Victaulic®
Tool Company

Installation Instructions

VE416FS & VE416FSD
Upper Roll Retract Spring Upgrade Kit

⚠ WARNING

Failure to follow instructions and warnings could result in serious personal injury, property damage, and/or product damage.

- **Read and understand all instructions before attempting to install, remove or adjust any Victaulic products.**
- **Wear safety glasses, hardhat, foot protection, and hearing protection.**
- **Save this installation instructions manual.**

If you need additional copies of any literature, or if you have questions concerning the safe and proper installation of any Victaulic products, contact Victaulic Tool Company, P.O. Box 31, Easton, PA 18044-0031, Phone: 1-800-PICK VIC, e-mail: pickvic@victaulic.com.

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TM-VE416FS/FSD.Kit 4216 Rev. A 9/05

Printed in U.S.A. SKU #WCAS-6DFKQR R000416KIT

INDEX

HAZARD IDENTIFICATION

Definitions for identifying the various hazard levels are provided below.

This safety alert symbol indicates important safety messages. When you see this symbol, be alert to the possibility of personal injury. Carefully read and fully understand the message that follows.

⚠ DANGER

- **The use of the word "DANGER" identifies an immediate hazard with a likelihood of death or serious personal injury if instructions, including recommended precautions, are not followed.**

⚠ WARNING

- **The use of the word "WARNING" identifies the presence of hazards or unsafe practices that could result in death or serious personal injury if instructions, including recommended precautions, are not followed.**

⚠ CAUTION

- **The use of the word "CAUTION" identifies possible hazards or unsafe practices that could result in personal injury and product or property damage if instructions, including recommended precautions, are not followed.**

NOTICE

- **The use of the word "NOTICE" identifies special instructions that are important but not related to hazards.**

OPERATOR SAFETY INSTRUCTIONS

Refer to the "Operator Safety Instructions" section found in the tool's Operating and Maintenance Instructions Manual.

INTRODUCTION

NOTICE

- **Drawings and/or pictures in this manual may be exaggerated for clarity.**
- **The tool, along with these installation instructions, contains trademarks, copyrights, and/or patented features that are the exclusive property of Victaulic Company.**

The Victaulic VE416FS and VE416FSD tools are semi-automated, hydraulic feed tools designed for roll grooving pipe/tubing to receive Victaulic grooved pipe/tubing products.

Your standard VE416 series tool has been equipped with grooving rolls for 2" through 16" pipe designated in the "Tool Rating and Roll Selection" charts in your tool's Operating and Maintenance Instructions Manual.

In April 2005, Victaulic introduced a new fitting and coupling system for 14" through 24" pipe sizes. This design is known as the "Advanced Groove System" (AGS) and includes both a wider and deeper groove profile for both the Victaulic fitting and inter-connecting lengths of pipe.

The VE416FS and VE416FSD upper roll retract spring upgrade kit is optional. However, the installation of this upgrade kit is recommended when roll grooving to 14" and 16" AGS specifications, as this upper roll assembly is heavier than all other rolls and sometimes requires the extra retract force needed to raise it to the full "up" position this kit provides.

VE416 series tools are rated to roll groove **only the 14" and 16" AGS sizes**. The AGS grooving rolls must be purchased separately.

⚠ CAUTION

- **The VE416 tools must be used ONLY for roll grooving pipe/tubing designated in the "Tool Rating and Roll Selection" section of your tool's Operating and Maintenance Instructions Manual.**

Failure to follow this instruction could overload the tool, resulting in reduced tool life and/or damage to the tool.

RECEIVING THE VE416 UPPER ROLL RETRACT SPRING UPGRADE KIT

Upon receipt of the upper roll retract spring upgrade kit, make sure all necessary parts are included. If any parts are missing, notify the Victaulic Tool Company.

VE416 UPPER ROLL RETRACT SPRING UPGRADE KIT CONTENTS

Qty.	Description
1	Pipe Size Indicator Label
1	Depth Adjuster Lock
1	Spring Washer
1	Upper Roll Retract Spring
1	Return Spring Seat
1	C-Diameter Reference Label
3	Return Spring Seat Set Screws

⚠ DANGER

- **To reduce the risk of electric shock, check the electrical source for proper grounding.**
- **Before performing any maintenance on the tool, turn the switch on the power drive to the "OFF" position, or disconnect the power cord from the electrical source.**

Failure to follow these instructions could result in death or serious personal injury.

TOOL SETUP

⚠ WARNING

- **DO NOT plug the power drive into the electrical source until instructed otherwise.**

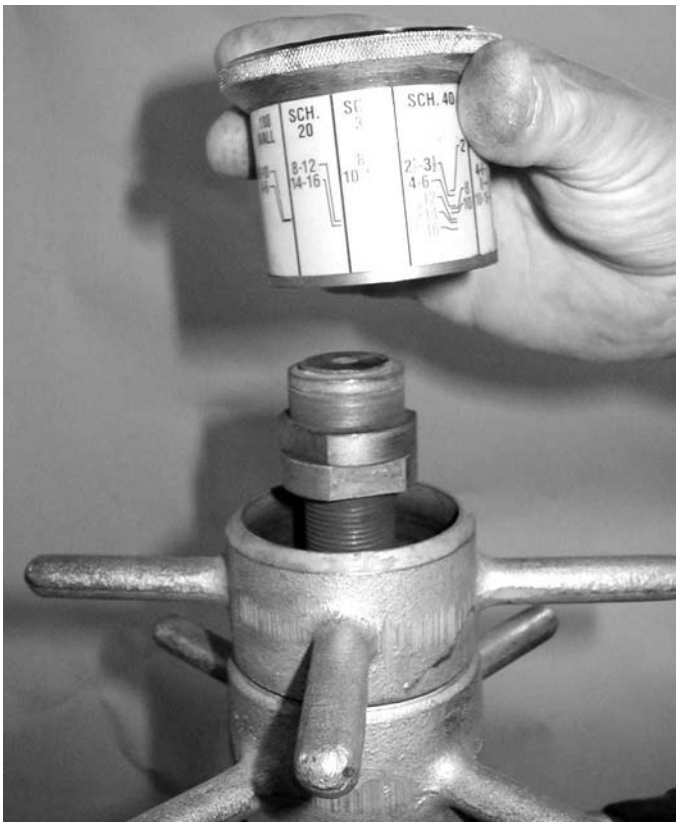
Failure to follow this instruction could result in serious personal injury.

TOOLS REQUIRED:

- Flat Tipped Screw Drive (1) required
- 1/16" Hex Key Wrench (1) required
- 1 1/4" Open-End Wrench or equivalent (2) required

VE416 COMPRESSION SPRING UPGRADE KIT INSTALLATION

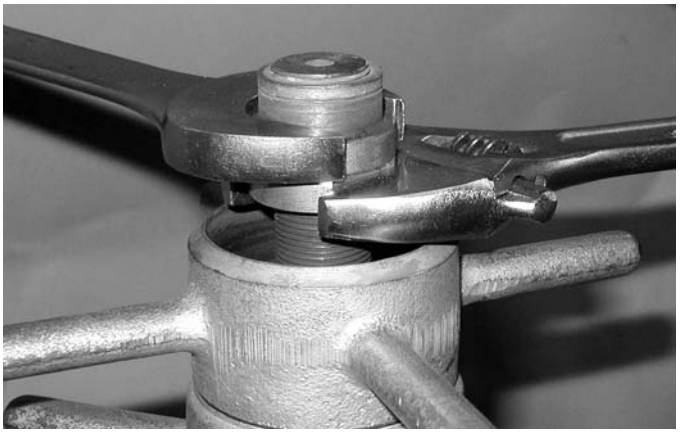
1. Using a flat tipped screwdriver (not supplied), carefully remove the retaining ring found on the top of the depth adjuster barrel currently installed on your VE416 tool. Save the retaining ring for re-installation.

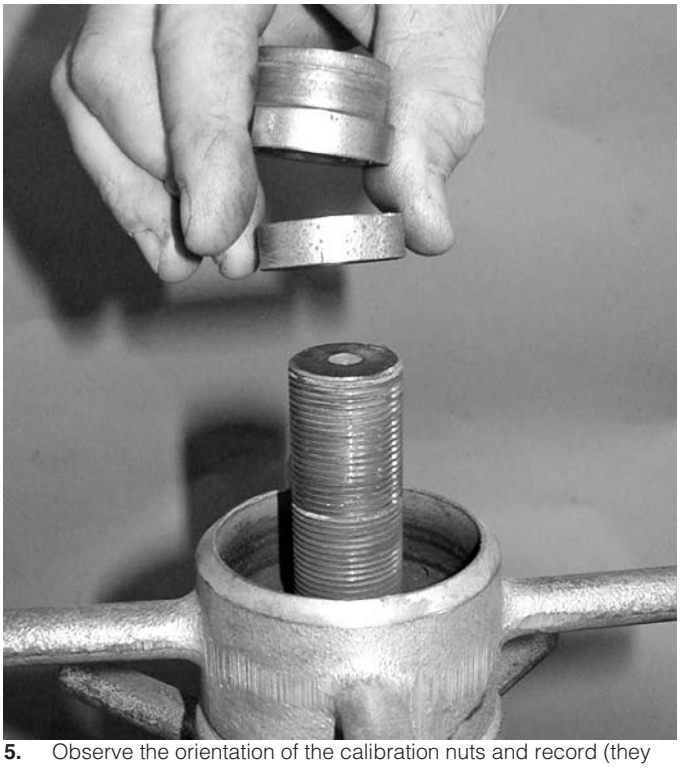


2. Remove the depth adjuster barrel by lifting up from the depth adjuster.

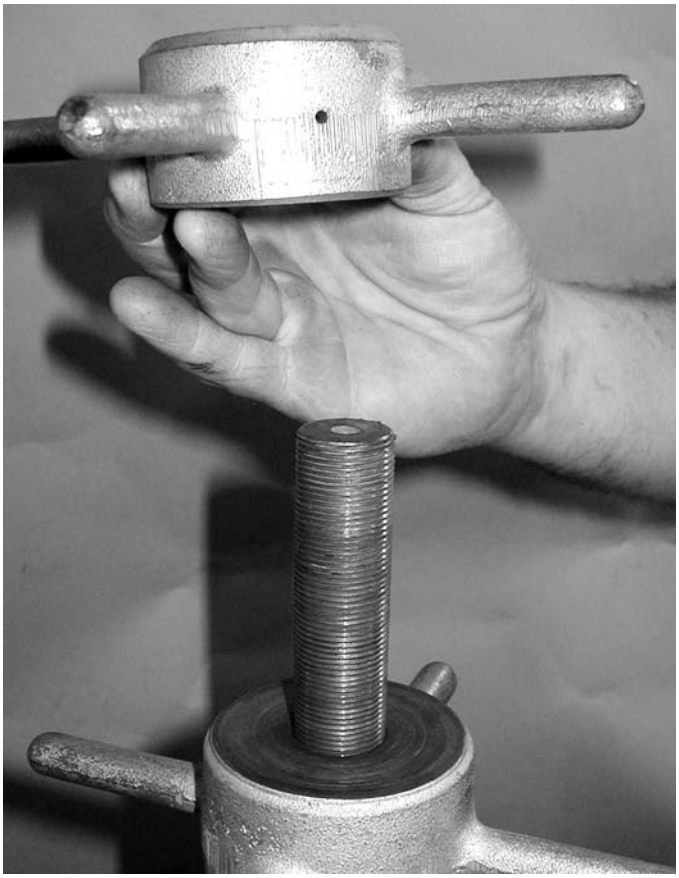
3. Remove and discard the existing pipe size indicator label found on the depth adjuster barrel. Clean the barrel with solvent to remove oil, grease, etc. Let dry.

4. Replace with the new pipe size indicator label provided with this kit. Make sure the label is affixed squarely in the undercut surface of the depth adjuster barrel.





5. Observe the orientation of the calibration nuts and record (they look similar but are not identical). Using two (2) 1¼" open-end or adjustable wrenches (not supplied), remove both calibration nuts from the tool's threaded rod. Save the calibration nuts for re-installation.



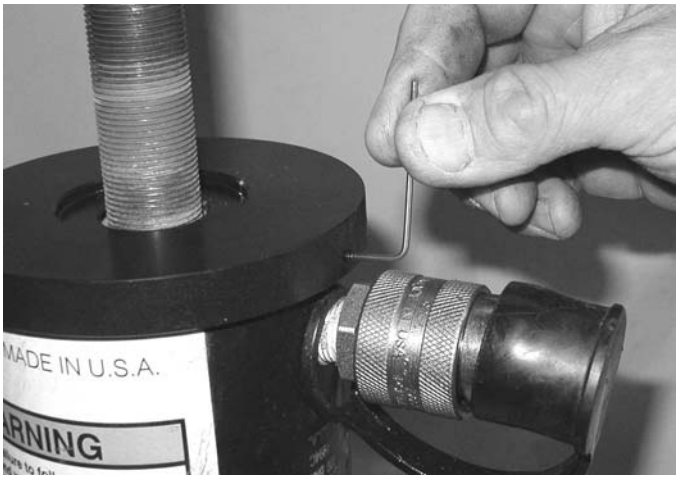
6. Remove the depth adjuster from the tool's threaded rod by rotating counterclockwise. Save the depth adjuster for re-installation.

7. Remove the existing depth adjuster lock from the tool's threaded rod by rotating counterclockwise. Discard the lock, since it will not be re-used.

7a. Remove the existing compression spring from the threaded rod. Discard the compression spring, since it will not be re-used.

7b. Clean off top of cylinder.

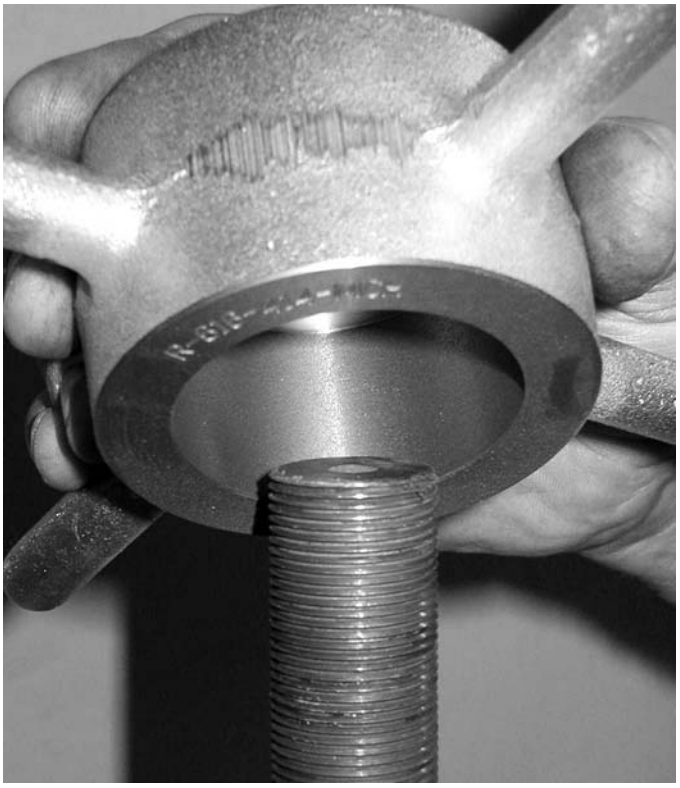
8. Install the new return spring seat by routing the seat over the tool's threaded rod. Make sure the return spring seat's "cupped" end is facing down. Seat the cupped end against the top face of the tool's hydraulic cylinder.



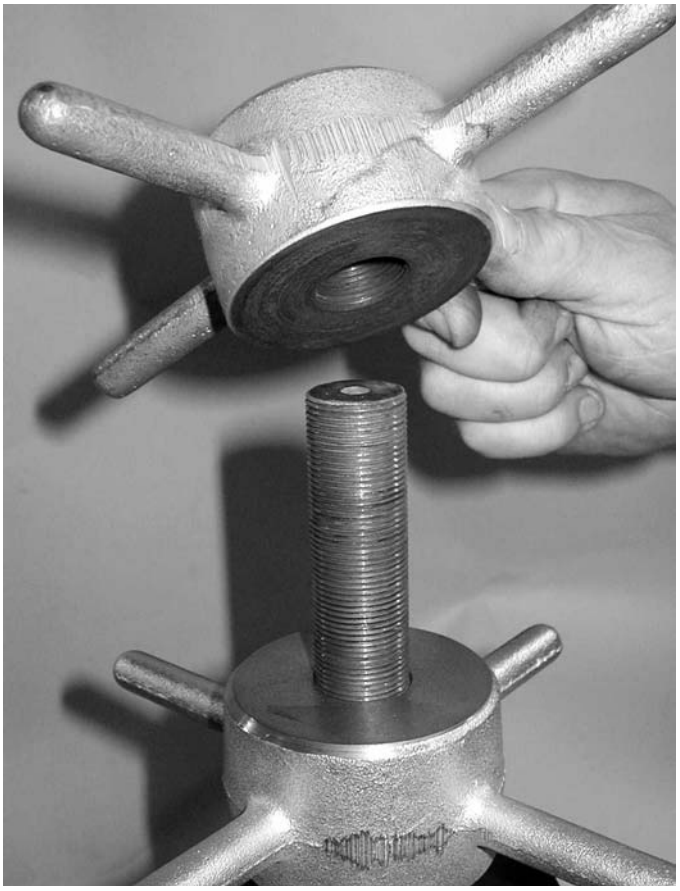
9. Using a $^{1}/_{16}$" hex key wrench (not supplied), install and alternately tighten the three (3) return spring seat set screws furnished with the kit.

10. Slide the new upper roll retract spring down onto the tool's threaded rod. Seat the spring in the new return spring seat recess.

11. Install the new spring washer by sliding the washer down onto the tool's threaded rod and placing the washer on top of the new compression spring.



12. Install the new depth adjuster lock by rotating the adjuster lock clockwise on the tool's threaded rod. Make sure the "cupped" end of the adjuster lock is facing down. Seat the bottom face of the cup against the spring washer.



13. Re-install the depth adjuster by threading clockwise onto the tool's threaded rod. Continue to rotate this adjuster until it seats against the adjuster lock installed in Step 12.

14. Re-install the calibration lock nut by turning clockwise on the tool's threaded rod 2 1/4" down the threaded rod. This lock nut can be visually identified as the thinner of the two calibration nuts removed in Step 5.

15. Re-install the calibration nut by both turning the nut clockwise on the tool's threaded rod, and seating against the already installed calibration lock nut. Do not tighten the calibration nuts at this time.

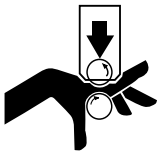
16. Re-install the depth adjuster barrel. Make sure that the new pipe size indicator label has been properly affixed to the barrel, and the original label has been discarded (refer to Steps 3 and 4).

You are now ready to perform the depth calibration of your tool.

17. Re-connect the tool ram's hydraulic hose, if needed. Plug in the line cord, following "Extension Cord Requirements" and "Tool Setup" sections of your Operating and Maintenance Instructions Manual.

18. Referring to the "Groove Diameter Stop Adjustment" section of your Operating and Maintenance Instructions Manual, insert a trial piece of 8" Schedule 40 pipe over the tool's lower roll. Close the hand pump valve and seat the upper roll against the pipe.

⚠ WARNING



Grooving rolls can crush or cut fingers and hands.

- **Before making any tool adjustments, always turn the switch on the power drive to the "OFF" position, or disconnect the power cord from the electrical source.**
- **Make sure the guard is adjusted properly before grooving pipe/tubing.**
- **Loading and unloading pipe/tubing will place your hands close to the rollers. Keep hands away from the grooving rolls and stabilizer wheel during operation.**
- **Never reach inside pipe/tubing end or across the tool or pipe/tubing during operation.**
- **Always groove pipe/tubing in a CLOCKWISE direction only.**
- **Never groove pipe/tubing that is shorter than the recommended lengths listed in the tool's Operating and Maintenance Instructions Manual.**
- **Never wear loose clothing, loose gloves, or anything that can become entangled in moving parts**

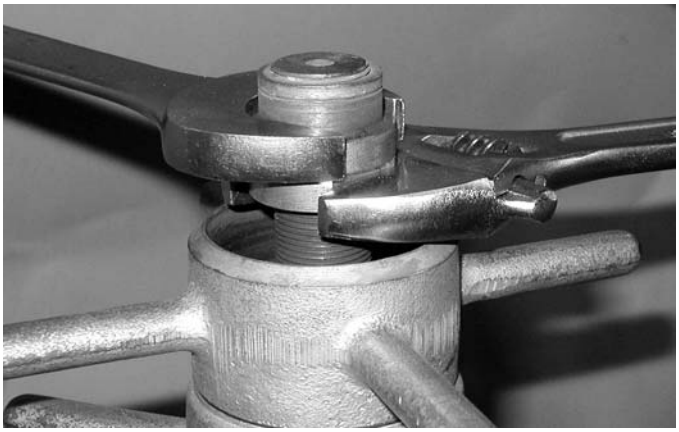
19. Rotate the depth adjuster lock to approximately 1/4" above the cylinder surface.

20. Perform the trial groove per the "Groove Diameter Stop Adjustment" section of your Operating and Maintenance Instructions Manual.

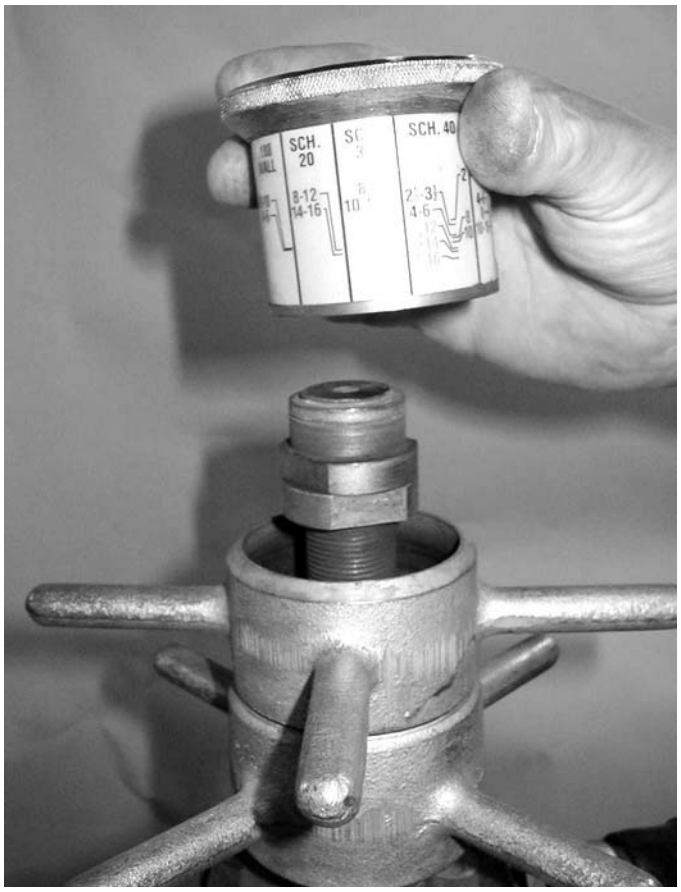
21. Locate the proper size and schedule on the updated depth adjuster barrel, and rotate the depth adjuster until it is aligned with the correct pipe size. Rotate the depth adjuster lock and seat against the adjuster.

22. Measure the groove and compare with your published groove specifications. One full revolution of the calibration nuts will change the groove diameter adjustment by .125". Remove the depth adjuster barrel and adjust the calibration nuts accordingly.

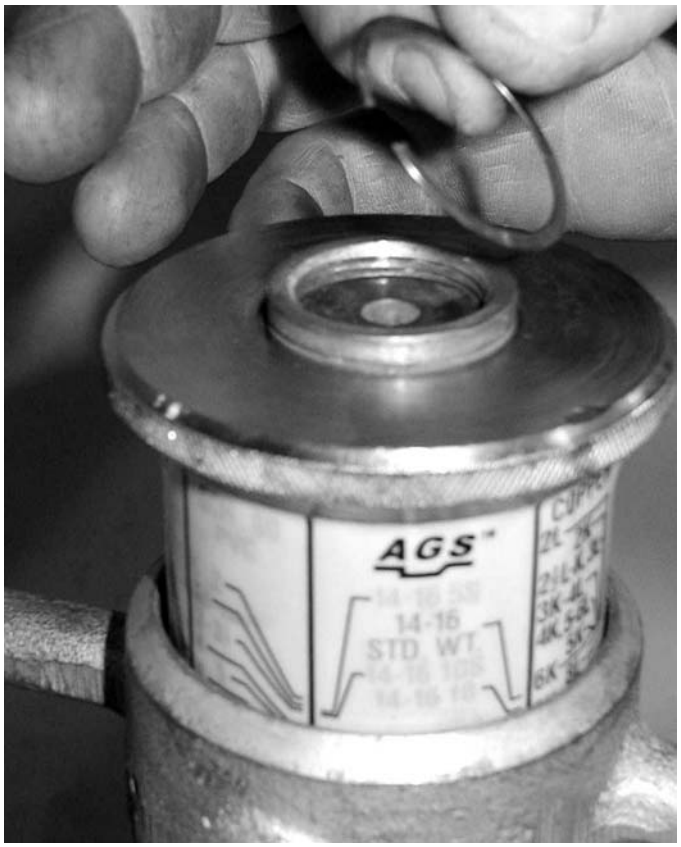
23. Re-install the depth adjuster barrel on the tool and repeat the adjustment of the calibration nuts until a satisfactory groove is achieved.



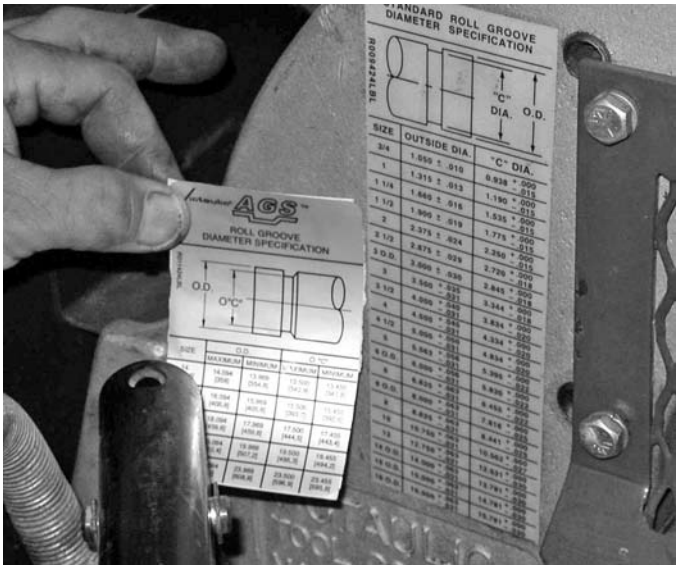
24. Remove the depth adjuster barrel. Using two (2) 1 1/4" open-end or adjustable wrenches, tighten the calibration nuts keeping the top nut in its calibrated position.



25. Re-install the depth adjuster barrel.



26. Re-install the retaining ring on top of the barrel.



27. Clean the tool surface where the new C-diameter reference label will be located with a solvent to remove grease, oil, dirt, etc. Let dry. Affix the new label to the cleaned tool head casting surface, as shown above.

The upper roll retract spring update of your tool is now complete.