

RG4200 Roll Grooving Tool



Patented

IGS™
OGS

WARNING



! WARNING



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

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

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

Original Instructions

TABLE OF CONTENTS

Hazard Identification 2

Operator Safety Instructions 2

Introduction 4

 Receiving The Tool4

 Container Contents5

 Tool Return Or Disposal5

Power Requirements 6

 Power Hookup6

Tool Nomenclature 7

Tool Dimensions and Specifications 8

Door Opening Radii and Bolt Pattern

 Dimensions 8

Lifting Requirements – Crane 9

Lifting Requirements – Forklift 9

Tool Placement10

Preparing Pipe for Grooving10

Tool Setup12

Grooving Operation15

Head Changeover17

Using the Groove Confirmation Cable19

Maintenance 20

 Periodic20

 Inner Die22

 Cleaning the Grooving24

Troubleshooting 26

 Set Grooving Rolls to Home Position26

 Reset Pipe Count27

 Screen Message30

Alarm Codes 34

Parts Ordering Information 36

Accessories 36

IGS Groove Specifications37

OGS Groove Specifications37

Additional Resources37

EC Declaration of Conformity 38

UK Declaration of Conformity 39

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 RG4200 Roll Grooving Tool is designed for the sole purpose of roll grooving pipe. The lessee or owner of this tool is responsible for ensuring that each operator reads this manual and fully understands the operation of this grooving tool PRIOR to working with the tool. These instructions describe safe operation of the tool, including setup and maintenance. Each operator shall become familiar with the tool’s operations, applications, and limitations. Particular attention shall be given to reading and understanding the dangers, warnings, and cautions described throughout this manual.

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

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

DANGER

1. **Avoid using the tool in potentially dangerous environments.** Do not expose the tool to rain, and do not use the tool in damp or wet locations. Do not use the tool on sloped or uneven surfaces. Keep the work area well lit. Allow sufficient space to operate the tool properly.
2. **Ground the tool to protect the operator from electric shock.** Verify 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 shall perform maintenance on the tool. Always disconnect the power cord from the electrical source before servicing or adjusting the tool. Follow all lockout/tagout procedures.

WARNING

1. **Follow all applicable local and national safety regulations.**
2. **Prevent back injury.** Always follow OSHA guidelines, and/or other nationally-recognized standards, for safe lifting techniques when handling tool components.
3. **Wear proper apparel.** Do not wear loose clothing, jewelry, or anything that can become entangled in moving parts.
4. **Wear protective items when working with tools.** Always wear safety glasses, hardhat, foot protection, and hearing protection (sound levels up to 78 decibels can be produced during the grooving process).
5. **Keep hands and tools away from the pipe insertion area.** Rotation of the grooving area can pinch or entangle fingers and hands. Use pipe that is a sufficient length.
6. **Do not reach inside pipe ends during tool operation.** Pipe edges can be sharp and can snag gloves, hands, and shirt sleeves.
7. **Operate the tool only as designed.** Never reach across moving parts.
8. **Perform proper pipe handling.** Only groove straight pipe (no bent tubes, elbows, welded tees, etc.). Keep the area around the pipe clear. Pipe handling shall be limited to the operator of the tool. The operator shall be positioned so that unexpected pipe spin does not result in personal injury. Refer to the "Grooving Operation" section.
9. **Do not over-reach.** Maintain proper balance at all times.
10. **Do not make any modifications to the tool.** DO NOT remove any safety guarding or any components that would affect tool safety or performance.
11. **Do not lift or move the tool with a grooving head inside.** Grooving heads shall be removed from the tool before lifting or moving the tool.

CAUTION

1. **The RG4200 tool is designed ONLY for roll grooving pipe sizes, materials, and wall thicknesses specified in this manual.**
2. **Inspect the equipment.** Before using the tool, check moveable parts for obstructions. Verify that tool components are installed and adjusted in accordance with the "Tool Setup" section. Verify that the proper tool head is installed and that tool components are lubricated.
3. **Stay alert.** DO NOT operate the tool if impaired by drugs (medicinal or recreational), medication, alcohol, or fatigue.
4. **Keep visitors, trainees, and observers away from the work area.** All visitors shall be kept a safe distance from equipment at all times, and shall be offered the opportunity to review this manual.

 CAUTION

- 5. **Keep work areas clean.** Keep the work area around the tool clear of any obstructions that could limit movement of the operator. Clean up any spills on the floor to prevent slips or falls.
- 6. **Secure the work, machine, and accessories.** Verify that the tool is stable. Refer to the “Tool Setup” section.
- 7. **Support the work.** Support long pipe lengths (longer than 3 feet/0.9-meter) with a pipe stand at locations appropriate for the length of pipe to be grooved.
- 8. **Do not force the tool.** Do not force the tool or accessories to perform any functions beyond the capabilities described in these instructions. Do not overload the tool.
- 9. **Maintain tool with care.** Keep the tool clean at all times to ensure proper and safe performance. Follow the instructions for matching and lubricating tool components.
- 10. **Use only Victaulic replacement parts and accessories.** Use of any other parts may result in a voided warranty, improper operation, and hazardous situations. Refer to the “Parts Ordering Information” and “Accessories” sections.
- 11. **Do not remove any labels from the tool.** Replace any damaged or worn labels.

INTRODUCTION

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

The RG4200 is a roll grooving tool designed to produce a Victaulic grooved end for small diameter carbon steel pipe fabrication in a shop environment. The standard RG4200 tool is equipped to groove 1-inch/DN25 pipe to IGS groove specifications and 1 ¼–2-inch/DN32–DN50 pipe to OGS groove specifications.

 WARNING • This tool shall be used ONLY for grooving pipe/tubing with specifications that fall within the designated parameters. • Always verify that the correct grooving head is installed in the tool for the corresponding pipe size. Failure to follow these instructions could damage the tool and cause product failure, resulting in death or serious personal injury and property damage.

RECEIVING THE TOOL

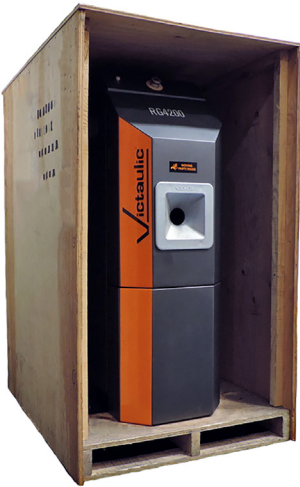
RG4200 tools are palletized individually and enclosed in a wooden crate. The grooving head assemblies and additional accessories are shipped in a separate container.

⚠ WARNING

- **DO NOT** lift or move the tool with a grooving head inside.
- Failure to follow these instructions could result in death or serious personal injury or property damage.

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

CONTAINER CONTENTS



RG4200 LARGE CONTAINER CONTENTS

Qty.	Description
1	RG4200 Tool
2	Operating and Maintenance Instructions Manual

RG4200 SMALL CONTAINER CONTENTS

Qty.	Description
4	Grooving Head Assembly
1	Groove Confirmation Cable

TOOL RETURN OR DISPOSAL

Prepare tool for shipment as received, with the tool bolted to the pallet to prevent tipping. **NOTE:** The original shipping crate is 140 pounds/64 kg empty. Verify that chips and debris are thoroughly cleaned from the machine and power is disconnected. RG4200 tool and accessories shall be disposed of, or recycled, according to local ordinances. Contact Victaulic with questions.

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

All RG4200 components are grounded to the frame of the tool. Verify that the frame is grounded properly in accordance with Article 250 of the National Electrical Code and all applicable local electrical codes.

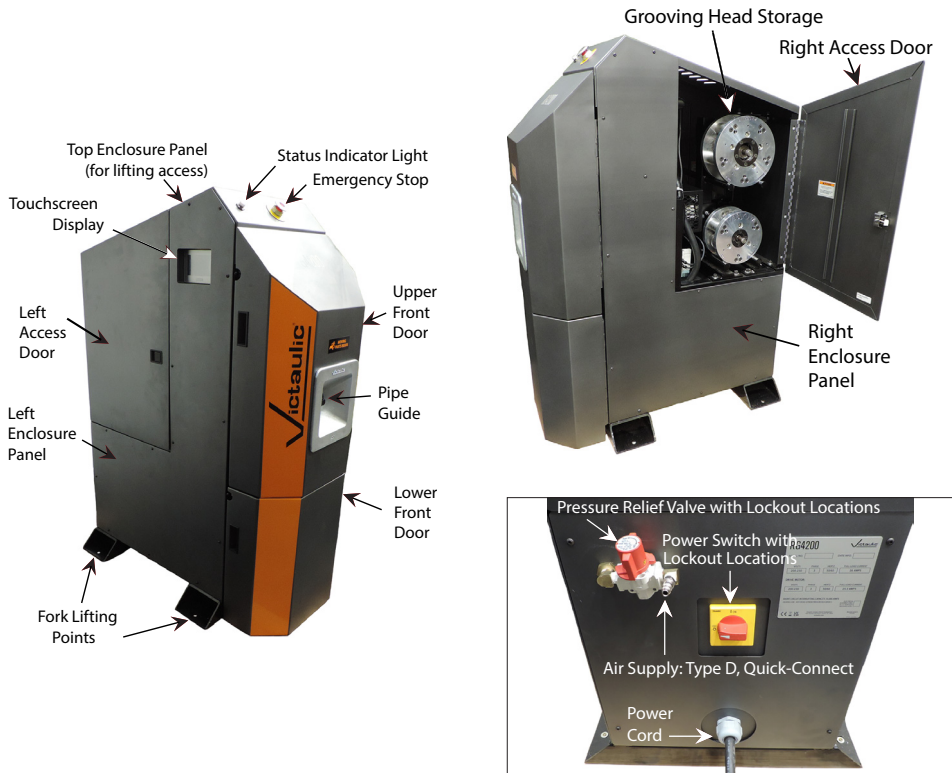
Each RG4200 Roll Grooving Tool includes a nameplate near the main electrical enclosure, which identifies voltage ratings for the tool (refer to example below). Reference shall be made to this label to ensure proper tool setup.

RG4200					
SERIAL NO.		DATE MFD.			
VOLTS 200-230		PHASE 3		HERTZ 50/60	
FULL-LOAD CURRENT 26 AMPS					
DRIVE MOTOR:					
VOLTS 200-230		PHASE 3		HERTZ 50/60	
FULL-LOAD CURRENT 25.3 AMPS					
<u>SHORT CIRCUIT INTERRUPTING CAPACITY 10,000 AMPS</u>					
• BEARING LUBE - ANTI-WEAR, EXTREME PRESSURE NUG GRADE 2					
				ELECTRICAL SPECIFICATIONS: R111 4200 SCH REVISION LEVEL	
  				Manufactured in China	
Victaulic Corporation World Headquarters 4001 Kencawille Road, Farm, PA 16805 victaulic.com					

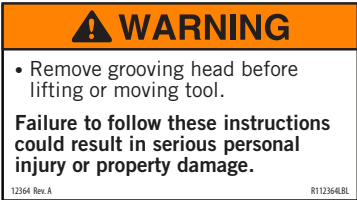
TOOL NOMENCLATURE

NOTICE

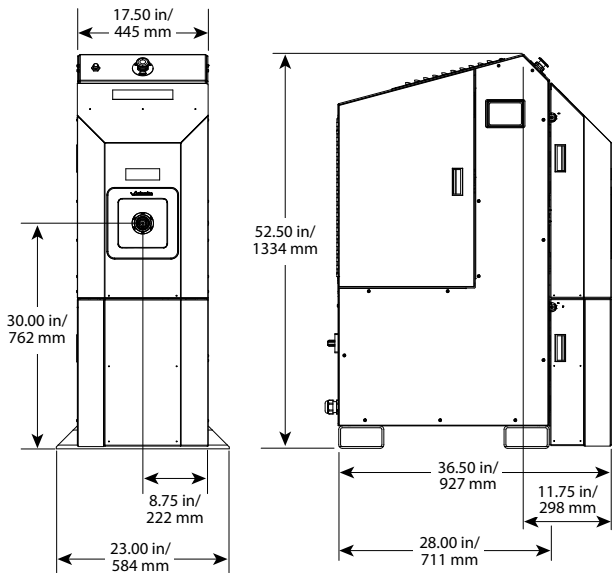
- Drawings and/or pictures in this manual may be exaggerated for clarity.
- The tool, along with this operating and maintenance instructions manual, contains trademarks, copyrights, and/or patented features that are the exclusive property of Victaulic.



IMPORTANT SAFETY INFORMATION LABELS PROVIDED ON THE TOOL



TOOL DIMENSIONS AND SPECIFICATIONS



Tool weight is 533 pounds/242 kilograms without grooving heads.

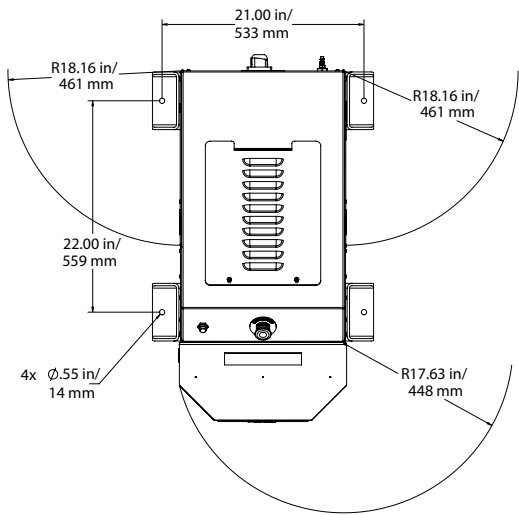
Grooving head weights are listed in the table below.

Grooving Head Size inches/mm	Grooving Head Weight lbs/kg
1 33.7	23 10.4
1 ¼ 42.4	27 12.2
1 ½ 48.3	28 12.7
2 60.3	37 16.8

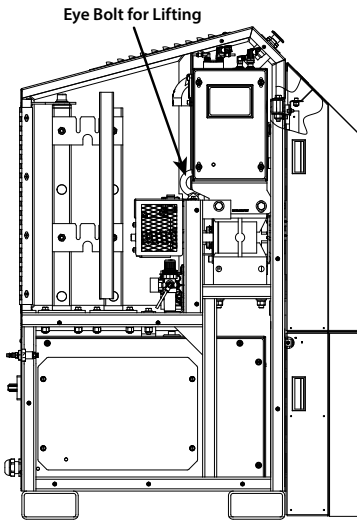
Tool sound pressure is 73 dB(A)

Tool sound power is 78 dB(A)

DOOR OPENING RADII AND BOLT PATTERN DIMENSIONS



LIFTING REQUIREMENTS – CRANE



Side Panel Removed for Clarity of Components

WARNING

- An overhead crane can be used to lift/transport the tool to its intended location.
- An eye bolt is provided in the middle section inside the tool, as shown in the drawing to the left.
- Minimum capacity rating of the overhead crane shall be 800 pounds/363 kilograms.
- DO NOT lift or move the tool with grooving heads in the storage cabinets.

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

LIFTING REQUIREMENTS – FORKLIFT

WARNING

- Proper forklift operation and material handling techniques are critical when transporting the RG4200 tool.
- Only licensed forklift operators shall perform material handling duties.
- DO NOT lift or move the tool with grooving heads in the storage cabinets.

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



TOOL PLACEMENT

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 and property damage.

1. Remove all components from the packaging, and verify that all necessary items are included. Refer to the "Receiving the Tool" section.
2. Select a location for the tool and pipe support by taking into consideration the following factors:
 - a. The required power supply (refer to the "Power Requirements" section)
 - b. Quick-connect MINIMUM air requirement of 50-psi/3.5-Bar/345-kPa
 - c. 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
 - d. A level concrete floor or base for the tool and pipe support
 - e. Adequate space to handle pipe lengths
 - f. Adequate clearance around the tool for adjustment and maintenance (2 feet/0.6 meters on all sides)
 - g. Adequate stability and distance from other machinery, free from excessive vibration and impact
 - h. Proper lighting and protection from rain, snow, and environmental contaminants
 - i. Electrical Panel disconnect and Emergency Stop buttons shall be accessible at all times
3. The RG4200 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, then anchored securely. A non-level tool can severely affect grooving operation. Refer to the "Door Opening Radii and Bolt Pattern Dimensions" diagram.

PREPARING PIPE FOR GROOVING

For proper RG4200 operation and production of grooves that are within Victaulic specifications, Victaulic requires square-cut pipe.

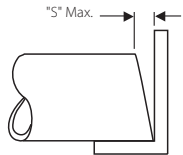
The maximum allowable tolerance from square-cut pipe ends is:

1/32 inch/0.8 mm for 1 – 2-inch/DN25 – DN50 sizes

This is measured from the true square line.

2. Raised external weld beads, seams, and burrs shall 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 shall be removed from the interior and exterior surfaces of the pipe ends.

Reference the "Roll Groove Specifications" section in this manual for additional information.



CAUTION

- For maximum grooving head life, remove foreign material and loose rust from the interior and exterior surfaces of pipe ends. Rust is an abrasive material that may prematurely wear grooving heads.

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



4. Support pipe at locations appropriate for the length to be grooved.

WARNING

- Pipe lengths shall be a minimum of 8 inches/205 mm.

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

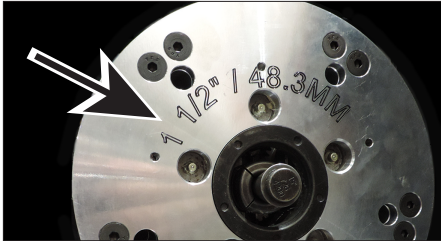
5. Pipe to be grooved with the RG4200 shall be a minimum of 8 inches/205 mm in length. **NOTE:** Grooved pipe nipples shorter than 8 inches/205 mm are available from Victaulic.

TOOL SETUP

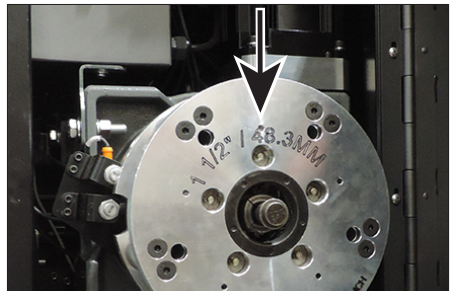
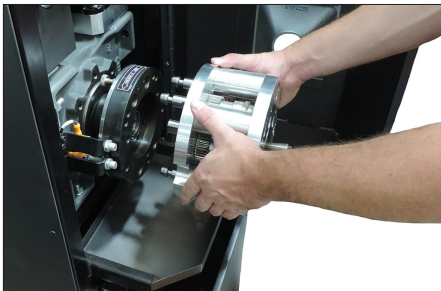
WARNING



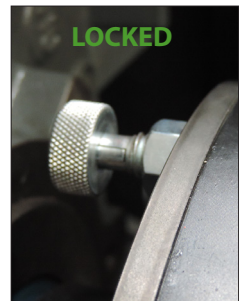
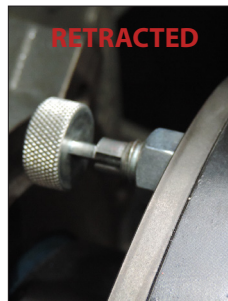
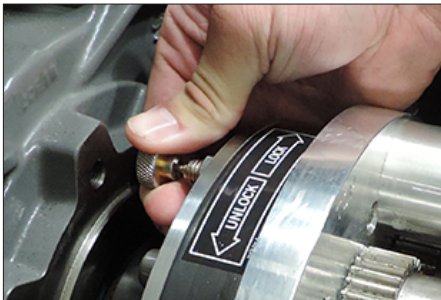
- **DO NOT** connect power to the tool until instructed to do so in step 6 of this section.
 - Always use proper lifting techniques when handling grooving heads.
- Failure to follow these instructions could result in serious personal injury.



1. Verify that the appropriate grooving head is selected for the pipe size to be grooved. A stamp/etch on the front face of the grooving head lists the pipe size range. Grooving heads that are not being used shall be secured in the storage area of the tool.



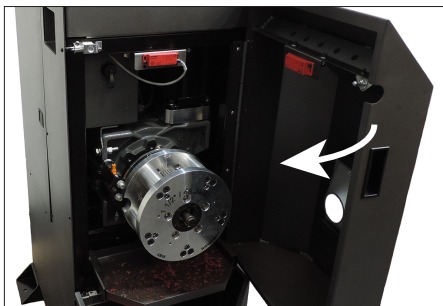
2. Seat the appropriate size grooving head against the flywheel. Grooving head shall be oriented so that the size range markings are in the 12:00 position, as shown. If the head is not zeroed, see page 14, step 9.



3. Retract the spring plunger, then rotate the locking plate clockwise to lock the grooving head in place. Verify that the grooving head is securely attached to the tool and that the spring plunger has fully seated into the locked position.



4. Secure the connecting rod by rotating it clockwise. **Hand-tighten only.**



5. Close all doors on the tool.



6a. Connect the power cord to the electrical source.

6b. Turn the RG4200 on by using the power switch on the back panel.

6c. Connect the air supply after powering on the tool.

6d. Turn the handle of the pressure relief valve to the "SUP" position.



7. Check the touchscreen display to confirm that the tool is free from alarms. If an alarm is present, refer to the "Alarm Codes" section in this manual. If no alarm is present, proceed to step 8.



8. On the MAIN screen, press the “RESET SAFETY” button.



9. The tool head shall be at the zero position. If the tool head is not at the zero position, press the “MOVE TO 0” button on the MOTOR screen to return the grooving head to the zero position. Refer to “Set Grooving Rolls to Home Position” section for correct zero configuration. **NOTE:** After pipe is grooved, the motor position will be -2.00. This is normal and should not be reset.



10. Verify that the tool is ready for use by visually checking the status indicator light at the top of the front panel. The light shall be steady green. Reference the “Controls - Lights and Messages” section for a description of status indicator light colors/meanings.



11. If the status indicator light is red, check the ALARM screen for alarm codes and refer to the “Alarm Codes” section in this manual.

12. Once all status messages are cleared, proceed to the “Grooving Operation” section.

NOTICE

- Reference the “Head Changeover” section to switch grooving heads for alternate pipe sizes. Always verify that the connecting rod is hand-tightened after changing out grooving heads.

GROOVING OPERATION

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

**WARNING**

- DO NOT attempt to groove bent tubes, elbows, welded tees, etc. with the RG4200.
- Be prepared for unexpected pipe spin. Improper pipe insertion, improper grooving head installation, and worn components may cause the pipe to rotate during grooving. The operator shall be positioned so that unexpected pipe spin does not result in personal injury.

Failure to follow these instructions could result in serious personal injury and tool/property damage.



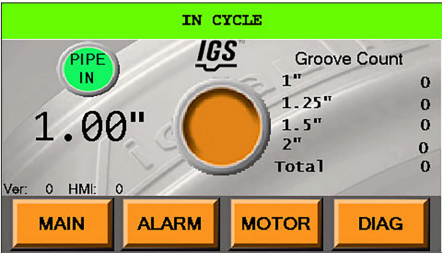
1. Check the MAIN screen to confirm that the grooving head size shown matches the size of the pipe to be grooved. If the incorrect grooving head is installed, refer to the “Head Changeover” section to replace the grooving head with the correct size.

Only proceed with grooving when the correct grooving head size is installed and registers accurately on the touchscreen.



2. Insert pipe into the tool. Verify that the pipe length is level and supported properly. Grooving will not initiate unless the pipe is fully inserted.

When the pipe is fully inserted, the Pipe Indicator on the Main screen will change from unlit “No Pipe” to lit green “Pipe In,” then the machine will start automatically.



3. Hold the pipe in place for the entirety of the grooving process (approximately 1.5 seconds). The status indicator light on the front upper panel will flash green during the grooving process, then return to steady green when grooving has finished.



4. Remove pipe from the tool.



5a. If no additional grooving will be performed, turn the handle of the pressure relief valve to the "EXH" position.

5b. Disconnect the air supply.

5c. Turn the tool off using the power switch on the back panel.

HEAD CHANGEOVER

RG4200 tools are designed with multiple grooving heads to accommodate several pipe sizes.

When grooving heads are not in use, secure them in the storage area of the tool. Store any applicable accessories in a clean, dry area that is readily available to all operators.

WARNING



- Immediately prior to changing a grooving head, turn the handle of the pressure relief valve to the "EXH" position, disconnect the air supply, then turn the tool off by using the power switch on the back panel.
- Always use proper lifting techniques when handling grooving heads.

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



1a. Turn the handle of the pressure relief valve to the "EXH" position.

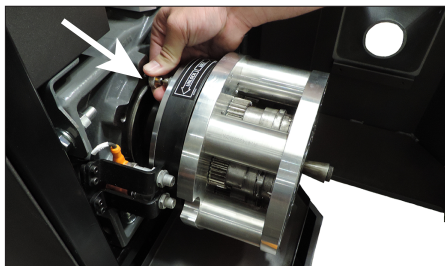
1b. Disconnect the air supply.

1c. Turn the tool off using the power switch on the back panel.



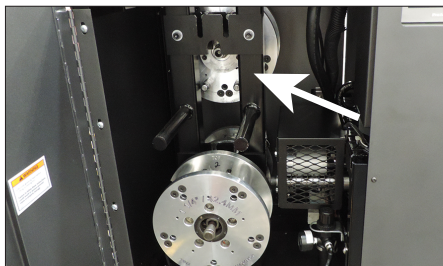
2a. Open the upper, front door to access the installed grooving head.

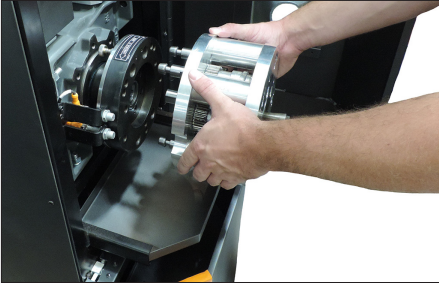
2b. Loosen the connecting rod by rotating it counter-clockwise.



3a. Retract the spring plunger, then rotate the locking plate counter-clockwise to unlock the grooving head. Remove the grooving head from the flywheel.

3b. For the grooving head that was just removed, secure it in the storage area of the tool. Choose the new, appropriate size of grooving head from the storage area and lift to remove.





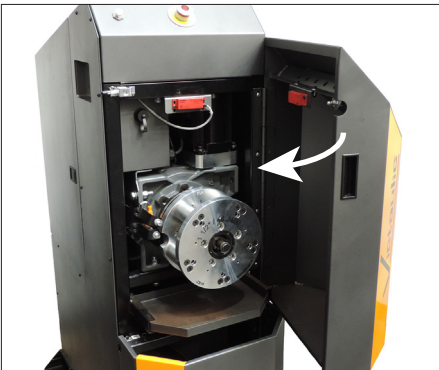
4. Seat the appropriate size grooving head against the flywheel. Grooving head shall be oriented so that the size range markings are in the 12:00 position.



5. Retract the spring plunger, then rotate the locking plate clockwise to lock the grooving head in place. Verify that the grooving head is securely attached to the tool and that the spring plunger has fully seated into the locked position.



6. Secure the connecting rod by rotating it clockwise. **Hand-tighten only.**



7. Close all doors on the tool.



8a. Turn the RG4200 on by using the power switch on the back panel.

8b. Connect the air supply after powering on the tool.

8c. Turn the handle of the pressure relief valve to the "SUP" position.



9. On the MAIN screen, press the "RESET SAFETY" button.



10. Check the screen to confirm that the tool is free from alarms. If an alarm is present, refer to the "Alarm Codes" section in this manual.

11. Grooving head changeover is now complete. Follow all instructions in the "Grooving Operation" section.

USING THE GROOVE CONFIRMATION CABLE

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



1. Carefully check the groove diameter ("C" dimension) using the provided groove confirmation cable. Refer to the "Roll Groove Specifications" section.

CAUTION

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

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

MAINTENANCE – PERIODIC

WARNING



- Immediately prior to removing a grooving head, turn the handle of the pressure relief valve to the "EXH" position, disconnect the air supply, then turn the tool off by using the power switch on the back panel.
- Always use proper lifting techniques when handling grooving heads.

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

**Tool head service interval reached.
Please see user manual for
required maintenance.**

**Service
Complete**

The RG4200 tallies the number of grooves completed and indicates when periodic maintenance is due.

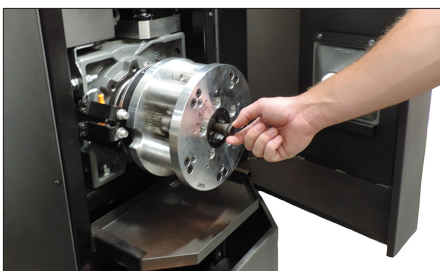
When the touchscreen indicates "Tool head service interval reached", perform the following steps. **Only lubricate grooving heads while they are removed from the tool.**



1a. Turn the handle of the pressure relief valve to the "EXH" position.

1b. Disconnect the air supply.

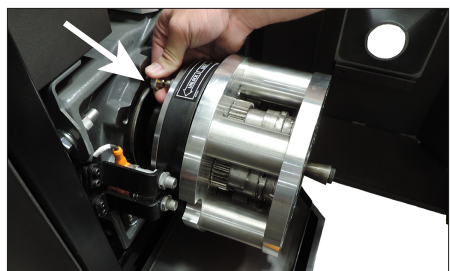
1c. Turn the tool off using the power switch on the back panel.



2a. Open the upper, front door to access the installed grooving head.

2b. Loosen the connecting rod by rotating it counter-clockwise.

2c. Retract the spring plunger, then rotate the locking plate counter-clockwise to unlock the grooving head. Remove the grooving head from the flywheel.

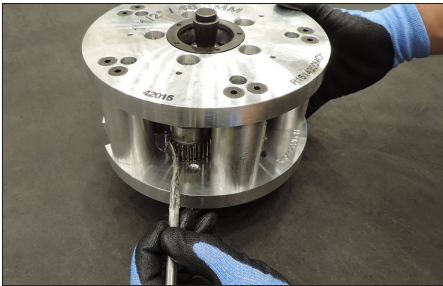


NOTICE

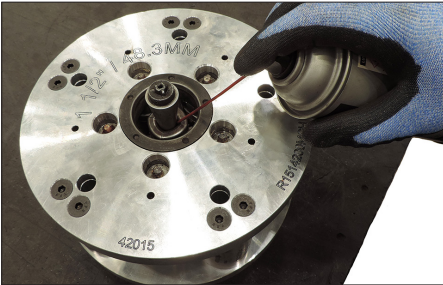
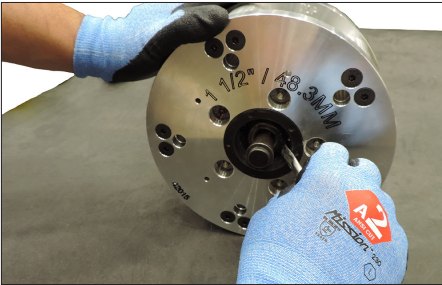
- The grooving head shown in the following photos contains five grease fittings. Other sizes may contain fewer or more grease fittings. Verify that all fittings are greased evenly and equally.



3. Lubricate the grease fittings on the grooving head with a No. 2EP lithium-based grease.

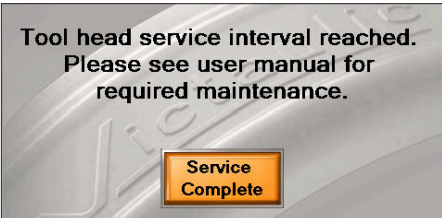


4. Apply the No. 2EP lithium-based grease to a brush and coat the gears evenly and equally.



5a. Use a clean brush to remove debris from the center support segments.

5b. Spray dry lubricate on the expansion cone and center support segments.



6. Follow all instructions in the "Tool Setup" section to reinstall the lubricated grooving head on the tool. Verify that the connecting rod is hand tightened. Upon tool startup, the "Service Complete" button may need to be pressed on the screen shown to the left.

MAINTENANCE – INNER DIE

WARNING

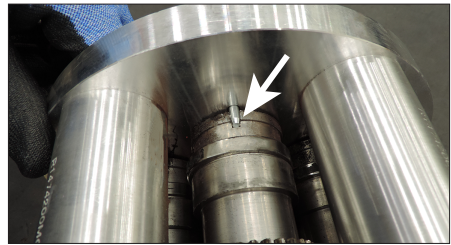


- Immediately prior to removing a grooving head, turn the handle of the pressure relief valve to the "EXH" position, disconnect the air supply, then turn the tool off by using the power switch on the back panel.
- Always use proper lifting techniques when handling grooving heads.

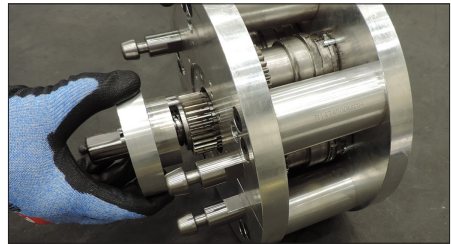
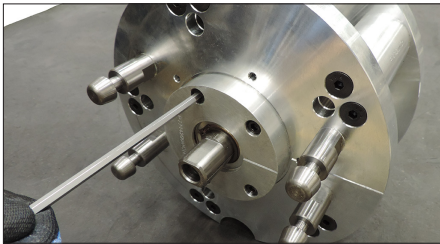
Failure to follow these instructions could result in serious personal injury.

Inner die maintenance should be performed when prompted or as needed. Typical conditions requiring maintenance are inner dies binding, pipe slipping, or loose/broken garter springs. Replacement parts shall be ordered from Victaulic to ensure proper and safe operation of the tool.

1. Follow steps 1 – 2c of the "Maintenance – Lubrication" section.



2. Using the supplied pins, secure the cams in place. Verify that the pins are seated properly to keep cams timed correctly.



3. Remove the pinion housing.



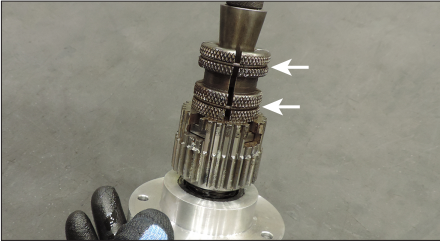
4. Use a clean brush to remove debris from the pinion housing and center support segments.

Note: Garter springs replacement required.

⚠ WARNING



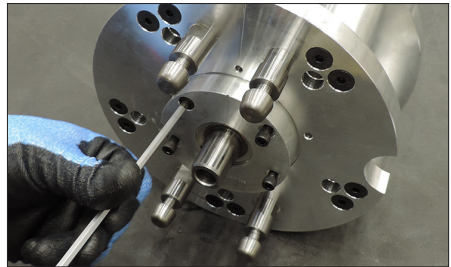
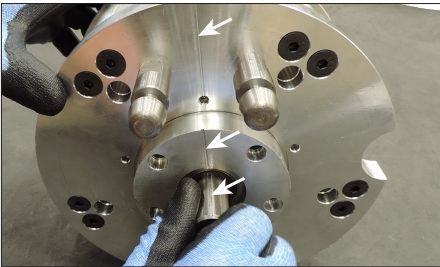
- Wear safety glasses to protect eyes during garter spring removal and replacement. Failure to follow this instruction could result in serious personal injury.



5. Using a pick, remove the garter springs carefully and replace with new, Victaulic-supplied springs.



6. Apply a small amount of 3-in-1 oil to the bushing and PTFE dry lube on the T-slots of the segments.



7. Reinstall pinion housing. Verify that the timing line of the pinion, pinion housing, and backplate are all oriented correctly.



8. Remove pins. Follow all instructions in the "Tool Setup" section to reinstall the maintained grooving head on the tool. Verify that the connecting rod is hand tightened.

MAINTENANCE – CLEANING THE GROOVING AREA

DANGER



- Before cleaning the grooving area of the tool, disconnect power from the electrical source as described in this section.

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

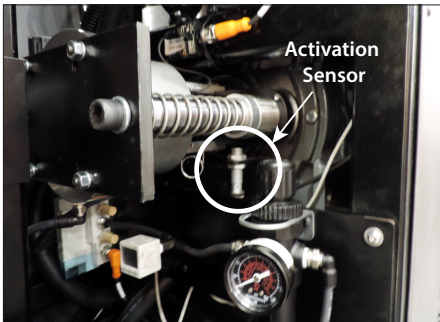


1a. Turn the handle of the pressure relief valve to the "EXH" position.

1b. Disconnect the air supply.

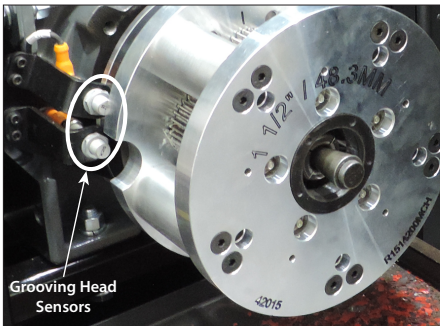
1c. Turn the tool off using the power switch on the back panel.

1d. Disconnect the power cord from the electrical source and lockout/tagout the electrical panel, or use the lockout/tagout locations on the power switch and pressure relief valve to prevent accidental tool startup. Follow all national and site-specific safety requirements for lockout/tagout.

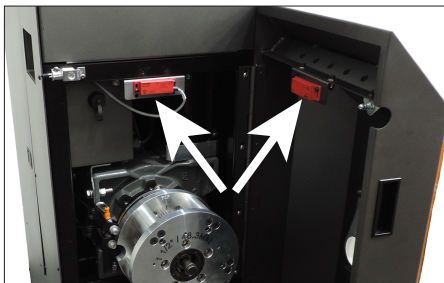


When grooving coated pipe, some flaking of the coating may occur and lodge inside the tool.

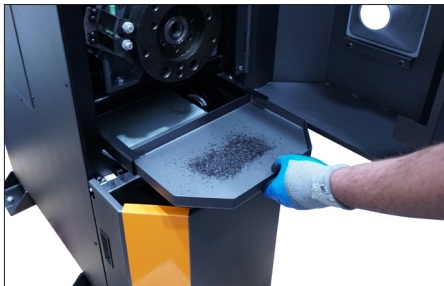
2. Periodically inspect the activation sensor, which is located behind the grooving head (inside left-hand storage door when looking at front of tool). If any debris is visible, remove the material with a clean brush. Do not loosen locking nuts or remove sensor to clean, instead clean in place.



3. Using a clean brush or cloth, remove any debris from the grooving head sensors. Do not loosen locking nuts or remove sensors to clean, instead clean in place.

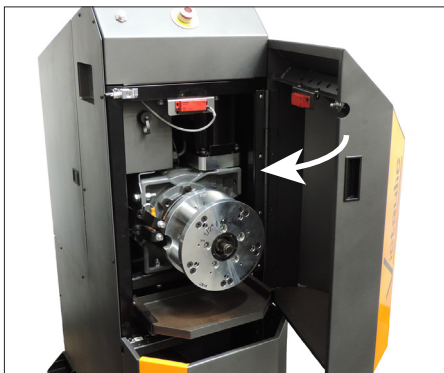


4. Using a clean brush or cloth, remove any debris from the safety interlock switch. Do not loosen fasteners or remove switch to clean, instead clean in place.



5. The debris tray at the front of the tool shall be emptied after each day of tool operation and before changing grooving heads. Use a brush to clean the tray, if needed.

When replacing the debris tray, verify that it is centered within the body of the tool to avoid spillover.



6. Close all doors on the tool.



7a. Reconnect the power cord to the electrical source and remove any lockout/tagout mechanisms.

7b. Turn the RG4200 on by using the power switch on the back panel.

7c. Connect the air supply after powering on the tool.

7d. Turn the handle of the pressure relief valve to the "SUP" position.

8. Follow steps 7 – 12 of the "Tool Setup" section.

TROUBLESHOOTING



 **DANGER**

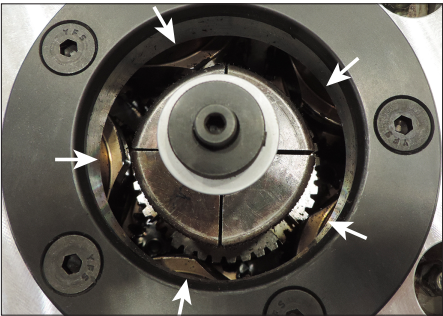
- Before performing any adjustment on the tool, disconnect power from the electrical source.

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

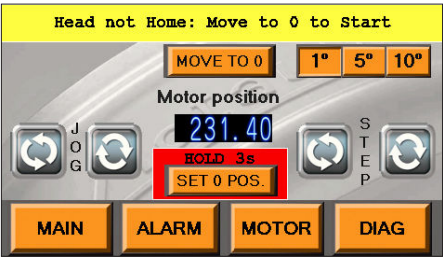
SET GROOVING ROLLS TO HOME POSITION

If the grooving process is interrupted midcycle, it may be necessary to reset the grooving rolls to the home position.

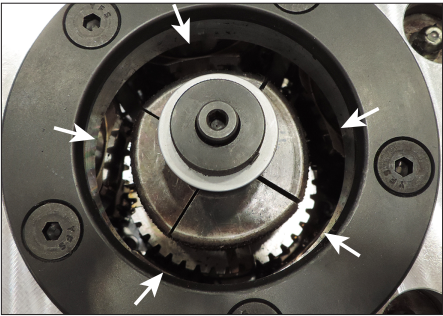
In addition, after changing the grooving head on the RG4200, it may be necessary to reset the grooving rolls to the home position.



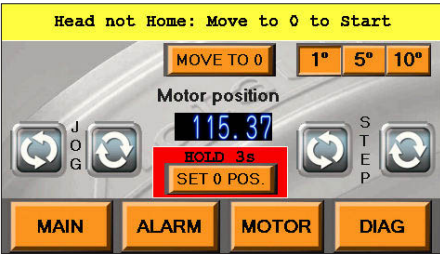
1. Inspect the pipe insertion area on the front of the tool. If the grooving rolls protrude past the circumference of the pipe guide, as shown, the grooving rolls shall be reset to the home position. (pipe not shown for clarity)



2. On the MOTOR screen, select the 1° step increment by pressing the 1° button.



3. Move the grooving rolls by pressing either the counterclockwise (CCW) or clockwise (CW) buttons labeled STEP at the preselected increment of 1° until the concave edges align with the curve of the grooving cup, as shown. Each button press of either the CCW or CW button will move the rolls 1° in the specified direction. The JOG buttons can be used to continuously rotate the rolls while pressed and may be useful in rough positioning if the roll concave edges are excessively out of position.



4. On the MOTOR screen, press and hold the “SET 0 POS” button for 3 seconds.



5. On the MOTOR screen, confirm that the motor position has reset to zero.

6. After the grooving rolls have been aligned, manually verify that the pipe end fits properly into the tool.

RESET PIPE COUNT

When a grooving head is worn and replaced with a new grooving head, the pipe count shall be reset for that grooving head size. This will allow the tool to track production and maintenance needs.

Size Identification: If the tool is reading an incorrect size, check the proximity sensors and adjust.

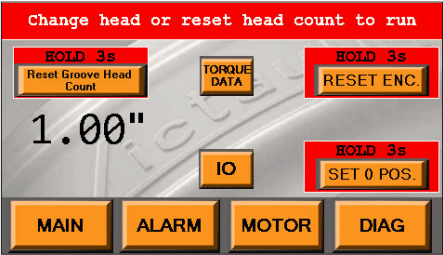
Before beginning the reset procedure, contact Victaulic to obtain the diagnostic password.



1. On the MAIN screen, press the “DIAG” button to advance to the PASSWORD screen.



2. On the PASSWORD screen, enter the password obtained from Victaulic.



3. On the DIAGNOSTIC screen, press the “Reset Groove Head Count” button for at least 3 seconds.



4. Press the “MAIN” button to return to the MAIN screen.



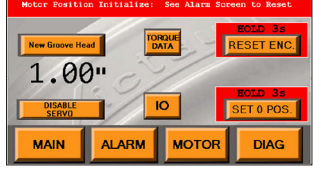
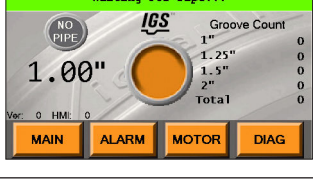
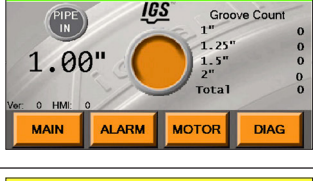
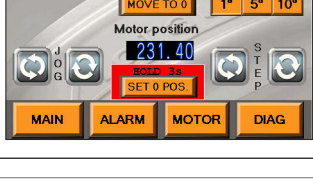
5. On the MAIN screen, confirm that the groove count was zeroed for the appropriate grooving head size (shown here: 1-inch grooving head).

TROUBLESHOOTING (CONTINUED)

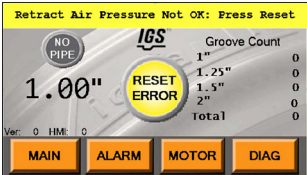
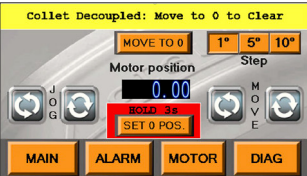
PROBLEM	POSSIBLE CAUSE	SOLUTION
Pipe will not fit into tool.	Grooving head is not set to home position.	Reset grooving head to home position. Refer to the "Troubleshooting" section.
	Pipe is not aligned to tool.	Level pipe to tool vertically and horizontally.
	Incorrect grooving head is installed.	Change grooving head to correct size.
	Incorrect pipe size is being used.	Replace with pipe that meets specifications.
Pipe rotates during grooving.	Loose debris in pipe.	Ensure pipe ID is clean and free of loose debris, such as pipe chips and cutting oil.
	Center supports are not moving freely.	Spray dry lube on the expansion cone and center supports.
	Pipe is smaller than the specified outside diameter tolerance.	Replace with pipe that meets specifications.
	Debris on the center supports.	Clean and lubricate the expansion cone and center supports.
Tool stops during grooving.	Grooving head is worn.	Contact Victaulic for a replacement grooving head.
	Collet did not engage or decoupled.	Check HMI for relevant message and follow the recovery steps in the "Screen Message Troubleshooting" section.
	The circuit breaker/GFI has tripped or a fuse has blown out on the electrical circuit.	Test/reset the jobsite GFI/breaker, or replace the fuse. Upon restoration of power, use the troubleshooting screen to manually rotate the grooving head to the home position. Remove the partially grooved pipe from the tool, cut off pipe end, and re-groove.
Tool will not groove pipe.	Pipe is not fully inserted into the tool.	Push the pipe all the way into the tool. On the MAIN screen, verify that the pipe indicator is unlit and displays "NO PIPE" when pipe removed. When pipe fully inserted, indicator will illuminate green and text will show "PIPE IN."
	Activation sensor has not reset.	Clean the activation sensor.
	Pipe is too short to extend far enough into the tool.	Replace with pipe that meets specifications.
	Anti-Rotation bracket had not returned.	Ensure that the Anti-Rotation bracket can move freely. Lubricate with a light oil if need be.
	Incorrect grooving head is installed.	Change grooving head to correct size.
	Incorrect pipe size is being used.	Replace with pipe that meets specifications.
	Alarm code has been triggered.	Check touchscreen for errors.
Tool displays an alarm with a red light.	Safety circuit is not satisfied.	Pull out ESTOP, ensure door is fully closed, press reset safety on HMI MAIN screen.
	Tool has experienced a fault.	Review the "Screen Message Troubleshooting" and "Alarm Codes" sections.
Pipe stuck in the tool.	Center Supports are hung up.	Lubricate the expansion cone and center supports with a dry lubricant.
	Center supports will not retract.	Disassemble the grooving head and replace the garter springs.

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

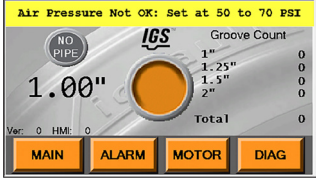
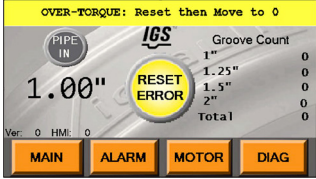
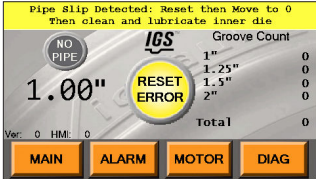
SCREEN MESSAGE TROUBLESHOOTING

MESSAGE	DESCRIPTION	RECOVERY	
"Safety Not OK: Close Door or Release ESTOP Press Reset"	(1) Door sensor is not detecting closed condition (2) ESTOP is pressed (3) Safety reset not yet performed	(1) Close the door (2) Pull out ESTOP to release (3) Press Reset Safety on Main or Alarm screen	
Servo Alarm: Check Alarm Screen	Servo motor or amplifier error	See "Alarm Codes" section for more information	
Motor Position Initialize: See Alarm Screen to Reset	Motor positioning error	Contact Victaulic to access the DIAG Screen to issue an Encoder Reset	
Waiting For Pipe...	Machine is ready to Groove	Insert Pipe to Start Grooving	
IN CYCLE	Machine is Grooving	N/A	
Head not Home: Move to 0 to Start	Head is not in the proper position.	(1) Press MOVE TO 0 on the Motor screen (2) Reposition the head using the JOG or MOVE buttons at the proper 0 position and perform Set 0. See "SET GROOVING ROLLS TO HOME POSITION" procedure for details.	

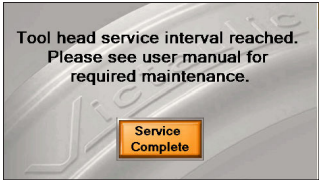
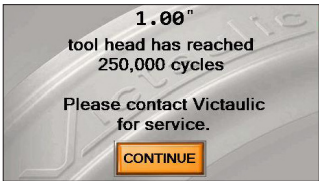
SCREEN MESSAGE TROUBLESHOOTING (CONTINUED)

MESSAGE	DESCRIPTION	RECOVERY	
Retract Air Pressure Not OK: Press Reset	Air pressure during cylinder retract did not normalize to within the expected range	(1) Verify air pressure at pressure relief gage is between 50psi and 70psi when air cylinder is retracted. Correct by adjusting pressure to within range as needed. (2) Verify air pressure at the digital pressure sensor is reading between 50psi and 70psi when air cylinder is retracted and that the OUT1 indicator is illuminated. Correct by adjusting pressure at the pressure relief to within range as needed. (2.1) If air pressure at sensor is within expected range and OUT1 is not illuminated, contact Victaulic for help (3) Verify hose connections are fully seated at directional control valve and air cylinder (no leaking air). Release and reinsert any hose connections that are leaking. If problem persists, replace the hose first and then the fitting. (4) Inspect airlines and fittings between the directional control valve and air cylinder for air leaks. Replace any damaged lines and/or fittings.	  
Collet Did Not Engage: Press RESET	Upon cycle start, the inner collet did not expand or over expanded	(1) Verify inner collet rod fully threaded in (2) Verify Pipe matches NPS callout for head (3) Verify Pipe size/type approved for use (4) Verify Pipe ID within specification (5) Verify air cylinder and connecting rods are still coupled (6) Press RESET ERROR on Main or Alarm screen and try again (7) If problem persists, contact Victaulic	
Collet Decouple: Move to 0 to Clear	During the groove, the inner collet over expanded or the connecting system decoupled	(1) Verify air cylinder and connecting rods are still coupled (2) Navigate to the Motor Screen and Press MOVE TO 0 (alarm will clear) (3) Remove Pipe and inspect inner collet for damage (4) Verify pipe match NPS callout for head, that the pipe size/type are approve for use, and the Pipe ID is within specification (5) If problem persists, contact Victaulic	

SCREEN MESSAGE TROUBLESHOOTING (CONTINUED)

MESSAGE	DESCRIPTION	RECOVERY	
Air Pressure Not OK: Set at 50 to 70 PSI	Incorrect air pressure setting	1) Verify the machine is connected to a source of compressed air (2) Verify the air pressure gage at the regulator and air pressure sensor are both reading a value (3) Adjust the pressure regulator until the air pressure is within the acceptable range of 50psi and 70psi. (The message will automatically clear when the pressure is properly set) (4) If pressure at the regulator is properly set and the message does not clear: (4.1) verify the Digital pressure sensor is reading a value within range and comparable to the gage at the pressure regulator (4.2) verify the OUT1 indicator is illuminated. If OUT1 is not illuminated, contact Victaulic for help. (5) If pressure is below minimum allowed and will not increase when adjusted, inspect air lines and fitting for leaks (6) Contact Victaulic for more help	  
OVER-TORQUE: Reset then Move to 0	Excessive groove torque	(1) Reset the error at MAIN or ALARM (2) From the motor screen press MOVE TO 0 (3) Verify pipe is an approved pipe size and type for the machine (4) If problem persists contact Victaulic	
Pipe Slip Detected: Reset then Move to 0 Then clean and lubricate inner die	Pipe Slip	(1) Lubricate inner dies (2) Clean pipe I.D. (3) Clean and lubricate dies/T-slots (4) Ensure pipe is being presented squarely and at proper axis	
Change head or reset head count to run	The installed grooving head has met its useful life.	(1) Replace the worn grooving head with a new grooving head. Contact Victaulic to reset the groove head count. Refer to the Reset Pipe Count procedure.	

SCREEN MESSAGE TROUBLESHOOTING (CONTINUED)

MESSAGE	DESCRIPTION	RECOVERY	
Maintenance Popup: Tool head service interval reached	The installed grooving head has reached a regular service interval	(1) Follow the Periodic Maintenance instruction to properly service tool head. When complete, reinstall the tool head and press Service Complete to clear the popup	
Maintenance Warning Popup: Grooving head approaching end of service life	The installed grooving head is nearing the end of its useful life	(1) Contact Victaulic to schedule tool head service. (2) Press CONTINUE to continue grooving NOTE: message displays every 5000 cycles from 225,000 to 245,000.	
Maintenance Popup: Grooving head end of life	The installed grooving head has achieved its useable life	(1) Replace the installed grooving head with an alternate size or with a new grooving head. Perform the RESET PIPE COUNT procedure.	

Controls – Lights and Messages

System Fault	Safety Not OK: Close Door or Release ESTOP Press Reset	Requires interaction to clear
	Servo Alarm: Check Alarm Screen	
	Motor Position Initialize: Set 0 Position to Reset	
	Change head or reset head count to run	
Application Fault	Head not Home: Move to 0 to Start	Clears when condition satisfied
	Retract Air Pressure Not OK: Press Reset	
	Collet Did Not Engage: Press RESET	
	Collet Decoupled: Move to 0 to Clear	
	Air Pressure Not OK: Set at 50 to 70 PSI	
	OVER-TORQUE: Reset then Move to 0	
System Normal	Pipe Slip Detected: Reset then Move to 0 Then clean and lubricate inner die	-
	Waiting For Pipe . . .	
	IN CYCLE	

ALARM CODES

Contact Victaulic if you receive an alarm code that is not listed on this page or the following page.

CODE NUMBER	MESSAGE	SOLUTION
A.020	Parameter Checksum Error	There has been a failure within the motor drive. Contact Victaulic.
A.021	Parameter Format Error	Error occurs while loading programs not normal operation.
A.022	System Checksum Error	Qualified person shall check incoming power. If power is okay, contact Victaulic.
A.024	System Alarm	Fault in motor drive and might need replacement. Contact Victaulic.
A.025	System Alarm	Fault in motor drive and might need replacement. Contact Victaulic.
A.030	Main Circuit Detector Error	Press the ALARM RESET button.
A.040	Parameter Setting Error	There has been a failure within the motor drive. Contact Victaulic.
A.041	Encoder Output Pulse Setting Error	Error occurs while loading configuration not normal operation.
A.050	Combination Error Drive Motor	Motor drive may be faulty. Contact Victaulic.
A.060	Invalid Servo ON Command Alarm	Turn the tool OFF using the switch in the back and then back ON again.
A.100	Overcurrent Detection	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.101	Motor Overcurrent Detected	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.300	Regeneration Error	Reset the alarm. If alarm persists, contact Victaulic.
A.320	Regenerative Overload	Grooving time is too low. Contact Victaulic for assistance with increasing groove time.
A.400	Overvoltage	Reset the alarm. If alarm persists, contact Victaulic.
A.410	Undervoltage	Reset the alarm. If alarm persists, contact Victaulic.
A.510	Overspeed	Reset the alarm. If alarm persists, contact Victaulic.
A.511	Encoder Output Pulse Overspeed	Error occurs while loading programs not normal operation.
A.521	Autotuning Alarm	Alarm occurs when configuring tool not under normal operation.
A.550	Maximum Speed Setting Error	Error occurs when configuring device not under normal operation.
A.710	Instantaneous overload	High load caused the motor to momentarily run above rating. Eliminate the high load condition, then press the ALARM RESET button.
A.720	Continuous Overload	High load caused the motor to continuously run above rating. Eliminate the high load condition, then press the ALARM RESET button.
A.740	Inrush Current Limiting Resistor Overload	Allow more time between subsequent power cycles. If alarm persists, contact Victaulic.
A.7A1 & 7A2	Internal Temperature Error 1 & 2	When operating under hot conditions, increase air flow (place a fan) near the lower electrical panel. If problem persists, contact Victaulic.
A.7A3	Internal Temperature Sensor Error	The motor drive may be faulty. Contact Victaulic.
A.7AB	SERVOPACK Built-in Fan Stopped	Motor drive fan has stopped. Contact Victaulic.
A.810	Encoder Backup Alarm	Synchronization of position needs to happen between drive and motor. Contact Victaulic.
A.830	Encoder Battery Alarm	The encoder battery needs to be replaced. Contact Victaulic.
A.840	Encoder Data Alarm	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.850	Encoder Over-speed	Power cycle the tool. If alarm reoccurs, contact Victaulic.

ALARM CODES (CONTINUED)

CODE NUMBER	MESSAGE	SOLUTION
A.860	Encoder Over-heated	When operating under hot conditions, increase air flow by removing the top cover of the tool.
A.861	Motor Over-Heated	When operating under hot conditions, increase air flow by removing the top cover of the tool.
A.862	Overheat Alarm	When operating under hot conditions, increase air flow by removing the top cover of the tool.
A.891	Encoder Module Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.8A3	External Absolute Encoder Position Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.B10	Speed Reference A/D Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.B11	Speed Reference A/D Data Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.B20	Torque Reference A/D Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.B33	Current Detection Error 3	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.BF0 – A.BF8	System Alarm 0 – System Alarm 8	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C10	Servo Motor Out Of Control	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C21	Polarity Sensor Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C22	Phase Information Disagreement	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C52	Polarity Detection Not Completed	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C53	Out Of Range Of Motion For Polarity Detection	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C80	Encoder Clear Error or Multiturn Limit Setting Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C90	Encoder Communications Error	Verify that the thinner cable going to the motor is connected properly.
A.C91	Encoder Communications Position Data Acceleration Rate Error	Verify that the thinner cable going to the motor is connected properly. Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.C92	Encoder Communications Timer Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.CA0	Encoder Parameter Error	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.CB0	Encoder Echo-back Error	Verify that the thinner cable going to the motor is connected properly. Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.CC0	Multiturn Limit Disagreement	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.D00	Position Deviation Overflow	Home the tool head using the MOTOR Screen. Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.EC8 & 9	Gate Drive Error 1 & 2	Power cycle the tool. If alarm reoccurs, contact Victaulic.
A.F10	Power Supply Line Open Phase	Qualified person shall check incoming power. If power is okay, contact Victaulic.
A.F50	Servomotor Main Circuit Cable Disconnection	Verify that the thicker cable going to the motor is connected properly.
FL-1 – FL-6	System Alarm	Power cycle the tool. If alarm reoccurs, contact Victaulic.

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 is a portable, adjustable, roller-type pipe stand that contains four legs for additional stability. Ball transfer rollers, adjustable for 2 – 12-inch/DN50 – DN300 pipe, and the “V” rest for $\frac{3}{4}$ – 1 $\frac{1}{2}$ -inch/DN20 – DN40 pipe, accommodate linear and rotational movement. The turnstile design permits ease of grooving for both pipe ends. Contact Victaulic for details.

IGS™ GROOVE SPECIFICATIONS

For the most up-to-date information regarding IGS roll groove specifications, reference the current revision of Victaulic publication 25.14, 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/25.14.pdf>



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>



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>



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 requirements of the Machinery Directive, 2006/42/EC.

Product Models:	RG4200
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 BV
Prijkelstraat 36
9810, Nazareth
Belgium

Signed for and on behalf of Victaulic Company,

Len R. Swantek

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

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

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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:	RG4200
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 BV Units B1 & B2 Cockerell Close off Gunnels Wood Road Stevenage, Hertfordshire SG1 2NB, United Kingdom

Signed for and on behalf of Victaulic Company,

Len R. Swantek

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

Place of Issue: Easton, Pennsylvania, USA

Date of Issue: April 22, 2022

RG4200 Roll Grooving Tool

