

241 Monteith Ave Stratford, ON, N5A 5X6 Canada

Phone: 519.271.7611 Fax: 519.271.8892

1.800.565.7288

www.oneway.ca

THE **STRONGHOLD** CHUCK Instruction Manual

Congratulations on your purchase. We at ONEWAY believe that you will be pleased with your versatile STRONGHOLD Key Operated Scroll chuck. Please read the following instructions before its use.

TABLE OF CONTENTS:

Section 1 - Your STRONGHOLD & its parts

, Contents of this package

, Chuck Description

, Features of your STRONGHOLD

, Why you have bought a superior chuck

Section 2 - Getting Started

Mounting the Adaptor

Removing the Adaptor

Mounting the STRONGHOLD

on your lathe spindle

Section 3 - Maintenance

Removing Top Jaws

, Removing Base Jaws

, Reassembling your STRONG-HOLD

Section 4 - Chuck Accessories Optional Chuck Accessories & Uses

, Capacity Chart

- Section 5 ONEWAY Turning Tips Methods for turning Bowls &
- Platters:
- Method One: Screw Chucking Method Two: Large Drill
- Method Three: Glue Block Differentiating Left & Right
- Hand Screws
- , Maximizing Gripping Power
- , A Finishing Tip
- , Safety Tips
- , ONEWAY's Guarantee
- , Warranty Card.

SECTION 1 - YOUR STRONGHOLD & IT'S PARTS

CONTENTS OF THIS PACKAGE

Please check that the following components have been included in your package. If any of the following pieces are missing, please contact us immediately.

- 1 STRONGHOLD Chuck assembly with No. 2 Top Jaws attached
- 1 Geared Chuck Key
- 1 1-1/2" R.H. Jumbo Screw
- 1 Taperlock adaptor*
- 2 M5 * 20 Hex socket screws*
- 1 4 mm T-handle hex key
- * The adaptor may be packaged separately. If your adaptor is not already installed in your chuck, installation instructions are on page 8.

Patents

Certain features of the STRONGHOLD are patented under one or more of the following patent numbers: 5141239, 2257068 (Note: other patents pending at the time of printing this manual).

Nomenclature

This section explains the proper terms for the component parts which make up your new STRONGHOLD chuck. These terms will be referred to throughout this instruction manual. It is necessary that you know the proper names for the parts of your chuck for complete understanding of these instructions. Some of the chuck's features are also discussed.



TERMINOLOGY OF THE CHUCK

TERMINOLOGY OF THE CHUCK TAPERLOCK ADAPTOR

dle.

This adaptor comes in over a

hundred different thead sizes so it

can be made to fit any lathe spin-

If you change lathes, all you need

to do is buy a new adaptor, not a

whole new chuck. The taperlock

design eliminates the possibility

of the adaptor loosening or sepa-

This is used to open and close the chuck. The key is supported in two places, for easy action and long life.

Your key will come disassembled. Insert the cross bar into the hole in the key and put the Red Caps (which are packed in a small plastic bag) on each end to secure it in place.

rating from the chuck body in Cross Bar normal use or when reversing the lathe. Red Cap

Not Shown

GEARED KEY

- Snap Ring The clip which holds the scroll in place. Snap ring pliers are required to remove the scroll if necessary (Anderton #6 external snap ring pliers)
- 4 MM T-Handle Hex Key Used to install or remove the Taperlock Adaptor and/or the Top Jaws.

FEATURES OF YOUR CHUCK

NEWAY

ANADA

The STRONGHOLD is equipped with ONEWAY's patented profile top jaw shape. This shape increases gripping power at all diameters of round and square stock. Less wood damage also occurs with this jaw shape

than with the conventional round shaped jaws.

Note the recess: This is where the groove around the diameter of the head of the screw fits. This eliminates the possibility of the screw moving in or out of the chuck.

Note the shape of the tip of the base jaw: this fits into the grooves or flats that are milled along the length of the head of the screw which prevents the screw from spinning. The groove on the base jaw is tapered. This groove is where the Top Jaw sits and is pulled in with two countersunk screws. The taper

> allows for the top jaws to have a snug fit but will not damage either the top or base jaw.

SLOT (patented safety feature)

This is a slot which is milled onto the body of the chuck. There is a shorter slot under the opposite jaw, which can't be seen in this view. Refer to page 13 for the functions of these slots.

WHAT MAKES THE STRONGHOLD A SUPERIOR CHUCK?

- , Base jaws are made from carbon steel. Precision grinding on the sides provides for the exact and controlled clearances which are required for wood turning chucks.
- , Base jaws are case hardened which makes them longer lasting, stronger, and non-seizing in use.
- , Scroll is precision machined and case hardened. The bore is honed to exact tolerances after heat treating.
- , The scroll is manganese phosphate plated which acts as an anti-seize compound. Less lubrication is consequently required for smooth running action over the life of the chuck.
- , The body is precision machined. Electroless nickel plating provides a hard wearing surface for base jaws and scroll while giving the added bonus of providing excellent corrosion resistance.

Add these quality materials and precision processes to features such as:

, Profiled Top Jaws

- , Patented Safety Feature allowing maximum travel
- , Key operation allowing one handed tightening and solid holding power
- , Superior Taperlock Adaptor
- , and its one-of-a-kind woodworm screw

Equals an absolutely superior chuck!

SECTION 2 - GETTING STARTED

MOUNTING AND REMOVING THE ADAPTOR

Note that there are four holes in the adaptor. Two of these holes are counter-bored and are not threaded. These are used to pull the adaptor into the tapered chuck body (and hold it there). The other two holes are not counter-bored, but are threaded. These are used as jack screws if the adaptor needs to be removed.

MOUNTING THE ADAPTOR: (your adaptor may already be mounted)

- 1. Wipe the inside of the taper of the chuck body as well as the outside of the adaptor to be sure all grit and dirt is removed.
- 2. Slide the adaptor into the chuck body with the counter-bored holes of the adaptor lined up with the threaded holes of the chuck body.
- 3. Thread in the M5 x 20 hex socket screws and with the 4mm T-handle hex key and tighten them alternately. Alternate tightening ensures the the adaptor is pulled into the taper straight.

Removing The Adaptor:

- 1. Remove the two tightening screws and thread them into the two tapped holes of the adaptor. They now become jack screws.
- 2. Carefully tighten alternately until the adaptor pops loose from the taper.

CAUTION: If a lot of force is required to remove the adaptor, the screws may flatten and compress the first thread. After the adaptor is out of the chuck body, you may not be able to remove the screws from the adaptor. Do not forcibly remove, but take the following action: 8

, First turn the screws in further

, Then, using a file or grinder, remove the first squashed thread. You will now be able to remove the screws without damaging the taperlock adaptor.

MOUNTING THE STRONGHOLD ON YOUR LATHE

It is important that your chuck is put on your lathe properly. Proceed as follows: After mounting the adaptor to the chuck, carefully screw the assembly onto your lathe spindle. It should go on smoothly without excessive play or binding. Screw it all the way on until the adaptor face contacts the spindle shoulder. Next, lock your spindle, and unscrew the chuck just slightly so you can give it a firm swift spin, consequently snapping the chuck home. Alternatively, a piece of wood can be tightened in the top jaws crosswise, and with the palm of your hand, bump the chuck home.

To remove, reverse the above procedure.

WARNING: Do not put a steel bar in the holes of the chuck body, as this may cause damage to the holes and/or the scroll.

SECTION 3 - MAINTENANCE

To clean your chuck, simply brush clean. If it is sticky, soak in varsol or mineral spirits with about 10% oil added. Allow to sit for 1/2 hour or more, and blow clean.

TO DISASSEMBLE YOUR STRONGHOLD

- 1. Remove Top Jaws. You may want to remove the Top Jaws either for cleaning purposes, or to exchange them for an optional set of jaws for a project which requires Jaws with a different capacity. To remove the Top Jaws, use the 4mm T-Handle hex key and unscrew the eight screws counterclockwise. The jaws are pulled in on a taper, so after the screws are out, it is usually necessary to give them a tap (with the T-handle of the hex key) to knock them loose from the taper. It is possible to disassemble the chuck and leave three of the Top Jaws on just locate the Top Jaw with the pin, and remove it.
- 2. **Remove Base Jaws**. To remove the base jaws, you must remove at least one of the Top Jaws. All four Top Jaws can be removed, but for cleaning purposes, it is usually only necessary to remove one that being the one with the pin (this may be base jaw No 2 or No 4 depending on if it is located in the short or long slot respectively). After this Top Jaw is off, use the key and open the chuck until the jaws stop moving. When the jaws are no longer moving, they are loose from the scroll and can be slid from the slots out of the body.
- 3. **Remove the adaptor** (refer to above page 8). It is necessary to remove the adaptor in order to remove the snap ring.
- 4. **Remove the snap ring**. Use Anderton #6 external snap ring pliers (or similar) to remove the snap ring
- 5. After removing the snap ring, turn the chuck upside down into your hand 10

and the scroll should fall straight out. The STRONGHOLD is manufactured with very tight tolerances, and sometimes a little jiggling is necessary to get the scroll out. Note: Do not use a wire brush on the scroll. This can damage the lubricating properties on the surfaces.

How To RE-ASSEMBLE YOUR STRONGHOLD

- 1. Place the scroll back into the chuck body.
- 2. Using the snap ring pliers, replace the snap ring.
- 3. Remount the base jaws, using the following directions



Chuck shown with all jaws removed.

TO REMOUNT THE BASE JAWS:

- a. Rotate the scroll until you can see the thread start at location 1.
- b. Back the scroll up until the start of the thread just disappears, and slide the No. 1 base jaw into the slot.
- c. While pushing inward on the No. 1 base jaw, rotate the scroll 90Ù. Pull outward on the No. 1 base jaw to make sure that it has engaged properly with the scroll. If the jaw comes out,

start the process again.

- d. Rotate the scroll until you can see the thread start at location 2.
- e. Back the scroll up and slide the No. 2. base jaw into the slot. Push on the jaw, and rotate the scroll, as you did for the No. 1 base jaw.
- f.. Repeat these steps for the No. 3 and No. 4 base jaws.
- g. Rotate the scroll all the way in to check that all the jaws meet in the centre. If they don't, you may have put the base jaws onto the scroll in the wrong order, or into the wrong slots, or one of the jaws may not have engaged properly onto the scroll. If the jaws do not meet in the centre, open the scroll until the jaws come out, and give it another try.



STRONGHOLD with Top Jaws removed.

After replacing base jaws, you must check that they all meet in the centre.

TROUBLE SHOOTING

If , after a second try, the jaws do not close properly, remove them and inspect for damage. It is possible that through accidental mishandling, the first half tooth on base jaw No. 1 has broken off. If this has happened, repeat the process above, but start by inserting base jaw No. 2 first, then No. 3, No. 4 and finally No. 1.

4. **Re-attach Top Jaws** using the following directions:

Replacing Top Jaws

To replace the Top Jaws on your STRONG-HOLD, first make sure that both the top of the base jaw (still in the chuck) and the bottom of the Top Jaw (to be put on) are free of dirt. Next, locate the Top Jaw with the safety pin. Place it on the base jaw adjacent to the slot (patented feature) and replace the screws. After the top jaw with the pin is mounted on the chuck, the other three top jaws can be placed on the chuck body at random (making sure that all the contact surfaces are free of dirt). There are two slots:



The Long Slot is for experienced turners. It Bottom view of Top Jaw with pin is machined to allow the jaws maximum out-

ward travel without the base jaws coming out of the scroll, effectively preventing jaw fly-out when the lathe is started.

The Short Slot is for beginners and school use. This slot is machined to stop base jaws from protruding out of the chuck, which can be a hazard to knuckles when working close to the chuck.

5. Re-Mount the Adaptor. (refer to page 8)

SECTION 4 - STRONGHOLD ACCESSORIES

Right out of the box, the STRONGHOLD will be ready to be used for most turning applications. The accessories which *ONEWAY* offers were designed to allow the wood turner to take on projects which may require a smaller or larger capacity than what the standard No. 2 Jaws can handle. The following is a list of available accessories which will allow you to easily upgrade and diversify your STRONG-HOLD.

No. 1 JAWS	CAPACITY CHART		
If often turning small parts, the		min	max
No. 1 jaws are a must, but do	#1 Jaws (Spigot Jaws)		
not use them for material over 1-	external chucking	3/8 <i>f</i>	1-7/8
1/2" in diameter or for bowls	internal chucking	1-1/8 <i>f</i>	2-5/8
with recess larger than 1-3/4" in	#2 Jaws		
diameter.	external chucking	1- <i>f</i>	3- f
	internal chucking	2-3/8f	4f
No. 3 JAWS	#3 Jaws		
For large bowls (over 12" in	external chucking	3-7/8 <i>f</i>	5- f
diameter and 5" deep), No. 3	internal chucking	4- <i>^f</i>	6 <i>f</i>
jaws are an asset because their	Jumbo Jaws		
larger size will better support	external chucking	2- f	11f
your material, whether holding	internal chucking	4- <i>f</i>	12 <i>f</i>
inside or out.	Mega Jumbo Jaws		
JUMBO JAWS	external chucking	1- <i>f</i>	14 <i>f</i>
For finishing the backside of	internal chucking	4- <i>f</i>	15 <i>f</i>
your bowls up to 12" in diame-			

minum plates machined from the solid for higher strength. Buttons are hard rubber sleeves pressed on taper steel cores and can be positioned at virtually any diameter. Extra button sets are also available and can be stacked to hold uneven or out of round bowls.

MEGA JUMBO JAWS

For larger bowls, up to 16", if your lathe has the capacity, go for the Mega Jumbo Jaws.

EXTRA BUTTON SET

For large, or odd shaped bowls, an extra button set is available which allows buttons to be stacked.

JUMBO SCREWS

An 1-1/2" Left Hand Jumbo Screw is available for outboard turning (this screw is the same length as the R.H. screw which is supplied with the STRONGHOLD). For large bowls, the 2" screw should be used (R.H. for inboard and L.H. for outboard turning). Having trouble differentiating right hand and left hand screws? See page 18.

COLLETT JAWS & PADS

For turning very long slender parts, consider the collett jaws and pads. They are extremely safe and hold with a bulldog grip any part within their capacity. Collett Pads come in sizes of 1/2", 3/4", 1", 1-1/4", and 1-1/2".

CHUCK SPURS

If you often switch from chuck work, to working between centres, consider a ONEWAY chuck spur. It mounts directly into your chuck, which eliminates having to remove and re-install your chuck from your spindle. Chuck Spurs are manufactured in two sizes; 1/2" and 1".

ter, the Jumbo Jaws are unsurpassed. Jumbo Jaws are alu-

SECTION 5 - ONEWAY TURNING TIPS

This section of this instruction manual is devoted to turning tips, and ways to maximize the use of your chuck.

BOWLS AND PLATTERS

There are many ways to hold your work piece for turning it into a bowl or platter. Here are three good methods:

Method One

Mount the Jumbo Screw in your chuck. The base jaws should sit in the grooves or flats which have been milled along the length of the head, and the groove around the head of the screw will fit in the reduced top jaw section (see page 6). (NOTE: No. 1 Jaws cannot be used with the Jumbo screw). After the screw is seated properly in your chuck, drill an 11/32" (9 mm) hole about 3/4" (19 mm) deep in the part of the wood blank which will be the inside of the bowl when its finished. Thread the blank onto the screw, making sure the face of the blank is in contact with the jaws. You may have to lock your spindle if you are having trouble holding the chuck stationary while threading the blank onto the screw. (Never forget to unlock your spindle before starting up your lathe, and its a good idea to get into the habit of never leaving your key in the chuck while you are doing something else). Once your blank is mounted on the screw, you can rough or finish turn the outside. To be able to mount your bowl for turning the second side, turn a foot, a spigot or recess for holding. Now you can remove the blank from the screw by rotating counter clockwise, (if you have trouble getting the blank off the screw, it helps if you loosen the jaws off of the screw just enough to break contact with the jaw faces). Next, turn the blank around and grip on the spigot or the recess. You may wish to wrap some tape around your spigot if damage from the chuck jaws is not acceptable. If you have turned a foot, and want to ensure zero damage, you could also use a glue block at this point (refer to Method 3). When holding by recess, damage will be negligible. You are now ready to hollow the bowl.

Method Two

With a large drill or forstner bit, drill a hole to suitable diameter (2-3/8" MIN-IMUM) and depth (1/4" or deeper) which acts as a recess. You can now grip on this recess by expansion chucking and turn the outside of the bowl. As in method one, turn a foot, a spigot, or a recess for holding. Loosen the chuck, remove the blank, turn it around and now grip the blank on the backside and hollow out the bowl. This method is faster for larger quantities of bowls, but the large hole requires a good drill press setup.

Method Three

A third method involves a glue block. Drill an 11/32" (9mm) hole in what will be the inside of the bowl. Mount the jumbo screw in the chuck, and thread the blank on the screw. Finish turn the outside of the bowl, and glue a block to the bottom of the bowl. Turn the glue block round so it is concentric and can be gripped in the chuck. Remove the blank from the Jumbo Screw, and the Jumbo Screw from the chuck. You can then grip the glue block with the Top Jaws, and hollow the inside of the bowl. Using a glue block is especially appropriate when you don't want a foot, or tenon and don't have a means to turn it off. This method is also less wasteful if you are working with exotic or expensive wood, or if your blank is just the right size and you can't afford to waste wood on an unwanted spigot that you have to turn off later. ONEWAY suggests using hot melt glue on dry wood (this glue will not work on wet wood). Glue blocks can usually be knocked off - if you have trouble getting the glue block off, use a heat gun to soften the glue and then knock the glue block off. If working with wet wood, ONEWAY suggests using cyanoacralate. If you are using cyanoacralate, it will be necessary to part off or waste away the glue block.



Spinning Tops

To make tops (or similar small components), simply mount a suitable piece of stock, square or preferably round. Due to the unique jaw shape, good holding will be achieved in either case. For tops, turn the point which will be in contact with the surface when spinning. You can then work towards the chuck, turning the spindle of the top, and part off.

MAXIMIZING YOUR GRIPPING POWER

If turning a large piece of square stock, (especially if it is end grain) it is a good idea to initially chuck the "good" end. A spigot can be turned on the other end. The piece can then be turned around and gripped on the spigot. This is done for two good reasons. Firstly, the spigot can be turned small enough so that when it is chucked, the base jaws remain inside the diameter of the body, which reduces the risk of knuckles being injured if a catch occurs when working close to the chuck. Secondly, when holding in a spigot of the ideal diameter, you are also maximizing your gripping power.

A FINISHING TIP

If you are finishing a piece with a spray finish, such as laquer, you may want to spray with the lathe off, and cover the chuck with some kind of protective shield. You can then remove the shield after spraying, turn the lathe on, and finish buffing with a rag or chips. Covering the chuck while spraying, will prevent it from becoming sticky and gumming up the scroll and jaws. This will ultimately keep your chuck running with smooth and easy action.

FOOT SPECIFICATIONS FOR CHUCKING BOARD GRAIN

When gripping the outside of a board grain foot

- 1 Make the foot 1/4" deep or more.
- 2 Stop off the top of the jaws, do not make the spigot so long that it reaches the bottom of the jaws and make the corner sharp. Make the foot straight.



Min. Dia. 2.0" Max. Dia. 3-1/2"

Min. Depth 3/16" Max. Depth 15/32"

Recess or Tenon Specifications for Chucking Board Grain

- 1. Do not make the cavity too deep. Maximum depth should be 7/32". If you go as deep as the straight section on the outside of the jaws the jaws will grip very poorly.
- 2. Back taper 2 or 3 degrees. The jaws will hold much better in a straight sided cavity than they will in a cavity that has too much taper.



Min. Dia. 2-3/8*f* Min. Depth 1/8" Max. Dia. 4.0" Max. Depth 7/32"

SPECIFICATIONS FOR CHUCKING SPINDLE TURNING (END GRAIN)

When gripping round end grain stock, make the spigot the same shape as for board grain.

Minimum Diameter	2.0"
Minimum Depth	3/16"
Maximum Diameter	3-1/2"
Maximum Depth	15/32"



JAW DESIGN AND HOLDING POWER

It is virtually impossible to design jaws that will not mark the wood. Collet type jaws and dovetail jaws will leave minimal marks but they will leave some marks



and have the disadvantage of only holding well over an extremely limited range. *ONEWAY* top jaws are designed to grip well over their entire range. As for the marks made by the jaws we believe that the marks from our jaws are much easier to remove than the marks made by a bowl flying out of a chuck and hitting the floor.

SAFETY TIPS

As when working with any tools, a sensible approach and simple safety precautions should be followed.

- 1. Always wear proper clothing and face protection. Also use adequate exhaust and respiration equipment, especially when turning or sanding toxic or spalted woods, or when spraying with any liquid material.
- 2. Before loading the chuck, check that the wood is not split, cracked, or otherwise weakened. Do not load damaged wood in you chuck for turning.
- 3. The capacity of the STRONGHOLD depends on various factors such as whether the wood is wet or dry, soft or hard or whether turning end grain or side grain and whether the piece is balanced.
- 4. Be sure wood is gripped tightly in the chuck before rotating the chuck under power. Use the key to tighten the chuck.
- 5. For safe use with hand chisels, do not extend the jaws beyond the chuck body.
- 6. Always rotate the chuck manually to be sure of clearances before starting your lathe. Don't forget to remove the key from the STRONGHOLD before starting your lathe.
- 7. Never wrap any strip sand paper or clothing around your hands or fingers when sanding or turning. Do not wear gloves when turning.
- 8. Only light cutting can be performed when holding long square stock without centre support, especially where soft or wet woods are involved. For best results on longer parts and heavy cutting, use the tip on page 19 for MAXI-MIZING YOUR GRIPPING POWER.

SAFETY TIPS

- 9. Using dull tools and poor technique will cause problems with any chucking system. By using properly sharpened tools and good technique, you will be guaranteed better results and safer turning.
- 10. When turning parts held between the chuck and live center, be sure the center is accurately aligned or oscillation will soon loosen the chuck's grip.
- 11. For endgrain hollowing in goblets or bowls, a ring tool such as the TERMITE made by ONEWAY will, because of its gentle cutting nature, allow safer deeper hollowing than previously possible with gouges and large scrapers.

WARNING

Always check and re-tighten after a catch or when some time elapses between uses to take care of warp and/or shrinkage. With care you may turn fairly long lengths unsupported, but for safety, whenever possible, use a center for support and to prevent accidents.

MANUFACTURERS WARRANTY

Date Purchased:

If you are not happy with this product, for whatever reason, return it within 90 days of purchase, for a full refund or credit. You are responsible for shipping the product back to us and any costs incurred.

Manufactured parts on this ONEWAY product are backed by a warranty period of **two years** from the date of purchase.

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

- 1. The warranty period has not elapsed. Proof of purchase date (sales receipt etc.) is required prior to any repair taking place.
- 2. The product has not been altered or modified in any way.
- 3. The product has not been subjected to misuse, abuse, negligence, or was not used strictly in accordance with these instructions.
- 4. Transportation costs incurred in returning the product to ONEWAY Manufacturing is **prepaid by the customer**.

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



241 Monteith Ave.

Stratford, ON, N5A 2P6, CANADA Phone: 519.271.7611

Fax: 519.271.8892

If you require technical assistance, call us toll free at

1.800.565.7288

To view all our products, inluding lathes, grinding jigs, chucks, and accessory jaws, visit our online product catalog at www.oneway.ca

STRONGHOLD WARRANTY CARD

Name:
Address:
City:
Province/State:
Postal Code/Zip:
Phone:
Date:
Place of Purchase:
Batch Number:
(stamped on the side of the body)
Would you like us to send you a ONEWAY catalogue? YES / NO
Comments:

NOTES

NOTES