

VE272SFS Pipe/Tubing Roll Grooving Tool

**WARNING****WARNING**

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

- Before operating or servicing the VE272SFS tool read all instructions in this manual and all warning labels on the tool.
- Wear safety glasses, hardhat, foot protection, and hearing protection.
- 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

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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 VE272SFS is designed for the sole purpose of roll grooving pipe. These instructions must be read and understood by each operator PRIOR to working with the grooving tools. These instructions describe safe operation of the tool, including set up and maintenance. Each operator must become familiar with the tool's operations, applications, and limitations. Particular care should be given to reading and understanding the dangers, warnings, and cautions described throughout these operating instructions.

Use of these tools requires dexterity and mechanical skills, as well as sound safety habits. Although these tools are designed and manufactured for safe, dependable operation, it is difficult to anticipate all combinations of circumstances that could result in an accident. The following instructions are recommended for safe operation of these tools. The operator is cautioned to always practice “safety first” during each phase of use, including set up and maintenance. It is the responsibility of the lessee or user of these tools to ensure that all operators read this manual and fully understand the operation of these tools.

Store this manual in a clean, dry area where it is always readily available. Additional copies of this manual are available upon request through Victaulic.



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 drive motor to protect the operator from electric shock.** Ensure that the drive motor is connected to an internally grounded electrical source.

3. **Disconnect the power cord from the electrical source before servicing the tool.** Only authorized personnel should perform maintenance on the tool. Always disconnect the power cord from the electrical source before servicing or adjusting the tool.
4. **Prevent accidental startups.** Place the power switch in the “OFF” position before connecting the tool to an electrical source.

 **WARNING**

1. **Prevent back injury.** DO NOT attempt to lift tool components without the use of mechanical lifting equipment, or with fewer than two people.
2. **Wear proper apparel.** Do not wear loose clothing, jewelry, or anything that can become entangled in moving parts.
3. **Wear protective items when working with tools.** Always wear safety glasses, hard hat, foot protection, and hearing protection.
4. **Keep hands and tools away from grooving rolls and stabilizer wheel during the grooving operation.** Grooving rolls can crush or cut fingers and hands.
5. **Do not reach inside pipe ends during tool operation.** Pipe edges can be sharp and can snag gloves, hands, and shirt sleeves.
6. **Operate the tool from the control station side only.** The tool must be operated with the safety foot switch that is located for easy operator access. Never reach across moving parts. If the tool does not contain a safety foot switch, do not use the tool, and contact Victaulic.
7. **Do not over-reach.** Maintain proper footing and balance at all times. Ensure that the safety foot switch is easily accessible for the operator.

 **CAUTION**

1. **This tool is designed ONLY for roll grooving pipe/tubing sizes, materials, and wall thicknesses listed in the “Tool Rating and Roll Selection” section.**
2. **Inspect the equipment.** Before using the tool, check all moveable parts for any obstructions. Ensure that tool components are installed and adjusted in accordance with the “Tool Setup” section.
3. **Stay alert.** Do not operate the tool if you are drowsy from medication or fatigue.
4. **Keep visitors, trainees, and observers away from the immediate work area.** All visitors should be kept a safe distance from the equipment at all times.
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.
6. **Secure the work, machine, and accessories.** Ensure that the tool is stable. Refer to the “Tool Setup” section.
7. **Support the work.** Support long pipe/tubing lengths with a pipe stand, in accordance with the “Long Pipe 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 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 VE272SFS tool is a hydraulic feed tool for roll grooving pipe to receive Victaulic grooved pipe products. The standard VE272SFS tool is supplied with grooving rolls for 2–12 inch/50–300 mm steel pipe. Rolls are marked with the size and part number, and are color coded to identify the pipe/tubing material. For roll grooving to other specifications and materials, refer to the “Tool Rating and Roll Selection” section. Grooving rolls for other specifications, sizes, and materials must be purchased separately.

CAUTION

- This tool must be used **ONLY** for roll grooving pipe/tubing designated in the “Tool Rating and Roll Selection” section of this manual.

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

RECEIVING THE TOOL

The VE272SFS tool is palletized individually and enclosed in a cardboard sleeve, which is designed for repeated shipping. Optional roll sets and pipe stabilizer/mounting hardware are shipped in a separate container. Save the original container for return shipment of rental tools and accessories.

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

CONTAINER CONTENTS



Qty.	Description
1	Tool Head with Mounting Table
1	Upper Leg
2	Adjustable Legs
1	Hand Pump/Pump Support
2	Upper Rolls for 2 – 6-inch/50 – 150 mm Steel Pipe and 8 – 12-inch/200 – 300 mm Steel Pipe
3	“Keyless” Lower Rolls for 2 – 3-inch/ 50 – 80 mm, 4 – 6-inch/100 – 150 mm, and 8 – 12-inch/200 – 300 mm Steel Pipe ‡
1	Guard Setting Pad
1	Lower Roll Removal Wedge
1	Can of Dry Graphite Spray
1	Pipe Tape
2	TM-VE272SFS Operating and Maintenance Instructions Manual
1	RP-VE272SFS Repair Parts List

NOTE: Optional items, such as the stabilizer assembly, may be shipped separately.

‡ The 8–12-inch/200–300 mm roll set is mounted on the tool head assembly at the factory

POWER REQUIREMENTS

DANGER

- To reduce the risk of electric shock, check the electrical source for proper grounding.**
- Before performing any maintenance on the tool, disconnect the power cord from the electrical source.**

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

POWER DRIVE REQUIREMENTS

The VE272SFS tool is designed for operation with a power drive. The tool mounts directly onto a Victaulic VPD752 Power Drive or a Ridgid® 300 Power Drive with a 38-rpm maximum chuck speed. Always refer to the operating manual for the power drive for additional information.

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

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 while the tool is operating. Voltage drops may cause damage to the power drive and can result in improper tool operation. **NOTE:** It is acceptable to use a cord size (gauge) that is heavier than required.

The required cord sizes (gauges) for cord lengths up to and including 100 feet/31 m are listed in the table below. Use of extension cords longer than 100 feet/31 m must be avoided.

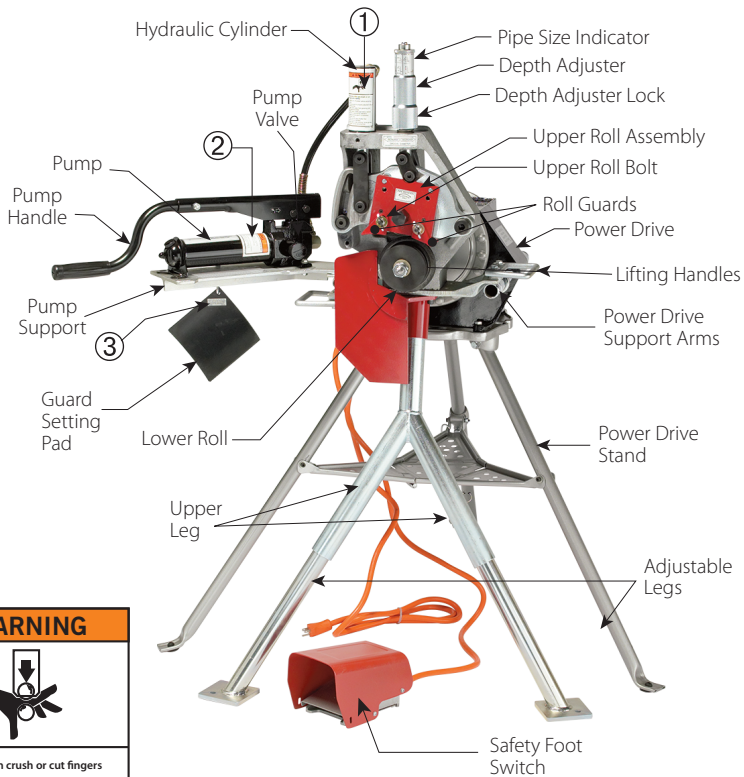
Power Drive Rating volts/amps	Cord Lengths feet/meters		
	25 8	50 15	100 31
115 15	12 gauge	12 gauge	10 gauge

® Ridgid is a registered trademark of the Ridge Tool Company

TOOL NOMENCLATURE

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.



①

WARNING

Grooving rolls can crush or cut fingers and hands.

- Always disconnect the tool from the power source before making any tool adjustments.
- Make sure the guard is adjusted properly before grooving pipe.
- Loading/unloading pipe will place your hands close to the grooving rolls. Keep hands away from the grooving rolls and the roller on the pipe stabilizer during operation.
- Never reach inside the pipe ends or across the tool or pipe during operation.
- Never groove pipe that is shorter than the recommended lengths listed in the operating and maintenance manual.
- Never wear loose clothing, loose gloves, or anything that can become entangled in moving parts.

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WARNING

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

- Before operating or servicing any pipe preparation tools, read all instructions in the Operating and Maintenance Instructions Manual and all labels on the tool.
- Wear safety glasses, hardhat, foot protection, and hearing protection when working around tools.

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

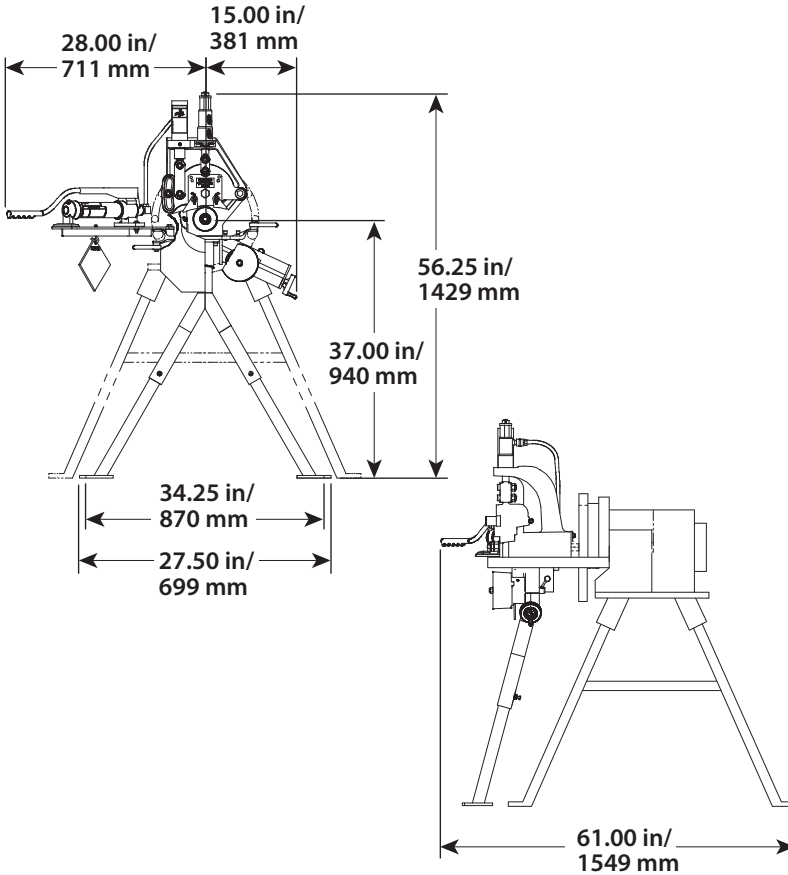
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ALWAYS KEEP THIS PAD WITH THE TOOL. USE IT TO SET THE GUARDS IN ACCORDANCE WITH THE TOOL OPERATION AND MAINTENANCE MANUAL.

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TOOL DIMENSIONS AND SPECIFICATIONS



Tool weight is 184 pounds/84 kilograms.

Tool sound pressure is 99.7 dB(A), while tool sound power is 91.7 dB(A). All measurements taken with a VPD 752 power drive.

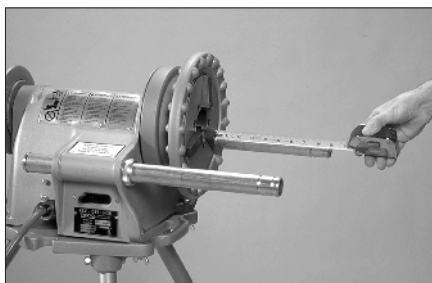
NOTE: Noise measurements are dependent on the power drive, and will vary based on configuration. Always check the power drive manufacturer's documentation for details.

TOOL SETUP

WARNING

- **DO NOT connect the power drive to the electrical source until instructed otherwise.**

Accidental startup of the tool could result in serious personal injury.



The standard VE272SFS tool is intended for field or shop setup. Before grooving, the tool head assembly and legs must be mounted onto a Victaulic VPD752 Power Drive or a Ridgid 300 Power Drive with a 38-rpm maximum chuck speed.

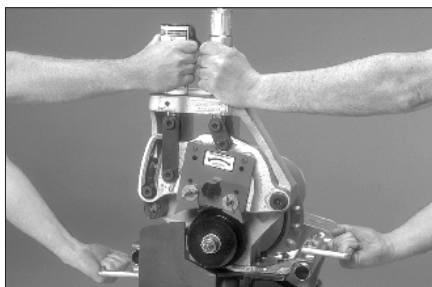
1. Remove all components from the packaging, and make sure all necessary items are included. Refer to the "Receiving the Tool" section.
2. Select a location for the power drive, tool, and pipe stand by taking into consideration the following factors (refer to the drawing below for overall dimensions):
 - a. The required power supply (refer to the power drive manufacturer's instructions)
 - b. Adequate space to handle pipe lengths
 - c. A firm and level surface for the power drive, tool, and pipe stand
 - d. Adequate clearance around the tool for adjustment and maintenance

3. Remove threading dies, cutoff attachments, etc. from the power drive. Extend the two tubular support arms approximately 7½ inches/190 mm beyond the chuck of the power drive. Secure the support arms in this position. Refer to the power drive manufacturer's instructions.
4. Open the chuck of the power drive fully. Refer to the power drive manufacturer's instructions.

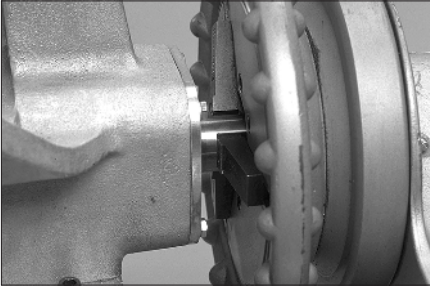
WARNING

- **During tool set-up, at least two people are needed to safely handle the weight of the tool head assembly (184 pounds/ 84 kilograms). If a hoist is available, use it to lift the tool head assembly into position.**

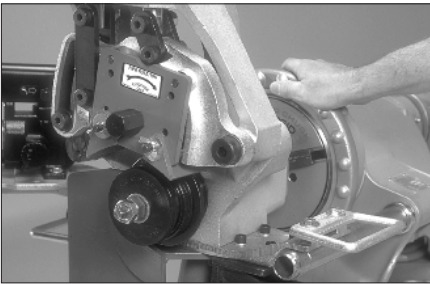
Failure to follow this instruction may result in serious injury.



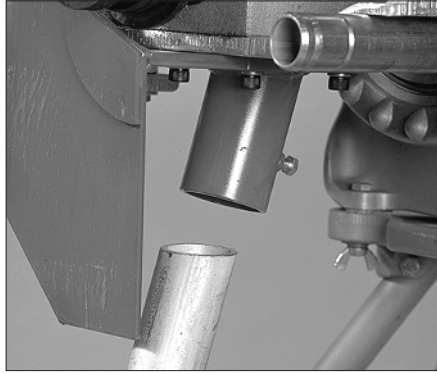
5. Slide the tool head assembly completely onto the arms of the power drive.



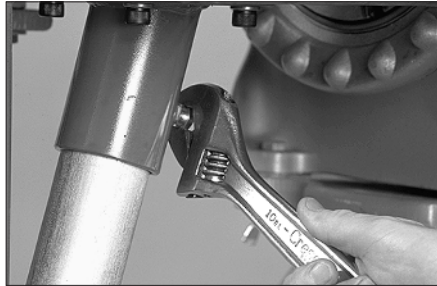
6. Allow approximately ½-inch/13-mm clearance from the hex bolts on the back of the tool to the power drive chuck.
7. Align the flat portions of the drive shaft with the chuck jaws by turning the lower roll.



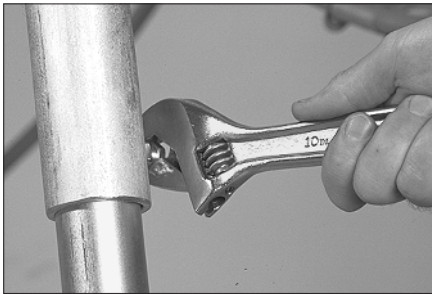
8. Tighten the chuck. Make sure the jaws engage with the flats of the drive shaft.
9. Insert the two adjustable legs completely into the sockets of the upper leg. Hand-tighten the hex bolts.



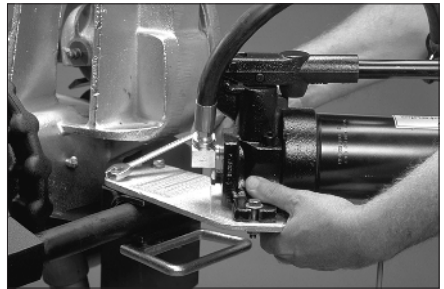
10. Insert the top of the leg assembly completely into the socket under the tool head assembly. Rotate the assembly until it seats completely in the socket. The hex head bolts on the legs should be facing toward the back of the machine (toward the power drive).



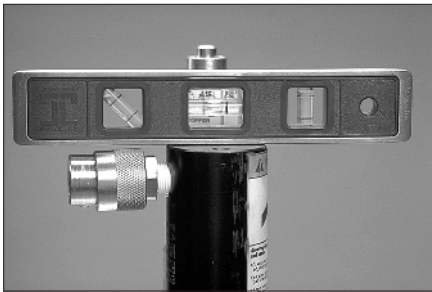
11. Tighten the hex head bolt with a wrench.



12. Loosen the hex bolts to release the two lower legs, allowing them to slide down to the floor. Turn the leg pads at the bottom until they are resting flat of the floor.



15. Attach the hand pump/pump support to the left side of the tool with the two hex bolts (supplied). Tighten the two hex bolts with a wrench.



13. Level the tool from front to back.
NOTE: The top of the hydraulic cylinder is a good location to measure “level,” as shown above.




16. Connect the hydraulic line from the hand pump to the power cylinder with the connectors provided.
17. Hang the guard setting pad on the hook provided under the base of the hand pump.



14. Using a wrench, tighten the two hex head bolts on the two legs to maintain the level position.

⚠ DANGER



- To reduce the risk of electric shock, check the electrical source for proper grounding.
- Before performing any maintenance on the tool, disconnect the power cord from the electrical source.

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

18. Ensure that the switch on the power drive is in the “OFF” position. Plug the power drive into an internally grounded electrical outlet. The outlet must meet the requirements for the power drive (refer to the power drive manufacturer’s instructions). If an extension cord is used, refer to the “Extension Cord Requirements” section.

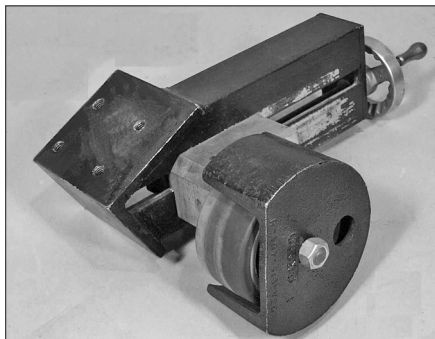
⚠ WARNING

- **DO NOT operate the power drive without a safety foot switch. If the tool does not contain a safety foot switch, contact Victaulic.**

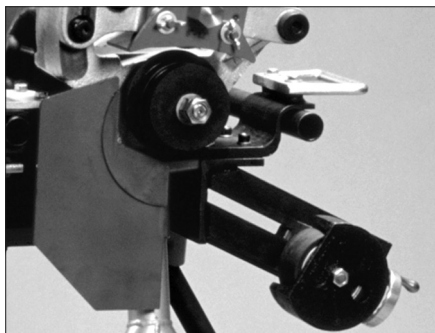
Operating the tool without a safety foot switch could result in serious personal injury.



19. 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 or Ridgid 300 Power Drive, placing the switch in the reverse position will produce clockwise rotation of the chuck, lower roll, and pipe.
20. Depress the safety foot switch, check the rotation of the chuck and lower roll, and ensure that the tool is stable. If rotation is counterclockwise, place the switch on the power drive to the opposite position. If the tool wobbles, ensure that the tool is mounted squarely in the chuck and that the tool is level on the floor. If the wobble persists, the power drive support arms are bent or the power drive is damaged. Have the power drive repaired if the wobble persists.
21. Turn the switch on the power drive to the “OFF” position, or disconnect the power cord from the electrical source.



22a. If the optional stabilizer assembly was ordered separately, attach it to the right side of the tool with the four hex bolts and four lock washers provided.



22b. Use the hex bolts provided for installing the screws.

PRE-OPERATION CHECKS AND ADJUSTMENTS

Every Victaulic roll grooving tool is checked, adjusted, and tested at the factory prior to shipment. However, before attempting to operate the tool, the following checks and adjustments should be made to ensure proper tool operation.

WARNING

- **DO NOT** operate the power drive without a safety foot switch. If the tool does not contain a safety foot switch, contact Victaulic.

Operating the tool without a safety foot switch could result in serious personal injury.

GROOVING ROLLS

Ensure that the proper roll set is installed on the tool for the pipe size and material that will be grooved. Roll sets are marked with the pipe size and part number, and they are color coded for the pipe material. Refer to the “Tool Rating and Roll Selection” section. If the proper rolls are not installed on the tool, refer to the “Roll Changing” section.

CAUTION

- Ensure that roll-retaining bolts and nuts are tight. Loose retaining bolts and nuts could cause damage to the tool and rolls.

PIPE PREPARATION

For proper tool operation and production of grooves that are within Victaulic specifications, the following guidelines must be followed.

1. Victaulic recommends square-cut pipe for use with grooved-end pipe products. Square-cut pipe **MUST** be used with FlushSeal® and EndSeal® gaskets. Beveled-end pipe may be used, provided that the wall thickness is standard wall (ANSI B36.10) or less and that the bevel meets ANSI B16.25 (37½°) or ASTM A-53 (30°). **NOTE:** Roll grooving beveled-end pipe may result in unacceptable pipe flare.
2. Raised internal and external weld beads and seams must be ground flush with the pipesurface 2 inches/50 mm back from the pipe ends.
3. All coarse scale, dirt, and other foreign material must be removed from the interior and exterior surfaces of the pipe ends.

CAUTION

- **For maximum grooving roll life, remove foreign material and loose rust from the interior and exterior surfaces of the pipe ends. Rust is an abrasive material that will wear the surface of grooving rolls.**

Foreign material may interfere with or damage grooving rolls, resulting in distorted grooves and grooves that are out of Victaulic specifications.

GROOVABLE PIPE LENGTHS

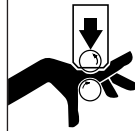
The VE272SFS is capable of grooving short pipe lengths without the use of a pipe stand. Refer to the “Short Pipe Lengths” section below.

Pipe lengths longer than those listed in Table 1 on the following page (and up to 20 feet/6 meters) must be supported with a pipe stand.

Pipe lengths from 20 feet/6 meters up to double-random lengths (approximately 40 feet/12 meters) must be supported with two pipe stands.

SHORT PIPE LENGTHS

WARNING



- **Grooving rolls can crush or cut fingers and hands. Never groove pipe that is shorter than the recommended lengths listed in this manual.**

Table 1 shows the minimum and maximum pipe lengths that can be grooved without the use of a pipe stand. Refer to the “Grooving Operation” section for instructions on how to groove short pipe lengths. For pipe longer than what is shown in Table 1, refer to the “Long Pipe Lengths” section.

NOTICE

- **Grooved pipe/tubing nipples, shorter than those listed in Table 1, are available from Victaulic.**

TABLE 1 – PIPE LENGTHS SUITABLE FOR GROOVING

Steel, Stainless Steel, Aluminum, and PVC Pipe		CTS US Standard ASTM B-88 Copper Tubing Size	Length – inches/mm	
Nominal Size inches/ mm	Actual Outside Dia. inches/ mm		Nominal inches/ Actual mm	Min. Max.
3/4	1.050	–	8	36
20	26.9	–	205	915
1	1.315	–	8	36
25	33.7	–	205	915
1 1/4	1.660	–	8	36
32	42.4	–	205	915
1 1/2	1.900	–	8	36
40	48.3	–	205	915
2	2.375	2	8	36
50	60.3	2	205	915
2 1/2	2.875	2 1/2	8	36
65	73.0	2 1/2	205	915
3	3.500	3	8	36
80	88.9	3	205	915
3 1/2	4.000	–	8	36
90	101.6	–	205	915
4	4.500	4	8	36
100	114.3	4	205	915
4 1/2	5.000	–	8	32
120	127.0	–	205	815
5	5.563	5	8	32
125	141.3	5	205	815
152.4 mm	6.000	–	10	30
	152.4	–	255	765
6	6.625	6	10	28
150	168.3	6	255	715
203.2 mm	8.000	–	10	24
	203.2	–	255	610
8	8.625	8	10	24
200	219.1	8	255	610
10	10.750	–	10	20
250	273.0	–	255	510
12	12.750	–	12	18
300	323.9	–	305	460

Nominal Size Millimeters		Length - millimeters	
European Standard Copper Tubing Size	Australian Standard Copper Tubing Size	Minimum	Maximum
54	DN50	205	915
64	DN65	205	915
66.7		205	915
76.1	DN80	205	915
88.9		205	915
108	DN100	205	915
133	DN125	205	815
159	DN150	255	715

If pipe is required that is shorter than the minimum length listed in Table 1, shorten the next-to-last piece so that the last piece is as long (or longer) than the minimum length specified. Refer to the example below.

EXAMPLE: A 20-foot, 4-inch/6.2-m length of 10-inch/250 mm diameter steel pipe is required to finish a section, and only 20-foot/6.1-m lengths are available. Instead of roll grooving a 20-foot/6.1-m length of steel pipe and a 4-inch/0.1-m length of steel pipe, follow these steps:

1. Refer to Table 1 on this page and note that for 10-inch/250 mm diameter steel pipe, the minimum length that should be roll grooved is 10 inches/255 mm.
2. Roll groove a 19-foot, 6-inch/5.9-m length of pipe and a 10-inch/255-mm length of pipe. Refer to the “Long Pipe/Tubing Lengths” section.

LONG PIPE LENGTHS

When roll grooving pipe that exceeds the maximum length shown in Table 1, a roller-type pipe stand must be used. The roller-type pipe stand must be capable of handling the weight of the pipe, while allowing the pipe to rotate freely.

1. Ensure that the tool is level. Refer to the “Tool Setup” section for leveling requirements.
2. When pipe flare is excessive, right-to-left tracking must be kept to a minimum. It may be necessary to use less than $\frac{1}{2}^\circ$ for the tracking angle.
3. Installation of couplings on pipe that exceeds the maximum allowable flare may prevent pad-to-pad closure of the housings and/or may cause damage to the coupling gasket. Refer to the applicable “Roll Groove Specifications” table for details.
4. If the tool is properly set up in a level position, but the back end of the pipe is higher than the end being grooved, the pipe may not track. As a result, excessive flare may occur on the pipe end. Refer to the “Tool Setup” section and figures 1 and 2 on this page for tool setup and pipe positioning requirements.

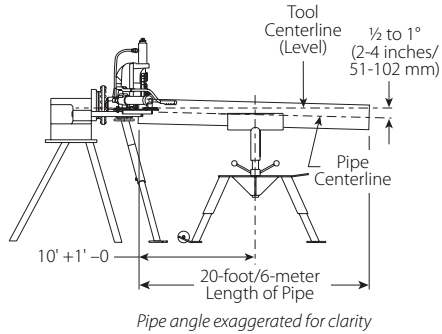


FIGURE 1 - SUPPORT OF PIPE

6. Position the pipe stand approximately $\frac{1}{2}^\circ$ to the left for the tracking angle. Refer to Figure 2 below.

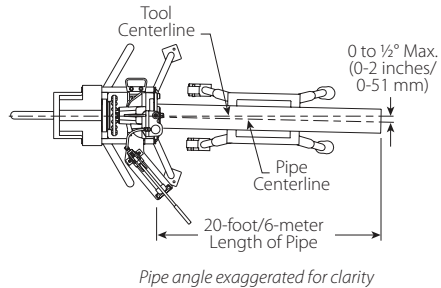


FIGURE 2 - TRACKING ANGLE

NOTICE

- Figure 1 shows a typical pipe stand.
 - Victaulic offers several pipe stands, such as the VAPS112 and VAPS224. Refer to the “Accessories” section for further details.
 - Refer to the manual provided with the pipe stand for additional information regarding setup and maintenance.
5. Place the pipe stand at a distance slightly beyond half the pipe length from the tool. Refer to Figure 1 on this page.

ROLL GUARD ADJUSTMENT

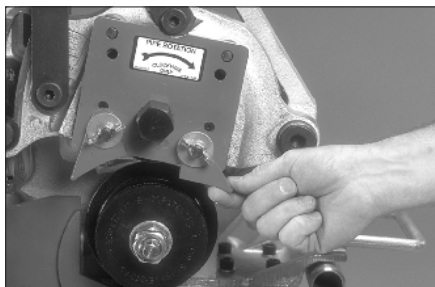
WARNING

- Before making any tool adjustments, always disconnect the power cord from the electrical source.

Accidental startup of the tool could result in serious personal injury.

VE272SFS guards must be adjusted every time rolls are changed or when the pipe size or wall thickness is different from pipe that was grooved previously.

1. Make sure the proper roll set is installed on the tool for the pipe size and material that will be grooved. Roll sets are marked with the pipe size/part number, and they are color-coded for the pipe material. Refer to the “Tool Rating and Roll Selection” section. If the proper rolls are not installed on the tool, refer to the “Roll Changing” section.



2. Loosen the wing nuts, and move the roll guards to the full-up position. Tighten the wing nuts.

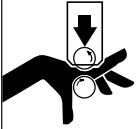


3. Set the groove diameter stop to the pipe size and schedule/thickness that will be grooved. To set the groove diameter stop, back off the depth adjuster lock, align the depth adjuster with the proper diameter and thickness, and lock the setting in position with the depth adjuster lock.



4. If the tool is equipped with a stabilizer, retract the stabilizer, if necessary, to insert the pipe. To retract the stabilizer, loosen the stabilizer locking handle, and retract the stabilizer roller with the hand wheel to provide clearance for the pipe when it is inserted onto the lower roll.

! WARNING



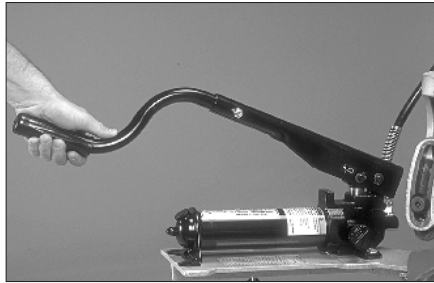
Grooving rolls can crush or cut fingers and hands.

- Before making any tool adjustments, always disconnect the power cord from the electrical source.

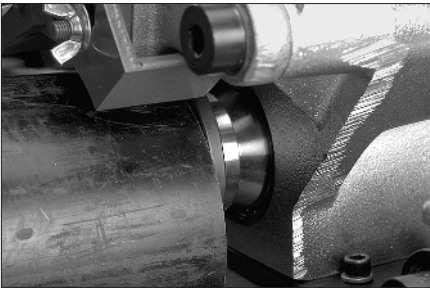
- Loading and unloading pipe will place your hands close to the rollers. Keep hands away from the grooving rolls during operation.
- Never reach inside the pipe end or across the tool or pipe during operation.
- Always groove pipe in a direction that rotates away from the operator.
- Never groove pipe that is shorter than the recommended lengths listed in this manual.
- Never wear loose clothing, loose gloves, or anything that can become entangled in moving parts.



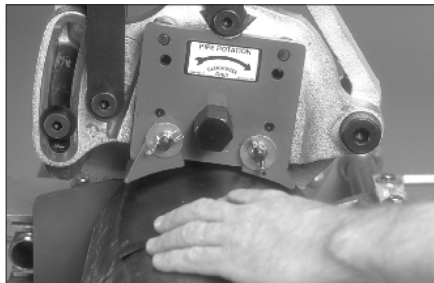
6. Close the hand pump valve by turning the knob **clockwise**.



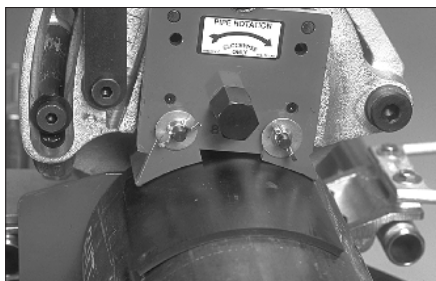
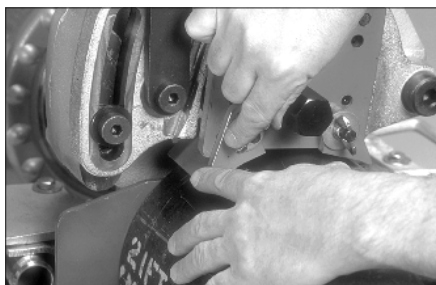
7. Using the hand pump, bring the upper roll down into firm contact with the pipe.



5. Insert a length of pipe of the correct size and schedule/ thickness over the lower roll with the pipe end against the lower roll backstop flange. Refer to the "Pipe/Tubing Preparation" section.



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



9. Loosen the wing nuts, and adjust each guard to conform to and lightly pinch the guard-setting pad against the pipe. Tighten the wing nuts to secure the guards into position.
10. Remove the guard-setting pad. Store the pad back on the hook provided under the pump support.

PIPE STABILIZER ADJUSTMENT

(Applies only to tools equipped with the optional pipe stabilizer)

The optional pipe stabilizer for the VE272SFS is designed to prevent pipe sway for 8 – 12-inch/ 200 – 300 mm NPS sizes in short and long lengths. When the stabilizer is adjusted for a selected pipe size and wall thickness, it does not require further adjustment unless pipe of a different size and wall thickness will be grooved. Pipe of the same size and thickness may be moved in and out of the tool without retracting the stabilizer.

WARNING

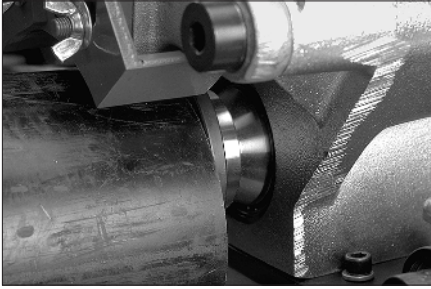
- **Before making any tool adjustments, always disconnect the power cord from the electrical source.**

Accidental startup of the tool could result in serious personal injury.

1. Make sure the proper roll set is installed on the tool for the pipe size and material to be grooved. Rolls are marked with the pipe size, part number, and they are color-coded according to the pipe material. Refer to the “Tool Rating and Roll Selection” section.



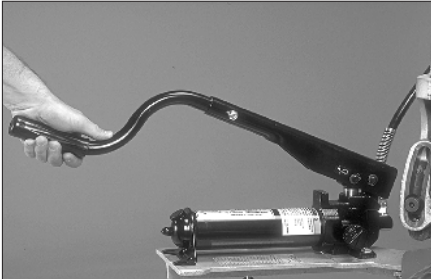
2. Loosen the stabilizer locking handle. Using the hand wheel, retract the stabilizer roller to clear the pipe when it is inserted onto the lower roll.



3. Insert a length of pipe that is the correct size and schedule over the lower roll. Make sure the pipe end contacts the lower-roll backstop flange.



4. Close the hand pump valve by turning the knob **clockwise**.



5. Using the hand pump, bring the upper roll down into firm contact with the pipe.
6. Make sure the guards are adjusted properly. Refer to the "Roll Guard Adjustment" section.

⚠ CAUTION

- **DO NOT** adjust the stabilizer to push the pipe to the left and off center from the rolls. Increased pipe-end flare and shortened roll life will result if the pipe is pushed to the left and off center.
- **Assembly of couplings on pipe that exceeds the maximum allowable flare dimension may prevent proper pad-to-pad assembly of coupling housings and may cause gasket distortion/damage.**

Failure to prepare pipe in accordance with all instructions may cause joint failure, resulting in personal injury and/or property damage.



7. Using the hand wheel, advance the stabilizer roller inward until the roller lightly contacts the pipe. Tighten the stabilizer locking handle. Refer to figures 3 and 4 on the next page for proper positioning.
8. Complete all adjustments and groove the pipe. Refer to the "Grooving Operation" section. Observe the stabilizer roller while grooving. It should remain in contact with the pipe, and the pipe should rotate smoothly without swaying from side to side. If the pipe is not rotating smoothly or is swaying from side to side, adjust the stabilizer roller further inward. Continue the grooving operation and make further adjustments, as necessary. **DO NOT** adjust the stabilizer too far inward, since it will skew the pipe to the left and off center, resulting in excessive pipe-end flare.

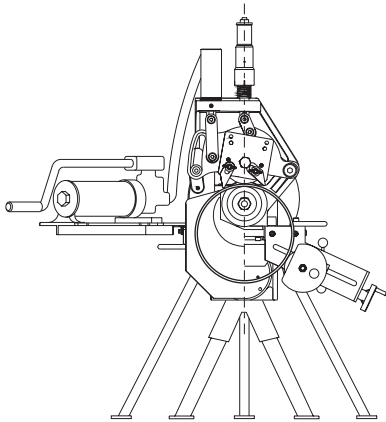


FIGURE 3 - "CORRECT"

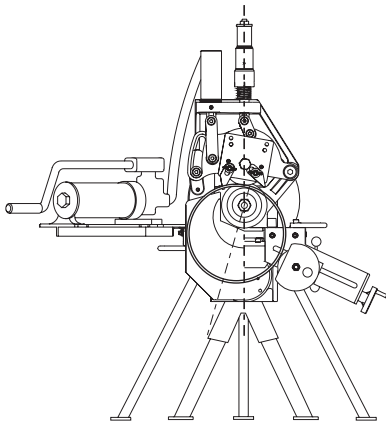


FIGURE 4 - "INCORRECT"

GROOVE DIAMETER STOP ADJUSTMENT

The groove diameter stop must be adjusted for each pipe size or change in wall thickness. The groove diameter, which is identified as the "C" dimension," is listed under the "Roll Groove Specifications" section. In addition, a label is affixed to the tool, which lists the "C" dimensions.

NOTICE

- **The groove diameter stop must be adjusted for each pipe size or change in wall thickness.**
- **The groove diameter, which is identified as the "C" dimension, is listed under the "Roll Groove Specifications" section.**
- **To perform the following adjustments, use several scrap sections of pipe that are the proper material, diameter, and thickness. Make sure the scrap sections meet the length requirements listed in Table 1.**

To achieve the proper diameter:

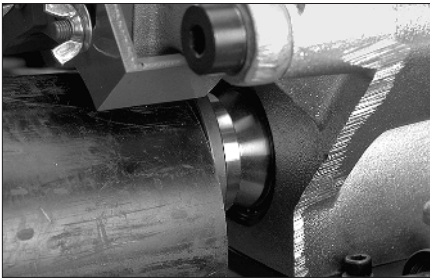
- a. Determine the diameter and thickness of the pipe to be grooved.
- b. Locate the proper pipe diameter and thickness on the pipe-size indicator label of the depth stop. The depth stop can be rotated for easy viewing.



1. Back off the depth adjuster lock. Align the top edge of the depth adjuster with the line down and to the right of the proper size and schedule markings, as shown above. Lock the depth adjuster in position with the depth adjuster lock.

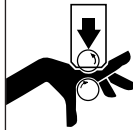
NOTICE

- The markings provide an approximate groove diameter adjustment and are not exact groove diameter settings. Variations in pipe OD and wall thickness make it impossible to calibrate the groove diameter stop exactly.



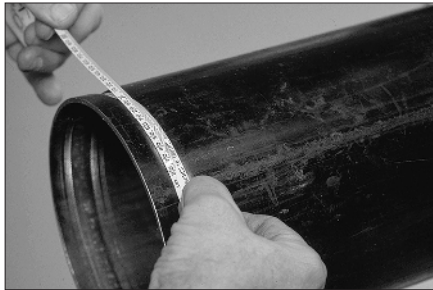
2. Insert a length of pipe over the lower roll with the pipe end against the lower-roll backstop flange.
3. Prepare a trial groove. Refer to the "Grooving Operation" section.

WARNING



Grooving rolls can crush or cut fingers and hands.

- Before making any tool adjustments, always disconnect the power cord from the electrical source.
- Loading and unloading pipe will place your hands close to the rollers. Keep hands away from the grooving rolls during operation.
- Never reach inside the pipe end or across the tool or pipe during operation.
- Always groove pipe in a direction that rotates away from the operator.
- Never groove pipe that is shorter than the recommended lengths listed in this manual.
- Never wear loose clothing, loose gloves, or anything that can become entangled in moving parts.



4. After a trial groove is prepared and the pipe is removed from the tool, carefully check the "C" dimension. Refer to "Roll Groove Specifications". The PT-100 Pipe Tape, supplied with the tool, is the best method for checking the "C" dimension. Alternately, a vernier caliper or narrow-land micrometer may be used to check this dimension at two locations (90° apart) around the groove. The average reading must be within the required groove diameter specification.

⚠ CAUTION

- The “C” dimension (groove diameter) and maximum allowable flare must conform to Victaulic specifications to ensure proper joint performance.
- The “C” dimension (groove diameter) must be within specification for the diameter and wall thickness of pipe. The groove diameter should be checked and adjusted, as necessary, to ensure grooves remain within specification.

Failure to follow these instructions could cause joint failure, resulting in personal injury and/or property damage.

- 5a. If the groove diameter (“C” dimension) is not within Victaulic specifications, the diameter stop must be adjusted.
- 5b. To adjust for a smaller groove diameter, turn the depth adjuster **counterclockwise** (when viewed from above the tool).
- 5c. To adjust for a larger groove diameter, turn the depth adjuster **clockwise** (when viewed from above the tool).

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.

6. Prepare another trial groove, and check the groove diameter (“C” dimension), as described in step 4. Repeat these steps, as necessary, until the groove diameter is within specification.

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

- This tool must be used **ONLY** for roll grooving pipe designated in the “Tool Rating and Roll Selection” section of this manual.

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

1. Before grooving, ensure that all instructions in the previous sections of this manual have been followed.
2. Plug the power drive into an internally grounded electrical source. **NOTE:** The power drive **MUST** be grounded. Refer to the power drive manufacturer’s instructions for detailed information.



- Set the power drive switch to produce **clockwise** rotation of the lower roll when viewed from the front of the tool. On the Victaulic VPD752 Power Drive and Ridgid 300 Power Drive, place the switch in the reverse position to produce clockwise rotation of the lower roll.

WARNING

- The power drive must be operated with a safety foot switch. If the power drive is not supplied with a safety foot switch, contact Victaulic.

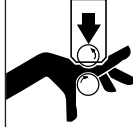
Operating the tool without a safety foot switch could result in serious personal injury.

- Make sure the tool is operational by depressing the safety foot-switch pedal. The lower roll must turn **clockwise** when viewed from the front of the tool. Remove foot from the safety foot switch.



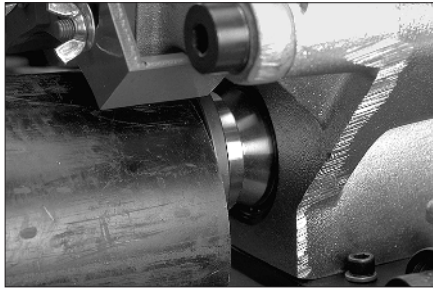
- Open the hand pump valve by turning the knob **counterclockwise**. Opening the hand pump valve will allow the upper roll and arm to move to the full up position.

WARNING



Grooving rolls can crush or cut fingers and hands.

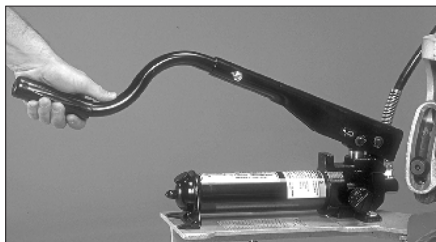
- Before making any tool adjustments, always disconnect the power cord from the electrical source.
- Loading and unloading pipe will place your hands close to the rollers. Keep hands away from the grooving rolls during operation.
- Never reach inside the pipe end or across the tool or pipe during operation.
- Always groove pipe in a direction that rotates away from the operator.
- Never groove pipe that is shorter than the recommended lengths listed in this manual.
- Never wear loose clothing, loose gloves, or anything that can become entangled in moving parts.



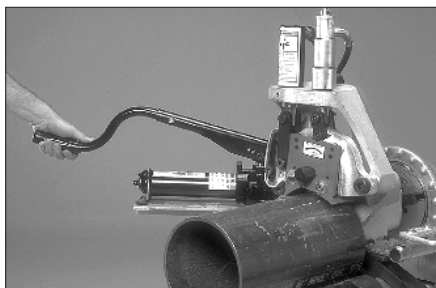
- Insert a length of pipe that is the correct size and thickness onto the lower roll. Make sure the pipe end contacts the lower-roll backstop flange completely. If the pipe is being supported with a pipe stand, remove hands from the pipe.



7. Close the hand pump valve by turning the knob **clockwise**.



- 8a. Use the hand pump to bring the upper roll down into firm contact with the pipe.
- 8b. If grooving a short length of pipe, remove hands from the pipe. Refer to the "Short Pipe Lengths" section for requirements.



9. Depress and hold down the safety foot-switch pedal. The pipe will begin to rotate clockwise. As the pipe rotates, begin the grooving process by slowly pumping the handle of the hand pump.

NOTICE

- **DO NOT** pump the handle too fast. The rate should be sufficient to groove the pipe and maintain an audible, moderate-to-heavy load on the power drive motor.



10. Continue the grooving process until the depth stop makes firm contact with the top of the tool body. Continue to rotate the pipe for one to three revolutions to ensure groove completion.
- 11a. Release the safety foot switch pedal, and withdraw foot from the safety foot switch.

⚠ WARNING

- **DO NOT** place hands inside the pipe end or in the area of the grooving rolls or stabilizer roller while the pipe is still rotating.

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

- 11b. If a short length of pipe is in the tool, manually support the pipe.



12. To release the pipe, open the hand pump valve by turning the knob counterclockwise. Remove the pipe from the tool.

NOTICE

- **The groove diameter must be within specification for the diameter and wall thickness of pipe. The groove diameter should be checked and adjusted, as necessary, to ensure grooves remain within specification.**

ROLL CHANGING

WARNING

- **Before making any tool adjustments, always disconnect the power cord from the electrical source.**

Accidental startup of the tool could result in serious personal injury.

The VE272SFS roll grooving tool is designed with rolls to accommodate several pipe sizes, which eliminates the need for frequent roll changes.

An upper roll and a “keyless” lower roll for 8 – 12-inch/200 – 300 mm steel pipe are factory installed on the tool. When 2 – 6-inch/ 50 – 150 mm steel pipe or other pipe materials are required for grooving, the upper and lower rolls must be changed. Refer to the following sections:

1. “Upper Roll Removal” section
2. “Lower Roll Removal for 2-inch/50 mm and Larger Sizes” section
3. “Lower Roll Installation for 2-inch/50 mm and Larger Sizes” section
4. “Upper Roll Installation” section

When 1½-inch/40 mm and smaller size steel pipe is required for grooving, the optional lower roll/adaptor assembly for ¾-inch/20 mm and 1 – 1½-inch/25 – 40 mm steel pipe must be ordered and installed. In addition, the correct upper roll for steel pipe must be installed. To accomplish this, the upper and lower rolls and the arbor for 2-inch/50 mm and larger sizes must be removed. Refer to the following sections:

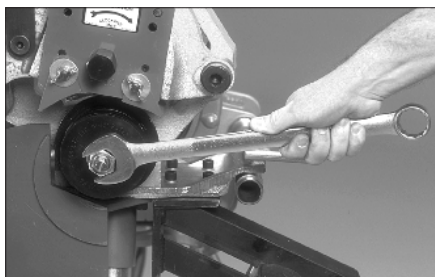
1. “Upper Roll Removal” section
2. “Lower Roll Removal for 2-inch/50 mm and Larger Sizes” section
3. “Arbor Removal” section
4. “Lower Roll/Adapter Assembly Installation” section
5. “Upper Roll Installation” section

In addition, different pipe materials may require different rolls. For proper roll selection, refer to the “Tool Rating and Roll Selection” section.

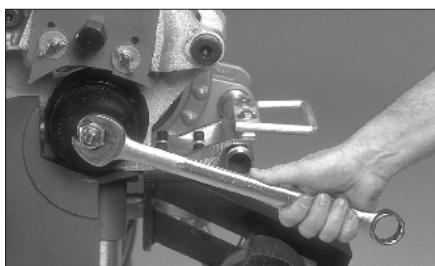
LOWER ROLL REMOVAL FOR 2-INCH/ 50 MM AND LARGER SIZES



1. Open the hand pump valve by turning the knob **counterclockwise**. Opening the hand pump valve will allow the upper roll and arm to move to the full up position.



2. Using a wrench, loosen (**counterclockwise**) and remove the thin jam nut that secures the thicker nut onto the threaded stud of the arbor.



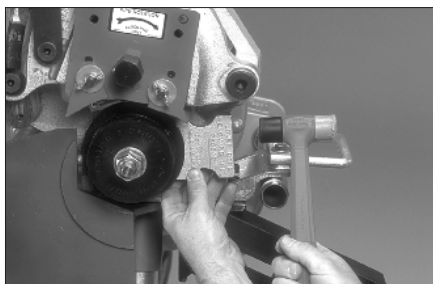
3. Using a wrench, loosen (**counterclockwise**) the thicker nut on the threaded stud of the arbor. Back off the nut approximately $\frac{1}{4}$ inch/6 mm without removing it from the threaded stud of the arbor.

WARNING



- **DO NOT** strike the lower roll/main shaft with a hammer or other blunt object.

Striking the lower roll/main shaft can cause fragmentation, resulting in serious personal injury.

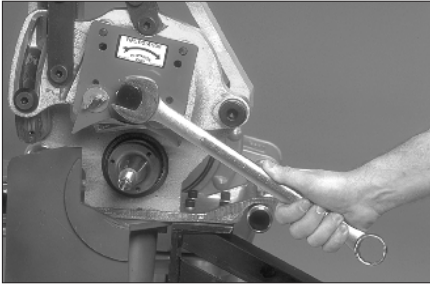


4. To loosen the lower roll from the arbor, use the aluminum wedge supplied with the tool. Place the aluminum wedge behind the lower roll, and strike the wedge with a soft-faced hammer to break the roll loose from the arbor. **DO NOT STRIKE THE ROLL DIRECTLY WITH A HAMMER.**

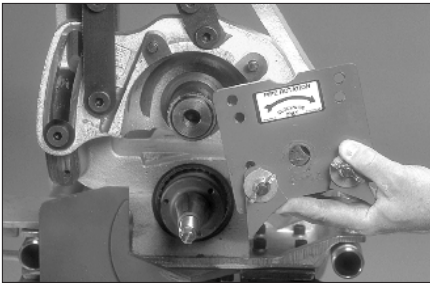


5. Remove the thick nut, washer, and lower roll. Store these items in a clean, dry location.

UPPER ROLL REMOVAL



1. Using a wrench, loosen (**counterclockwise**) and remove the bolt from the upper roll. Store the bolt in a clean, dry location.

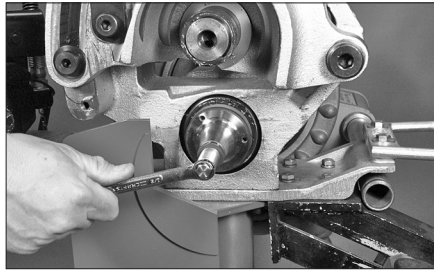


2. Remove the upper roll assembly. Store the upper roll in a clean, dry location.

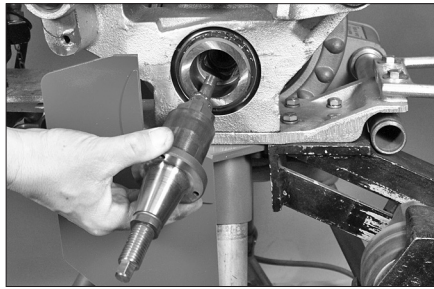
ARBOR REMOVAL

This procedure is necessary for grooving smaller-size pipe or for replacing a damaged arbor. The standard arbor installed in the tool is specifically for 2 – 12-inch/50 – 300 mm pipe. When it is necessary to groove 1½-inch/40 mm and smaller size pipe, the optional lower roll/adaptor assembly must be ordered and installed.

1. Refer to the “Lower Roll Removal for 2-inch/50 mm and Larger Sizes” section to remove the lower roll.



2. With a wrench engaged on the exposed hex-portion stud of the arbor, loosen the arbor by turning **counterclockwise**.
NOTE: The arbor should move outward as it is being loosened.



3. When the arbor has stopped moving outward, pull the arbor out of the tool. Store the arbor in a clean, dry location.

NOTICE

- If the arbor was insufficiently lubricated, it may be difficult to remove it from the drive shaft.
- The arbor features three ¼ – 20 UNC tapped holes so that jack bolts (not supplied) can be used to push the arbor out of the tool.

CAUTION

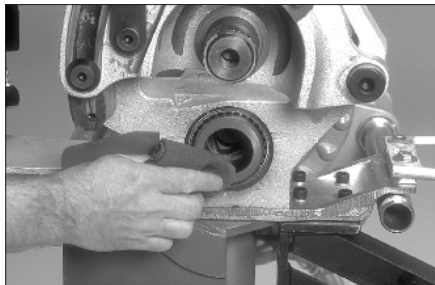
- NEVER operate the tool with jack bolts installed in the arbor.

Failure to follow this instruction will result in improper tool operation and tool damage.

NOTICE

- The ¾-inch/20 mm and 1 – 1½-inch/25 – 40 mm lower roll/adaptor assembly is held in position with left-hand threads and must be tightened by turning **COUNTERCLOCKWISE**.

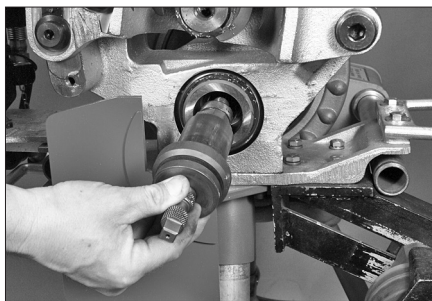
LOWER ROLL/ADAPTER ASSEMBLY INSTALLATION FOR ¾-INCH/20 MM AND 1 – 1½-INCH/25 – 40 MM SIZES



1. Using a soft cloth, clean the bore of the main shaft and the lower roll/adaptor assembly.



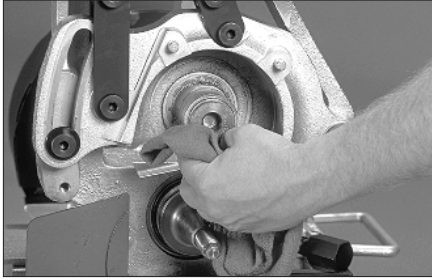
2. Lightly lubricate the lower roll/adaptor assembly with dry graphite spray (supplied with the tool and available from Victaulic).



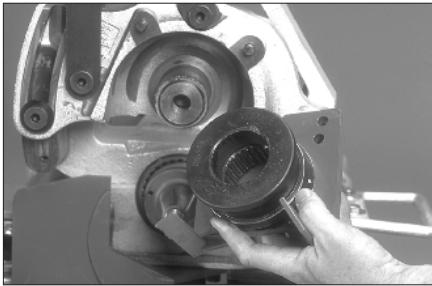
3. Carefully insert the lower roll/adaptor assembly into the main shaft. Make sure the lower roll/adaptor assembly is fully seated on the main shaft. It may be necessary to rotate the lower roll/adaptor assembly to align its square end with the square bore in the main shaft. Tighten the lower roll/adaptor assembly by turning **counterclockwise**.

UPPER ROLL INSTALLATION

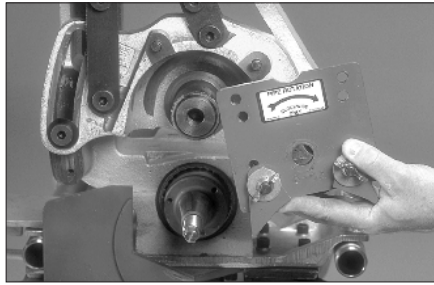
Refer to the “Tool Rating and Roll Selection” section for information regarding grooving rolls.



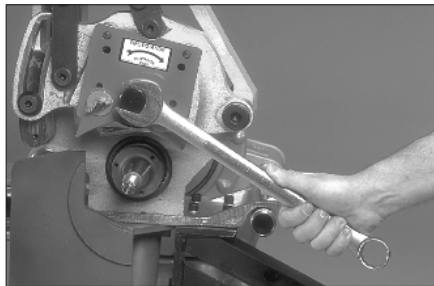
1. Before installing the upper roll, clean any dirt and scale from all shaft surfaces and roll bores.



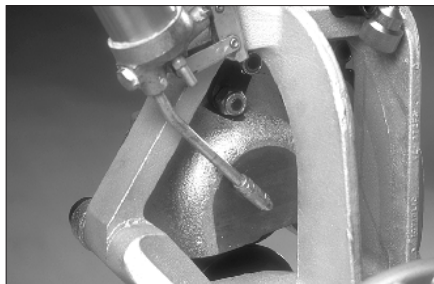
2. While the upper roll is removed from the tool, inspect the internal roller bearing for contamination, proper lubrication, and freedom of movement. In addition, inspect the guards for wear and freedom of movement. Repair or replace damaged components, as necessary.



3. Carefully slide the desired upper roll assembly onto the upper shaft with the red plate facing out. Loosen the guards, if necessary, to ease installation. Make sure the red plate engages the two pins on the arm and that it contacts the front of the upper roll shaft.



4. Insert the bolt for the upper roll. Tighten the bolt (**clockwise**) securely with a wrench.



5. Lubricate the upper roll bearing. Refer to the “Maintenance” section for additional maintenance information.

**LOWER ROLL/ADAPTER ASSEMBLY
REMOVAL FOR 3/4-INCH/20 MM AND
1 – 1½-INCH/25 – 40 MM SIZES**



1. Open the hand pump valve by turning the knob **counterclockwise**. Opening the hand pump valve will allow the upper roll and arm to move to the full up position.

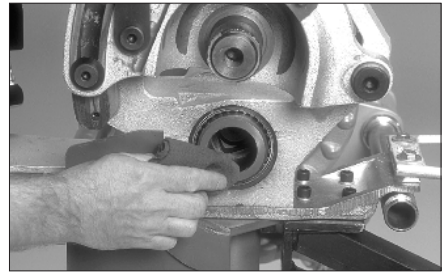
NOTICE

- The 3/4-inch/20 mm and 1 – 1½-inch/ 25 – 40 mm lower roll/adapter assembly is held in position with left-hand threads and must be removed by turning **CLOCKWISE**.

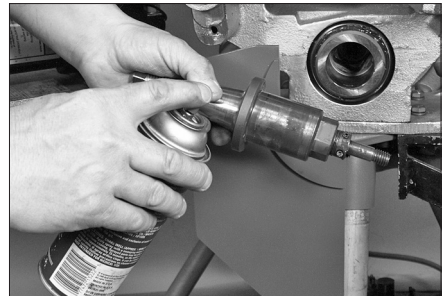


2. Using a wrench engaged on the square end of the lower roll/adapter assembly, remove the lower roll/adapter assembly by turning clockwise. Store the lower roll/adapter assembly in a clean, dry location.

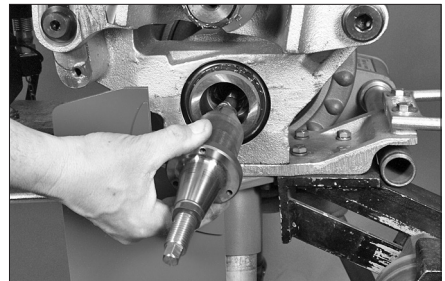
ARBOR INSTALLATION



1. Using a soft cloth, clean the bore of the main shaft and the arbor.



2. Lightly lubricate the arbor with dry graphite spray (supplied with the tool and available from Victaulic).



3. Carefully insert the arbor into the main shaft. Make sure the arbor is fully seated in the main shaft. It may be necessary to rotate the arbor to align its square end with the square bore in the main shaft. Tighten the arbor into the main shaft by turning the exposed hex-portion of the threaded stud **clockwise**.

- 4a. Install the lower roll for the correct size and pipe material by referring to the “Lower Roll Installation” section.
- 4b. Make sure the upper roll is installed for the correct pipe size and material.

LOWER ROLL INSTALLATION FOR 2-INCH/50 MM AND LARGER SIZES

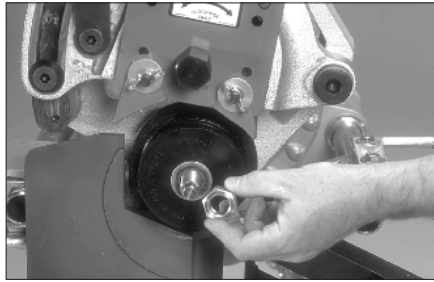
NOTICE

- The arbor must be installed before attempting to install the lower roll. Refer to the “Arbor Installation” section.

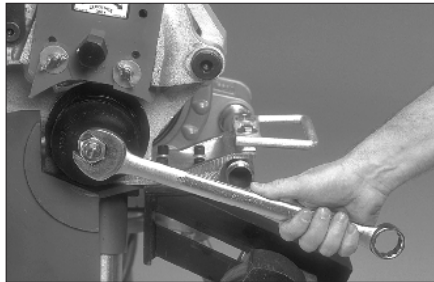
CAUTION

- Ensure that the square drive flats of the roll are aligned properly with the square drive flats of the arbor.
- Make sure the thick nut is tightened securely onto the threaded stud of the arbor.

Failure to follow these instructions can result in the lower roll slipping on the arbor and causing damage to the arbor.



2. Install the flat washer and thick nut onto the threaded stud of the arbor in front of the lower roll. Tighten the thick nut **clockwise** securely with a wrench.

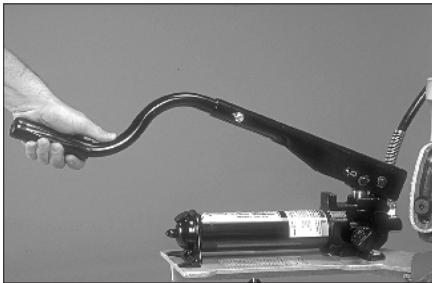


3. Install the thin jam nut onto the threaded stud of the arbor. Using a wrench, tighten the thin jam nut **clockwise** securely against the thick nut.



1. Place the lower roll onto the arbor. Re-position the roll guards, if necessary, to ease assembly. Make sure the lower roll fits fully onto the arbor. **NOTE:** The square drive flats of the roll must be aligned with the square drive flats of the arbor.

4. Close the hand pump valve by turning the knob **clockwise**.





5. Pump the hand pump several times until the upper roll interlocks with the lower roll. This will confirm proper roll installation.



6. Open the hand pump valve by turning the knob **counterclockwise**.
7. Lower roll installation for 2-inch/50 mm and larger sizes is now complete. Before grooving, follow all steps in the “Pre-Operation Checks and Adjustments” section.

MAINTENANCE

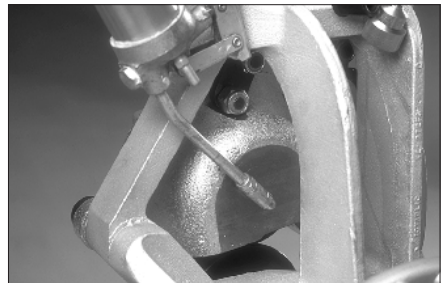
 DANGER	
	<ul style="list-style-type: none"> • Before performing any maintenance on the tool, disconnect the power cord from the electrical source. <p>Failure to follow this instruction could result in death or serious personal injury.</p>

This section provides information about keeping tools in proper operating condition and guidance for making repairs, when necessary. Preventive maintenance during operation will pay for itself in repair and operating savings.

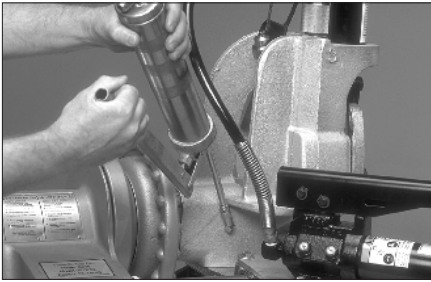
Replacement parts must be ordered from Victaulic to ensure proper and safe operation of the tool.

LUBRICATION

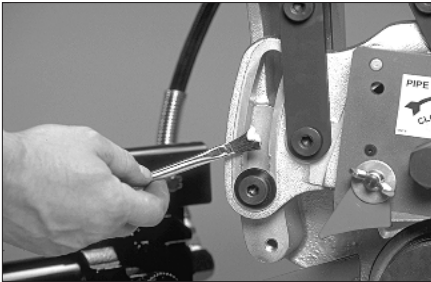
1. After every eight hours of operation, lubricate the machine. Always lubricate the upper roll bearings when rolls are changed.



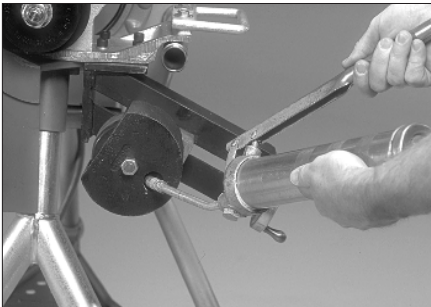
2. Grease the upper roll bearing at the grease fitting with a No. 2EP lithium-base grease, as shown above.



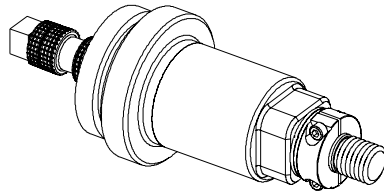
- Grease the main shaft bearings at the grease fitting with a No. 2EP lithium-base grease, as shown above.



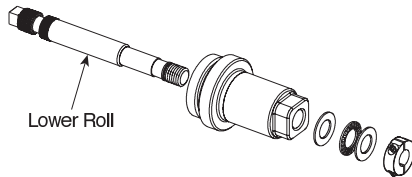
- Lubricate the linkage mechanisms, the arm pivot point, and the arm sliding surfaces with a heavy-duty spray lubricant, or grease may be applied by hand.



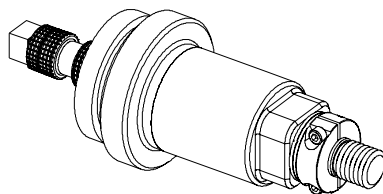
- For tools equipped with the optional pipe stabilizer:** Lubricate the stabilizer wheel with a No. 2EP lithium-base grease, as shown above.



- After every forty hours of operation, clean and lubricate the $\frac{3}{4}$ -inch/20 mm lower roll (if equipped) and the 1 – $1\frac{1}{2}$ -inch/25 – 40 mm lower roll.



- Remove the cap screws, and disassemble the two-piece collar. Remove both the collar and the needle bearing, along with the washers.
- Remove the lower roll from the arbor. Clean the $\frac{3}{4}$ -inch/20 mm lower roll (if equipped) and the 1 – $1\frac{1}{2}$ -inch/25 – 40 mm lower roll. Lightly lubricate the lower rolls with dry graphite spray (supplied with the tool and available from Victaulic).



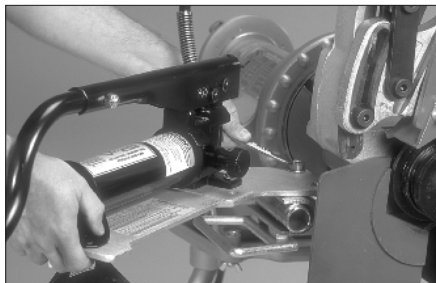
- Re-assemble the $\frac{3}{4}$ -inch/20 mm lower roll (if equipped) and the 1 – $1\frac{1}{2}$ -inch/25 – 40 mm lower roll. Lubricate the needle bearing with bearing grease. Make sure the end gaps are uniform on the two-piece collar.

CHECKING AND FILLING HYDRAULIC SYSTEMS

The hydraulic fluid level in the hand pump must be checked semi-annually or if the pump feels “spongy.”



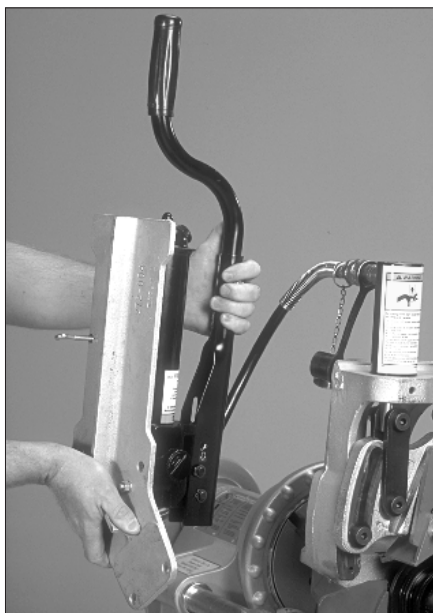
1. Open the hand pump valve by turning the knob **counterclockwise**.



2. Remove the hand pump/pump support from the tool base.

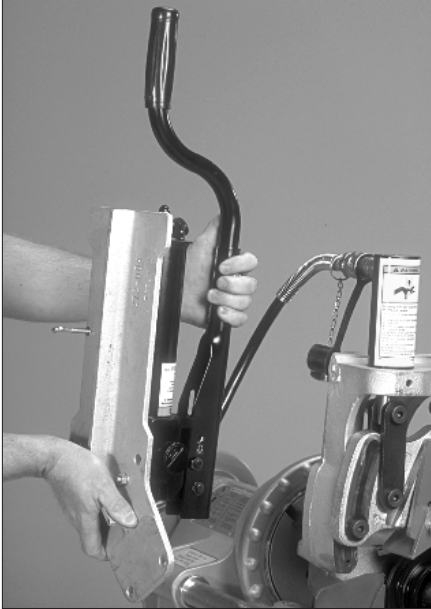


3. Loosen, but do not remove, the hydraulic fill plug/dipstick at the back end of the pump.



4. Hold the hand pump so that the fill plug end is **above** the hydraulic cylinder. This will prevent siphoning of oil from the hydraulic cylinder through the hand pump.
5. Check the fluid level. Add hydraulic jack oil (ISO 32) to the proper level, as required. On models without a dipstick, remove the cap. The oil should be approximately $\frac{1}{2}$ – 1 inch/13 – 25 mm from the end.

AIR BLEEDING



1. To bleed air from the system, hold the entire hand pump above the hydraulic cylinder. Close the hand pump valve by turning the knob **clockwise**. Open the fill plug one full turn.
2. Pump the hand pump several times to build pressure.
3. Open the hand pump valve by turning the knob **counterclockwise**, and allow air to escape.
4. Repeat steps 1 to 3 several times to bleed all air from the system.
5. Check the oil level. Add more oil, if necessary.
6. Continue to hold the pump above the hydraulic cylinder, and close the fill plug.
7. Install the hand pump/pump support securely to the tool by following steps 15 to 17 of the "Tool Setup" section.

PARTS ORDERING INFORMATION

When ordering parts, the following information is required for Victaulic to process the order and send the correct part(s). Request the RP-272SFS Repair Parts List for detailed drawings and parts listings.

1. Tool Model Number – VE272SFS
2. Tool Serial Number – The serial number is stamped onto the tool body
3. Quantity, Part Number, and Description – For example, (1), R029266MCH, Main Shaft
4. Where to Send the Part(s) – Company name and address
5. To Whose Attention to Send the Part(s)
6. Purchase Order Number

Order parts from Victaulic at the address listed in this manual.

ACCESSORIES

VAPS 112 VICTAULIC ADJUSTABLE PIPE STAND



The Victaulic VAPS 112 is a portable, adjustable, roller-type pipe stand that contains four legs for additional stability. Ball transfer rollers, adjustable for $\frac{3}{4}$ – 12-inch/20 – 300 mm pipe, accommodate linear and rotational movement. The turnstile design permits ease of grooving for both pipe ends. Contact Victaulic for details.

VAPS 224 VICTAULIC ADJUSTABLE PIPE STABILIZER ASSEMBLY STAND

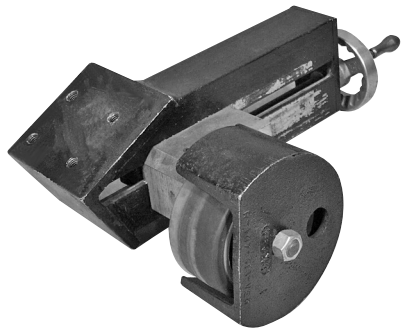


The Victaulic VAPS 224 contains features that are similar to the VAPS 112, but it is suitable for 2 – 24-inch/50 – 600 mm pipe sizes. Contact Victaulic for details.

VPD752 POWER DRIVE



The Victaulic VPD752 Power Drive can be used as the power drive unit for several different roll grooving tool models with the correct base plate. The power drive utilizes a 60 Hz universal motor and requires 115V/1 Phase, 15 amps of power. A safety foot switch is included for proper operation. Contact Victaulic for details.



A pipe stabilizer is available to prevent pipe sway on 8 – 12-inch/200 – 300 mm pipe sizes. Contact Victaulic for details.

OPTIONAL ROLLS

Refer to the “Tool Rating and Roll Selection” section for rolls that are available for different materials and groove specifications.

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TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe will not stay in grooving rolls.	Incorrect pipe positioning of long pipe length.	Refer to the "Long Pipe Lengths" section.
	Lower roll and pipe are not rotating clockwise.	Flip the switch on the power drive to the opposite rotation position.
Pipe stops rotating during grooving.	Rust or dirt buildup is present on the lower roll.	Remove rust or dirt accumulation from the lower roll with a stiff wire brush.
	Rust or dirt is excessively heavy inside the pipe end.	Remove heavy rust and dirt from inside the pipe end.
	Worn grooving rolls.	Inspect the lower roll for worn knurls. Replace the lower roll if excessive wear is present.
	Power drive has stalled due to excessive pumping of the hand pump.	Support the pipe. Open the hand pump valve by turning the knob counterclockwise. Close the hand pump valve by turning the knob clockwise. Continue grooving by pumping the hand pump at a moderate rate.
	The circuit breaker has tripped or a fuse has blown out on the electrical circuit that supplies the power drive.	Reset the breaker, or replace the fuse.
The tool will not groove the pipe.	Pipe is beyond the wall thickness capacity of the tool.	Refer to the "Tool Ratings" section.
While grooving, loud squeaks or echo	Pipe material is excessively hard.	Refer to the "Tool Ratings" section.
	Incorrect pipe support positioning of long pipe. Pipe is "over-tracking."	Move the pipe support to the right. Refer to the "Long Pipe Lengths" section.
	Pipe end is not cut square.	Cut the pipe end squarely.
	Pipe is rubbing excessively on the lower roll backstop flange.	Remove the pipe from the tool, and apply a light coating of grease to the face of the lower roll backstop flange, as needed.
During grooving, loud thumps or bangs occur approximately 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.

TROUBLESHOOTING (CONTINUED)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe flare is excessive.	Pipe support adjusted too high for long pipe.	Refer to the "Long Pipe Lengths" section.
	Tool is tilted forward (out of level) while grooving long pipe.	Refer to the "Tool Setup" section.
	Incorrect pipe support positioning of long pipe. Pipe is "over-tracking".	Move the pipe support to the right. Refer to the "Long Pipe Lengths" section.
	Pipe stabilizer is adjusted too far inward.	Back off the pipe stabilizer to the furthest point where it still stabilizes the pipe effectively.
Larger diameter pipe sways or vibrates from side to side.	Incorrect pipe stabilizer adjustment.	Move the pipe stabilizer in or out until the pipe rotates smoothly.
	Optional pipe stabilizer was not purchased, installed, or used.	Purchase, install, or use the optional pipe stabilizer.
The tool will not groove the pipe.	Hand pump valve is not closed tightly.	Tighten the hand pump valve by turning the knob clockwise.
	Improper feed rate.	Advance the feed at the rate specified in the "Grooving Operation" section.
	Hand pump is low on oil.	Refer to the "Maintenance" section.
	Air is present in the hydraulic system.	Refer to the "Maintenance" section.
	Pipe is beyond the wall thickness capacity of the tool.	Refer to the "Tool Rating and Roll Selection" section.
Pipe grooves do not meet Victaulic specifications.	Groove diameter stop is not adjusted correctly.	Refer to the "Groove Diameter Stop Adjustment" section.
	Pipe is beyond the wall thickness capacity of the tool.	Refer to the "Tool Rating and Roll Selection" section.
The "A" Gasket Seat or "B" Groove Width dimensions do not meet Victaulic specifications.	Upper roll bearing is not lubricated adequately.	Refer to the "Maintenance" section.
	Incorrect upper roll, lower roll, or both installed on the tool.	Install the correct rolls. Refer to the "Tool Rating and Roll Selection" section.

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

TOOL RATING AND ROLL SELECTION

ORIGINAL GROOVE SYSTEM AND “ES” ROLLS FOR STEEL AND STAINLESS STEEL PIPE – COLOR-CODED BLACK

(For light-wall stainless steel pipe, refer to separate table)

Pipe Size		Dimensions - inches/millimeters				OGS Roll Part Numbers	“ES” Roll Part Numbers
Nominal Size inches or mm	Actual Outside Diameter inches/mm	Steel Pipe Wall Thickness †		Stainless Steel Pipe Wall Thickness *			
		Minimum	Maximum	Minimum	Maximum		
¾	1.050 26.9	0.065 1.7	0.113 2.9	0.065 1.7	0.113 2.9	Lower Roll R9A0268L01 Upper Roll R9A0268U02	—
1	1.315 33.7	0.065 1.7	0.133 3.4	0.065 1.7	0.133 3.4	Lower Roll R9A1268L02 Upper Roll R9A0268U02	—
1¼	1.660 42.4	0.065 1.7	0.140 3.6	0.065 1.7	0.140 3.6		
1½	1.900 48.3	0.065 1.7	0.145 3.7	0.065 1.7	0.145 3.7		
2	2.375 60.3	0.065 1.7	0.154 3.9	0.154 3.9	0.154 3.9	Lower Roll R902272L03	Lower Roll RZ02272L03
2½	2.875 73.0	0.083 2.1	0.203 5.2	0.203 5.2	0.203 5.2		
3	3.500 88.9	0.083 2.1	0.216 5.5	0.216 5.5	0.216 5.5	Upper Roll R9A2268U06	Upper Roll RZA2268U03
3½	4.000 101.6	0.083 2.1	0.226 5.7	0.226 5.7	0.226 5.7		
4	4.500 114.3	0.083 2.1	0.375 9.5	0.237 6.0	0.237 6.0	Lower Roll R904272L06	Lower Roll RZ04272L06
4½	5.000 127.0	0.095 2.4	0.375 9.5	0.237 6.0	0.237 6.0		
5	5.563 141.3	0.109 2.8	0.375 9.5	0.258 6.6	0.258 6.6	Upper Roll R9A2268U06	Upper Roll RZA2268U06
152.4mm	6.000 152.4	0.109 2.8	0.258 6.6	0.258 6.6	0.258 6.6		
6	6.625 168.3	0.109 2.8	0.375 9.5	0.280 7.1	0.280 7.1	Lower Roll R908272L12	Lower Roll RZ08272L12
203.2mm	8.000 203.2	0.109 2.8	0.322 8.2	0.250 6.4	0.322 8.2		
8	8.625 219.1	0.109 2.8	0.375 9.5	0.250 6.4	0.322 8.2	Upper Roll R9A8268U12	Upper Roll RZA8268U12
10	10.750 273.0	0.134 3.4	0.375 9.5	0.250 6.4	0.365 9.3		
12	12.750 323.9	0.156 4.0	0.375 9.5	0.250 6.4	0.375 9.5		

† Maximum ratings on steel are limited to pipe of a Brinell Hardness Number (BHN) of 180 BHN and less

* Types 304/304L and 316/316L stainless steel pipe

In addition, the following pipe sizes may be roll grooved: 76.1 mm; 108.0 mm; 127.0 mm; 133.0 mm; 139.7 mm; 159.0 mm; 165.1 mm; 216.3 mm; 267.4 mm; and 318.5 mm. Contact Victaulic for details.

**ORIGINAL GROOVE SYSTEM ROLLS FOR ALUMINUM AND PVC PLASTIC PIPE –
COLOR-CODED YELLOW ZINC**

Pipe Size		Dimensions - inches/millimeters				Roll Part Numbers
Nominal Size inches or mm	Actual Outside Diameter inches/mm	Aluminum Pipe Wall Thickness †		PVC Plastic Pipe Wall Thickness *		
		Minimum	Maximum	Minimum	Maximum	
2	2.375 60.3	0.065 1.7	0.154 3.9	0.154 3.9	0.154 3.9	Lower Roll R902272L03 Upper Roll RP02272U06
2½	2.875 73.0	0.083 2.1	0.203 5.2	0.203 5.2	0.276 7.0	
3	3.500 88.9	0.083 2.1	0.216 5.5	0.216 5.5	0.300 7.6	
3½	4.000 101.6	0.083 2.1	0.226 5.7	0.226 5.7	0.318 8.1	Lower Roll R904272L06 Upper Roll RP02272U06
4	4.500 114.3	0.083 2.1	0.237 6.0	0.237 6.0	0.337 8.6	
4½	5.000 127.0	0.095 2.4	0.237 6.0	—	—	
5	5.563 141.3	0.109 2.8	0.258 6.6	0.258 6.6	0.375 9.5	
152.4 mm	6.000 152.4	0.109 2.8	0.258 6.6	—	—	
6	6.625 168.3	0.109 2.8	0.280 7.1	0.280 7.1	0.432 11.0	

† Alloys 6061-T4 and 6063-T4

* PVC Type 1. Grade 1 – PVC 1120; PVC Type 1. Grade II – PVC 1220; PVC Type II. Grade I – PVC 2116

The wall thicknesses listed are nominal minimum and maximum

In addition, the following pipe sizes may be roll grooved: 76.1 mm; 108.0 mm; 133.0 mm; 139.7 mm; 159.0 mm; and 165.1 mm. Contact Victaulic for details.

A special lower roll is available for grooving 2-inch Schedule 80 PVC plastic pipe (part number RP02272L02). Contact Victaulic for details.

**RX ROLLS FOR SCHEDULE 5S AND 10S STAINLESS STEEL PIPE –
COLOR-CODED SILVER**

Pipe Size		Dimensions - inches/millimeters		RX Roll Part Numbers
Nominal Size inches	Actual Outside Diameter inches/mm	Stainless Steel Pipe † Wall Thickness		
		Minimum	Maximum	
2	2.375 60.3	0.065 1.7	0.109 2.8	Lower Roll RX02272L03
2½	2.875 73.0	0.083 2.1	0.120 3.0	
3	3.500 88.9	0.083 2.1	0.120 3.0	Upper Roll RXA2268U06
3½	4.000 101.6	0.083 2.1	0.120 3.0	
4	4.500 114.3	0.083 2.1	0.120 3.0	Lower Roll RX04272L06
5	5.563 141.3	0.109 2.8	0.134 3.4	
6	6.625 168.3	0.109 2.8	0.134 3.4	Upper Roll RXA2268U06
8	8.625 219.1	0.109 2.8	0.148 3.8	
10	10.750 273.0	0.134 3.4	0.165 4.2	Lower Roll RX08272L12
12	12.750 323.9	0.156 4.0	0.180 4.6	

† Types 304/304L and 316/316L stainless steel pipe

The wall thicknesses listed are nominal minimum and maximum

In addition, the following pipe sizes may be roll grooved: 76.1 mm; 108.0 mm; 133.0 mm; 139.7 mm; 152.4 mm; 159.0 mm; 165.1 mm; and 203.2 mm. Contact Victaulic for details.

**ROLLS FOR CTS US STANDARD – ASTM DRAWN COPPER TUBING –
COLOR-CODED COPPER**

Pipe Size		Dimensions – inches/millimeter		Copper Roll Part Numbers
Nominal Size inches	Actual Outside Diameter inches/mm	Copper Tubing Wall Thickness †		
		Minimum	Maximum	
2	2.125 54.0	0.042 1.1	0.083 2.1	Lower Roll RR02272L06 Upper Roll RRA2268U08
2½	2.625 66.7	0.065 1.7	0.095 2.4	
3	3.125 79.4	0.045 1.1	0.109 2.8	
4	4.125 104.8	0.058 1.5	0.134 3.4	
5	5.125 130.2	0.072 1.8	0.160 4.1	
6	6.125 155.6	0.083 2.1	0.192 4.9	
8	8.125 206.4	0.109 2.8	0.271 6.9	Lower Roll RR08272L0 Upper Roll RRA2268U08

† ASTM B-306, Type DWV and ASTM B-88, Types K, L, M copper tubing

The wall thicknesses listed are nominal minimum and maximum

ROLLS FOR EUROPEAN STANDARD – EN 1057 DRAWN COPPER TUBING – COLOR-CODED COPPER

Nominal Size mm	Dimensions – millimeters/inches		Copper Roll Part Numbers
	Copper Tubing Wall Thickness †		
	Minimum	Maximum	
54.0	1.2 0.047	2.0 0.079	Lower Roll RRE1272L06 Upper Roll RRE1272U06
64.0	2.0 0.079	2.0 0.079	
66.7	1.2 0.047	2.0 0.079	
76.1	1.5 0.059	2.0 0.079	
88.9	2.0 0.079	2.0 0.079	
108.0	1.5 0.059	2.5 0.098	
133.0	1.5 0.059	3.0 0.118	
159.0	2.0 0.079	3.0 0.118	

† The European Standard (EN 1057) replaces the British Standard (BS 2871) and DIN Standard (DIN 1786). However, to ensure proper product performance, refer to Tables X and Y in the British Standard (BS 2871).

**ROLLS FOR AUSTRALIAN STANDARD – AS 1432 DRAWN COPPER TUBING –
COLOR CODED COPPER**

Nominal Size mm	Dimensions – millimeters/inches		Copper Roll Part Numbers
	Copper Tubing Wall Thickness †		
	Minimum	Maximum	
DN 50	0.9 0.035	1.6 0.063	Lower Roll RRE1272L06 Upper Roll RRE1272U06
DN 65	0.9 0.035	1.6 0.063	
DN 80	1.2 0.047	2.0 0.079	
DN 100	1.2 0.047	2.0 0.079	
DN 125	1.4 0.055	2.0 0.079	
DN 150	1.6 0.063	2.6 0.102	

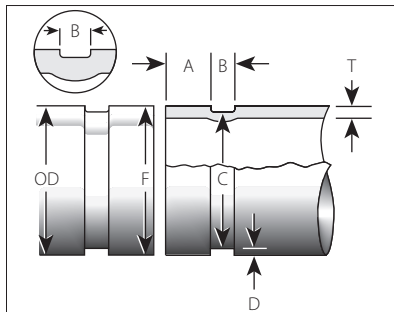
† Types A, B, and D

EXPLANATION OF CRITICAL ROLL GROOVE DIMENSIONS FOR ORIGINAL GROOVE SYSTEM (OGS) PRODUCTS

WARNING

- Pipe dimensions and groove dimensions must be within the tolerances specified in the tables on the following pages to ensure proper joint performance.

Failure to follow these specifications could cause joint failure, resulting in serious personal injury and/or property damage.



STANDARD ROLL GROOVE

Illustration is exaggerated for clarity

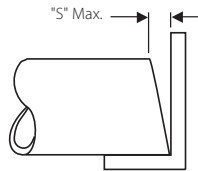
NOTICE

FOR STANDARD COUPLINGS WITH RATINGS ON LIGHT-WALL STAINLESS STEEL PIPE:

- Victaulic RX rolls **MUST** be used when roll grooving light-wall stainless steel pipe for use with standard couplings.

Pipe Outside Diameter – Nominal NPS Pipe Size (ANSI B36.10) and Basic Metric Pipe Size (ISO 4200) – The average pipe outside diameter must not vary from the specifications listed in the tables on the following pages. Maximum allowable pipe ovality shall comply with the requirements of ASTM A-999 and API 5L. Greater variations between the major and minor diameters will result in difficult coupling assembly.

For NPS pipe, the maximum allowable tolerance from square-cut pipe ends is: $\frac{1}{16}$ inch/1.6 mm for 4 to 24-inch/114.3 to 610-mm sizes and $\frac{3}{32}$ inch/2.4 mm for 26-inch/660-mm and larger sizes. This is measured from the true square line.



Any internal and external weld beads or seams must be ground flush to the pipe surface. The inside diameter of the pipe end must be cleaned to remove coarse scale, dirt, and other foreign material that might interfere with or damage grooving rolls. The front edge of the pipe end shall be uniform with no concave/convex surface features that will cause improper grooving roll tracking or result in difficulties during coupling assembly.

“A” Dimension – The “A” dimension, or the distance from the pipe end to the groove, identifies the gasket seating area. This area must be free from indentations, projections (including weld seams), and roll marks from the pipe end to the groove to ensure a leak-tight seal. All foreign material, such as loose paint, scale, oil, grease, chips, rust, and dirt must be removed.

“B” Dimension – The “B” dimension, or groove width, controls expansion, contraction, and angular deflection of flexible couplings by the distance it is located from the pipe and its width in relation to the coupling housings’ “key” width. The bottom of the groove must be free of all foreign material, such as dirt, chips, rust, and scale that may interfere with proper coupling assembly.

“C” Dimension – The “C” dimension is the average diameter at the base of the groove. This dimension must be within the diameter’s tolerance and concentric with the OD for proper coupling fit. The groove must be of uniform depth for the entire pipe circumference.

“D” Dimension – The “D” dimension is the normal depth of the groove and is a reference for a “trial groove” only. Variations in pipe OD affect this dimension and must be altered, if necessary, to keep the “C” dimension within tolerance. The groove diameter must conform to the “C” dimension described above.

“F” Dimension – Maximum allowable pipe-end flare diameter is measured at the extreme pipe-end diameter. **NOTE:** This applies to average (pi tape) and single-point readings.

“T” Dimension – The “T” dimension is the lightest grade (minimum nominal wall thickness) of pipe that is suitable for cut or roll grooving. Pipe that is less than the minimum nominal wall thickness for cut grooving may be suitable for roll grooving or adapted for Victaulic couplings by using Vic-Ring® Adapters. Vic-Ring Adapters can be used in the following situations (contact Victaulic for details):

- When pipe is less than the minimum nominal wall thickness suitable for roll grooving
- When pipe outside diameter is too large to roll or cut groove
- When pipe is used in abrasive services

NOTICE

- **Coatings that are applied to the interior surfaces of Victaulic grooved and plain-end pipe couplings must not exceed 0.010 inch/0.25 mm. This includes the bolt pad mating surfaces.**
- **In addition, the coating thickness applied to the gasket-sealing surface and within the groove on the pipe exterior must not exceed 0.010 inch/0.25 mm.**

**ROLL GROOVE SPECIFICATIONS
STEEL, STAINLESS STEEL, ALUMINUM, AND PVC PIPE**

Pipe Size		Dimensions – inches/millimeters												
Nominal Size inches/mm	Actual Outside Diameter inches/mm	Pipe Outside Diameter		Gasket Seat "A"		Groove Width "B"				Groove Diameter "C"		Groove Depth "D" (ref.)	Min. Allow. Wall Thick. "T"*	Max. Allow. Flare Dia. "F"
		Max.	Min.	Basic	Max.	Min.	Basic	Max.	Min.	Max.	Min.			
¾ 20	1.050	1.060	1.040	0.625	0.656	0.594	0.281	0.312	0.250	0.938	0.923	0.056	0.049	1.15
	26.9	26.9	26.4	15.9	16.7	15.1	7.1	7.9	6.4	23.8	23.4	1.5	1.2	29.2
1 25	1.315	1.328	1.302	0.625	0.656	0.594	0.281	0.312	0.250	1.190	1.175	0.063	0.049	1.43
	33.7	33.7	33.1	15.9	16.7	15.1	7.1	7.9	6.4	30.2	29.9	1.6	1.2	36.3
1¼ 32	1.660	1.676	1.644	0.625	0.656	0.594	0.281	0.312	0.250	1.535	1.520	0.063	0.049	1.77
	42.4	42.6	41.8	15.9	16.7	15.1	7.1	7.9	6.4	39.0	38.6	1.6	1.2	45.0
1½ 40	1.900	1.919	1.881	0.625	0.656	0.594	0.281	0.312	0.250	1.775	1.760	0.063	0.049	2.01
	48.3	48.7	47.8	15.9	16.7	15.1	7.1	7.9	6.4	45.1	44.7	1.6	1.2	51.1
2 50	2.375	2.399	2.351	0.625	0.656	0.594	0.344	0.375	0.313	2.250	2.235	0.063	0.049	2.48
	60.3	60.9	59.7	15.9	16.7	15.1	8.7	9.5	8.0	57.2	56.8	1.6	1.2	63.0
2½ 65	2.875	2.904	2.846	0.625	0.656	0.594	0.344	0.375	0.313	2.720	2.702	0.078	0.078	2.98
	73.0	73.8	72.3	15.9	16.7	15.1	8.7	9.5	8.0	69.1	68.6	2.0	2.0	75.7
76.1 mm	3.000	3.030	2.970	0.625	0.656	0.594	0.344	0.375	0.313	2.845	2.827	0.078	0.078	3.10
	76.1	77.0	75.4	15.9	16.7	15.1	8.7	9.5	8.0	72.3	71.8	2.0	2.0	78.7
3 80	3.500	3.535	3.469	0.625	0.656	0.594	0.344	0.375	0.313	3.344	3.326	0.078	0.078	3.60
	88.9	89.8	88.1	15.9	16.7	15.1	8.7	9.5	8.0	84.9	84.5	2.0	2.0	91.4
3½ 90	4.000	4.040	3.969	0.625	0.656	0.594	0.344	0.375	0.313	3.834	3.814	0.083	0.078	4.10
	101.6	102.6	100.8	15.9	16.7	15.1	8.7	9.5	8.0	97.4	96.9	2.2	2.0	104.1
108.0 mm	4.250	4.293	4.219	0.625	0.656	0.594	0.344	0.375	0.313	4.084	4.064	0.083	0.078	4.35
	108.0	109.0	107.2	15.9	16.7	15.1	8.7	9.5	8.0	103.7	103.2	2.2	2.0	110.5
4 100	4.500	4.545	4.469	0.625	0.656	0.594	0.344	0.375	0.313	4.334	4.314	0.083	0.078	4.60
	114.3	115.4	113.5	15.9	16.7	15.1	8.7	9.5	8.0	110.1	109.6	2.2	2.0	116.8
4½ 120	5.000	5.050	4.969	0.625	0.656	0.594	0.344	0.375	0.313	4.834	4.814	0.083	0.078	5.10
	127.0	128.3	126.2	15.9	16.7	15.1	8.7	9.5	8.0	122.8	122.3	2.2	2.0	129.5

Table continued on the following page.

STEEL, STAINLESS STEEL, ALUMINUM, AND PVC PIPE (CONTINUED)

Pipe Size		Dimensions – inches/millimeters												
Nominal Size inches/mm	Actual Outside Diameter inches/mm	Pipe Outside Diameter		Gasket Seat "A"			Groove Width "B"			Groove Diameter "C"		Groove Depth "D" (ref.)	Min. Allow. Wall Thick. "T" ¹	Max. Allow. Flare Dia. "F"
		Max.	Min.	Basic	Max.	Min.	Basic	Max.	Min.	Max.	Min.			
133.0 mm	5.250	5.303	5.219	0.625	0.656	0.594	0.344	0.375	0.313	5.084	5.064	0.083	0.078	5.35
	134.7	132.6	134.7	15.9	16.7	15.1	8.7	9.5	8.0	129.1	128.6	2.2	2.0	135.9
139.7 mm	5.500	5.556	5.469	0.625	0.656	0.594	0.344	0.375	0.313	5.334	5.314	0.083	0.078	5.60
	139.7	141.1	138.9	15.9	16.7	15.1	8.7	9.5	8.0	135.5	135.0	2.2	2.0	142.2
5	5.563	5.619	5.532	0.625	0.656	0.594	0.344	0.375	0.313	5.395	5.373	0.084	0.078	5.66
125	141.3	142.7	140.5	15.9	16.7	15.1	8.7	9.5	8.0	137.0	136.5	2.2	2.0	143.8
152.4 mm	6.000	6.056	5.969	0.625	0.656	0.594	0.344	0.375	0.313	5.830	5.808	0.085	0.078	6.10
	152.4	153.8	151.6	15.9	16.7	15.1	8.7	9.5	8.0	148.1	147.5	2.2	2.0	154.9
159.0 mm	6.250	6.313	6.219	0.625	0.656	0.594	0.344	0.375	0.313	6.032	6.002	0.109	0.109	6.35
	159.0	160.4	158.0	15.9	16.7	15.1	8.7	9.5	8.0	153.2	152.5	2.8	2.8	161.3
165.1 mm	6.500	6.563	6.469	0.625	0.656	0.594	0.344	0.375	0.313	6.330	6.308	0.085	0.078	6.60
	165.1	166.7	164.3	15.9	16.7	15.1	8.7	9.5	8.0	160.8	160.2	2.2	2.0	167.6
6	6.625	6.688	6.594	0.625	0.656	0.594	0.344	0.375	0.313	6.455	6.433	0.085	0.078	6.73
150	168.3	169.9	167.5	15.9	16.7	15.1	8.7	9.5	8.0	164.0	163.4	2.2	2.8	170.9
203.2 mm	8.000	8.063	7.969	0.750	0.781	0.719	0.469	0.500	0.438	7.816	7.791	0.092	0.109	8.17
	203.2	204.8	202.4	19.1	19.8	18.3	11.9	12.7	11.1	198.5	197.9	2.4	2.8	207.5
216.3 mm	8.515	8.578	8.484	0.750	0.781	0.719	0.469	0.500	0.438	8.331	8.306	0.092	0.109	8.69
	216.3	217.9	215.5	19.1	19.8	18.3	11.9	12.7	11.1	211.6	211.0	2.4	2.8	220.7
8	8.625	8.688	8.594	0.750	0.781	0.719	0.469	0.500	0.438	8.441	8.416	0.092	0.109	8.80
200	219.1	220.7	218.3	19.1	19.8	18.3	11.9	12.7	11.1	214.4	213.8	2.4	2.8	223.5
254.0 mm	10.000	10.063	9.969	0.750	0.781	0.719	0.469	0.500	0.438	9.812	9.785	0.094	0.134	10.17
	254.0	255.6	253.2	19.1	19.8	18.3	11.9	12.7	11.1	249.2	248.5	2.4	3.4	258.3
267.4 mm	10.528	10.591	10.497	0.750	0.781	0.719	0.469	0.500	0.438	10.340	10.313	0.094	0.134	10.70
	267.4	269.0	266.6	19.1	19.8	18.3	11.9	12.7	11.1	262.6	262.0	2.4	3.4	271.8

Table continued on the following page.

STEEL, STAINLESS STEEL, ALUMINUM, AND PVC PIPE (CONTINUED)

Pipe Size		Dimensions – inches/millimeters												
Nominal Size inches/ mm	Actual Outside Diameter inches/mm	Pipe Outside Diameter		Gasket Seat "A"			Groove Width "B"			Groove Diameter "C"		Groove Depth "D" (ref.)	Min. Allow. Wall Thick. "r" ¹ **	Max. Allow. Flare Dia. "F"
		Max.	Min.	Basic	Max.	Min.	Basic	Max.	Min.	Max.	Min.			
10	10.750	10.813	10.719	0.750	0.781	0.719	0.469	0.500	0.438	10.535	10.92	0.134	10.92	
250	273.0	274.7	272.3	19.1	19.8	18.3	11.9	12.7	11.1	268.3	277.4	3.4	277.4	
304.8 mm	12.000	12.063	11.969	0.750	0.781	0.719	0.469	0.500	0.438	11.781	12.17	0.156	12.17	
	304.8	306.4	304.0	19.1	19.8	18.3	11.9	12.7	11.1	298.5	309.1	4.0	309.1	
318.5 mm	12.539	12.602	12.508	0.750	0.781	0.719	0.469	0.500	0.438	12.321	12.71	0.156	12.71	
	318.5	320.1	317.7	19.1	19.8	18.3	11.9	12.7	11.1	313.0	322.8	4.0	322.8	
12	12.750	12.813	12.719	0.750	0.781	0.719	0.469	0.500	0.438	12.531	12.92	0.156	12.92	
300	323.9	325.5	323.1	19.1	19.8	18.3	11.9	12.7	11.1	318.3	328.2	4.0	328.2	

STEEL PIPE AND ALL MATERIALS GROOVED WITH "ES" ROLLS

Pipe Size		Dimensions – inches/millimeters											
Nominal Size inches/ mm	Actual Outside Diameter inches/ mm	Pipe Outside Diameter		Gasket Seat "A"		Groove Width "B"		Groove Diameter "C"		Groove Depth "D" (ref.)	Min. Allow. Wall Thick. "T"	Max. Allow. Flare Dia. "F"	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
2	2.375	2.399	2.351	0.572	0.552	0.265	0.250	2.250	2.235	0.063	0.154	2.480	
50	60.3	60.9	59.7	14.5	14.0	6.7	6.4	57.2	56.8	1.6	3.9	63.0	
2½	2.875	2.904	2.846	0.572	0.552	0.265	0.250	2.720	2.702	0.078	0.203	2.980	
65	73.0	73.8	72.3	14.5	14.0	6.7	6.4	69.1	68.6	2.0	5.2	75.7	
3	3.500	3.535	3.469	0.572	0.552	0.265	0.250	3.344	3.326	0.083	0.216	3.600	
80	88.9	89.8	88.1	14.5	14.0	6.7	6.4	84.9	84.5	2.1	5.5	91.4	
4	4.500	4.545	4.469	0.610	0.590	0.320	0.300	4.334	4.314	0.083	0.237	4.600	
100	114.3	115.4	113.5	15.5	15.0	8.1	7.6	110.1	109.6	2.1	6.0	116.8	
6	6.625	6.688	6.594	0.610	0.590	0.320	0.300	6.455	6.433	0.085	0.280	6.730	
150	168.3	169.9	167.5	15.5	15.0	8.1	7.6	164.0	163.4	2.2	7.1	170.9	
8	8.625	8.688	8.594	0.719	0.699	0.410	0.390	8.441	8.416	0.092	0.322	8.800	
200	219.1	220.7	218.3	18.3	17.8	10.4	9.9	214.4	213.8	2.3	8.2	223.5	
10	10.750	10.813	10.719	0.719	0.699	0.410	0.390	10.562	10.535	0.094	0.365	10.920	
250	273.0	274.7	272.3	18.3	17.8	10.4	9.9	268.3	267.6	2.4	9.3	277.4	
12	12.750	12.813	12.719	0.719	0.699	0.410	0.390	12.531	12.501	0.109	0.375	12.920	
300	323.9	325.5	323.1	18.3	17.8	10.4	9.9	318.3	317.5	2.8	9.5	328.2	

COPPER TUBING TO CTS US STANDARD – ASTM B-88 AND ASTM B-306

Nominal inches/ Actual mm		Dimensions – inches/millimeters										
		Copper Tubing Outside Diameter †		Gasket Seat "A"		Groove Width "B"		Groove Diameter "C"		Groove Depth "D" (ref.)	Min. Allow. Wall Thick. "T"	Max. Allow. Flare Dia. "F"
		Max.	Min.	Basic	Max.	Min.	Max.	Min.	Max.			
2	2.127	2.123	0.610	0.640	0.580	0.330	0.300	2.029	2.009	0.048	DWV *	2.220
5/4	54.0	53.9	15.5	16.3	14.7	8.4	7.6	51.5	51.0	1.2		56.4
2½	2.627	2.623	0.610	0.640	0.580	0.330	0.300	2.525	2.505	0.050		2.720
6/7	66.7	66.6	15.5	16.3	14.7	8.4	7.6	64.1	63.6	1.2		69.1
3	3.127	3.123	0.610	0.640	0.580	0.330	0.300	3.025	3.005	0.050	DWV *	3.220
7/4	79.4	79.3	15.5	16.3	14.7	8.4	7.6	76.8	76.3	1.2		81.8
4	4.127	4.123	0.610	0.640	0.580	0.330	0.300	4.019	3.999	0.053	DWV *	4.220
10/4.8	104.8	104.7	15.5	16.3	14.7	8.4	7.6	102.1	101.6	1.4		107.2
5	5.127	5.123	0.610	0.640	0.580	0.330	0.300	4.999	4.979	0.063	DWV *	5.220
13/0.2	130.2	130.1	15.5	16.3	14.7	8.4	7.6	127.0	126.5	1.6		132.6
6	6.127	6.123	0.610	0.640	0.580	0.330	0.300	5.999	5.979	0.063	DWV *	6.220
155/6	155.6	155.5	15.5	16.3	14.7	8.4	7.6	152.3	151.9	1.6		158.0
8	8.127	8.121	0.610	0.640	0.580	0.330	0.300	7.959	7.939	0.083	DWV *	8.220
206/4	206.4	206.3	15.5	16.3	14.7	8.4	7.6	202.2	201.7	2.1		208.8

† The outside diameter of roll grooved copper tubing cannot vary from the tolerance listed. The maximum allowable tolerance from square cut ends is 0.030 inch/0.8 mm for 2 – 3 inch/54.0 – 79.4 mm sizes and 0.045 inch/1.1 mm for 4 – 6 inch/104.8 – 155.6 mm sizes; this is measured from the true square line.

* ASTM B-306 drain-waste and vent (DWV) is the minimum wall thickness of copper tubing that can be roll grooved.

COPPER TUBING TO EUROPEAN STANDARD – EN 1057

Actual Size † mm		Dimensions – inches/millimeters										
		Actual Outside Diameter *		Gasket Seat "A"		Groove Width "B"		Groove Diameter "C"		Groove Depth "D" (ref.)	Max. Allow. Flare Dia. "F"	
		Max.	Min.	Basic	Max.	Min.	Max.	Min.	Max.			Min.
54	54.07 2.129	53.93 2.123	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	51.51 2.028	51.00 2.008	1.25 0.049	56.38 2.220	
64	64.07 2.522	63.93 2.517	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	61.47 2.420	60.96 2.400	1.27 0.050	66.41 2.615	
66.7	66.77 2.629	66.63 2.623	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	64.14 .525	63.63 2.505	1.27 0.050	69.09 2.720	
76.1	76.17 2.999	76.03 2.993	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	73.41 2.890	72.90 2.870	1.35 0.053	78.61 3.095	
88.9	88.97 3.496	88.83 3.497	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	85.70 3.374	85.19 3.354	1.60 0.063	91.63 3.607	
108	108.07 4.255	107.93 4.249	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	104.80 4.126	104.29 4.106	1.60 0.063	110.54 4.352	
133	133.20 5.244	132.80 5.228	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	129.29 5.090	128.78 5.070	1.85 0.073	135.79 5.346	
159	159.20 6.280	158.80 6.252	15.87 0.625	16.64 0.655	15.11 0.595	8.38 0.330	7.62 0.300	155.30 6.114	154.79 6.094	1.85 0.073	161.80 6.370	

† European Standard Copper Tubing: EN 1057 drawn copper tubing size

* The outside diameter of roll grooved copper tubing cannot vary from the tolerance listed. The maximum allowable tolerance from square cut ends is 0.8 mm/0.030 inch for 54 – 88.9 mm sizes and 1.1 mm/0.045 inch for 108 – 159 mm sizes; this is measured from the true square line.

COPPER TUBING TO AUSTRALIAN STANDARD – AS 1432

Nominal Size † mm	Dimensions – inches/millimeters												Max. Allow. Flare Dia. "F"
	Actual Outside Diameter *		Gasket Seat "A"		Groove Width "B"		Groove Diameter "C"		Groove Depth "D" (ref.)	Max. Allow. Flare Dia. "F"			
	Max.	Min.	Basic	Max.	Min.	Max.	Min.	Max.			Min.		
DN 50	50.80	50.67	15.87	16.64	15.11	8.38	7.62	48.21	47.70	1.25	53.06		
	2.000	1.995	0.625	0.655	0.595	0.330	0.300	1.898	1.878	0.049	2.089		
DN 65	63.50	63.35	15.87	16.64	15.11	8.38	7.62	60.88	60.38	1.27	65.83		
	2.500	2.494	0.625	0.655	0.595	0.330	0.300	2.397	2.377	0.050	2.592		
DN 80	76.20	76.02	15.87	16.64	15.11	8.38	7.62	73.56	73.05	1.27	78.51		
	3.000	2.993	0.625	0.655	0.595	0.330	0.300	2.896	2.876	0.050	3.091		
DN 100	101.60	101.35	15.87	16.64	15.11	8.38	7.62	98.78	98.27	1.35	103.88		
	4.000	3.990	0.625	0.655	0.595	0.330	0.300	3.889	3.869	0.053	4.090		
DN 125	127.00	126.75	15.87	16.64	15.11	8.38	7.62	123.67	123.16	1.60	128.77		
	5.000	4.990	0.625	0.655	0.595	0.330	0.300	4.869	4.849	0.063	5.070		
DN 150	152.40	152.10	15.87	16.64	15.11	8.38	7.62	149.05	148.54	1.60	154.66		
	6.000	5.988	0.625	0.655	0.595	0.330	0.300	5.868	5.848	0.063	6.089		

† Nominal AS 1432 drawn copper tubing size

* The outside diameter of roll grooved copper tubing cannot vary from the tolerance listed. The maximum allowable tolerance from square cut ends is 0.8 mm/0.030 inch for DN 50 – 80 mm sizes and 1.1 mm/0.045 inch for DN 100 – 150 mm sizes; this is measured from the true square line.

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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:	VE-272 SFS
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 VE-272 SFS may be commissioned for its full intended purpose:

Victaulic VPD752	Victaulic VPD753	Berkley Tool BT-5020	Ridgid* 300
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Authorized Representative: Victaulic Company
c/o Victaulic Europe BVBA
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

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VE272SFS Pipe/Tubing Roll Grooving Tool

UPDATED 04/2016

TM-VE272SFS 3776 REV C RM00272SFS

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