

## AVAILABLE ACCESSORIES

### LATHE BED EXTENSION

A 24" (61 cm) extension which bolts onto the end of the 1018 is available which increases the distance between centers from 18" (46 cm) to 42 inches (107 cm). Because of the solid construction of the model 1018 Lathe, using this extension easily allows turning pieces this extended length. The end of this extension is equipped to handle a leg, but does not come with one. After testing this extension in our shop, we feel that one extension bolted to the end of the 1018 Lathe, in most applications will not require a support leg.

*1018 Lathe Bed Extension Part #M0140*



### 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 1018 Lathe.

» 1" - 8 to M33 \* 3.5      Part #2961

» 3/4 - 16 to M33 \* 3.5      Part #2962

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 at [www.oneway.on.ca](http://www.oneway.on.ca)

# 1018 LATHE

*POWER AND PRECISION  
FOR TODAY'S WOODTURNER*



## OWNER'S MANUAL

<http://www.oneway.on.ca>

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## ONEWAY 1018 LATHE MANUAL

This manual describes general use and features of the ONEWAY 1018 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 centers - 18"**  
**Overall length of lathe - 35.75"**  
**Swing over bed - 10"**  
**Swing over banjo - 6-3/4"**  
**Weight with motor - approximately 140 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**  
**Threads per inch Right Hand**

### OTHER SPECIFICATIONS

- Included: 3" faceplate, #2 MT Live Centre Body and #2 Safe Driver, Lathe Knock out Rod, Double ended Wrench, 4 leveling pads, 6 & 8 MM hex keys, and touch up paint.
- Lathe runs extremely quietly
- Standard spindle height from bottom of bench - 42-1/2"
- Bench Dimensions (1/8" thick steel):  
 Top 40" x 12-1/2"  
 Bottom 40" x 20"
- Options when purchasing this machine include:
  - With **or** without a bench
  - 1 HP 220 volt standard (optional 110 Volt) **or** No Motor or Drive

## 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.

Bedways are machined with a seven degree taper for rapid installation and removal of the tailstock.

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 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 sanding and braking.

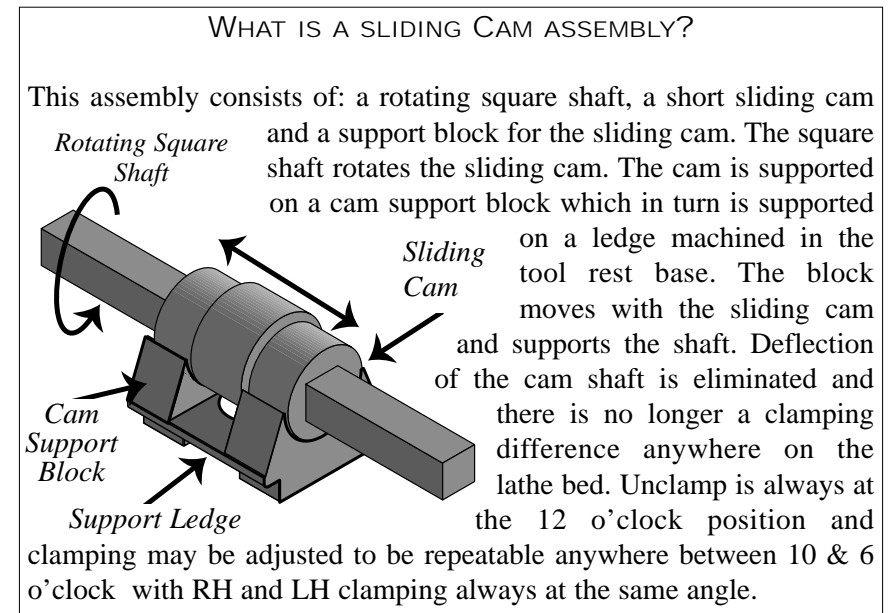
This lathe is a jack shaft design with a 1" wide belt driving the spindle from the intermediate shaft. This design adds cost, but the benefits are a much higher level of rigidity for turning. Motor to jack shaft utilizes a six groove poly V belt which is easily changed or replaced.

## BANJO - THE 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 handle to be clamped in all positions except over the bed. The clamp handle position can be adjusted via the Nylock Nut, underneath the banjo.

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 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.



The inside mechanism of *ONEWAY's* new toolrest base.

## 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. In the headstock loosen the two nuts holding the jack shaft and swing it up to allow the belt to come loose. Remove the nut on the back side of the spindle and slide off the index ring/handwheel. 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.

## THE TAILSTOCK

The tailstock on the ONEWAY 1018 is precision designed with a number two morse taper which allows the use of stronger live centers 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" hand-wheel and the high lead on this screw allows rapid in and out feeds for drilling.

The quill is 1-1/8" diameter quill 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 centers.

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 Tailstock***

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 AND SETUP

Please disregard this section, if your lathe does not have a ONEWAY Manufactured Steel Bench.

ONEWAY 1018 Lathes are shipped disassembled from the bench. Your new lathe will be bolted to a shipping shelf inside the bench. Before setting up your lathe, the first step is to choose a suitable location. The best location for the lathe is on a level solid wood or concrete floor. The electrical box and motor should be kept as cool as possible, so try to avoid putting the lathe where sun will shine directly on the box or right in front of a furnace vent.

### 1. Remove the Lathe Assembly from Inside the Bench

To begin setting up your lathe, first remove the lathe assembly from the shipping shelf. It is attached to the shelf with 2 bolts. Use a 7/16" wrench to remove the nut in order to get the bolts out.

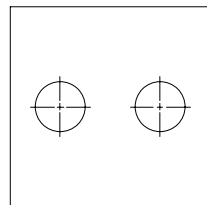
### 2. Remove the Bench from the wooden pallet

It is a good idea to remove the bench from the wooden skid, while the lathe is not attached. Use your 7/16" wrench to remove the four nuts, and tap the carriage bolts down so the lathe can be easily removed from the wooden pallet.

### 3. Position the Bench and Levelling Pads

The final step in successfully positioning the bench is to put the levelling pads which came in the lathe kit under the feet of the bench. A set screw and nut will be assembled in each foot of the bench. Position the set screw in the hole that is not drilled thru. The lathe does not have to be perfectly level - these levelling pads are for equalizing the pressure of the lathe and bench assembly equally over each foot. We recommend that the lathe bench be bolted to the floor, to do this, position the thru hole in the foot of the bench directly over the thru hole in the levelling pad. A bolt can then be put through these two holes and bolted into the floor. If you do not plan to bolt the lathe to the floor, the position of the levelling pad relative to the position of the bench foot does not matter.

Levelling Pad



Hole drilled thru      Hole 0.19" deep

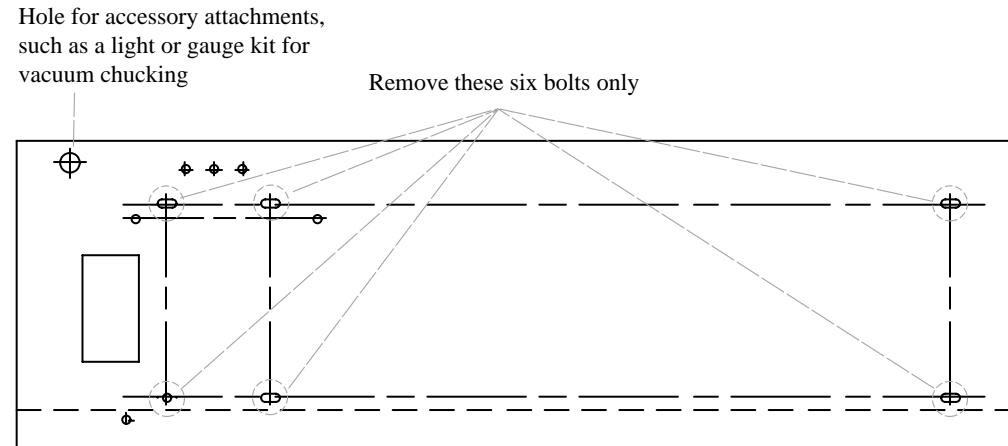
### 5. Attach the lathe to the bench

Once you have the bench in the final desired position, you can attach the lathe to the bench. Remove 6 bolts from the top of the bench. Be careful not to remove the bolts which are fastening the motor assembly to the bench, use the bench hole pattern diagram if you are not sure which bolts to remove. Take care when removing this hardware, as there are three tapping pads underneath the bench fastened with these bolts. You will be using this hardware you are removing to attach the lathe to the bench, so keep it handy.

Position the lathe on the bench so that the holes in the base are over the holes in the bench and push the belt through the belt hole. Use the tapping pads instead of nuts to attach the lathe to the bench.

Attach the motor pulley to the jack shaft using the instructions below on "How to Change the Belt"

**BENCH TOP HOLE PATTERN**



## THE DRIVE

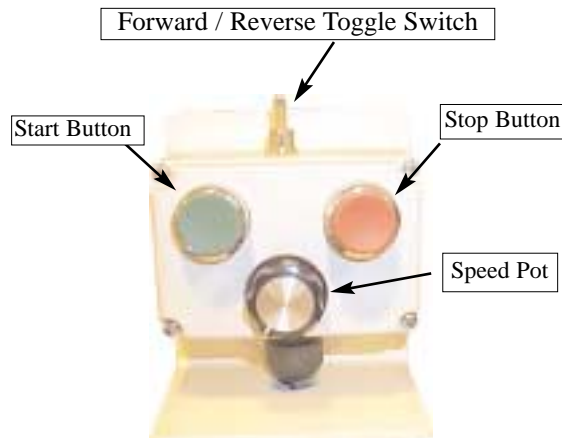
### AC ELECTRONIC VARIABLE 0 - 4000 RPM WITH FULL SPEED REVERSE

- The drive package is fully electronic with speed from 0 - 4000 RPM. Lathes are available with one of two options:
  1. No motor or drive (pulley, belt and motor bracket supplied).
  2. 1 HP -- requiring 220 Volt
- Speed ranges are 0-1000 / 0-2500 /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 pulleys are 3 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

The toggle switch on the top of the box has three settings:

- » Forward -Slow acceleration (long)
- » Forward -Fast acceleration (short)
- » Reverse



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.

2. 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. If you have a 1 HP lathe, this can be prevented from happening again by putting the deceleration toggle switch into the Long position. Selecting the Long Break time, will also stop the drive from tripping out when the speed pot is turned rapidly while working on a large piece.

3. 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.

4. 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

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 oil on the barrel and wind it in. Putting oil on the clamping mechanism will help ensure long life and good clamping force. To oil the clamp mechanism put a few drops on the shaft through the hole in the back of the tailstock.

The banjo uses a patent pending mechanism that eliminates flex in the shaft and ensures tight clamping over the entire range of the banjo. Lubricating the mechanism will ensure that the clamping force is used to clamp the banjo not to overcome friction in the mechanism. Any anti-seize lubricant will work but we find that Fel-Pro anti-seize lubricant C5-A works well. You should only have to lubricate the mechanism when it is not clamping well. Remove the banjo from the lathe and lubricate the sliding cam. Putting oil on the shaft helps ensure that the banjo continues to slide freely.

## CHANGING THE BELT

1. Stop the lathe. Make sure all parts have completely stopped moving.
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 jack shaft pulley, and then to the corresponding step on the motor pulley. Ensure the belt is correctly located in the grooves on both pulleys.
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 both pulleys.
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, shut the machine down, release the index pin and allow the machine to reset itself. 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.

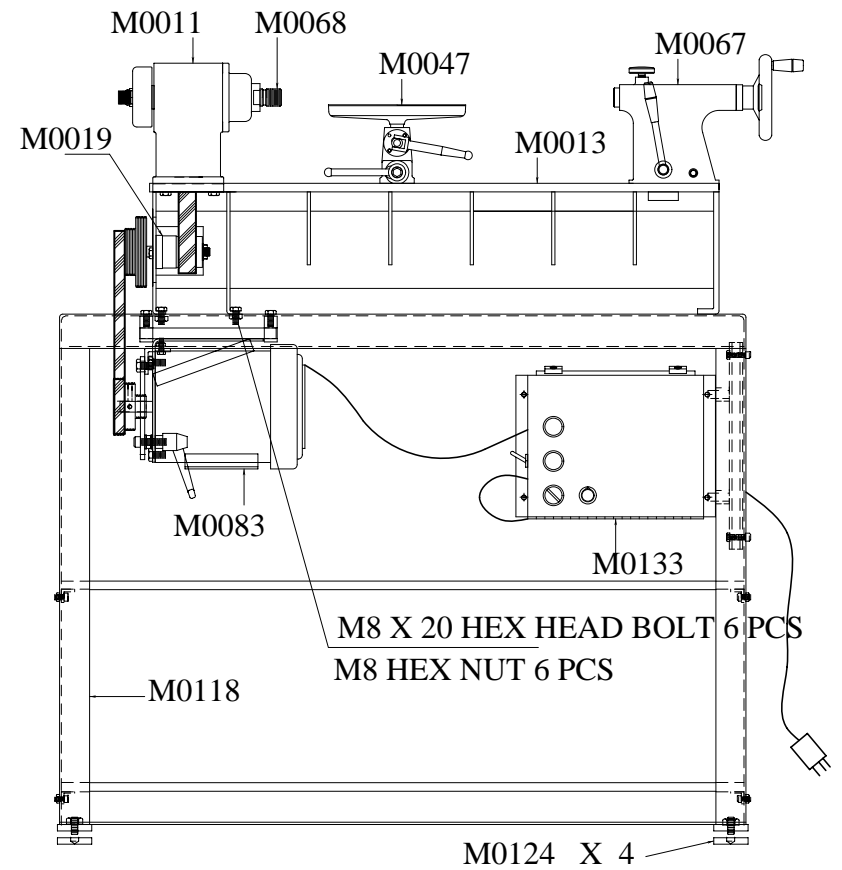
### *While You Are Working*

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.



## APPENDIX

1018 & Bench Assy  
M0047 - Banjo Assy  
M0067 - Tailstock Assy  
M0011 - Headstock Ass  
M0068 - Spindle Assembly  
M0019 - Jack Shaft Blown  
M0019 - Jack Shaft Assembled  
M0083 - Motor Mount Assembly



1018 MINI LATHE & M0131 BENCH ASSY

