

VE460 Roll Grooving Tool



OGS
OGS-200
AGSTM
EndSealTM

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

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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 VE460 Roll Grooving Tool 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 tool. 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 this tool requires dexterity and mechanical skills, as well as sound safety habits. Although this tool is designed and manufactured for safe, dependable operation, it is difficult to anticipate all combinations of circumstances that could result in an accident. The following instructions are recommended for safe operation of this tool. 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 this tool to ensure that all operators read this manual and fully understand the operation of this tool.

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 tool to protect the operator from electric shock.** Ensure that the tool 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.** Always use proper lifting techniques when handling tool components.
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 and stabilizer roller 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 power drive shall be operated with a 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, 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.
8. **Do not make any modifications to the tool.** Do not remove any safety guarding or any components that would affect tool performance.
9. **Do not operate the tool at ram speeds exceeding those specified in this manual.**

CAUTION


1. **The VE460 tool is designed ONLY for roll grooving pipe sizes, materials, and wall thicknesses as designated.**
2. **Inspect the equipment.** Before using the tool, check moveable parts for obstructions. Ensure that tool components are installed and adjusted in accordance with the “Tool Setup” section. Ensure that properly matched roll sets are installed and lubricated.
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 lengths with a pipe stand, in accordance with the “Long Pipe/Tubing Lengths” section.
8. **Do not force the tool.** Do not force the tool or accessories to perform any functions beyond the capabilities described in these instructions. Do not overload the tool.
9. **Maintain tool with care.** Keep the tool clean at all times to ensure proper and safe performance. Follow the instructions for 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
<ul style="list-style-type: none">• 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 VE460 Roll Grooving Tool is a motorized, semi-automatic, hydraulic-feed tool for roll grooving pipe to receive Victaulic grooved pipe products. The VE460 tool is supplied with matched rolls for grooving 4–12-inch/ 114.3–323.9-mm carbon steel pipe to Original Groove System (OGS) specifications and 14–24-inch/355.6–610-mm carbon steel pipe to Advanced Groove System (AGS) specifications.

VE460 rolls are marked with the size and part number, and are color coded to identify the pipe material. For roll grooving to other specifications and materials, refer to the tables on page 60. Grooving tools for other specifications, sizes, and materials must be purchased separately.

 **CAUTION**

- This tool must be used **ONLY** for grooving pipe 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

VE460 tools are palletized individually and enclosed in a wooden or cardboard sleeve. The stabilizer assembly and additional roll sets are shipped in a separate container. Save the original packaging 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.

LARGE CONTAINER CONTENTS

Qty.	Description
1	VE460 Pipe Roll Grooving Tool
1	Roll Set for 8–12-inch/219.1–323.9-mm Steel Pipe Mounted on the Tool (Unless Ordered Otherwise) - Original Groove System Specifications
1	Stabilizer Mounting Hardware (Installed Loose in Mounting Holes for Stabilizer)
1	Pipe Diameter Tape
1	Hydraulic System Bleeder Tube
1	Safety Foot Switch with Detachable Line Cord
2	TM-VE460 Operating and Maintenance Instructions Manual
2	RP-VE460 Repair Parts List

SMALL CONTAINER CONTENTS

Qty.	Description
1	Stabilizer Assembly
1	Roll Set for 4–6-inch/114.3–168.3-mm Steel Pipe - Original Groove System Specifications
1	Roll Set for 14–24-inch/355.6–610-mm Steel Pipe - AGS Specifications


NOTE: Support bases for grooving 26-inch/660.0-mm and larger pipe sizes shall be ordered separately and will be shipped in separate containers from the tool components listed on this page.

TOOL RETURN OR DISPOSAL

Prepare tool for shipment as received. Ensure that chips and debris are thoroughly cleaned from the machine, all fluids are drained, and power is disconnected. VE460 tool, drained fluids, and accessories shall be disposed of or recycled according to local ordinances. Contact Victaulic with questions.



POWER REQUIREMENTS



⚠ DANGER

- **ONLY QUALIFIED ELECTRICIANS SHOULD CONNECT INCOMING POWER TO THE TOOL.**

- To reduce the risk of electric shock, check the electrical source for proper grounding.
- Always turn off the main power supply to the tool before making any tool adjustments or before performing any maintenance.
- **DO NOT** alter the plug in any way.

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

THE VE460 IS DESIGNED FOR USE ON A TYPE TN POWER DISTRIBUTION SYSTEM AND CAN OPERATE UNDER THE FOLLOWING CONDITIONS:

Volts	Phase	Hertz	Full-Load Current
230	3	50/60	18.3 AMPS
380	3	50/60	9.9 AMPS
415	3	50/60	9.1 AMPS
460	3	50/60	8.2 AMPS

Short circuit interrupting capacity is 5,000 AMPS.

The tool is shipped with the wiring set for 220-volt operation, unless specified otherwise on the order. To re-wire the tool for 440-volt service, the following conversions shall be made. Refer to the electrical schematic in the RP-VE460 Repair Parts List and the information contained on the nameplate on the tool's drive motor and hydraulic pump motor.

Conversions to 440-volt, 60-Hz service include:

- 1. Motor Connections
- 2. Thermal Overload Unit Changes

The circuit protection required for 220-volt operation is 45 amps. For 440-volt operation, 25-amp circuit protection is required.

All VE460 components are grounded to the frame of the tool. Ensure that the frame is grounded properly.

For other voltages and frequencies, contact Victaulic.

POWER HOOKUP

Each VE460 Roll Grooving Tool is provided with a label outside the main electrical enclosure, which identifies voltage ratings for the tool (refer to example below). Reference shall be made to this label to ensure proper tool setup.

VE460

SERIAL NO. DATE MFD.




VOLTS	PHASE	HERTZ	FULL-LOAD CURRENT
230	3	50/60	18.3 AMPS
380	3	50/60	9.9 AMPS
415	3	50/60	9.1 AMPS
460	3	50/60	8.2 AMPS

DRIVE MOTOR:

VOLTS	PHASE	HERTZ	FULL-LOAD CURRENT
230	3	50/60	12.6 AMPS
380	3	50/60	7.6 AMPS
415	3	50/60	7.0 AMPS
460	3	50/60	6.3 AMPS


SHORT CIRCUIT INTERRUPTING CAPACITY 5,000 AMPS

- GEAR OIL – AGMA 7
- HYDRAULIC OIL – HIGH-PRESSURE, ANTI-WEAR ISO GRADE 32
- BEARING LUBE – ANTI-WEAR, EXTREME PRESSURE NLGI GRADE 2



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victaulic.com

ELECTRICAL
ASSEMBLY DWG.
18-301-460-110-01
REVISION LEVEL



Manufactured in
Canada

1044 Rev. E 03/2024/01/01

The VE460 Roll Grooving Tool is supplied with a 3/4-inch nominal conduit opening for wiring incoming power. The conduit opening is located at the back of the tool near the main electrical enclosure.

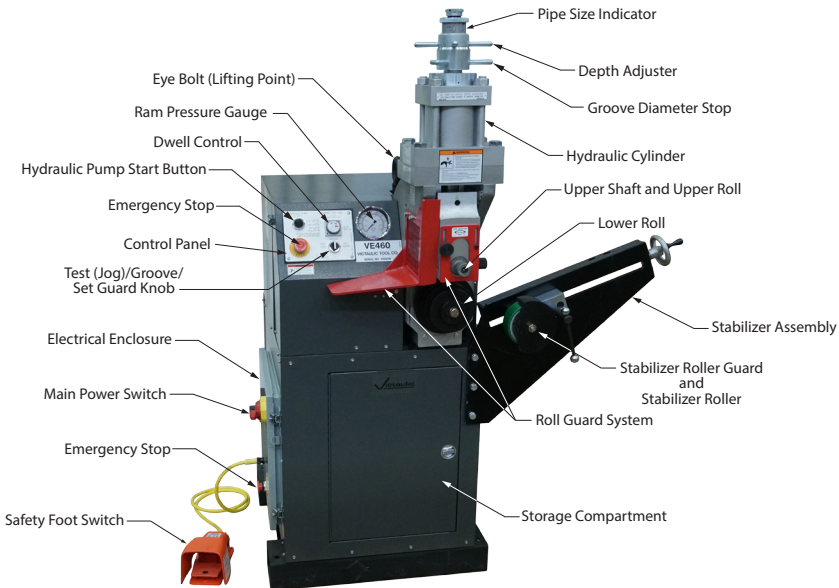
Incoming electrical connections shall be made inside the main electrical enclosure. The incoming, three-phase power shall be connected at the top of the main breaker at the upper-right side within the main electrical enclosure.

1. Make the ground connection inside the main electrical enclosure.
2. Make 3-phase electrical connections to the circuit breaker of the tool.
3. After power is connected, the tool shall be checked for proper rotational direction.

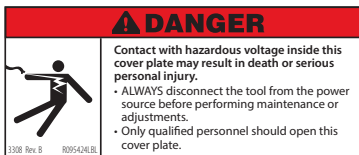
TOOL NOMENCLATURE

NOTICE

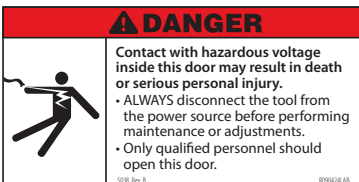
- Drawings and/or pictures in this manual may be exaggerated for clarity.
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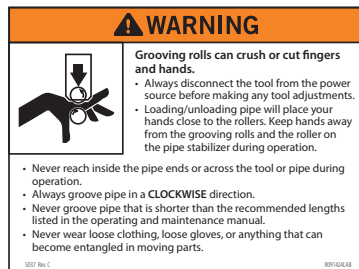
Located Under Control Panel



Located on Electrical Enclosure



Located on Front of Tool



IMPORTANT INFORMATION FOR TOOL SETUP

Support bases are required when using a VE460 Roll Grooving Tool to groove 26-inch/660-mm and larger pipe sizes. Each support base corresponds with a range of pipe sizes; these requirements shall be followed to ensure pipe is grooved properly (refer to table below).

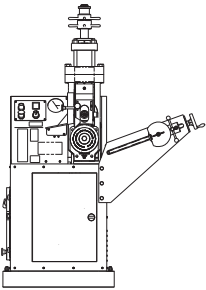
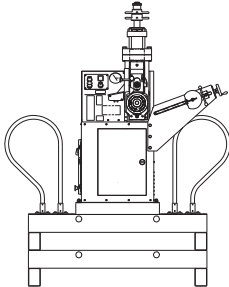
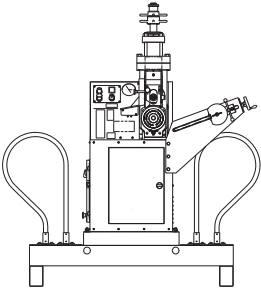
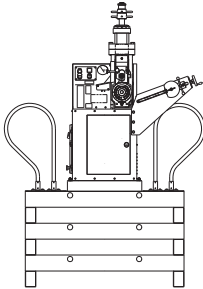
If the tool will be used for roll grooving 24-inch/610-mm and smaller pipe sizes, follow the “Tool Setup for Grooving 24-inch/610-mm and Smaller Pipe Sizes” section. For the 24-inch/610-mm and smaller pipe size range, support bases are not required, but the tool shall be anchored to a sturdy, level concrete floor.

If the tool will be used for roll grooving 26-inch/660-mm and larger pipe sizes, follow the “Tool Setup for Grooving 26-inch/660-mm and Larger Pipe Sizes” section. **NOTE:** Each support base is 12 inches/305 mm in height and weighs approximately 180 pounds/82 kilograms.

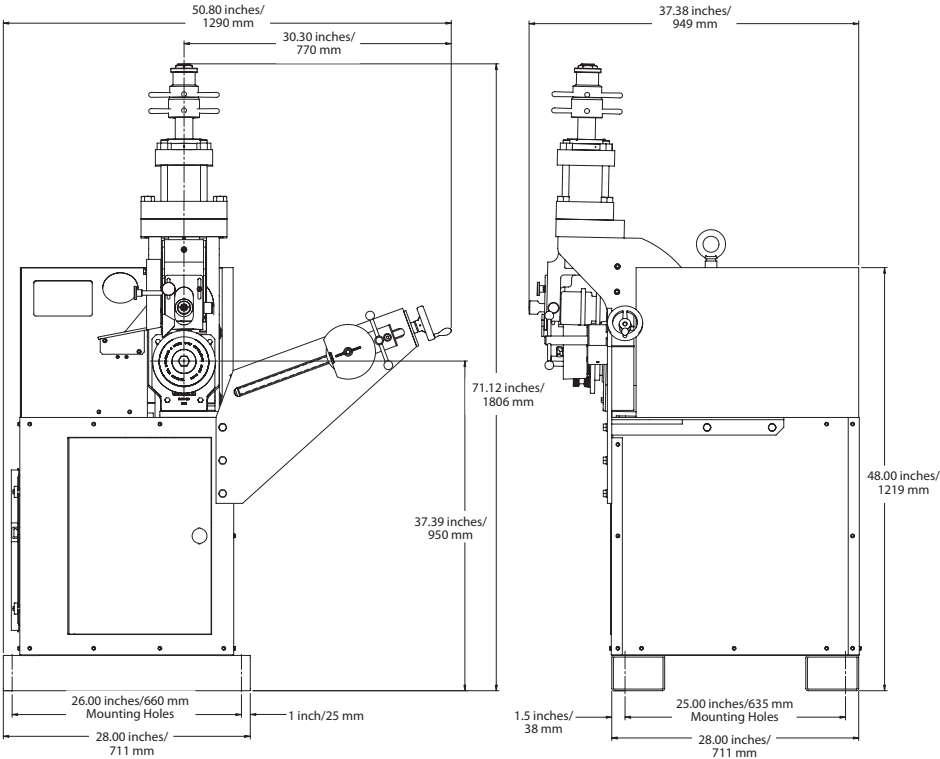
WARNING

- The tool or bottom support base **SHALL** always be anchored to a sturdy, level concrete floor that is capable of handling the weight of the tool and accessories.
- Handrails shall be installed and the electrical cord/safety foot switch cord shall be routed through the support base(s) to prevent tripping hazards.

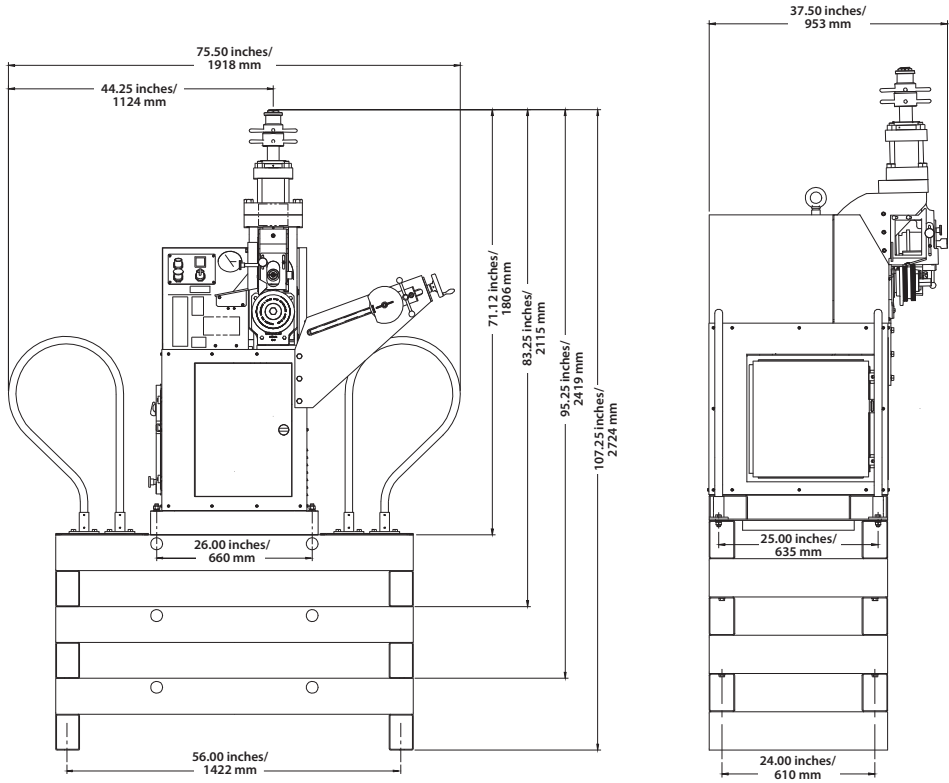
Failure to follow this instruction could result in property damage or serious personal injury.

Configuration	Pipe Size Range	Configuration	Pipe Size Range
 Tool without support base(s)	24-inch/610-mm and Smaller Pipe Sizes	 Tool installed with two support bases	40–50-inch/ 1016–1270-mm Pipe Sizes
 Tool installed with one support base	26–38-inch/ 660–965-mm Pipe Sizes	 Tool installed with three support bases	52–60-inch/ 1320–1524-mm Pipe Sizes

TOOL DIMENSIONS AND SPECIFICATIONS – WITHOUT SUPPORT BASES



TOOL DIMENSIONS AND SPECIFICATIONS – WITH SUPPORT BASES

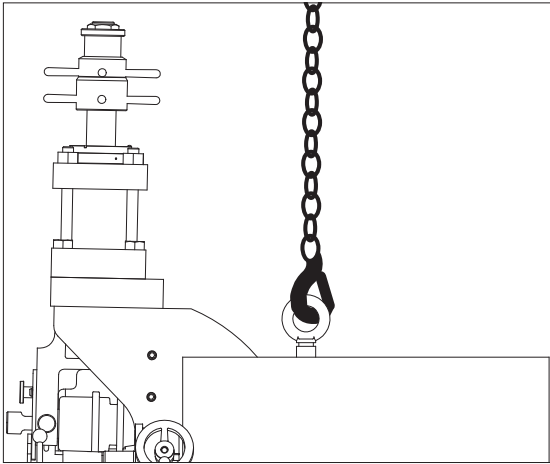


The VE460 Roll Grooving Tool by itself weighs approximately 1800 pounds/820 kilograms.

- The VE460 Roll Grooving Tool mounted on one support base weighs approximately 1980 pounds/900 kilograms.
- The VE460 Roll Grooving Tool mounted on two support bases weighs approximately 2160 pounds/980 kilograms.
- The VE460 Roll Grooving Tool mounted on three support bases weighs approximately 2340 pounds/1065 kilograms.

Tool sound pressure is below 70 dB(A).

LIFTING REQUIREMENTS – WITHOUT SUPPORT BASES



WARNING

- An overhead crane shall be used to lift/transport the tool to its intended location.
- An eye bolt is provided in the top-middle section of the tool, as shown in the drawing to the left.
- Minimum capacity rating of the overhead crane shall be 2000 pounds/910 kilograms.

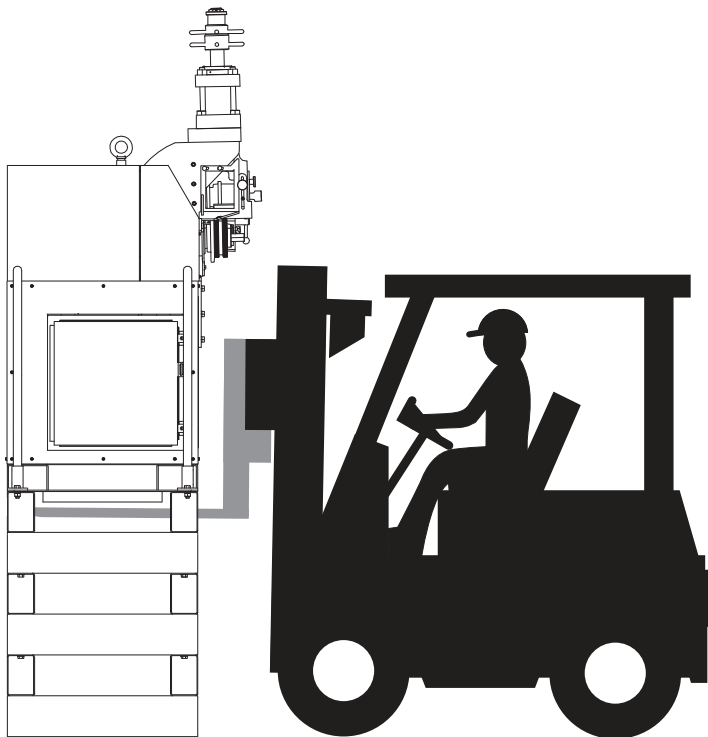
Failure to follow this instruction could result in property damage or serious personal injury.

LIFTING REQUIREMENTS – WITH SUPPORT BASES

WARNING

- DO NOT attempt to use the eye bolt for lifting a VE460 Roll Grooving Tool that is installed on a support base(s).
- When attempting to relocate a VE460 Roll Grooving Tool that is installed on a support base(s), the wedge-type concrete floor anchors shall be removed, and a forklift shall be used to transport the tool assembly.
- The forks of the forklift shall engage only with the top support base, as shown in the drawing below.
- Wedge-type concrete floor anchors shall be used to anchor the tool/support base assembly to the floor at the new location. Refer to the “Tool Setup for Grooving 26-inch/660-mm and Larger Pipe Sizes” section.

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



TOOL SETUP

24-INCH/610-MM AND SMALLER PIPE

! WARNING

- **DO NOT** turn on the main power supply to the tool until instructed otherwise.
- The tool **SHALL** be leveled and anchored securely on a concrete floor or base.

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

1. Remove all 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 and pipe stand by taking into consideration the following factors:

- a. The required power supply (refer to the “Power Requirements” section)
- b. Ambient temperature requirements of 20° F to 104° F / -6°C to 40° C and ambient humidity requirements of 30 to 85% RH non-condensing.
- c. A level concrete floor for the tool/support base(s) and pipe stand
- d. Adequate space to handle pipe lengths
- e. Adequate clearance around the tool/support base(s) for adjustment and maintenance
- f. Adequate stability and distance from other machinery, free from excessive vibration and impact.
- g. Proper lighting and protection from rain, snow, and environmental contaminants.
- h. Electrical Panel disconnect and Emergency Stop buttons must be accessible at all times.

NOTE: An overhead crane shall be used to lift/transport the tool to its intended location. An eye bolt is provided in the top-middle section of the tool. Ensure that the minimum capacity rating of the overhead crane is 2000 pounds/910 kilograms. Refer to the “Tool Dimensions and Weight – Without Support Bases” section for additional information.

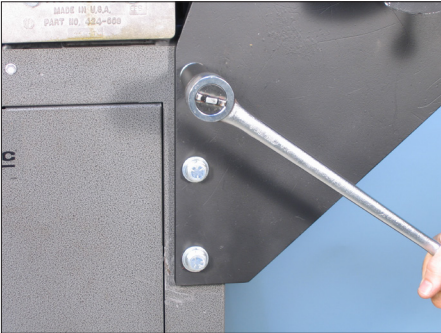
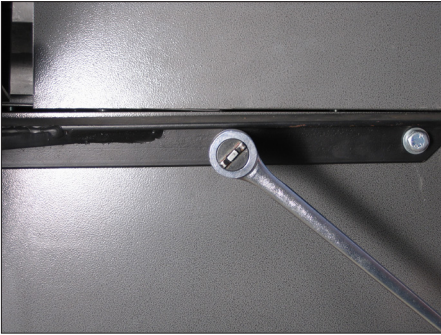


3. The VE460 Roll Grooving Tool is designed for use in a permanent location and shall be located on a level concrete floor or base. After an appropriate location is chosen, the tool shall be leveled front-to-back and side-to-side and anchored securely. A non-level tool can severely affect grooving operation. When checking tool level, place the level directly on the tool surfaces, as shown above.

! WARNING

- **During tool setup, two people are needed to safely handle the stabilizer assembly due to its weight.**
- **An alternative is to use a hoist to lift the stabilizer assembly into position.**

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



4. Remove the stabilizer bolts and lock washers from the front and right side of the tool. Position the stabilizer assembly onto the front, right corner of the tool so that the mounting holes in the stabilizer assembly align with the mounting holes in the tool. Using the stabilizer bolts and lock washers, removed previously from the tool, fasten the stabilizer assembly to the tool.

NOTE: The tool frame is designed so that no nuts are required on the ends of the bolts. Tighten all stabilizer bolts completely until the lock washers are compressed fully.

NOTICE

- VE460 tools are equipped with a detachable safety foot switch cord. The safety foot switch can be removed easily for storage in the cabinet when the tool is not in use.



5. Install the safety foot switch by aligning the pins/tab of the male adapter plug with the receptacle.



6. Tighten the locking ring on the plug.

7. Proceed to the “Power Requirements” section.

26-INCH/660-MM AND LARGER PIPE

⚠ WARNING

- **DO NOT** turn on the main power supply to the tool until instructed otherwise.
- The bottom support base **SHALL** always be anchored to a sturdy, level concrete floor that is capable of handling the weight of the tool and accessories.

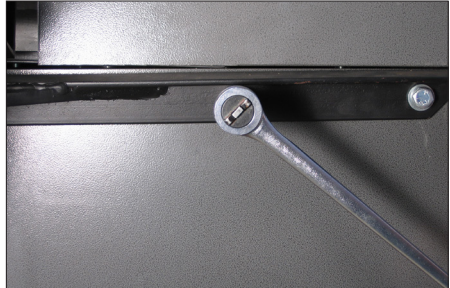
Failure to follow these instructions could result in serious personal injury.

1. Remove all components from the packaging, and ensure that all necessary items are included. Refer to the “Receiving the Tool” section.
2. The VE460 Roll Grooving Tool with support base(s) is designed for use in a permanent location and shall be located on a level concrete floor. After an appropriate location is chosen, the bottom support base shall be level and securely anchored. A non-level tool can severely affect grooving operation.
3. Select a location for the tool/support base(s) and pipe stand by taking into consideration the following factors:
 - a. The required power supply (refer to the “Power Requirements” section)
 - b. Ambient temperature requirements of 20° F to 104° F / -6°C to 40° C and ambient humidity requirements of 30 to 85% RH non-condensing.
 - c. A level concrete floor for the tool/support base(s) and pipe stand
 - d. Adequate space to handle pipe lengths
 - e. Adequate clearance around the tool/support base(s) for adjustment and maintenance
 - f. Adequate stability and distance from other machinery, free from excessive vibration and impact.
 - g. Proper lighting and protection from rain, snow, and environmental contaminants.
 - h. Electrical Panel disconnect and Emergency Stop buttons must be accessible at all times.

⚠ WARNING

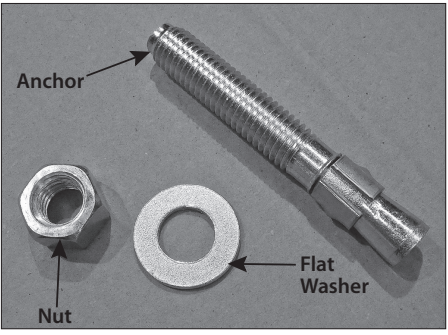
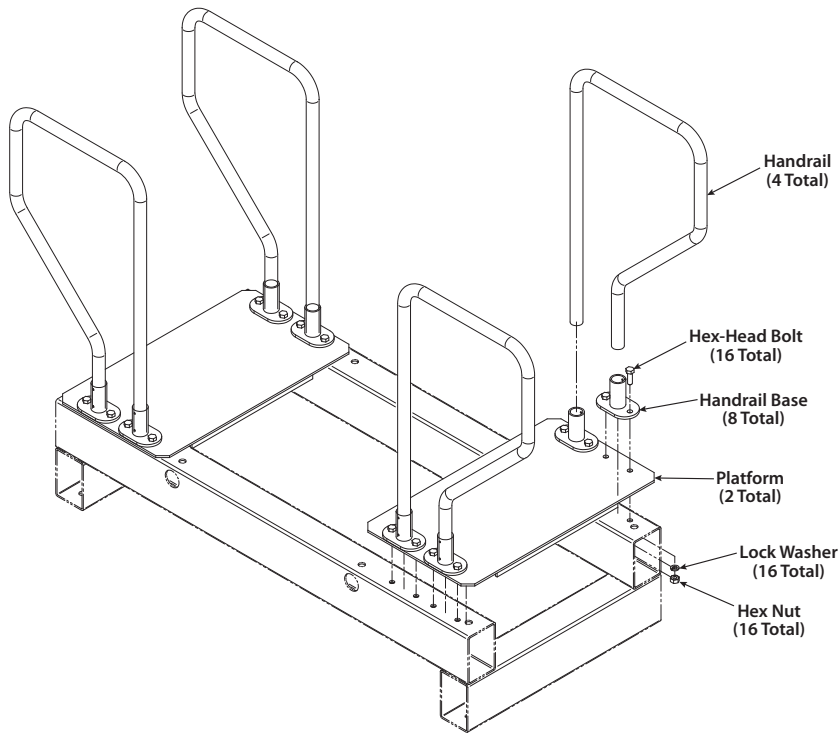
- During tool setup, two people are needed to safely handle the stabilizer assembly due to its weight.
- An alternative is to use a hoist to lift the stabilizer assembly into position.

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



4. Remove the stabilizer bolts and lock washers from the front and right side of the tool. Position the stabilizer assembly onto the front, right corner of the tool so that the mounting holes in the stabilizer assembly align with the mounting holes in the tool. Using the stabilizer bolts and lock washers, removed previously from the tool, fasten the stabilizer assembly to the tool.

NOTE: The tool frame is designed so that no nuts are required on the ends of the bolts. Tighten all stabilizer bolts completely until the lock washers are compressed.



5. Wedge-type concrete floor anchors ($\frac{5}{8}$ x $4\frac{1}{4}$ -inch size) shall be used to secure the bottom platform to the floor. Ensure that the floor anchors are installed into the concrete floor in accordance with the manufacturer's instructions.



6. Using a four-point lifting method, as shown above, raise the bottom support base over the area where the floor anchors are installed. Align the four holes in the support base with the four floor anchors. Slowly lower the support base over the floor anchors.

NOTE: DO NOT attempt to move the support base with a forklift.

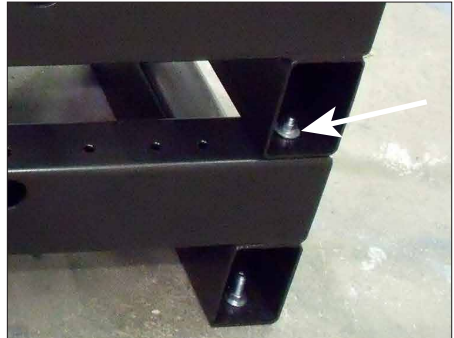


7. Install a flat washer and nut onto each of the floor anchors, as shown. Tighten the nut completely.



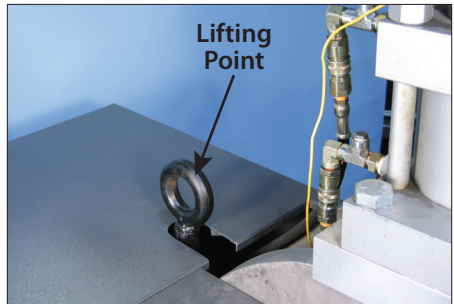
8. At this time, an additional support base can be installed. Following the same four-point lifting method as shown in step 6, raise the second support base over the first support base. Align the four holes in the second support base with the four holes in the first support base. Slowly lower the second support base onto the first support base.

9. Locate the bolt, two flat washers, lock washer, and nut (supplied with the support base kit). This hardware is required to anchor the support bases to each other.

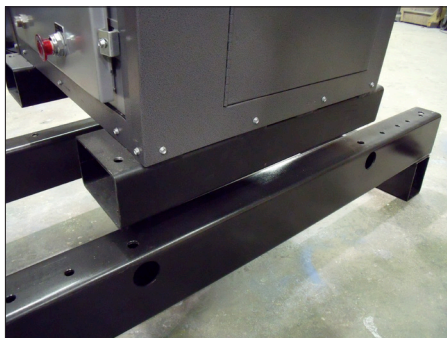


10. Insert a bolt with flat washer through the holes in the second support base and first support base. Apply a flat washer, lock washer, and nut to the end of the bolt. Tighten the nut completely until the lock washer is compressed. Repeat this step for the other three hole locations.

11. If a third support base is required, repeat steps 8–10.



12. When the correct number of support bases are installed and secured, the tool shall be lifted into position and placed onto the support base(s). An eye bolt is provided in the top-middle section of the tool. Ensure that the minimum capacity rating of the overhead crane is 2000 pounds/910 kilograms. Refer to the “Tool Dimensions and Weights – Without Support Bases” section for additional information.



13. As the tool is being lowered onto the support base(s), ensure that the power cord is guided out of the way and the safety foot switch cord is disconnected to prevent damage. The holes in the base of the tool shall align with the innermost holes in the support base, as shown.

14. Locate the bolt, two flat washers, lock washer, and nut (supplied with the support base kit). This hardware is required to anchor the tool and support base to each other.



15. Insert a bolt with a flat washer up through the hole in the support base and into the hole in the base of the tool. Apply a flat washer, lock washer, and nut to the end of the bolt. Tighten the nut completely until the lock washer is compressed. Repeat this step for the other three hole locations in the support base and tool base.

NOTICE

- VE460 tools are equipped with a detachable safety foot switch cord. The safety foot switch can be removed easily for storage in the cabinet when the tool is not in use.

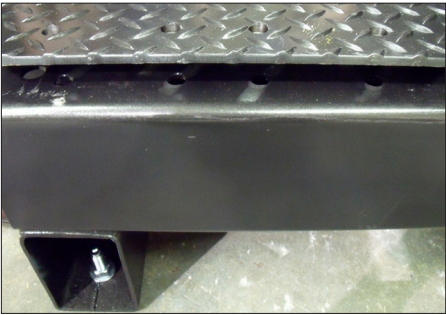
⚠ WARNING

- Handrails shall be installed and the electrical cord/safety foot switch cord shall be routed through the support base(s) to prevent tripping hazards.

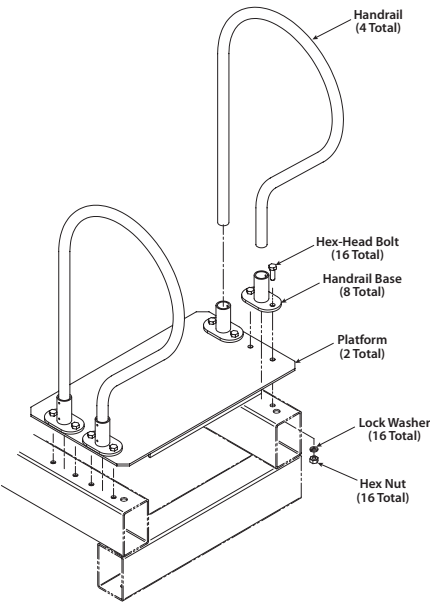
Failure to follow this instruction could result in serious personal injury.



16. Route the safety foot switch cord up through the support base(s). Plug the safety foot switch cord into the receptacle on the side of the tool by aligning the pins/tab of the male adapter plug with the receptacle. Tighten the locking ring on the plug.



17. Install the platform onto the support base. Align the holes in the platform with the holes in the support base, as shown. Repeat this step for the other side of the tool.



18. Locate the hex-head bolt, lock washer, and hex nut (supplied with the support base kit). This hardware is required for installation of the handrail bases.



19a. Install a handrail base onto the platform at the eight locations on the platform/tool support. Ensure that the holes in the handrail bases align with the holes in the platforms/support base and that the set screws on the handrail bases face away from the platform, as shown.

19b. Install a hex-head bolt through the two holes in each handrail base and into the platform/tool support. Apply a lock washer and hex nut onto the end of each hex-head bolt.



19c. Tighten the hex nut completely until the lock washer is compressed. Repeat this step for each handrail base location.



19d. Insert a handrail into each handrail base, as shown.



19e. Tighten the two set screws on each handrail base to retain the handrails.

20. Proceed to the “Power Requirements” section.

NOTICE

- **Always use the handrails for support when climbing the support base(s).**
- **When attempting to relocate a tool that is installed on support base(s), refer to the “Tool Dimensions and Weights – With Support Bases” and “Lifting Requirements – With Support Bases” sections for additional information.**

VERIFICATION OF PIPE ROTATION DIRECTION

The VE460 Roll Grooving Tool is equipped with a “TEST (JOG)” setting. Operating the tool in the “TEST (JOG)” setting allows for:

- Determining rotation of the tool’s lower roll
- Confirming that the pipe to be grooved is tracking properly on the lower roll



1. Turn the main power switch on the side of the tool to the “ON” position.



2. Pull the “EMERGENCY STOP” button on the control panel and the electrical enclosure to the out position.



3. Place the selector switch on the control panel to the “TEST (JOG)” mode and momentarily depress the “HYDRAULIC PUMP START” button to energize the lower roll. Observe lower roll rotational direction. Release the “HYDRAULIC PUMP START” button to de-energize the lower roll.

NOTE: The safety foot switch does not need to be depressed while the tool is in the “TEST (JOG)” mode.

4. Proper rotation of the lower roll is **clockwise** when viewed from the front of the tool. If rotation is clockwise, power hookup is complete.

⚠ WARNING

- Always turn off the main power supply to the tool before making any tool adjustments.

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



5. If rotation of the lower roll is counter-clockwise, turn the main power switch on the side of the tool to the “OFF” position and proceed with the following steps.



6. Turn off the main power supply to the tool (circuit breaker panel, knife switch, etc.). Lock the switch in the “OFF” position to prevent accidental engagement.

NOTE: Victaulic does not supply this lockout mechanism.



7. Open the main enclosure by loosening the screw on the two brackets of the main enclosure. Push in the lever at the bottom of the handle while turning clockwise to open the main enclosure. Reverse any of the two incoming lines at the top of the main power disconnect (located at the upper-right side within the enclosure).

8. Close the main enclosure and re-tighten the screw on the two brackets.

9. Turn on the main power supply to the tool (circuit breaker panel, knife switch, etc.).

10. Follow steps 1–4 to check the rotational direction of the lower roll. If rotational direction is not clockwise, contact Victaulic. If rotational direction is clockwise, the verification procedure is complete.

EMERGENCY STOP OPERATION

Verify that emergency stop function is operational during tool setup. Perform the “PUSH”, “PULL”, and “START” actions to test emergency stop function.

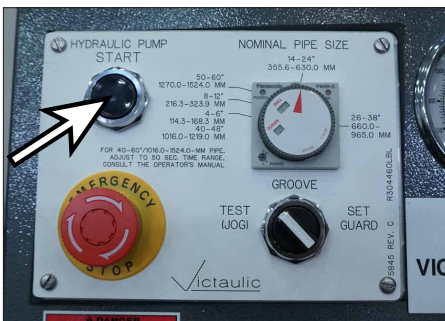


1. Turn the main power switch on the side of the tool to the “ON” position.

! WARNING

- The motor must not energize until after the “HYDRAULIC PUMP START” button has been pressed.
- If the motor energizes from a cold start without first pressing the “HYDRAULIC PUMP START” button, discontinue use and contact Victaulic.

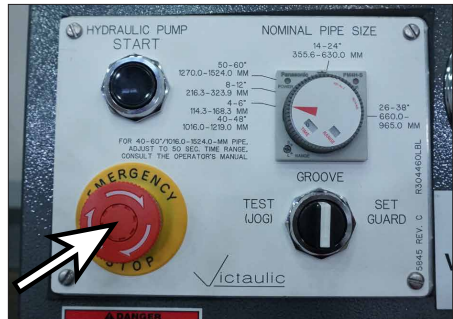
Failure to follow this instruction could result in serious personal injury.



2. Press the “HYDRAULIC PUMP START” button.



3. Depress the safety foot switch, confirm tool operation, then release the safety foot switch.



4. Push the “EMERGENCY STOP” button and confirm that this action has cut power to the motor. Depressing the footswitch, pressing the start button, or adjusting the selector switch should have no effect on the state of the tool. All components should remain off.

! WARNING

- The motor must not energize while the “EMERGENCY STOP” button is activated.
- If the motor can be energized while the “EMERGENCY STOP” button is activated, discontinue use and contact Victaulic.

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



5. Pull the “EMERGENCY STOP” button and confirm that power to the motor remains off. Depressing the foot switch or adjusting the selector switch should have no effect on the state of the tool. All components should remain off.

WARNING

- The motor must not re-energize until after the “HYDRAULIC PUMP START” button has been pressed.
- If the motor energizes after an emergency stop without first pressing the “HYDRAULIC PUMP START” button, discontinue use and contact Victaulic.

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



6. Press the “HYDRAULIC PUMP START” button.



7. Depress the safety foot switch, confirm tool operation, then release the safety foot switch.



8a. Turn the selector switch to the “GROOVE” position. The tool head should lower when the footswitch is depressed, and rise to its resting position when the footswitch is released.



8b. Turn the selector switch to the “TEST (JOG)” position. The tool head should lower when the footswitch is depressed, and remain in position when the footswitch is released.

8c. Turning the selector switch from “TEST (JOG)” to “GROOVE” with the head in a lowered position should cause the head to rise to its resting position.

9. If the tool does not function as described, refer to the “Troubleshooting” section.

PREPARING PIPE FOR GROOVING

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 or grooves that are out of Victaulic specifications.

For proper tool operation and production of grooves that are within Victaulic specifications, the following pipe preparation steps shall be followed.

Victaulic recommends square-cut pipe for use with grooved-end pipe products. Square-cut pipe SHALL be used with Victaulic FlushSeal® and EndSeal® gaskets. For 12-inch/323.9-mm and smaller pipe sizes, beveled-end pipe may be used with Victaulic standard and Vic-Flange gaskets, 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. Beveled steel pipe in 14–60-inch/355.6–1524-mm sizes is acceptable with Victaulic Advanced Grooving System (AGS) standard or FlushSeal gaskets, including AGS Vic-Flanges.

- 1a.** For 12-inch/323.9-mm and smaller pipe sizes, raised internal and external weld beads and seams shall be ground flush with the pipe surface 2 inches/50 mm back from the pipe ends.
- 1b.** For 14–38-inch/355.6–965-mm pipe sizes, raised internal and external weld beads and seams shall be ground flush with the pipe surface 4 inches/100 mm back from the pipe ends.
- 1c.** For 40–60-inch/1016–1524-mm pipe sizes, raised internal and external weld beads and seams shall be ground flush with the pipe surface 4½ inches/115 mm back from the pipe ends.

- 2.** The inside diameter of the pipe end shall 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 and result in difficulties during coupling assembly.

PIPE LENGTH REQUIREMENTS

VE460 tools are capable of grooving short pipe lengths without the use of a pipe stand. Table 1 identifies the minimum pipe lengths that can be grooved safely by using Victaulic Grooving Tools. In addition, this table identifies the maximum pipe lengths that can be grooved without the use of a pipe stand. Refer to the “Grooving Short Pipe Lengths” section for instructions on how to groove short pipe lengths. **NOTE:** Grooved pipe nipples, shorter than those listed in Table 1, are available from Victaulic.

Pipe lengths, longer than those listed in Table 1 (and up to 20 feet/6 meters), shall be supported with a pipe stand. Pipe lengths, from 20 feet/6 meters up to double-random lengths (approximately 40 feet/12 meters), shall be supported with two pipe stands. Refer to the “Long Pipe Lengths” section for instructions on how to groove long pipe lengths.

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.

EXAMPLE: A 20-foot, 4-inch/6.2-m length of 10-inch 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 carbon steel pipe and a 4-inch/102-mm length of carbon steel pipe, follow these steps:

1. Refer to Table 1, and note that for 10-inch diameter carbon 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 Lengths” section.

TABLE 1- PIPE LENGTHS SUITABLE FOR GROOVING

Steel, Stainless Steel, Aluminum, and PVC Pipe Size	Length – inches/mm	
Nominal Pipe Size inches/mm	Minimum	Maximum
4 100	8 205	36 915
5 125	8 205	32 815
6 150	10 255	28 715
8 200	10 255	24 610
10 250	10 255	20 510
12 300	12 305	18 460
14 350	12 305	16 410
16 400	12 305	16 410
18 – 60 450 - 1500	NOTE: Always use a pipe stand when roll grooving pipe in these sizes. DO NOT roll groove pipe lengths shorter than 18 inches/457 mm in these sizes.	

CHECKING AND ADJUSTING THE TOOL PRIOR TO GROOVING

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

- Always turn off the main power supply to the tool before making any tool adjustments.

Failure to follow this instruction 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, part number, and they are color coded for the pipe material. Refer to the tables on pages 61 – 62. If the proper rolls are not installed on the tool, refer to the “Roll Changing” section.

! CAUTION

- Ensure that the lower-roll retaining bolt is tight and that the upper shaft is locked in position.

A loose lower-roll retaining bolt or upper shaft could cause damage to the tool and rolls.

ADJUSTING THE ROLL GUARDS

! CAUTION

- The “Adjusting the Roll Guards” section shall be completed with every roll change.
- Verify that the upper and lower grooving rolls are a matched set and are properly lubricated.

Failure to follow these instructions could result in property damage or personal injury.

The VE460 tool features a “SET GUARD” control switch setting. With the correct pipe size and schedule inserted in the tool, the “SET GUARD” setting allows the operator to complete the necessary guard adjustments.



1. Retract the depth adjusters to allow for full travel of the hydraulic cylinder.



2. Loosen the knob on the front of the roll guards to raise the plate to its highest position. Tighten the knob.



3. Insert a length of pipe that is the correct size and schedule over the lower roll. Ensure that the pipe end contacts the lower-roll backstop flange. The pipe shall rest directly on top of the roll and shall not be skewed to one side or the other.



4. Place the switch on the control panel to the “SET GUARD” mode. Depress the safety foot switch to place the tool’s hydraulic system under pressure. Movement of the tool’s ram/slide/upper roll will occur. The hydraulic pump will shut off automatically when the upper roll contacts the pipe and an increase in hydraulic system pressure (as little as 75–100-psi pressure) occurs. Release the safety foot switch. The ram assembly will remain down. If hydraulic pressure is not established, the ram will return to the neutral position as the safety foot switch is released.



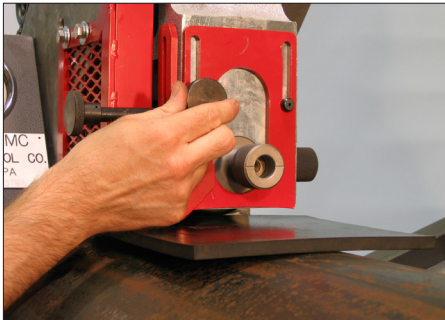
5. Prior to making tool guard adjustments, push the “EMERGENCY STOP” button on the control panel. The upper roll will continue to remain seated against the pipe.

6. Two guard setting pads are included with the tool. For 12-inch/323.9-mm and smaller pipe sizes, use the ¾-inch/6.4-mm thick guard setting pad. For 14-inch/355.6-mm and larger pipe being grooved with AGS roll sets, use the ⅝-inch/9.5-mm thick guard setting pad containing a “FOR AGS ONLY” label.

WARNING

- The roll guards shall be spaced properly by using the appropriate guard setting pad.

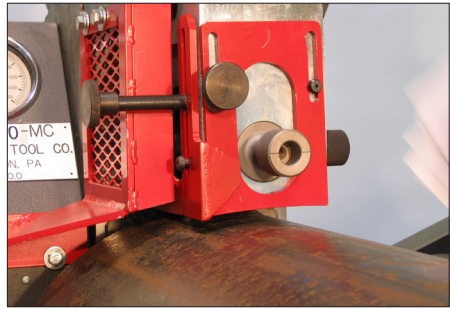
Failure to follow this instruction could result in serious personal injury.



7. Hold the correct guard setting pad firmly against the pipe and push it under the roll guards. Loosen the knob on the front of the roll guards to drop the plate onto the guard setting pad. Tighten the knob.



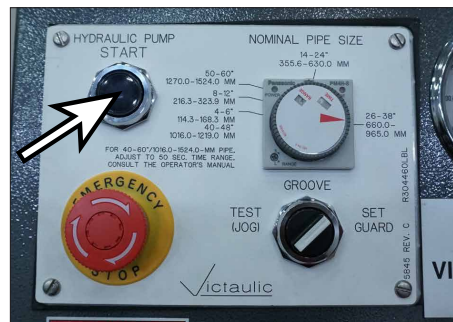
8. Loosen the knob on the left side of the roll guards to drop the side sliding guard onto the guard setting pad. Tighten the knob.



9. Remove the guard setting pad from the pipe. Store the guard setting pad in a safe location.



10. When tool guard adjustments are complete, pull the "EMERGENCY STOP" button on the control panel to the out position.



11. Depress and release the "HYDRAULIC PUMP START" button. The tool's hydraulic pump motor will energize and the tool's ram shaft will retract to the neutral position.

12. The guard setting procedure is complete.

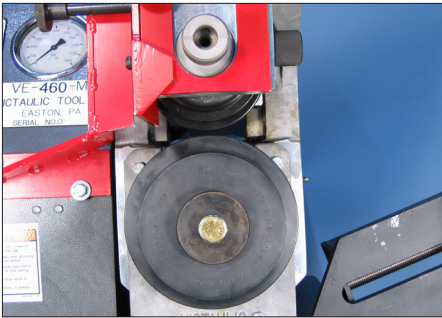
PIPE STABILIZER ADJUSTMENT

WARNING

- Always turn off the main power supply to the tool before making any tool adjustments.
- DO NOT reach over pipe while making adjustments.
- DO NOT make adjustments while the tool/pipe is in operation/motion.

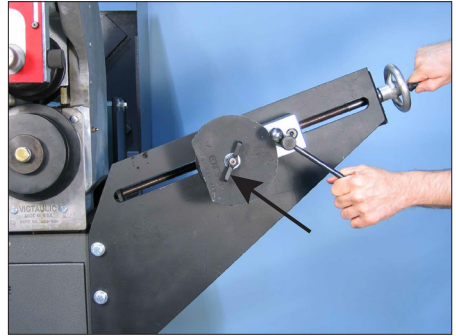
Failure to follow these instructions could result in serious personal injury.

The pipe stabilizer for the VE460 is designed to prevent pipe sway of short and long pipe 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 wall thickness can be moved in and out of the tool without retracting the stabilizer.



1. Ensure that 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 tables on pages 61 – 62.

2a. Loosen the stabilizer locking handle and the stabilizer-roller-guard wing nut.



2b. Using the stabilizer handwheel, 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. Ensure that the pipe end contacts the lower-roll backstop flange. The pipe shall rest directly on top of the roll and shall not be skewed to one side or the other.

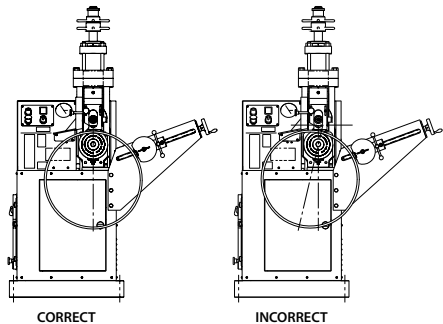
⚠ CAUTION

- **DO NOT** adjust the stabilizer roller 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.
- **DO NOT** reach across the pipe to make pipe stabilizer adjustments.
- **DO NOT** adjust the pipe stabilizer while the pipe is in motion.
- Assembly of couplings on pipe that exceeds the maximum allowable flare dimension may prevent proper pad-to-pad assembly of coupling housings and gasket distortion/damage.

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

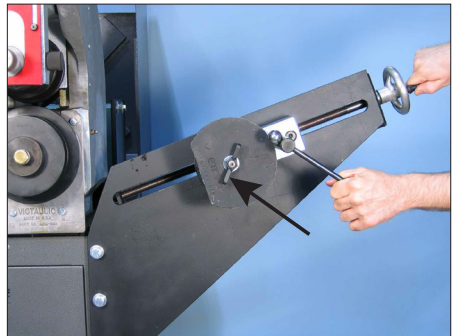


4. Using the stabilizer handwheel, adjust the stabilizer roller toward the pipe.



NOTE: DO NOT adjust the stabilizer roller too far inward, since it will skew the pipe to the left and off center, resulting in excessive pipe-end flare. Refer to the drawing above for proper positioning.

5. Position the roller guard so that the roller opening faces the pipe directly. Ensure that the guard does not rub the pipe.



6. Tighten the stabilizer locking handle and the stabilizer-roller-guard wing nut.

7. 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, discontinue grooving and adjust the stabilizer roller. Continue the grooving operation and make further adjustments, as necessary.

RAM SPEED ADJUSTMENT

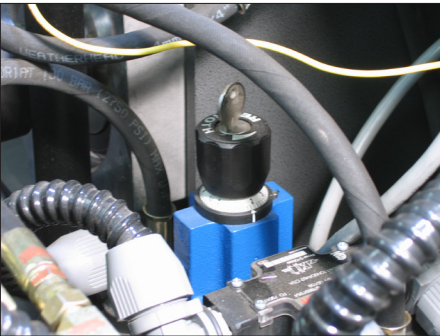
⚠ WARNING

- Always turn off the main power supply to the tool before making any tool adjustments.

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

The ram speed adjustment is factory set for roll grooving carbon steel pipe. When grooving a pipe material other than carbon steel pipe, the ram speed may need to be re-adjusted.

1. Locate the key, which is inserted into the ram speed control valve at the factory.



2. Turn the key to unlock the ram speed control valve.

3. With the key inserted into the ram speed control valve, rotate the knob until it “locks in.” Adjust the ram speed control valve to the proper setting, as indicated in the table on this page.

Pipe Material	Ram Speed Control Valve Setting *
Steel	2.5
Steel (Grooved to AGS Specifications)	2.5
Stainless Steel (Type 304/304L and Type 316/316L)	1.5
Stainless Steel (Type 304/304L and Type 316/316L Grooved to AGS Specifications)	2.5
Aluminum (Types 6061-T4 and 6063-T4)	3.0
PVC	10.0

Scale: 1.0 = Slow, 10.0 = Fast

* Settings listed are nominal. Adjustment may be required when different pipe material/grades are being grooved. Refer to the NOTICE below.

4. After the ram speed is set, unlock the ram speed control valve and remove the key. Store the key in a safe location on the tool.

NOTICE

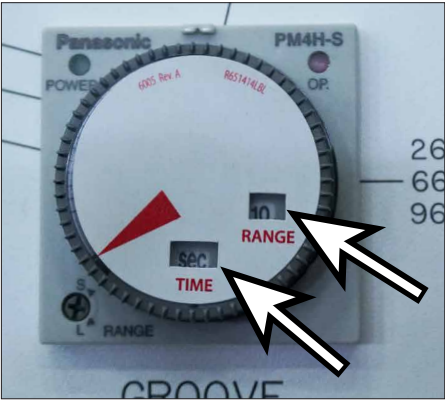
- The ram speed affects only the rate at which the upper roll forms the groove. It does not affect the rate at which the upper roll advances to contact the pipe, nor does it affect the rate at which the roll retracts from the pipe at the completion of a groove.
- Ram speed during the formation of a groove can have a significant effect on pipe flare. The settings listed in the table on this page will produce grooves within Victaulic specifications in most situations. However, if excessive flare results at these settings, reduce the setting to correct the condition. For example, adjust the ram-speed control valve to 1.5 or 2.0 for carbon steel pipe when flare is excessive at the 2.5 setting.

DWELL CONTROL ADJUSTMENT

The dwell control adjustment controls the length of time the tool continues to rotate the pipe after the groove diameter stop contacts the top of the hydraulic cylinder. The dwell control timer is adjustable for time range and pipe size settings. When adjusted to the proper pipe size, the pipe will rotate a minimum of one revolution after the groove diameter stop contacts the hydraulic cylinder. This ensures that the groove in the pipe will be of uniform depth around the entire pipe circumference.

TIME RANGE ADJUSTMENT

The time range setting will set the operating parameters of the timer.

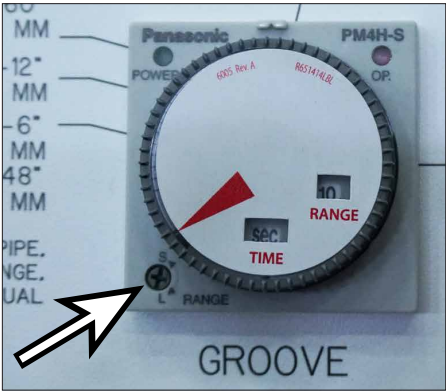


1. To adjust the time range setting, rotate the timer dial counterclockwise completely until the range settings are visible on the dial.

CAUTION

- Use only a #0 Phillips-head screwdriver to adjust the range screw.

Failure to follow this instruction may damage the screw head.



2. If necessary, rotate the time range screw, located in the lower left-hand corner of the timer, to the desired range shown on the dial face.

NOTE: VE460 tools are factory set in the “SEC-10” position. Use only a #0 Phillips head screwdriver to adjust the range screw. Use of any tools other than a #0 Phillips-head screwdriver may damage the screw head.

- For 4–38-inch/114.3–965-mm pipe sizes, set the timer range to “SEC-10”
- For 40–60-inch/1016–1524-mm pipe sizes, set the timer range to “SEC-50”

CAUTION

- The timing range shall be set properly for the pipe size being grooved.

Failure to follow this instruction could cause excessive or insufficient dwell, resulting in improper groove diameters and grooves that are not uniform in depth.

PIPE SIZE ADJUSTMENT

Rotate the timer dial to the appropriate pipe size.

- 4–38-inch/114.3–965-mm pipe sizes are detailed in black. Ensure that the timer range is set to “SEC-10.”
- 40–60-inch/1016–1524-mm pipe sizes are detailed in red. Ensure that the timer range is set to “SEC-50.”



GROOVE DIAMETER STOP ADJUSTMENT

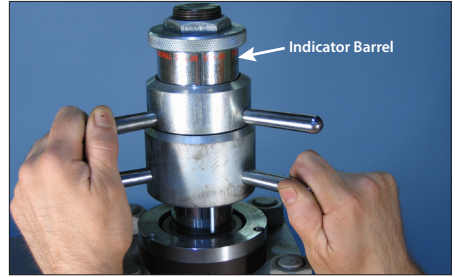
The groove diameter stop shall be adjusted for each pipe size or change in wall thickness. The groove diameter is identified as the “C” dimension (reference the applicable groove specification links on page 63). In addition, a label affixed to the tool lists the “C” dimensions.

NOTICE

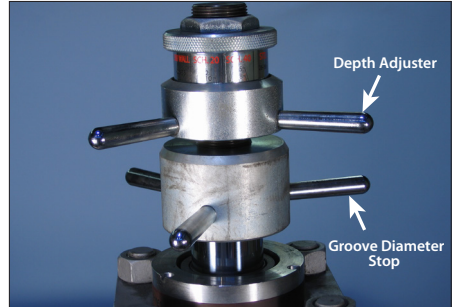
- To perform the following adjustments, use several short, scrap sections of pipe that are the proper material, diameter, and thickness to be grooved. Ensure that the scrap sections meet the length requirements listed in Table 1.

To achieve the proper diameter:

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



2. Locate the proper diameter and thickness on the pipe size indicator label of the depth stop. The pipe size indicator barrel can be rotated for ease of viewing.



3. Unlock the groove diameter stop (clockwise) from the depth adjuster. Align the top edge of the depth adjuster with the lowest line position of the proper size and schedule markings on the indicator barrel. Hold the depth adjuster to prevent it from turning.

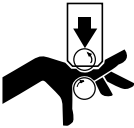


4. Turn the groove diameter stop counter-clockwise to lock the depth adjuster in position.

NOTICE

- Rotating the depth adjusters while locked will cause premature thread wear of the depth adjusters and cylinder ram.
- 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.
- Set the initial adjustment shallow (at bottom edge of mark), groove a sample piece of pipe, then make the final adjustment.

WARNING



Grooving rolls can crush or cut fingers and hands.

- Always turn off the main power supply to the tool before making any tool adjustments.
- Loading/unloading pipe will place your hands close to the rollers. 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.
- Always groove pipe in a **CLOCKWISE** direction.
- 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.

5. Prepare a trial groove. Refer to the "Grooving Operation" section.

NOTICE

- Occasionally during grooving, the groove diameter stop may move up and down slightly, making contact and then breaking contact with the hydraulic cylinder. This is normal for pipe that has a noticeable weld seam or hard spot.



6. After a trial groove is prepared and the pipe is removed from the tool, check the groove diameter ("C" dimension) carefully. Reference the applicable groove specification links on page 63. A standard 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) within the groove. The average reading shall be within the required groove diameter specification.

CAUTION

- The “C” dimension (groove diameter) shall conform to Victaulic specifications to ensure proper joint performance.

Failure to follow this instruction could cause joint failure, resulting in property damage or personal injury.

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

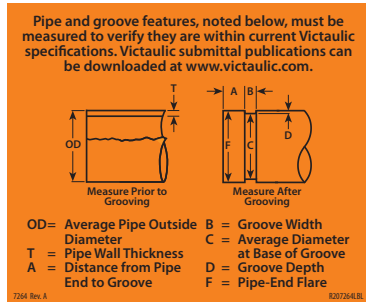
- a. Unlock the depth adjusters.
- b. To adjust for a smaller groove diameter (deeper groove), loosen the groove diameter stop and turn the depth adjuster counter-clockwise (when viewed from above the tool). Turn the groove diameter stop counter-clockwise to lock the depth adjuster in this position.
- c. To adjust for a larger groove diameter (shallower groove), loosen the loosen the groove diameter stop and turn the depth adjuster clockwise (when viewed from above the tool). Turn the groove diameter stop counter-clockwise to lock the depth adjuster in this position.

NOTE: A quarter turn either way will change the groove diameter by 0.042 inch/1.1 mm or 0.167 inch/4.2 mm per full turn.

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


NOTICE

- Rotating the depth adjusters while locked will cause premature thread wear of the depth adjusters and cylinder ram.
- The design of the roll sets will provide the correct “A” and “B” dimensions. If the “A” and “B” dimensions are out of specification, ensure that the pipe is seated properly while grooving. In addition, ensure that the matching roll set is installed on the tool.
- A label is affixed to the tool, which outlines additional dimensional checks:



GROOVING LONG PIPE LENGTHS

⚠ DANGER



- To reduce the risk of electric shock, check the tool for proper grounding and follow all instructions.
- 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

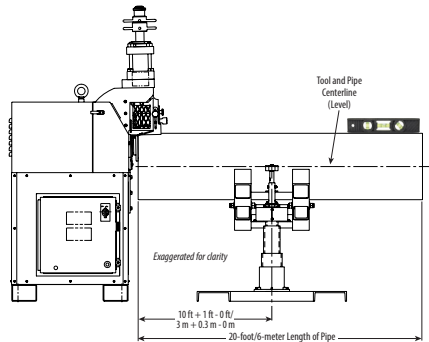
- For long pipe lengths, ensure that the pipe stand is positioned properly to minimize pipe-end flare.
- **DO NOT** install couplings on pipe that exceeds the maximum allowable flare.
- This tool must be used **ONLY** for grooving pipe with specifications that fall within the designated parameters.
- Verify that the upper and lower grooving rolls are a matched set.
- Always reference the applicable groove specification links on page 63 for details.

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

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

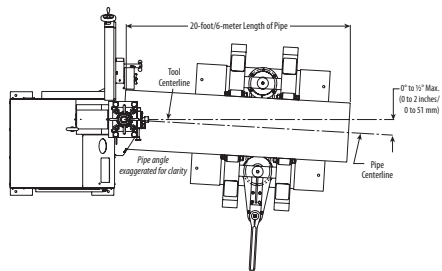
1. Ensure that the tool is level. Refer to the “Tool Setup” section for leveling requirements.

2. Place the pipe stand at a distance slightly beyond half the pipe length from the tool. Refer to the drawing below.



3. Position the pipe stand approximately 0 - ½ a degree to the left for the tracking angle. Refer to the drawing below.

NOTE: When pipe flare is excessive, right-to-left tracking shall be kept to a minimum. It may be necessary to use less than ½ a degree for the tracking angle.



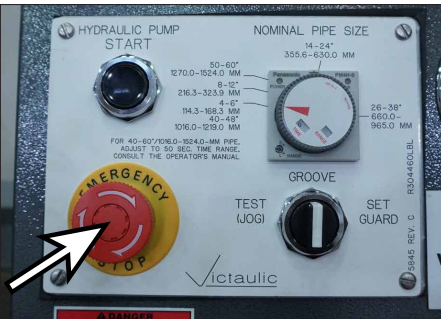
4. If the tool is properly set up in a level position, but the back end of the pipe is higher than the end being grooved, the pipe may not track. In addition, excessive flare may occur on the pipe end. Refer to the “Tool Setup” section and the drawings above for tool setup and pipe positioning requirements.

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

6. Turn on the main power supply to the tool (circuit breaker panel, knife switch, etc.).



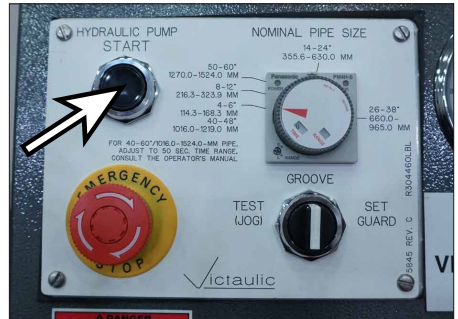
7. Turn the main power switch on the side of the tool to the “ON” position.



8. Pull the “EMERGENCY STOP” button on the control panel and the electrical enclosure to the out position.

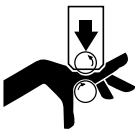


9. Ensure that the selector switch on the control panel is set to the “GROOVE” position.



10. Push the “HYDRAULIC PUMP START” button.

! WARNING

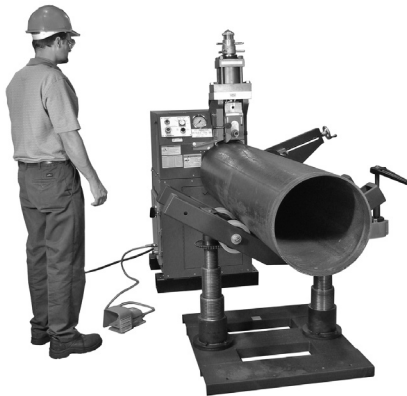


Grooving rolls can crush or cut fingers and hands.

- Always turn off the main power supply to the tool before making any tool adjustments.
- Loading/unloading pipe will place your hands close to the rollers. 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.
- Always groove pipe in a **CLOCKWISE** direction.
- 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.



11. Insert a length of pipe that is the correct size, material, and thickness onto the lower roll. Ensure that the pipe end contacts the lower-roll backstop flange completely. Remove hands from the pipe.

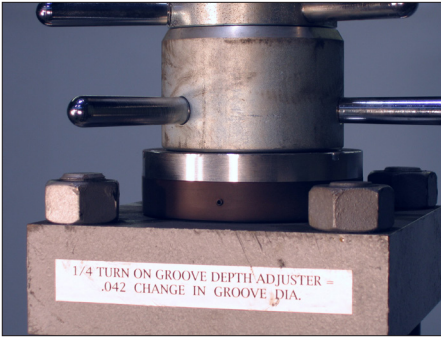


12. The operator should be positioned as shown above.



13. To start the grooving operation, depress and hold down the safety foot switch. This will advance the upper roll into contact with the pipe. The lower roll will start rotating, and the groove will begin to form.

14. During the grooving operation, visually check the tracking of the pipe as it rotates. Ensure that the pipe remains against the lower-roll backstop flange. If the pipe does not stay in contact with the lower-roll backstop flange, stop the tool by releasing the safety foot switch, and withdraw foot from the switch. Ensure that pipe is positioned properly (refer to the “Long Pipe Lengths” section). Repeat steps 10–12.



15. As grooving continues, the groove diameter stop will move down and contact the hydraulic cylinder. This contact activates the dwell timer, which allows the pipe to rotate one to three more revolutions to ensure groove completion (refer to the “Dwell Control Adjustment” section). The tool will automatically release the pipe a few seconds later. Release the safety foot switch, and withdraw foot from switch.

16. Inspect the groove/pipe end to ensure they are within Victaulic specifications.

NOTICE

- Occasionally during grooving, the groove diameter stop may move up and down slightly, making contact and then breaking contact with the hydraulic cylinder. This is normal for pipe that has a noticeable weld seam or hard spot.
- Ensure that short pipe lengths are properly supported.

17. If roll grooving will not be performed for an extended time period, turn off the hydraulic system by pushing down (in) either the “EMERGENCY STOP” button on the control panel or the electrical enclosure.

NOTICE

- If pipe remains lodged on the lower roll: Jogging the lower roll will free the pipe. DO NOT attempt to pull the pipe out of the rolls while “jogging” the lower roll. Pull the “EMERGENCY STOP” button on the control panel and the electrical enclosure to the out position, depress the “Hydraulic Pump Start” button, then push down (in) on the “EMERGENCY STOP” button on the control panel and the electrical enclosure to “jog” the lower roll.
- The groove diameter shall 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.

GROOVING SHORT PIPE LENGTHS

DANGER



- To reduce the risk of electric shock, check the tool for proper grounding and follow all instructions.
- 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 grooving pipe 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.

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

2. Turn on the main power supply to the tool (circuit breaker panel, knife switch, etc.).



3. Turn the main power switch on the side of the tool to the “ON” position.



4. Ensure that the selector switch on the control panel is set to the “GROOVE” position.

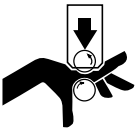


5. Pull the “EMERGENCY STOP” button on the control panel to the out position, and ensure that the “EMERGENCY STOP” button on the electrical enclosure is pulled to the out position.



6. Push the “HYDRAULIC PUMP START” button.

! WARNING



Grooving rolls can crush or cut fingers and hands.

- Always turn off the main power supply to the tool before making any tool adjustments.
- Loading/unloading pipe will place your hands close to the rollers. 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.
- Always groove pipe in a CLOCKWISE direction.
- 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.

! CAUTION

- Pipe shall be supported manually before and after the grooving cycle.

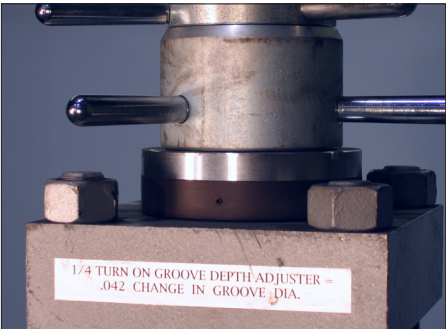
Failure to follow this instruction could result in personal injury.



7. Insert a length of pipe that is the correct size, material, and thickness onto the lower roll. Ensure that the pipe end contacts the lower-roll backstop flange completely. While manually supporting the pipe, depress and hold down the safety foot switch. The upper roll will advance and contact the pipe. Remove hands from the pipe.

NOTICE

- Occasionally during grooving, the groove diameter stop may move up and down slightly, making contact and then breaking contact with the hydraulic cylinder. This is normal for pipe that has a noticeable weld seam or hard spot.



8. As grooving continues, the groove diameter stop will move down and contact the hydraulic cylinder. This contact activates the dwell timer, which allows the pipe to rotate one to three more revolutions to ensure groove completion (refer to the “Dwell Control Adjustment” section).

- a. The upper roll will retract automatically and will release the pipe.
- b. Release the safety foot switch, and withdraw foot from the switch.

9. Inspect the groove/pipe end to ensure they are within Victaulic specifications.

10. If roll grooving will not be performed for an extended time period, turn off the hydraulic system by pushing the “EMERGENCY STOP” button on the control panel or the “EMERGENCY STOP” button on the electrical enclosure.

NOTICE

- The groove diameter shall 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

VE460 roll grooving tools are designed with rolls to accommodate several pipe sizes and materials, which eliminates the need for frequent roll changes.

When a different pipe size or material is required for grooving, the upper and lower rolls shall be changed. For proper roll selection, refer to the tables on pages 61 – 62.

WARNING

- Upper and lower rolls are matched components and shall not be intermixed.
- Failure to follow these instructions could result in property damage or serious personal injury.

1. Turn on the main power supply to the tool (circuit breaker panel, knife switch, etc.).



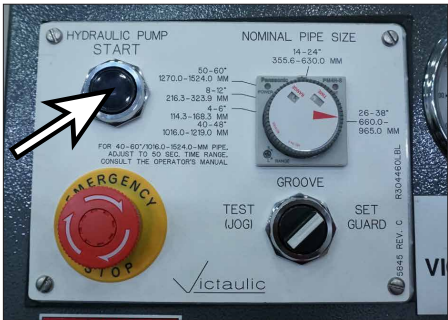
2. Turn the main power switch on the side of the tool to the “ON” position.



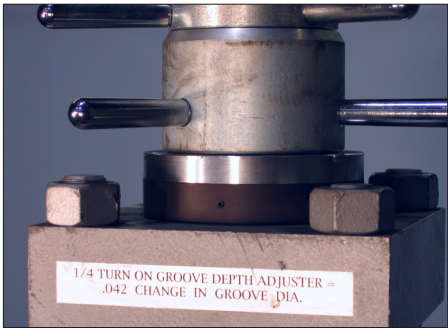
3. Pull the “EMERGENCY STOP” button on the control panel and the electrical enclosure to the out position.



4. Place the selector switch on the control panel to the “SET GUARD” mode.



5. Push the “HYDRAULIC PUMP START” button.



6. Depress the safety foot switch. When the groove diameter stop contacts the hydraulic cylinder, the hydraulic pump will shut off. Release the safety foot switch, and withdraw foot from switch.



7. Remove the slide spacer by snapping it out of the tool head, as shown above.



8. Push the “HYDRAULIC PUMP START” button to retract (raise) the slide.

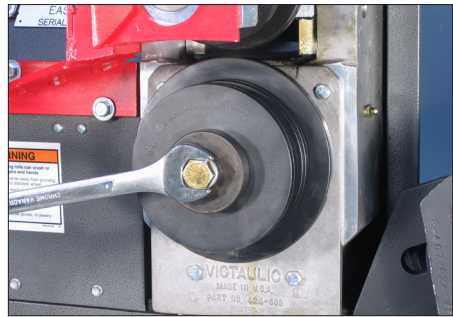


9. After the slide is retracted (raised) completely, push the “EMERGENCY STOP” button on the control panel.

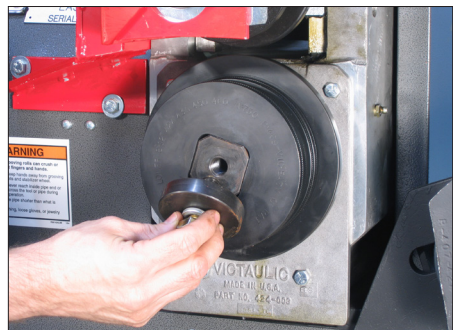


10. Turn the main power switch on the side of the tool to the “OFF” position.

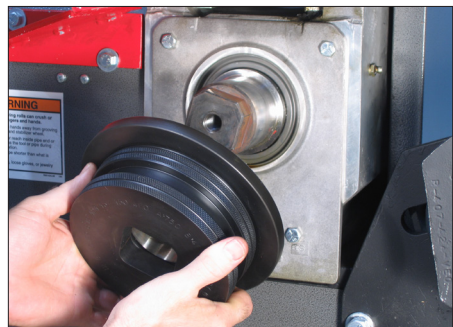
LOWER ROLL REMOVAL



1. Using an appropriate wrench, loosen the lower-roll retaining bolt.

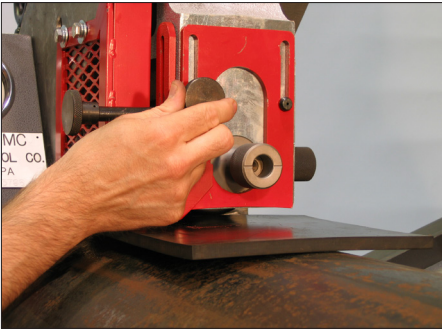


2. Remove the lower-roll retaining bolt and the lower-roll washer.

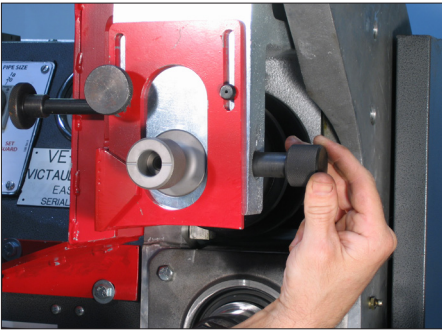


3. Remove the lower roll by pulling it off the main shaft. Store the lower roll inside the tool cabinet. If the lower roll cannot be removed by hand, use a conventional gear puller.

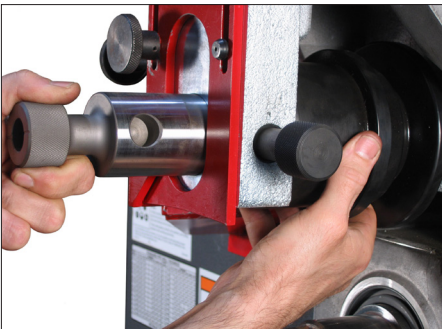
UPPER ROLL REMOVAL



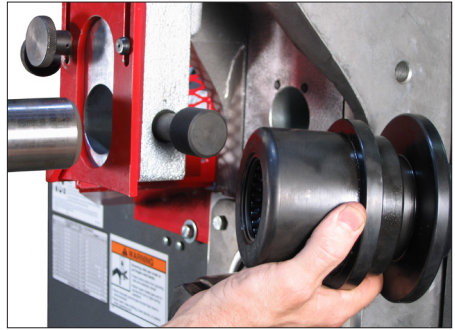
1. Adjust the front roll guard, if necessary, to uncover the upper shaft completely.



2. Pull the upper shaft locking pin out of the slide until it stops.



3a. While supporting the upper roll, remove the upper shaft from the upper roll/slide by pulling it straight out.



3b. Remove the upper roll. Store the upper roll inside the tool cabinet.

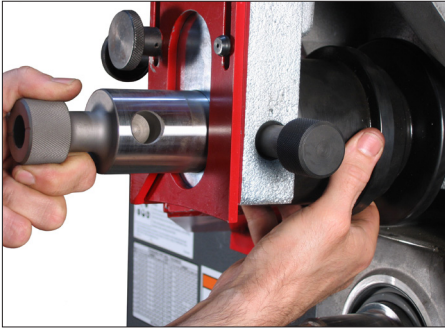
UPPER ROLL INSTALLATION

1. Prior to installation, clean the upper shaft and the upper roll to remove any dirt and scale. Inspect the condition of the bearing in the upper roll. If damage is present, replace any affected components.

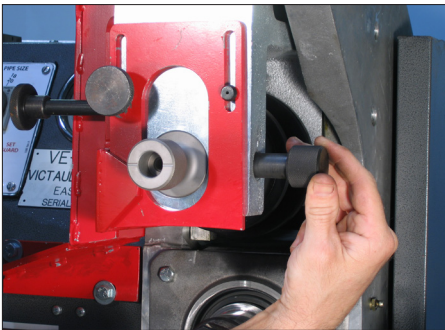
NOTE: The upper roll bearings shall be lubricated prior to each use/installation.



2. Install the proper upper roll behind the slide, as shown above. Ensure that the markings on the upper roll are facing forward.



3a. While supporting the upper roll, insert the upper shaft into the slide and upper roll. Align the hole in the upper shaft with the locking pin on the side of the slide.



3b. Push the upper shaft locking pin into the slide/upper shaft until it stops.

NOTE: Hole orientation lines are marked on the front of the upper shaft.

LOWER ROLL INSTALLATION

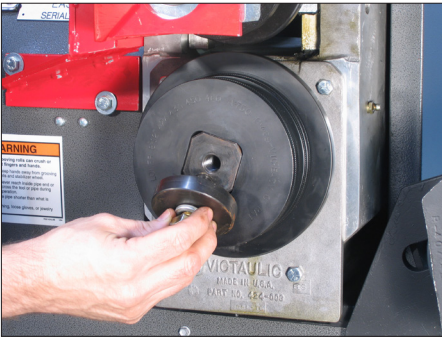


1. Prior to installation, clean the main shaft and the lower roll to remove any dirt and scale.

2. To aid in removing the lower roll at a later time, a dry graphite spray or anti-seize lubricant can be applied to the main shaft before the lower roll is installed.



3. Align the square end of the main shaft with the square hole in the lower roll. Push the lower roll completely onto the main shaft. Ensure that the markings on the lower roll are facing out.



4. Install the lower-roll washer and lower-roll retaining bolt.



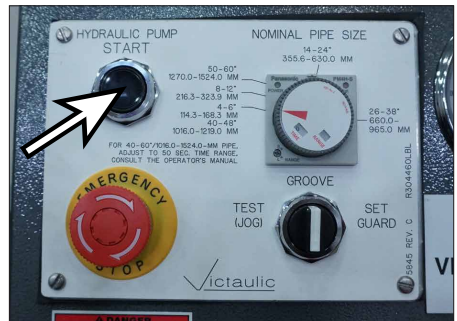
5. Tighten the lower-roll retaining bolt completely to secure the lower roll onto the main shaft.



6. Turn the main power switch on the side of the tool to the "ON" position.



7. Pull the "EMERGENCY STOP" button on the control panel to the out position.



8. Push the "HYDRAULIC PUMP START" button.



9. Place the selector switch on the control panel to the "SET GUARD" mode. Depress and hold the safety foot switch. The upper roll and slide will start to move downward.

CAUTION

- The upper roll is free floating. Ensure that the upper roll is positioned toward the back of the upper shaft.

Failure to follow this instruction could result in damage to the flange of the upper and lower rolls.



10. After the upper roll/slide has advanced approximately 1 inch/25 mm and the rolls are aligned and engaged, push the “EMERGENCY STOP” button on the control panel.



11. Snap the slide spacer into the tool, as shown above.



12. Pull the “EMERGENCY STOP” button on the control panel to the out position.



13. Push the “HYDRAULIC PUMP START” button to fully retract (raise) the slide.




14. After the slide has retracted (raised) completely, push the “EMERGENCY STOP” button on the control panel.



15. Grease the upper shaft bearings, as shown, by applying grease through the lubrication fitting on the front of the upper shaft. Refer to the applicable “Recommended Lubricants” table for the proper grease.

16. Roll set installation is now complete. Before grooving, ensure that all instructions in the previous sections of this manual have been followed (i.e. adjusting the roll guards, adjusting the groove diameter stop, etc.).

MAINTENANCE



⚠ DANGER

- Always turn off the main power supply to the tool before making any tool adjustments or before performing any maintenance.

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 shall be ordered from Victaulic to ensure proper and safe operation of the tool.



Before making any tool adjustments or before performing maintenance on the tool, turn off the main power supply (main circuit breaker panel, knife switch, etc.). Lock the switch in the “OFF” position to prevent accidental engagement.

NOTE: Victaulic does not supply this lockout mechanism.

LUBRICATION

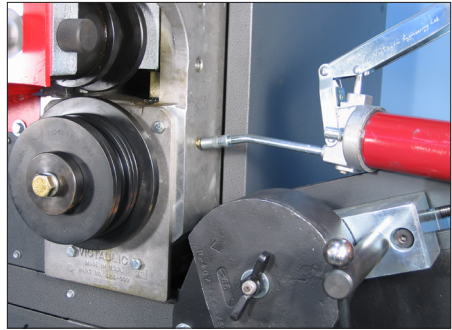
1. After every 8 hours of operation, lubricate the tool. **Always lubricate the upper roll bearings when rolls are changed.**



2. Grease the upper shaft bearings every time roll changes are made and after every 8 hours of operation. A grease fitting is provided on the front of the upper shaft. Refer to the applicable “Recommended Lubricants” table for the proper grease.



3. Grease the slide gibs. The slide gib grease fitting is located on the back of the slide and is accessible when the tool hood is open.



4. Grease the main shaft bearings through the fitting located on the side of the tool.



5a. Remove the stabilizer-roller-guard wing nut and stabilizer roller guard.

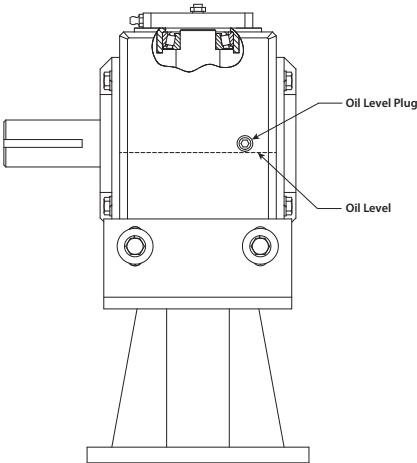


5b. Grease the stabilizer roller.

5c. Replace the stabilizer roller guard and stabilizer-roller-guard wing nut.

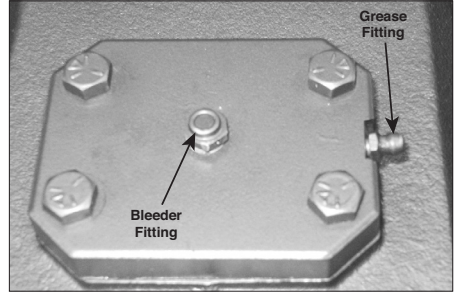
CHECKING AND FILLING GEAR REDUCER OIL

The gear reducer oil level shall be checked every six months or 2,500 operating hours, whichever comes first. Oil shall be changed more often if the tool is used in a severe environment (i.e. dusty, humid). If leakage is present, repairs shall be made to correct the leak. **NOTE:** The gear reducer's oil capacity is 75 oz (2 liters).

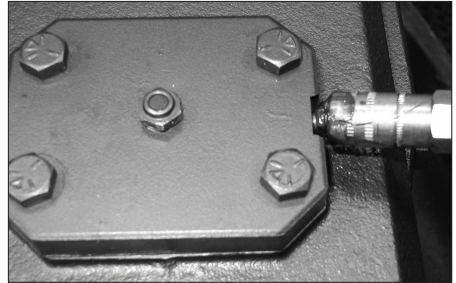


1. Remove the oil level plug from the gear reducer (refer to drawing above). The oil level should be even with the bottom of the hole.
2. To add oil, remove the oil level plug from the gear reducer and fill to the proper level (refer to drawing above). Refer to the tag attached to the gear reducer for the required gear oil.
3. Re-install the oil level plug.

GEAR REDUCER INPUT SHAFT



1. The gear reducer's input shaft cover contains a grease fitting (shown above). This grease fitting is located on the chain coupling side of the gear reducer. A bleeder fitting is located on the center of the gear reducer's input shaft cover (shown above).



2. Lubricate the input shaft bearing after every 40 hours of operation. This fitting must be lubricated with a No. 2EP Lithium-base grease until it weeps from the bleeder fitting.

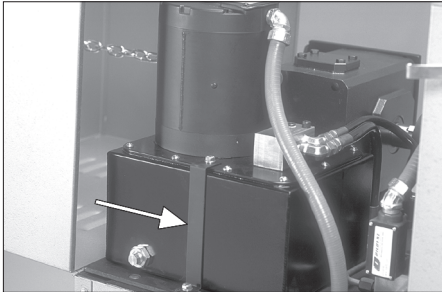
CHECKING AND FILLING HYDRAULIC OIL

1. The hydraulic oil level shall be checked every month or 50 operating hours, whichever comes first. Check the hydraulic oil level preferably before tool startup. The level should be no lower than 1–2 inches/25–50 mm from the top of the hydraulic oil reservoir. DO NOT over-fill the hydraulic oil reservoir, since the oil may overflow due to thermal expansion. Refer to the “Recommended Lubricants” table for the proper hydraulic oil.

REPLACING HYDRAULIC OIL AND FILTER

Replace the hydraulic oil and hydraulic oil filter annually or every 2,000 operating hours, whichever comes first.

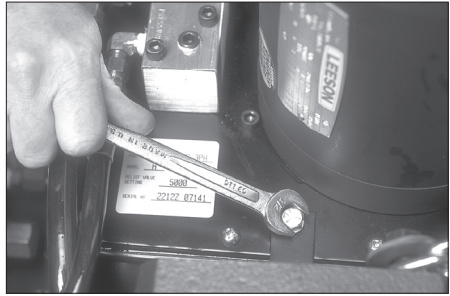
1. Raise the hood of the tool.



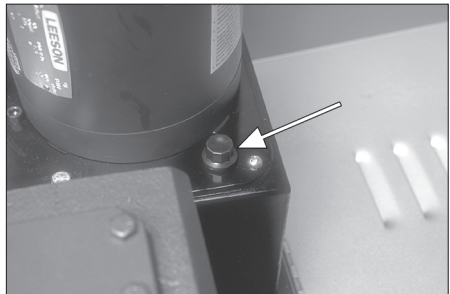
2. Locate the two brackets that hold the hydraulic oil reservoir to the frame.



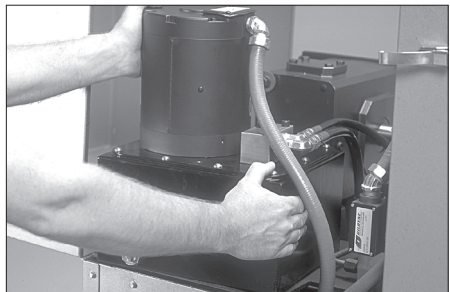
3. Loosen the screws on the bracket closest to the drain plug. Remove the bracket and set it aside.



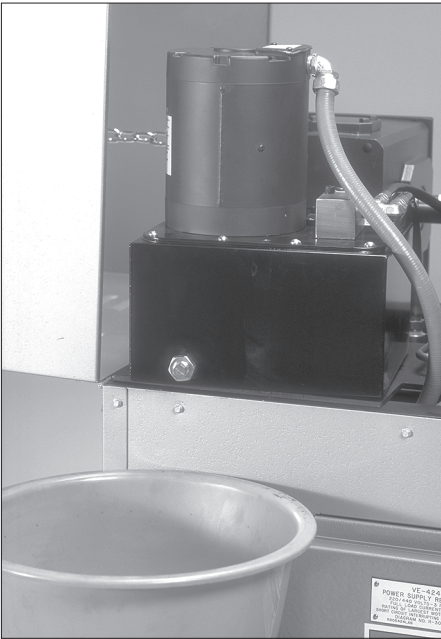
4. On the other bracket, loosen and remove the screw on top of the hydraulic oil reservoir. It is not necessary to loosen the screw that holds the bracket to the frame.



5. Remove the fill/vent plug from the top of the hydraulic oil reservoir.



6. Slide the hydraulic oil reservoir partially over the side of the tool. Do NOT disconnect any electrical or hydraulic lines.



7. Position a container underneath the drain plug. Ensure that the container is large enough to hold 2 gallons/8 liters of hydraulic oil.



8. Remove the drain plug to drain the old hydraulic oil from the hydraulic oil reservoir.

NOTICE

- **Reference local ordinances regarding the proper disposal of hydraulic oil.**



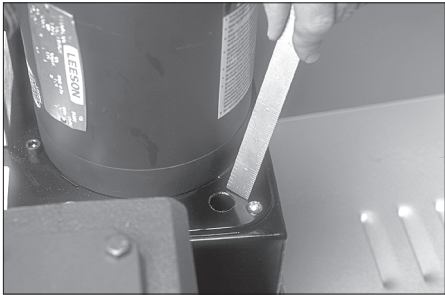
9. Replace the drain plug. Slide the hydraulic oil reservoir back into position and reattach the brackets.



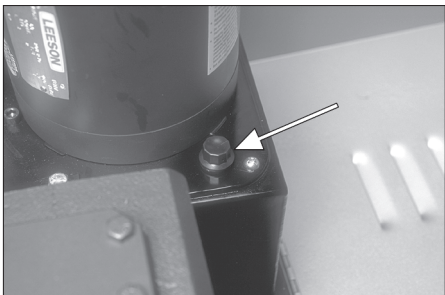
10. Place a tray under the hydraulic oil filter. Remove the hydraulic oil filter.



11. Lubricate the gasket of the new hydraulic oil filter with new hydraulic oil. Fill the filter with new hydraulic oil, then install it hand-tight into the tool.



12. Fill the hydraulic oil reservoir with new hydraulic oil until the level reaches 1–2 inches/ 25–50 mm from the top of the hydraulic oil reservoir. Refer to the “Recommended Lubricants” section.

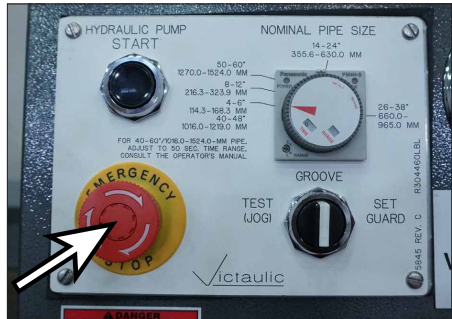


13. Install the fill/vent plug.

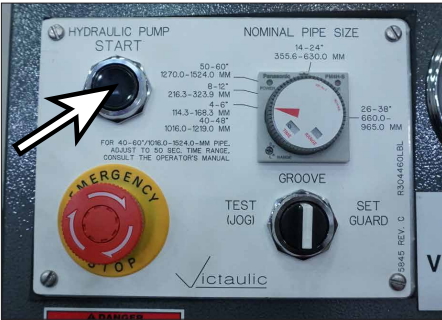
14. Turn on the main power supply to the tool (circuit breaker panel, knife switch, etc.).



15. Turn the main power switch on the side of the tool to the “ON” position.



16. Pull the “EMERGENCY STOP” button on the control panel and the electrical enclosure to the out position.



17. Push the “HYDRAULIC PUMP START” button. Allow the hydraulic pump to run for 3–5 minutes.

18. Inspect the hydraulic system for leaks.

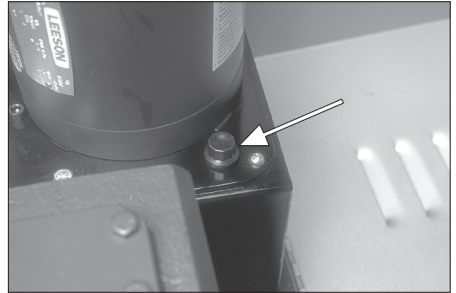


19. Turn off the hydraulic system by pushing the “EMERGENCY STOP” button on the control panel.

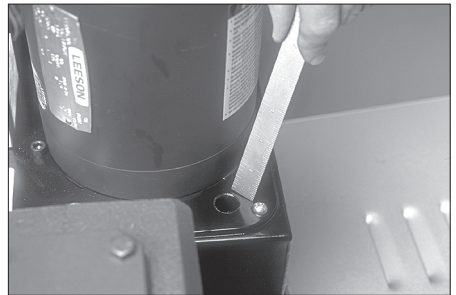
20. Check the hydraulic oil level. Add oil, as necessary.

21. Follow the “Air Bleeding” section.

AIR BLEEDING



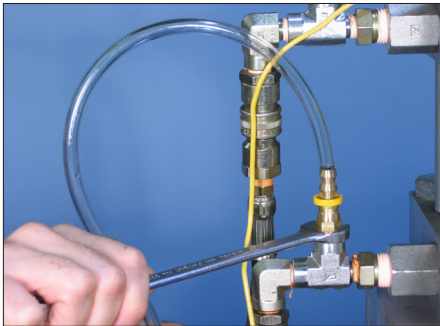
1. Remove the fill/vent plug from the hydraulic oil reservoir.



2. Fill the hydraulic oil reservoir with new hydraulic oil until the level reaches 1–2 inches/25–50 mm from the top of the hydraulic oil reservoir. Refer to the “Recommended Lubricants” section.



3. Remove the plug from the tee at the bottom of the hydraulic cylinder port.



4. Install the bleeder tube into the tee, as shown above. Insert the other end of the bleeder tube into the fill/vent hole in the hydraulic oil reservoir. **NOTE:** The bleeder tube consists of a ¼-inch NPT barb hose fitting and 4 feet/1.2 m of ¼-inch ID clear vinyl hose (supplied).

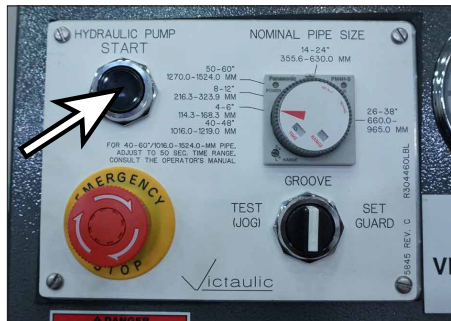
5. Turn on the main power supply to the tool (circuit breaker panel, knife switch, etc.).



6. Turn the main power switch on the side of the tool to the “ON” position.



7. Pull the “EMERGENCY STOP” button on the control panel to the out position.



8. Push the “HYDRAULIC PUMP START” button. Hydraulic oil will start flowing from the tee through the bleeder tube and into the hydraulic oil reservoir.



9. Place the selector switch on the control panel to the “SET GUARD” mode.

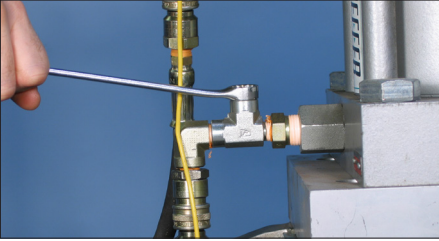
10. Depress the safety foot switch, hold it down for 5 seconds, then release it for 5 seconds. Repeat this step until no air bubbles can be seen through the clear vinyl tube.



11. Push the “EMERGENCY STOP” button on the control panel.

NOTICE

- To prevent oil from flowing out of the tee while removing the bleeder tube and installing the plug: Block the groove diameter stop from moving down by inserting a piece of wood between the groove diameter stop and the top of the hydraulic cylinder.

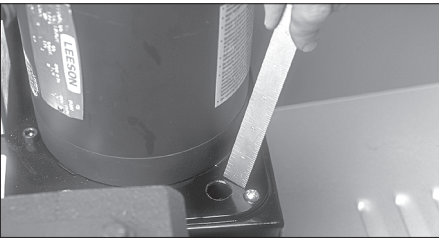


12. Remove the bleeder tube, and install the plug into the tee. **DO NOT ALLOW AIR TO GET BACK INTO THE TEE WHEN INSTALLING THE PLUG (REFER TO NOTICE BELOW).**

NOTICE

- To prevent air from entering the tee while the bleeder tube is removed and the plug is installed: Hold the 4-way valve in the “shifted” position by pressing in on the rubber boot on the end of the valve. Keep the rubber boot depressed until the plug is installed and tightened.

13. Repeat steps 3 – 10 for bleeding air from the tee at the top of the hydraulic cylinder port.



14. Bring the hydraulic oil level up to 1–2 inches/25–50 mm from the top of the hydraulic oil reservoir. DO NOT over-fill the hydraulic oil reservoir, since the oil may overflow due to thermal expansion. Refer to the applicable “Recommended Lubricants” table for the proper hydraulic oil.

RECOMMENDED LUBRICANTS

BEARING AND SLIDE GREASE

NLGI #2 Summer Grade graphite moly base
(General Purpose EP Lithium Base Grease)

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

GEAR OIL

Refer to the tag located on the gear reducer.

HYDRAULIC OIL

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

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

PARTS ORDERING INFORMATION

When ordering parts, the following information is required for Victaulic to process the order and send the correct part(s). Parts can be ordered by calling 1-800-PICK-VIC.

1. Tool Model Number
2. Tool Serial Number
3. Quantity, Item Number, Part Number, and Description
4. Where to send the part(s) – Company Name and Address
5. To whose attention to send the part(s) – Person's Name
6. Purchase Order Number
7. Billing Address

ACCESSORIES

VAPS112 VICTAULIC ADJUSTABLE
PIPE STAND



The Victaulic VAPS112 Pipe Stand is a portable, adjustable, roller-type pipe stand that contains four legs for additional stability. The VAPS112 supports pipe sizes ¾ to 12 inches/26.9 to 323.9 mm (1½-foot/0.5-meter to full, single 20-foot/6-meter random lengths) and has a load rating of 1075 pounds/490 kilograms. The turnstile design permits ease of grooving for both pipe ends. Contact Victaulic for details.

VAPS224 VICTAULIC ADJUSTABLE
PIPE STAND



The Victaulic VAPS224 Pipe Stand contains features that are similar to the VAPS112, but supports pipe sizes 2 to 24 inches/60.3 to 610.0 mm (1½-foot/0.5-meter to full, single 20-foot/6-meter random lengths) and has a load rating of 1800 pounds/817 kilograms. Contact Victaulic for details.

OPTIONAL ROLLS

Refer to the tables on pages 61 – 62, which identify rolls that are available for different pipe materials and groove specifications.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe will not stay in grooving rolls.	Incorrect pipe positioning of long pipe length. Lower roll and pipe are not rotating clockwise.	Refer to the “Long Pipe Lengths” section. Refer to the “Power Hookup and Verification of Pipe Rotation Direction” section.
Pipe stops rotating during the grooving operation.	Rust or dirt buildup is present on the lower roll. Rust or dirt is excessively heavy inside the pipe end. Worn grooving rolls. The circuit breaker has tripped or a fuse/thermal overload relay has blown out on the electrical circuit that supplies the tool.	Remove rust or dirt accumulation from the lower roll with a stiff wire brush. Remove heavy rust and dirt from inside the pipe end. Inspect the lower roll for worn knurls. Replace the lower roll if excessive wear is present. Reset the breaker, or replace the fuse/thermal overload relay.
While grooving, loud squeaks echo through the pipe.	Incorrect pipe support positioning of a long pipe length. Pipe is “over-tracking.” Pipe is not cut square. Pipe is rubbing excessively on the lower-roll backstop flange. Ram speed is set too low. Tool bearings are not lubricated.	Move the pipe support to the right. Refer to the “Long Pipe Lengths” section. Cut the pipe end squarely. Remove the pipe from the tool, and apply a light coating of bandsaw blade wax to the face of the pipe end. Refer to the “Ram Speed Adjustment” section. Refer to the “Maintenance” and “Lubrication” sections.

PROBLEM	POSSIBLE CAUSE	SOLUTION
During grooving, loud thumps or bangs occur approximately once every revolution of the pipe.	Pipe has a pronounced weld seam.	For 12-inch/323.9-mm and smaller pipe sizes, raised internal and external weld beads and seams shall be ground flush with the pipe surface 2 inches/50 mm back from the pipe ends. For 14 - 38-inch/355.6 - 965-mm pipe sizes, raised internal and external weld beads and seams shall be ground flush with the pipe surface 4 inches/100 mm back from the pipe ends. For 40 - 60-inch/1016 - 1524-mm pipe sizes, raised internal and external weld beads and seams shall be ground flush with the pipe surface 4 ½ inches/115 mm back from the pipe ends.
Pipe flare is excessive.	Pipe support is adjusted too high for long pipe. Tool is tilted forward (out of level) while grooving long pipe. Incorrect pipe support positioning of long pipe. Pipe is "over-tracking." Pipe stabilizer is adjusted too far inward. Ram speed is not set correctly.	Refer to the "Long Pipe Lengths" section. Refer to the applicable "Tool Setup" section. Move the pipe support to the right. Refer to the "Long Pipe Lengths" section. Back off the pipe stabilizer to the furthest point where it still stabilizes the pipe effectively. Refer to the "Ram Speed Adjustment" section.
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.
Tool will not groove the pipe.	Air is present in the hydraulic system. Pipe is beyond the wall thickness or pipe yield strength capacity of the tool.	Refer to the "Air Bleeding" section. Refer to the tables on page 60.
Pipe groove diameters do not meet Victaulic specifications.	Groove diameter stop is not adjusted properly. Pipe is beyond the wall thickness or pipe yield strength capacity of the tool. Incorrect upper roll, lower roll, or both installed on the tool	Refer to the "Groove Diameter Stop Adjustments" section. Refer to the tables on page 60. Install the correct rolls. Refer to the tables on pages 61 – 62.
The "A" Gasket Seat or "B" Groove Width dimensions do not meet Victaulic specifications.	Upper roll bearing is not lubricated adequately. Incorrect upper roll, lower roll, or both installed on the tool Pipe not inserted fully onto the lower roll, or pipe is not tracking properly.	Refer to the "Maintenance" section. Install the correct rolls. Refer to the tables on pages 61 – 62. Ensure that pipe is against the lower-roll backstop flange. Refer to the "Long Pipe Lengths" section for proper pipe stand positioning.

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

NOTICE

- The "Maximum Pipe Size and Wall Thickness Capacity" tables on the following page are 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>



VE460 RATINGS - MAXIMUM PIPE SIZE AND WALL THICKNESS CAPACITY (OGS AND OGS-200)

		Pipe Size (inches/mm)																	
Model	Pipe Material	Notes	4	5	6	8	10	12	14	16	18	20	22	24					
	Steel (OGS)	2, 5	Sch. 5 – 80 2.1 – 9.5 mm		Sch. 5 – 40 2.8 – 8.2 mm		Sch. 5 – XS 3.4 – 12.7 mm												
	Steel (OGS-200)	4			Sch. 40 – 80 8.2 – 12.7 mm														
	Stainless (OGS)				Sch. 40S 6.0 – 9.3 mm			STD 9.5 mm											
VE460	Stainless (OGS-200)				Sch. 40 8.2 mm														
	Lt. Wall SS	6			Sch. 5S – 10S 2.1 – 4.6 mm			Sch. 5S – 10S, TRUE 10 4.0 – 4.8 mm, 6.4 mm											
	Aluminum	1			Sch. 5 – 40 2.1 – 10.3 mm														
	PVC Plastic	3	Sch. 40 – 80 6.0 – 11.0 mm		Sch. 40 8.2 mm														

- 1 6061-T4 or 6063-T4 Alloy must be used.
- 2 EndSeal™ grooving rolls marked with the prefix RZ are available. Refer to the following page.
- 3 Use grooving rolls marked with the prefix RP.
- 4 OGS-200 for use with Style 870 Rigid Coupling
- 5 Use standard grooving rolls marked with the prefix R for OGS and RW for AGS.
- 6 Use grooving rolls marked with the prefix RX for OGS and RWX for AGS. (Special RWX Rolls are available for grooving true Sch. 10 (0.250 | 6.4 mm).

VE460 RATINGS - MAXIMUM PIPE SIZE AND WALL THICKNESS CAPACITY *AGS*

		Pipe Size (inches/mm)																								
Model	Pipe Material	Notes	14 350	16 400	18 450	20 500	22 550	24 600	26 650	28 700	30 750	32 800	34 850	36 900	38 950	40 1000	42 1050	44 1100	46 1150	48 1200	50 1250	54 1350	56 1400	60 1500		
VE460	Steel	2	.250 – .500 6.4 – 12.7 mm										.375 – .500 9.5 – 12.7 mm													
	Stainless		STD 9.5 mm																							
	Lt. Wall SS	6	Sch. 5S–10S, TRUE 10 4.0 – 4.8 mm, 6.4 mm																							

- Capable of grooving up to .375-inch/9.5-mm nominal wall thickness API Specification 5L, Grade B with a maximum yield strength of 50,000 psi. For higher yield strength, use the 50T.
- Capable of grooving up to .500-inch/12.7-mm nominal wall thickness API Specification 5L, Grade B with a maximum yield strength of 42,000 psi. For higher yield strength, use the 50T.

ORIGINAL GROOVE SYSTEM (OGS) ROLL PART NUMBERS

STEEL AND SCHEDULE 40 STAINLESS STEEL PIPE - COLOR CODED BLACK

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

Pipe Size inches/mm	Roll Part Numbers
4	Lower Roll R904460L06 Upper Roll R9QA448U06 Roll Set R9Q1460006
100	
5	
125	
6	Lower Roll R908460L12 Upper Roll R9QA448U12 Roll Set R9Q1460012
150	
8	
200	
10	Lower Roll R914460L16 Upper Roll R9QA448U16 Roll Set R9Q1460016
250	
12	
300	
14	Lower Roll R918460L20 Upper Roll R9QA448U20 Roll Set R9Q1460020
350	
16	
400	
18	Lower Roll R922460L24 Upper Roll R9QA448U24 Roll Set R9Q1460024
450	
20	
500	
22	Lower Roll RX08460L12 Upper Roll RXQA448U12 Roll Set RXQ1460012
550	
24	
600	Lower Roll RX14460L16 Upper Roll RXQA448U16 Roll Set RXQ1460016

ENDSEAL “ES” ROLL PART NUMBERS

STEEL PIPE - COLOR CODED BLACK

Pipe Size inches/mm	Roll Part Numbers
4	Lower Roll RZ04460L06 Upper Roll RZQA448U06 Roll Set RZQ1460006
100	
5	
125	
6	Lower Roll RZ08460L12 Upper Roll RZQA448U12 Roll Set RZQ1460012
150	
8	
200	
10	Lower Roll RX08460L12 Upper Roll RXQA448U12 Roll Set RXQ1460012
250	
12	
300	Lower Roll RX14460L16 Upper Roll RXQA448U16 Roll Set RXQ1460016

ORIGINAL GROOVE SYSTEM (OGS) ROLL PART NUMBERS

ALUMINUM AND PVC PLASTIC PIPE - COLOR CODED YELLOW ZINC

Pipe Size inches/mm	Roll Part Numbers
4	Lower Roll RP04460L06 Upper Roll RPQA448U06 Roll Set RPQ1460006
100	
5	
125	
6	Lower Roll RP08460L12 Upper Roll RPQA448U12 Roll Set RPQ1460012
150	
8	
200	
10	Lower Roll RX08460L12 Upper Roll RXQA448U12 Roll Set RXQ1460012
250	
12	
300	Lower Roll RX14460L16 Upper Roll RXQA448U16 Roll Set RXQ1460016

ORIGINAL GROOVE SYSTEM (OGS) ROLL PART NUMBERS

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

Pipe Size inches/mm	Roll Part Numbers
4	Lower Roll RX04460L06 Upper Roll RXQA448U06 Roll Set RXQ1460006
100	
5	
125	
6	Lower Roll RX08460L12 Upper Roll RXQA448U12 Roll Set RXQ1460012
150	
8	
200	
10	Lower Roll RX14460L16 Upper Roll RXQA448U16 Roll Set RXQ1460016
250	
12	
300	
14	Lower Roll RX18460L20 Upper Roll RXQA448U20 Roll Set RXQ1460020
350	
16	
400	
18	Lower Roll RX22460L24 Upper Roll RXQA448U24 Roll Set RXQ1460024
450	
20	
500	
22	Lower Roll RX22460L24 Upper Roll RXQA448U24 Roll Set RXQ1460024
550	
24	
600	Lower Roll RX22460L24 Upper Roll RXQA448U24 Roll Set RXQ1460024

ADVANCED GROOVE SYSTEM **AGS**™ ROLL PART NUMBERS

STEEL PIPE - COLOR CODED BLACK WITH YELLOW BAND
STAINLESS STEEL PIPE - COLOR CODED SILVER WITH BLACK BAND

Pipe Size inches/ mm	Roll Part Numbers for Steel Pipe	Roll Part Numbers for Stainless Steel Pipe
14 350	Lower Roll RW02460L24 Upper Roll RWQ2448ASY Roll Set RWQ2460024	Lower Roll RWQX448L18 Upper Roll RWQX448A24 Roll Set RWQX460018
16 400		
18 450		Lower Roll RW0X460L24 Upper Roll RWQX448A24 Roll Set RWQX460024
20 500		
22 550		
24 600		
26 650	Lower Roll RWQ3460L38 Upper Roll RWQ3460A38 Roll Set RWQ3460038	
28 700		
30 750		
32 800		
34 850		
36 900		
38 950		

Pipe Size inches/ mm	Roll Part Numbers for Steel Pipe	Roll Part Numbers for Stainless Steel Pipe
40 1000	Lower Roll RWQ3460L50 Upper Roll RWQ3460A50 Roll Set RWQ3460050	
42 1050		
44 1100		
46 1150		
48 1200		
50 1250		
54 1350	Lower Roll RWQ3460L60 Upper Roll RWQ3460A60 Roll Set RWQ3460060	
56 1400		
60 1500		

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>



AGS GROOVE SPECIFICATIONS

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

<https://www.victaulic.com/assets/uploads/literature/25.09.pdf>



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 Advanced Groove System (AGS) products, reference the current revision of the I-W100 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-W100.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:	VE460
Serial No. :	Refer to Machinery Nameplate
Product Description:	Pipe Roll Grooving Tool
Conformity Assessment:	2006/42/EC, Annex I
Reference Standards:	EN ISO 12100 : 2010 EN IEC 60204-1:2018 EN ISO 13857 : 2019
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 Priijkelstraat 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 24, 2020

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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: VE460

Serial No. : Refer to Machinery Nameplate

Product Description: Pipe Roll Grooving Tool

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

VE460 Roll Grooving Tool

