

RG2100 Roll Grooving Tool



WARNING



WARNING



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

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

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

Original Instructions



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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 RG2100 Roll Grooving Tool is designed to be used in conjunction with a power drive, such as the Ridgid™ Model 300 Power Drive manufactured by Ridgid Tool Company, for the sole purpose of grooving pipe. These instructions, in addition to the instructions provided by the power drive manufacturer, 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 these tools requires dexterity and mechanical skills, as well as sound safety habits. Although these tools are designed and manufactured for safe, dependable operation, it is difficult to anticipate all combinations of circumstances that could result in an accident. The following instructions are recommended for safe operation of these tools. The operator is cautioned to always practice “safety first” during each phase of use, including set up and maintenance. It is the responsibility of the lessee or user of these tools to verify that all operators read this manual and fully understand the operation of these tools.

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

DANGER

1. **Avoid using the tool in potentially dangerous environments.** Do not expose the tool to rain, and do not use the tool in damp or wet locations. Do not use the tool on sloped or uneven surfaces. Keep the work area well lit. Allow sufficient space to operate the tool properly.

™ Ridgid is a registered trademark of Ridgid Tool Company



2. **Ground the power drive to protect the operator from electric shock.** Verify that the power drive is connected to an internally grounded electrical source.
3. **Disconnect the power cord from the electrical source before servicing the tool.** Only authorized personnel should perform maintenance on the tool. Always disconnect the power cord from the electrical source before servicing or adjusting the tool.

 **WARNING**

1. **Prevent back injury.** Always use proper lifting techniques when handling tool components.
2. **Wear proper apparel.** Do not wear loose clothing, gloves, 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 (sound levels up to 99 decibels can be produced during the grooving process).
4. **Keep hands and tools away from the power drive chuck and carriage edges during grooving operation.** Rotation of the power drive can pinch or entangle fingers and hands.
5. **Do not reach inside pipe ends during tool operation.** Pipe edges can be sharp and can snag hands and shirt sleeves.
6. **Operate the tool only with a safety foot switch.** The power drive must 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 balance at all times. Verify 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.

 **CAUTION**

1. **The RG2100 tool is designed ONLY for 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 setup instructions.
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.** Verify that the tool is stable. Refer to the “Tool Setup” section.
7. **Support the work.** Support long pipe lengths with a pipe stand.
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 to ensure proper and safe performance. Follow the instructions for matching and lubricating tool components, if applicable.
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” section.
11. **Do not remove any labels from the tool.** Replace any damaged or worn labels.

INTRODUCTION

NOTICE

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

The Victaulic RG2100 Roll Grooving Tool is a portable tool used in conjunction with a power drive for grooving pipe to be compatible with Victaulic grooved piping products, including 1”/DN25 IGS products. The standard RG2100 tool is equipped to groove 1”/DN25 Schedule 10 and Schedule 40 carbon steel pipe to Victaulic’s proprietary IGS groove specifications.

CAUTION

- This tool must be used **ONLY** for grooving pipe with specifications that fall within the designated parameters.

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

RECEIVING THE TOOL

RG2100 tools are packed individually in cardboard boxes. Upon receipt of the tool, ensure that all necessary parts are included. If any parts are missing, contact Victaulic.

CONTAINER CONTENTS




Qty.	Description
1	Tool Head Assembly
1	Carriage Assembly
1	Pipe Cutter
1	Pipe Reamer
1	Lever Arm Assembly
1	Threading Adapter
1	Groove Confirmation Gauge
2	Operating and Maintenance Instructions Manual

RETURNING THE TOOL

Prepare tool for shipment as received. Contact Victaulic with questions.

POWER REQUIREMENTS

DANGER



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

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

POWER DRIVE REQUIREMENTS

The RG2100 tool is designed for operation with a power drive. The tool mounts directly onto a Ridgid™ Model 300 Power Drive. Read and understand the operation of the power drive by referring to the manual provided by the manufacturer. Contact Victaulic for information regarding mounts for alternate power drives.

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

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

EXTENSION CORD REQUIREMENTS

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

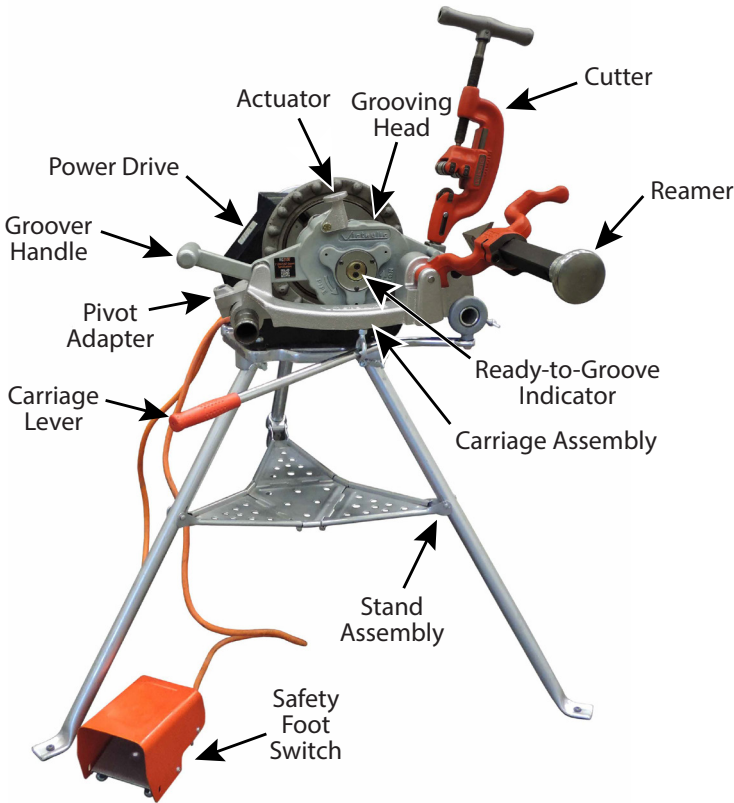
The required cord sizes for cord lengths up to and including 100 ft/31 m are listed in the table below. Use of extension cords longer than 100 ft/31 m must be avoided.

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

TOOL NOMENCLATURE

NOTICE

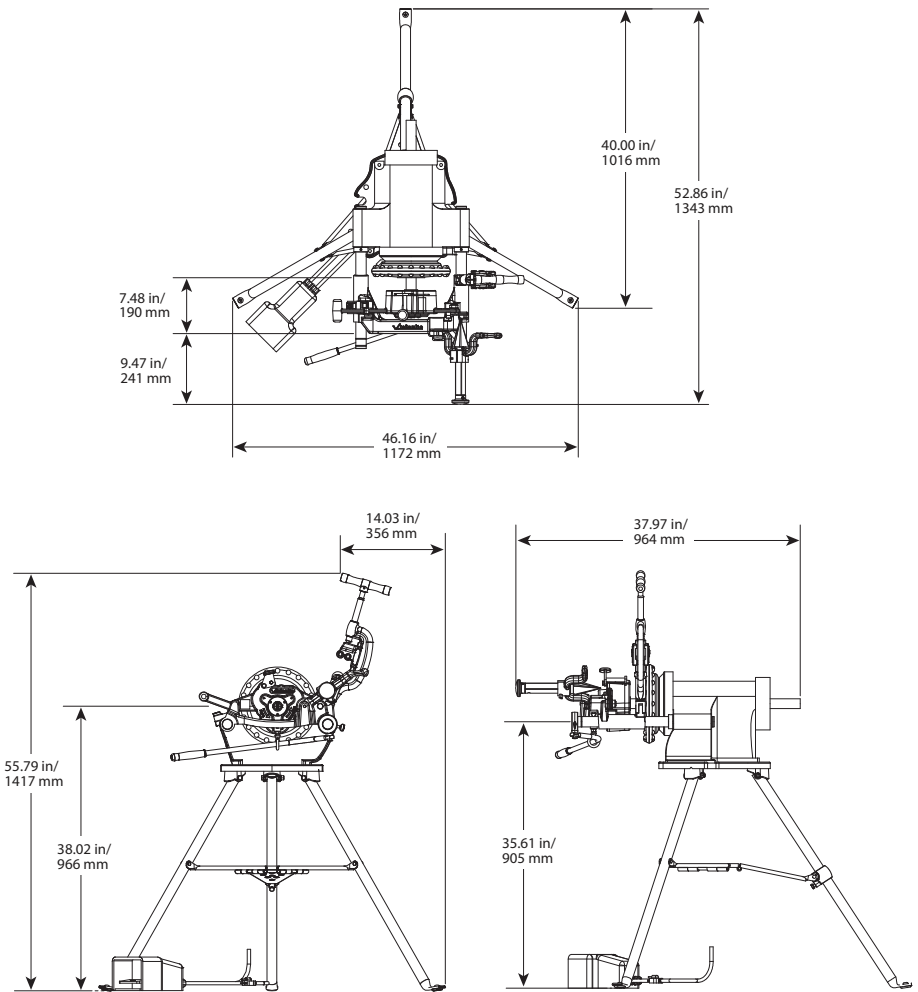
- Drawings and/or pictures in this manual may be exaggerated for clarity.
- The tool, along with this operating and maintenance instructions manual, contains trademarks, copyrights, and/or patented features that are the exclusive property of Victaulic.



IMPORTANT INFORMATION LABELS PROVIDED ON THE TOOL



TOOL DIMENSIONS AND SPECIFICATIONS



Tool weight is 37.5 pounds/17 kilograms. Tool weight includes the tool head assembly and carriage only. Dimensional measurements are taken with a Ridgid™ Model 300 Power Drive.

Tool sound pressure is 93 dB(A), while tool sound power is 99 dB(A). Sound measurements are taken with a Ridgid™ Model 300 power drive.

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

PIPE SETUP

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

1. Victaulic requires square-cut pipe for use with grooved-end pipe products.
2. Raised external weld beads, seams, and burrs must be ground flush with the pipe surface 2 inches/50 mm back from the pipe ends.
3. All coarse scale, dirt, and other foreign material must be removed from the interior and exterior surfaces of the pipe ends.

CAUTION

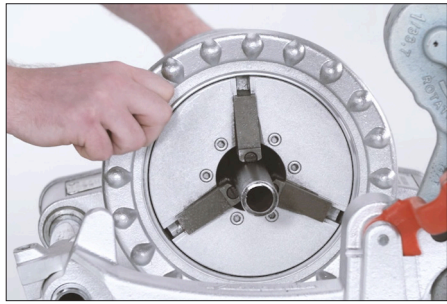
- For maximum tool life, remove foreign material from the interior and exterior surfaces of the pipe ends.

Foreign material may interfere with or damage the tool, resulting in property damage or personal injury.

4. Place pipe stands at locations appropriate for the length of pipe to be grooved.

NOTICE

- When grooving pipe from 4.5 to 6.75 inches in length, leave 2 inches of pipe extended from the front of the chuck. When grooving longer pipe lengths, leave 2–4.5 inches of pipe extended from the front of the chuck.
- Do not tighten the chuck on the first 0.5 inches of the pipe.
- When grooving pipe long enough to extend into the rear chuck of the power drive, tighten the rear chuck to center the pipe length.



5. Insert the pipe into the power drive and tighten the chuck at the proper pipe length.

While holding the pipe with one hand, use the other hand to firmly pull the power drive hand wheel in a counterclockwise motion until the chuck securely grips the pipe.

WARNING

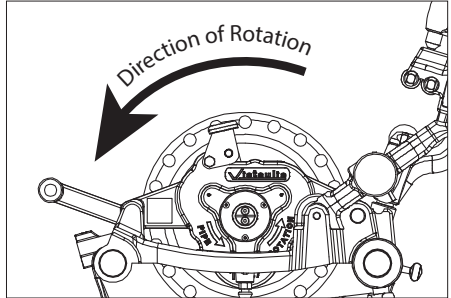
- To prevent damage to the gasket sealing surface, pipe lengths shall be a minimum of 4.5 inches/114 mm.

Failure to follow this instruction will cause improper product assembly and joint failure, resulting in serious personal injury and property damage.

DRIVE SETUP



1. Plug the power drive cord into the provided safety foot switch, as shown above. Refer to the power drive manufacturer's operating manual for additional information.
2. Place the safety foot switch on the same side of the tool as the power drive switch, with adequate clearance for ease of use and to avoid a tripping hazard.



⚠ WARNING

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

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

4. Depress the safety foot switch. Verify that the pipe rotates counterclockwise when viewed from the front power drive chuck. Remove foot from the safety foot switch.

If the pipe rotates clockwise when viewed from the front power drive chuck, return to the previous step and verify the direction of the power drive.

3. Turn the switch on the side of the power drive to FWD (forward).

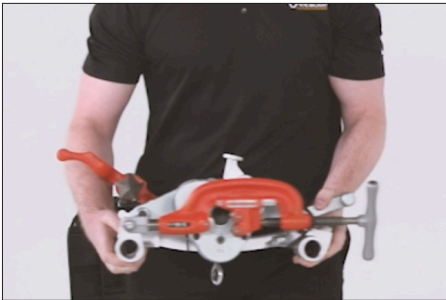
TOOL AND CARRIAGE ASSEMBLY SETUP

⚠ WARNING



- Always use proper lifting techniques when handling the tool and carriage assembly.

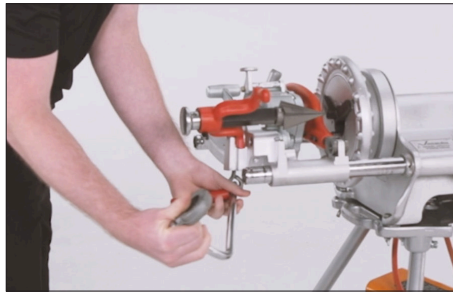
Failure to follow this instruction could result in personal injury.



1. Using proper lifting techniques, lift the tool and carriage assembly by the two handles with the reamer facing toward you, as shown above.



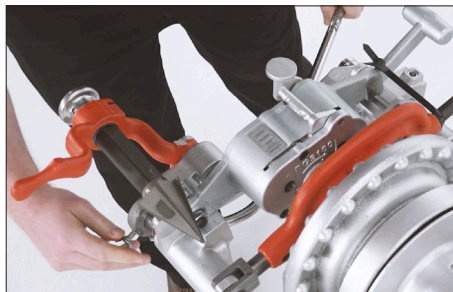
- 2a. Slide the tool and carriage assembly onto the stand assembly. The cutter should be facing towards the power drive, as shown above.



3. Insert the carriage lever through the eye bolt.




4. Insert the lever collar over the stand arm and tighten the wing screw to hand-tight.



5. Verify that the carriage and power drive are secure and properly balanced.

CUTTING AND REAMING OPERATION

⚠ DANGER	
	<ul style="list-style-type: none">• To reduce the risk of electric shock, check the electrical source for proper grounding.
<ul style="list-style-type: none">• 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	
<ul style="list-style-type: none">• This tool must be used ONLY for grooving pipe as designated.	
Failure to follow this instruction could overload the tool, resulting in reduced tool life, damage to the tool, or personal injury.	

Before proceeding, verify that all instructions in the previous sections of this manual have been followed. Read and understand the operation of the cutter and reamer by referring to the manual provided by the manufacturer.

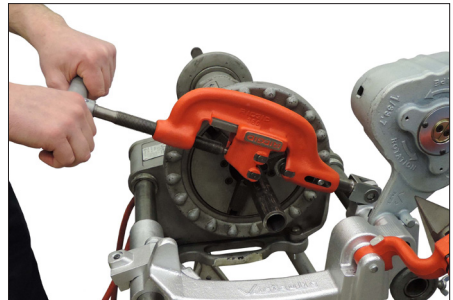
Prepare for pipe ends and cut lengths of pipe to fall during the cutting operation. Ensure that these cuttings do not interfere with operator movement.



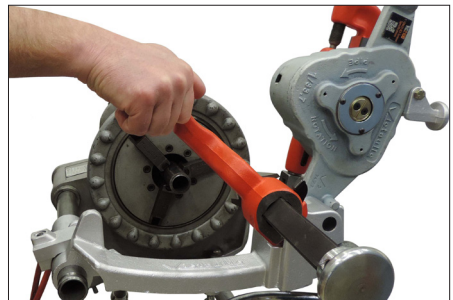
1. Using the handle, bring the cutter down over the pipe end.



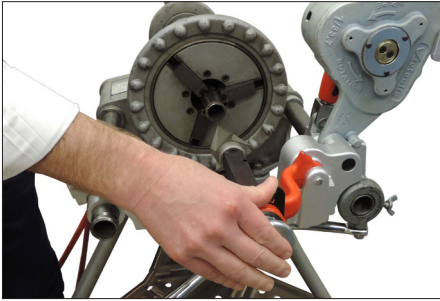
2. Depress the safety foot switch to start the power drive, then turn the handle of the cutter in a steady motion until the pipe end is cut and falls off. Remove foot from the safety foot switch.



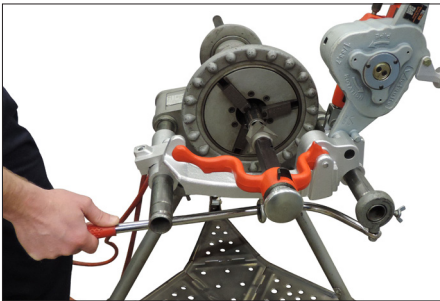
3. Using the handle, lift the cutter back to its storage position.



4. Using the handle, bring the reamer down to the pipe end.



5. Push the release lever open and slide the reamer forward until it locks into the extended position.



6. Depress the safety foot switch to start the power drive, then use the carriage lever to push the reamer into the pipe end. Hold the reamer in place for a minimum of two revolutions of the pipe, then retract the reamer and remove foot from the safety foot switch.



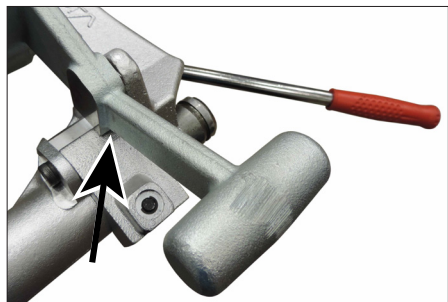
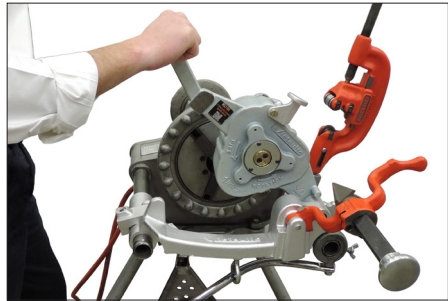
7. Use the handle to lift the reamer back to its storage position.

GROOVING OPERATION

Before proceeding, verify that all instructions in the previous sections of this manual have been followed.

NOTICE

- When grooving pipe from 4.5 to 6.75 inches in length, leave 2 inches of pipe extended from the front of the chuck. When grooving longer pipe lengths, leave 2–4.5 inches of pipe extended from the front of the chuck.
- Do not tighten the chuck on the first 0.5 inches of the pipe.
- When grooving pipe long enough to extend into the rear chuck of the power drive, tighten the rear chuck to center the pipe length.



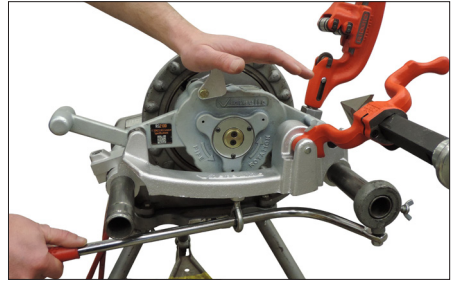
1. Using the handle, bring the grooving head down to rest on the pivot adapter assembly.



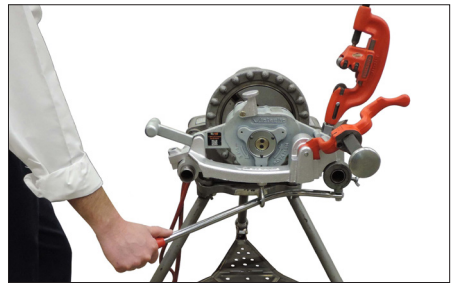
2. Using the carriage lever, push the grooving head fully over the pipe end.



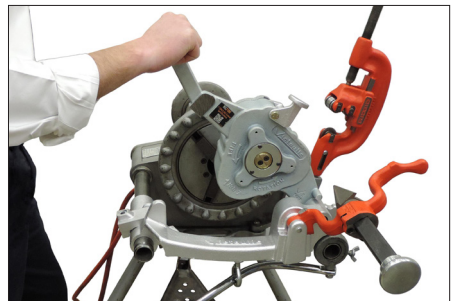
3. When the grooving head is pushed fully over the pipe end, verify that the Ready-to-Groove Indicator on the rear face of the grooving head pops out to lie flush with the cover. This provides visual confirmation that the tool is unlocked and ready for grooving. If the indicator is not flush, the tool is still locked and will not operate.



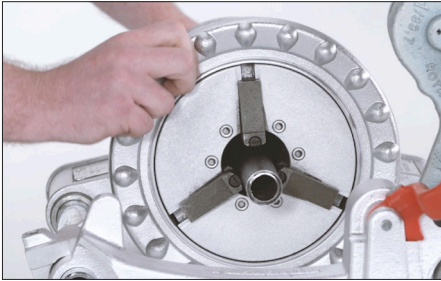
4. Maintain grip on the carriage lever to keep the tool in position during grooving. Depress the safety foot switch to start the power drive, then press and release the actuator. **NOTE:** Keep all other objects away from the tool during the grooving process.



5. Hold the grooving position until the Ready-to-Groove Indicator stops rotating, signaling that the groove is complete. Remove foot from the safety foot switch and use the carriage lever to pull the grooving head free from the pipe end.



6. Using the handle, lift the grooving head back to its storage position.

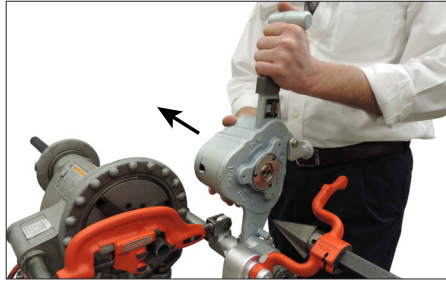


7. Loosen the chuck to remove the pipe from the power drive. If a pipe stand is not being used, manually support the pipe during removal to prevent it from falling as it separates from the tool.
8. Disconnect the tool from the electrical source if no additional grooving will be performed.

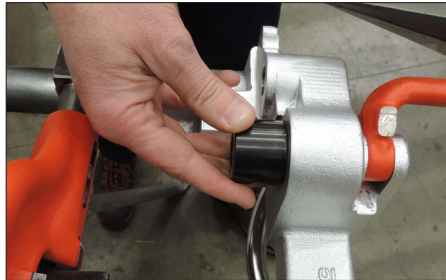
HEAD CHANGEOVER

The RG2100 universal carriage is easily converted between a grooving head and a threading head.

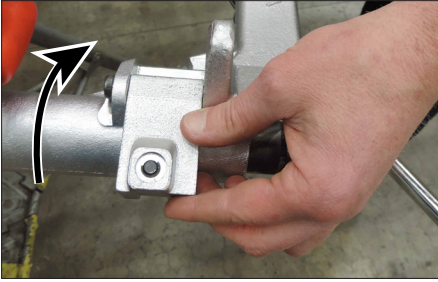
When a head is not in use, store it and any applicable accessories in a clean, dry area that is readily available to all operators.



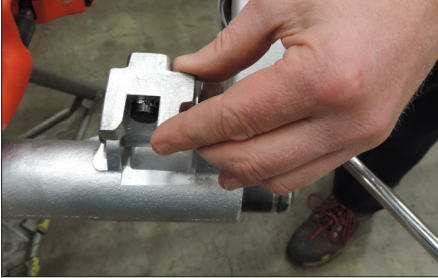
1. With the grooving head up in the storage position, grasp the head with both hands and pull it towards the power drive to remove it from the carriage. Store the grooving head in a safe location.



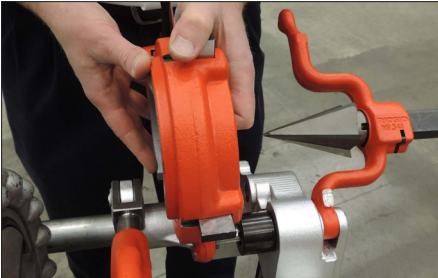
2. Push the threading adapter into the socket.



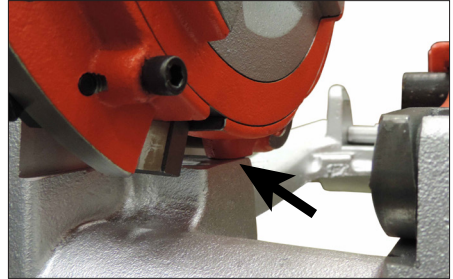
3. Turn over the pivot adapter assembly.



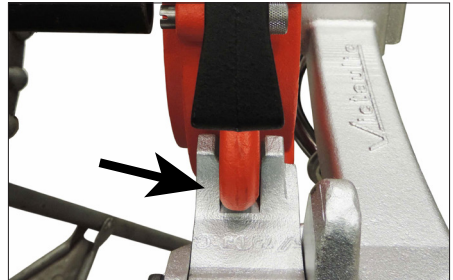
4. Push the threading head onto the threading adapter until fully seated.



5. Lower the threading head onto the pivot adapter assembly, checking for proper alignment.



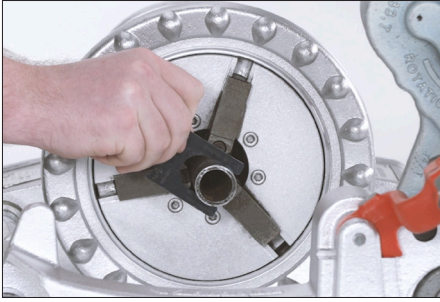
5a. Ensure that the underside of the threading head rests flat on the carriage.



5b. Ensure that the foot of the threading head rests in the groove of the pivot adapter assembly.

USING THE GROOVE CONFIRMATION GAUGE

At the beginning of a grooving session, confirm groove specifications of the first completed piece with the provided groove confirmation gauge.



1. Carefully check the groove diameter (“C” dimension) by sliding the groove confirmation gauge over the pipe groove.

If the gauge slides over the pipe groove, the groove diameter falls within Victaulic specifications.

If the gauge cannot fit over the pipe groove, the groove does not meet Victaulic specifications.



2a. Carefully check the gasket seating area (“A” dimension) by placing the profile of the groove against the notch in the groove confirmation gauge.


If the pipe end falls within the right, upper edge of the gauge notch, the “A” dimension falls within Victaulic specifications.



2b. If the pipe end falls within the left, lower edge of the gauge notch, the groove does not meet Victaulic specifications.

After confirming that the groove meets specifications, the operator may commence grooving. It is not necessary to re-check groove specifications unless the operator experiences difficulty or notices unusual tool behavior.

MAINTENANCE

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

This section provides information about keeping the tool in proper operating condition.

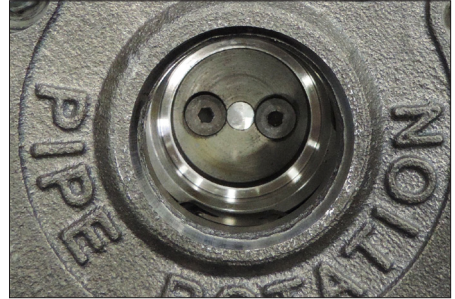
LUBRICATION

Once per week, lubricate the three grease fittings on the tool body with a No. 2EP lithium-based grease.



CLEANING THE GROOVING CUP

When grooving galvanized pipe, some flaking of the galvanized coating may occur and lodge inside the grooving cup.





Periodically inspect the pipe insertion area on the front of the grooving head. If any debris is visible inside the grooving cup, clear away the material with a wire brush.

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

TROUBLESHOOTING

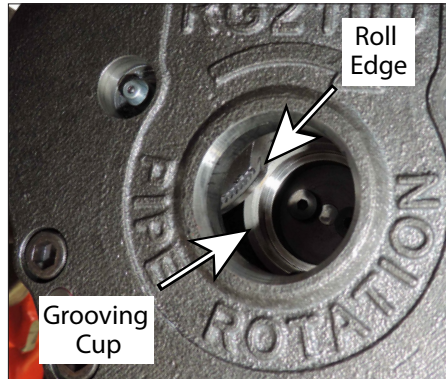
 DANGER	
	<ul style="list-style-type: none">• Before performing any adjustment on the tool, disconnect the power cord from the electrical source. <p>Failure to follow this instruction could result in death or serious personal injury.</p>

SET GROOVING HEAD TO HOME POSITION

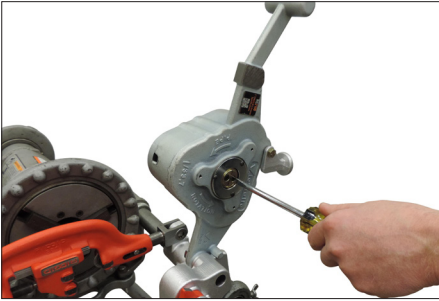
If the grooving head cannot be pushed onto the pipe end, or if the grooving head is stuck on the pipe end and cannot be removed, it may be necessary to reset the grooving head to the home position.

Grooving Head Cannot be Pushed Onto Pipe End

For ease of access, put the grooving head in the storage position while lowering the cutter and reamer. This will provide a clear view of the front of the grooving head.

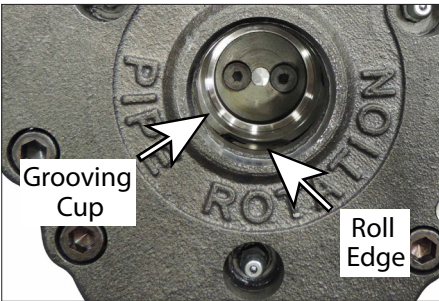


1. Inspect the pipe insertion area on the front of the grooving head. If the grooving rolls protrude past the edge of the cup, as shown above, the grooving head must be reset to home position.



2. To align the rolls, insert a flat-head screwdriver into the notch that bisects the Ready-to-Groove Indicator. Twist the screwdriver in either direction until the indicator pops into the locked position, so that it no longer lies flush with the cover.

To visualize the difference between the locked and unlocked positions of the Ready-to-Groove Indicator, review step 3 of the “Grooving Operation” section, on page 15.



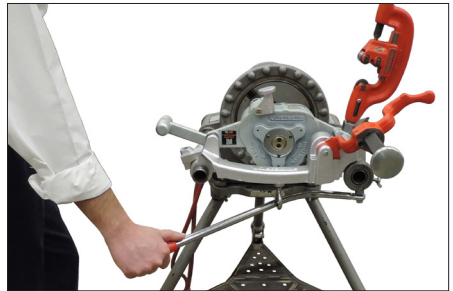
3. When the grooving rolls are properly aligned, their concave edges will align with the curve of the grooving cup, as shown above.

4. After the grooving rolls are aligned, manually verify that the tool fits properly over the pipe end.

Grooving Head Cannot be Pulled Off Pipe End

1. Loosen the power drive chuck(s) enough that the pipe remains centered in the chuck, but the chuck jaws allow the pipe to slide freely.
2. To align the rolls, insert a flat-head screwdriver into the notch that bisects the Ready-to-Groove Indicator. Twist the screwdriver in either direction until the indicator pops into the locked position, so that it no longer lies flush with the cover.

To visualize the difference between the locked and unlocked positions of the Ready-to-Groove Indicator, review step 3 of the “Grooving Operation” section, on page 15.



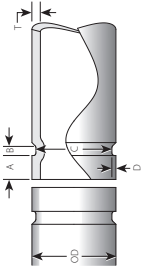
3. Once the grooving head has been reset, tighten the power drive chuck(s) and use the carriage lever to pull the grooving head off of the pipe end.

TROUBLESHOOTING (CONTINUED)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe will not fit into tool.	Grooving head is not set to home position.	Reset grooving head to home position. Refer to the "Troubleshooting" section.
Pipe stops rotating during grooving.	Pipe is slipping in the power drive chuck.	Securely tighten the power drive chuck.
	The circuit breaker/GFI has tripped or a fuse has blown out on the electrical circuit that supplies the power drive.	Test/reset the jobsite GFI/breaker, or replace the fuse. Upon restoration of power, cut off pipe end and re-groove.
	Facility has lost power.	Upon restoration of facility power, cut off pipe end and re-groove.
Tool will not groove pipe.	Tool is not fully pushed onto the pipe.	Push the tool all the way onto the pipe.
	Pipe does not extend far enough out of the chuck.	Rechuck pipe so that the end to be grooved extends a minimum of 2 inches past the edge of the chuck.
	Pipe is rotating clockwise.	Reverse power drive direction to create counterclockwise rotation of the pipe.

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

ROLL GROOVE SPECIFICATIONS IGS FOR STEEL PIPE



Size		Dimensions – inches/millimeters													
		Pipe Outside Diameter		Gasket Seat "A"			Groove Width "B"			Groove Diameter "C"		Groove Depth "D" (ref.)	Max. Allow. Wall Thick. "T"	Min. Allow. Wall Thick. "T"	Max. Allow. Flare Dia.
Nominal Size inches	Actual Pipe Outside Diameter inches/mm	Max.	Min.	Basic	Max.	Min.	Basic	Max.	Min.	Max.	Min.				
1	1.327 33.7	1.346 34.2	1.300 33.0	0.375 9.5	0.405 10.3	0.345 8.8	0.150 3.8	0.160 4.1	0.140 3.6	1.190 30.2	1.170 29.7	0.063 1.6	0.133 3.4	0.065 1.7	1.37 34.8

RG2100 Roll Grooving Tool

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