good clamp mechanism put a few the hole in the back of the tail-

The banjo uses a patent that eliminates flex in the clamping over the entire Lubricating the mechathe clamping force is banjo not to overcome mechanism. Any antiwork but we find that lubricant C5-A works only have to lubricate the not clamping well. Remove lathe and lubricate the slidthe shaft helps ensure that slide freely.

oil on the barrel and wind clamping mechanism will clamping force. To oil the drops on the shaft through stock.

> pending mechanism shaft and ensures tight range of the banjo.

nism will ensure that used to clamp the friction in the seize lubricant will Fel-Pro anti-seize well. You should mechanism when it is the banjo from the ing cam. Putting oil on the banjo continues to



**Notes** 

#### **Changing the Belt**

- 1. Stop the lathe. Make sure all parts have completely stopped moving. Push the stop button on incoming power on the box.
- 2. Open the belt cover compartment.
- 3. Loosen the speed handle and lift the motor. Tighten the speed handle to lock the motor in the raised position.
- 4. Move the belt to the desired step on the pulley.
  - Large MOTOR Pulley / Small SPINDLE Pulley = HIGH speed range
  - Small MOTOR Pulley / Large SPINDLE Pulley = SLOW speed range **Note:** Ensure the belt is correctly located in the grooves on the pulley.
- 5. Grasp the motor, loosen the speed handle and lower the motor. Apply downward pressure to the motor and tighten the speed handle. Check the belt again to make sure it is seated correctly in the grooves on the pulley.
- **6.** Close the belt cover compartment.

#### **Attaching & Removing Accessories from the Spindle**

A special self supporting wrench is used to install and remove accessories from the spindle. This wrench will drop between the bedways so it does not need to be hand held while attaching and removing accessories. There are two set screws on all ONEWAY accessories that fit your lathe. Screw the accessory securely onto the spindle and snug up the two set screws using an M4 allen key.

#### Indexing

The indexing pin is located on the front side of the headstock. To use the spindle indexing, turn the knurled knob counter-clockwise to loosen the mechanism. Slide the pin forward while rotating the spindle by hand. The pin will engage in one of 24 holes, when it does, lock the pin in place by snugging up the brass knob. If the lathe gets turned on while the indexing pin is engaged, the lathe will not be damaged (unless there is belt slippage). If this happens, press the stop button, release the index pin, press the start button and resume working. If the lathe will not re-start, refer to the section on page 11 'If Your Drive Does Trip Out'.

#### **General Safety Tips**

Woodturning is an activity that can involve heavy workpieces revolving at high speeds. *ONEWAY* Lathes are very heavy solid machines and can rotate pieces faster than most other lathes. *ONEWAY* Lathes are also very quiet and it is easy to run the lathe faster than you think it is going. Bark, shavings and pieces of wood can fly from the lathe with considerable force, unexpectedly, at any time. Always wear face protection to prevent injury in such instances. Safety glasses will not protect your whole face. Wear a full face shield and if possible wear lung protection as well. A powered respirator is a good investment for any woodturner.

The best way to avoid injury is to stay out of the firing line. Professional instructors can teach you where to stand to minimize injury potential from flying debris. As when working with any tool, a sensible approach and simple safety precautions should be followed.

#### Common Sense Safety Rules.

- 1. Always keep guards in place.
- 2. Always wear eye protection. Use safety glasses or a full face shield when appropriate. Work in a well lit environment.
- 3. Wear lung protection. Wear a dust mask if cutting dry/dusty wood and when sanding
- 4. Do not wear loose clothing. Shirts should have short sleeves. Never wear a tie when working with any power equipment.
- 5. Never wear jewelry (ex watches, necklaces, rings and bracelets) while working with a wood lathe.
- **6.** Long hair should be tied up or stuffed into a hat. Long beards can get caught and should be tied back or removed.
- 7. Keep your shop floor free from objects that can be stumbled over. Woodturning generates lots of chips which will quickly hide any hazards on the floor. Keep the work area clean. Accidents are less likely to occur in a tidy work area where all sharp tools are put in their proper place.

#### Before You Start:

8. Check your lathe and work area before you start to make sure that everything is in proper working order and there is nothing lying loosely on the lathe. Ensure that the proper belt is selected and that the speed pot is dialled down to the lowest speed. Make sure that the

workpiece is fastened securely to the lathe and that the toolrest and banjo are tightened. Rotate your work manually before starting power. This will both assure clearances of toolrest, bed, etc. as well as assuring that chuck keys or wrenches have been removed.

#### While You Are Working

- 9. Stop the lathe before moving the toolrest. If you move the rest while the lathe is running you risk damaging the lathe, your workpiece and your fingers. Never touch the spinning wood.
- 10. Do not force your tool. A sharp tool used properly will remove wood very quickly without being forced. Pushing hard will lead to many problems, not just safety problems. Always use the proper tool for the job. Keep your tools sharp and clean for best results. Sharp tools are more predictable and behave better than dull tools.
- 11. Never wrap rags or abrasive's around your fingers. They can get caught and cause severe injury.
- 12. If you have small children around, please be aware that they can walk into the firing line and be hit with chips or other debris.
- **13.** If you hear your lathe making a new sound stop and investigate. New sounds are usually a sign of something going wrong.
- 14. Do not turn obviously damaged or weakened wood. Check for splits, cracks or weak spots before mounting it on the lathe. If turning a piece of glued wood, ensure that glue joints are secure.
- 15. Never leave the lathe running while unattended. Wait until the lathe comes to a complete stop before leaving the area.
- **16.** Disconnect the power source when the motor is being mounted, connected or reconnected.
- 17. The Tool Rest: adjust the tool rest height properly; adjust the tool rest so that it is as close to your work piece as possible; remove the tool rest when sanding or buffing.
- **18.** When roughing, always work downhill, roughing from large to small diameters.