

VE106 and VE107 Groove-N-Go Pipe/Tubing Roll Grooving Tools



WARNING



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

- Before operating or servicing any pipe preparation tools, read all instructions in the operating and maintenance manual and all warning labels on the tool.

- Wear safety glasses, hardhat, foot protection, and hearing protection while working around pipe preparation tools.
- Save the 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 any pipe preparation tools, contact Victaulic, P.O. Box 31, Easton, PA 18044-0031, Phone: 1-800-PICK VIC, E-Mail: pickvic@victaulic.com

Original Instructions

TABLE OF CONTENTS

Hazard Identification	2	Maintenance	24
Operator Safety Instructions	2	Parts Ordering Information	26
Introduction	4	Accessories	27
Receiving the Tool	4	Troubleshooting	30
Container Contents	4	VE106/107 Ratings - Maximum Pipe Size and Wall Thickness Capacity	29
Power Requirements	5	Roll Part Numbers	30
Power Drive Requirements	5	Link to OGS Groove Specifications	31
Extension Cord Requirements	5	Link to EndSeal “ES” Groove Specifications	31
Tool Nomenclature	6	Link to Copper Tubing Groove Specifications	31
Tool Dimensions and Specifications	7	Link to Additional Resources	31
Tool Setup	8	EC Declaration of Conformity	32
Pre-Operation Checks and Adjustments	11	UK Declaration of Conformity	33
Grooving Rolls	11		
Pipe/Tubing Preparation	11		
Pipe Lengths Suitable for Grooving	12		
Short Pipe/Tubing Lengths	12		
Long Pipe/Tubing Lengths	13		
Groove Diameter Stop Adjustment	14		
Grooving Operation	17		
Roll Changing	20		
Lower Roll/Main Shaft Removal	20		
Upper Roll Removal	22		
Upper Roll Installation	22		
Lower Roll/Main Shaft Installation	23		


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 VE106/107 is designed for the sole purpose of roll grooving pipe/tubing. 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, or can be downloaded at victaulic.com.

**DANGER**

1. **Avoid using the tool in potentially dangerous environments.** Do not expose the tool to rain, and do not use the tool in damp or wet locations. Do not use the tool on sloped or uneven surfaces. Keep the work area well lit. Allow sufficient space to operate the tool properly.
2. **Ground the drive motor to protect the operator from electric shock.** Ensure that the drive motor is connected to an internally grounded electrical source.

3. **Disconnect electrical power before servicing the tool.** Only authorized personnel should perform maintenance on the tool. Always disconnect the power 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.
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, hardhat, foot protection, and hearing protection.
4. **Keep hands and tools away from grooving rolls 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 only with a safety foot switch.** 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 to the operator.

CAUTION

1. **This tool is designed ONLY for roll grooving pipe/tubing sizes, materials, and wall thicknesses listed in the table on page 29.**
2. **Inspect the equipment.** Before using the tool, check all moveable parts for any obstructions. Ensure that all tool components are installed and adjusted properly.
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 the movement of the operator. Clean up any oil or other spills.
6. **Secure the work, tool, and accessories.** Ensure that the power drive is secured to the floor or is otherwise capable of resisting the full output torque of the power drive and the weight of the pipe being grooved.
7. **Support the work.** Support long pipe lengths with a pipe stand that is secured to the floor or the ground.
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 VE106/VE107 is a manual-feed tool for roll grooving pipe/tubing to receive Victaulic grooved pipe/tubing products. The standard VE106/VE107 tool is supplied with grooving rolls for 1¼–6 inch/42.4–168.3 mm carbon steel pipe. Rolls are marked with the size and part number, and are color-coded to identify the pipe material. For roll grooving to other Victaulic specifications and materials, refer to the tables on page 30. Grooving rolls for other specifications, sizes, and materials must be purchased separately.

CAUTION

- This tool must be used **ONLY** for grooving pipe/tubing with specifications that fall within the designated parameters.
- Verify that the upper and lower grooving rolls are a matched set.

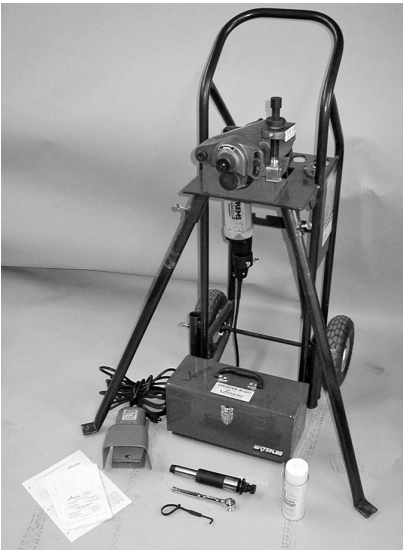
Failure to follow these instructions could damage the tool and cause product failure, resulting in property damage or personal injury.

RECEIVING THE TOOL

VE106/VE107 Groove-N-Go tools are packed individually in sturdy containers that are designed for repeated shipping. Save the original container for return shipment of rental tools.

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

CONTAINER CONTENTS





Qty.	Description
1	Tool Head Assembly with Cart
3	Adjustable Legs (Secured in Leg Storage Tubes of Cart)
1	Lower Roll/Main Shaft for 4 – 6-inch/ 114.3 – 168.3-mm Carbon Steel Pipe*
1	Lower Roll/Main Shaft for 1¼ – 3-inch/ 42.4 – 88.9-mm Carbon Steel Pipe
1	Safety-Foot-Switch Storage Box
1	Safety Foot Switch (Located Inside Storage Box)
2	Operating and Maintenance Manual
1	Repair Parts List
1	Feed Ratchet
-	Spare Shear Pins
-	Depth Gauges for 1¼ – 6-inch/42.4 – 168.3-mm Schedule 5, Schedule 10, and Schedule 40 Carbon Steel Pipe
1	⅜-inch Hex Key
1	Go/No-Go Pipe Tape
1	Can of Dry Graphite Spray

* Installed in the head assembly

NOTE: Optional items, such as roll sets for grooving stainless steel pipe and copper tubing, may be shipped separately.

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

Power must be supplied to the drive motor through a safety foot switch to ensure safe operation. Ensure that the power drive is grounded properly in accordance with Article 250 of the National Electrical Code. Always refer to the operating manual for the power drive for additional information.

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 that is thicker than required.

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

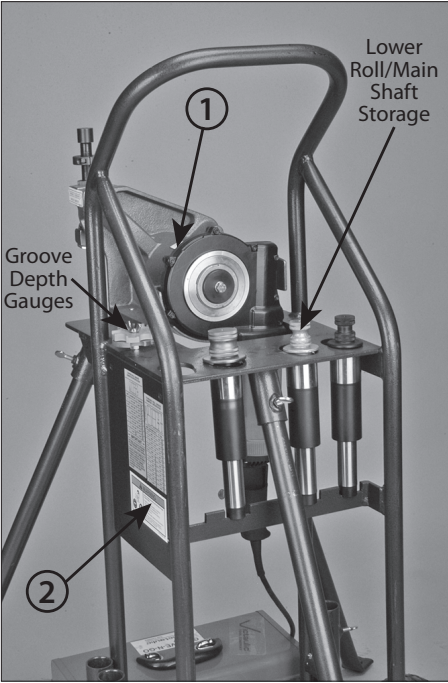
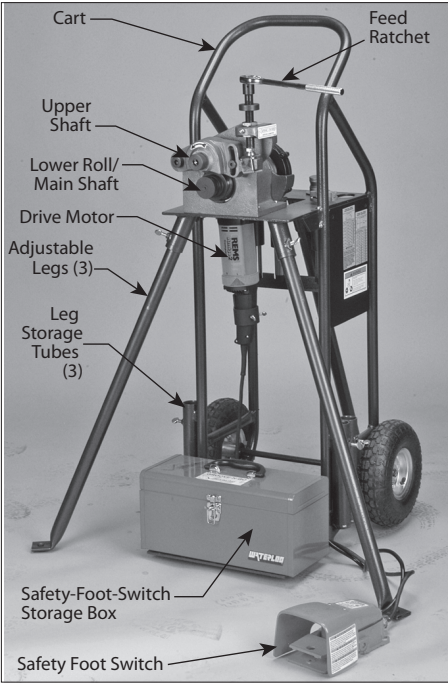
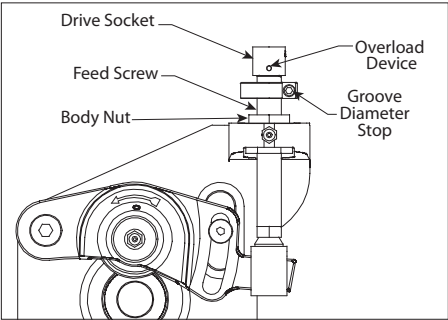
Model	Power Drive Rating volts/amps	Cord Lengths feet/meters		
		25 8	50 15	100 31
VE106	110 12	12 gauge	12 gauge	10 gauge
VE107	220 6	14 gauge	12 gauge	10 gauge



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

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

- Before operating or servicing this tool, read the entire operating and maintenance instructions manual and all labels on the tool.
- Wear safety glasses, hardhat, foot protection, and hearing protection.
- Operate the tool only with a safety foot switch. If the tool does not contain a safety foot switch, contact Victaulic.

Contact Victaulic with questions regarding the safe and proper operation of tools.

Web: victaulic.com E-Mail: pickvic@victaulic.com Phone: 1-800-PICK-VIC

2

WARNING

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

- Before operating or servicing any tools, read the entire operating and maintenance instructions manual and all labels on the tool.
- Wear safety glasses, hardhat, foot protection, and hearing protection.
- Operate the tool only with a safety foot switch. If the tool does not contain a safety foot switch, contact Victaulic.

Contact Victaulic with questions regarding the safe and proper operation of tools.

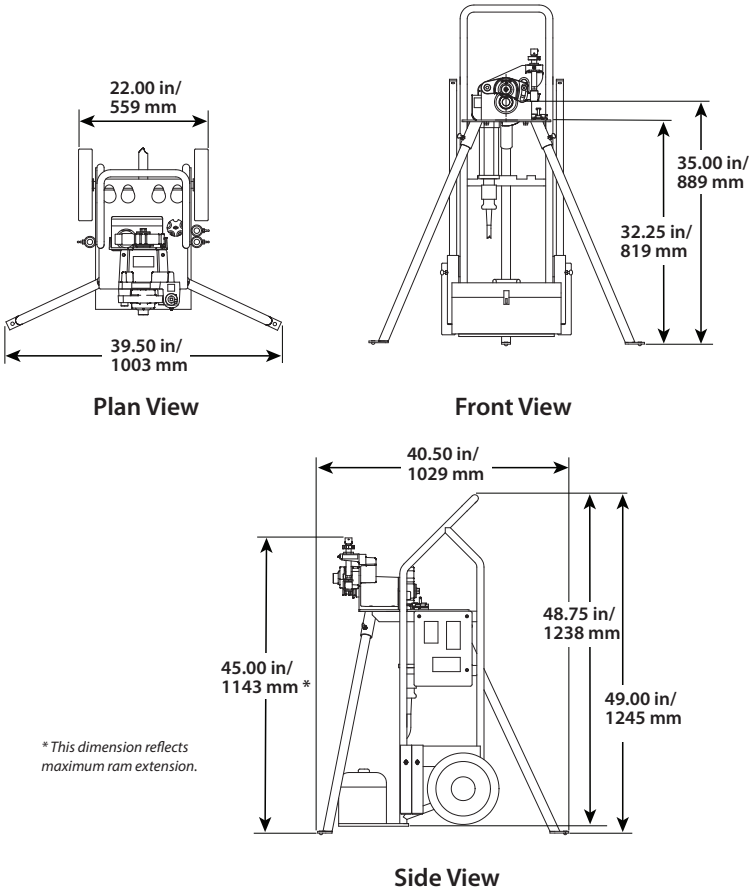
Web: victaulic.com E-Mail: pickvic@victaulic.com Phone: 1-800-PICK-VIC

Not Shown

Pipe and groove features, noted below, must be measured to verify they are within current Victaulic specifications. Victaulic submittal publications can be downloaded at www.victaulic.com.

OD = Average Pipe Outside Diameter
T = Pipe Wall Thickness
A = Distance from Pipe End to Groove
B = Average Pipe Outside Diameter
C = Average Diameter at Base of Groove
D = Groove Depth
F = Pipe-End Flare

TOOL DIMENSIONS AND SPECIFICATIONS



Tool weight is 140 pounds/64 kilograms.

Tool sound pressure is 95 dB(A), while tool sound power is 97 dB(A). All measurements taken with a Rems Amigo® 2 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.

® Rems Amigo is a trademark of REMS GmbH & Co KG

TOOL SETUP

WARNING

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

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

The standard VE106/VE107 Groove-N-Go tool is intended for field or shop setup. Before grooving, the adjustable legs must be mounted onto the tool.

1. Remove components from the packaging, and ensure that all necessary items are included. Refer to the “Receiving the Tool” section.
2. Select a location for the tool by taking into consideration the following factors (refer to the drawing on the previous page for overall dimensions):
 - a. The required power supply (verify the voltage of the drive motor as 110 volt or 220 volt)
 - b. Adequate space to handle pipe/tubing lengths
 - c. A firm and level surface for the tool and pipe stand
 - d. Adequate clearance around the tool for adjustment and maintenance

WARNING

- **DO NOT** lift the tool into the vertical (upright) position until the two front legs are installed.
- The tool will be top heavy until the third leg is installed on the tool. Use caution to prevent the tool from tipping over.

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



3. Ensure that the tool is secure and is in the horizontal position (lying down) with the handle of the cart resting against the ground or floor, as shown above.



4. Remove the legs from the leg storage tubes. Install the two front legs by inserting them into the sockets located on the underside of the tool head table. Ensure that each leg seats properly in the sockets. Rotate the legs so that each foot points away from the tool. Using a ½-inch wrench, tighten each 5/16 – 18 hex bolt to secure the legs to the tool.



5. Ensure that the front legs are securely fastened in the sockets. Lift/tilt the tool into the vertical (upright) position, as shown above.



6. With the tool in the vertical (upright) position, install the third leg into the socket adjacent to the drive motor. Rotate the leg so that the foot points away from the tool. Using a ½-inch wrench, tighten the 5/16 – 18 hex bolt to secure the leg to the tool.



7a. Level the tool from front to back. **NOTE:** The top of the tool head table is a good location to measure “level”, as shown above. If the tool is not level, proceed with 7a.

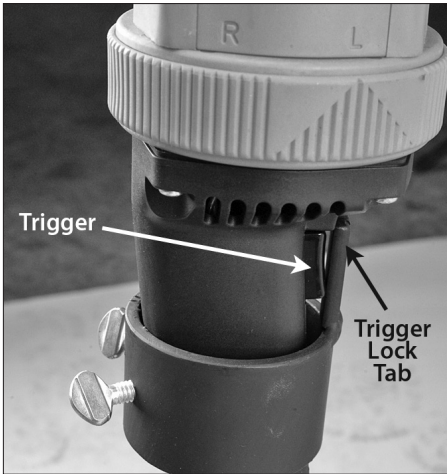
7b. Loosen the hex bolts to adjust the legs in or out, as required, to make the tool level. Re-tighten all hex bolts after leveling the tool. Do not extend any of the legs past the hex bolt. If this cannot be accomplished, move the tool to a more level surface, and repeat this step until the tool is level.

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.



8a. Ensure that the drive-motor trigger switch is depressed in the proper location. The trigger lock tab must push down on the drive-motor trigger switch.



8b. Tighten the two trigger-lock switch thumb screws to maintain this position.

WARNING

- **DO NOT** operate the drive motor 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.



9a. Remove the safety foot switch from the storage box.

9b. Plug the cord for the safety foot switch into a grounded electrical outlet. Refer to the “Power Requirements” section. If an extension cord is used, refer to the “Extension Cord Requirements” section for requirements.



10. Rotate the drive motor switch to the “L” position to produce **counterclockwise** rotation of the lower roll/main shaft and pipe/tubing, as shown above.

11. Depress the safety foot switch, check the rotation of the lower roll/main shaft, and ensure that the tool is stable. If rotation is clockwise, rotate the drive-motor switch to the opposite position. If the tool wobbles, ensure that the legs are adjusted correctly and that the tool is level on the floor. If the wobble persists, re-adjust the legs.

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

- **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.

GROOVING ROLLS

Ensure that the proper roll set is installed on the tool for the pipe/tubing size and material that will be grooved. Roll sets are marked with the pipe/tubing size and part number, and they are color coded for the pipe/tubing material. Refer to the tables on pages 29 and 30. If the proper rolls are not installed on the tool, refer to the “Roll Changing” section.

PIPE/TUBING 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/tubing for use with grooved-end pipe/tubing products. Square-cut pipe/tubing **MUST** be used with FlushSeal® and EndSeal® gaskets. Beveled-end pipe/tubing may be used for other applications, 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/tubing may result in unacceptable flare.

2. Raised internal and external weld beads and seams must be ground flush with the pipe/tubing surface 2 inches/50 mm back from the pipe/tubing ends.

3. All coarse scale, dirt, and other foreign material must be removed from the interior and exterior surfaces of the pipe/tubing ends.

CAUTION

- **For maximum grooving roll life, remove foreign material and loose rust from the interior and exterior surfaces of the pipe/tubing 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.

PIPE LENGTHS SUITABLE FOR GROOVING


The VE106/VE107 Groove-N-Go tool is capable of grooving short pipe/tubing lengths without the use of a pipe stand. Refer to the “Short Pipe/ Tubing Lengths” section on this page.

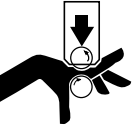
Table 1 shows the minimum and maximum pipe/tubing lengths that can be grooved without the use of a pipe stand. Refer to the “Grooving Operation” section for instructions on how to groove short pipe/tubing lengths. For pipe/tubing longer than what is shown in Table 1, refer to the “Long Pipe/Tubing Lengths”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

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

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

SHORT PIPE/TUBING LENGTHS

**WARNING**



- Grooving rolls can crush or cut fingers and hands.

Never groove pipe/tubing that is shorter than the recommended lengths listed in this manual.

NOTICE

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

TABLE 1 - PIPE LENGTHS SUITABLE FOR GROOVING

Steel and Stainless Steel		Length – inches/mm	
Nominal Pipe Size inches	Actual Pipe Outside Diameter inches/mm	Minimum	Maximum
1¼ – 4	1.660 – 4.500	8	36
	42.4 – 114.3	205	915
5	5.563	8	32
	141.3	205	815
6	6.625	10	28
	168.3	255	715

If pipe/tubing 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 (6.19-m) length of 6-inch diameter steel pipe is required to finish a section, and only 20-foot (6.09-m) lengths are available. Instead of roll grooving a 20-foot (6.09-m) length of steel pipe and a 4-inch (101.6-mm) length of steel pipe, follow these steps:

1. Refer to Table 1 and note that for 6-inch diameter steel pipe, the minimum length that should be roll grooved is 10 inches (254 mm).
2. Roll groove a 19-foot, 6-inch (5.94-m) length of steel pipe and a 10-inch (254-mm) length of steel pipe. Refer to the “Long Pipe/Tubing Lengths” section.

LONG PIPE/TUBING LENGTHS

When roll grooving pipe/tubing 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/tubing, while allowing the pipe/tubing to rotate freely.

a. Ensure that the tool is level. Refer to the “Tool Setup” section for leveling requirements. Set the pipe stand height to produce a $\frac{1}{2}$ to 1° pitch on the pipe away from the tool (see Figure 1). This will help promote tracking and reduce pipe end flare.

b. When 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 (see Figure 2).

c. Installation of couplings on pipe/tubing that exceeds the maximum allowable flare may prevent pad-to-pad closure of the housings and/or may cause damage to the coupling gasket. Reference the applicable groove specification link on page 31.

d. If the tool is properly set up in a level position, but the back end of the pipe/tubing is higher than the end being grooved, the pipe/tubing may not track. As a result, excessive flare may occur on the pipe/tubing end. Refer to Figures 1 and 2 and the “Tool Setup” section for pipe/tubing positioning and tool setup requirements.

e. Position the pipe stand at a distance slightly beyond half the pipe/tubing length from the tool. Refer to Figure 1 below.

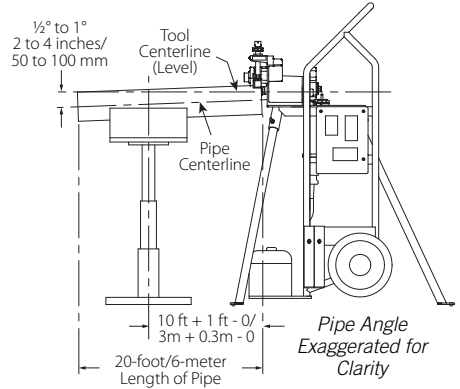


FIGURE 1 – SUPPORT OF PIPE

f. Position the pipe stand approximately 0 to $\frac{1}{2}^\circ$ to the left for the tracking angle. Refer to Figure 2 below.

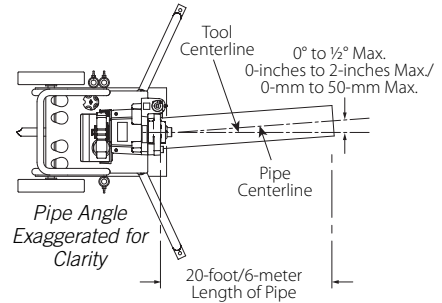


FIGURE 2 – TRACKING ANGLE

NOTICE

- Figure 1 shows a typical pipe stand.
- Victaulic offers several pipe stands, such as the VAPS112 and VAPS224. The VAPS112 is suitable for $\frac{3}{4}$ to 12-inch/ 26.9 to 323.9-mm sizes. The VAPS224 is suitable for 2 to 24-inch/60.3 to 610-mm sizes. Refer to the “Accessories” section.
- For additional information about pipe stands, refer to the instructions included with the pipe stand.

GROOVE DIAMETER STOP ADJUSTMENT

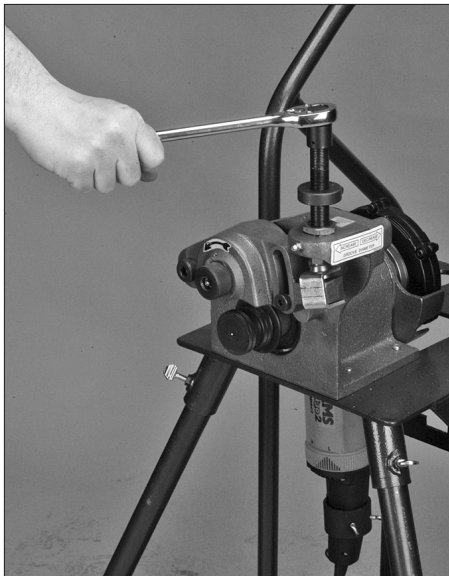
The groove diameter stop must be adjusted for each pipe/tubing size or change in wall thickness. The groove diameter is identified as the “C” dimension (reference the applicable groove specification link on page 31). In addition, a label is affixed to the tool, which lists the “C” dimensions for the pipe sizes.

NOTICE

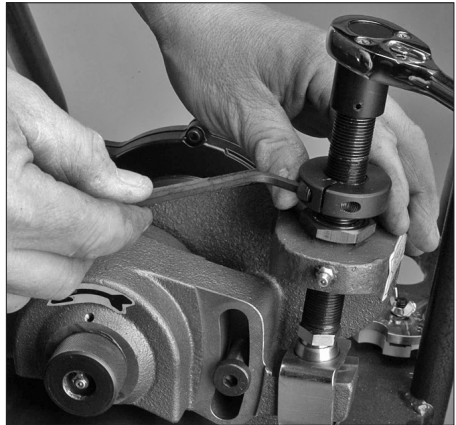
- To perform the following adjustments, use several short, scrap sections of pipe/tubing that are the proper material, diameter, and thickness to be grooved. Ensure that the scrap sections meet the length requirements listed in Table 1.

To achieve the proper diameter:

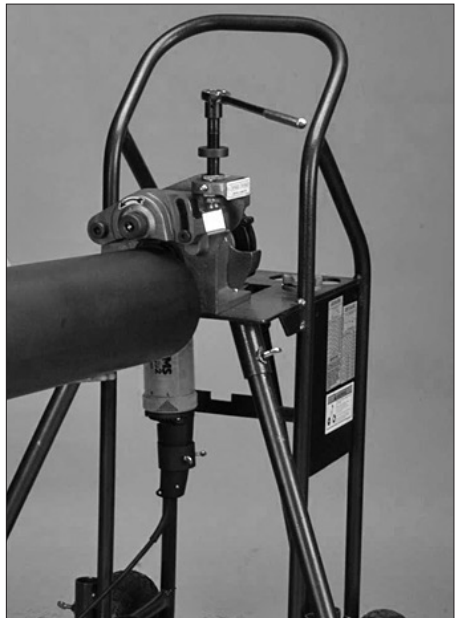
1. Determine the diameter and thickness of the pipe/tubing to be grooved.



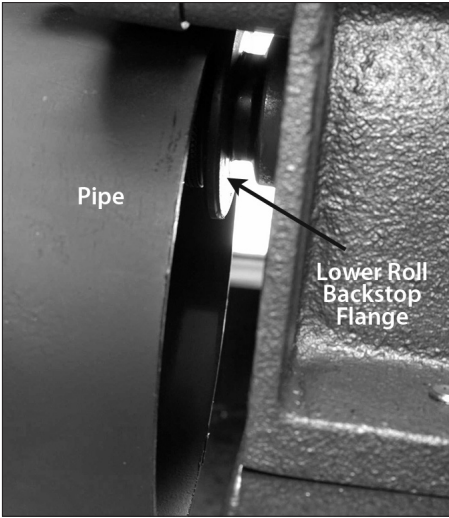
2. Using the feed ratchet (provided), retract (turn counterclockwise) the feed screw/upper roll until the pipe/tubing can be slipped completely over the lower roll.



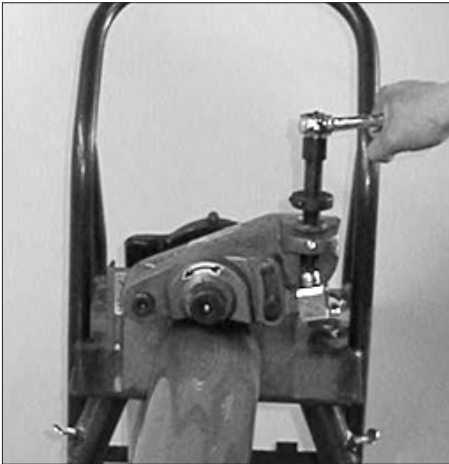
- 2a. Back off the groove-diameter stop by loosening the clamping screw with the supplied 3/16-inch hex key. Turn the groove-diameter stop counterclockwise several turns.



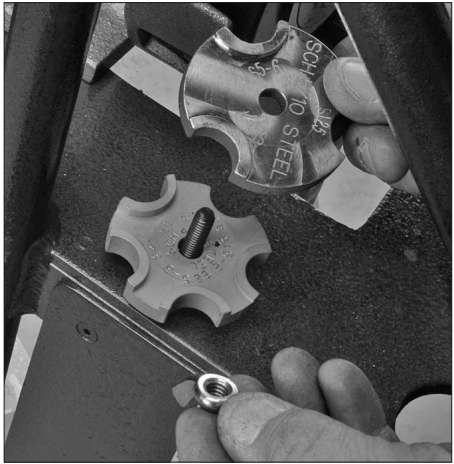
3. Insert a length of pipe/tubing that is the correct size and thickness onto the lower roll.



4. Ensure that the pipe/tubing end contacts the lower-roll backstop flange completely.



5. Continue supporting the pipe manually. Using the feed ratchet (provided), advance (turn clockwise) the feed screw to place the upper roll into light contact with the pipe/tubing.



6. Locate the groove depth gauges on the tool. Remove the wing nut from the gauge retainer, and select the proper groove depth gauge for the pipe size being grooved.



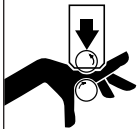
7. Using the groove depth gauge as a “feeler gauge” between the groove-diameter stop and the body nut, adjust the groove-diameter stop until it contacts the groove depth gauge, as shown above.

7a. Using the 3/16-inch hex key, tighten the screw on the groove-diameter stop to maintain the adjustment made in the previous step.



8. Replace the groove depth gauge onto the gauge retainer. Re-install and tighten the wing nut.

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

9. Prepare a trial groove. Refer to the “Grooving Operation” section.



10. After a trial groove is prepared and the pipe/tubing is removed from the tool, carefully check the groove diameter (“C” dimension). Reference the applicable groove specification link on page 31. The pipe tape, supplied with the tool, is the best method for checking the “C” dimension. In addition, a vernier caliper or narrow-land micrometer can 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) must conform to Victaulic specifications to ensure proper joint performance.
- Failure to follow this instruction could cause joint failure, resulting in personal injury and/or property damage.

11. If the groove diameter (“C” dimension) is not within Victaulic specifications, the diameter stop must be adjusted.

11a. To **DECREASE** the groove diameter (increase groove depth), turn the diameter stop **COUNTERCLOCKWISE** (when viewed from above the tool).

11b. To **INCREASE** the groove diameter (decrease groove depth), turn the diameter stop **CLOCKWISE** (when viewed from above the tool).

NOTE: A quarter-turn either way will change the groove diameter adjustment by approximately 0.013inch/0.3mm or 0.051inch/1.3mm per full turn.

12. Prepare another trial groove, and check the groove diameter (“C” dimension), as described in step 10. 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/tubing designated in the table on page 29 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 safety foot switch into an internally-grounded electrical source. Ensure that the safety foot switch and drive motor are grounded.



3. Set the switch on the drive motor to produce **counterclockwise** rotation of the lower roll/main shaft and pipe/tubing when viewed from the front of the tool. Placing the switch in the “L” position will produce counterclockwise rotation of the lower roll/main shaft and pipe/tubing.

WARNING

- The drive motor must be operated with a safety foot switch. If the drive motor does not contain a safety foot switch, contact Victaulic.

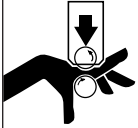
Operating the tool without a safety foot switch could result in serious personal injury.

4. Ensure that the tool is operational by depressing the safety-foot-switch pedal. The lower roll/main shaft must turn **counterclockwise** when viewed from the front of the tool. Remove foot from the safety foot switch.



5. Using the feed ratchet (provided), rotate the feed screw **counterclockwise** to move the upper roll to the fully up position.

⚠ WARNING



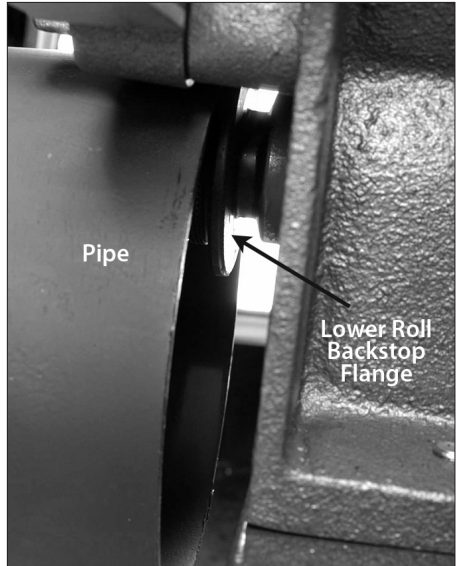
Grooving rolls can crush or cut fingers and hands.

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

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



6. Insert a length of pipe/tubing that is the correct size and thickness onto the lower roll.



7. Ensure that the pipe/tubing end contacts the lower-roll backstop flange completely.



8. Rotate the feed screw **clockwise** to bring the upper roll into firm contact with the pipe/tubing. Continue to support the pipe, or use a pipe stand for long pipe/tubing lengths. Refer to the "Long Pipe/Tubing Lengths" section.

9. Remove hands from the pipe/tubing.



10. For long pipe/tubing lengths supported with a pipe stand, ensure that the pipe/tubing is pitched and positioned properly. Refer to the “Long Pipe/Tubing Lengths” section.



11. Depress and hold down the safety foot-switch pedal. The pipe/tubing will begin to rotate counterclockwise. As the pipe/tubing rotates, begin the grooving process by rotating the feed screw **clockwise** slowly with the feed ratchet (provided). Ensure that the pipe/tubing remains against the lower-roll backstop flange. If the pipe/tubing does not remain against the lower-roll backstop flange, release the safety foot switch, and re-position the pipe/tubing.

NOTICE

- Groove light-wall pipe at a moderate rate by forming grooves uniformly in 5 to 10 pipe rotations.
- Schedule 40 pipe requires more revolutions to reach the proper groove diameter.
- A shear pin is used to connect the drive socket to the feed screw. If excessive force is applied to the feed ratchet, the pin will shear and prevent damaging forces from being applied to tool components.
- The tool is designed to accommodate normal grooving forces. Therefore, shearing the pin should not occur normally. However, if a pin shears, determine the cause by referring to the “Troubleshooting” section. Correct the problem, and replace the sheared pin with a spare pin supplied with the tool.

12. Continue the grooving process until the groove diameter stop makes firm contact with the top of the body nut.

13. Continue to rotate the pipe/tubing for one to three revolutions to ensure groove completion.

14. Release the safety-foot-switch pedal, and withdraw foot from the safety foot switch.

⚠ WARNING

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

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


15. If a short length of pipe/tubing is in the tool, manually support the pipe/tubing.

16. To release the pipe/tubing, retract the upper roll by turning the feed screw counterclockwise. Remove the pipe/tubing from the tool.

NOTICE

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

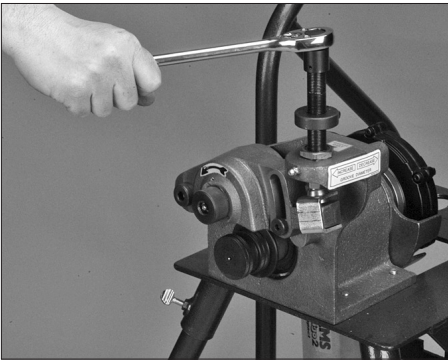
The VE106/VE107 Groove-N-Go is designed with rolls to accommodate several pipe sizes, which eliminates the need for frequent roll changes.

In addition, different pipe materials may require different rolls. For proper roll selection, refer to the tables on pages 29 and 30.

LOWER ROLL/MAIN SHAFT REMOVAL

When preparing to groove stainless steel pipe, copper tubing, or pipe to “ES” specifications, the lower roll/main shaft for carbon steel pipe must be removed.


In addition, when preparing to groove copper tubing or pipe to “ES” specifications, the carbon steel upper roll must be removed (refer to the “Upper Roll Removal” and “Upper Roll Installation” sections). The upper roll must be installed prior to installation of the lower roll/main shaft in the tool body.



1. Raise the upper roll arm to its maximum position by rotating the feed screw **counterclockwise**.




2. Loosen and remove the 3/8-inch hex bolt and lock washer at the rear of the shaft.

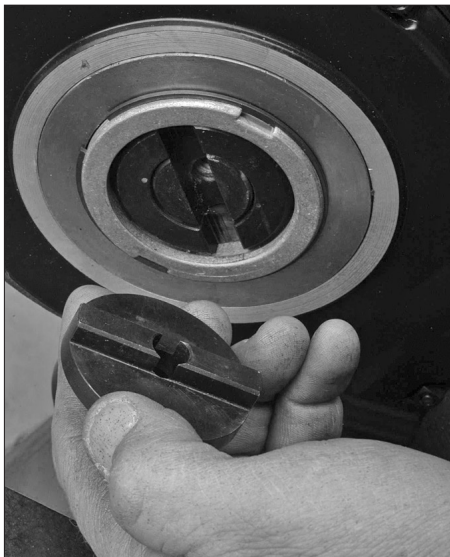


WARNING

DO NOT strike the roll with a hammer or other blunt object. Striking the roll can cause fragmentation, resulting in serious personal injury.

- Always wear safety glasses.
- Never strike the roll directly for any reason.





3. Remove the drive key from the rear of the shaft.



4. Store the drive key, hex bolt, and lock washer in the safety-foot-switch storage box.



5. Using a punch and hammer (these tools are not supplied), tap the lower roll/main shaft out from the rear of the tool, as shown above.



6. Pull the lower roll/main shaft out from the front of the tool head. Using a soft cloth, remove any debris and excess grease from the lower roll/main shaft.



7. Store the lower roll/main shaft in the holder located on the tool cart.

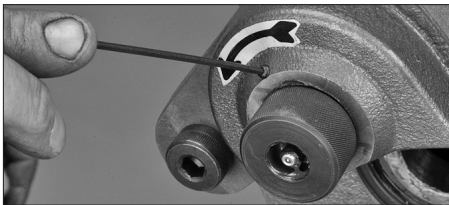
8. Follow the “Lower Roll/Main Shaft Installation” section.

UPPER ROLL REMOVAL

The same upper roll is used for standard grooving of carbon steel and stainless steel pipe. When preparing to groove copper tubing or pipe to "ES" specifications, the upper roll for carbon steel/stainless steel pipe must be removed and the appropriate upper roll must be installed.

NOTICE

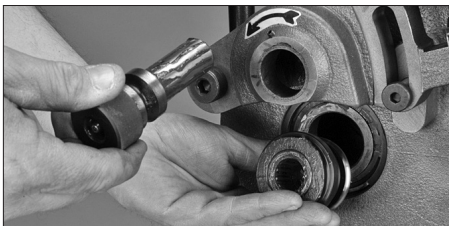
- The lower roll/main shaft must be removed prior to removing the upper roll from the upper roll shaft/arm casting.



1. Using a $\frac{3}{32}$ -inch hex key (not supplied), loosen the set screw located on the top front portion of the arm casting.



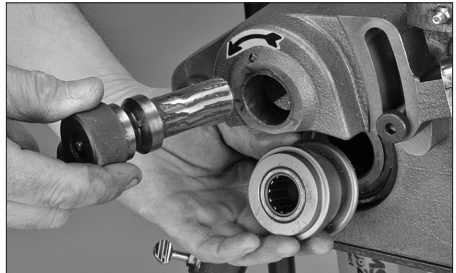
2. Prepare to support the upper roll while sliding the upper shaft out of the arm casting.



3. Remove the upper roll. Store the upper roll in the safety-foot-switch storage box.
4. Follow the "Upper Roll Installation" section.

UPPER ROLL INSTALLATION

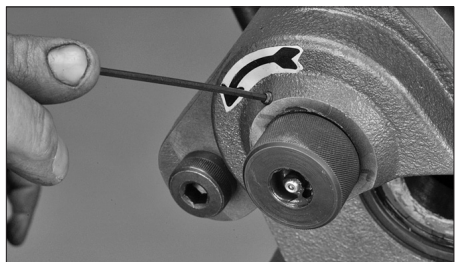
1. Select the proper upper roll for the pipe size and material to be grooved. Refer to the tables on pages 29 and 30.



2. Position the upper roll in the pocket of the arm casting. **NOTE:** The flange portion of the upper roll must face toward the rear of the tool, as shown above.



3. Insert the upper shaft into the arm casting and upper roll.



4. Tighten the set screw to secure the upper shaft in position. Ensure that the upper roll rotates freely.
5. Lower the arm casting. Ensure that the upper roll aligns properly with the lower roll/main shaft.

LOWER ROLL/MAIN SHAFT INSTALLATION

1. Select the proper lower roll/main shaft for the pipe size and material to be grooved. Refer to the tables on pages 29 and 30.

NOTICE

- Upper roll installation must be complete before proceeding with lower roll/main shaft installation.



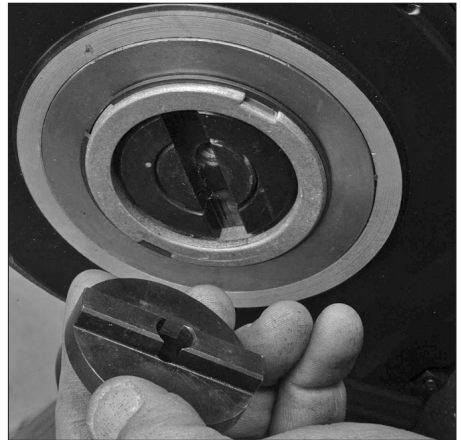
2. Apply dry graphite spray (supplied) to the lower roll/main shaft bore, as shown above.



3. Apply dry graphite spray (supplied) to the main shaft, as shown above.



4. Install the lower roll/main shaft into the tool head. While maintaining a grip on the knurled end (lower roll) of the main shaft, ensure that the flats on the drive end of the main shaft align with the flats in the drive motor.




5. Seat the drive key into the rear of the lower roll/main shaft.



6. Install the lock washer, and tighten the $\frac{3}{8}$ -inch hex bolt to retain the drive key.

MAINTENANCE



DANGER

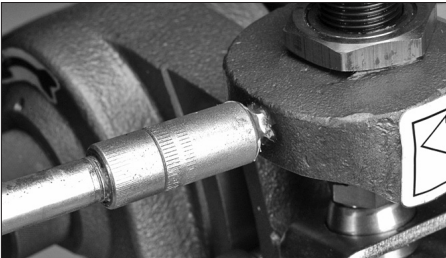
- Before performing any maintenance on the tool, disconnect the power cord from the electrical source.

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

This section provides information about keeping tools in proper operating condition and guidance for making repairs when it becomes necessary.

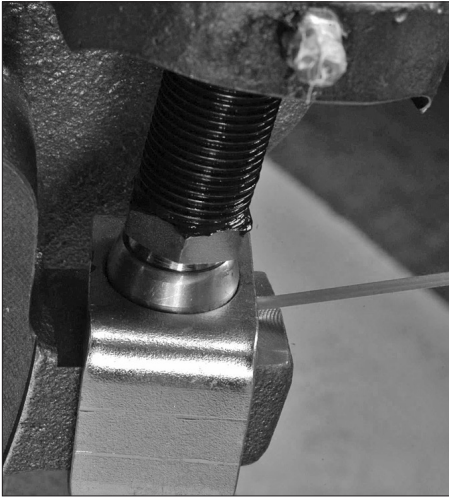
Replacement parts must be ordered from Victaulic to ensure proper and safe operation of the tool.

LUBRICATION



1. After every two hours of operation, apply a No. 2EP lithium-based grease to the feed screw.

Apply the grease by hand to the screw threads or through the grease fitting located at the feed screw. Keep the feed screw lubricated to ensure a long service life.



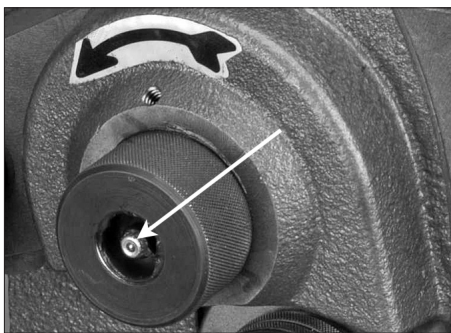
2. Apply grease underneath the toggle pad.



3. Apply grease to the ball-and-socket joint of the toggle pad.



4. Apply grease to the locations in which the roll arm slides against the tool body.



5. After every eight hours of operation, apply grease to the grease fitting of the upper roll shaft.

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-VE106/107 Repair Parts List for detailed drawings and parts listings.

1. Tool Model Number – VE106 or VE107
2. Tool Serial Number – The serial number is stamped onto the tool body
3. Quantity, Part Number, and Description
4. Where to Send the Part(s) – Company Name and Address
5. To Whose Attention to Send the Part(s)
6. Purchase Order Number

Parts can be ordered by calling 1-800-PICK VIC.

ACCESSORIES

VAPS112 VICTAULIC ADJUSTABLE PIPE STAND



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

VAPS224 VICTAULIC ADJUSTABLE PIPE STAND



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

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe will not stay in grooving rolls.	Incorrect pipe positioning of long pipe. Lower roll/main shaft and pipe are not rotating counterclockwise.	Refer to "Long Pipe/Tubing Lengths" on page 13. Turn the drive motor switch to the opposite rotation position.
Pipe stops rotating during grooving.	Rust or dirt has built up on lower roll. Rust or dirt is excessively heavy inside the pipe end. Worn lower roll. The circuit breaker has tripped or a fuse has blown out on the electrical circuit that supplies the power drive. The trigger-lock switch clamp is loose.	Remove accumulation from the lower roll with a stiff wire brush. Remove heavy rust and dirt from inside the pipe end. Inspect lower roll for worn knurls, replace if worn. Reset the breaker, or replace the fuse. Tighten the trigger-lock switch thumb screws.
While grooving, loud squeaks echo through the pipe.	Incorrect pipe support positioning of long pipe length. Pipe is "over-tracking." Pipe end is not cut square. Pipe is rubbing excessively on the lower-roll backstop flange.	Move the pipe support to the right. Refer to "Long Pipe/Tubing Lengths" on page 13. Cut the pipe end squarely. Remove the pipe from the tool, and apply a light coating of grease to the face of the lower-roll backstop flange.
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.
Pipe flare is excessive.	Pipe support is adjusted too high for long pipe. Tool is tilted forward (out of level) while grooving long pipe length. Incorrect pipe support positioning.	Refer to "Long Pipe/Tubing Lengths" on page 13. Refer to "Tool Setup" on page 8. Move the pipe support to the right. Refer to "Long Pipe/Tubing Lengths" on page 13.
The tool will not groove the pipe.	Pipe is beyond the wall thickness capacity of the tool, or the pipe material is too hard.	Refer to the table on the following page.
The shear pin has broken.	Rolls were being fed too fast. Pipe is beyond the wall thickness capacity of the tool, or the pipe material is too hard. The feed mechanism is binding, damaged, or insufficiently lubricated.	Replace the shear pin, and groove the pipe at a slower rate. Replace the pin, and groove pipe that is within the capacity of the tool. Refer to the table on the following page. Repair and lubricate the feed mechanism, as required.


TROUBLESHOOTING (CONTINUED)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe grooves do not meet Victaulic specifications.	Groove diameter stop is not adjusted correctly. Pipe is beyond the wall thickness capacity of the tool, or the pipe material is too hard.	Refer to "Groove Diameter Stop Adjustment" on page 14. Refer to the table below.
The "A" Gasket Seat or "B" Groove Width dimensions do not meet Victaulic specifications.	Upper roll bearing is not lubricated sufficiently. Incorrect upper roll, lower roll, or both installed on the tool.	Refer to "Maintenance" on page 24. Install the correct rolls. Refer to the table below.

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

NOTICE

- The "Maximum Pipe Size and Wall Thickness Capacity" table below is accurate as of the date printed on the back cover of this manual. For the most up-to-date information, reference Victaulic publication 24.01, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link:
<https://www.victaulic.com/assets/uploads/literature/24.01.pdf>



VE106/VE107 RATINGS - MAXIMUM PIPE SIZE AND WALL THICKNESS CAPACITY

		Pipe Size (inches/mm)								
Model	Pipe Material	1¼ 32	1½ 40	2 50	2½	3 80	3½ 90	4 100	5	6 150
VE106	Steel	Sch. 5 – 40 1.7 – 7.1 mm								
	Stainless	Sch. 40S 3.6 – 7.1 mm								
	Lt. Wall SS	Sch. 5S – 10S 1.7 – 3.4 mm								
	Copper	K, L, M and DWV								

ORIGINAL GROOVE SYSTEM
(OGS) ROLL PART NUMBERS

STEEL PIPE - COLOR CODED BLACK

Pipe Size inches/mm	Roll Part Numbers
1 ¼ – 3 ½ 32 – 90	Lower Roll R912106L03
	Upper Roll R912106UA6
4 – 6 100 – 150	Lower Roll R904106L06
	Upper Roll R912106UA6

ENDSEAL “ES”
ROLL PART NUMBERS

STEEL PIPE - COLOR CODED BLACK

Pipe Size inches/mm	Roll Part Numbers
2 – 3 ½ 50 – 90	Lower Roll RZ02106L03
	Upper Roll RZ02106UA3
4 – 6 100 – 150	Lower Roll RZ04106L06
	Upper Roll RZ04106UA6

ORIGINAL GROOVE SYSTEM
(OGS) ROLL PART NUMBERS

SCHEDULE 5S AND 10S STAINLESS STEEL
PIPE - COLOR CODED SILVER

Pipe Size inches/mm	Roll Part Numbers
1 ¼ – 6 32 – 150	Lower Roll RX12106L06
	Upper Roll R912106UA6

ORIGINAL GROOVE SYSTEM
(OGS) ROLL PART NUMBERS

CTS US STANDARD - ASTM DRAWN COPPER
TUBING - COLOR CODED COPPER

Pipe Size inches	Roll Part Numbers
2 – 6	Lower Roll RR02106L06
	Upper Roll RR02106UA6

ORIGINAL GROOVE SYSTEM
(OGS) ROLL PART NUMBERS

AUSTRALIAN STANDARD - AS 1432 TYPES A,
B, AND D COPPER TUBING - COLOR CODED
COPPER

Pipe Size DN	Roll Part Numbers
DN50 – DN150	Lower Roll RRA2106L06
	Upper Roll RRA2106UA6

OGS GROOVE SPECIFICATIONS

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

<https://www.victaulic.com/assets/uploads/literature/25.01.pdf>



ENDSEAL “ES” GROOVE SPECIFICATIONS

For the most up-to-date information regarding EndSeal “ES” roll groove specifications, reference the current revision of Victaulic publication 25.02, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link:

<https://www.victaulic.com/assets/uploads/literature/25.02.pdf>



COPPER TUBING GROOVE SPECIFICATIONS

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

<https://www.victaulic.com/assets/uploads/literature/25.06.pdf>



ADDITIONAL RESOURCES

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

<https://www.victaulic.com/assets/uploads/literature/I-100.pdf>



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

<https://www.victaulic.com/assets/uploads/literature/I-600.pdf>



EC DECLARATION OF CONFORMITY

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 Models:	VE 106 VE 107
Serial No. :	Refer to Machinery Nameplate
Product Description:	Portable Pipe Roll Grooving Tools
Conformity Assessment:	2006/42/EC, Annex I
Reference Standards:	EN ISO 12100 : 2010
Technical Documentation:	The relevant technical documentation prepared in accordance with Annex VII (A) of the Machinery Directive 2006/42/EC, will be made available upon request to the governing authorities.
Authorized Representative:	Victaulic Company c/o Victaulic Europe 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

Date of Issue: April 11, 2016

MD_DoC_RGT_003_041116_en

VICTAULIC IS A REGISTERED TRADEMARK OF VICTAULIC COMPANY. ©2013 VICTAULIC COMPANY. ALL RIGHTS RESERVED.





UK DECLARATION OF CONFORMITY

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

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

Product Models:	VE-106 VE-107
Serial No. :	Refer to Machinery Nameplate
Product Description:	Portable Pipe Roll Grooving Tools
Conformity Assessment:	2008 No. 1597, Annex I
Reference Standards:	BS EN ISO 12100 : 2010 BS EN ISO 13857 : 2019 BS EN ISO 14120 : 2015
Technical Documentation:	The relevant technical documentation prepared in accordance with Annex VII (A) of The Supply of Machinery (Safety) Regulations 2008 No. 1597, will be made available upon request to the governing authorities.
Authorized Representative:	Victaulic Company c/o Victaulic Europe BVBA Units B1 & B2 Cockerell Close off Gunnels Wood Road Stevenage, Hertfordshire SG1 2NB, United Kingdom

Signed for and on behalf of Victaulic Company,

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

Place of Issue: Easton, Pennsylvania, USA

Date of Issue: May 14, 2021

VE106 and VE107 Groove-N-Go Pipe/Tubing Roll Grooving Tools
