VE416FS and VE416FSD

WARNING

⚠ WARNING

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

- **Before operating or servicing any pipe preparation tools, read all instructions in this manual and all warning labels on the tool.**
- **Wear safety glasses, hardhat, foot protection, and hearing protection while working around this tool.**
- **Save this operating and maintenance manual in a place accessible to all operators of the tool.**

If you need additional copies of any literature, or if you have questions concerning the safe and proper operation of this tool, contact Victaulic, P.O. Box 31, Easton, PA 18044-0031, Phone: 1-800-PICK VIC, E-Mail: pickvic@victaulic.com.

Original Instructions

TABLE OF CONTENTS

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

The VE416 Roll Grooving Tool is designed for the sole purpose of roll grooving pipe/tubing. The lessee or owner of this tool is responsible for ensuring that each operator reads this manual and fully understands the operation of this grooving tool PRIOR to working with the tool. These instructions describe safe operation of the tool, including setup and maintenance. Each operator shall become familiar with the tool's operations, applications, and limitations. Particular attention shall be given to reading and understanding the dangers, warnings, and cautions described throughout this manual.

Operators shall follow all appropriate Occupational Safety and Health Administration (OSHA) guidelines and training, and/or other nationally-recognized standards, as well as jobsite-specific requirements. Use of this tool requires dexterity, mechanical skills, and sound safety habits. Although this tool is designed and manufactured for safe, dependable operation, it is difficult to anticipate all combinations of circumstances that could result in an accident. The operator is cautioned to always practice "safety first" during each phase of use, including setup and maintenance.

Store this manual in a clean, dry area where it is always readily available. Additional copies are available upon request through your Victaulic Sales Representative, or a PDF version can be downloaded at victaulic.com.

⚠ DANGER

1. **Avoid using the tool in potentially dangerous environments.** Do not expose the tool to rain, and do not use the tool in damp or wet locations. Do not use the tool on sloped or uneven surfaces. Keep the work area well lit. Allow sufficient space to operate the tool properly.
2. **Ground the power drive to protect the operator from electric shock.** Verify that the power drive is connected to an internally-grounded electrical source.
3. **Disconnect the power cord from the electrical source before servicing the tool.** Only authorized personnel shall perform maintenance on the tool. Always disconnect the power cord from the electrical source before servicing or adjusting the tool. Follow all lockout/tagout procedures.
4. **Prevent accidental startups.** Place the power switch in the “OFF” position before connecting the tool to an electrical source.

⚠ WARNING

1. **Follow all applicable local and national safety regulations.**
2. **Prevent back injury.** Always follow OSHA guidelines, and/or other nationally-recognized standards, for safe lifting techniques when handling tool components.
3. **Wear proper apparel.** Do not wear loose clothing, jewelry, or anything that can become entangled in moving parts.
4. **Wear protective items when working with tools.** Always wear safety glasses, hardhat, foot protection, and hearing protection (sound levels up to 104 decibels can be produced during the grooving process).
5. **Keep hands and tools away from grooving rolls during the grooving operation.** Grooving rolls can crush or cut fingers and hands. Use pipe that is a sufficient length.
6. **Do not reach inside pipe ends during tool operation.** Pipe edges can be sharp and can snag gloves, hands, and shirt sleeves.
7. **Operate the tool opposite the direction of pipe rotation.** The tool shall be operated with a safety foot switch that is located for easy operator access. Never reach across moving parts. DO NOT use the tool if it does not contain a safety foot switch (contact Victaulic).
8. **Do not over-reach.** Maintain proper balance at all times. Verify that the safety foot switch is easily accessible to the operator.
9. **Do not make any modifications to the tool.** DO NOT remove any safety guarding or any components that would affect tool safety or performance.

⚠ CAUTION

1. **The VE416 tool is designed ONLY for roll grooving pipe/tubing sizes, materials, and wall thicknesses as designated.**
2. **Inspect the equipment.** Before using the tool, check moveable parts for obstructions. Verify that tool components are installed and adjusted in accordance with the "Tool Setup" section. Verify that properly matched roll sets are installed and lubricated.
3. **Stay alert.** DO NOT operate the tool if impaired by drugs (medicinal or recreational), medication, alcohol, or fatigue.
4. **Keep visitors, trainees, and observers away from the work area.** All visitors shall be kept a safe distance from equipment at all times, and shall be offered the opportunity to review this manual.
5. **Keep work areas clean.** Keep the work area around the tool clear of any obstructions that could limit movement of the operator. Clean up any spills on the floor to prevent slips or falls.
6. **Secure the work, machine, and accessories.** Verify that the tool is stable. Refer to the “Tool Setup” section.

⚠ CAUTION

7. **Support the work.** Support long pipe/tubing lengths with a pipe stand, in accordance with the "Long Pipe/Tubing Lengths" section.
8. **Do not force the tool.** Do not force the tool or accessories to perform any functions beyond the capabilities described in these instructions. Do not overload the tool.
9. **Maintain tool with care.** Keep the tool clean at all times to ensure proper and safe performance. Follow the instructions for matching and lubricating tool components.
10. **Use only Victaulic replacement parts and accessories**. Use of any other parts may result in a voided warranty, improper operation, and hazardous situations. Refer to the "Parts Ordering Information" and "Accessories" sections.
11. **Do not remove any labels from the tool.** Replace any damaged or worn labels.

INTRODUCTION

NOTICE

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

The Victaulic VE416 tool is available in two different models. Both are designed to roll groove pipe of various materials and wall thicknesses to prepare it to receive Victaulic grooved pipe couplings (see "Roll Groove Specifications" section on page 41). Both are hydraulic feed tools intended for shop or field use.

The VE416FSD is a completely self-contained unit with a gear motor, safety foot switch, and power cord/plug. The VE416FS requires a separate power drive. See the "Power Drive Requirements" section for details.

⚠ CAUTION

- **These tools should only be used for roll grooving pipe designated in the "Roll Groove Specifications" section of this manual.**

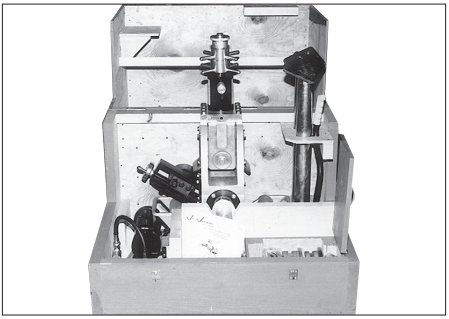
Use of the tools for other purposes, or use exceeding the pipe thickness maximums, will overload the tools, shortening tool life and potentially causing tool damage.

RECEIVING THE TOOL

Victaulic VE416 tools are packed individually in sturdy containers that are designed for repeated shipping. Save the container for return shipment of rental tools.

Upon receipt of the tool, ensure that all necessary parts are included. If any parts are missing, contact Victaulic.

CONTAINER CONTENTS



Qty.	416FS Description
1	Tool head/mounting stand assembly
2	Telescoping legs
1	Pump/pump support assembly
1	Pump handle
1	2–3½" roll set assembly
1	Roll storage chest with additional roll sizes
2	Operating and Maintenance Instructions Manual

Qty.	416FSD Description
1	Tool head/stabilizer
1	Mounting table /gear motor
1	Hand pump/pump support
1	Pump handle
4	Legs
1	Foot switch with cord
1	2–3½" roll set assembly
1	Roll storage chest with additional roll sizes
2	Operating and Maintenance Instructions Manual

Series 416 tools are supplied with 2-12" OGS and 14-16" AGS roll sets (with 8-12" rolls installed on the tool), unless otherwise specified on the order. Check the order and the rolls on the tool to confirm. Rolls are marked with the pipe size and part number, and are color-coded for the pipe material to be grooved. For grooving to other specifications and other materials, see "Roll Groove Specifications". Rolls for other specifications and other materials must be purchased separately.

POWER REQUIREMENTS

⚠ DANGER

- **ONLY QUALIFIED ELECTRICIANS SHOULD CONNECT INCOMING POWER.**
- **To reduce the risk of electric shock, check the electrical source for proper grounding.**
- **Always disconnect the power cord from the electrical source before servicing or adjusting the tool. Follow all lockout/tagout procedures.**
- **DO NOT alter plugs in any way.**

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

POWER DRIVE REQUIREMENTS

The VE416FS tool is designed for operation with a power drive. The tool mounts directly onto a Victaulic VPD752 or a Ridgid® 300 power drive (45 rpm maximum chuck speed). Always refer to the operating manual for the power drive for additional information.

Power must be supplied through a safety foot switch to ensure safe operation (standard on VE416FSD). Ensure that the power drive is properly grounded in accordance with Article 250 of the National Electrical Code.

A 220V-compatible tool, the VE417FSD, is also available. Contact Victaulic for details.

If an extension cord is required, refer to the "Extension Cord Requirements" section that follows for cord sizes.

EXTENSION CORD REQUIREMENTS

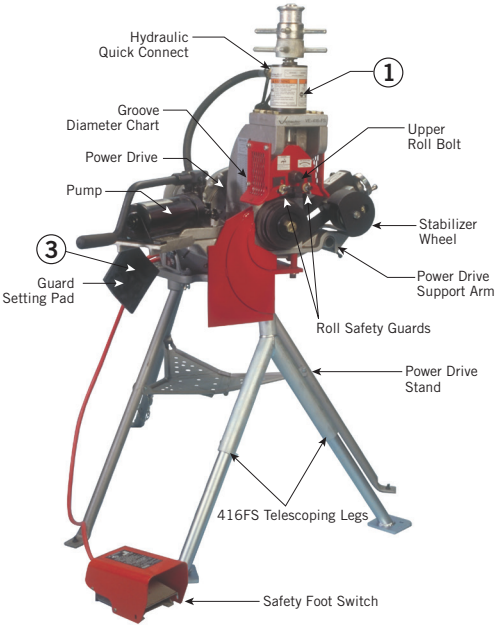
When pre-wired outlets are not available and an extension cord must be used, it is important to use the proper cord size (i.e. Conductor Size American Wire Gauge). Cord size selection is based upon tool rating (amps) and cord length (feet). Use of a cord size (gauge) thinner than required will cause significant voltage drop at the power drive or tool motor while the tool is operating. Voltage drops may cause damage to the power drive or tool motor and can result in improper tool operation. **NOTE:** It is acceptable to use a cord size that is thicker than required.

Listed in the chart below are recommended cord size (gauge) for cord lengths up to and including 100 feet. Use of extension cords beyond 100 feet in length should be avoided.

Power Drive	Power Drive Rating volts/amps	Cord Lengths feet/meters		
		25 8	50 15	100 31
VPD752	115 15	12 gauge	12 gauge	10 gauge
Ridgid 300	115 15	12 gauge	12 gauge	10 gauge
VE416FSD	115 15	12 gauge	12 gauge	10 gauge

® Ridgid is a registered trademark of the Ridge Tool Company

TOOL NOMENCLATURE



VE416FS

1

WARNING

Grooving rolls can crush or cut fingers and hands.

- Always turn off power before adjusting guard.
- Be sure guard is properly adjusted before grooving pipe.
- Keep hands away from grooving rolls and stabilizer wheel.
- Never reach inside pipe end or across the tool or pipe during operation.
- Never manually groove pipe shorter than what is recommended.
- Never wear loose clothing, loose gloves, or jewelry while operating tool.

416FSD R069417LAB

WARNING

Failure to follow instructions and warnings can result in serious injury.

- Before installing, operating, or servicing this tool, read and understand the Operating Instructions and all warning labels on this tool.
- Always wear safety glasses and foot protection.

If you have any questions about the safe operation of this tool, contact Victaulic Tool Company, P.O. Box 31, Easton, PA 18044-0031, 610-559-3300.

0396 Rev. B

3

ALWAYS KEEP THIS PAD WITH THE TOOL. USE IT TO SET THE GUARDS IN ACCORDANCE WITH THE TOOL OPERATION AND MAINTENANCE MANUAL. R068272LAB

2

WARNING

Grooving rolls can crush or cut fingers and hands.

- Always turn off power before adjusting guard.
- Be sure guard is properly adjusted before grooving pipe.
- Keep hands away from grooving rolls and stabilizer wheel.
- Never reach inside pipe end or across the tool or pipe during operation.
- Always groove pipe in a clockwise direction only.
- Never manually groove pipe shorter than what is recommended.
- Never wear loose clothing, loose gloves, or jewelry while operating tool.

416FS R069418LAB

WARNING

Failure to follow instructions and warnings can result in serious injury.

- Before installing, operating, or servicing this tool, read and understand the Operating Instructions and all warning labels on this tool.
- Always wear safety glasses and foot protection.

If you have any questions about the safe operation of this tool, contact Victaulic Tool Company, P.O. Box 31, Easton, PA 18044-0031, 610-559-3300.

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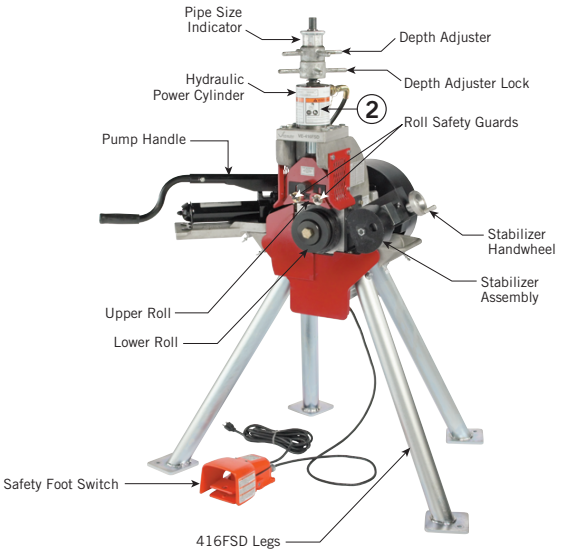
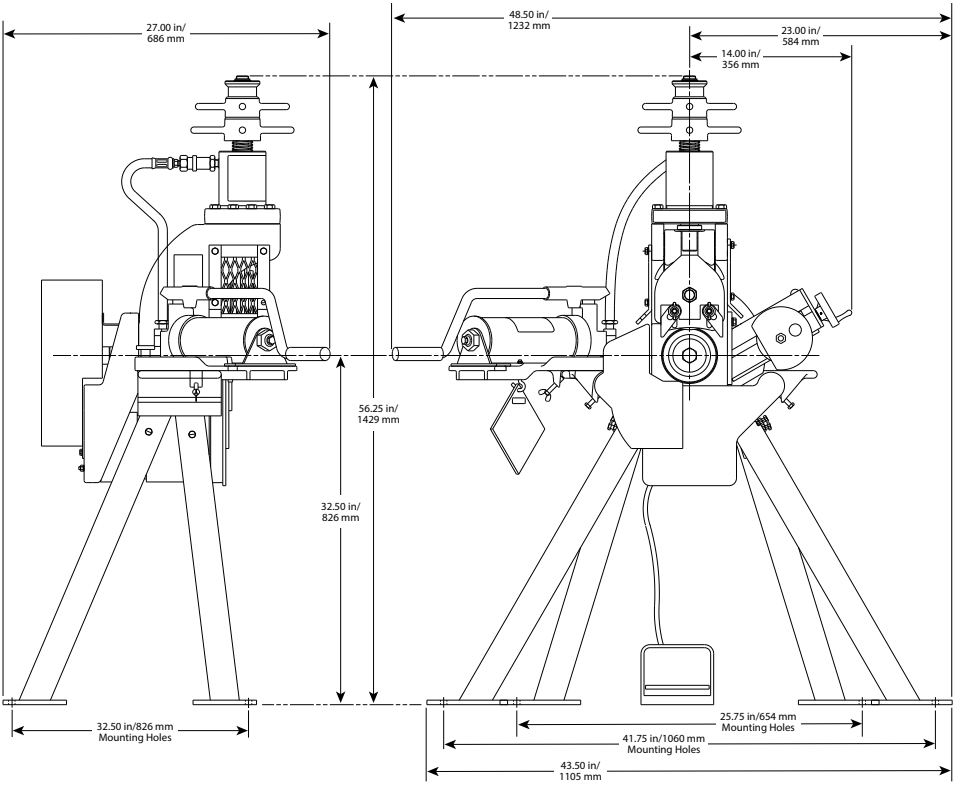


VE416FSD

TOOL DIMENSIONS AND SPECIFICATIONS



FSD tool weight is 340 pounds/154 kilograms. FS tool weight is 240 pounds/109 kilograms. Tool weight includes the tool head assembly, power drive, base assembly, hand pump, and foot switch. The tool head assembly alone weighs approximately 150 pounds/68 kilograms.

FSD tool sound pressure is 87.4 dB(A), while tool sound power is 95.4 dB(A). All measurements taken with an Allied Motion 5093 power drive.

FS tool sound pressure is 96.3 dB(A), while tool sound power is 88.3 dB(A). All measurements taken with a VPD 752 power drive.

NOTE: Noise measurements are dependent on the power drive, and will vary based on configuration. Always check the power drive manufacturer's documentation for details.

TOOL SETUP

⚠ WARNING

- **Do not connect power until instructed otherwise.**

Accidental start up of tool may result in serious injury.

VE416FS SETUP

Before grooving, the tool head and legs must be mounted on a Victaulic VPD752 or a Ridgid 300 power drive. The tool and power drive must be placed on level ground and secured to a platform or to the floor. See “Operator Safety Instructions”.

⚠ WARNING

- **During tool set-up, at least two people are needed to safely handle the weight of the tool head assembly (150 pounds/68 kilograms). If a hoist is available, use it with a 1 ⅜” plate clamp to lift the tool head assembly into position.**

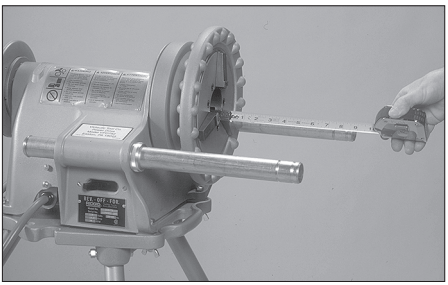
Failure to follow this instruction may result in serious injury.

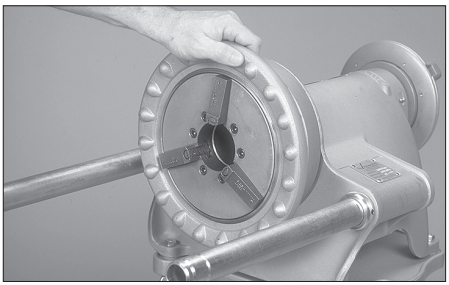
1. Remove all components and check to ensure that all necessary items are included. Refer to the list under “Receiving Tool”.

2. Select a location for the power drive, tool, and pipe stand. Choose a location that has:

- **a.** The required power. Consult the power drive manufacturer’s instructions.
- **b.** The space necessary to adequately handle the pipe to be grooved.
- **c.** A level and even surface for the power drive, tool, pipe stand, and footing.

3. Prepare the power drive unit to receive the VE416FS tool. Remove threading dies, cut off attachments, etc. from the power drive. Fully extend the two tubular arms approximately 9 ¾” beyond the power drive chuck. See the photo that follows. Secure the support arms in this position. (Consult the power drive manufacturer’s instructions.)

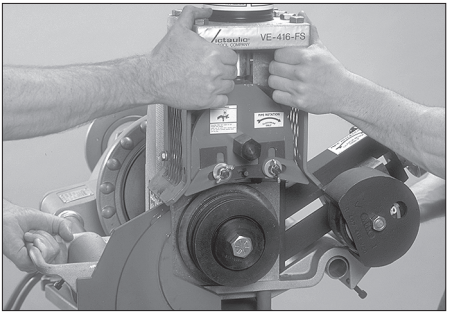




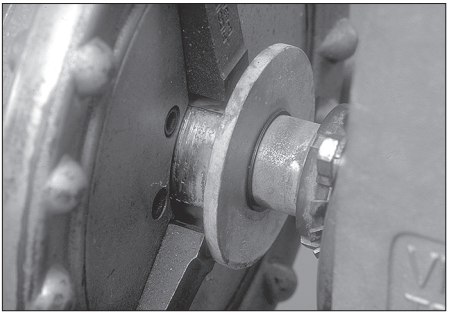
4. Fully open the power drive chuck (consult the power drive manufacturer’s instructions).

⚠ WARNING

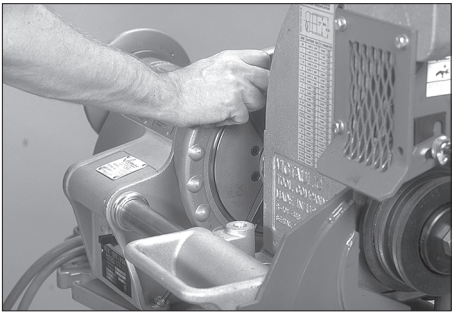
- **While the tool head assembly is on power drive arms, without support legs installed, it is front heavy and may tip over. Have someone push back on the tool head, to help prevent a tip over, until the legs are secured in place.**



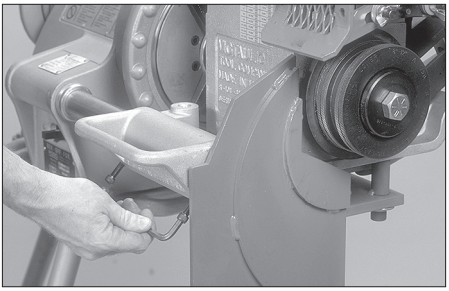
5. Slide the tool head/mounting stand assembly as shown fully onto the power drive arms, with the drive lug flange flush up against the power drive chuck.



6. Align the notched portions of the drive shaft with the chuck jaws by turning the lower roll.

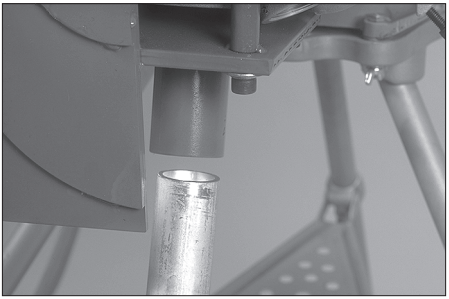


7. Tighten the chuck, ensuring that the jaws fit in the drive shaft notches.

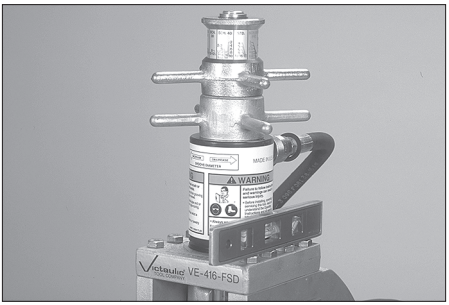


8. Tighten the four set screws as shown to secure the tool to the support arms.

9. Install the two adjustable legs completely into the sockets of the upper leg and finger tighten the hex bolts.

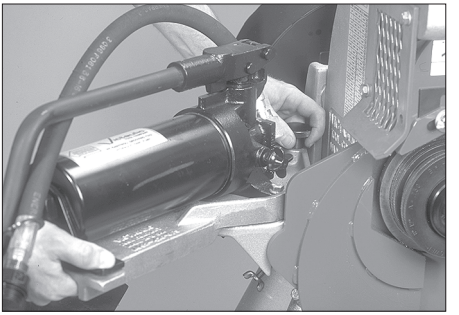


10. Insert the top of the leg assembly fully into the socket under the tool head assembly. Rotate the assembly so it fully seats in the socket. The hex head bolts on the legs should be toward the back of the machine (toward the power drive). Tighten the hex head bolt using a wrench.

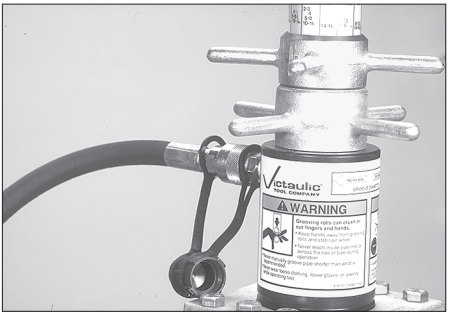


11. Level the tool front to back by placing a level on the top of the cylinder mounting plate.

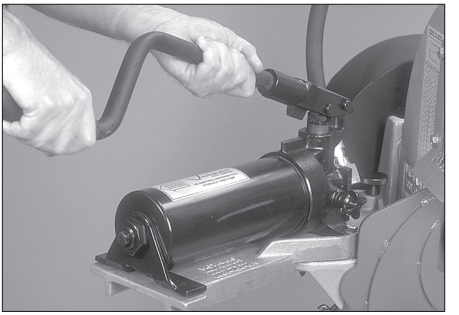
12. Loosen the hex bolts to release the lower legs and allow them to drop down to the floor. Turn the leg pads at the bottom until they are resting flat on the floor, and tighten the hex bolts with the tool in a level position.



13. Mount the hand pump/pump support assembly. Tighten the hand knob and then tighten the wing set screw on the underside of the pump support, as shown.



14. Connect the hydraulic hose from the hand pump to the power cylinder using the quick connections provided.



15. Insert the hand pump handle into the lever arm of the pump. Position the handle with the handle grip down. Lock the handle in this position with a set screw or the nut and bolt provided.

⚠ DANGER

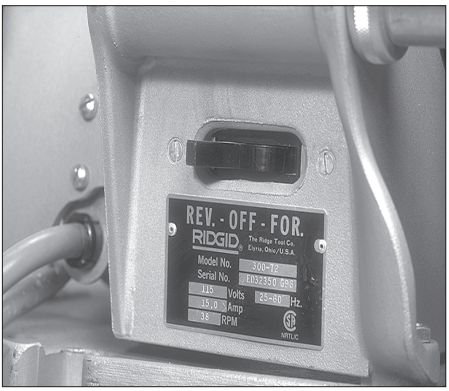
- **To reduce the risk of electric shock, check the electrical source for proper grounding and follow the instructions on the following page.**
- **Before performing any repair or maintenance, disconnect the tool from the electrical source.**

Failure to do so could result in death or serious personal injury.

16. Ensure that the power drive is in the OFF position (consult power drive manufacturer's instructions). Plug the power drive into an internally grounded electrical outlet. See "Operator Safety Instructions". The outlet must meet the power requirements for the power drive (consult power drive manufacturer's recommendations). See "Extension Cord Requirements" if one will be used.

⚠ WARNING

- **The power drive must be operated with a safety foot switch. If your power drive does not have a foot switch, contact the power drive manufacturer.**



17. Turn the power drive switch to the position that will produce clockwise rotation of the chuck when viewed from the front of the tool. On the Victaulic VPD752 and the Ridgid 300, putting the switch in the reverse position will produce clockwise rotation of the chuck, lower roll, and pipe. Depress the foot switch and check rotational direction and tool stability. If rotation is counterclockwise, reverse the power drive switch. If the tool wobbles, check to ensure that the tool is mounted squarely in the chuck and that the tool is level. If the wobble cannot be eliminated, the power drive support arms are bent, or the power drive is damaged. Have the power drive repaired if the wobble persists.

18. Disconnect power. Turn the power drive switch off or unplug the power drive.

VE416FSD SETUP

⚠ WARNING

- **Do not connect power until instructed otherwise.**
- **Tool must be lifted with a hoist and 1 ⅜" plate clamp to safely handle the weight (340 pounds/154 kilograms).**

Failure to follow these instructions may result in serious injury.

1. Remove all components and check to ensure that all necessary items are included. See the list under "Receiving The Tool".

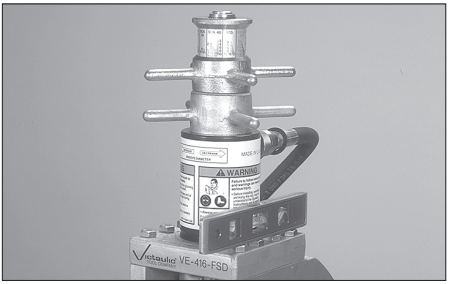
2. Select a location for the tool and pipe stand. Choose a location that has:

a. The required power. Consult "Power Requirements".

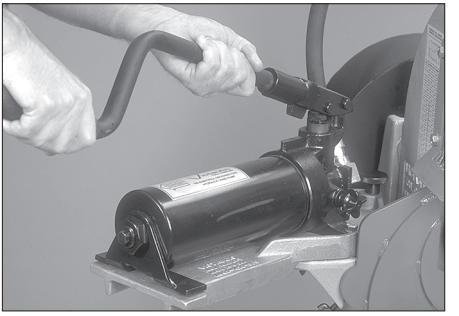
b. The space necessary to adequately handle the pipe to be grooved.

c. A level and even surface for the power drive, tool, pipe stand, and footing.

3. Place the tool on level ground or on a platform and secure it. The tool's legs are adjustable in length to compensate for uneven surfaces. Adjust as necessary to maintain tool levelness.



4. Level the tool front to back by placing a level on top of the hydraulic ram.



5. Insert the hand pump handle into the lever arm of the pump. Position the handle with the handle grip down. Lock the handle in this position with the set screw or nut and bolt provided.

PRE-OPERATION ADJUSTMENTS

Every VE416 tool is checked, adjusted, and tested at the factory prior to shipment. Before grooving, however, the following adjustments should be made to ensure proper tool operation.

⚠ WARNING

- **Always turn off power before making any tool adjustments.**

Accidental start up of tool may result in serious injury.

GROOVING ROLLS

Ensure that the proper roll set is on the tool. Rolls are marked with the pipe size and part number, and are color-coded for the pipe material to be grooved. See “Roll Groove Specifications”. If proper rolls are not on the tool, refer to “Roll Changing”.

⚠ CAUTION

- **Ensure that roll retaining bolts are tight.**

Loose retaining bolts could seriously damage both the tool and the rolls.

PIPE PREPARATION

For proper tool operation and production of proper pipe grooves, carefully observe the following pipe preparation tips.

1. Pipe ends must be square cut (see the appropriate groove specification chart).

2. Internal or external weld beads or seams must be ground flush with the pipe surface, extending 2" back from the pipe end.

3. The end of the pipe, both inside and out, must be cleaned of coarse scale, dirt, and other foreign material.

⚠ CAUTION

- **Foreign material such as coarse scale or dirt might interfere with or damage the grooving rolls or distort the groove. Rust is an abrasive material and will wear out the surface of the grooving rolls. For maximum grooving roll life, remove foreign material and loose rust.**

GROOVABLE PIPE LENGTHS

The VE416FS/FSD is capable of grooving short pipe lengths without the use of a pipe stand (see Table 1 on the following page), or long pipe lengths up to double randoms (approximately 40 ft.), with the use of appropriate stands.

NOTICE

ALL VICTAULIC ROLL GROOVING TOOL USERS

New Enhanced Tracking Rolls (ETR) for Victaulic Roll Grooving Tools

In late 1993, Victaulic introduced an improved type of grooving roll called Enhanced Tracking Roll. The patented ETR allows hands-free grooving for short lengths of pipe as shown in Table 1. The photo below shows you the difference in appearance between the new ETR and the old type of roll. The new ETRs have two narrow grooves in the knurled surfaces; the older rolls do not.

ETRs are for the lower roll only. Your upper roll is compatible with the new ETR.

ETR Roll **Old Type Roll**

NOTE: Roll grooving short length pipe will place your hands close to the rollers. Using the old type of lower roll requires you to manually guide the pipe while grooving short lengths. Using the new ETR allows hand-free grooving.

Who has ETRs? You may have ETRs if you:

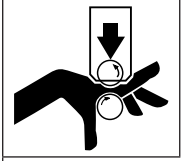
- **Purchased or rented a Victaulic roll grooving tool after December 1993**
- **Purchased replacement grooving rolls after December 1993**

NOTE: It is important to figure out what type of grooving rolls you have. If you bought replacement rolls recently, you may have both types. If you do not have ETRs and would like to order them, contact Victaulic for details.

SHORT PIPE LENGTHS USING ETR ROLLS

Table 1 shows minimum and maximum pipe lengths that can be grooved without a pipe stand. Refer to "Grooving Operation" for instructions on grooving short pipe lengths. For pipe longer than shown in Table 1, refer to "Long Pipe Lengths".

⚠ WARNING



Grooving rolls can crush or cut fingers and hands.

- **Loading and unloading pipe will place your hands close to the rollers.**
- **Never groove pipe shorter than what is recommended in Table 1 below.**

TABLE 1 - PIPE LENGTHS SUITABLE FOR GROOVING

DIMENSIONS (inches)					
Nom. Size	Min. Length	Max. Length	Nom. Size	Min. Length	Max. Length
2	8	36	6	10	28
2½	8	36	8 O.D.	10	24
3	8	36	8	10	24
3½	8	36	10	10	20
4	8	36	12	12	18
4½	8	32	14	12	16
5	8	32	16	12	16
6 O.D.	10	30			

If a pipe is needed that is shorter than the minimum length listed in Table 1, shorten the next-to-last piece of pipe enough so that the last piece of pipe is as long or longer than the minimum length specified in Table 1. See the examples that follows.

If a pipe is needed that is shorter than the minimum length listed in Table 1, shorten the next-to-last piece of pipe enough so that the last piece of pipe is as long or longer than the minimum length specified in Table 1. See the examples that follows.

NOTICE

- **Pipe nipples shorter than those shown in Table 1 are available from Victaulic.**

Example: A 20 ft. 4 in. length of 10 in. diameter pipe is needed to finish a section, and only 20 ft. lengths are available. Instead of roll grooving a 20 ft. piece of pipe and a 4 in. piece of pipe, follow these steps:

1. Refer to Table 1 and note that for 10 in. diameter pipe, the minimum length that should be grooved is 10 in.

2. Roll groove a 19 ft. 6 in. piece of pipe and a 10 in. piece of pipe. Refer to the "Long Pipe Lengths" section for more information.

LONG PIPE LENGTHS

A roller-type pipe stand must be used with pipe that is longer than the maximum length listed in Table 1.

NOTICE

- **Figure 1 below shows the Victaulic adjustable pipe stand (VAPS 112). VAPS 112 is suitable for ¾–12" pipe. Also available is Victaulic model VAPS 224, suitable for sizes 2–24". See "Accessories".**

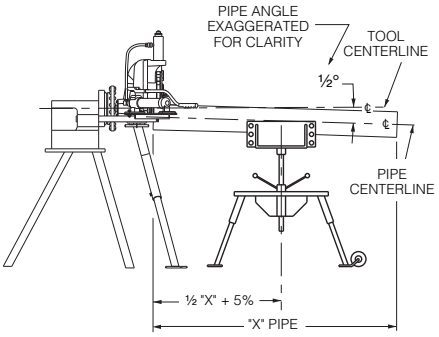


FIGURE 1

1. Place the pipe stand at a distance slightly beyond one half the pipe length from the tool. See Figure 1.

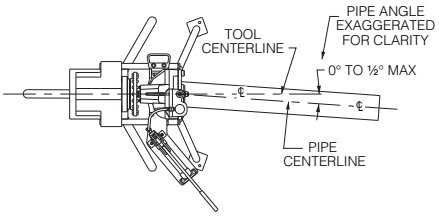


FIGURE 2

2. Position the pipe stand approximately ½° to the left (tracking angle). See Figure 2.

⚠ CAUTION

- **Tracking angle will affect pipe end flare. When pipe end flare is excessive, right-to-left tracking angle must be kept to a minimum. It may be necessary to use an angle less than ½°.**
- **Make sure tool is level (see "Tool Setup"). If pipe is grooved with the back end of pipe (end of pipe not in tool) higher than the end being grooved, pipe may not track, and pipe end flare may result.**

Pipe exceeding maximum allowable flare, as listed in "Roll Groove Specifications", may prevent assembly of couplings pad-to-pad. Pad gapping may allow pipe separation and result in property damage. Joint leakage may result due to excessive gasket distortion/damage.

3. Adjust the pipe stand height to position the pipe approximately ½° below level. See Figure 1. The pipe must be in position on the tool's lower roll while checking the below level position.

NOTICE

- **For additional information about pipe stands, refer to the Operating Instructions included with your pipe stand.**

ROLL GUARD ADJUSTMENT

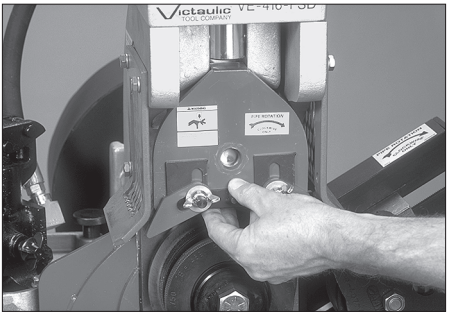
The VE416FS/FSD guards must be adjusted every time rolls are changed, or when pipe size or wall thickness differs from previous pipe grooved.

⚠ WARNING

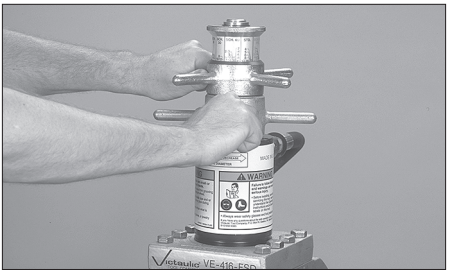
- **Always turn off power before making any tool adjustments.**

Accidental start up of tool may result in serious injury.

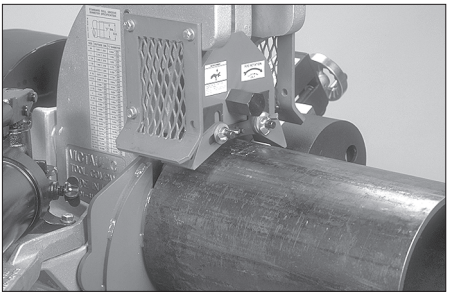
1. Ensure that the proper roll set is on the tool for the pipe size and material to be grooved. Rolls are marked with the pipe size and part number, and are color-coded for the pipe material to be grooved. See “Roll Groove Specifications”. If the proper rolls are not on the tool, refer to “Roll Changing”.



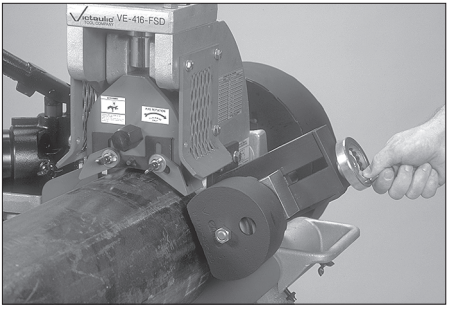
2. Loosen wing nuts and move the adjustable guards to the fully up position. Tighten wing nuts.



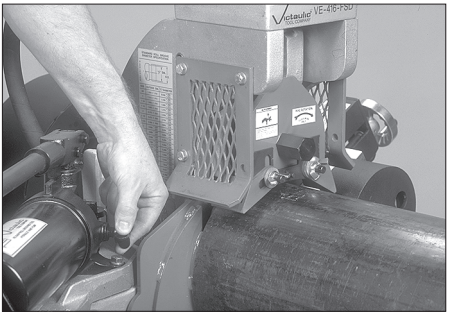
3. Set groove diameter stop to pipe size and schedule/thickness to be grooved. To do this, back off the depth adjuster lock, align the depth adjuster with the proper diameter and thickness. Lock the depth adjuster in position with the depth adjuster lock.



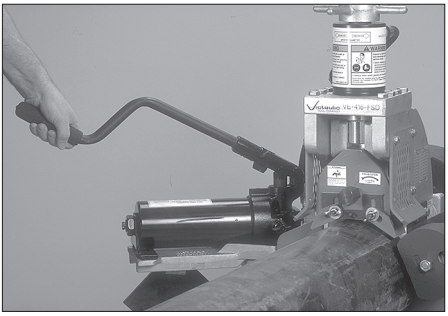
4. Insert a piece of pipe of the correct size and schedule/thickness to be grooved over the lower roll, with the pipe end against the lower roll backstop flange. See “Pipe Preparation”.



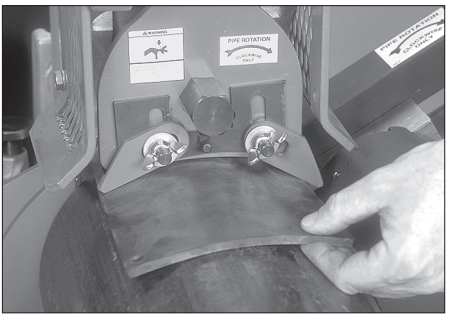
5. Retract the stabilizer, if necessary, to insert pipe. To do this, loosen the locking handle and retract the stabilizer roller with the handwheel to clear pipe when inserted onto the lower roll.



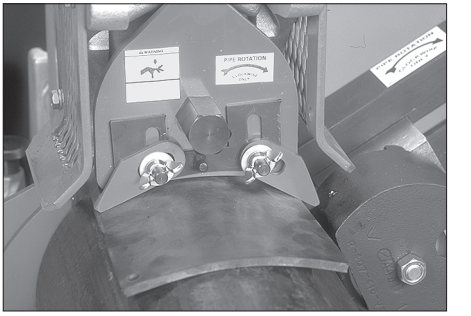
6. Close the hand pump valve.



7. Pump the upper roll down into firm contact with the pipe.



8. Remove the guard setting pad from its storage hook beneath the pump support. Hold the guard setting pad firmly down against the pipe and push it under the adjustable guards, flush against the red plate.



9. Loosen the wing nuts and adjust each guard to conform to, and lightly pinch, the pad against the pipe. Tighten wing nuts to secure guards in position.

10. Remove the guard setting pad. Store the pad on the hook provided under the pump base.

PIPE STABILIZER ADJUSTMENT

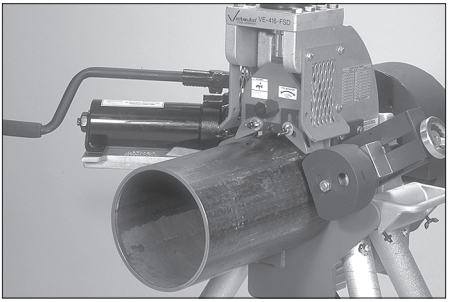
The Series 416 Pipe Stabilizer is designed to prevent pipe sway on 6–16" nominal IPS pipe sizes. This applies to both short and long pipe. Once the stabilizer is adjusted for a selected pipe size and thickness, it does not require further adjustment. Pipe of the same size and thickness may be moved in and out of the tool without retracting the stabilizer.

⚠ WARNING

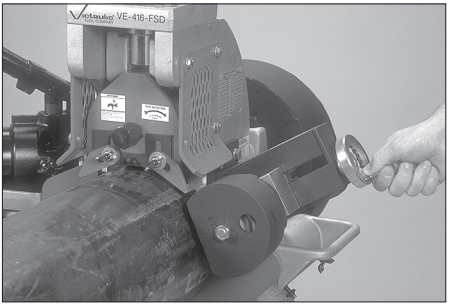
- **Turn off power until instructed otherwise.**

Accidental start up of tool may result in serious injury.

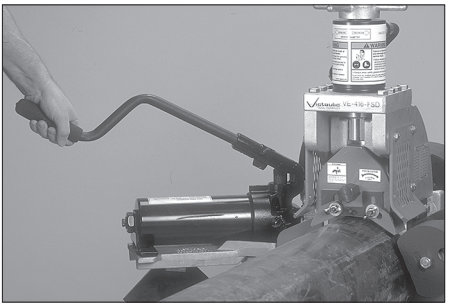
1. Ensure that the proper roll set is installed for the pipe size being grooved. Rolls are marked with the pipe size and part number.



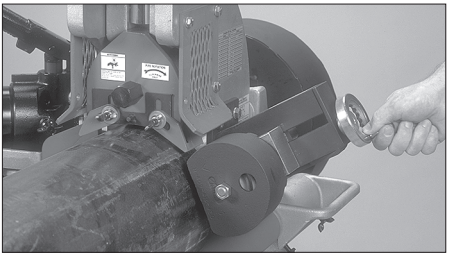
2. Insert a piece of pipe of the correct size and thickness over the lower roll, with the pipe end against the lower roll backstop flange.



3. Loosen the locking handle and retract the stabilizer sufficiently with the hand wheel to clear pipe when inserted onto the lower roll.



4. Close the hand pump valve and pump upper roll down into firm contact with the pipe.



5. Advance the stabilizer inward with the hand wheel until the stabilizer wheel lightly contacts the pipe as shown, then tighten the locking handle.

⚠ CAUTION

- **Do not adjust the stabilizer to push the pipe to the left and off center from the rolls. Doing so will cause increased pipe end flare and shorten roller life.**

Pipe exceeding maximum allowable flare, as listed in "Roll Groove Specifications", may prevent assembly of couplings pad-to-pad. Pad gapping may allow pipe separation and result in property damage. Joint leakage may result due to excessive gasket distortion/damage.

6. Complete the pre-operation adjustments and groove the pipe (see "Grooving Operation"). While grooving, observe the stabilizer wheel. It should remain in contact with the pipe at all times, and the pipe should rotate smoothly, without swaying from side to side. If not, advance the stabilizer further inward as necessary. Do not adjust the stabilizer too far inward, as it will skew the pipe to the left and may result in excessive pipe end flaring.

GROOVE DIAMETER STOP ADJUSTMENT

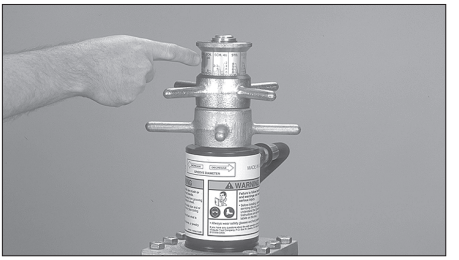
The groove diameter stop must be adjusted for each change in pipe size or wall thickness. Groove diameter, identified as the "C" dimension, is listed in "Roll Groove Specifications". A "C" Diameter Chart may also be found on the tool.

NOTICE

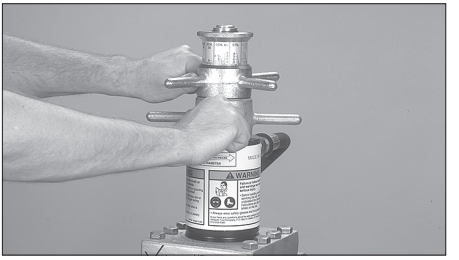
- **To perform the following adjustments, use several short scrap sections of pipe (but not shorter than what is recommended in Table 1) that are of the proper material, diameter, and thickness to be grooved.**

To achieve proper diameter:

1. Determine the size and thickness of pipe to be grooved. See "Roll Groove Specifications" section on page 41 to determine proper schedule.



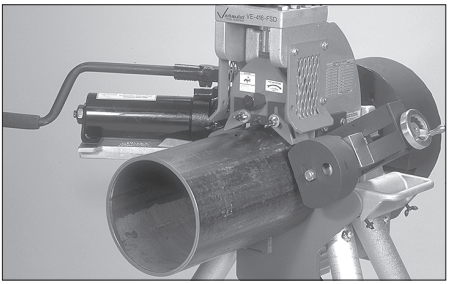
2. Locate the proper size and thickness on the pipe size indicator above the hydraulic power cylinder. It rotates for easy viewing.



3. Back off the depth adjuster lock. Align the depth adjuster with the proper size and thickness, as shown. Lock the depth adjuster in position with the depth adjuster lock.

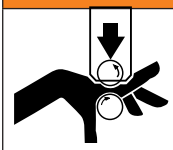
NOTICE

- **The markings provide a coarse groove diameter adjustment, and are not exact groove diameter settings. Variations in actual pipe OD and wall thicknesses make it impossible to calibrate the diameter stop exactly.**



4. Using a piece of scrap pipe that matches the diameter and wall thickness of the pipe to be grooved (refer to Table 1), place the pipe over the lower roll with the pipe end against the lower roll back stop flange.

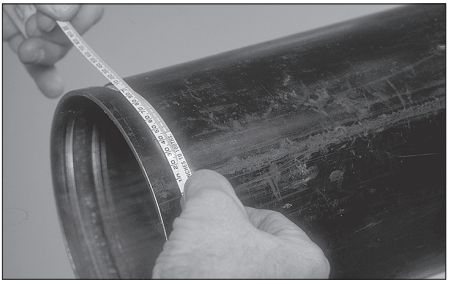
⚠ WARNING



Grooving rolls can crush or cut fingers and hands.

- **Keep hands away from grooving rolls and stabilizer wheel.**
- **Never reach inside pipe end or across the tool or pipe during operation.**
- **Always groove pipe in a clockwise direction only.**
- **Never groove pipe shorter than what is recommended.**
- **Never wear loose clothing, loose gloves, or jewelry while operating tool.**

5. Prepare a trial groove. To do so, follow the procedures outlined in the “Grooving Operation” section.



6. After a trial groove is prepared and the pipe removed from the tool, carefully check the groove diameter (“C” dimension), as charted under “Roll Groove Specifications”. The “C” dimension is best checked with a pipe tape. It may instead be checked with a vernier caliper or narrow-land micrometer at two locations, 90° apart, around the groove. The average reading must equal the required groove diameter specification.

⚠ CAUTION

- **The “C” dimension (groove diameter) must always conform to the amounts listed under “Roll Groove Specifications” to ensure proper joint performance.**

Failure to do so could result in personal injury, property damage, improper installation, joint leakage or joint failure.

7. If the groove diameter ("C" dimension) is not within tolerance, the diameter stop must be adjusted to obtain the proper dimension. To adjust for a **smaller groove diameter**, turn the depth adjuster **counterclockwise**. To adjust for a **larger groove diameter**, turn adjuster **clockwise**.

NOTE: A quarter turn either way will change the groove diameter adjustment by approximately 0.031 inch/0.8 mm. A full turn either way will change the groove diameter adjustment by approximately 0.125 inch/3.2 mm.

8. Prepare another trial groove and check the groove diameter again (steps 6 and 7) until the groove diameter is within tolerance.

GROOVING OPERATION

⚠ DANGER

- **To reduce the risk of electric shock, check the electrical source for proper grounding.**
- **Before operating the tool, review the "Operator Safety Instructions" section of this manual.**

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

⚠ CAUTION

- **VE416 tools are designed ONLY for roll grooving pipe of the sizes, materials, and wall thicknesses outlined in the "Roll Groove Specifications" section.**

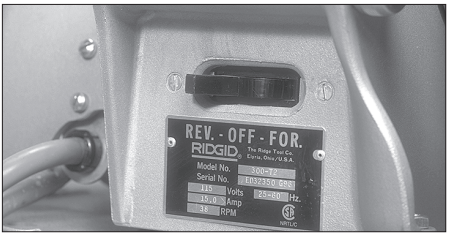
Grooving pipe other than that recommended will result in improper pipe end configuration or improper groove dimensions for applying Victaulic products.

NOTICE

- **Pipe coatings, particularly galvanization, can become impacted in the knurling of the lower roll and cause the pipe to slip during the grooving process.**
- **It may become necessary to clean the lower roll with a wire brush periodically. Pay particular attention to any buildup during the grooving process that may impact the ability to effectively clean the knurling.**

1. Before grooving, ensure that all instructions in the previous sections of this manual have been followed.

2. Plug the VE416FSD or power drive into an internally grounded electrical source. Make sure the VE416FSD or power drive is grounded. Consult power drive manufacturer's instructions when using the VE416FS.

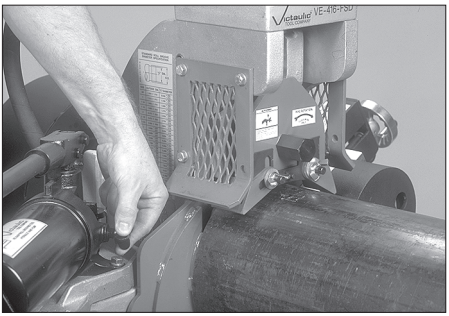


3. When using the VE416FS, set the power drive switch to produce **clockwise** rotation of the lower roll and pipe when viewed from the front of the tool. On the Victaulic VPD752 and Ridgid 300, **putting the switch in the REVERSE position will produce clockwise** rotation of the lower roll and pipe.

⚠ WARNING

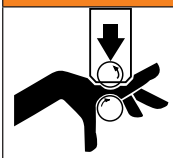
- **The power drive must be operated with a safety foot switch, as the operator will require it to operate the tool safely. If your power drive does not have a foot switch, contact power drive manufacturer.**

4. Actuate foot switch by pressing foot on pedal to be certain tool is operational, power supply is available, and that lower roll is turning clockwise when viewed from the front. Remove foot from foot switch.



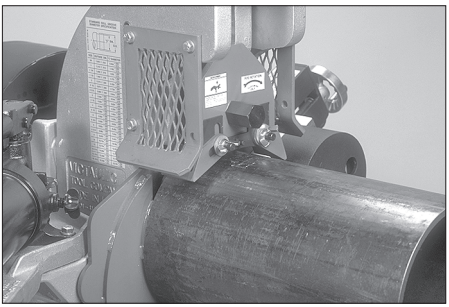
5. Open hydraulic pump pressure release valve by turning counterclockwise. This will allow upper roll to move to full up position.

⚠ WARNING

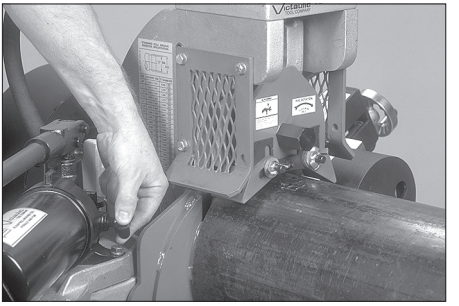


Grooving rolls can crush or cut fingers and hands.

- **Keep hands away from grooving rolls and stabilizer wheel.**
- **Never reach inside pipe end or across the tool or pipe during operation.**
- **Always groove pipe in a clockwise direction only.**
- **Never groove pipe shorter than what is recommended.**
- **Never wear loose clothing, loose gloves, or jewelry while operating tool.**



6. Insert a piece of pipe that is the correct size and thickness to be grooved onto the lower roll, with the pipe end squarely against the lower roll back-stop flange. If grooving a pipe supported by a pipe stand, remove hands from pipe.



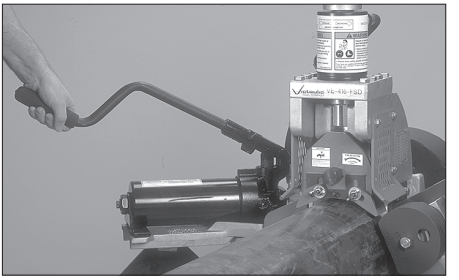
7. Close the pressure release valve on the pump by turning clockwise

8. Operator should be positioned as shown.

9. Pump the handle several times to bring the upper roll into light but firm contact with the pipe.

10. If grooving short pipe (see Table 1) with ETR rolls (see “Notice” on page 15), remove hands from pipe.

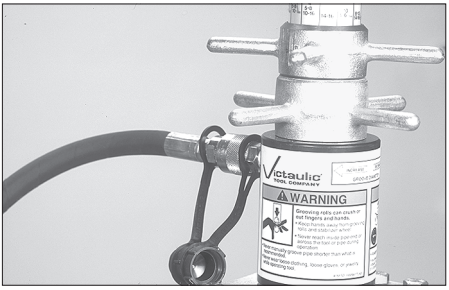
11. If grooving short pipe (see Table 1) with old type rolls (see “Notice” on page 15), pull the pipe to the left and downward with your right hand. Do not lift up on the pipe or push it to the right, as the pipe will not track and may walk out of the rolls. To initiate power, depress and hold down the safety foot pedal switch. This will produce rotation of the lower roll, which serves to rotate the pipe, which in turn rotates the upper roll. Check the tracking of the pipe as it rotates to be certain that it remains snug against the lower roll back stop flange. If it does not, stop the tool rotation by releasing the safety pedal switch and check to be certain pipe is level and properly positioned.



12. Depress and hold down foot switch. The pipe will begin to rotate clockwise. As the pipe rotates, begin grooving by slowly pumping the pump handle.

NOTICE

- **Do not pump too fast, but at a rate sufficient to groove the pipe and maintain audible moderate-to-heavy load on the tool or power drive motor.**



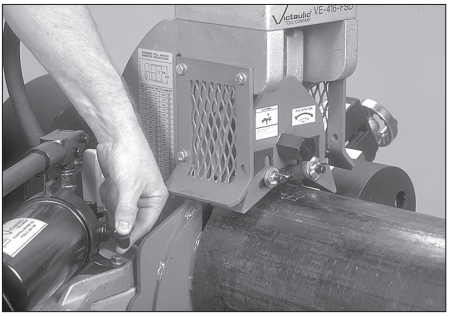
13. Continue grooving until the depth stop comes into full, firm contact with top of the hydraulic power cylinder. Continue pipe rotation for one to three revolutions to assure groove completion.

14. Release foot switch and withdraw foot from switch.

⚠ WARNING

- **Do not place hands inside end of pipe to pull pipe out of tool or place hands in area of grooving rolls or stabilizer roller.**

15. To remove a short piece of pipe after grooving is complete, support the pipe.



16. Open hydraulic release valve to release pipe. Remove pipe from tool.

NOTICE

- **Groove diameter should be correct for the diameter and wall thickness of pipe for which it was set under "Groove Diameter Stop Adjustment". Groove diameter should be checked periodically and adjusted as necessary to ensure that grooves are within specification.**

ROLL CHANGING

⚠ WARNING

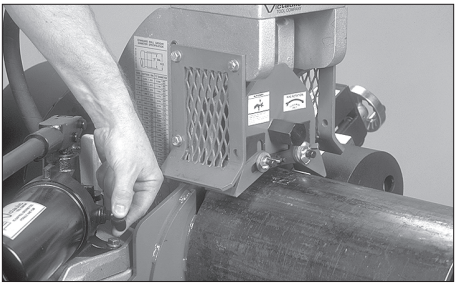
- **Always turn off power or unplug tool before making any tool adjustments.**

Accidental start-up of tool may result in serious injury.

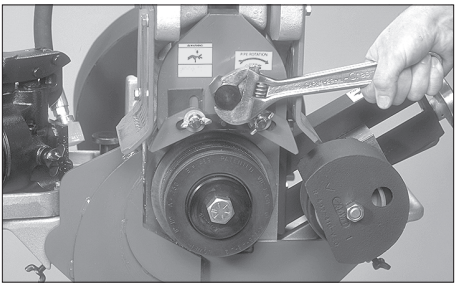
ROLL REMOVAL 4–16"

VE416 roll grooving tools are designed for fast, easy grooving. Rolls accommodate several pipe sizes (refer to "Roll Groove Specifications"), eliminating the need for frequent roll changes. When a different size range is encountered or special grooving styles are required, the grooving rolls must be changed and pre-operation adjustments must be performed again. Also, different pipe materials may require that the rolls be changed. Refer to "Roll Groove Specifications" for proper roll selection.

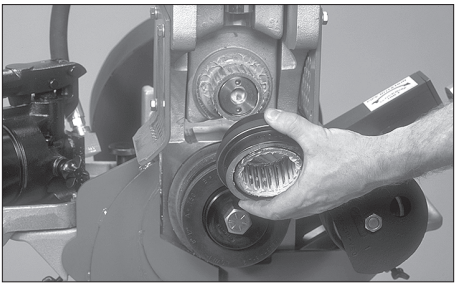
UPPER ROLL



1. Open hand pump release valve (turn knob counterclockwise), which will move slide to the fully open position.

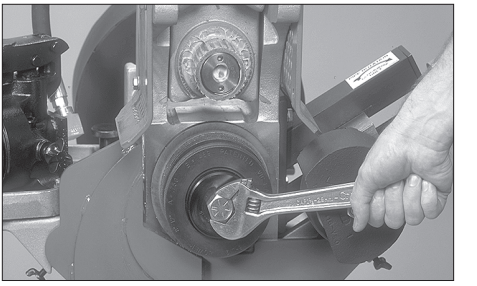


2. With a wrench, loosen and remove the upper roll bolt and retaining plate as shown. Place them on a clean surface.

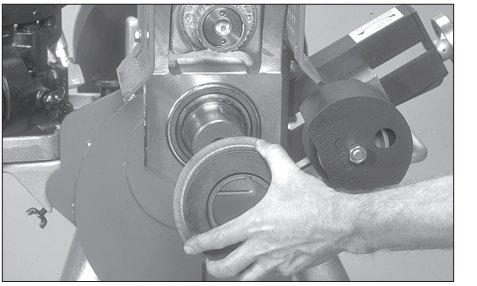


3. Slide the upper roll off the upper shaft as shown and store in the roll tote box supplied.

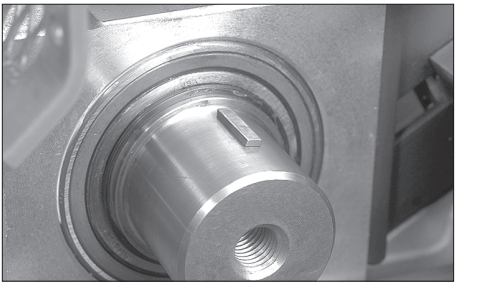
LOWER ROLL



1. Loosen and remove the bolt and retaining plate as shown. Place them on a clean surface.



2. Slide the lower roll off the main shaft as shown and store in the roll tote box supplied.



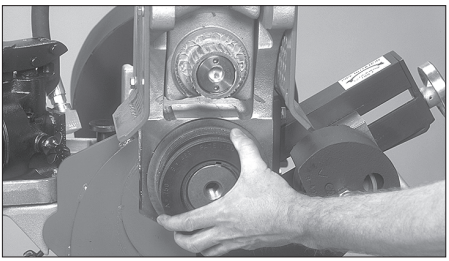
NOTICE

- **Be careful not to lose the Woodruff Key. It should remain in the lower shaft. Inspect the Woodruff Key and replace if damaged.**

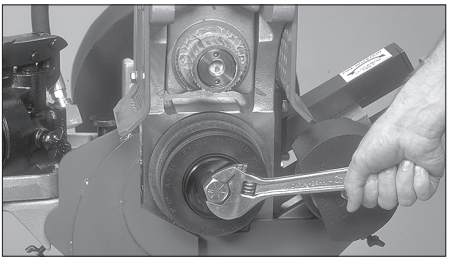
ROLL INSTALLATION 4–16”

Clean the upper shaft, main shaft, and lower roll bore of any dirt and/or scale before installation of rolls. Inspect the roller bearing inside the upper roll for proper lubrication and condition. Make repairs as necessary.

LOWER ROLL

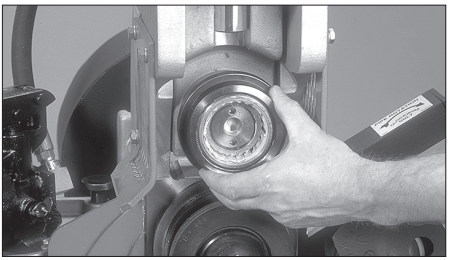


1. Slide desired size lower roll fully onto main shaft with the marked side facing forward as shown. Make sure to properly align roll with the Woodruff Key on main shaft. **NOTE:** To aid in removing roll at a later time, you may apply a thin film of oil or grease (anti-seize lubricant) to the main shaft before installing the lower roll.

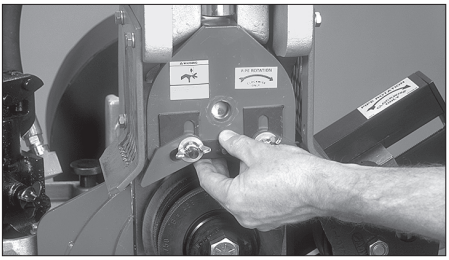


2. Install the lower roll retaining plate (marked R-106-416-VEO) and bolt as shown. Securely tighten the bolt with a wrench.

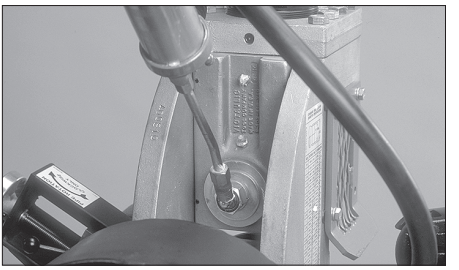
UPPER ROLL



1. Carefully slide the desired size upper roll onto the upper shaft as shown, with markings facing forward.



2. Install upper roll retaining plate and bolt. Align tab on plate with recess in the slide as shown. Securely tighten bolt with a wrench.

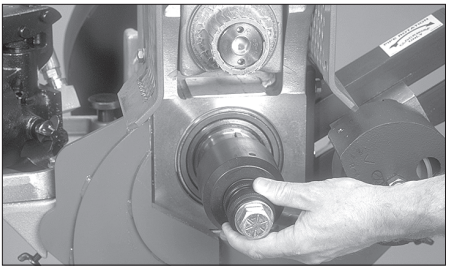


3. Lubricate upper roll bearing with a No. 2EP Lithium based grease as shown. Refer to maintenance section for additional information.

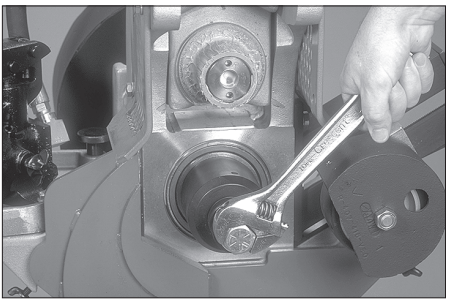
4. Roll installation is complete.

ROLL INSTALLATION 2–3½"

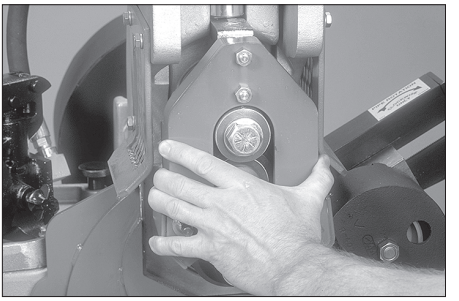
1. Remove existing rolls if necessary. Refer to 4"-16" upper and lower roll removal procedures.



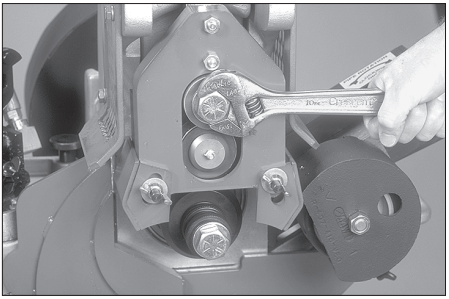
2. Lightly lubricate lower shaft with a thin film of oil or grease before installing the lower roll. Slide lower roll (Part No. R-902-416-L03) onto main shaft. Make sure to properly align roll with Woodruff Key on main shaft.



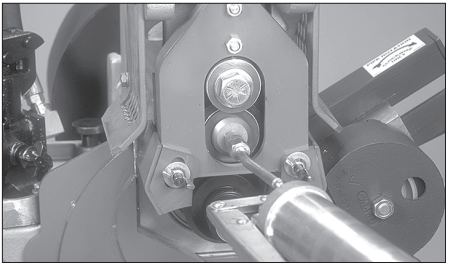
3. Place a ¾" flat washer (Part No. N-W01-120-000) onto a ¾" X ¾" hex head cap screw (Part No. N-S02-120-304). Install bolt and washer as shown. Securely tighten bolt with a wrench.



4. Carefully slide upper roll assembly onto upper shaft. Make sure to properly align the upper support block with the recess in the slide as shown.



5. Thread the upper support block bolt (Part No. R-902-416-M03) into the upper shaft as shown. Tighten securely.



6. Lubricate the upper roll with No. 2EP Lithium base grease as shown. Refer to maintenance section for additional information.

NOTICE
• **As the upper support block bolt is tightened, it will draw the upper roll assembly into proper alignment with the lower roll.**

COPPER ROLL INSTALLATION 2–6" AND 8"

Installation and removal of 2–6" roll set for copper tubing is identical to installation and removal of standard roll sets for 2–3½" steel pipe. See page 30.

Installation and removal of 8" roll set for copper tubing is identical to installation and removal of standard roll sets for 4–16" steel pipe. See page 29.

MAINTENANCE

GENERAL

This manual provides information to permit the operator of Series 416 tools to keep his equipment in top operating condition and to guide him in making repairs when it becomes necessary.

Replacement parts, applicable only to these tools, should be ordered from Victaulic to ensure proper operation of the tool.

NOTICE
• **Remember that preventative maintenance during operation will pay for itself in repair and operating savings.**

⚠ DANGER

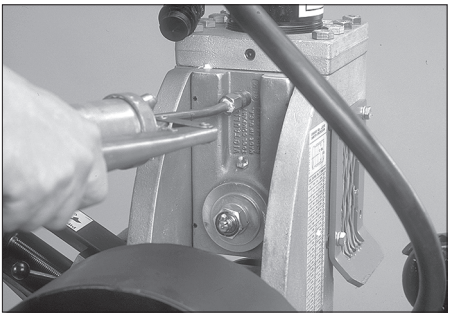
- **Before performing any repair or maintenance, disconnect the tool from the electrical source to prevent accidental start up of tool.**

Failure to do so could result in death or serious personal injury.

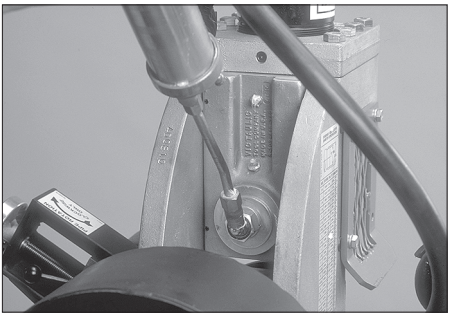
NOTICE

- **Pipe coatings, particularly galvanization, can become impacted in the knurling of the lower roll and cause the pipe to slip during the grooving process.**
- **It may become necessary to clean the lower roll with a wire brush periodically. Pay particular attention to any buildup during the grooving process that may impact the ability to effectively clean the knurling.**

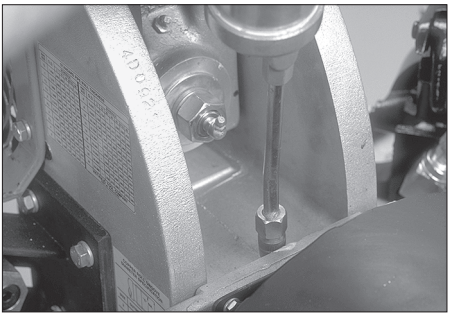
After every eight hours of operation, lubricate the tool. Always lubricate upper roll bearings when rolls are changed.



1. Grease the slide gibs. Two grease fittings are provided, as shown.

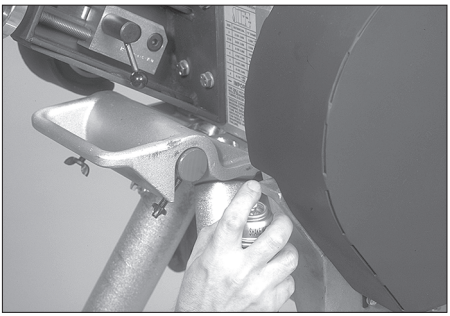


2. Grease the upper roll bearing at the fitting provided, as shown.



3. Grease the main shaft bearings at the fittings provided, as shown.

MONTHLY LUBRICATION (VE416FSD ONLY)

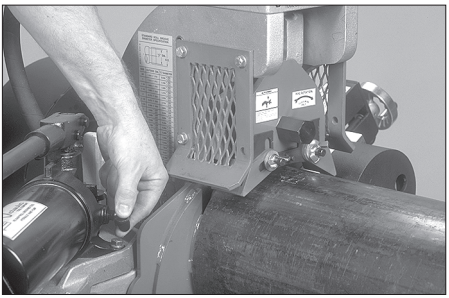


1. Lubricate the drive gear as shown with a spray-type heavy duty open gear lubricant (Lubriplate Gear Shield Extra Heavy, or equivalent). To thoroughly lubricate, plug the tool into a proper outlet and jog the drive gear around to several locations by depressing the foot switch momentarily and then lubricating the gear at each position.

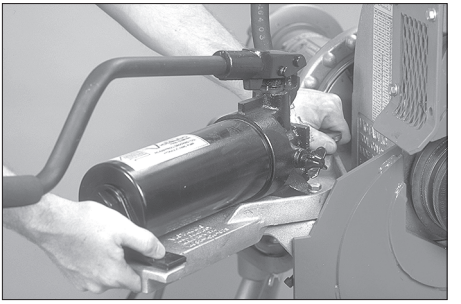
HYDRAULIC SYSTEMS

The level of hydraulic fluid in the pump should be checked before operation and **must** be checked semi-annually, or if pumping feels spongy.

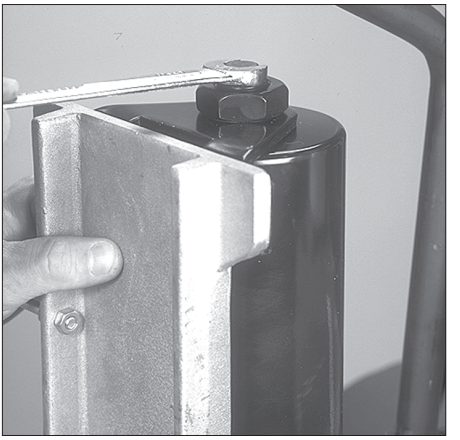
FILLING AND CHECKING



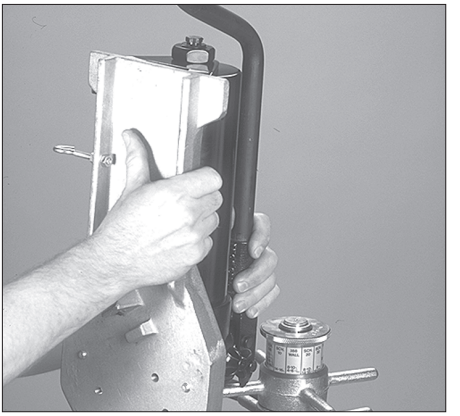
1. Open the pump release valve fully by turning it counterclockwise.



2. Remove the pump and mounting table from the side of the tool.



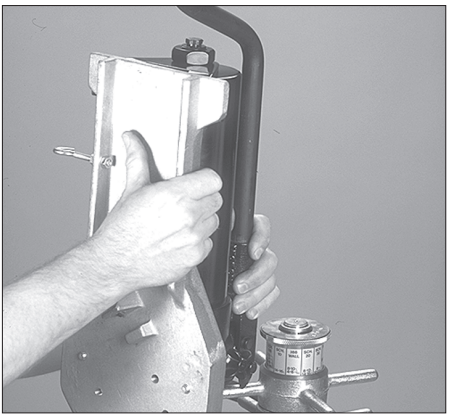
3. Loosen, but do not remove, the hydraulic fill plug/ dipstick at the back end of the pump



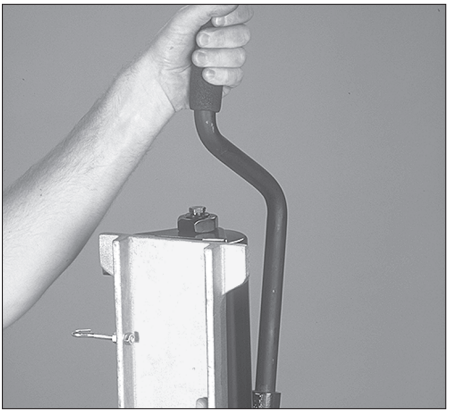
4. Hold the pump so that the fill plug end is ABOVE the hydraulic power cylinder. This will prevent siphoning of oil from the hydraulic power cylinder through the pump.

5. Check fluid level. Add hydraulic jack oil to the proper level as required. On models without a dip stick, remove the cap. Oil should be approximately ½" to 1" from the end.

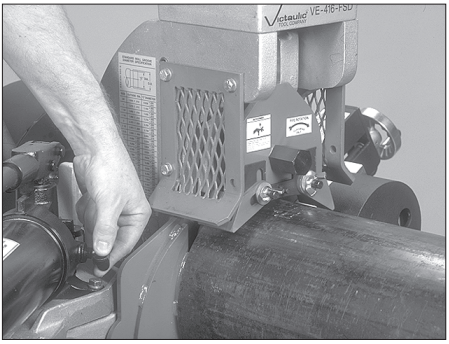
AIR BLEEDING



1. To bleed air from the system, hold the entire pump above the hydraulic power cylinder. Close the pump release valve by turning it clockwise. Open the fill plug by one full turn.



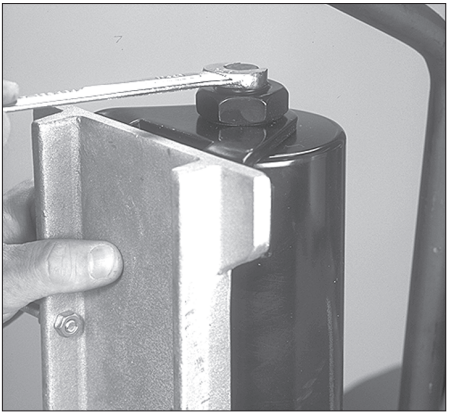
2. Pump the handle several strokes to build pressure.



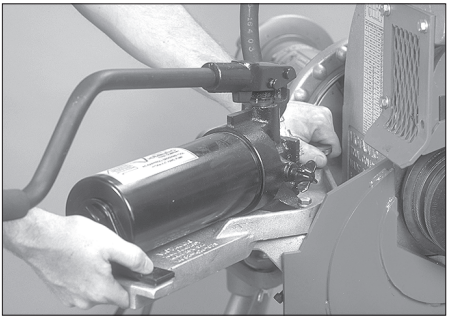
3. Open the release valve by turning it counterclockwise, and allow air to escape.

4. Repeat steps 1–3 several times to bleed all the air from the system.

5. Check the oil level and add oil if necessary.



6. Continue to hold the pump above the hydraulic power cylinder and close the fill plug.



7. Replace the pump and table assembly securely to the side of the tool.

RECOMMENDED LUBRICANTS

BEARING AND SLIDE GREASE

(General Purpose EP Lithium Base Grease)

Manufacturer	Product
BP Amoco	Energrease LC-EP2
Gulf Oil Corp.	Gulfcrown Grease EP#2
Lubriplate	No. 630-2
Mobil Oil Corp.	Mobilux EP2
Pennzoil Products Co.	Pennlith EP 712 Lube
Shell Oil Co.	Alvania EP2
Sun Refining	Sun Prestige 742 EP
Texaco Inc.	Multifak EP2

HYDRAULIC OIL

(High Pressure, Anti-Wear/Anti-Foam Hydraulic Oil ISO Grade 32)

Manufacturer	Product
BP Amoco	Energol HLP-HM32
Gulf Oil Corp.	Harmony 32 AW
Kendall Refining Co.	Kenoil R&O AW-32
Lubriplate	HO-o
Mobil Oil Corp.	Mobil DTE 24
Pennzoil Products Co.	Pennzbell AW32
Shell Oil Co.	Tellus 32
Sun Refining	Survis 832
Texaco Inc	Rando

PARTS ORDERING INFORMATION

When ordering parts, the following information is necessary for Victaulic to process the order and send the correct parts. Request RP-416FS/FSD for detail drawings and parts listing.

(1) Tool Model Number: VE416FS or VE416FSD.

(2) Tool Serial Number: The serial number can be found on the side of the tool head.

(3) (Quantity), Part Number and Description.
For example: (1) Part #R-105-416-VEO, Upper Shaft.

(4) Where to send the part(s):
Company name
Address

(5) To whose attention to send the part(s).
Person's name

(6) Purchase Order Number

ACCESSORIES

VAPS112 VICTAULIC ADJUSTABLE PIPE STAND

The Victaulic VAPS112 is a portable, adjustable, roller-type pipe stand that contains four legs for additional stability. Ball transfer rollers, adjustable for 2 to 12-inch/60.3 to 323.9-mm pipe, and the "V" rest for ¾ to 1½-inch/ 26.9 to 48.3-mm pipe accommodate linear and rotational movement. The turnstile design permits ease of grooving for both pipe ends. Contact Victaulic for details.

VAPS224 VICTAULIC ADJUSTABLE PIPE STAND

The Victaulic VAPS224 contains features that are similar to the VAPS112, but it is suitable for 2 to 24-inch/60.3 to 610.0-mm pipe sizes. Contact Victaulic for details.

POWER DRIVE

The Victaulic VPD752 is available for use with the VE416FS and other tools. Consult Victaulic for details.

OPTIONAL ROLLS

See "Roll Groove Specifications" section on page 41 for rolls used with different materials and groove specifications.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe will not stay in grooving rolls.	Incorrect pipe positioning of long pipe.	Refer to "Groovable Pipe Lengths" on page 15
	Power drive running counterclockwise (VE416FS).	Refer to "VE416FS Setup" on page 9
Pipe stops rotating during grooving.	Rust or dirt has built up on lower roll.	Remove accumulation from lower roll with stiff wire brush.
	Worn grooving rolls.	Inspect lower roll for worn knurls, replace if worn.
	Lower roll key is sheared or missing.	Remove lower roll, replace key, and reinstall lower roll. Refer to "Roll Changing" on page 27
	Power drive chuck is not engaged onto drive shaft.	Refer to "Tool Setup" on page 9
	Power drive has stalled due to excess hand pumping.	Open release valve to free the pipe, then close release valve. Continue grooving, pumping at a moderate rate.
	Circuit breaker has tripped or fuse has blown on electrical circuit supplying power drive.	Reset breaker or replace fuse.
While grooving, loud squeaks echo through the pipe.	Incorrect pipe support positioning on long pipe, pipe is "overtracking".	Move pipe support to the right. Refer to "Long Pipe Lengths" on page 16
	Pipe end is not cut square.	Cut pipe end squarely.
	Pipe is rubbing excessively hard on lower roll flange.	Remove pipe from tool and apply a film of grease to the face of the lower roll flange as needed.
During grooving, loud thumps or bangs occur about once every revolution of the pipe.	Pipe has a pronounced weld seam.	Grind the raised welds flush with the interior and exterior pipe surfaces 2 inches/50 mm back from the pipe end.
Pipe flare is excessive.	Pipe support adjusted too high on long pipes.	Refer to "Long Pipe Lengths" on page 16
	Tool is tilted forward while grooving long pipes.	Refer to "Tool Setup" on page 9
	Incorrect pipe support positioning on long pipes, pipe is "overtracking".	Move pipe support to the right. Refer to "Long Pipe Lengths" on page 16
	Stabilizer is adjusted too far inward.	Back off stabilizer to the furthest point at which it still stabilizes the pipe effectively.
Pipe sways or vibrates from side to side.	Incorrect stabilizer adjustment.	Move stabilizer in or out until pipe rotates smoothly.
Tool won't groove pipe.	Hand pump valve is not closed tightly.	Tighten valve.
	Hand pump is low on oil.	Refer to "Maintenance" on page 31
	Air in hydraulic system.	Refer to "Maintenance" on page 31
	Pipe is beyond tool's wall thickness capability.	Refer to "Roll Groove Specifications" section on page 41

In the event of tool malfunction outside the scope of the troubleshooting section, contact Victaulic Engineering Services for assistance.

ORIGINAL GROOVE SYSTEM (OGS) ROLL PART NUMBERS

CARBON STEEL PIPE AND ALL MATERIALS GROOVED WITH STANDARD AND RX ROLLS

STANDARD AND "ES" ROLLS – COLOR CODED BLACK

Pipe Size inches or mm	Standard Roll Part Numbers	"ES" Roll Part Numbers
2 – 3¼ 50 – 90	Interlocking Roll Set R902414003*	Interlocking Roll Set RZ02414003*
4 – 6 100 – 150	Lower Roll R904416L06 Upper Roll R9A4416U06	Lower Roll RZ04416L06 Upper Roll RZA4416U06
8 – 12 200 – 300	Lower Roll R908416L12 Upper Roll R9A8416U16	Lower Roll RZ08416L12 Upper Roll RZA8416U12
14 – 16 350 – 400	Lower Roll R914416L16 Upper Roll R9A8416U16	– –

ADVANCED GROOVE SYSTEM (AGS) ROLL PART NUMBERS

CARBON STEEL PIPE AND SCHEDULES 5S AND 10S STAINLESS STEEL PIPE (IN ACCORDANCE WITH EN 10217, ASTM A-53, ASTM A-312, OR API 5L)

Pipe Size inches or mm	Carbon Steel Roll Part Numbers	Stainless Steel Roll Part Numbers
14 – 16 350 – 400	Lower Roll RW01416L16 Upper Roll RW01416ASY	Lower Roll RWX1416L16 Upper Roll RWX1416ASY

ROLL PART NUMBERS

SCHEDULES 5S AND 10S STAINLESS STEEL PIPE †

(RX ROLLS) – CHROME PLATED

Pipe Size inches or mm	RX Roll Part Numbers	
2 – 3¼ 50 – 90	Interlocking Roll Set RX02414003*	
4 – 6 100 – 150	Lower Roll RX04416L06	Upper Roll RXA4416U06
8 – 12 200 – 300	Lower Roll RX08416L12	Upper Roll RXA8416U16
14 – 16 350 – 400	Lower Roll RX14416L16	Upper Roll RXA8416U16

† TYPES 304 AND 316.

ROLL PART NUMBERS

COPPER TUBING – COLOR-CODED COPPER †

Pipe Size inches or mm	Copper Roll Part Numbers	
2 – 6 50 – 150	Interlocking Roll Set RR02414006*	
8 200	Lower Roll RR08416L08	Upper Roll RRA8416U08

† DRAWN COPPER TUBING – DWV, ASTM B306 - TYPE "M", ASTM B88 – TYPE "L", ASTM B88 – TYPE "K", ASTM B88. ROLLS ARE AVAILABLE FOR GROOVING BRITISH STANDARD, AUSTRALIAN STANDARD AND DIN STANDARD COPPER TUBE, CONTACT VICTAULIC FOR DETAILS.

*** NON-INTERLOCKING 2-3 1/2" ROLLS ARE NOT COMPATIBLE WITH INTERLOCKING ROLLS.**

OGS GROOVE SPECIFICATIONS

For the most up-to-date information regarding OGS roll groove specifications, reference the current revision of Victaulic publication 25.01, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link: https://www.victaulic.com/assets/uploads/literature/25.01.pdf

AGS GROOVE SPECIFICATIONS

For the most up-to-date information regarding AGS roll groove specifications, reference the current revision of Victaulic publication 25.09, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link: https://www.victaulic.com/assets/uploads/literature/25.09.pdf

ENDSEAL "ES" GROOVE SPECIFICATIONS

For the most up-to-date information regarding EndSeal "ES" roll groove specifications, reference the current revision of Victaulic publication 25.02, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link: https://www.victaulic.com/assets/uploads/literature/25.02.pdf

COPPER TUBING GROOVE SPECIFICATIONS

For the most up-to-date information regarding copper tubing roll groove specifications, reference the current revision of Victaulic publication 25.06, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link: https://www.victaulic.com/assets/uploads/literature/25.06.pdf

ADDITIONAL RESOURCES

For additional information on 24-inch/DN600 and smaller Victaulic mechanical piping products for carbon steel, stainless steel, aluminum, and CPVC/PVC pipe, reference the current revision of the I-100 Field Installation Handbook, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link: https://www.victaulic.com/assets/uploads/literature/I-100.pdf

For additional information on Victaulic Copper Connection Products, reference the current revision of the I-600 Field Installation Handbook, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link: https://www.victaulic.com/assets/uploads/literature/I-600.pdf

EC DECLARATION OF INCORPORATION

In Accordance with the Machinery Directive 2006/42/EC

Victaulic Company, headquartered at 4901 Kesslersville Road, Easton, PA 18040, USA, hereby declares that the machinery listed below complies with the essential safety requirements of the Machinery Directive, 2006/42/EC.

Product Model:	VE416FS
Serial No. :	Refer to Machinery Nameplate
Product Description:	Portable Pipe Roll Grooving Tool
Conformity Assessment:	2006/42/EC, Annex I
Technical Documentation:	The relevant technical documentation prepared in accordance with Annex VII (B) of the Machinery Directive 2006/42/EC, will be made available upon request to the governing authorities.
Compatible Power Drives:	When installed with any of the following power drive units, each having an appropriate EC Declaration of Conformity in accordance with Annex II (A) of the Directive 2006/42/EC, the VE416FS may be commissioned for its full intended purpose:

Victaulic VPD752	Victaulic VPD753	Ridgid* 300

Authorized Representative:

Victaulic Company
c/o Victaulic Europe BV
Prijkelstraat 36
9810, Nazareth
Belgium

Signed for and on behalf of Victaulic Company,

Mr. Len R. Swantek
Director – Global Regulatory Compliance
Machinery Manufacturer Representative

Place of Issue: Easton, Pennsylvania, USA
Date of Issue: February 7, 2024

MD_DoI_RGT_003_020724_en

EC DECLARATION OF CONFORMITY

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Product Models:	VE416FSD VE417FSD
Serial No. :	Refer to Machinery Nameplate
Product Description:	Portable Pipe Roll Grooving Tools
Conformity Assessment:	2006/42/EC, Annex I
Reference Standards:	EN ISO 12100 : 2010 EN ISO 13857 : 2019 EN 953 : 1997 +A1 : 2009 ISO 14120 : 2015
Technical Documentation:	The relevant technical documentation prepared in accordance with Annex VII (A) of the Machinery Directive 2006/42/EC, will be made available upon request to the governing authorities.
Authorized Representative:	Victaulic Company c/o Victaulic Europe BV Prijkelstraat 36 9810, Nazareth Belgium

Signed for and on behalf of Victaulic Company,

Len R. Swantek

Mr. Len R. Swantek
Director – Global Regulatory Compliance
Machinery Manufacturer Representative

Place of Issue: Easton, Pennsylvania, USA
Date of Issue: February 7, 2024

MD_DoC_RGT_002_020724_en

UK DECLARATION OF INCORPORATION

In Accordance with The Supply of Machinery (Safety) Regulations 2008 No. 1597

Victaulic Company, headquartered at 4901 Kesslersville Road, Easton, PA 18040, USA, hereby declares that the machinery listed below complies with the essential safety requirements of The Supply of Machinery (Safety) Regulations 2008 No. 1597.

Product Models: VE416FS

Serial No. : Refer to Machinery Nameplate

Product Description: Portable Pipe Roll Grooving Tool

Conformity Assessment: 2008 No. 1597, Annex I

Technical Documentation: The relevant technical documentation prepared in accordance with Annex VII (A) of The Supply of Machinery (Safety) Regulations 2008 No. 1597, will be made available upon request to the governing authorities.

Compatible Power Drives: When installed with any of the following power drive units, each having an appropriate UK Declaration of Conformity in accordance with The Supply of Machinery (Safety) Regulations 2008 No. 1597, the VE416FS may be commissioned for its full intended purpose:

Victaulic VPD752	Victaulic VPD753	Ridgid 300

Authorized Representative:

Victaulic Company
c/o Victaulic Europe BVBA
Units B1 & B2
Cockerell Close off Gunnels
Wood Road
Stevenage, Hertfordshire
SG1 2NB, United Kingdom

Signed for and on behalf of Victaulic Company,

Len R. Swantek

Mr. Len R. Swantek
Director – Global Regulatory Compliance
Machinery Manufacturer Representative

Place of Issue: Easton, Pennsylvania, USA
Date of Issue: May 17, 2021

UK DECLARATION OF CONFORMITY

In Accordance with The Supply of Machinery (Safety) Regulations 2008 No. 1597

Victaulic Company, headquartered at 4901 Kesslersville Road, Easton, PA 18040, USA, hereby declares that the machinery listed below complies with the essential safety requirements of The Supply of Machinery (Safety) Regulations 2008 No. 1597.

Product Models:	VE-416FSD VE-417FSD
Serial No. :	Refer to Machinery Nameplate
Product Description:	Portable Pipe Roll Grooving Tools
Conformity Assessment:	2008 No. 1597, Annex I
Reference Standards:	BS EN ISO 12100 : 2010 BS EN ISO 13857 : 2019 BS EN ISO 14120 : 2015
Technical Documentation:	The relevant technical documentation prepared in accordance with Annex VII (A) of The Supply of Machinery (Safety) Regulations 2008 No. 1597, will be made available upon request to the governing authorities.
Authorized Representative:	Victaulic Company c/o Victaulic Europe BV Units B1 & B2 Cockerell Close off Gunnels Wood Road Stevenage, Hertfordshire SG1 2NB, United Kingdom

Signed for and on behalf of Victaulic Company,

Len R. Swantek

Mr. Len R. Swantek
Director – Global Regulatory Compliance
Machinery Manufacturer Representative

Place of Issue: Easton, Pennsylvania, USA
Date of Issue: May 14, 2021

VE416FS and VE416FSD

TM-VE416 0135 REV D UPDATED 04/2024 RM00416000