



SIMPLEX IDEAL PEERLESS



Peerless 7000™ Automatic Reel Grinder Operating Manual

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Part Number 20046.1

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1.0 Introduction

Thank you for selecting the Simplex•Ideal•Peerless Reel Mower Grinder. The Peerless 7000 Grinder is designed and built from top quality materials and components by people who care, and it will give you decades of service.

1.1 Safety guidelines

The following are general safety guidelines. Please read and understand these guidelines before proceeding. As is the case with most machinery, failure to operate it in a safe manner may result in damage, injury or loss of life. Please be careful.

1. Always close shield or wear safety glasses and face shield when grinding!
2. Keep all guards in place and functioning.
3. Do not wear any loose clothing or jewelry which may get caught in the machinery. Secure long hair.
4. Keep your work area clean and organized.
5. Set up the work properly, using the correct tools and fixtures. Ensure that work is securely clamped.
6. Use the wrenches provided when changing the grinding stone and always ensure that the nut is tight.
7. Do not overtightening as that may damage the grinding stone.
8. Always replace damaged grinding stone.
9. Never leave grinder running while unattended.

1.2 Safety notices

In addition to the safety guidelines just listed, there are safety notices through out this manual which are denoted as follows:

INFO-Running the spin motor too fast may damage the indexer.

INFO-Running the spin motor too fast may damage the indexer.

A Warning Notice indicates a situation which could cause severe damage, serious injury or death.

WARNING-Always close shield or wear safety glasses and face shield when grinding.

A Danger Notice indicates a very dangerous situation which if continued will cause severe damage, serious injury or death.

DANGER-Do not overtighten the nut as it will cause the grinding stone to explode!

Again, make sure that you read and understand these warnings before proceeding because failure to operate any machinery in a safe manner may result in damage, injury or loss of life.

1.3 Limited One Year Product Warranty

SIP Corporation warrants the grinder against defects in materials and workmanship for one year from date of original purchase. SIP Corporation will, at its option, repair or replace the defective part at no charge provided it is returned during the warranty period, with transportation charges prepaid, to our factory. Proof of purchase may be required.

This warranty is subject to proper use and maintenance in accordance with all instructional material and manuals provided with the grinder.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication; if the product has been modified without written permission of SIP Corporation or if the serial number has been removed or defaced.

This warranty applies only to the original purchaser.

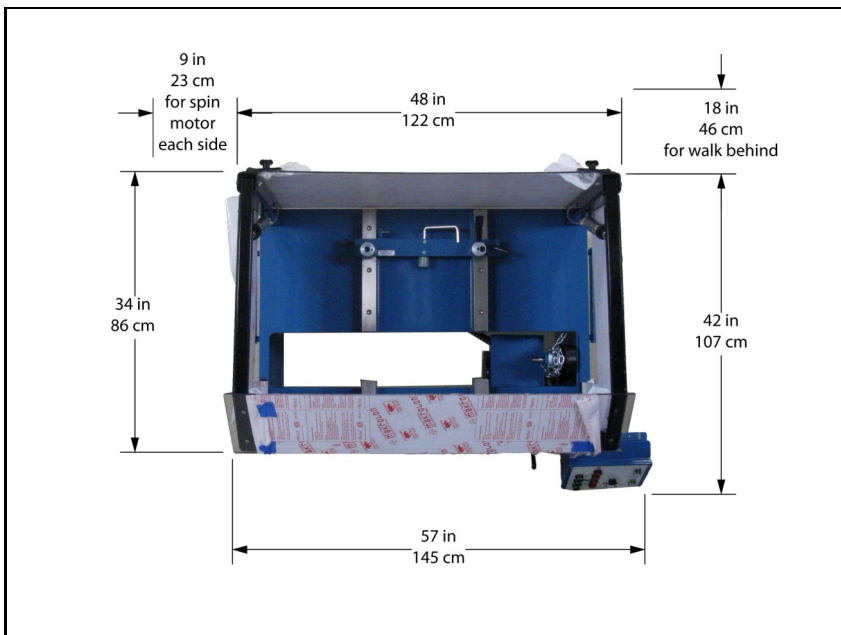
The warranty and remedies set forth above are exclusive in lieu of all others, whether oral or written, expressed or implied. SIP Corporation specifically disclaims any and all implied warranties, including without limitation, warranties of merchantability and fitness for a particular purpose.

No SIP Corporation dealer, agent or employee is authorized to make any modification, extension or addition to this warranty.

SIP Corporation is not responsible for special, incidental, or consequential damages resulting from any breach of warranty, or any other legal theory, including but not limited to lost profits, downtime, or goodwill.

Some states do not allow the exclusion or limitation of incidental or consequential damages or exclusion of implied warranties, so the above limitations or exclusion may not apply. This warranty gives you specific legal right and you may also have other rights that vary from state to state.

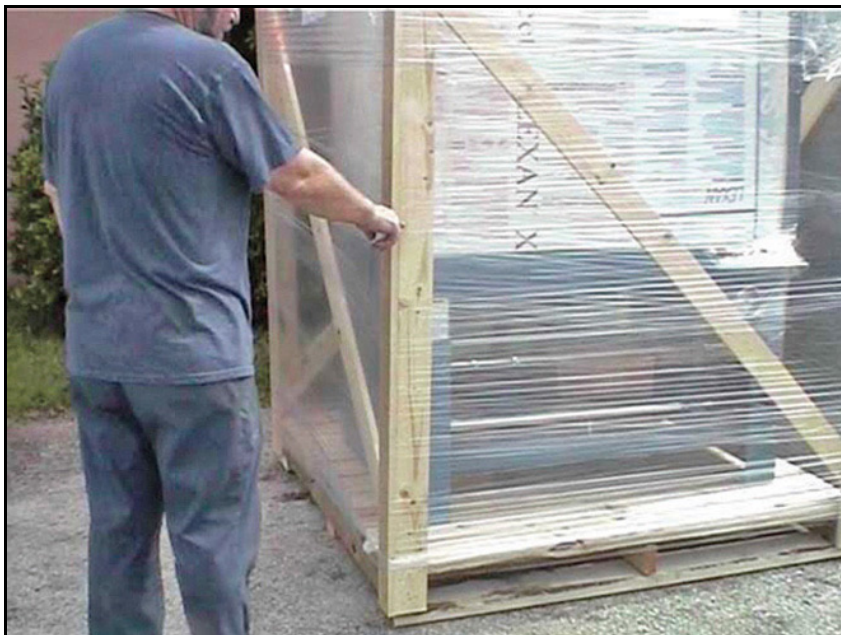
You must obtain prior authorization before returning defective parts to SIP Corporation.



2.0 Position the grinder

Determine where on a concrete slab the grinder will be located. The reel mounts on top of the grinder. The operator loads and works from the front. Adequate working area must be provided around the reel grinder.

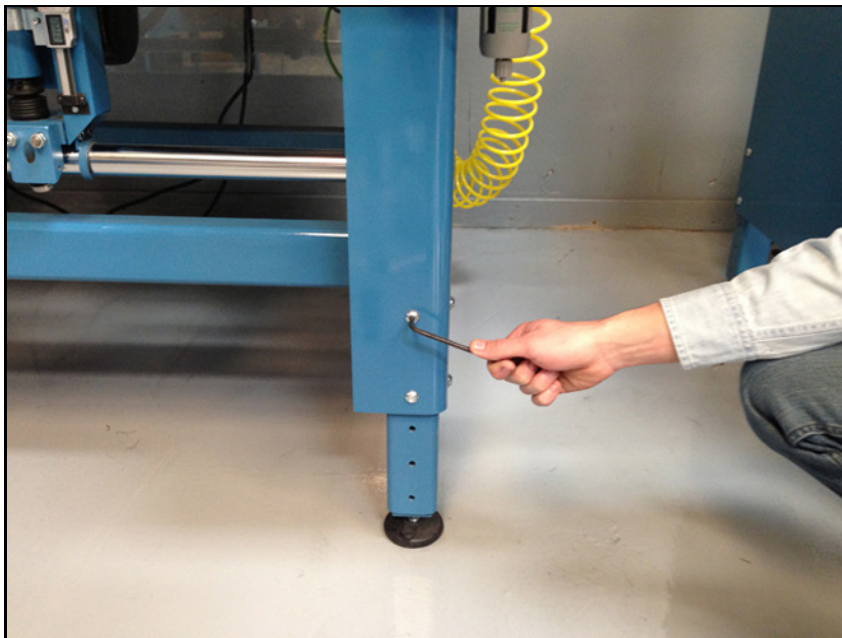
The Peerless requires standard 110 volt, 60 Hz, single phase service. Foreign versions with 200 volt, 50/60 Hz, single phase are available. The grinder comes with an 8 foot grounded cord for 110 volt service. The grinder also requires 70 psi clean compressed air.



2.1 Unpacking the grinder

While unpacking, examine carefully for any shipping damage. Any damage should be reported immediately to the carrier.

By now you have removed the plastic wrap from the main crate. After removing the box of accessories and any other optional equipment, unbolt the grinder from the pallet and place it in the location you have selected.



2.2 Leveling the Base
Set the grinder to your desired height.



Mount the leveling pads provided in to the four corners of the grinder.



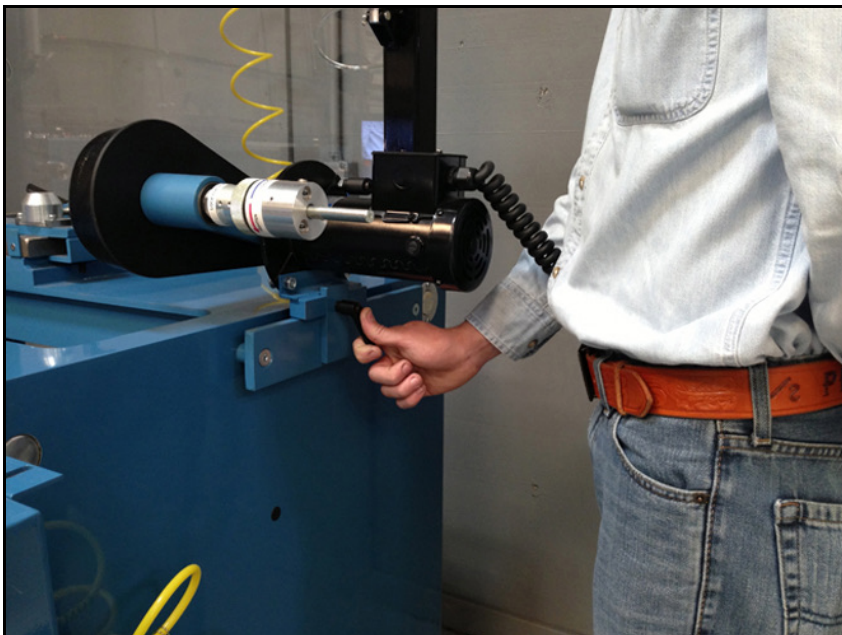
With the grinder in its final location, use a good quality carpenters level to adjust the leveling pads until grinder is level.



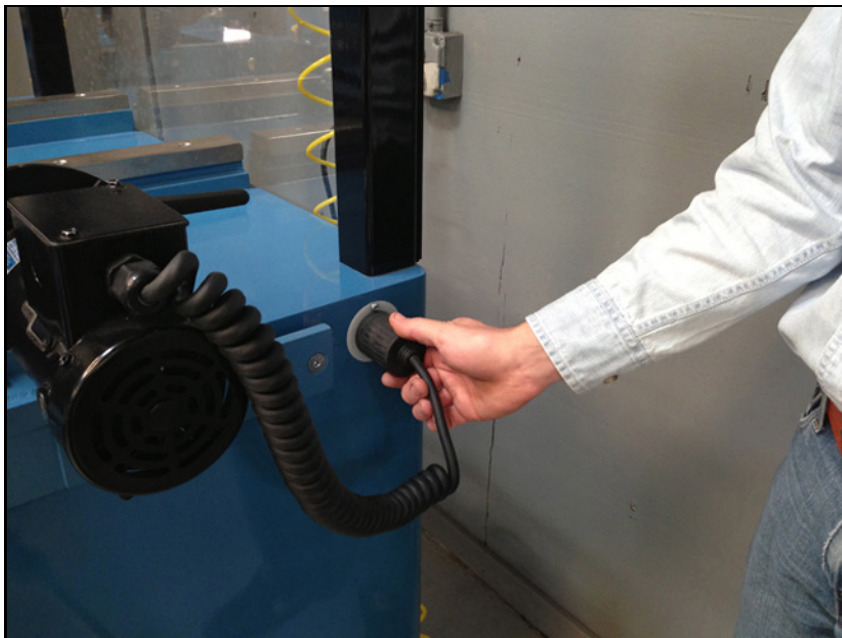
Again using the level, adjust the foot pads so that the back of the grinder is slightly lower than the front. This will let the reel roll into the fence.



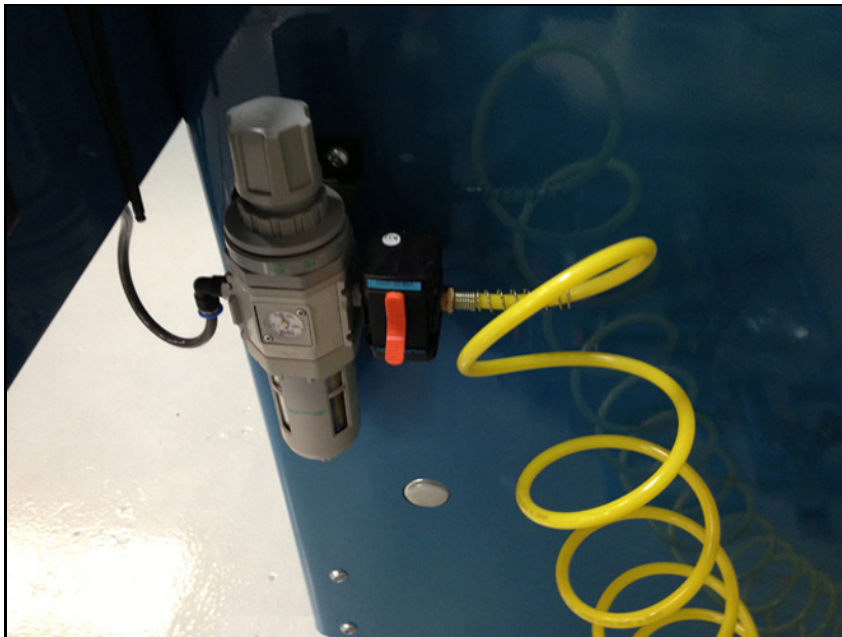
2.3 Reel drive motor
Mount the reel drive motor.



Clamp it in place. The clamping knobs are ratchet style handles and can be adjusted by pulling out and turning.



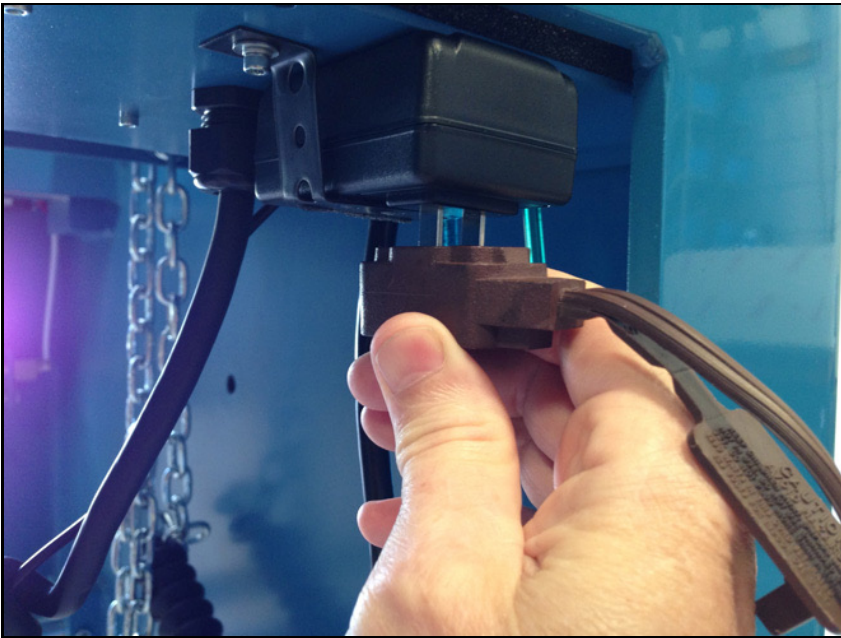
Plug and twist the motor plug into its receptacle on the same side as the reel drive motor is mounted. The reel drive motor is smart wired so that it will always rotate in the correct direction. The cord is only long enough to plug the motor into the side on which the reel drive motor is mounted.



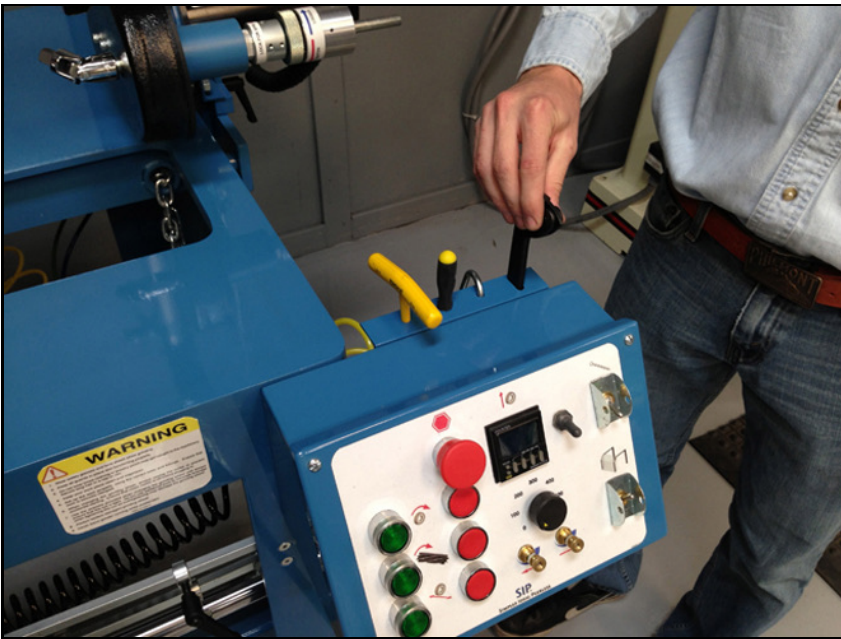
2.4 Connecting the service
Connect the air supply to the filter regulator
Set the pressure to 70 psi.



Plug the electrical cord into a 110 volt outlet.



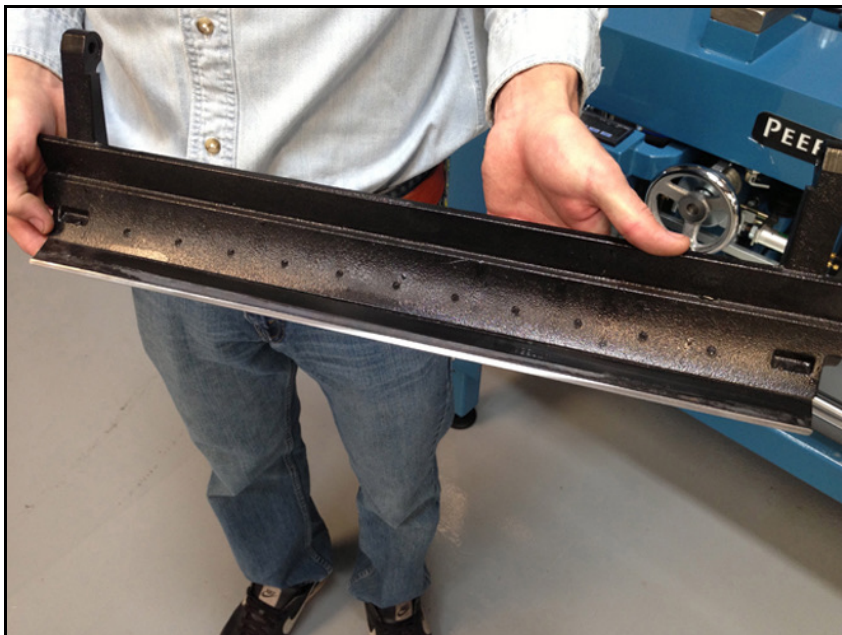
If you have the optional Digital Readout, plug an extension cord to the transformer plug on the bottom of the back panel.



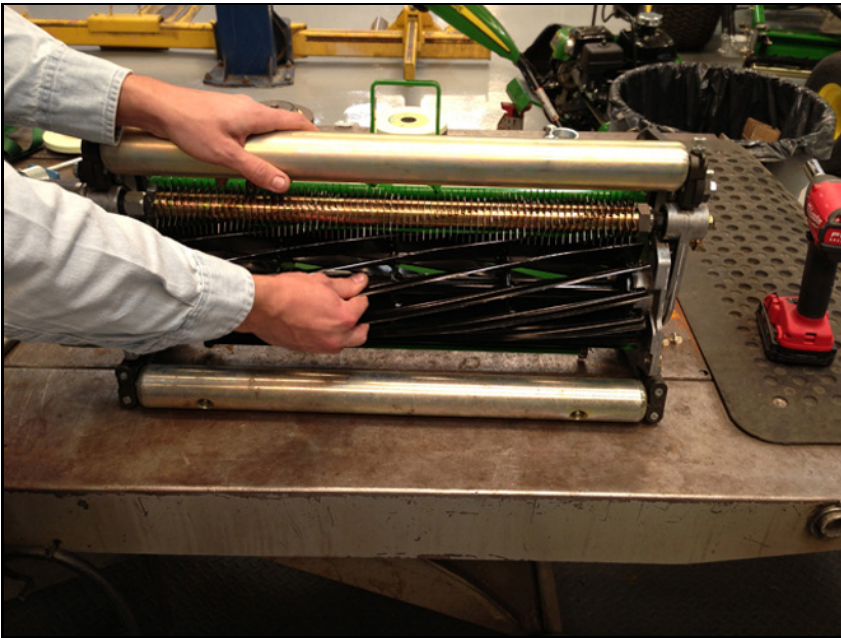
Store your tools in the rack.



3.0 Prepare the cutting unit for grinding
Clean all dirt, grass, rust, grease, and oil from the mower assembly, especially where it accumulates behind the lip of the bed knife.

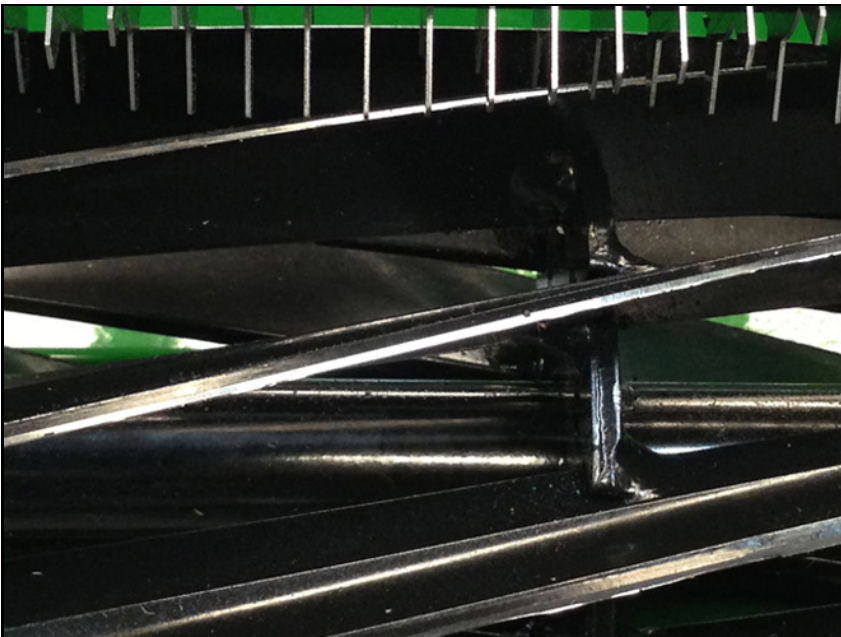


Inspect for a wavy appearance or condition along the top face of the bed knife. This would indicate that the bed knife has been adjusted to the reel with excessive pressure. This could cause worn or loose reel bearings.

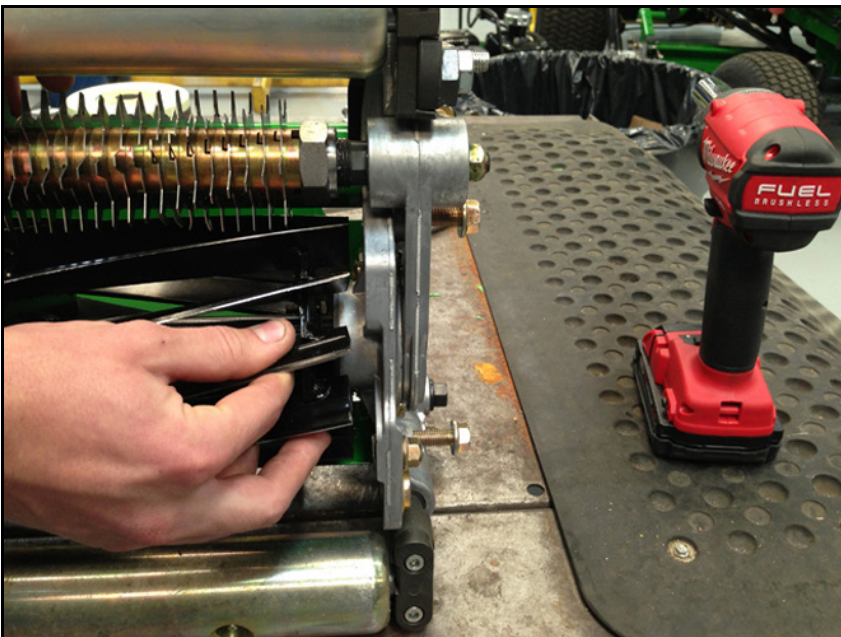


Check that the front spacer bar and that the bed knife is not loose. If the frame is loose, it is probably out of alignment. Check the mower manufacturer's manual to reset alignment.

Check the reel for free rotation and examine the reel blades for bad nicks that might indicate a twist or sprung spider.



Check to see that reel blades are securely fastened to the spiders and that the spiders are secure on the reel shaft. Repair as necessary.



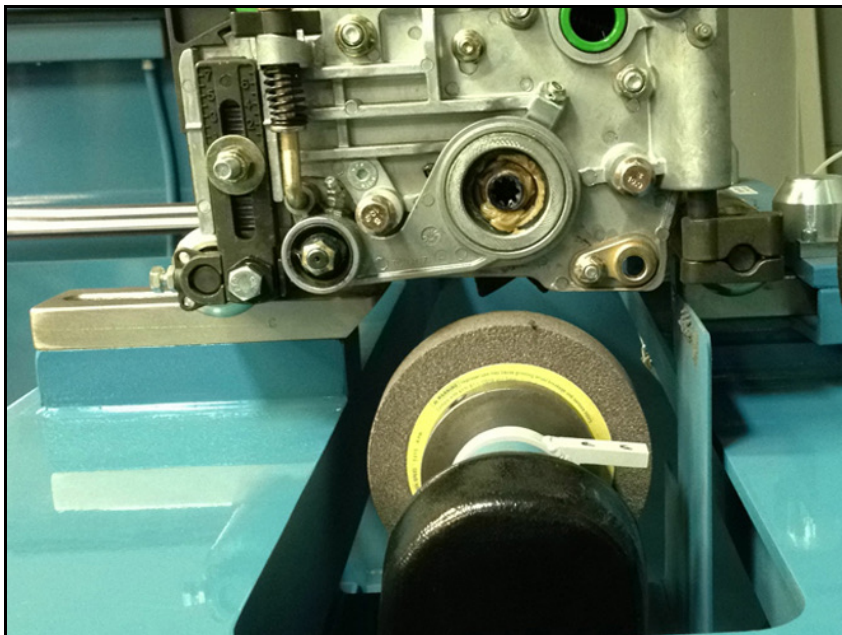
Check for axial and radial play in the reel bearings. Adjust or replace the bearings in accordance with the manufacturer's manual.



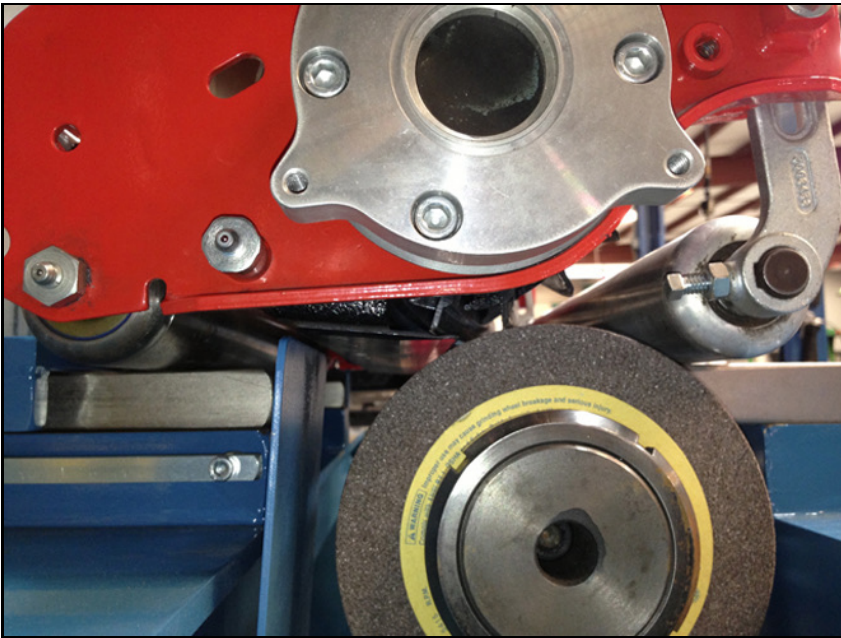
3.1 Mounting the cutting unit
Open the front shield.



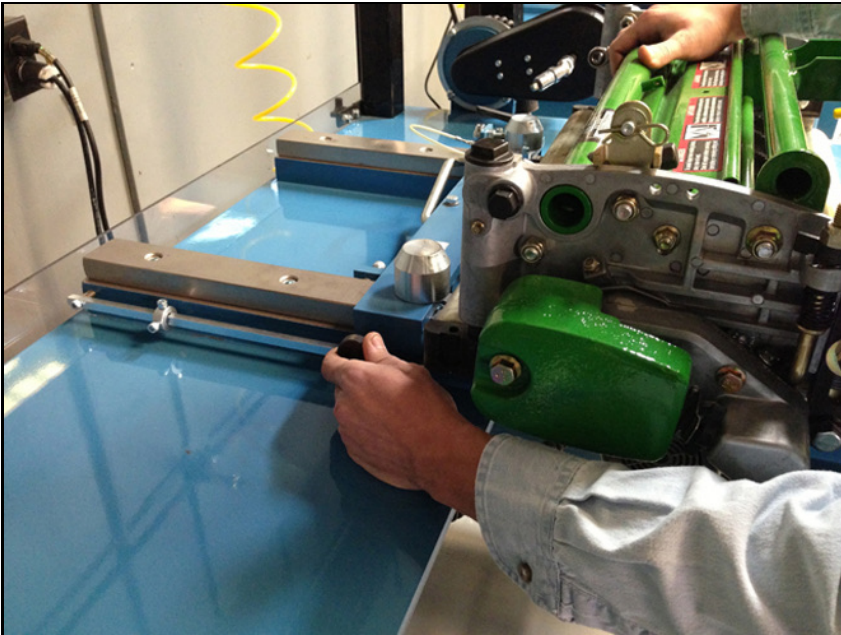
Place the cutting unit on the reel support rails.



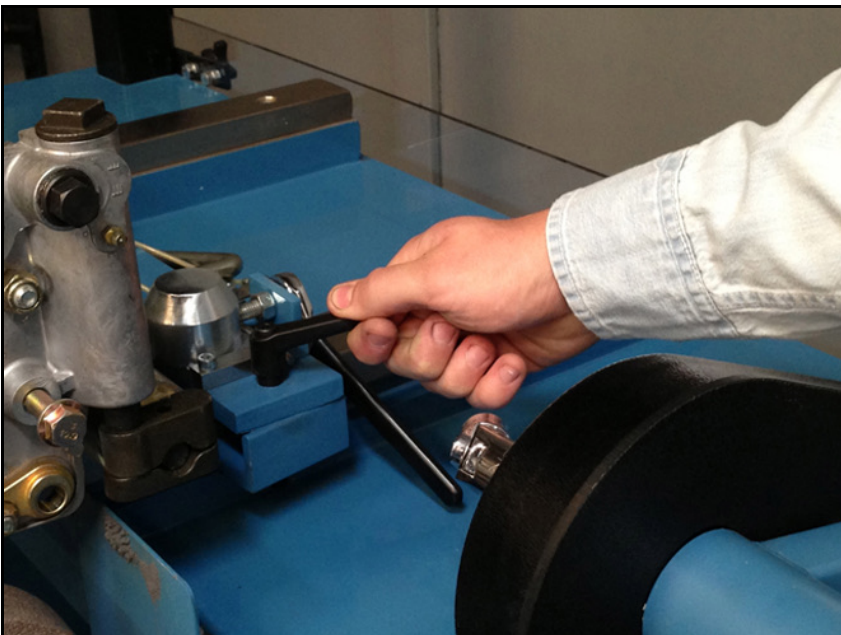
Position the reel front to back until the center of the reel shaft is above the center of the grinding stone shaft.



If you are grinding with the bed knife in place, locate the reel so that the grinding stone will only grind the reel blades and clears the bed knife, front roller, and any other part of the reel.



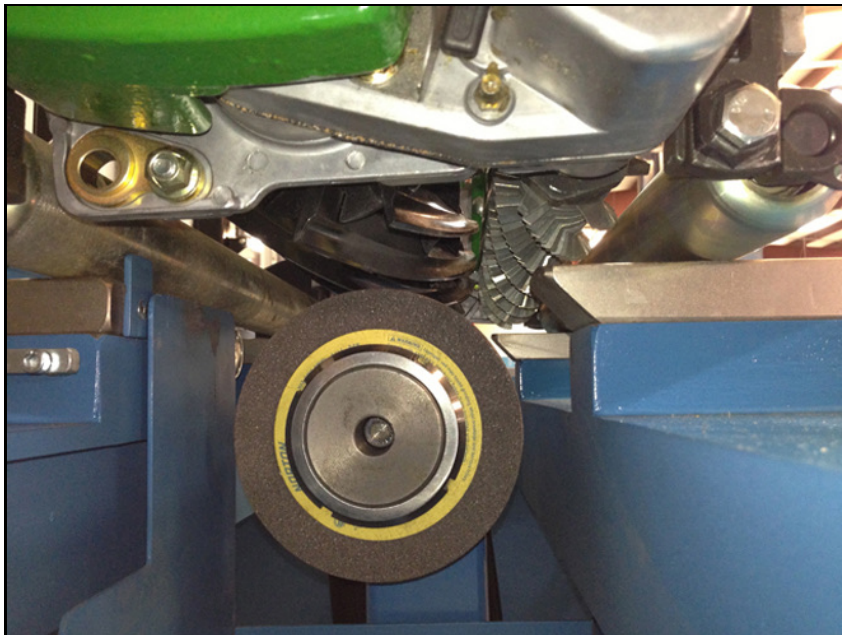
Bring the rear fence up to the rear roller. Lock down the left side making sure that the fence aligns itself.



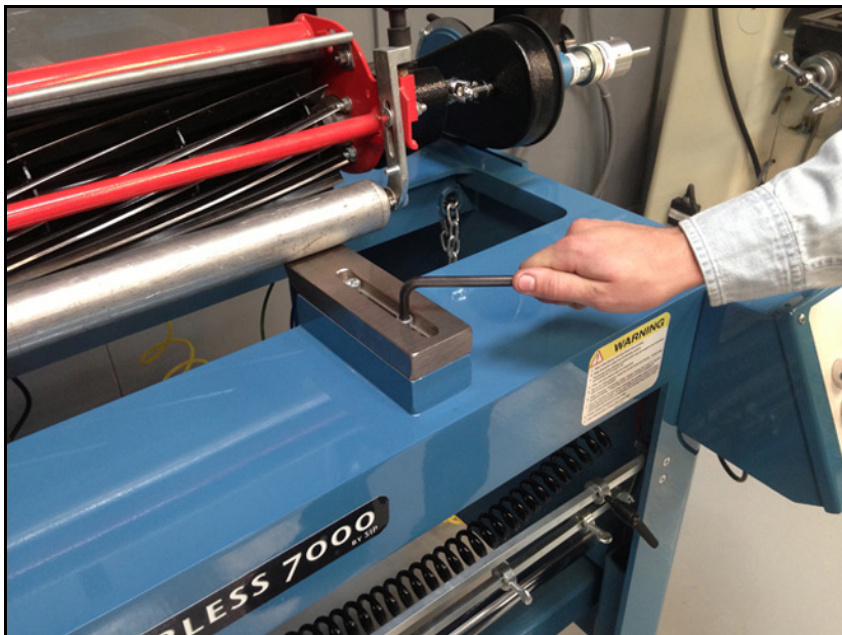
Lock down the right side. When doing a group of the same type of reels, the rear fence does not need to be moved.



Feed the grinding stone up until it almost touches the reel blades.



Move the carriage past the reel support rails and make sure there is adequate clearance between the grinding stone and the reel support rail.

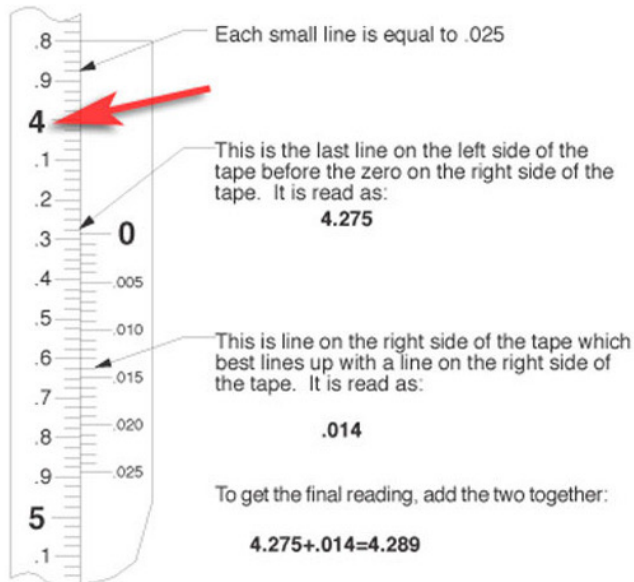


If it does not, loosen the two socket head bolts in the front reel support rail and slide the rail back. Retighten the socket head bolts.

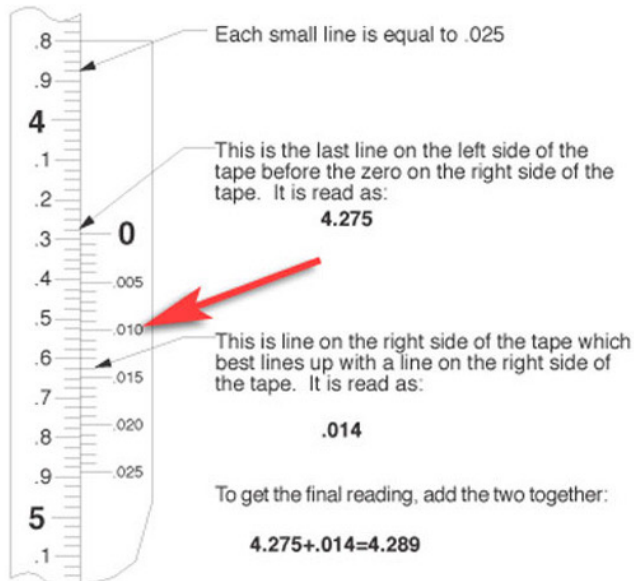
WARNING-Make sure everything is secure. Loose equipment may cause damage.

3.2 Reel Diameter Tape™

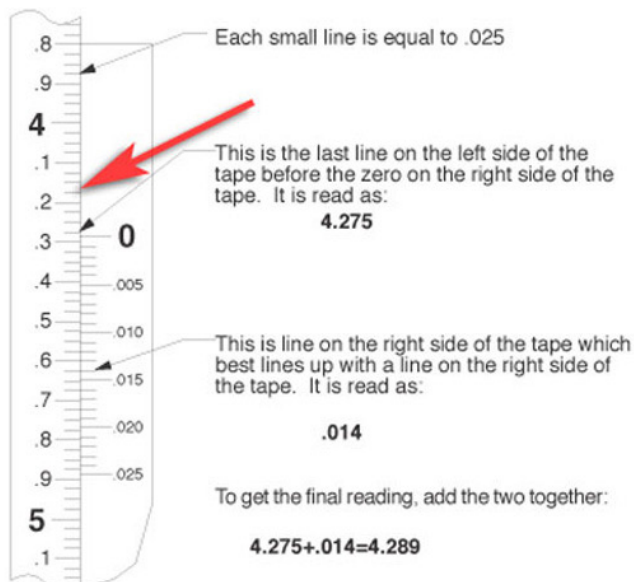
The Reel Diameter Tape™ measures the diameter of a reel by wrapping around the circumference. It is calibrated so that each inch is 3.142 inches long or pi (π) inches long. This will automatically convert the circumference into a diameter.

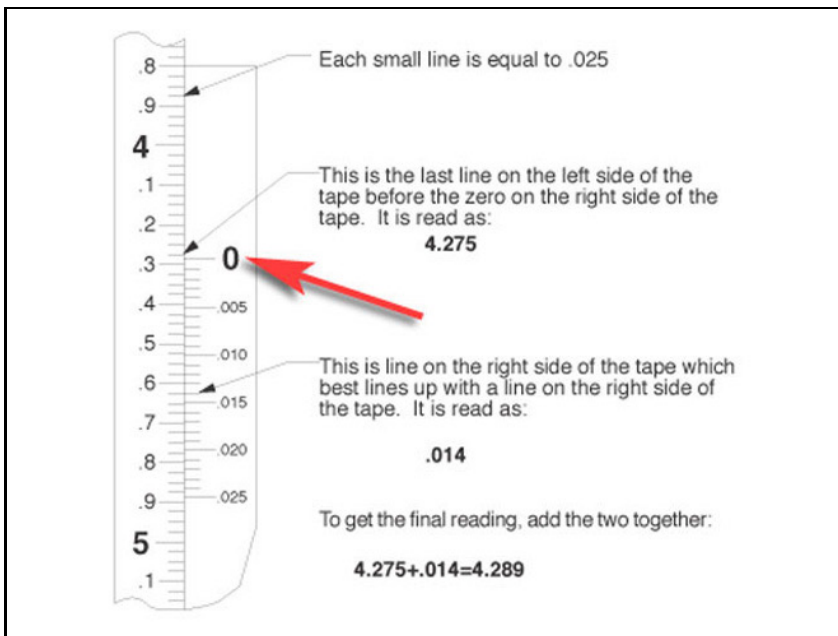


The Reel Diameter Tape™ also has a vernier, which makes it capable of measuring the diameter of the reel to .001 inches.



Make sure that the Reel Diameter Tape™ is tight and straight.

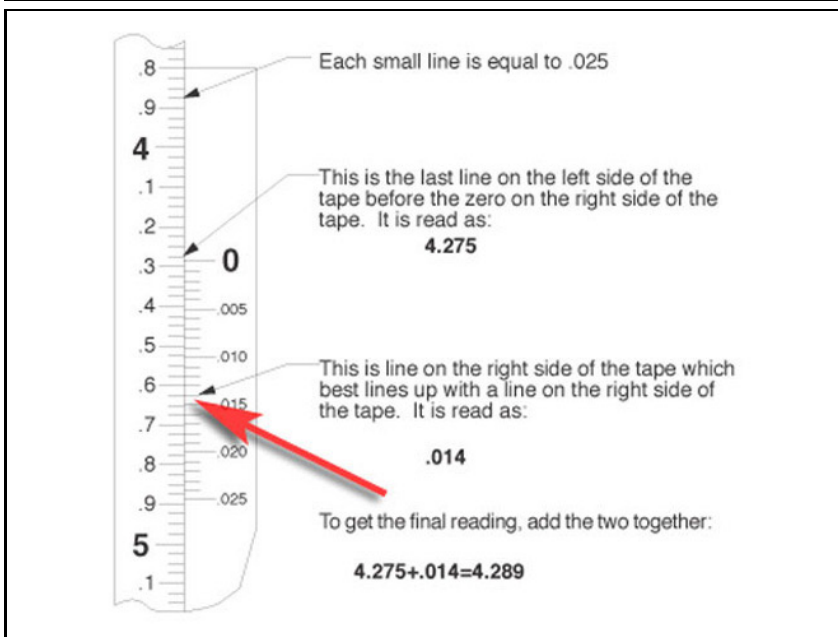




Locate the zero (0) on the right side or vernier side of the Reel Diameter Tape™. Read the measurement just above the zero.

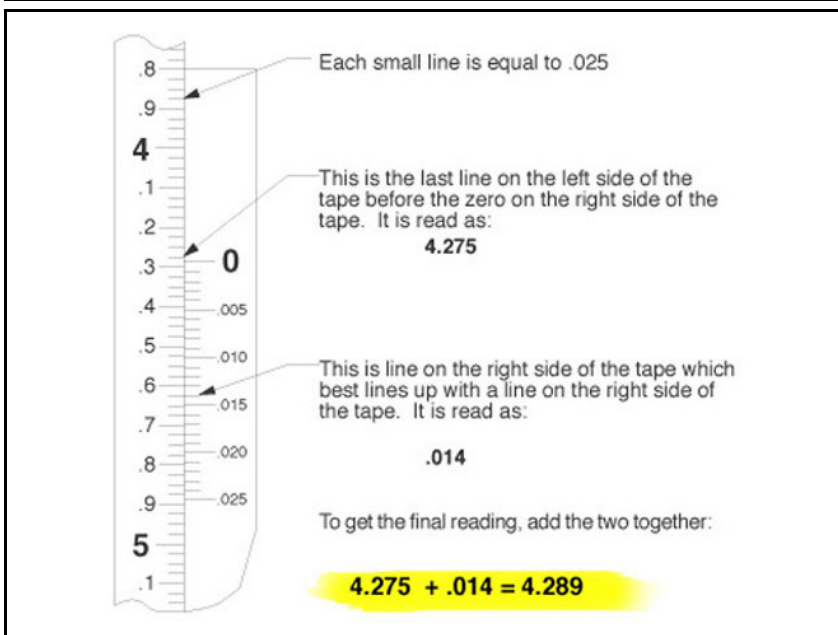
Each large numbered line is 1 inch.
Each small numbered line is .1 inches.
Each small line without numbers is .025 inches.

The illustration at the left would then be 4.275.



To read the vernier, find the two lines that best line up and read the number on the right side or the vernier side

This would be .014 inches.

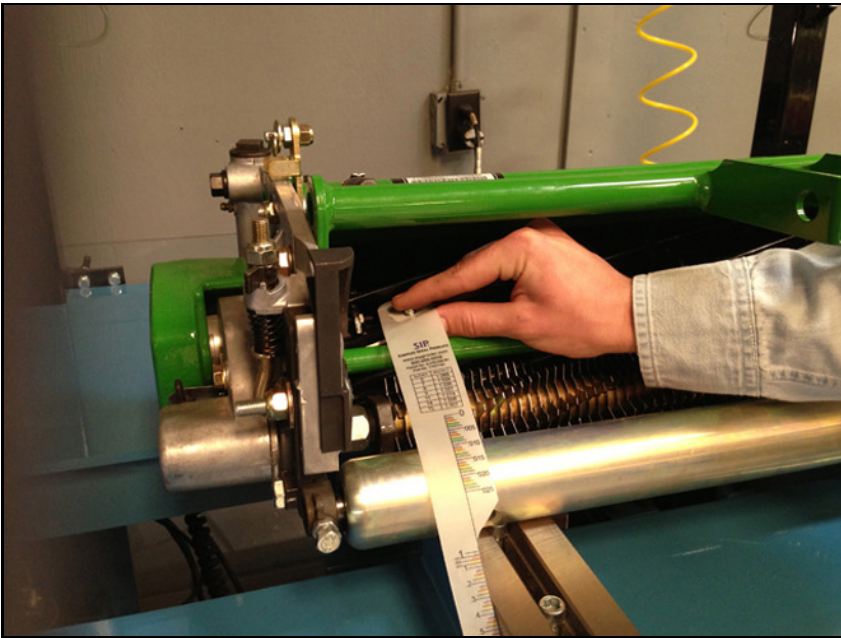


Add together to get your final measurement

(4.275 + .014 = 4.289).

You should repeat each measurement you make at least once and until you duplicate the measurement within .003 inches.

The smaller the number is on any given measurement, the more accurate it is.



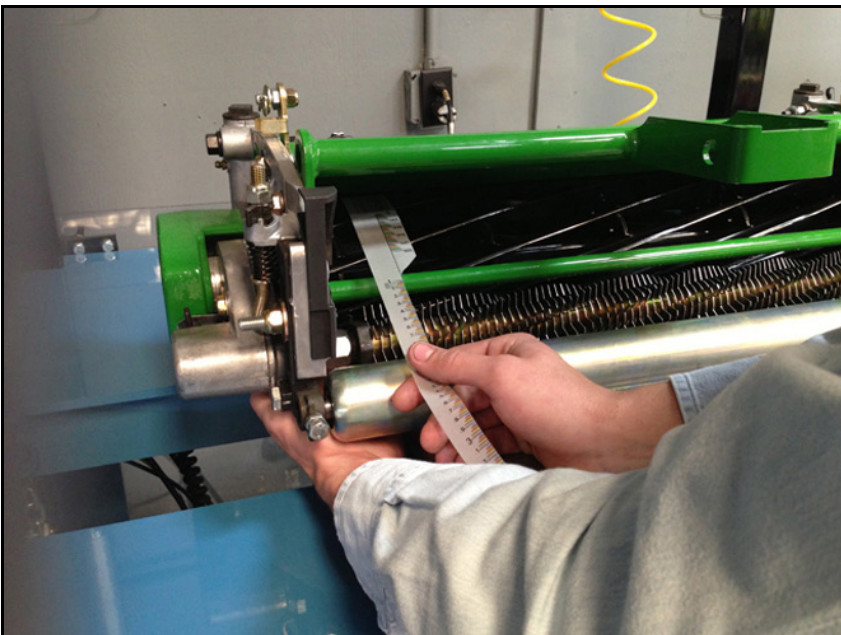
3.3 Measuring the reel

Place the magnet of the Reel Diameter Tape™ on a blade at the left end of the reel.



Make sure that the magnet is in far enough so that it will not touch the Reel Diameter Tape™ when you wrap it around.

INFO-The position of the magnet is not important because you are measuring from and to the zero point on the Reel Diameter Tape™.

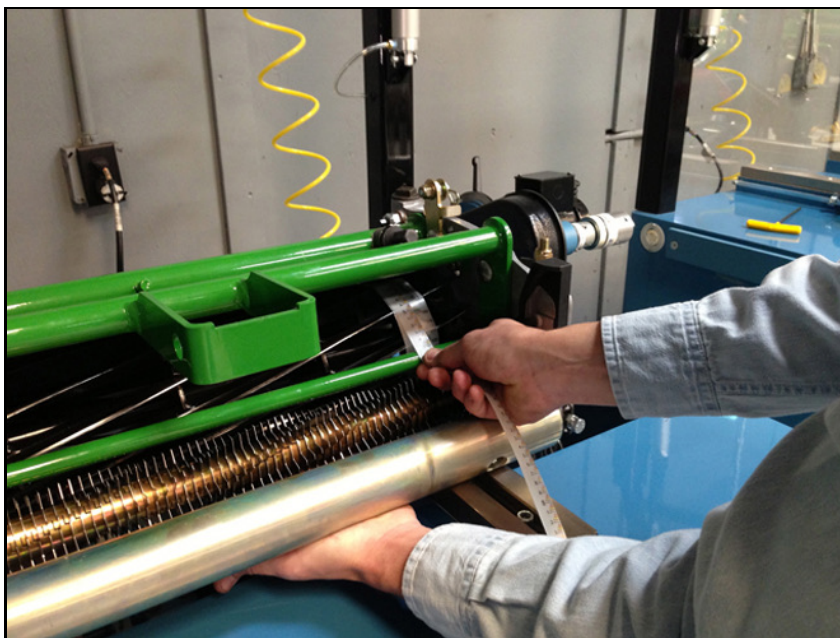


Keep tension on the Reel Diameter Tape™ as you rotate the reel and wrap the Reel Diameter Tape™ around the reel.



Make sure that you wrap it in a straight line so that the end of the tape lines up with the vernier line of the tape. Note the reel diameter, in this case, 4.534 inches.

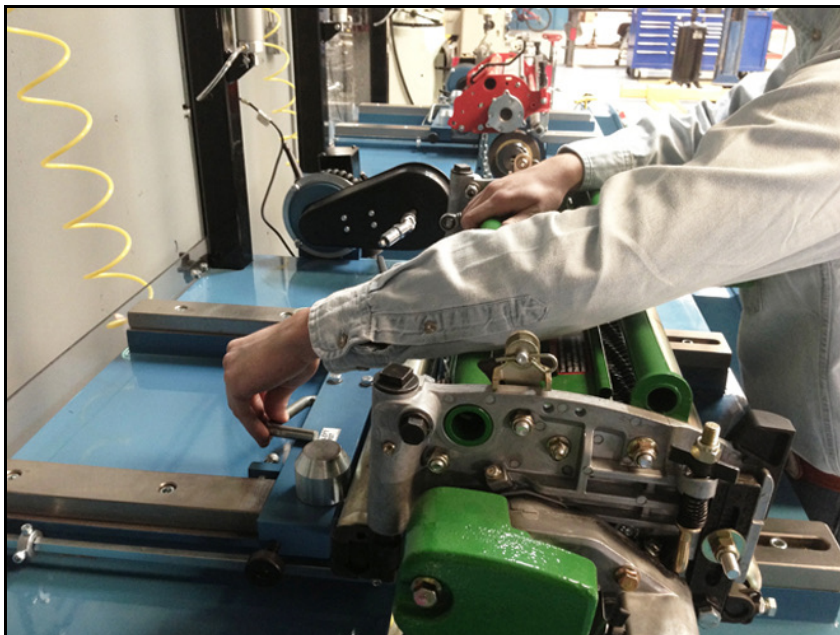
INFO-The tighter and straighter the pi tape is, the smaller and more precise the reading will be.



Place the Reel Diameter Tape™ magnet on one of the blades at the right end of the reel. Again, make sure that the magnet does not touch the Reel Diameter Tape™ when you wrap it around.

Keep tension on the Reel Diameter Tape™ as you rotate the reel and wrap the Reel Diameter Tape™ around the reel.

Make sure that you wrap it in a straight line so that the end of the tape lines up with the vernier line. Note the reel diameter.



3.4 Adjusting the cutting unit

Lift the rear roller with the fence jack so that both ends of the front roller are on the table.



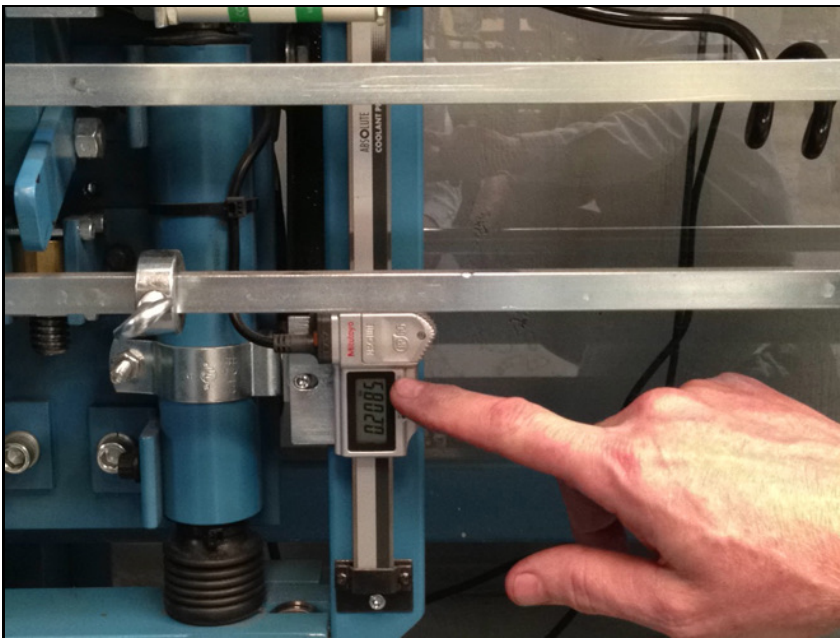
Feed the grinding stone up at the large end of the cutting unit while turning the reel until the wheel just touches the reel. You should do this at the same place you took your Reel Diameter Tape™ measurement.



While holding the hand wheel, turn the dial until it reads 0.



If you have the Digital Read Out Option, push the zero button



You may have to turn the scale on with the blue button.



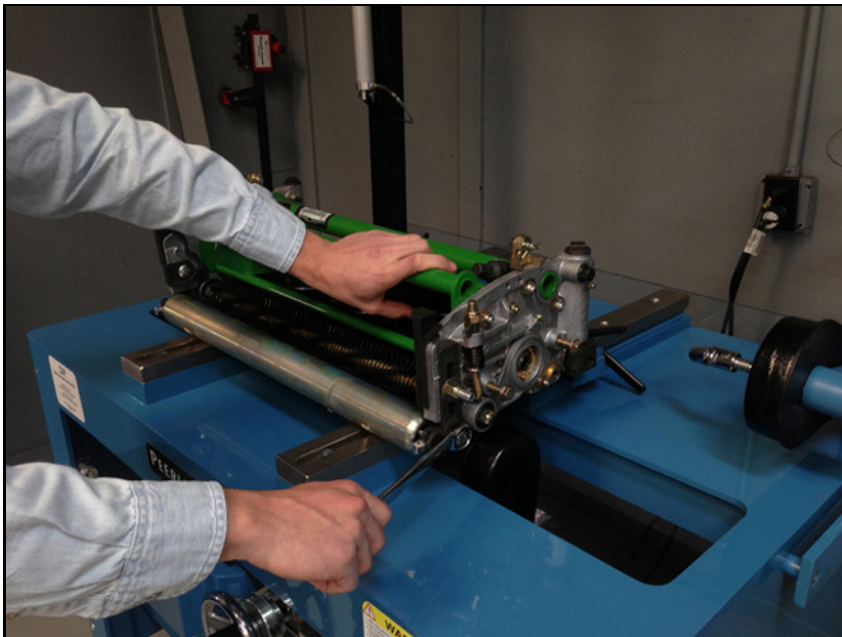
Move the grinding head to the small end of the reel.



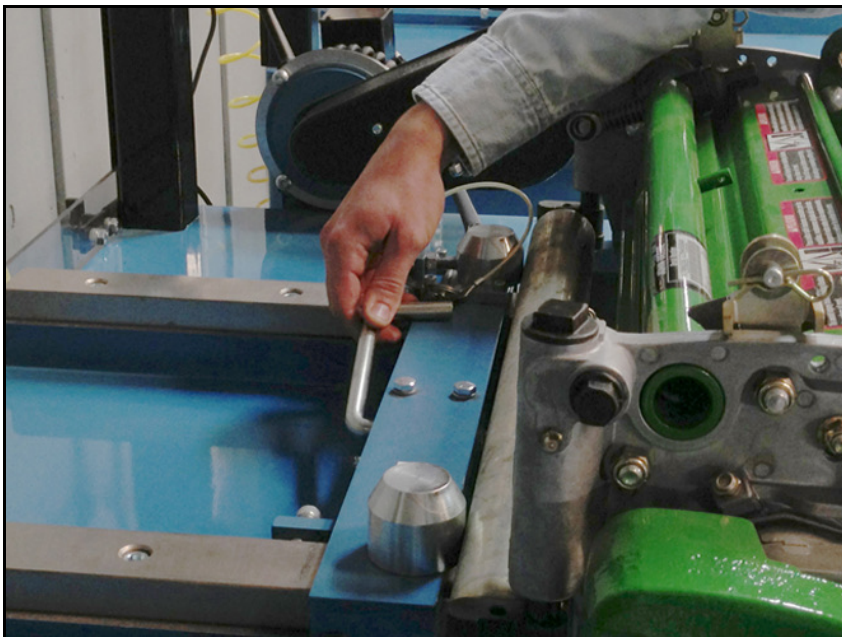
Infeed the hand wheel the difference in the left and right lawn mower diameters by reading .020 on the hand wheel dial...



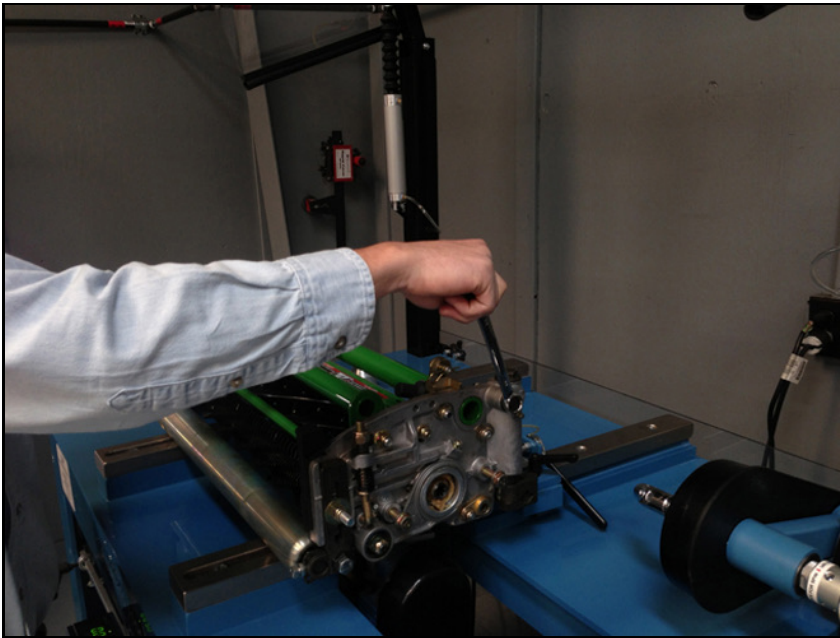
... or on the Optional Digital Read Out.



While turning the lawn mower blades, adjust the front roller until the grinding stone just touches the reel.



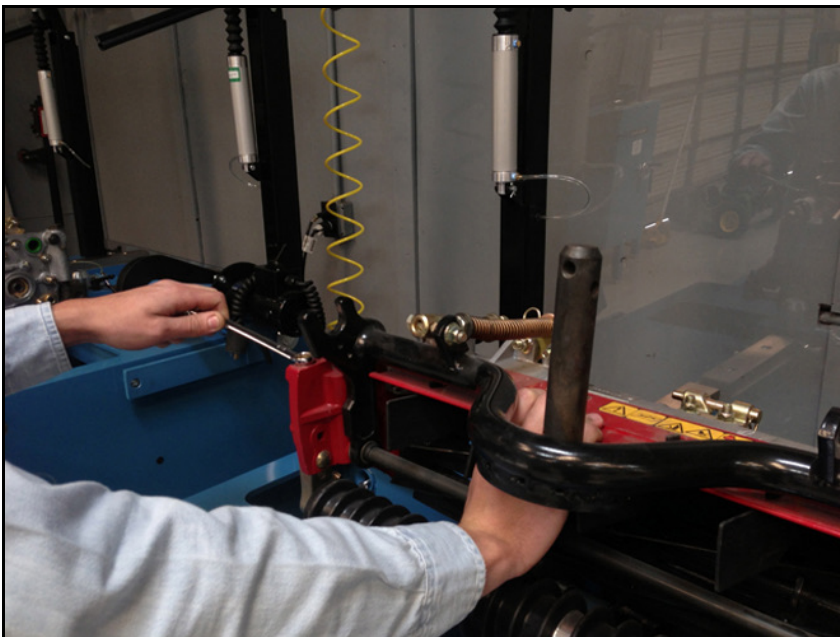
Lower the fence jack.



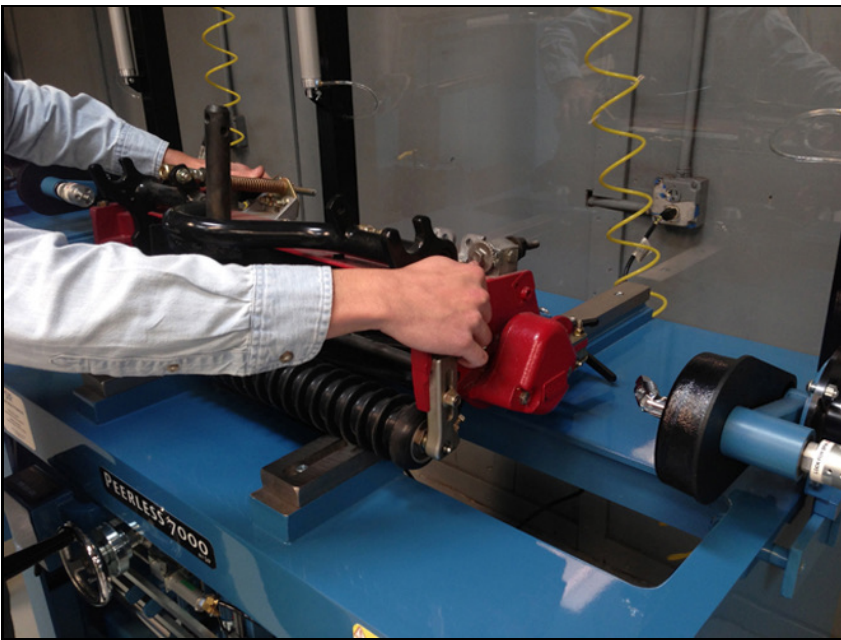
Adjust the rear roller until there is no rock.



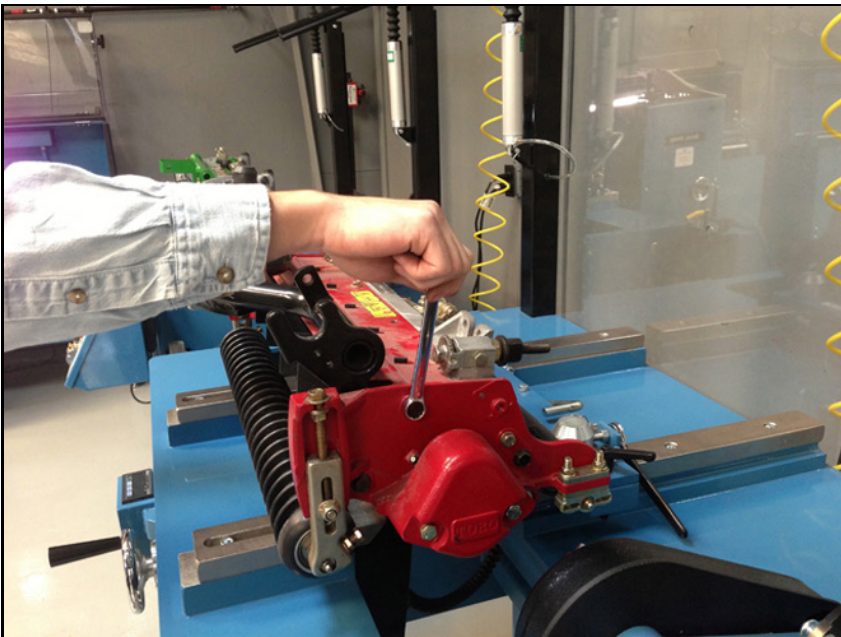
If the rear roller is fixed and the frame is welded, you may adjust the front roller up to .010 to remove the rock, otherwise you need to adjust the frame.



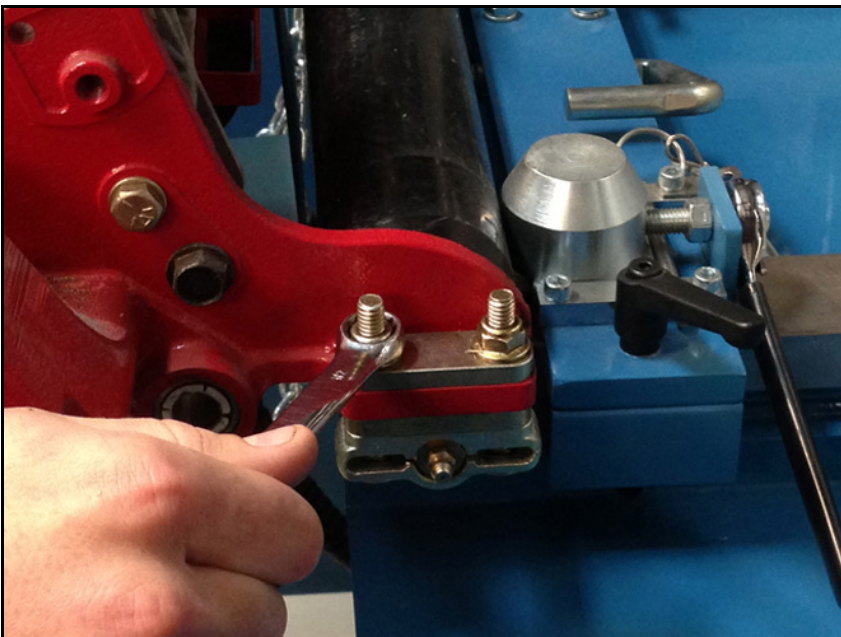
If the rear roller is fixed and the frame is bolted, first adjust the front roller as before.



Check for rock.



Loosen the frame and shield bolts, then twist the frame until there is no rock. Retighten the frame and shield bolts.



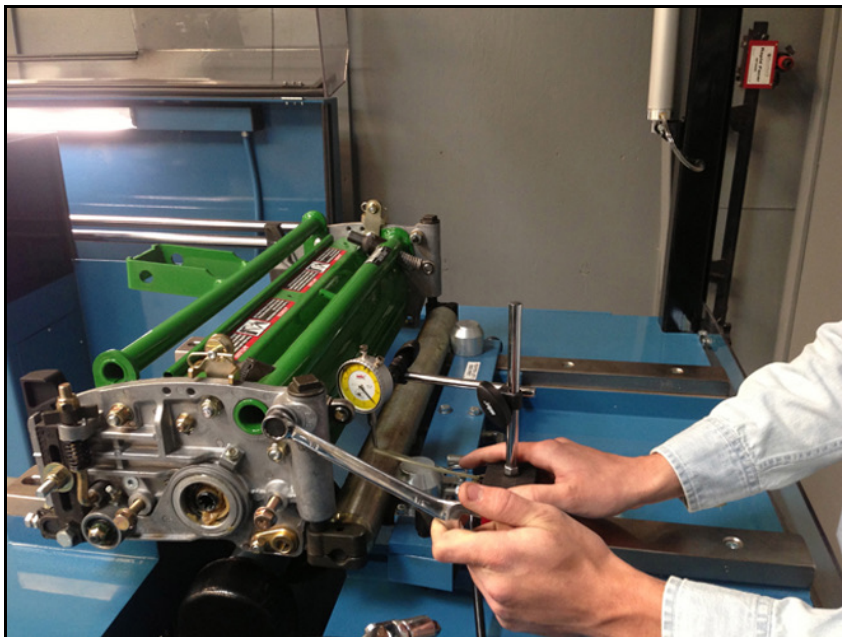
You can also use either the shim kit or eccentric kit available from the mower manufacturer.



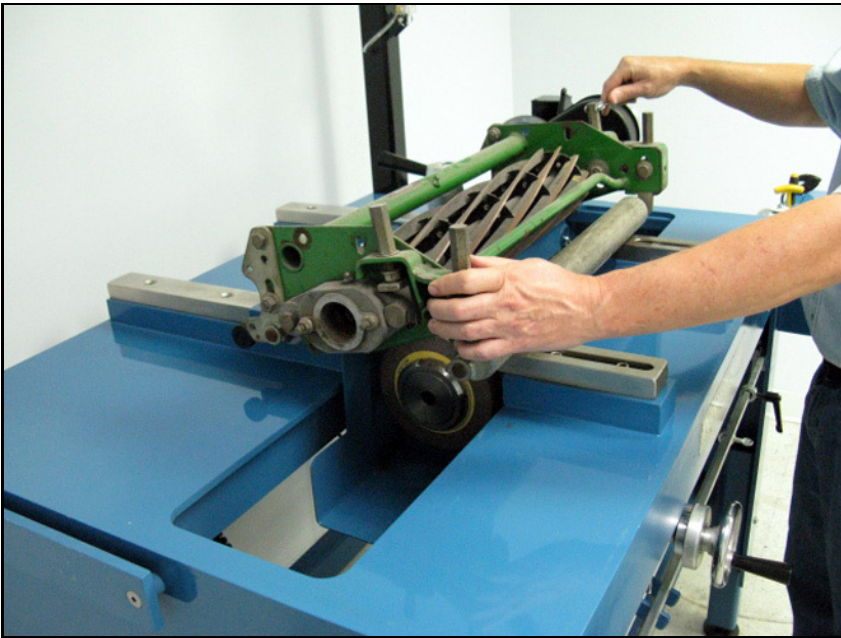
If you would like to be more precise, you can use the dial indicator and magnetic base. Slide the magnetic base front to back and find the high point on one end of the roller.



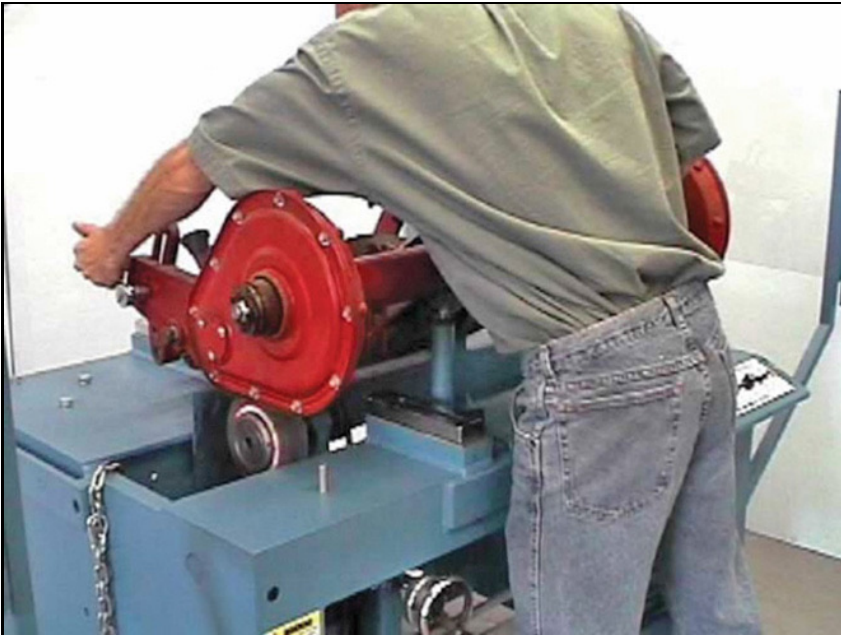
Set the dial indicator to zero.



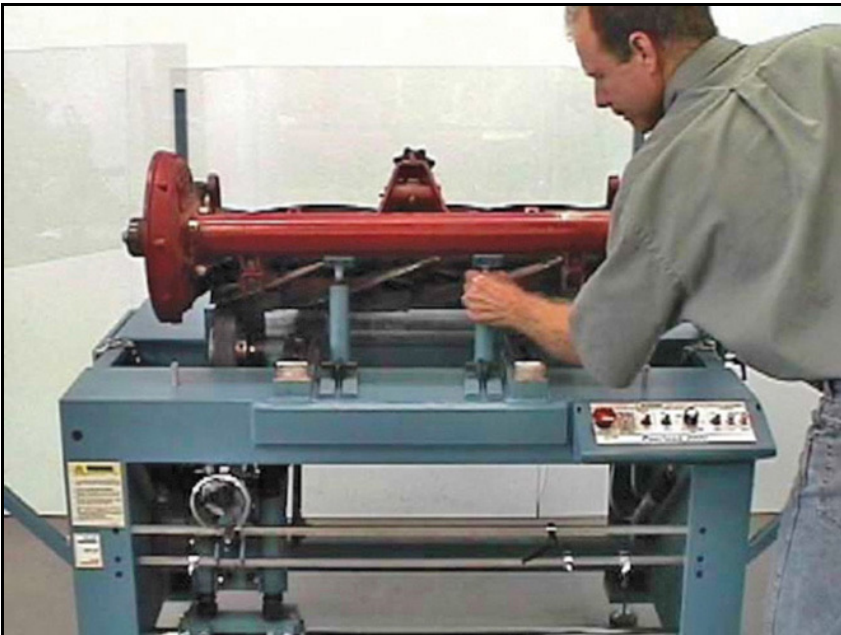
Find the high spot on the other end of the roller, then adjust the rear roller to remove half of the difference.



If you have a reel to bed knife adjustment, adjust the roller to remove the rock. Then make your adjustments using the reel adjustments rather than the roller adjustments.



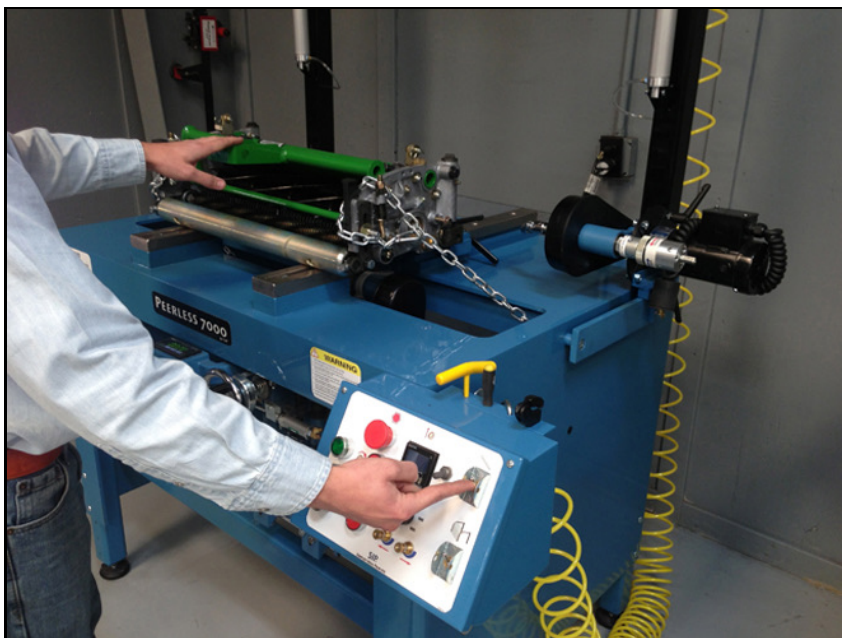
Use the optional support stands for cutting units without a front roller. To adjust the cutting unit, loosen the frame or roller mount.



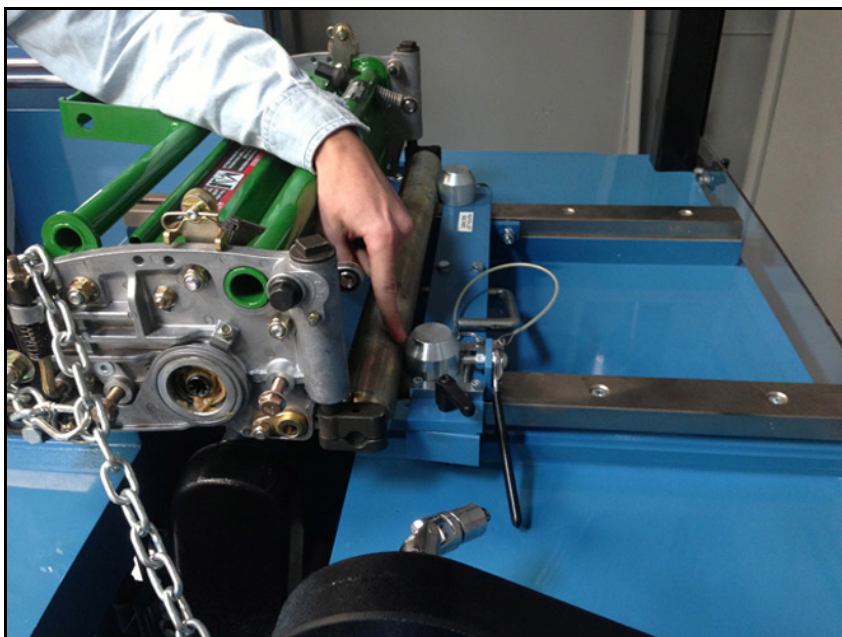
Adjust the support stands as necessary. Then retighten the frame or roller mount.



3.5 Clamping the reel
Loop the chains around the lawn
mower frame.



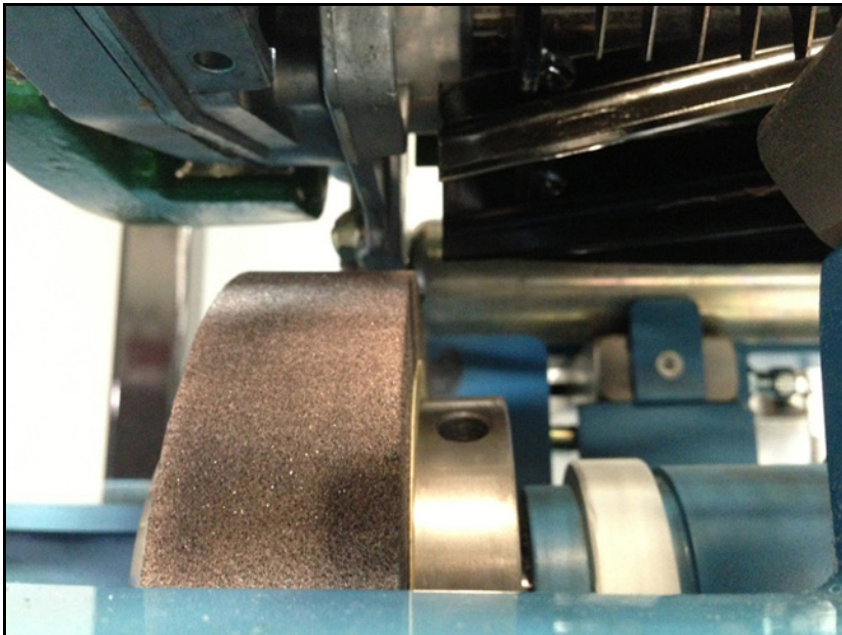
Turn the chain clamps on.



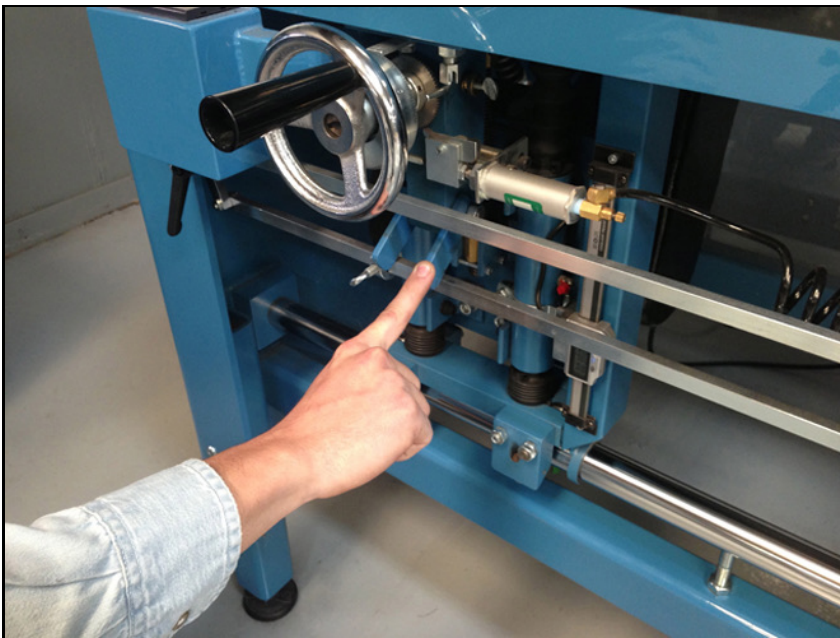
Make sure the cutting unit is properly
seated and both chains are tight.



4.0 Setting the carriage stops for spin
Disengage the grinding head from the carriage travel by pulling then turning the locking pin.



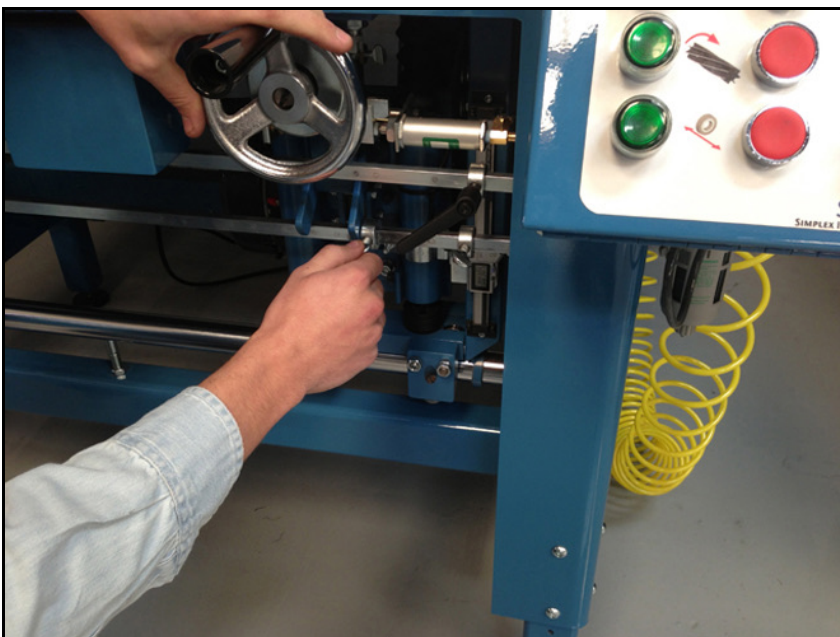
Move the grinding head to one end of the reel so that the grinding stone is just off the end of the reel blade and does not touch the cutting unit frame. If you can not clear the frame, you may leave all or part of the grinding stone on the reel.



Move both levers to the down position.



Loosen the clamp screw on the lower carriage stop and slide the stop so it touches the grinding head, then tighten the clamp screw.



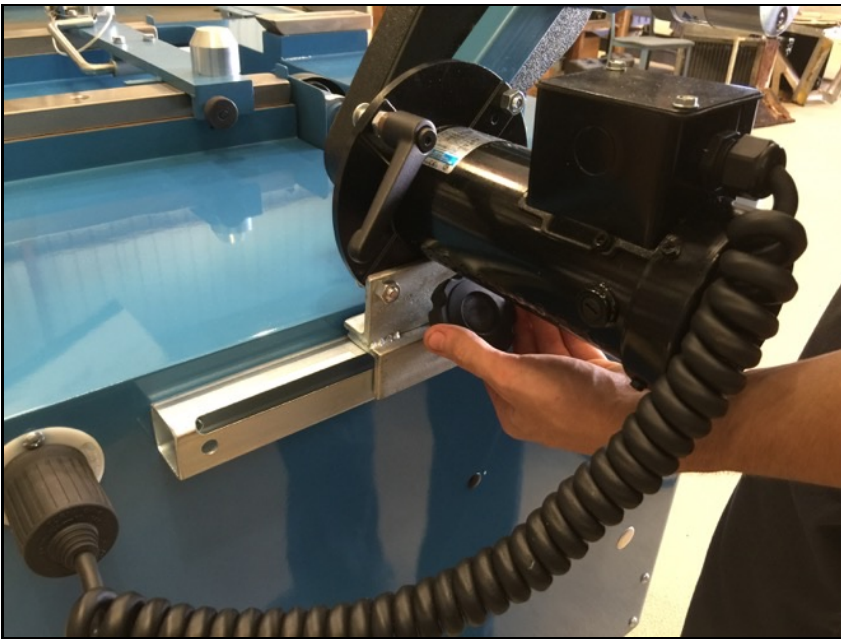
Move the grinding head off the other end of the reel and set the stop for that end.

The third middle stop is for spin grinding conical reels. It can be set a few inches past where the grinding stone stops grinding to shorten the stroke. As the grinding stone increases the length of contact with the reel, the middle stop can be moved so that it is always a few inches past where the grinding stone loses contact with the reel. When almost the whole length of the reel is being ground, the middle stop can be moved to the end. If you are going to use the middle stop, make sure you position the end stop to allow for the thickness of the middle stop.



4.1 Engaging the spin motor to the reel
To change the side on which the reel drive motor is mounted, twist and unplug the reel drive motor plug.

WARNING-Make sure that all clamps are tight. Loose clamping may cause damage or injury.



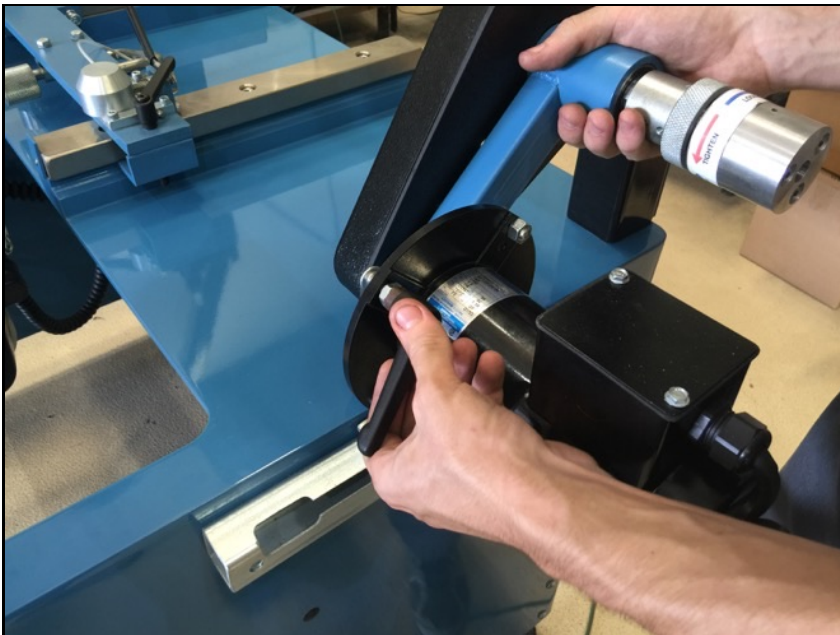
Hold the reel drive motor with one hand and loosen the locking knob which clamps the unit to its support.



Lift the assembly off the support, turn it around, and place it on the support at the other end of the grinder.



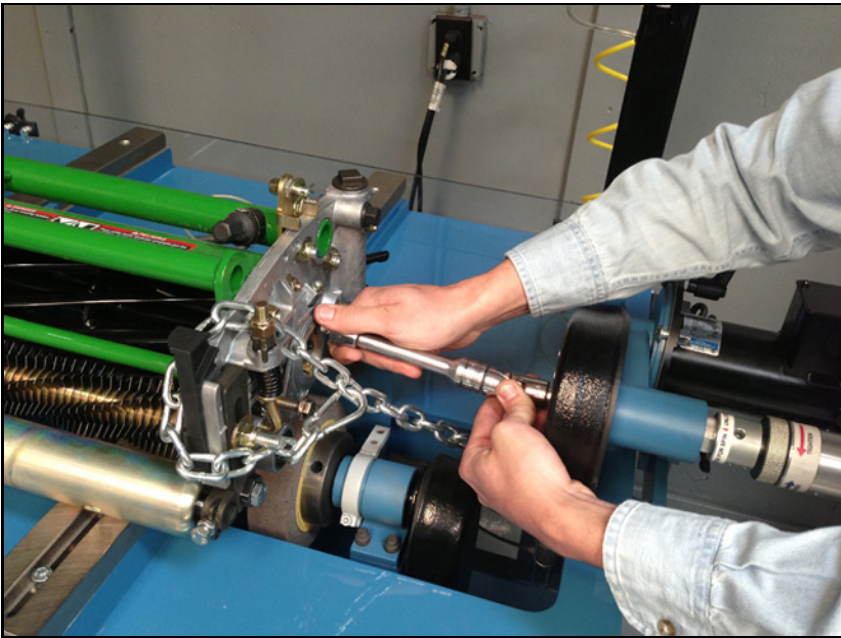
Plug and twist the reel drive motor plug in its receptacle on the same side as unit is mounted.



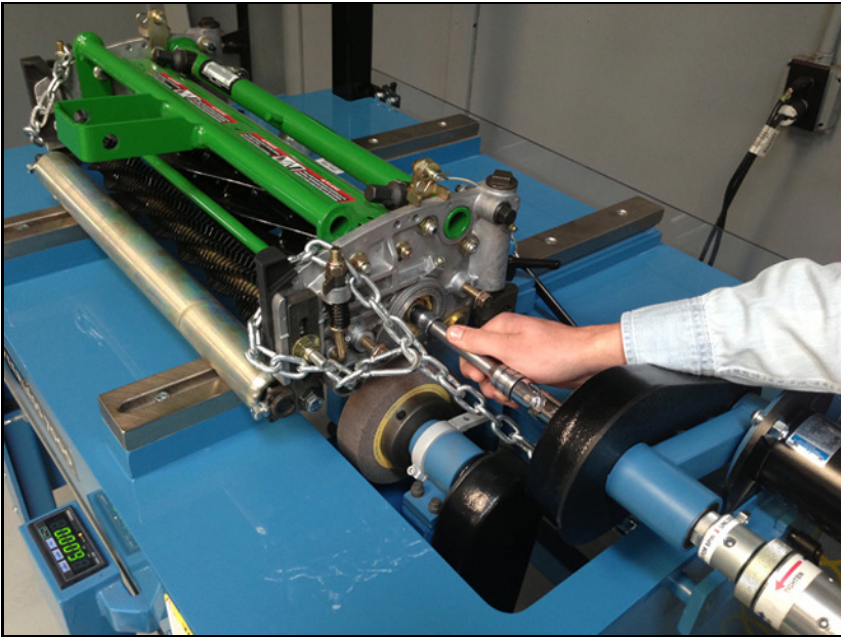
Un-clamp the radius arm.



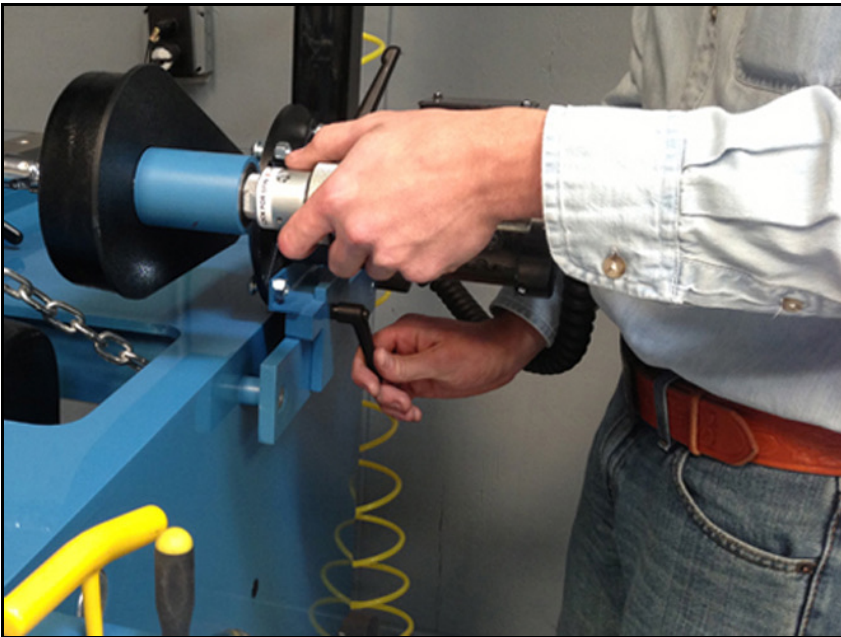
Swing the radius arm forward.



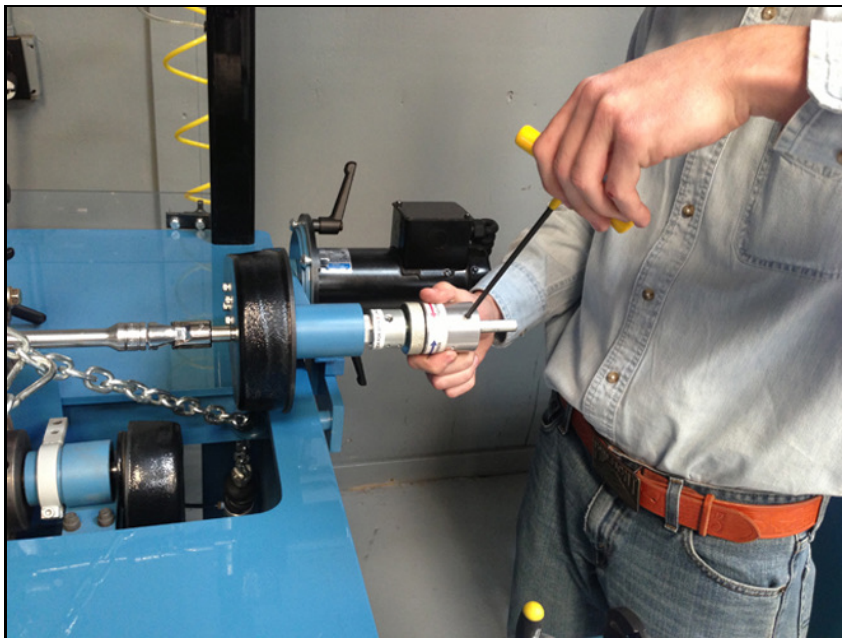
Select a 1/2" drive socket that will fit the drive of your cutting unit and place it on the 1/2" drive shaft of the reel drive motor. Some cutting units may require simple adaptors.



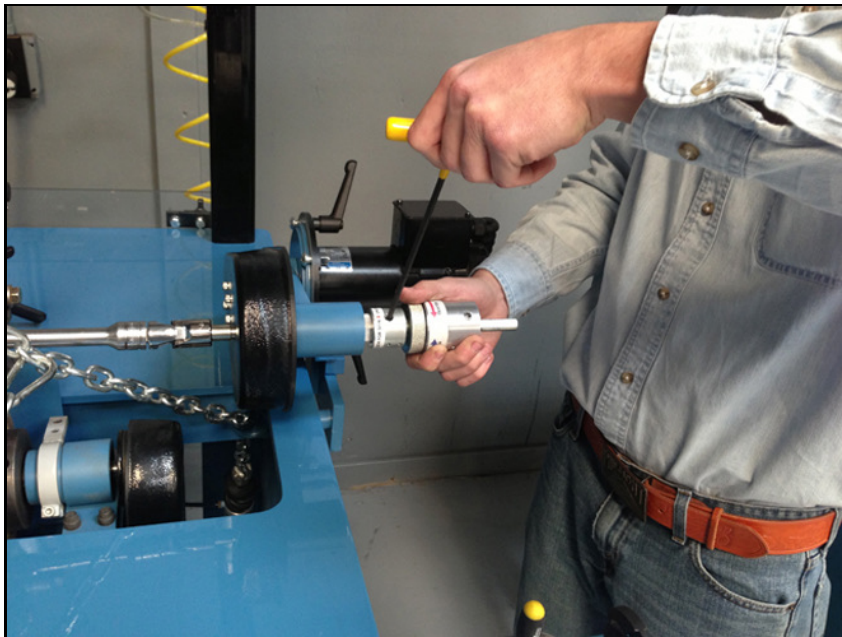
Position the socket so that it aligns with the drive on the reel.



Lock the support and radius arm clamps.



Loosen the set screws which locks the reel drive motor shaft and slide the socket on to the drive on the reel, then retighten the clutch (outer) set screw.



Align the clutch set screw with the clutch lock-out set screw and tighten the clutch lock-out (inner) set screw on to the flat of the shaft.



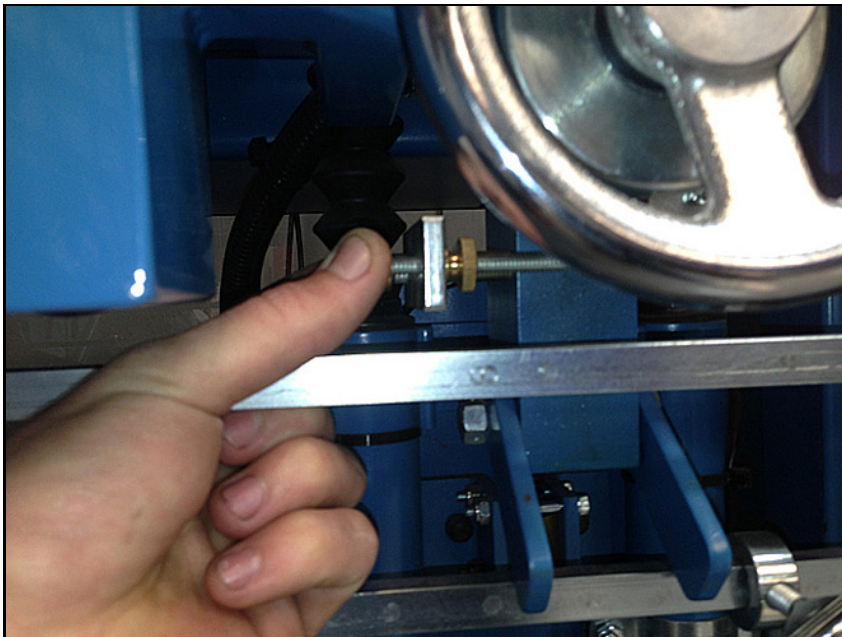
4.2 Spin grinding

Feed the grinding head up until the grinding stone just touches the reel at the large end then back off about .020.

WARNING-Make sure that all clamps are tight. Loose clamping may cause damage or injury.



Engage the grinding head to the pneumatic drive.

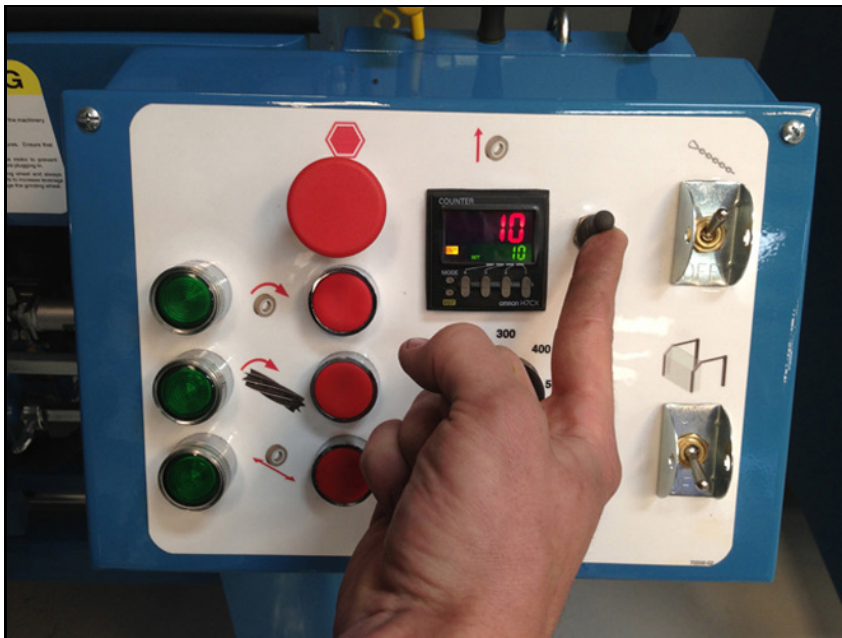


If you have the Auto In-feed option, check the depth stop for the amount of in-feed per pass.

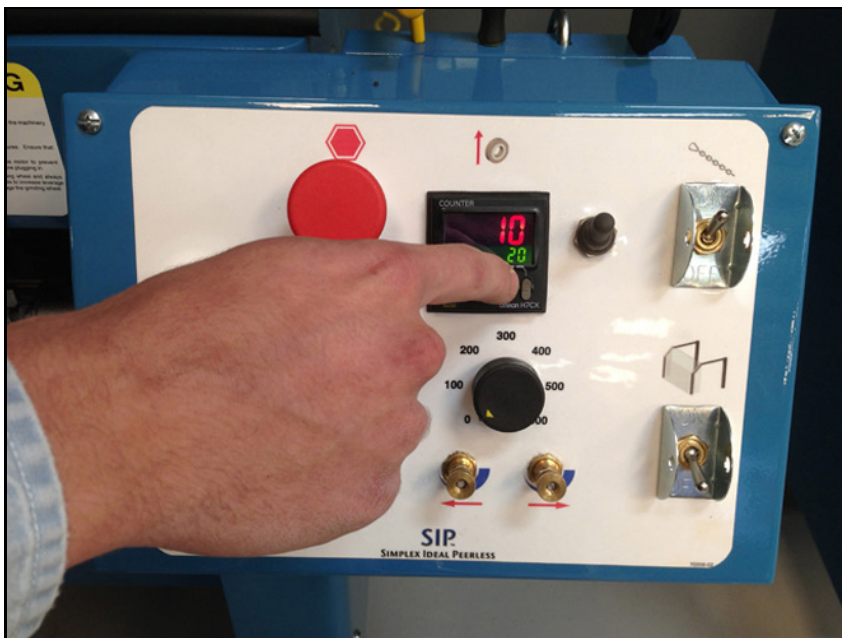


Close the hood.

DANGER-Always close shield or wear safety glasses and face shield when grinding! Stay clear of grinding stone when turning grinder on!



If you have the optional Auto In-feed, turn on the counter.



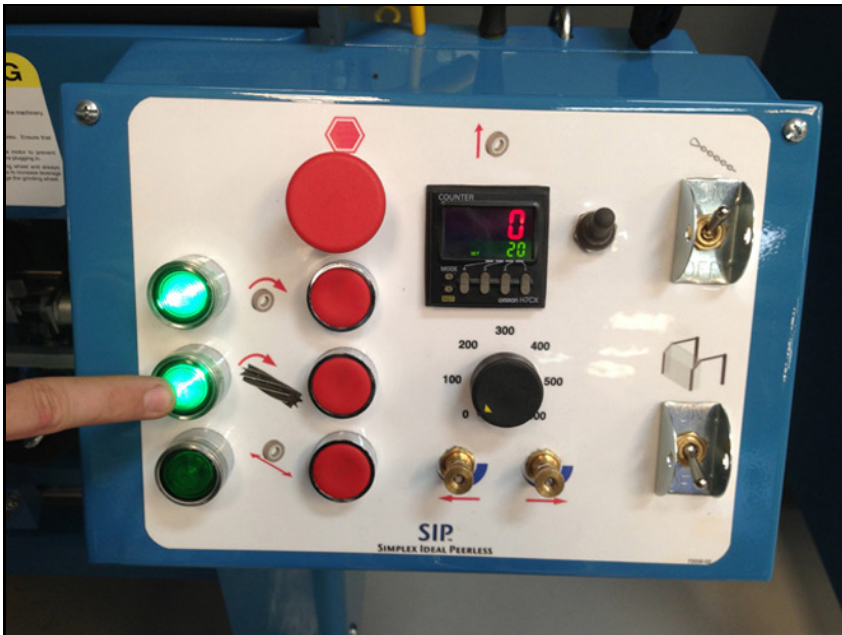
Use the rocker switches to set the number of passes.



Push the Reset button.

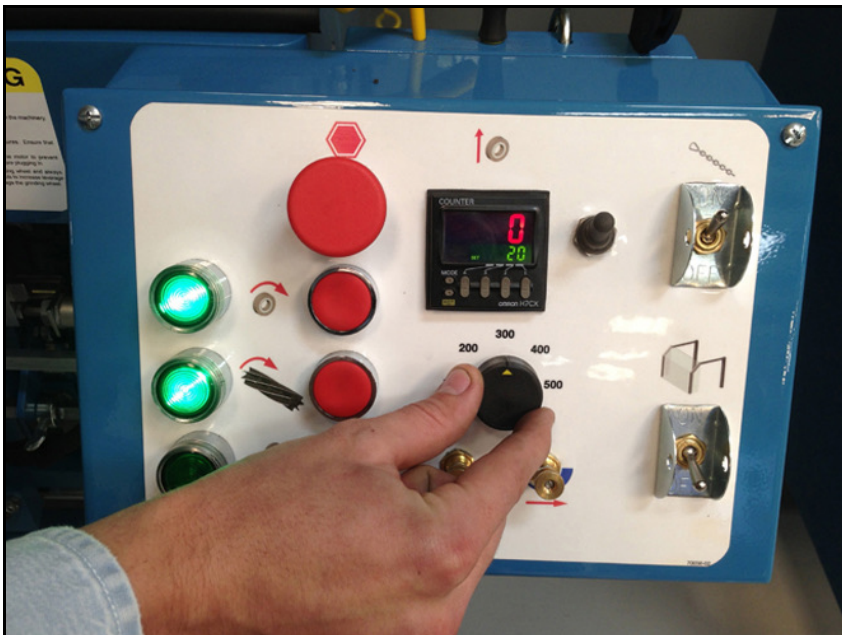


Turn the grinding motor on.

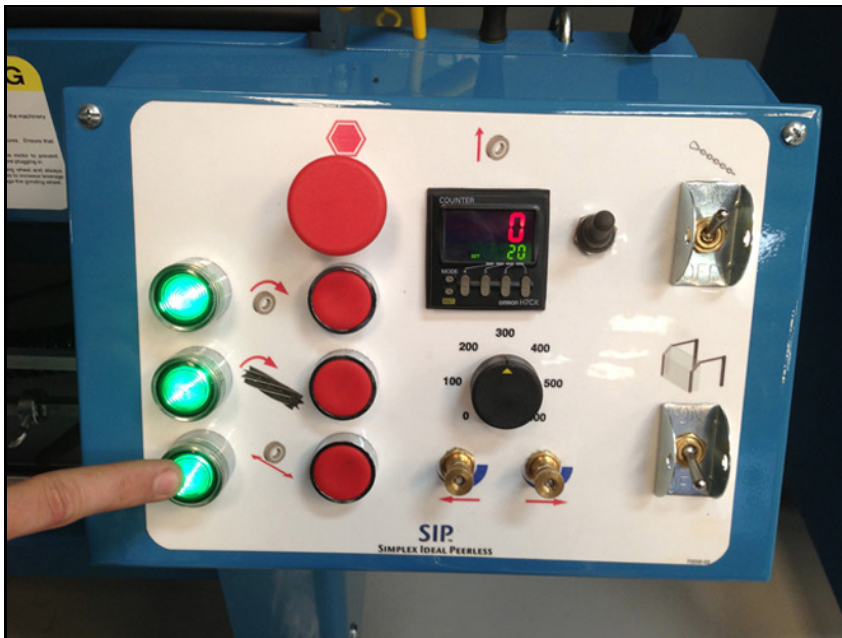


Start the reel drive motor.

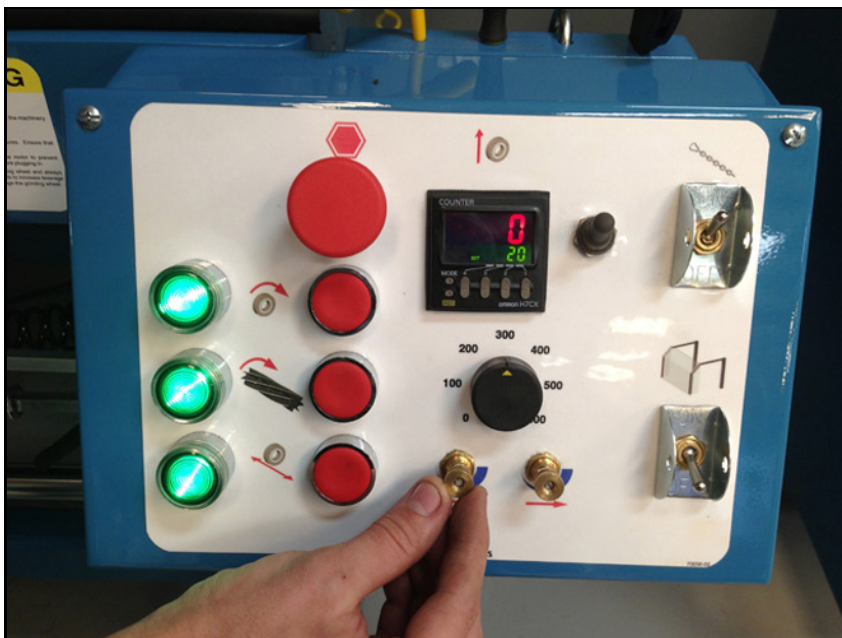
INFO-Make sure the reel is properly aligned with the reel drive motor and that the reel spins freely.



Set the spin speed, faster for small reels, slower for larger reels. 200-300 rpm is usually the slowest you will need to use.



Turn the carriage travel on. There may be a slight pause before the carriage begins to move.



Set the carriage speed so it is about equal in both directions.



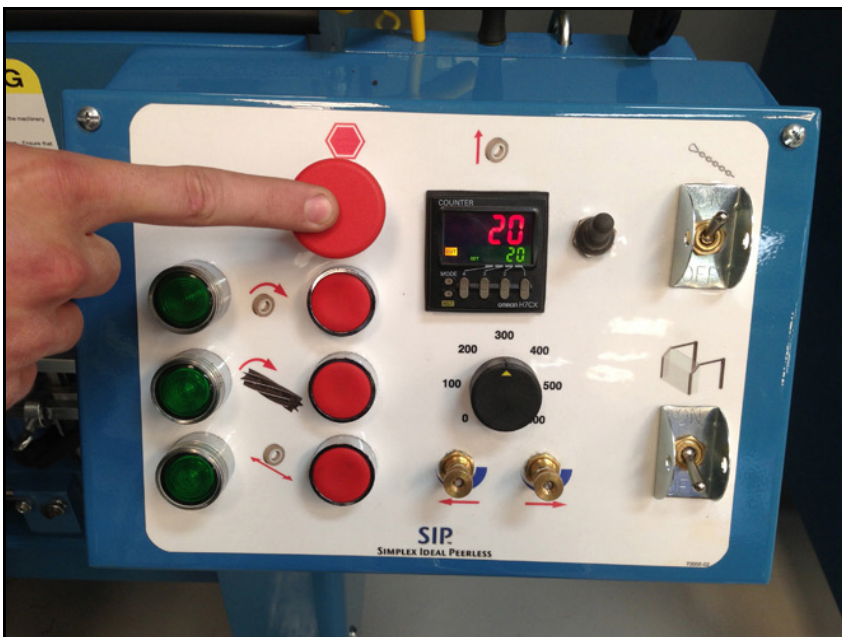
Slowly feed the grinding head in until the grinding stone starts to grind the reel then allow the grinding head to travel back and forth.



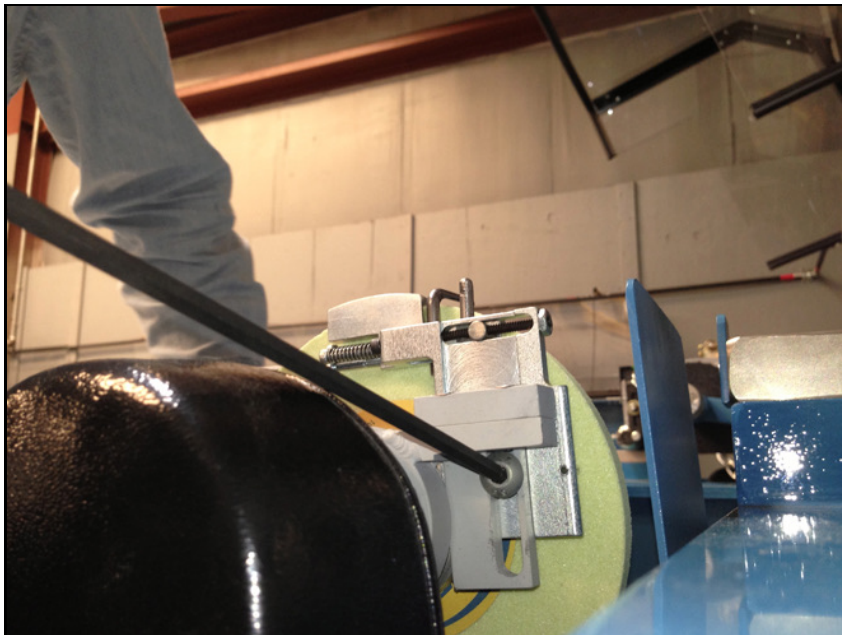
Snug the tension screw. Depending on the size, type, and condition of the reel, you may wish to adjust the speed of the spin motor or the carriage travel so that you get a smooth, consistent grind.



The auto infeed will continue to feed the grinding stone. Listen for uniform grinding sound all the way across the reel. When the counter has reached the total count you selected, it will stop infeeding and spark out. If the reel is not sharp you may reset the counter for additional passes. You also have full manual control of the grinding stone infeed, even in full auto mode.

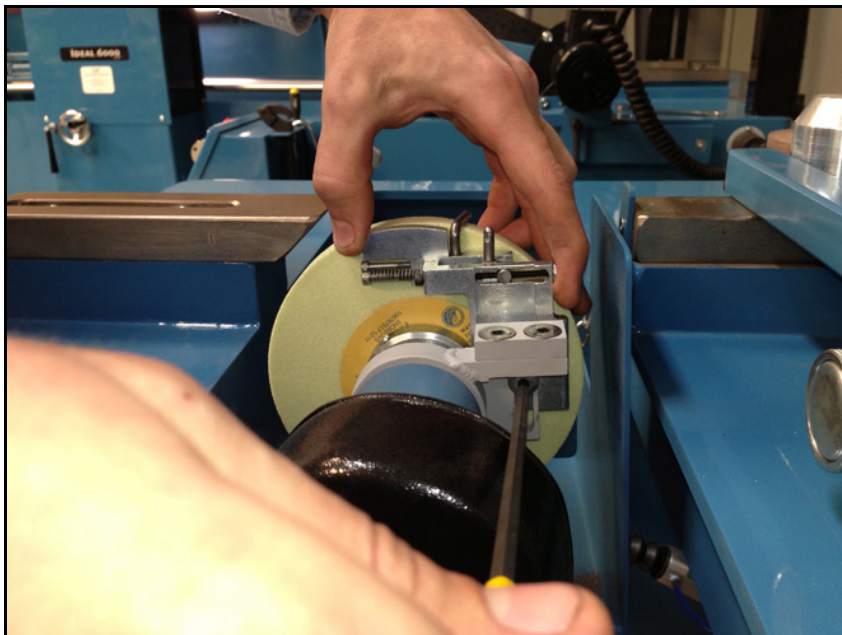


At the end of the last pass, turn the grinder off.

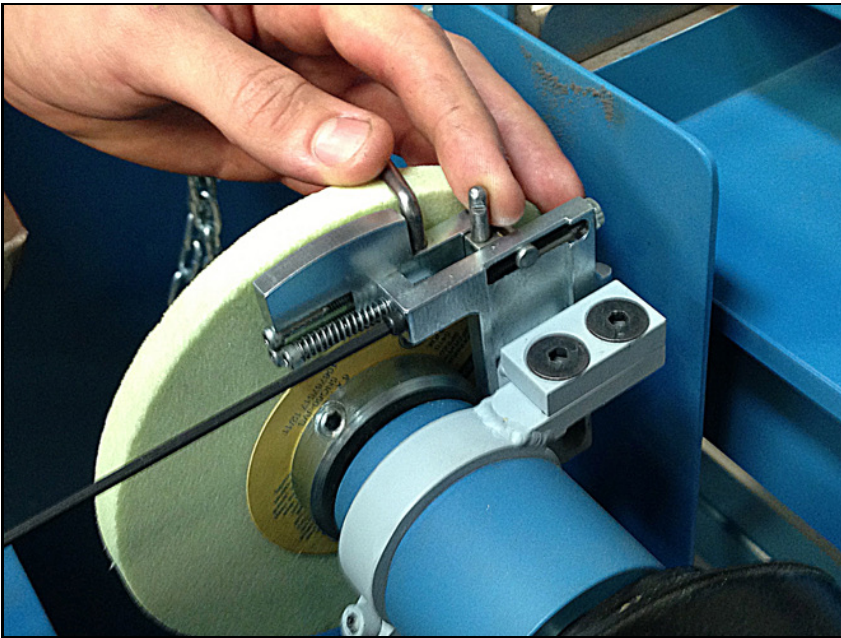


5.0 Indexer adjustments

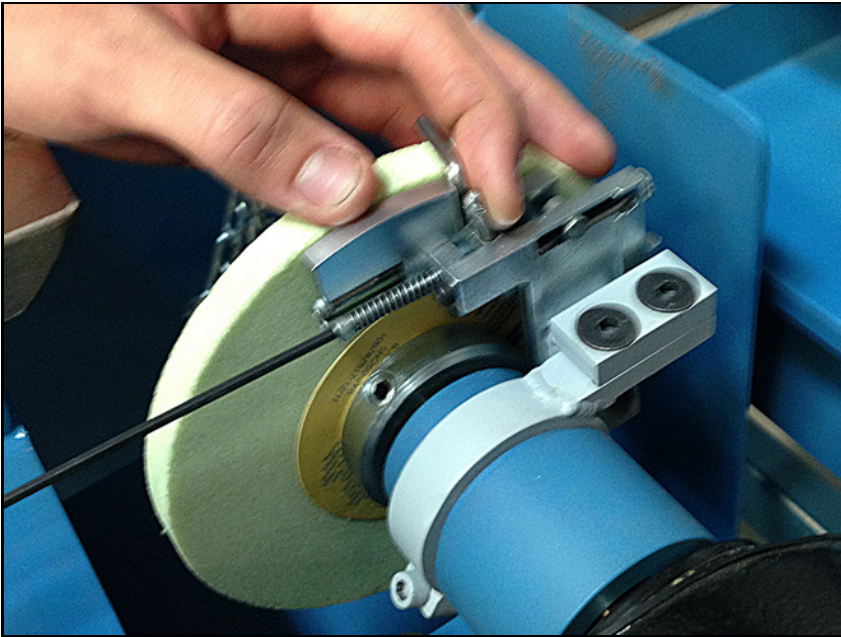
To set the indexer height to the grinding stone, loosen the screw on the side of the indexer...



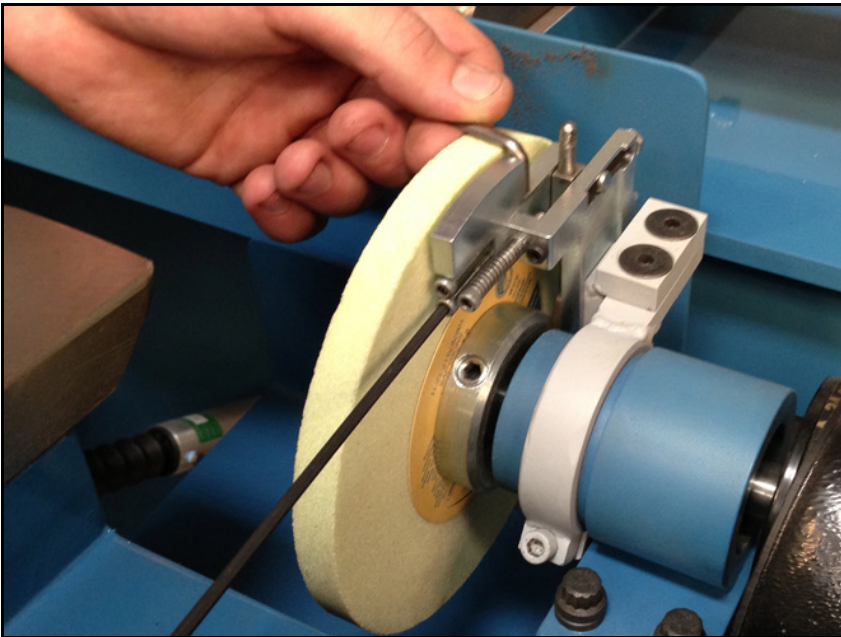
...and position it so that the blade stop just clears the grinding stone, then retighten the screw.



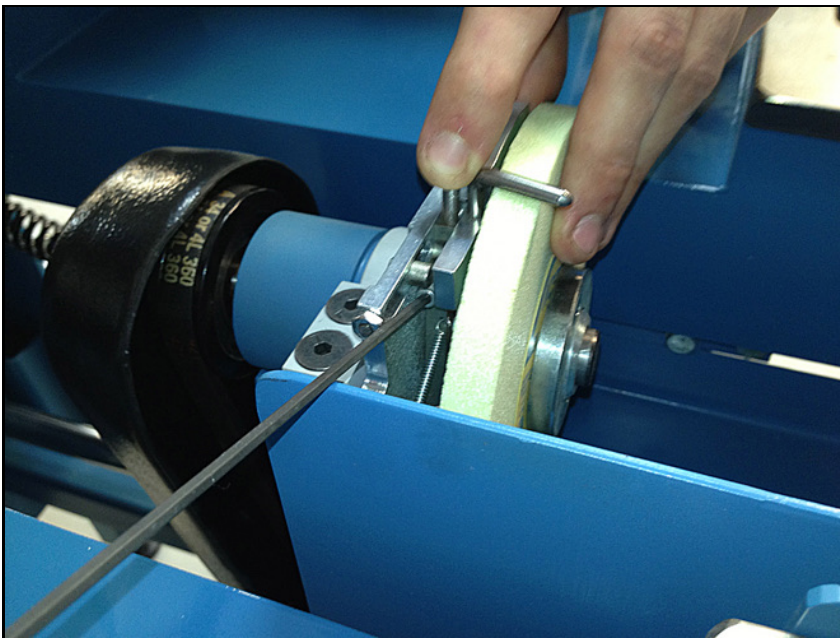
To set the indexer forward stop so that it is caught by the blade during indexing, adjust the screw on the right.



To set the back indexer stop so it will align properly with the blade stop, adjust the middle screw with the spring.



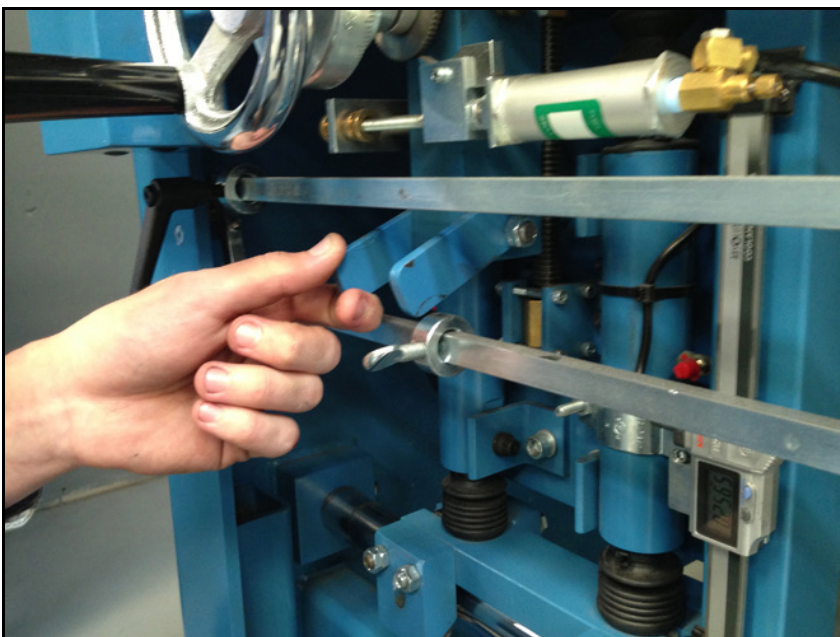
To set the height or change the blade stop, loosen the two left screws.



To set the height or change the indexing stop, loosen the screw on the front of the indexer.



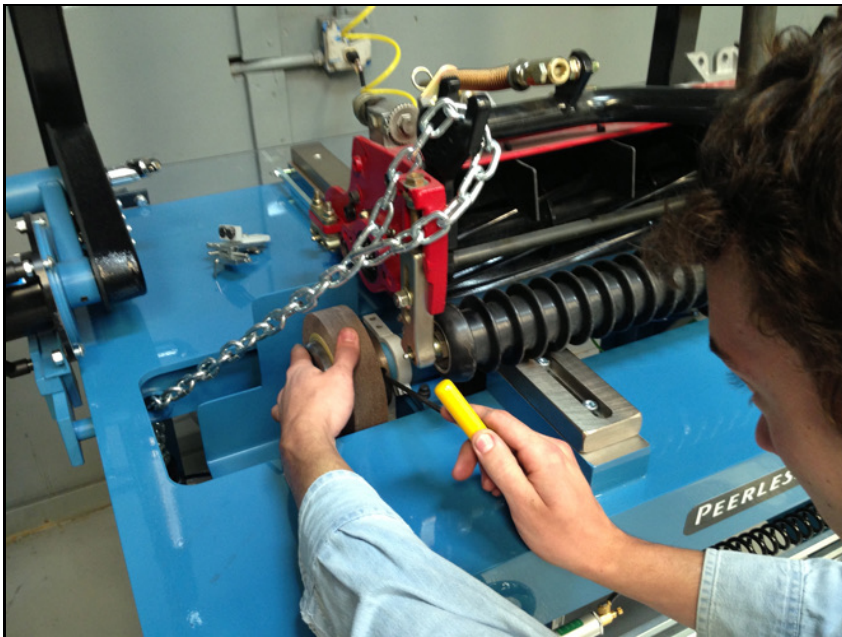
5.1 Remove the spin grinding stone
Disengage the carriage travel.



Move the stop levers to their center position.

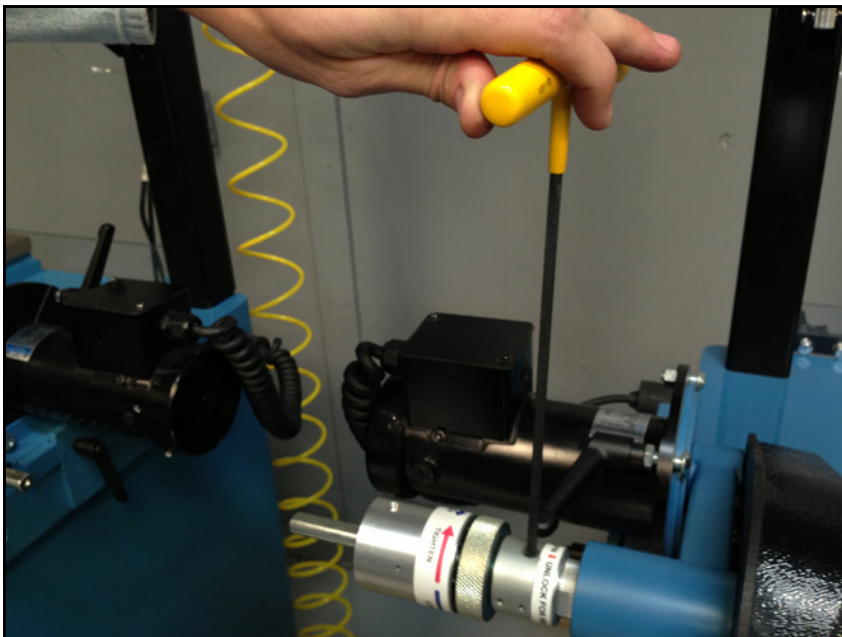


Move the grinding head to the left end of the grinder.

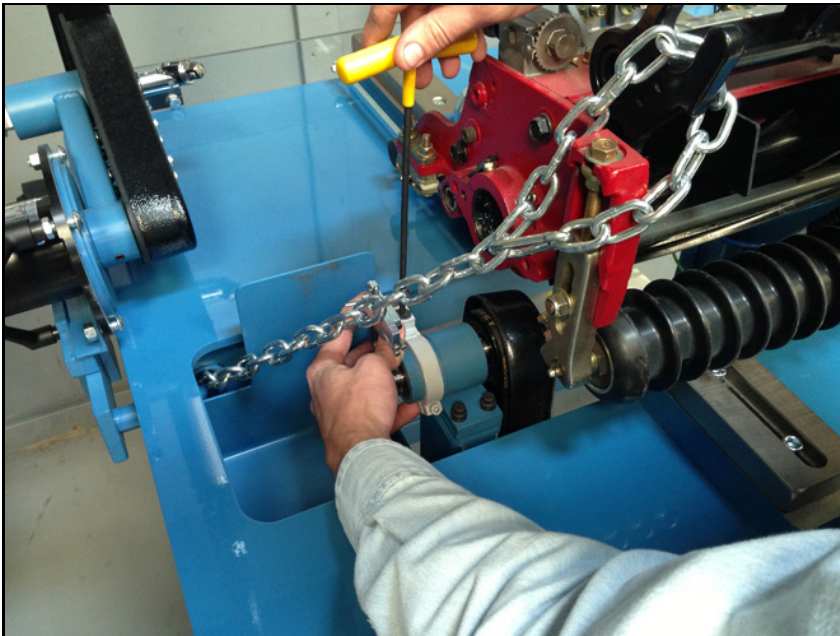


Use the T-handle allen wrench to loosen the set screw which locks the quick change hub to the shaft. Gently slide the spin grinding stone off the shaft taking care not to damage it.

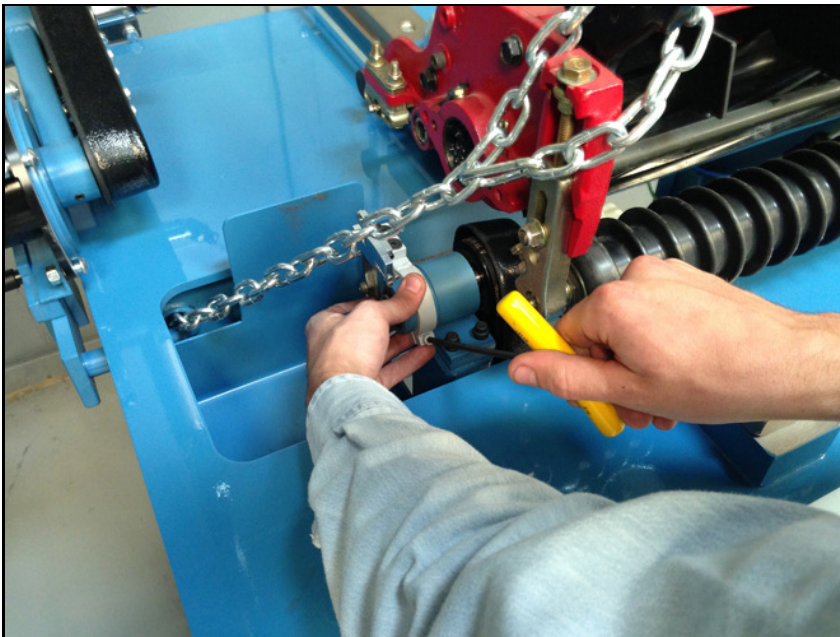
DANGER-Do not use a damaged stone as it may explode and cause injury or death.



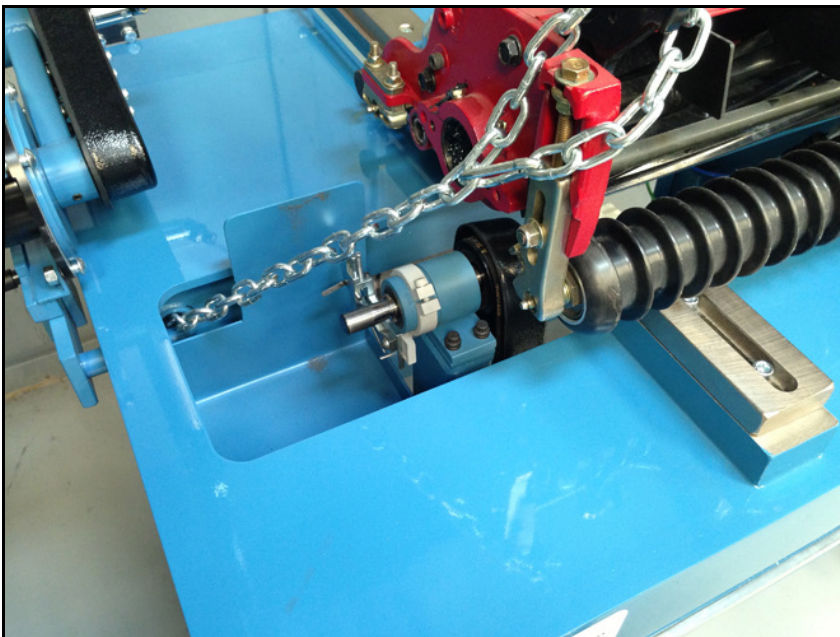
Unlock the clutch lock-out set screw and make sure the shaft turns freely with out touching the set screw.



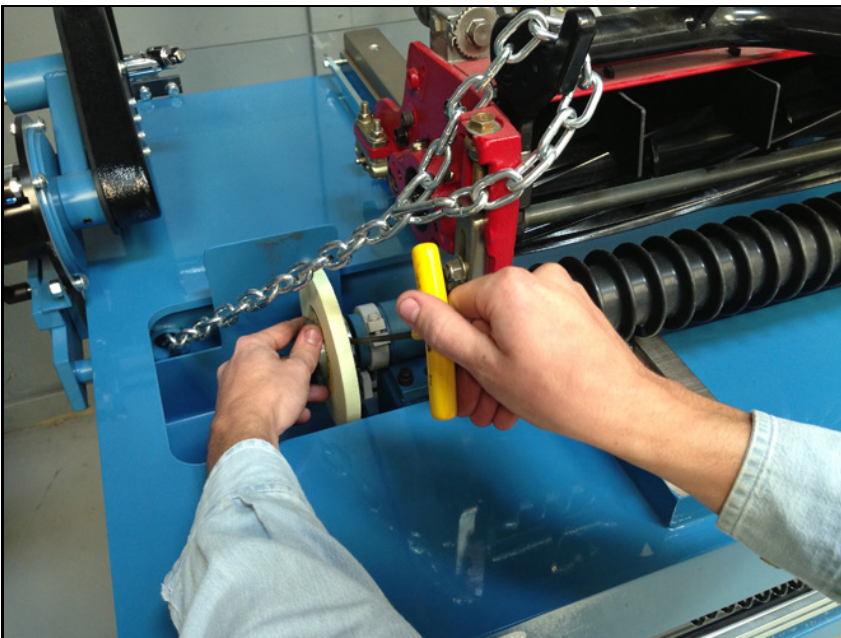
5.2 Mounting the indexer and relief stone
Mount the indexer on the collar with the two captured countersunk screws using the t-handle allen wrench. There are different length blade stops that can be used with different width stones depending on the clearance between the end of the reel and the frame.



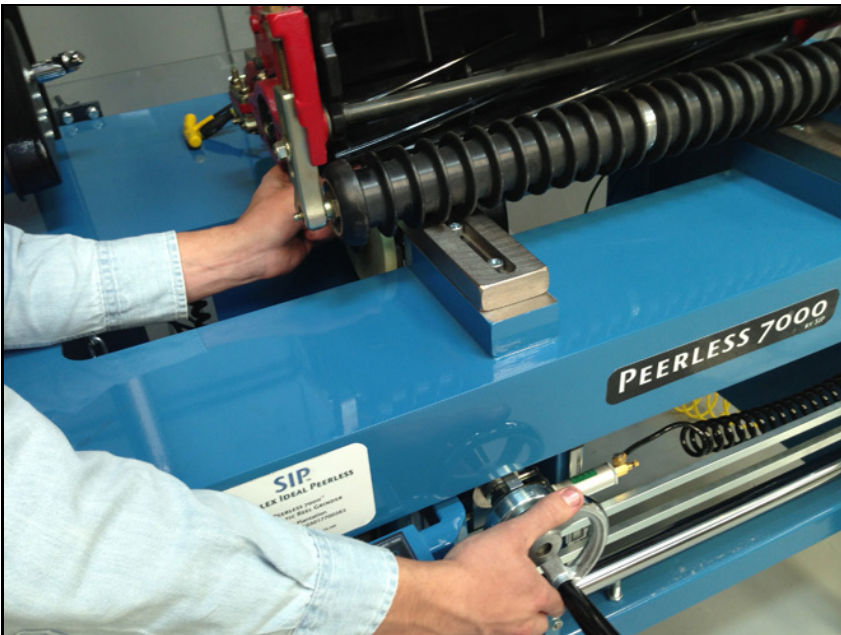
Unlock the collar and rotate it so...



the indexer is down and out of the way.



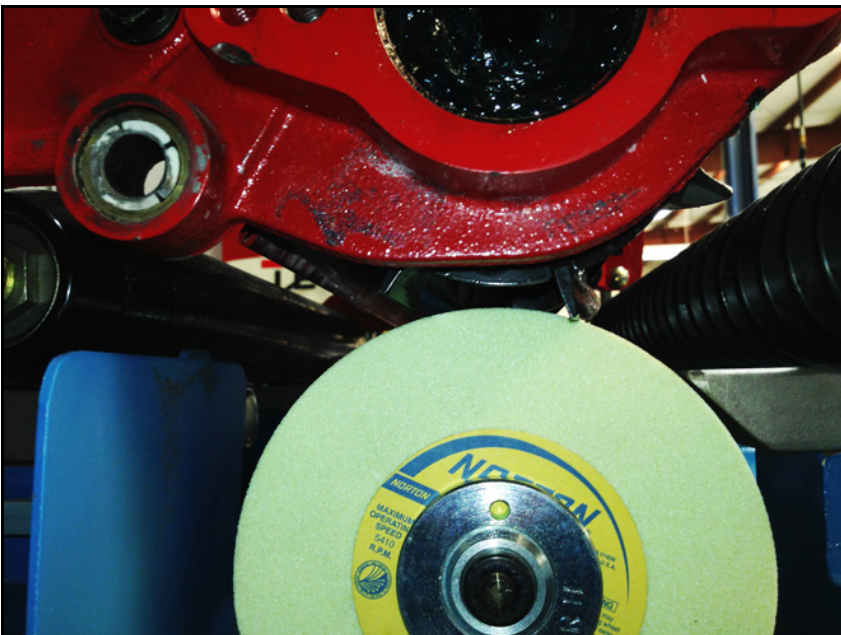
Mount the relief grinding stone.



5.3 Setting the relief angle

You must set the relief angle so that the grinding stone does not contact the blade in front of the one being ground. Find the closest blade gap by checking for uneven blade spacing or bent blades.

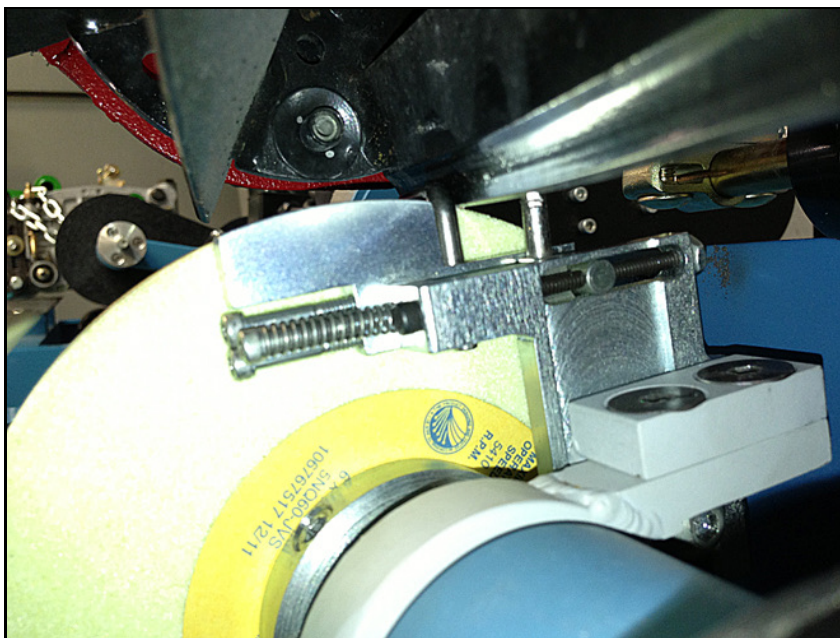
Move the grinding stone to the left end of reel. Feed the grinding head up until...



...the grinding stone just touches both reel blades.



Adjust the grinding stone down 1 to 2 revolutions of the hand wheel for smaller reels and 4 or more revolutions for larger reels. Make sure that the relief angle does not exceed 45°. This will give approximate the correct relief angle for most reels. You may need to adjust up or down depending on your reels.



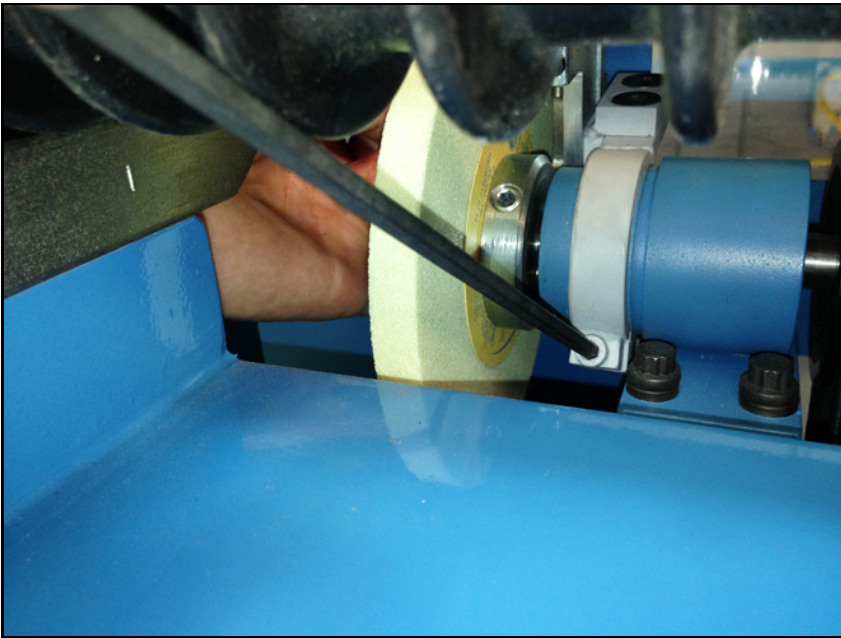
5.4 Engaging the indexer

This procedure is usually only required when setting up the first reel of a particular model or size.

With the grinding head off the left end of the reel, rotate the indexing collar and move the grinding head on to the reel so that the blade goes between the indexing stop and the blade stop.



Squeeze the blade and blade stop together while pulling the blade against the grinding stone.



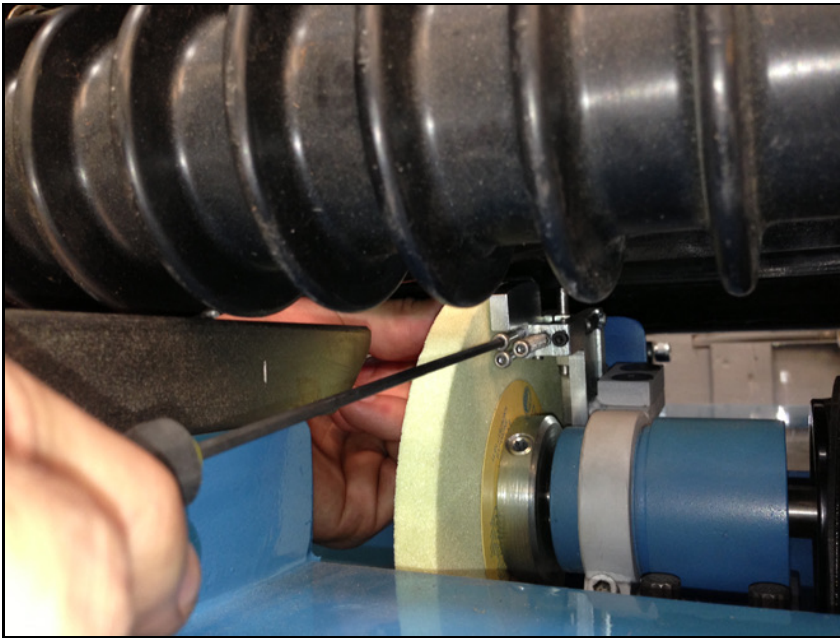
Tighten the collar locking screw.



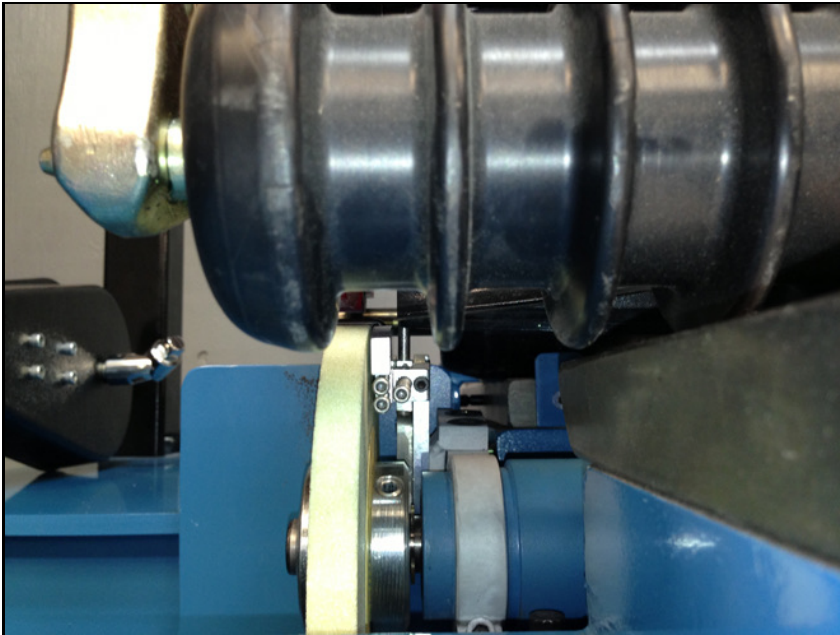
Back off the grinding head about .010".



5.5 Aligning the indexer
Again squeeze the blade and the blade stop together.



While squeezing the blade and blade stop together, loosen the two screws which clamp the blade stop. When you feel the blade stop align to the blade, retighten the two screws.



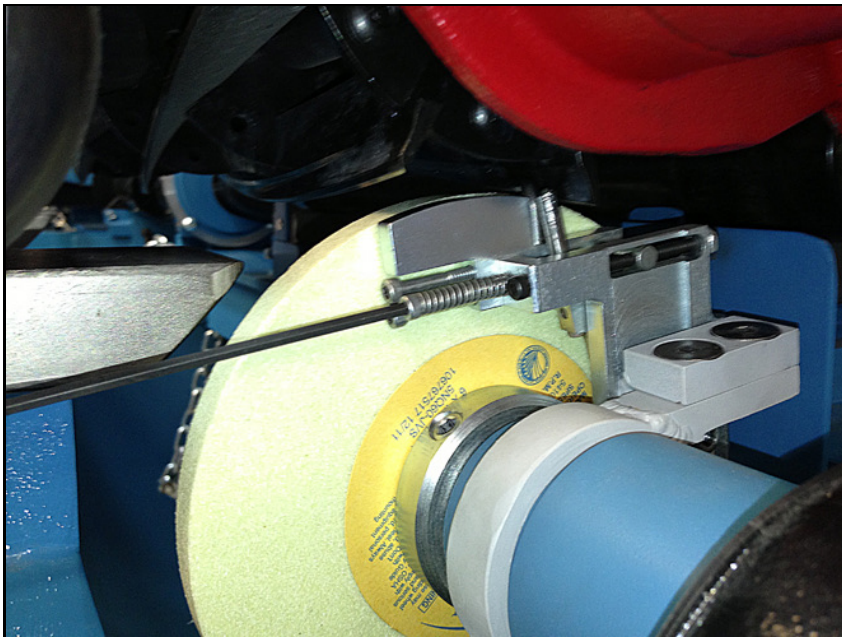
Move the grinding head to the left end of the reel so that the right blade stop is just off the end of the reel but the indexer stop is not.



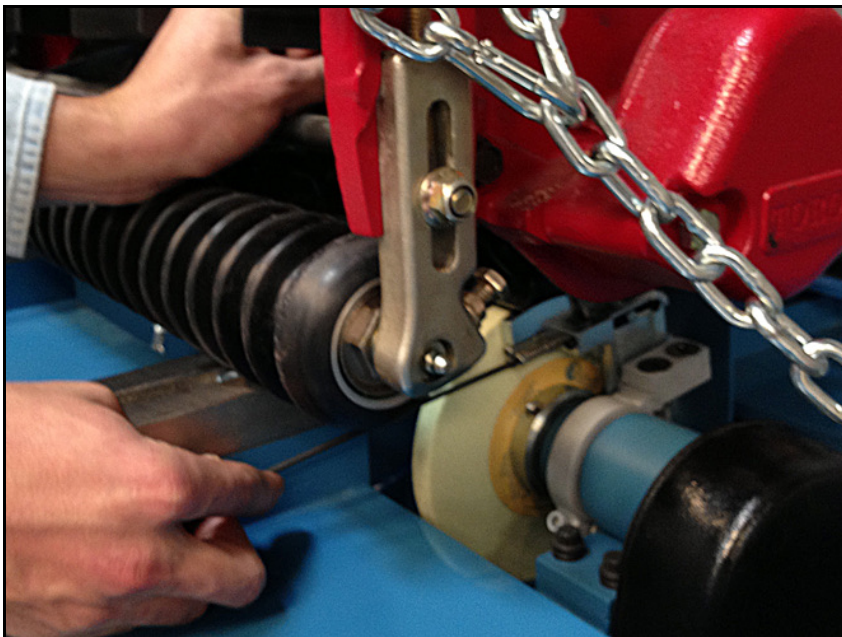
Rotate the reel blade so that it catches the indexer stop.



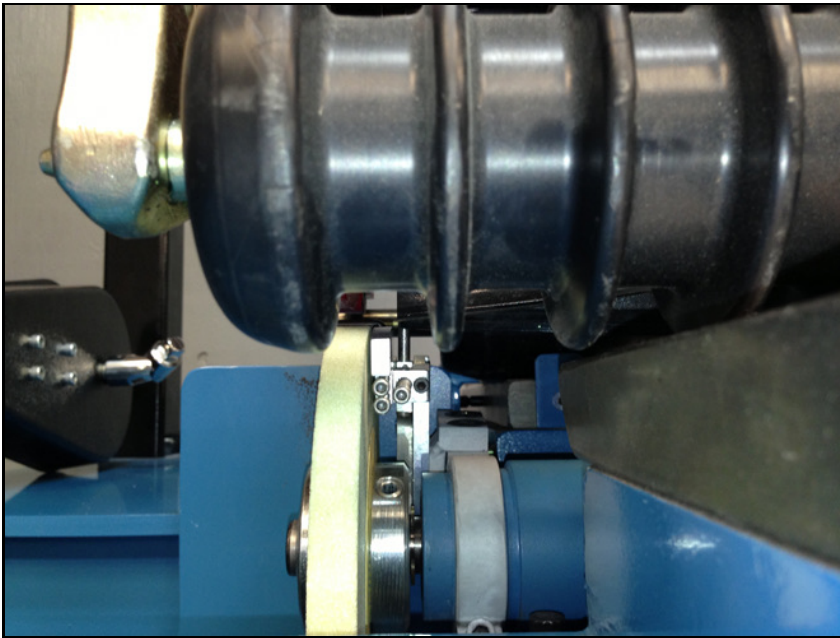
Move the grinding head to the right so that both the blade stop and the indexing stop are against the reel blade.



Adjust the indexer stop in or out in short, quick turns until it just touches the blade.

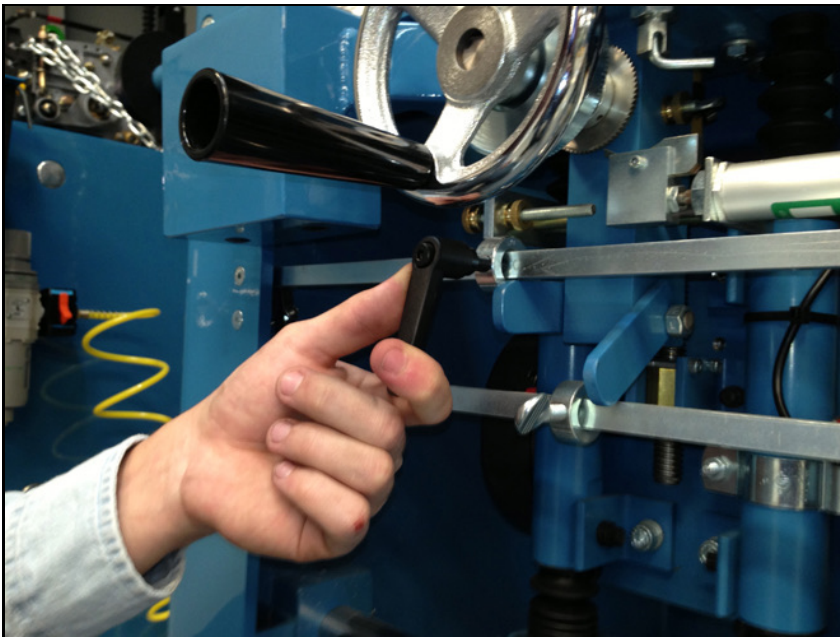


You can tell this by feeling the reel move with your thumb. If you do not use short, quick turns, you will not feel the blade move.



5.6 Setting travel stops

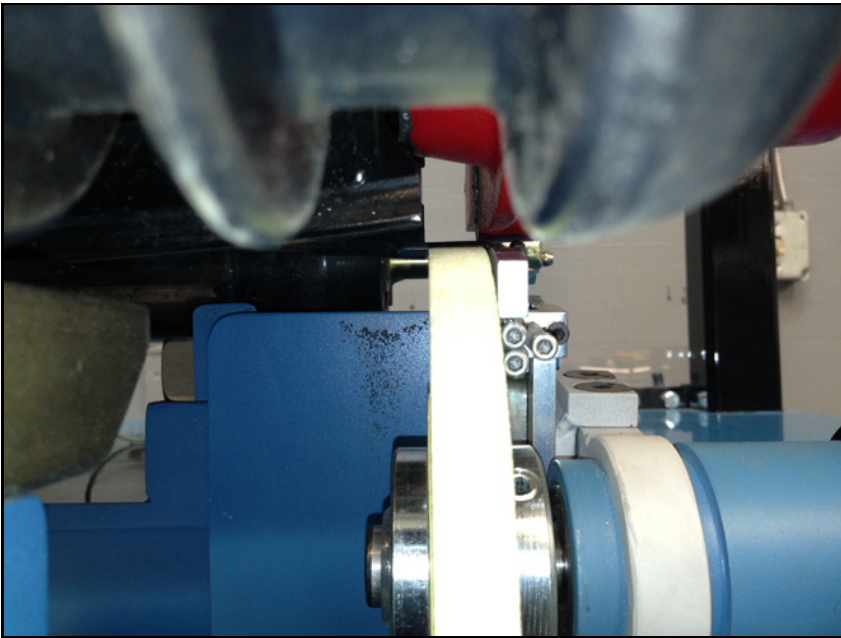
Move the grinding head to the left end of the reel so that the blade stop is off the end of the reel while the indexer stop is still on the reel blade.



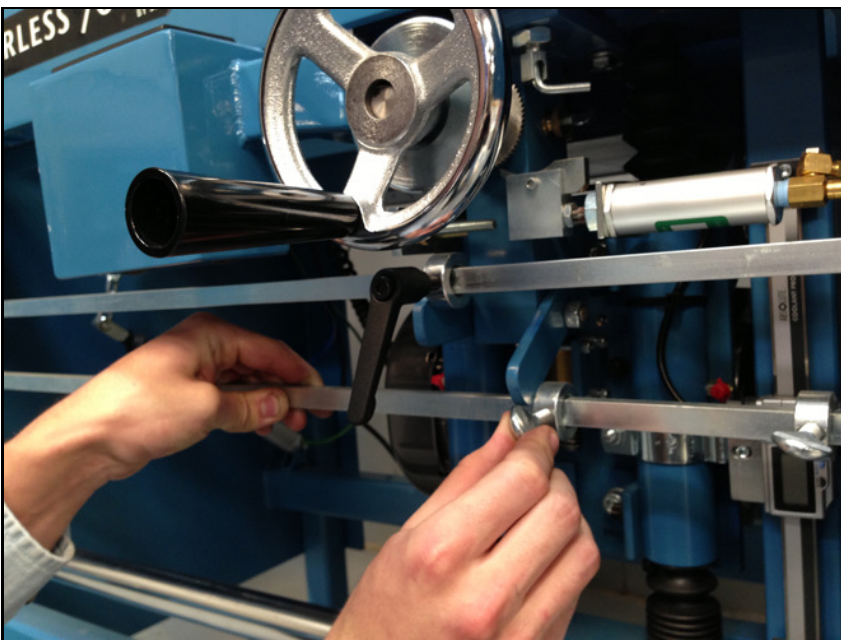
With the left lever in the up position, set the top left carriage travel stop.



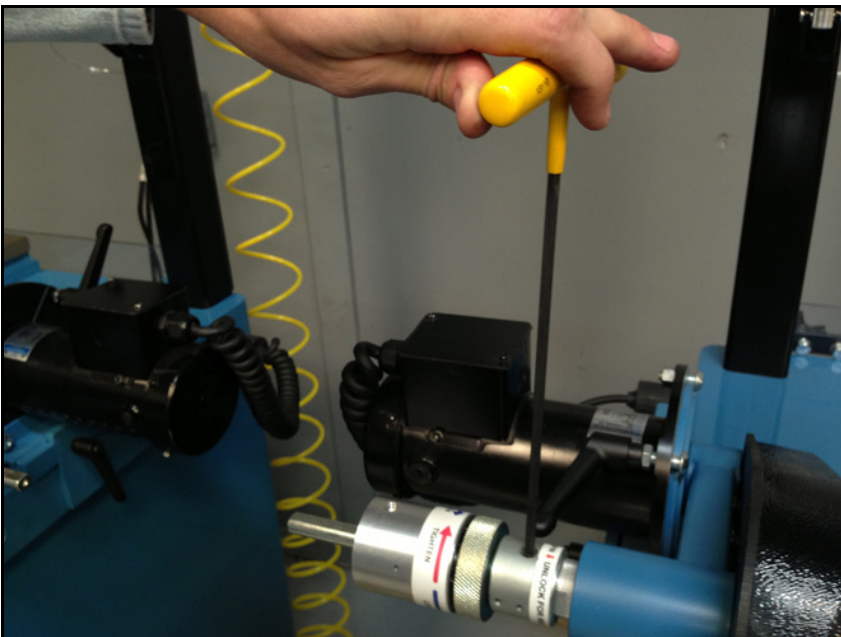
Move the grinding head to the right end of the reel...



so that the grinding stone is off the end of the reel while the left blade stop is still on the reel blade.

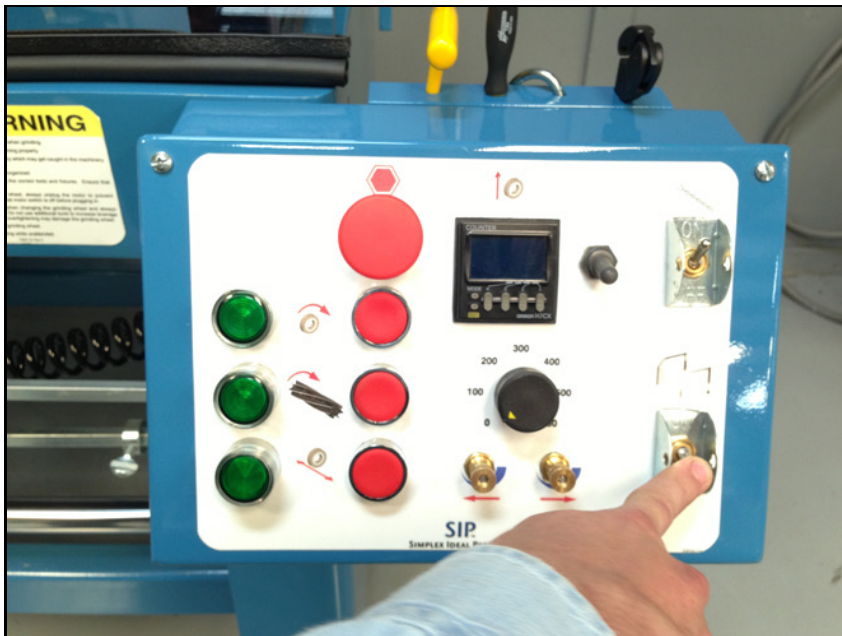


With the right lever down, set the top stop against the top lever. While holding the actuating bar to the right, set the bottom stop against the bottom lever.

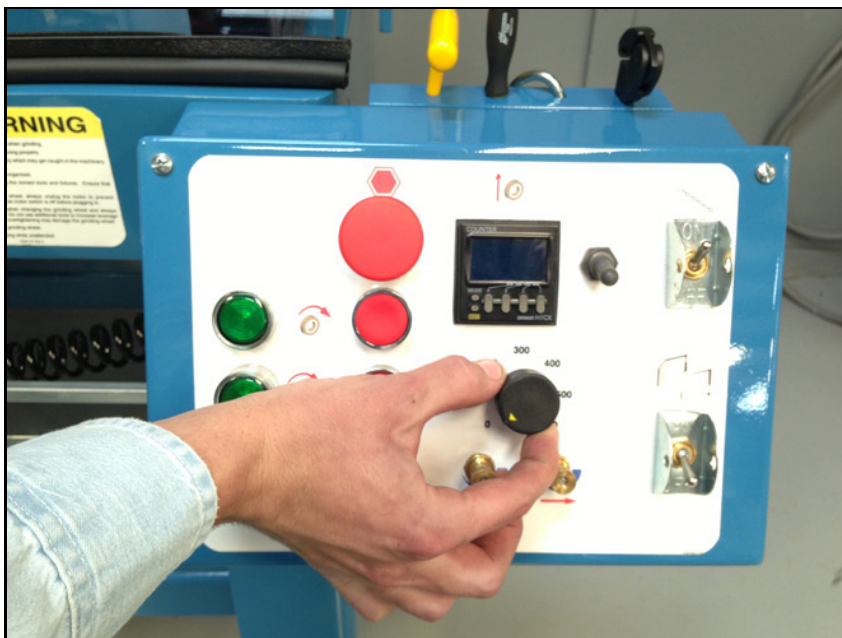


5.7 Checking the indexer

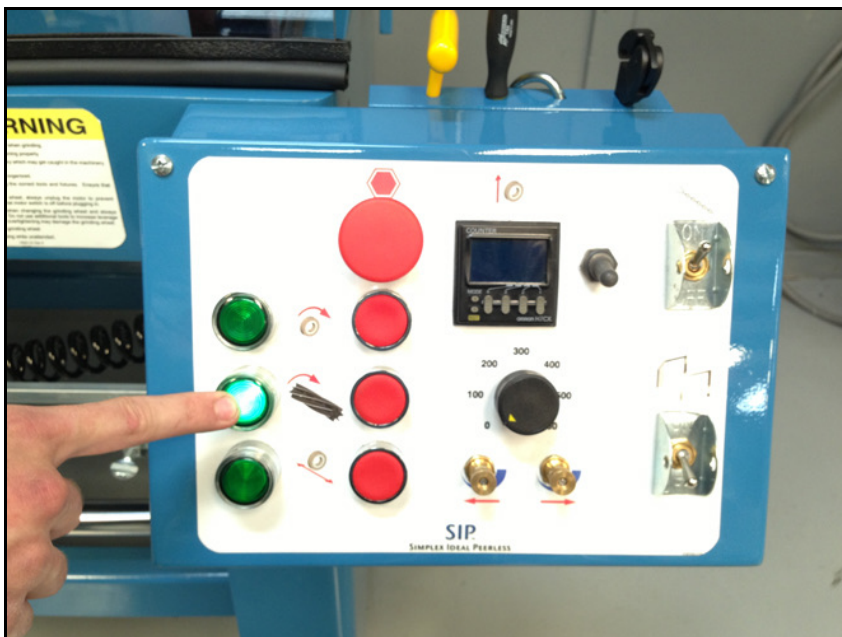
Check that the clutch lock out is unlocked.



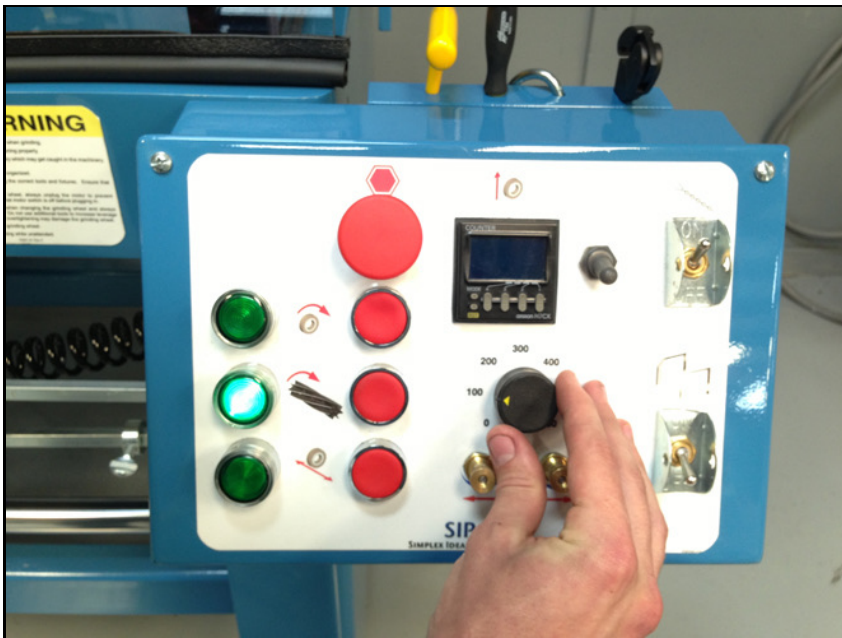
Close the door.



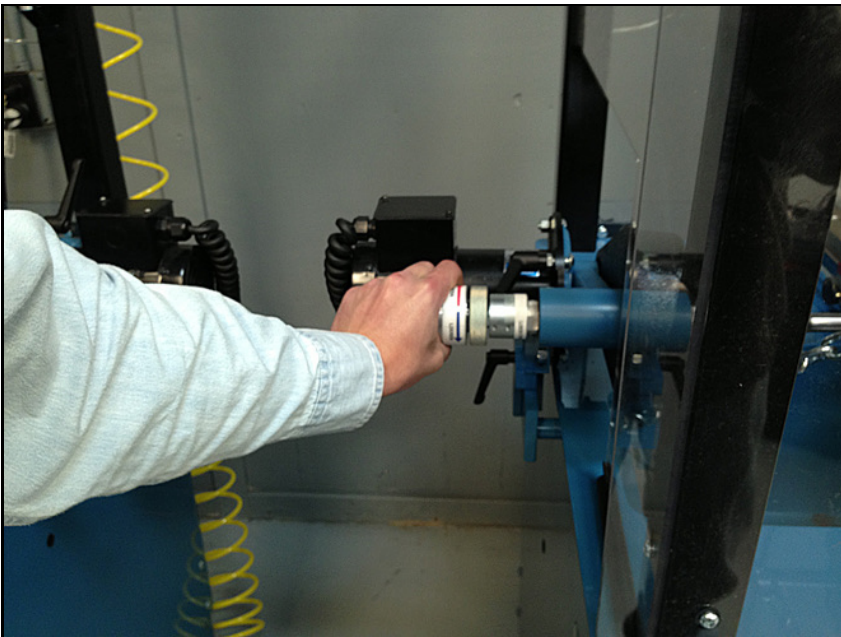
Turn the reel drive speed to zero.



Turn the reel drive motor on.



Slowly increase the speed until the reel drive motor is turning as slowly and smoothly as possible. This should cause the reel blade to remain against the reel blade stops as the grinding head moves in either direction.



Rotate the slip clutch so you pull the blade away from the blade stop. Let go and make sure it pulls the blade back on to the blade stop.



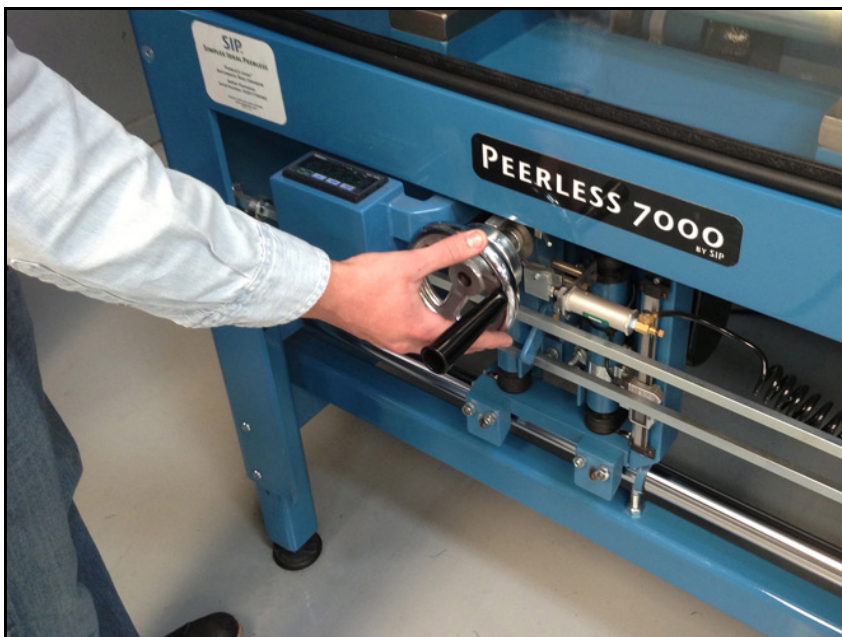
Disengage the carriage travel.



Move the grinding head back and forth across the reel and check for correct function of the blade stop and indexer.



Turn the reel drive motor off.



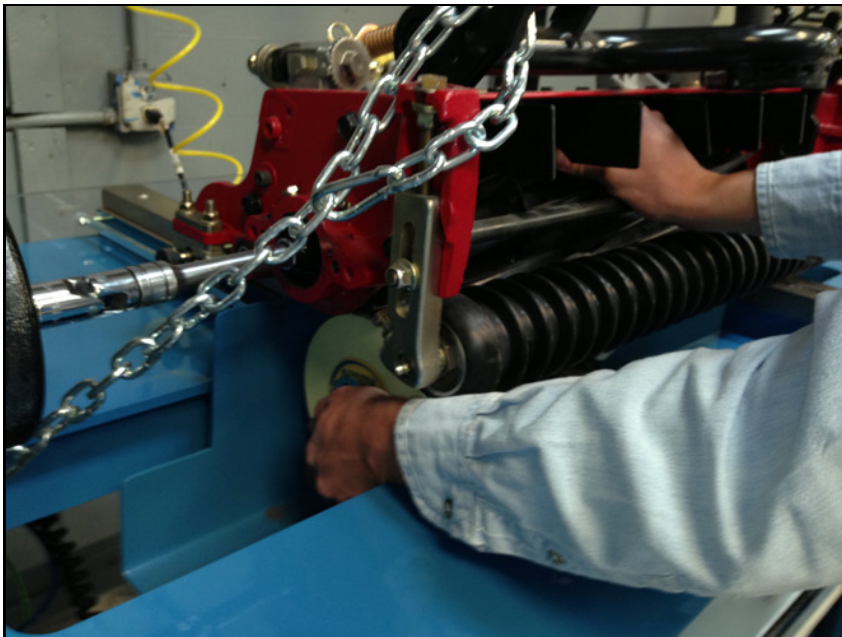
5.8 Adjusting for variations in the amount of relief

The amount of relief can vary from one end of the reel to the other due to variations in the rake angle, rear roller position and other reasons. Regardless of the reason, the adjustment to compensate is the same.

Move the grinding head to the left end of the reel.



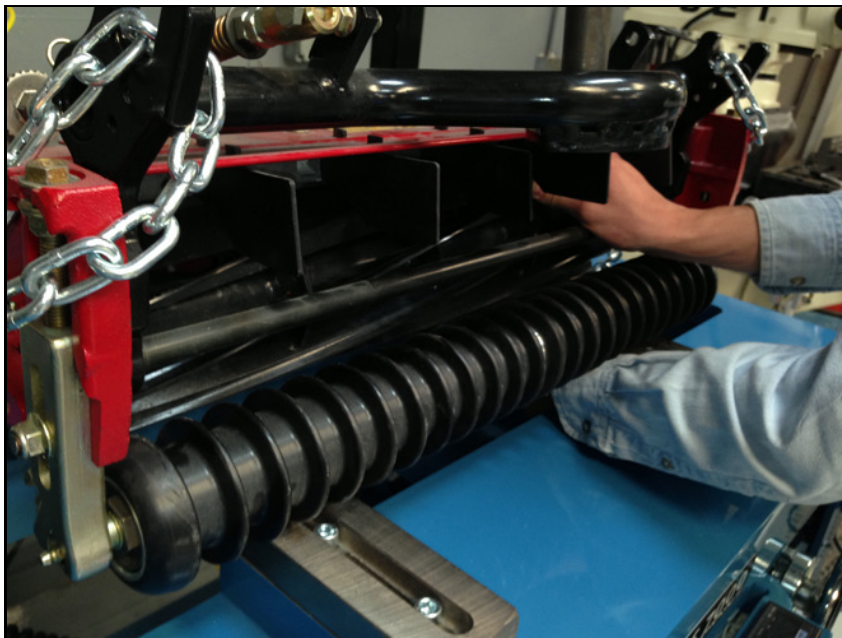
Feed the grinding stone up until it just touches the reel.



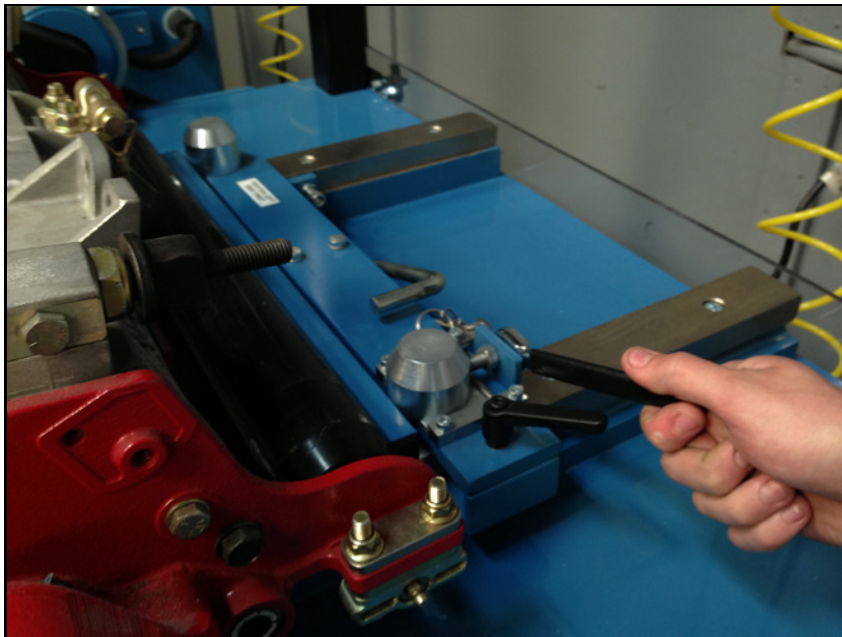
Check that it just touches by holding the reel blade against the blade stop and turning the grinding stone.



Move the grinding head to the right end of the reel.



While holding the reel blade against the blade stop, turn the grinding stone to see if you have the same contact as on the left end of the reel. If you get the same contact while infeeding the grinding stone up or down .010, go to Section 5.9, otherwise continue on to the next step.



Turn the ratchet handle in or out until you have consistent contact on both ends of the reel. You will have to remove the locating pin if you need to move the post back. When you are done with this reel, make sure you replace the pin and position the post against it. This will reset the posts parallel.

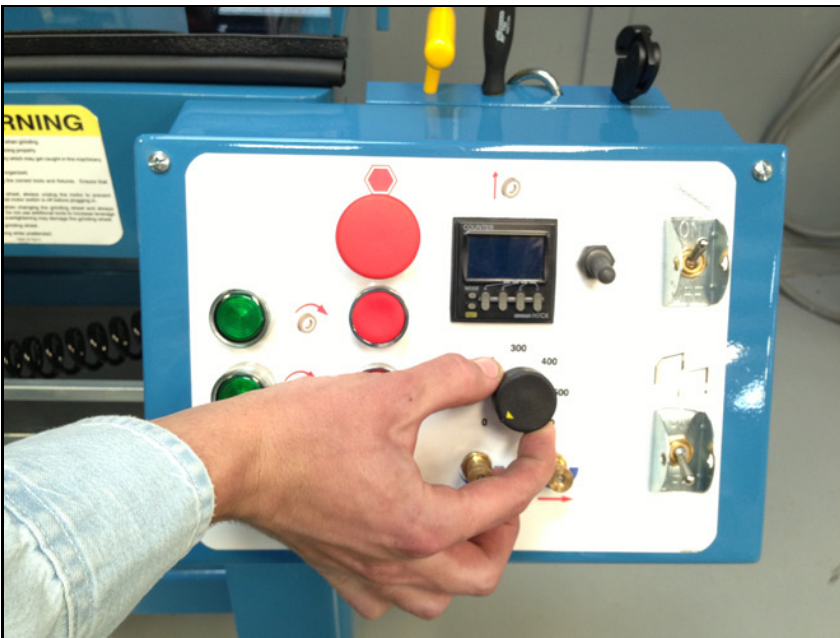
INFO-This procedure may not be accurate if the reel blades have some relief left.



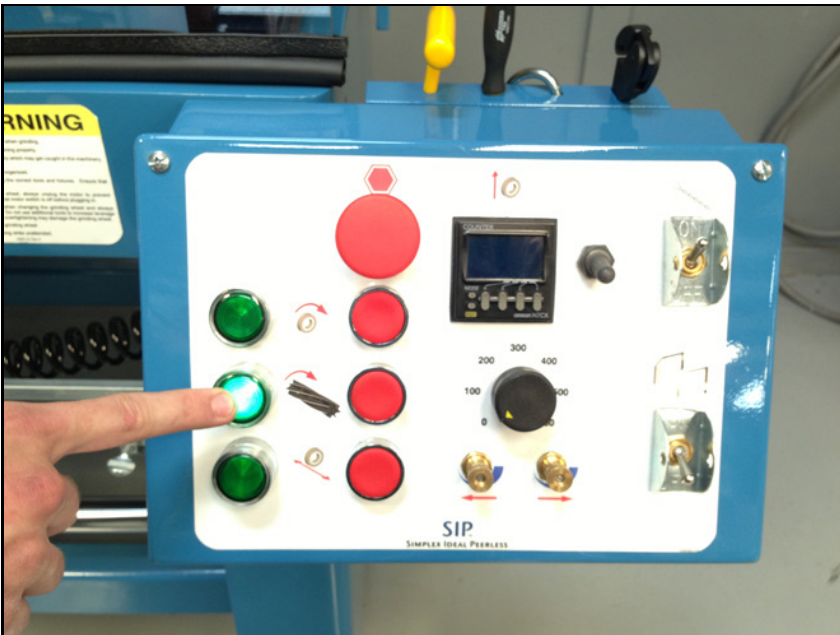
5.9 Relief grinding

Make sure the Auto Infeed is off.

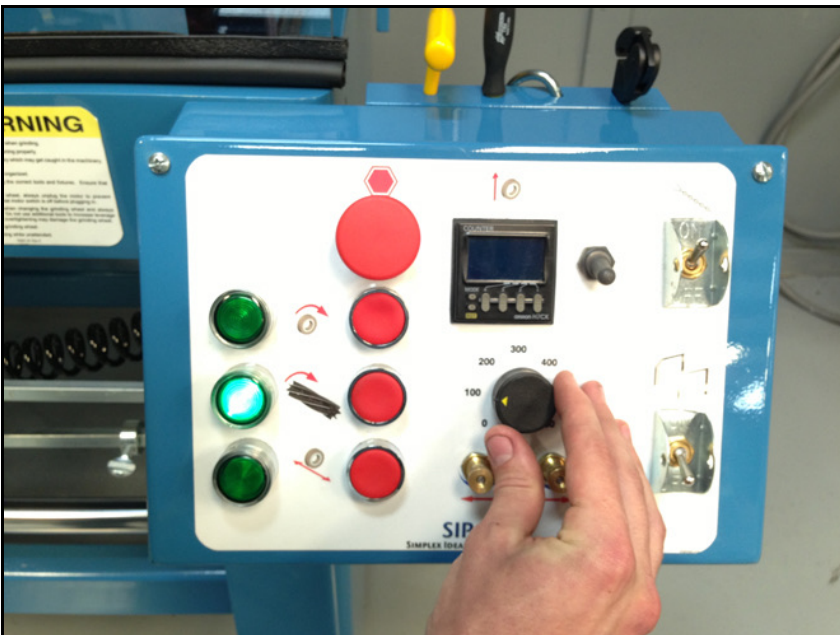
DANGER-Always close shield or wear safety glasses and face shield when grinding! Stay clear of grinding stone when turning grinder on!



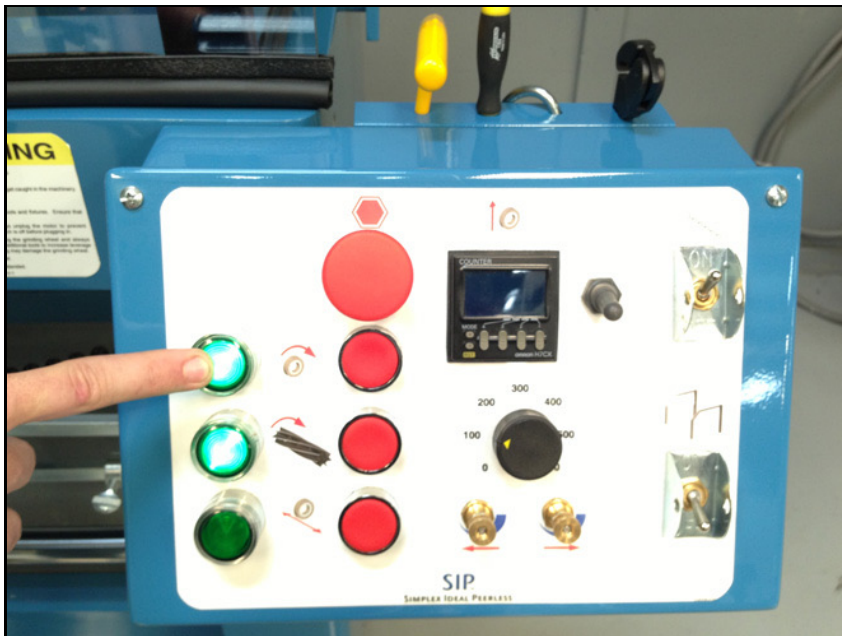
Turn the reel drive speed to zero.



Start the reel drive motor.



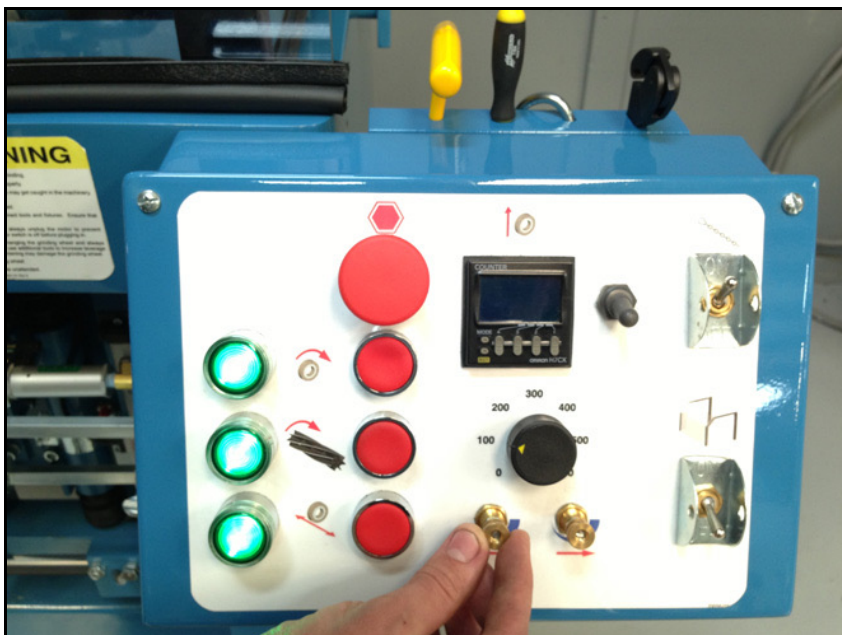
Set the speed between 100 and 150 so that the reel turns slowly and smoothly.



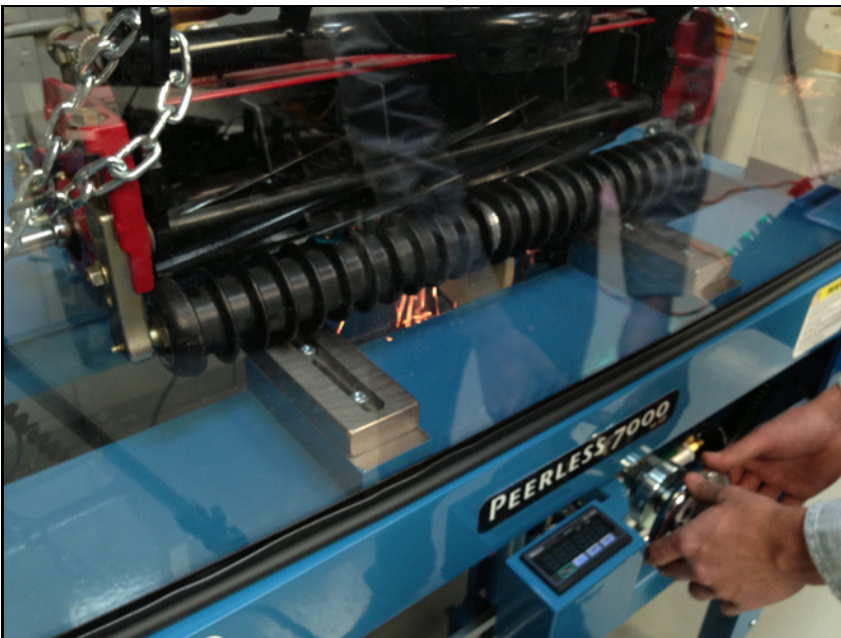
Turn the grinding motor on.



Turn the carriage travel on.



You may need to adjust the speed to get a satisfactory grind. Most of the grinding is done as the grinding stone feeds into the blade. This will be as the grinding head is moving to the right for right hand spiral blades and to the left for left hand spiral blades.



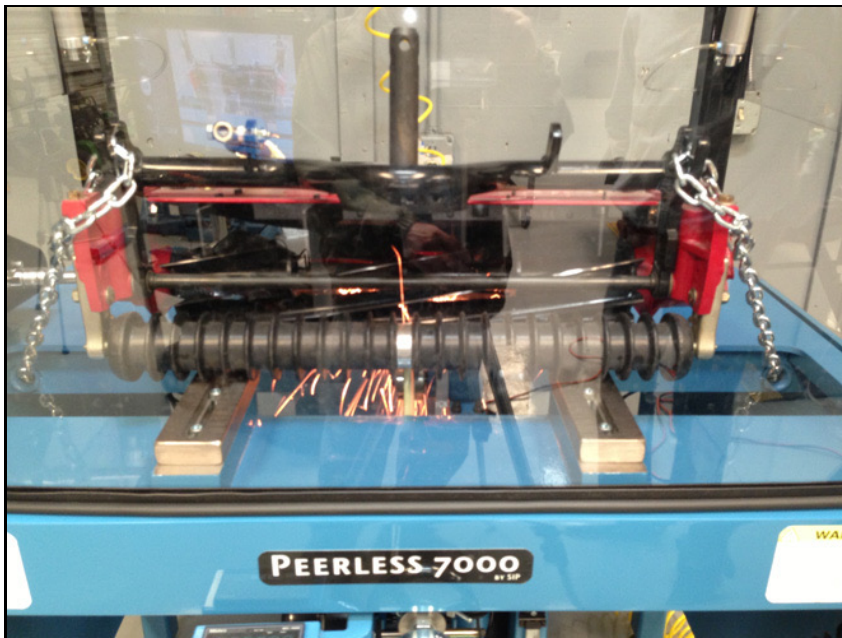
Feed the grinding stone up until it just starts to grind.



Set your hand wheel dial to zero or ...



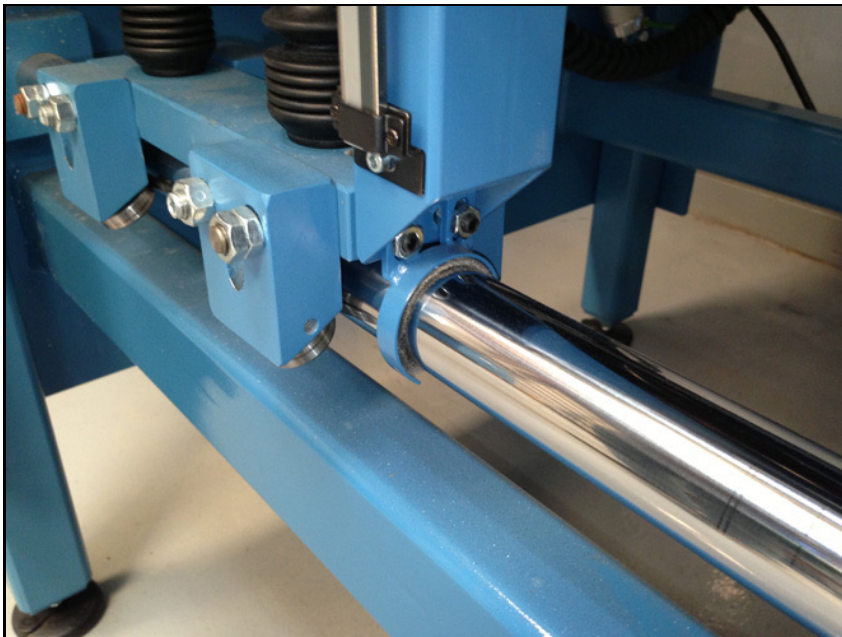
... reset the optional Digital Read Out.



Let the grinder continue to grind the reel blades until you have the desired relief on all of the reel blades. Many reels can be ground with one or two passes. Larger reels with thick or hard blades may take three or more passes. If the reel blades ride on the stops before the desired relief is achieved, you may infeed the grinding stone slightly to increase the percent of blade ground.



When you have the correct relief ground and are off one end of the reel, turn the main power off.

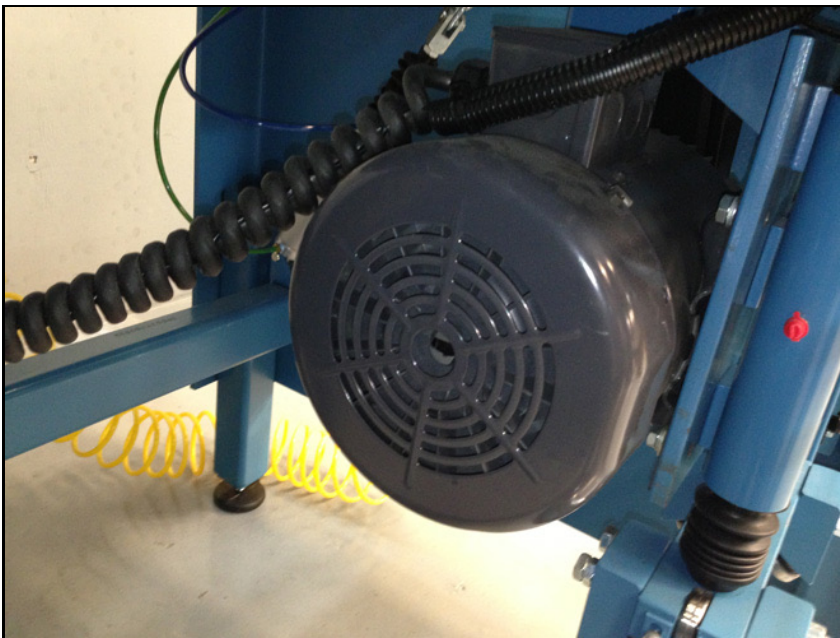


6.0 General maintenance

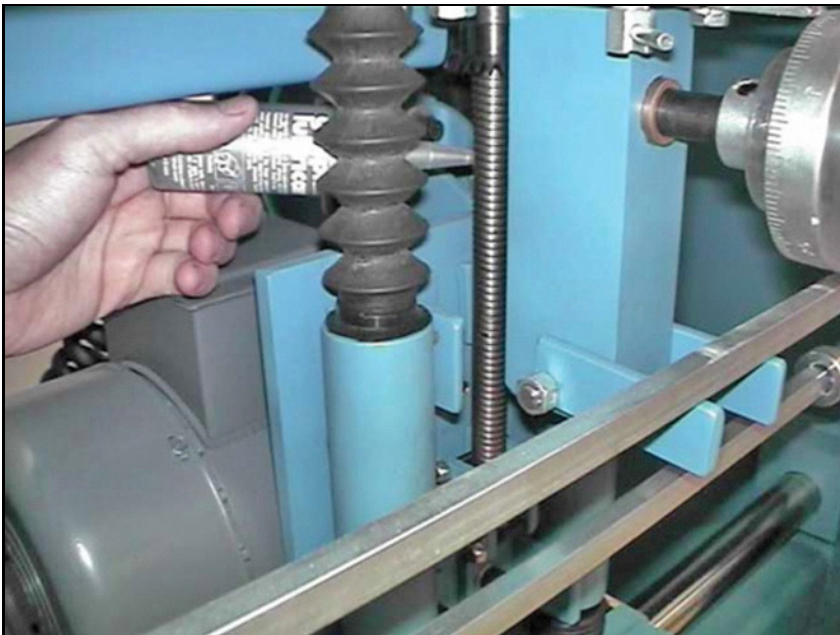
The carriage bearings are permanently sealed and lubricated. They require no lubrication or attention except to be kept clean.



The track shafts must also be kept clean and free from grinding dust and are equipped with integral wipes. Do not oil the track shafts as that will cause the grinding dust to cling to the track shafts and make the wipes ineffective.



The grinder is equipped with a totally enclosed fan cooled motors which requires no regular maintenance. The motors should be cleaned periodically with either a vacuum or compressed air.



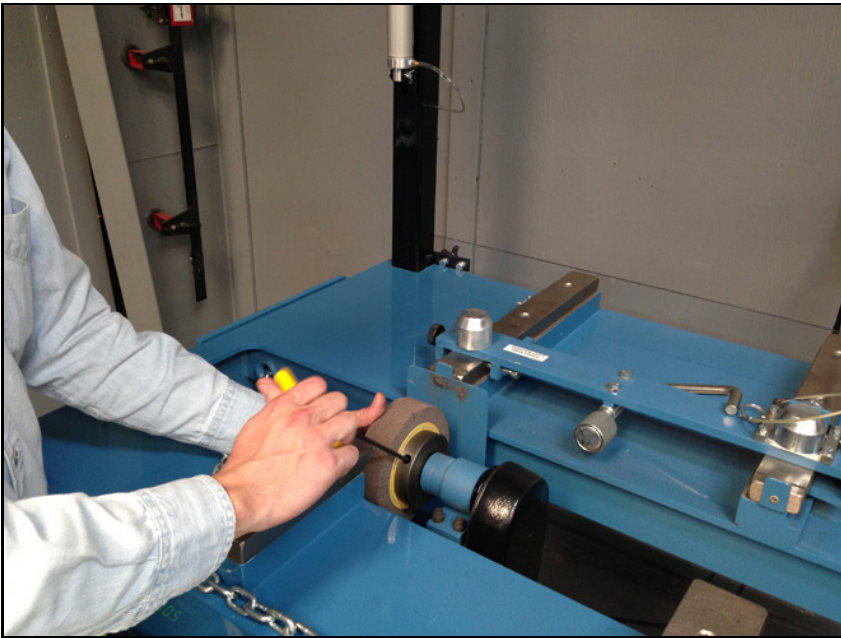
The feed screw should be lubricated lightly with dry graphite as needed for easy operation.



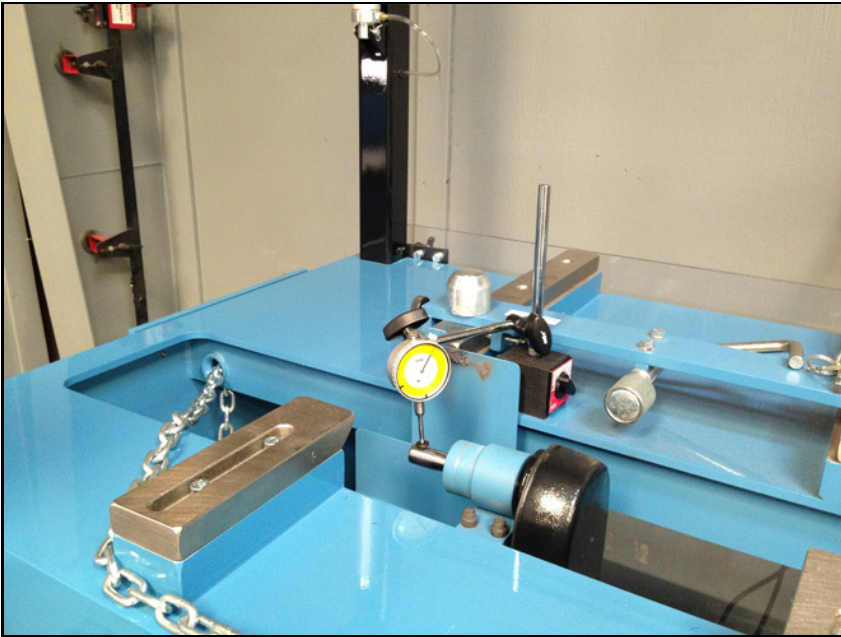
6.1 Aligning the head vertically

The grinding head is aligned at the factory and should only be adjusted if you are sure it is out of alignment.

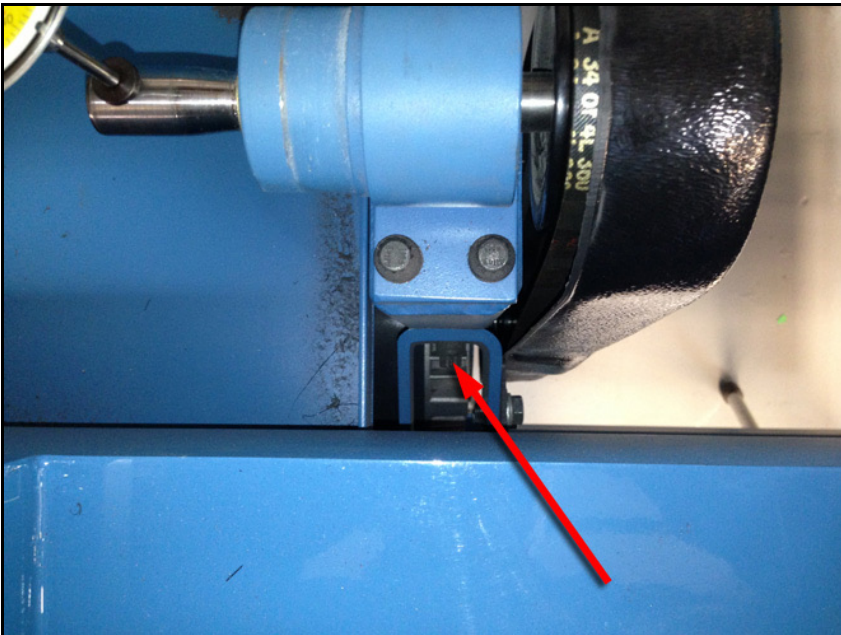
Disengage the grinding head from the carriage travel by pulling the pin down and turning it.



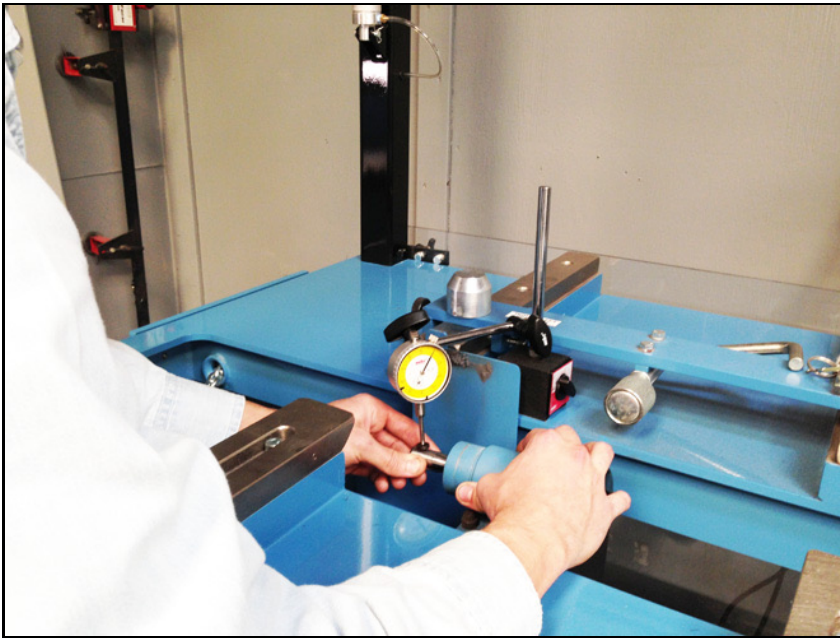
Remove the quick change hub if one is mounted.



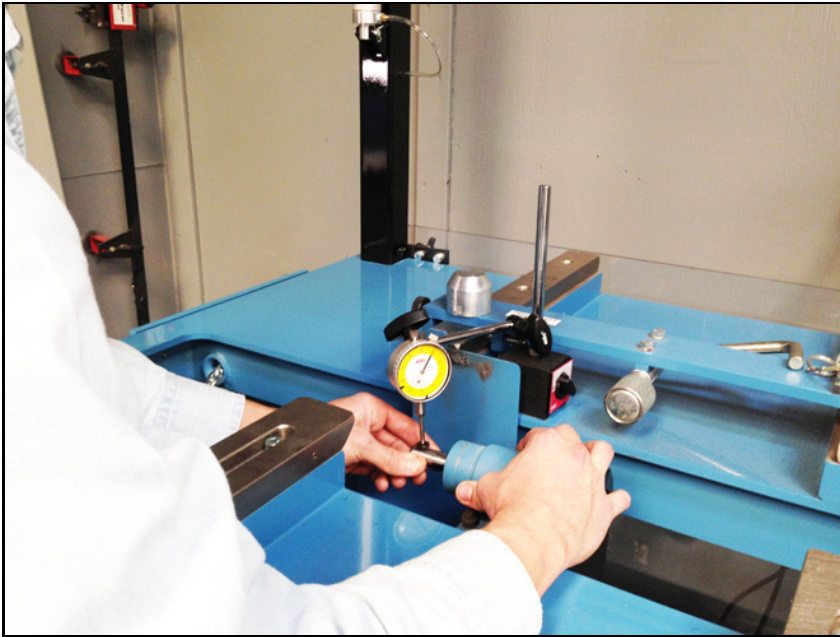
Mount the dial indicator and magnetic base so that the tip of the dial indicator rests on top of the grinding stone shaft. Move the grinding head back and forth and read the difference on the dial indicator.



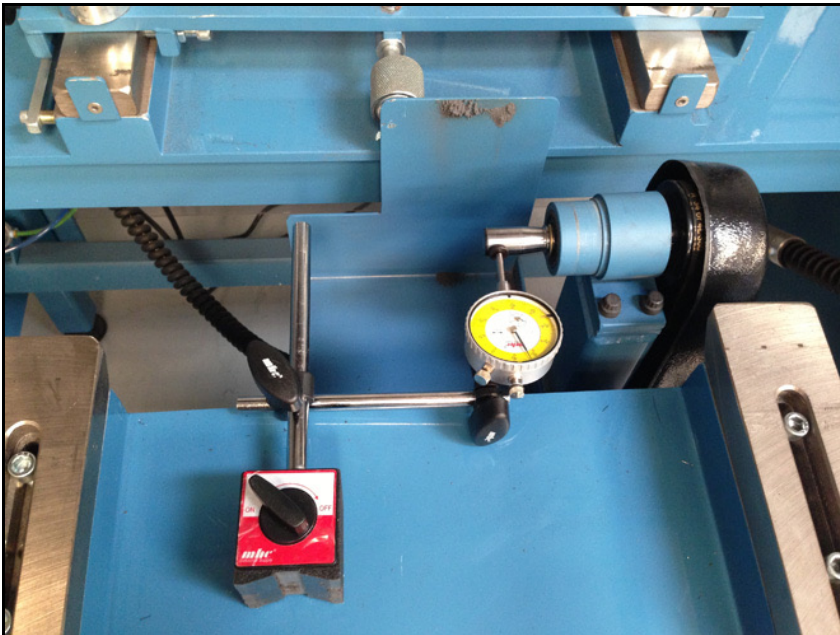
If the difference is greater than .002-.003 you should adjust the head by loosening the bolts at the base of the bearing support.



Adjust the head until the shaft varies less than .002-.003.



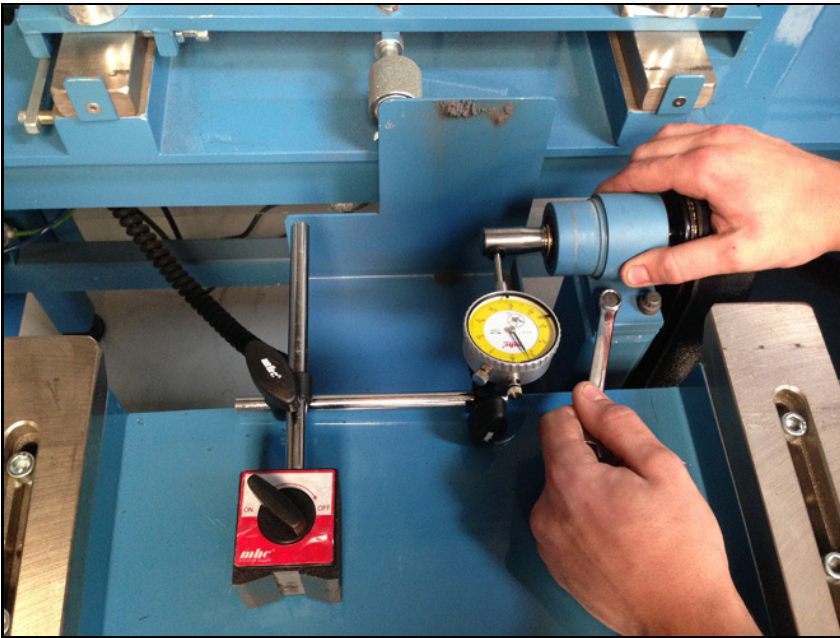
Tighten the bolts. Recheck the alignment to make sure that you do not move the bearing housing.



6.2 Aligning the head horizontally

The grinding head is aligned at the factory and should only be adjusted if you are sure it is out of alignment.

With the grinding head disengaged and the grinding stone removed (see Section 6.1), mount the dial indicator so that the tip touches the front of the shaft. Move the grinding head back and forth and read the difference on the dial indicator.



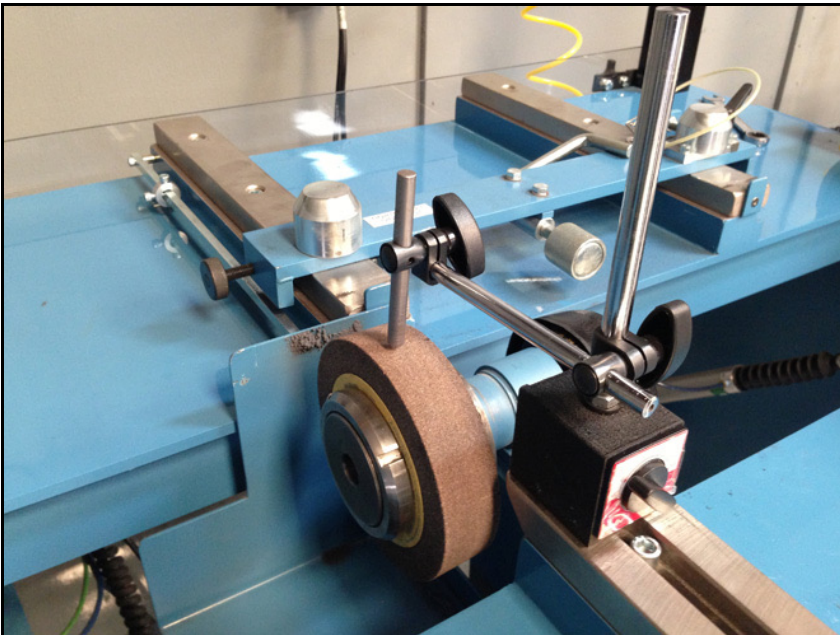
If the difference is greater than .002-.003 you should adjust the head by loosening the bolts.

Rotate the head until the shaft varies less than 0.003. Re-tighten the bolts, taking care not to move the head.



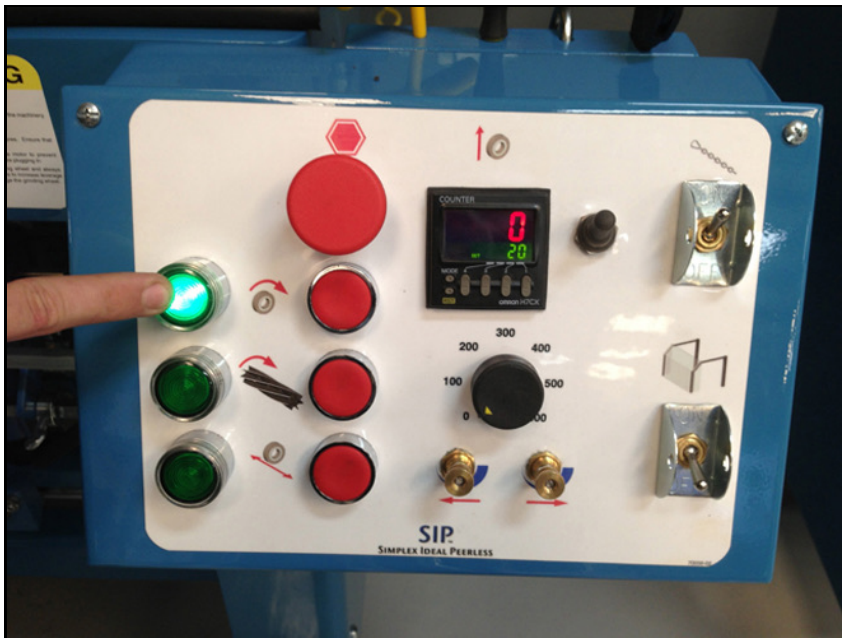
6.3 Dressing the grinding stone Disengage the grinding head.

DANGER-Wear face shield! Stay clear of stone when starting machine!

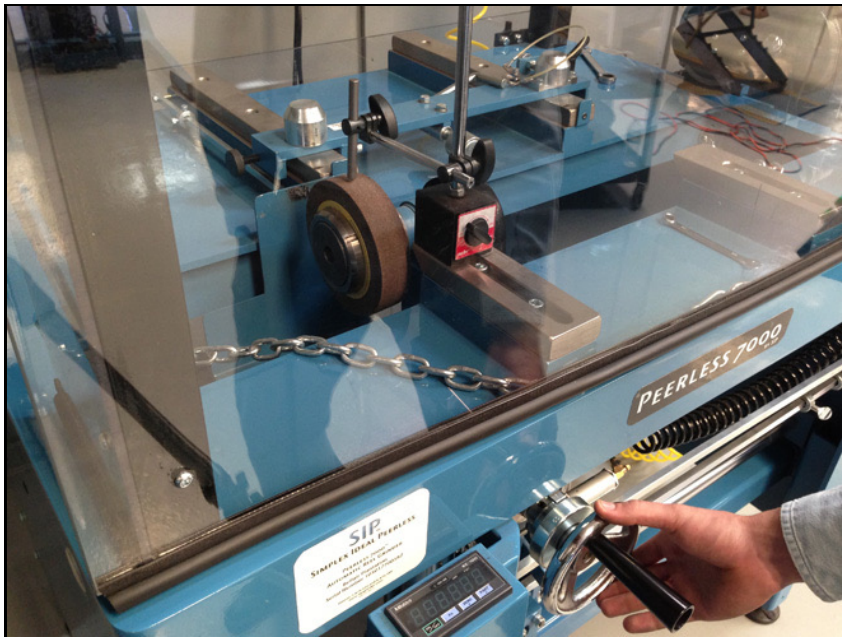


Mount the diamond dresser on to the magnetic base.

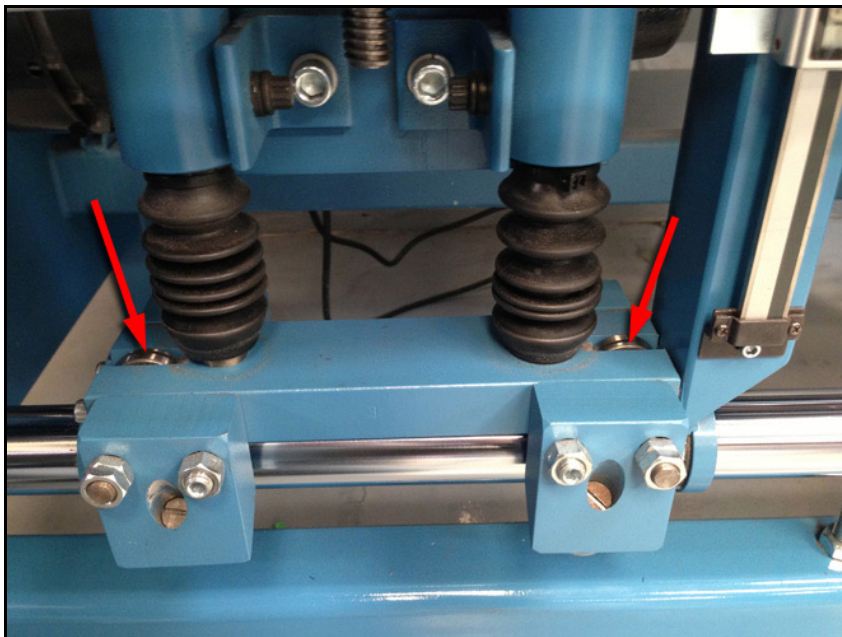
Clamp the magnetic base on to one of the reel support rails. Position the diamond dresser tip on the top of the stone.



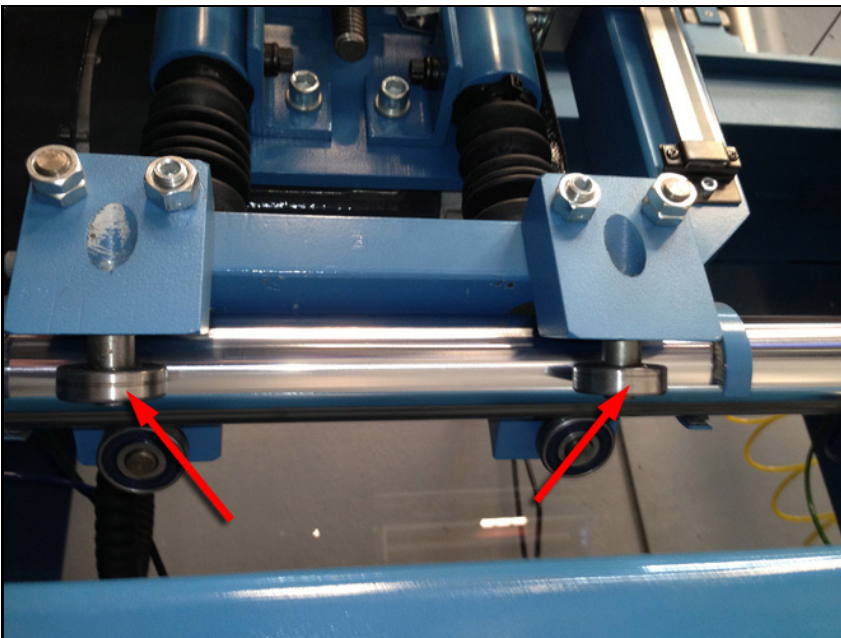
Close the shield and turn on the grinding motor.



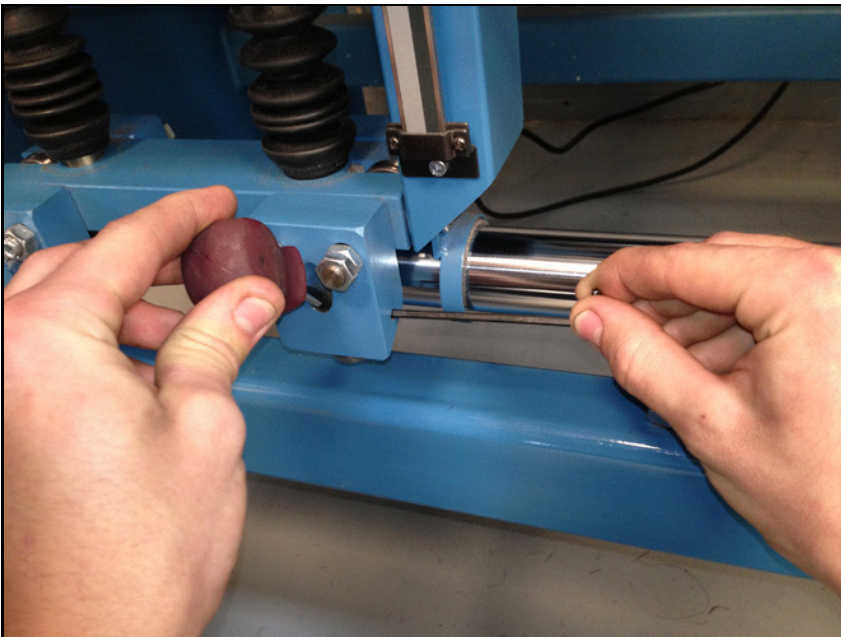
Feed the grinding head up until it just touches the diamond dresser.
Move the grinding head back and forth and slowly infed the stone until the stone is clean and true.



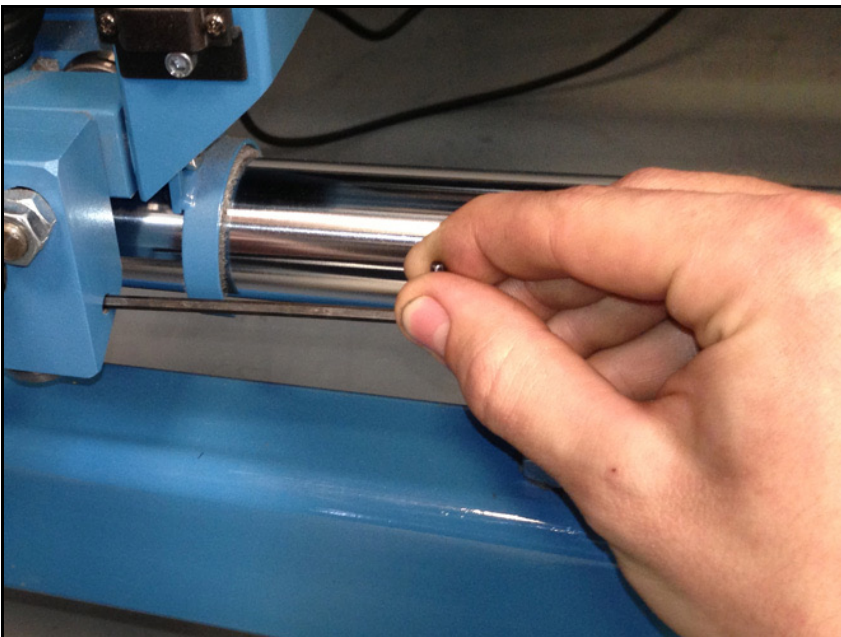
6.4 Adjusting the grinding head bearings
The two bearings on the top of the bottom bearing block do not need adjusting.



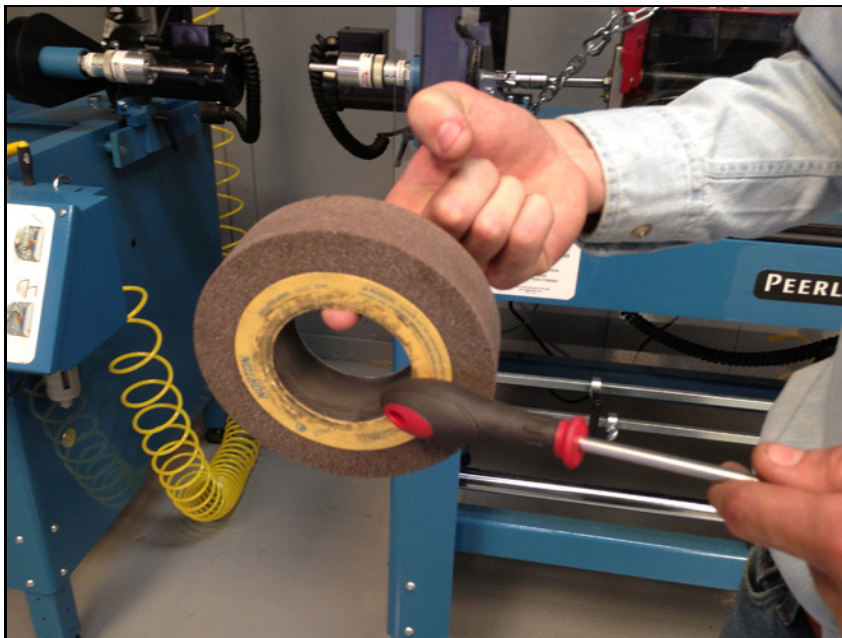
The remaining eight bearings, four on the top track shaft and four on the bottom are mounted on eccentric axle and may need occasional adjusting.



Loosen the set screw which locks the bearing axle. With a screwdriver, turn the axle so that bearing just touches the chrome track shaft.



Re-tighten the locking set screw. The bearing should just touch the track shaft and slip when turned. Not all bearings will be in full contact with the track shaft over its full length.



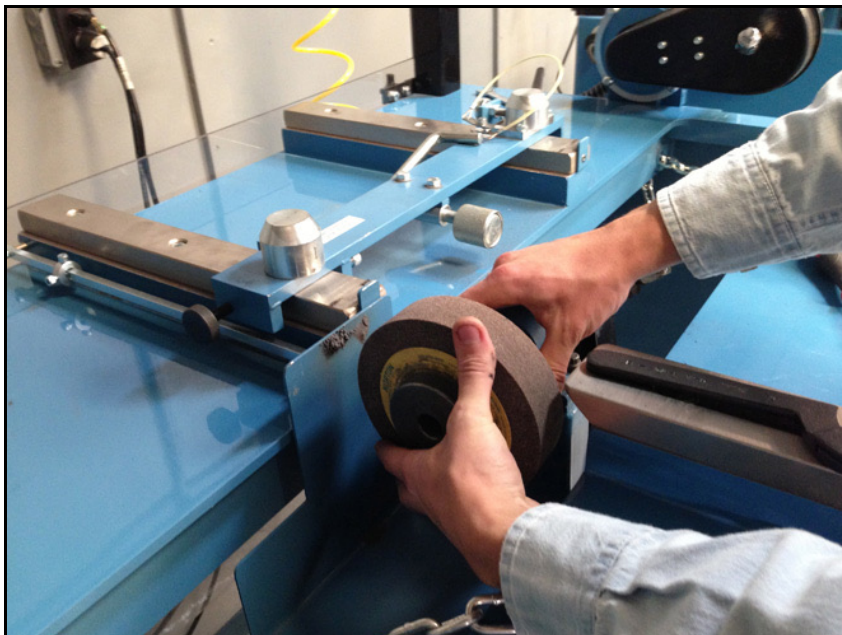
6.5 Mounting the grinding stone

Ring the new stone to ensure it is undamaged. Do this by holding it in the arbor hole and gently tapping it with a wooden handle of a screw driver or similar tool. If the stone does not ring do not use it.

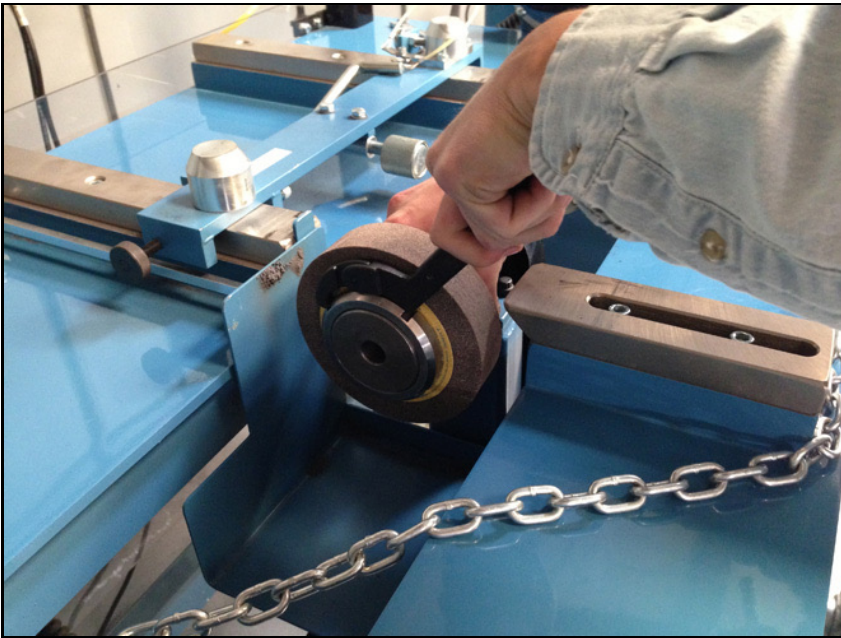
DANGER-A defective grinding stone can cause damage, serious injury or death.



For the spin grinding stone, use the spanner wrench provided, hold the stone and unscrew the wheel nut counterclockwise. Remove the stone.

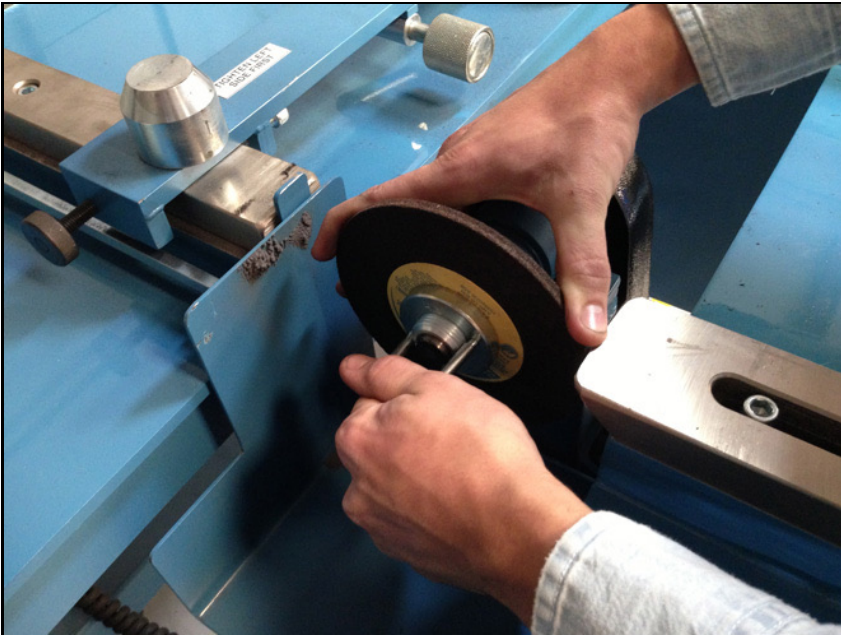


Place the new stone on the hub



Replace the wheel nut and tighten with the spanner wrench provided. Do not over-tighten as you may damage the stone. You may remove the hub assembly and mount it carefully in a vise for tightening.

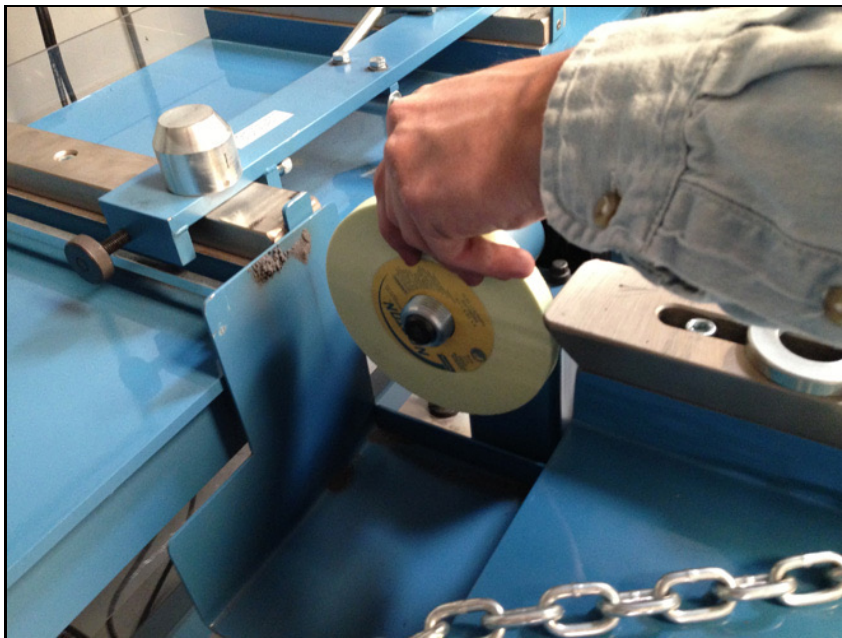
WARNING-Do not overtighten. You will damage the stone. Use extra caution when turning the grinding motor on and off the first few times after you have mounted the stone. If the nut is not tight enough, it and the stone may come off when you turn the motor off.



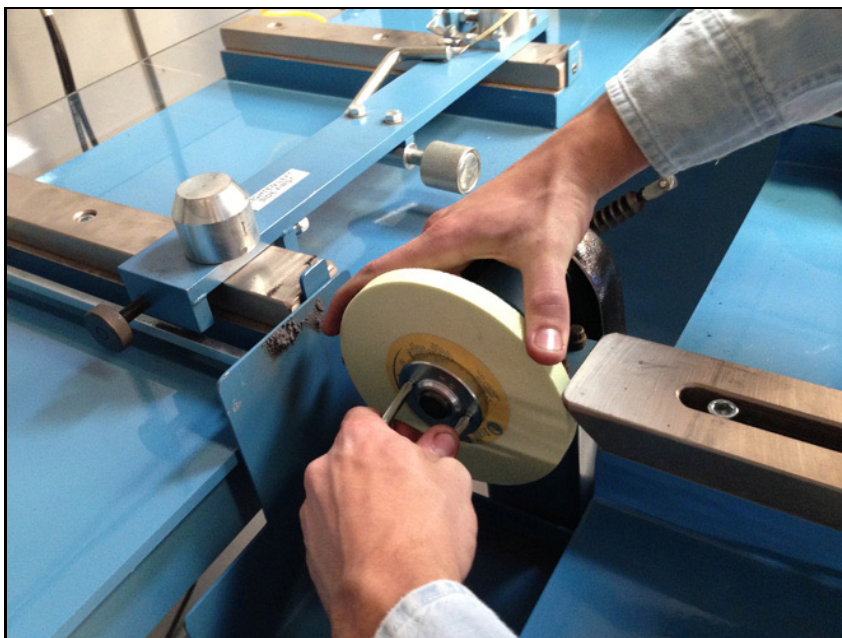
For the relief grinding stone, use the u-wrench provided, hold the stone and unscrew the wheel nut counterclockwise.



Remove the stone.



Place the new stone on the hub.

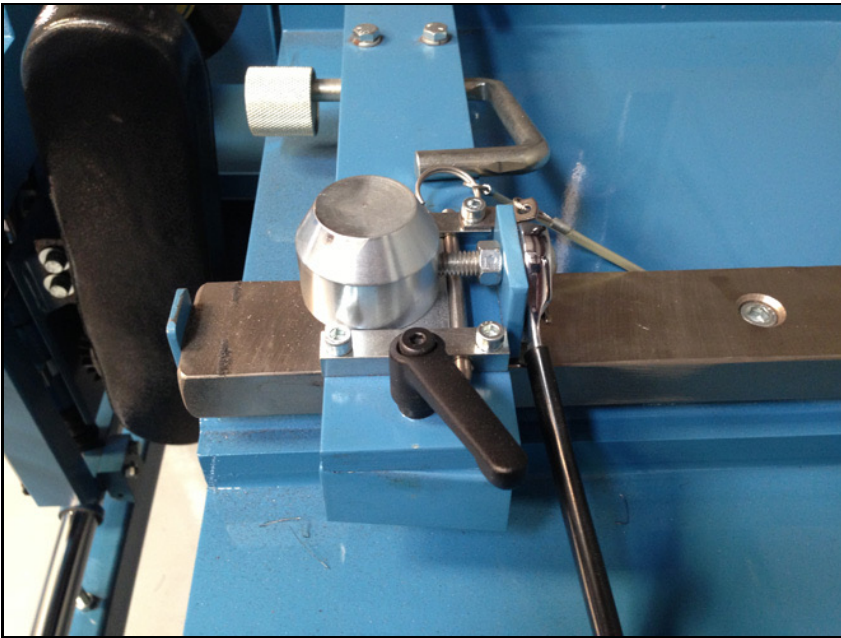


Replace the wheel nut and tighten with the u-wrench provided. Do not over-tighten as you may damage the stone. You may remove the hub assembly and mount it carefully in a vise for tightening.

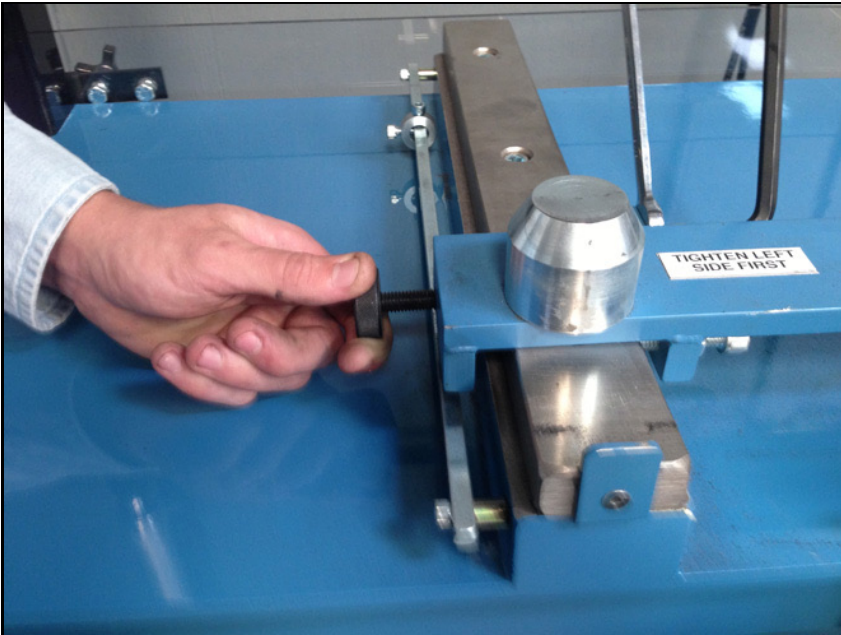
WARNING-Do not overtighten. You will damage the stone. Use extra caution when turning the grinding motor on and off the first few times after you have mounted the stone. If the nut is not tight enough, it and the stone may come off when you turn the motor off.



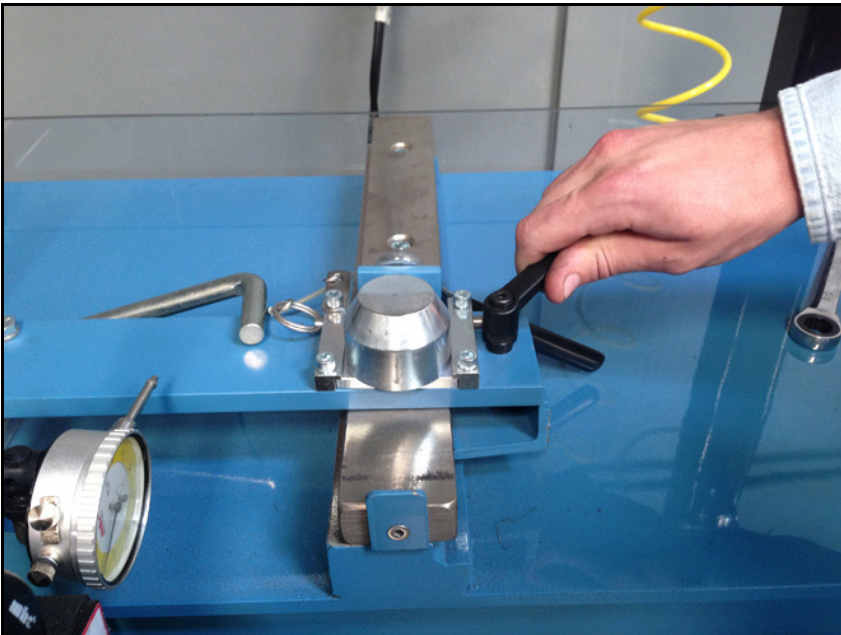
6.6 Aligning the fence
Disengage the grinding head.



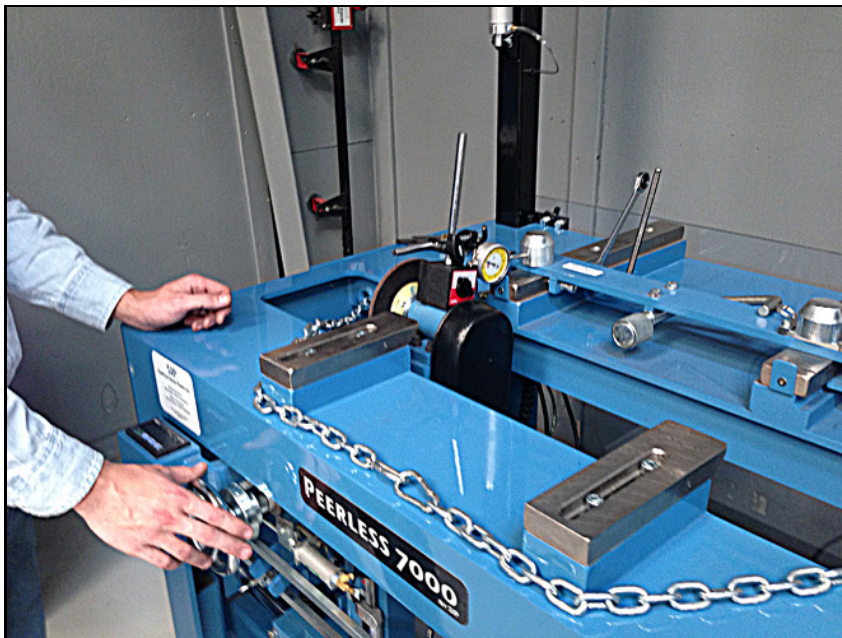
Make sure that the adjustable post is in the aligned position with the post base against the pin.



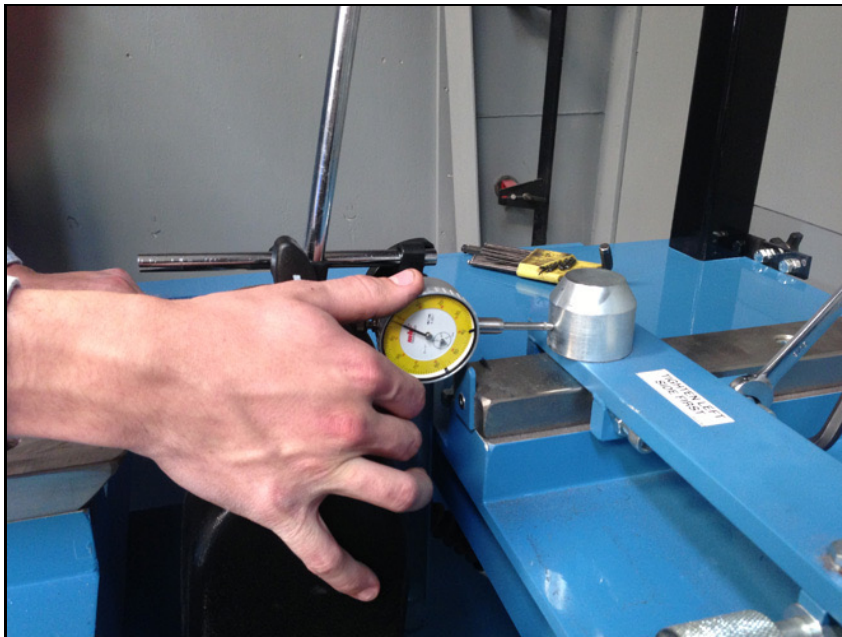
Lock the fence in position with the left side locking knob only.



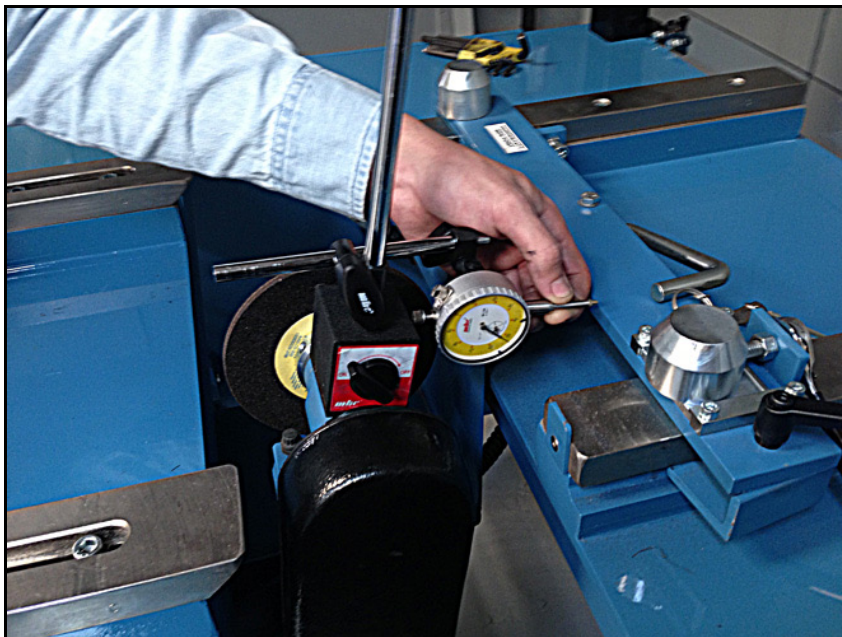
Make sure the right side is loose.



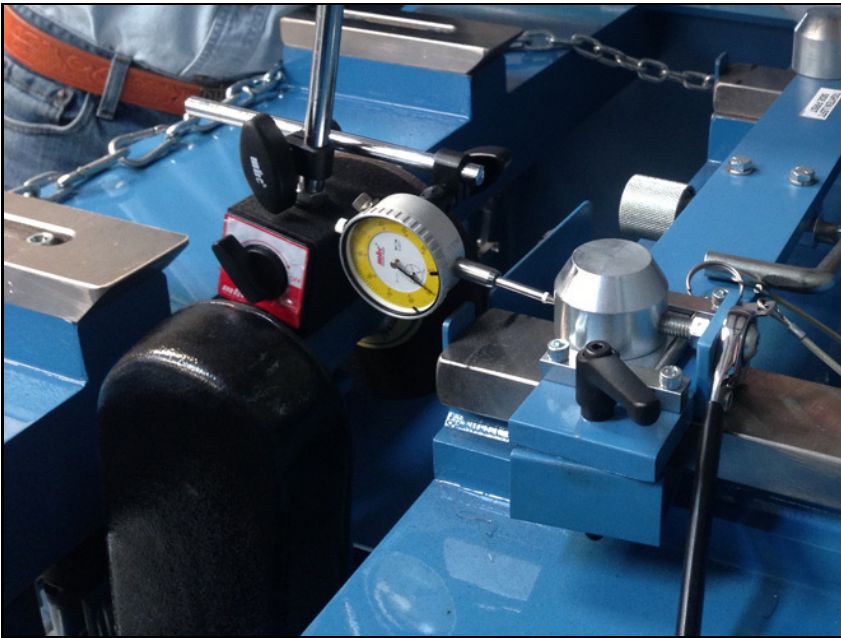
Move the grinding head to the left side of the fence. Place the magnetic base on the bearing housing so that the tip of the indicator measures the fence.



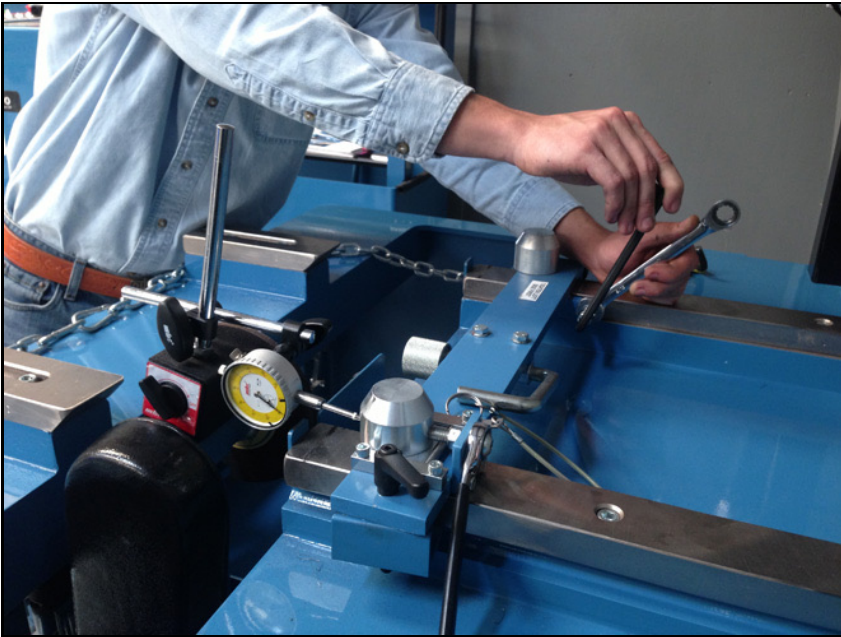
With the dial indicator point on the high point of the fence post, turn the bezel so that the pointer lines up to zero.



Pulling the plunger on the dial indicator out so that it does not hit the side of the fence, move the grinding head to the high point of the right side of the fence.



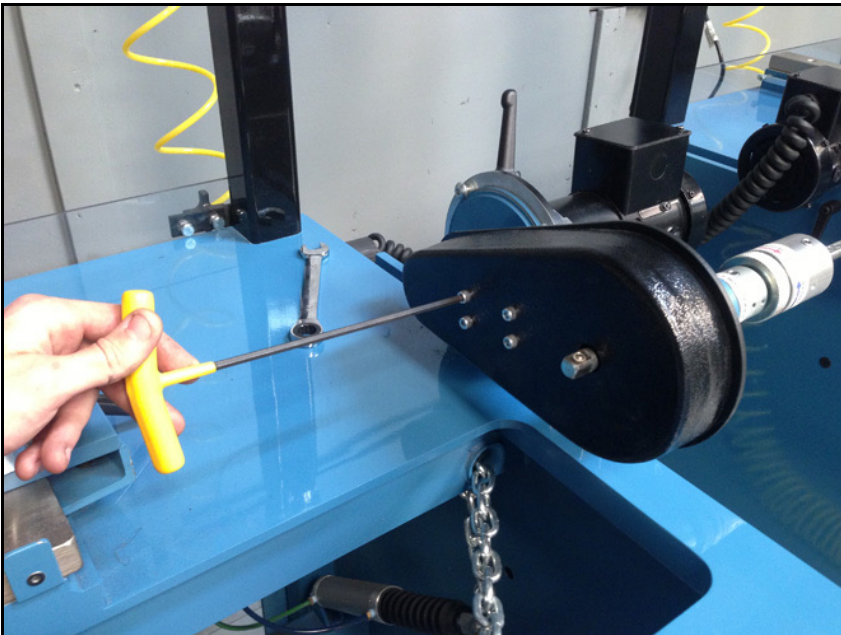
If the difference is greater than .010, you should realign the fence.



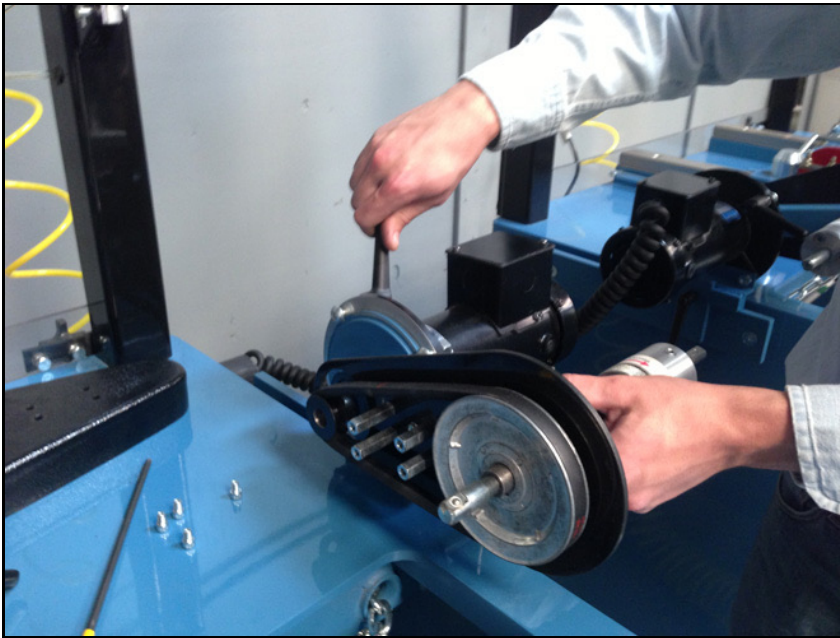
Loosen the left locking knob.

Loosen the rear jam nut on the left rear of the fence.

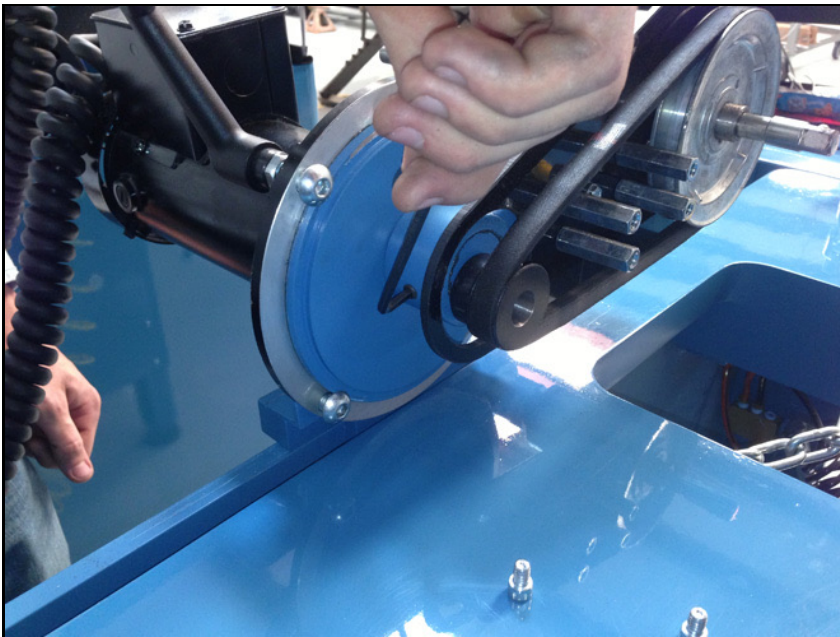
Adjust the socket head bolt until the both sides are within .010 with the locking knob and jam nut tight. It may take several tries in order to compensate for tightening the locking knob and jam nuts.



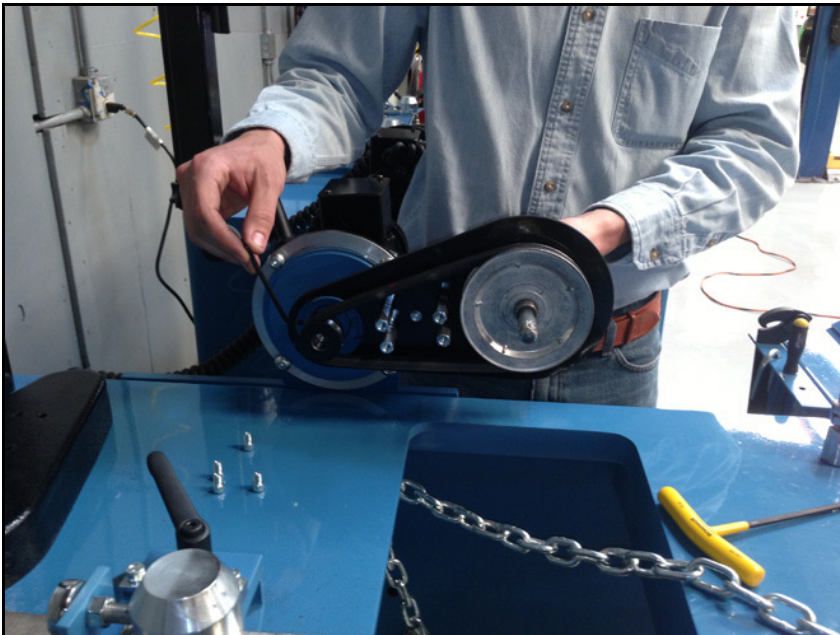
6.7 Adjusting the spin motor belt
Remove the belt guard.



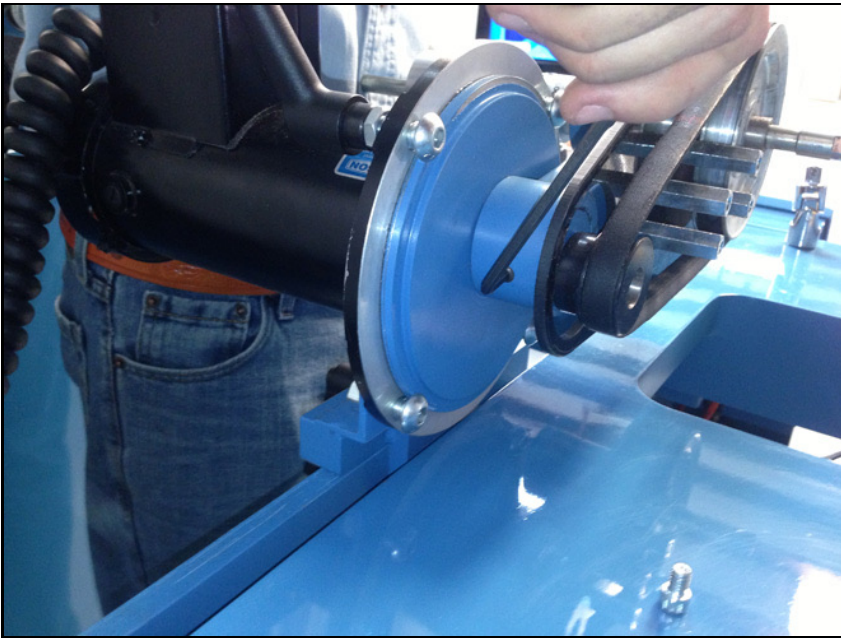
Lock the radius arm.



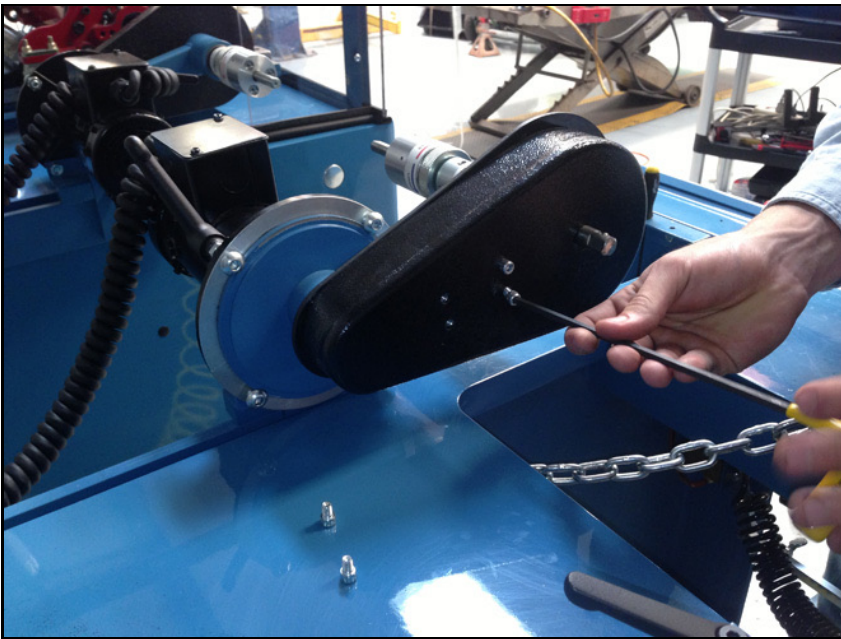
Loosen set screw in the end of the radius arm.



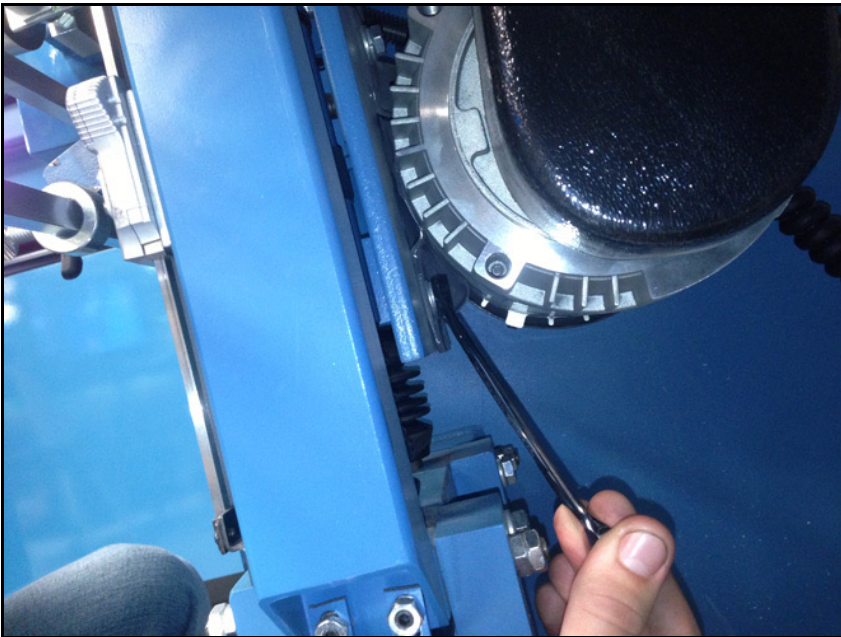
Rotate the arm around the eccentric to loosen or tighten the belt.



Re-tighten the set screw.



Replace the belt guard.



6.8 Adjusting the grinding motor belt
Loosen bolts which mount the motor.
Slide the motor up or down. Re-tighten the motor bolts.