

# BLUEROCK® TOOLS

## OPERATION MANUAL V1.0

### RGM-612 | 1"–12" ROLL GROOVER

*Standard Duty*



**READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THE MACHINE**

**Keep this manual for future reference**

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## IMPORTANT SAFETY INFORMATION

### WARNING

**Before using this equipment, read this entire manual and become familiar with the machine and its controls. Do not allow untrained or unauthorized persons to operate the equipment.**

### General Safety Rules

**WARNING:** Read and understand this entire manual before operating the BLUEROCK RGM-612. Failure to follow the instructions and safety precautions may result in serious injury, death, or equipment damage.

- Operate the groover only if you are trained and capable of using it safely. Become familiar with the groover, power drive or threading machine, foot switch, and all controls before operation.
- Inspect the groover before each use. Do not operate the machine with damaged, loose, missing, binding, or excessively worn components.
- Wear appropriate personal protective equipment, including eye protection and protective footwear. Secure long hair and do not wear loose clothing, jewelry, or loose-fitting gloves around rotating equipment.
- Keep the work area clean, well lit, and free of unnecessary personnel. Maintain stable footing and adequate clearance around the machine and pipe.
- Properly support and stabilize the pipe, groover, pipe stands, and power drive or threading machine. Long or heavy pipe can tip, fall, or move unexpectedly if inadequately supported.
- Use only the correct roller set for the pipe size, material, and wall thickness. Do not exceed the capacities stated in this manual.
- Do not modify the groover, substitute improper components, or defeat the shear pin or any other protective feature.
- Stop operation immediately if the pipe walks off the rollers, a spiral groove develops, the tool binds, abnormal noise occurs, excessive force is required, or the shear pin breaks. Determine and correct the cause before resuming operation.

### Rotating Pipe, Rollers, and Pinch Points

**WARNING:** Roll grooving creates pinch, crushing, entanglement, and cutting hazards.

- Keep hands and fingers away from the groove roller, drive roller, pipe end, and all pinch points during operation.
- Never reach inside rotating pipe or touch the pipe, groove, rollers, or other moving components while the machine is operating.
- Keep loose clothing, jewelry, long hair, and gloves away from rotating pipe and moving parts.
- Restrict access around long rotating pipe so that other persons cannot accidentally contact it.
- Keep hands away from pipe ends and freshly prepared grooves. Burrs and sharp edges can cause cuts.

### Power-Driven Operation

When operating the RGM-612 with a compatible power drive or threading machine:

- Use a functioning **momentary foot switch**. One operator must control both the grooving operation and the foot switch.
- Never bypass, disable, block, or secure the foot switch in the ON position.
- Do not exceed **57 RPM**.
- Disconnect the power drive or threading machine from its power source before installing or removing the groover, making adjustments, changing rollers, cleaning, or servicing the machine.
- Follow all safety and operating instructions supplied with the power drive or threading machine.

## Manual / In-Place and Overhead Grooving

**WARNING:** A roll groover can fall when used in-place or overhead, creating a serious falling-object hazard.

- The pipe must be rigidly mounted and capable of supporting the weight of the groover and the forces generated during grooving.
- Maintain physical control of the groover throughout the operation.
- **Never stand below the groover during overhead/aerial work, and do not allow other persons beneath the work area.**
- Support the groover while retracting the groove roller and removing the machine from the pipe. Retraction can release the groover from the pipe unexpectedly.
- Do not perform overhead work unless the pipe, groover, and work area can be safely secured and controlled.

## TECHNICAL DATA

| Specification          | RGM-612                                                       |
|------------------------|---------------------------------------------------------------|
| Duty Class             | Standard Duty                                                 |
| Pipe Range             | 1 in–12 in with correct roller set                            |
| Operation              | Manual / in-place or compatible power drive/threading machine |
| Maximum Drive Speed    | 57 RPM                                                        |
| Approx. Machine Weight | Approx. 27.5 lb (12.5 kg)                                     |
| Groove Standard        | AWWA C606-06; verify coupling manufacturer requirements       |
| Shear-Pin Protection   | 3/16 in (5 mm) shear pin                                      |

### Pipe Capacity

| Pipe Size                   | Steel Pipe Capacity  |
|-----------------------------|----------------------|
| 1–4 in                      | Schedule 10/40 steel |
| 5–6 in                      | Schedule 10/20 steel |
| 8–12 in                     | Schedule 10 steel    |
| Maximum pipe wall thickness | 6 mm (0.236").       |

**NOTE:** When grooving Schedule 40 steel pipe, operate at a slower speed.

### Intended Use

The BLUEROCK RGM-612 is a portable standard-duty roll groover designed to form circumferential grooves in compatible steel pipe for mechanical grooved-pipe joining systems. The machine may be operated manually for in-place grooving or driven by a compatible RIDGID 300 Power Drive (38 or 57 RPM) or RIDGID 300 Compact Threading Machine using the supplied drive-bar adapter.

The RGM-612 is designed for **1"–4" Schedule 10 and Schedule 40 steel pipe, 5"–6" Schedule 10 and Schedule 20 steel pipe, and 8"–12" Schedule 10 steel pipe**, using the correct drive shaft and groove roller for the pipe size. **Maximum pipe wall thickness is 6 mm (0.236").**

Before grooving, verify that the pipe material, outside diameter, wall thickness, and installed tooling are within the stated capacity of the machine. Finished groove dimensions must meet the requirements of the coupling or fitting system being installed. Always follow the current groove specifications and installation requirements provided by the coupling or fitting manufacturer.

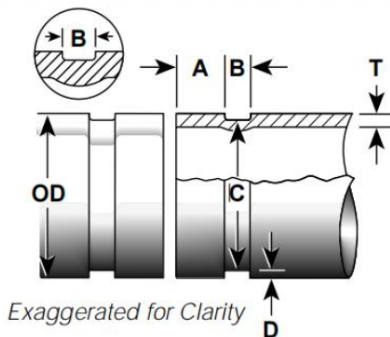
## OGS ROLL GROOVE SPECIFICATIONS FOR CARBON STEEL PIPE — BLUEROCK RGM-612

*Dimensions are shown in inches / millimeters.*

| Nom. Pipe Size (in.) | Nom. Pipe Size (mm) | Pipe O.D. Basic (in.) | Pipe O.D. Tolerance + / - (in.) | Pipe O.D. Basic (mm) | Pipe O.D. Tolerance + / - (mm) | Gasket Seat A in. / mm<br>±0.03 / ±0.76 | Groove Width B in. / mm<br>±0.03 / ±0.76 | Groove Dia. C Basic in. / mm | Groove Dia. C Tolerance in. / mm | Groove Depth D (ref.) in. / mm | SCH 10 Nominal Wall Thickness T in. / mm | Max. Allow. Flare Dia. F in. / mm |
|----------------------|---------------------|-----------------------|---------------------------------|----------------------|--------------------------------|-----------------------------------------|------------------------------------------|------------------------------|----------------------------------|--------------------------------|------------------------------------------|-----------------------------------|
| 1                    | 25                  | 1.315                 | +0.013 / -0.013                 | 33.40                | +0.33 / -0.33                  | 0.625 / 15.88                           | 0.281 / 7.14                             | 1.190 / 30.23                | -0.015 / -0.38                   | 0.063 / 1.60                   | 0.109 / 2.769                            | 1.430 / 36.30                     |
| 1-1/4                | 32                  | 1.660                 | +0.016 / -0.016                 | 42.16                | +0.41 / -0.41                  | 0.625 / 15.88                           | 0.281 / 7.14                             | 1.535 / 38.99                | -0.015 / -0.38                   | 0.063 / 1.60                   | 0.109 / 2.769                            | 1.770 / 45.00                     |
| 1-1/2                | 40                  | 1.900                 | +0.019 / -0.019                 | 48.30                | +0.48 / -0.48                  | 0.625 / 15.88                           | 0.281 / 7.14                             | 1.775 / 45.09                | -0.015 / -0.38                   | 0.063 / 1.60                   | 0.109 / 2.769                            | 2.010 / 51.10                     |
| 2                    | 50                  | 2.375                 | +0.024 / -0.024                 | 60.30                | +0.61 / -0.61                  | 0.625 / 15.88                           | 0.344 / 8.74                             | 2.250 / 57.15                | -0.015 / -0.38                   | 0.063 / 1.60                   | 0.109 / 2.769                            | 2.480 / 63.00                     |
| 2-1/2                | 65                  | 2.875                 | +0.029 / -0.029                 | 73.00                | +0.74 / -0.74                  | 0.625 / 15.88                           | 0.344 / 8.74                             | 2.720 / 69.09                | -0.018 / -0.46                   | 0.078 / 1.98                   | 0.120 / 3.048                            | 2.980 / 75.70                     |
| 3                    | 80                  | 3.500                 | +0.035 / -0.031                 | 88.90                | +0.89 / -0.79                  | 0.625 / 15.88                           | 0.344 / 8.74                             | 3.344 / 84.94                | -0.018 / -0.46                   | 0.078 / 1.98                   | 0.120 / 3.048                            | 3.600 / 91.40                     |
| 3-1/2                | 90                  | 4.000                 | +0.040 / -0.031                 | 101.60               | +1.02 / -0.79                  | 0.625 / 15.88                           | 0.344 / 8.74                             | 3.834 / 97.38                | -0.020 / -0.51                   | 0.083 / 2.11                   | 0.120 / 3.048                            | 4.100 / 104.10                    |
| 4                    | 100                 | 4.500                 | +0.040 / -0.031                 | 114.30               | +1.02 / -0.79                  | 0.625 / 15.88                           | 0.344 / 8.74                             | 4.334 / 110.08               | -0.020 / -0.51                   | 0.083 / 2.11                   | 0.120 / 3.048                            | 4.600 / 116.80                    |
| 5                    | 125                 | 5.563                 | +0.056 / -0.031                 | 141.30               | +1.42 / -0.79                  | 0.625 / 15.88                           | 0.344 / 8.74                             | 5.395 / 137.03               | -0.022 / -0.56                   | 0.084 / 2.13                   | 0.134 / 3.404                            | 5.660 / 143.80                    |
| 6                    | 150                 | 6.625                 | +0.063 / -0.031                 | 168.30               | +1.60 / -0.79                  | 0.625 / 15.88                           | 0.344 / 8.74                             | 6.455 / 163.96               | -0.022 / -0.56                   | 0.085 / 2.16                   | 0.134 / 3.404                            | 6.730 / 170.90                    |
| 8                    | 200                 | 8.625                 | +0.063 / -0.031                 | 219.10               | +1.60 / -0.79                  | 0.750 / 19.05                           | 0.469 / 11.91                            | 8.441 / 214.40               | -0.025 / -0.64                   | 0.092 / 2.34                   | 0.148 / 3.759                            | 8.800 / 223.50                    |
| 10                   | 250                 | 10.750                | +0.063 / -0.031                 | 273.00               | +1.60 / -0.79                  | 0.750 / 19.05                           | 0.469 / 11.91                            | 10.562 / 268.28              | -0.027 / -0.69                   | 0.094 / 2.39                   | 0.165 / 4.19                             | 10.920 / 277.40                   |
| 12                   | 300                 | 12.750                | +0.063 / -0.031                 | 323.90               | +1.60 / -0.79                  | 0.750 / 19.05                           | 0.469 / 11.91                            | 12.531 / 318.29              | -0.030 / -0.76                   | 0.109 / 2.77                   | 0.180 / 4.57                             | 12.920 / 328.20                   |

### Notes

- Standard** Groove dimensions are based on the OGS (Original Groove System) standard.
- Capacity** RGM-612 is capable of roll grooving 1"-4" steel pipe in SCH 10 and SCH 40, 5"-6" steel pipe in SCH 10 and SCH 20, and 8"-12" steel pipe in SCH 10.
- Wall Thickness** The wall thickness values listed represent the actual nominal wall thickness of SCH 10 steel pipe for each pipe size. They indicate applicable machine capacity and do not represent the minimum wall thickness specified by the OGS standard.
- Dims.** A, B, C, D and F are OGS groove dimensions and should be used as reference dimensions for checking the finished groove.



## MACHINE DESCRIPTION

| Component         | Function                                                                       |
|-------------------|--------------------------------------------------------------------------------|
| Feed screw        | Advances and retracts the groove roller.                                       |
| Stop nut          | Provides a repeatable groove-depth reference after a satisfactory test groove. |
| Groove roller     | Forms the groove in the outside of the pipe.                                   |
| Drive roller      | Supports/drives the pipe and helps maintain tracking.                          |
| Drive-bar adapter | Connects the groover to a compatible power drive/threading machine.            |
| Support arms      | Stabilize the groover when installed on a compatible power drive.              |
| Shear pin         | Designed to fail under excessive torque to help protect the machine.           |

### Standard Equipment

- Drive rollers: 1", 1¼"–1½", 2"–6", and 8"–12"
  - 1" drive shaft: 1" SCH 10/40
  - 1¼"–6" drive shaft: 1¼"–4" SCH 10/40; 5"–6" SCH 10/20
  - 8"–12" drive shaft: 8"–12" SCH 10
- Groove rollers: 1"–6" and 8"–12"
  - 1"–6" groove roller: 1"–4" SCH 10/40; 5"–6" SCH 10/20
  - 8"–12" groove roller: 8"–12" SCH 10
- Two support arms
- Drive-bar adapter
- Ratchet and socket
- Tool case
- Groove measuring gauge/tape as supplied
- Operation manual

## PRE-OPERATION INSPECTION

### WARNING

**Disconnect any power drive or threading machine from power before inspection, adjustment, roller changes, cleaning, or service.**

1. Clean oil, grease, dirt, rust, and debris from the tool, especially handles, drive knurls, shafts, and roller areas.
2. Inspect the housing, support arms, adapter, ratchet, fasteners, shafts, rollers, bearings, and visible components for cracks, deformation, missing parts, looseness, binding, or abnormal wear.
3. Confirm the groove roller and drive roller rotate freely.
4. Inspect drive knurls. Clean contaminated knurls with a suitable wire brush. Worn or clogged knurls can cause slippage and tracking problems.
5. Confirm the correct roller set is installed for the pipe size and material.

6. Check lubrication and service the tool as required.
7. If power driven, inspect the power drive/threading machine and momentary foot switch according to its manufacturer's manual. Do not use the system if the foot switch does not immediately control rotation.

## WORK AREA AND PIPE PREPARATION

### Work Area

- Use a clean, dry, well-lit, level, and stable work area.
- Keep the floor free of oil, water, debris, and other slip or trip hazards.
- Keep bystanders away from the groover and rotating pipe.
- Provide adequate clearance for the full length and rotation of the pipe.
- Position the power drive, groover, and pipe stands so the entire setup remains stable during operation.
- Do not operate in explosive atmospheres or near flammable liquids, gases, or combustible dust.

### Pipe Preparation

1. Verify that the **pipe material, outside diameter, wall thickness, and coupling system** are within the applicable limits for the machine and installed roller set.
2. Cut the pipe end **square**. Remove burrs, sharp edges, and other irregularities that could interfere with grooving or coupling installation.
3. Remove or grind internal and external weld beads, flash, and seams **flush with the pipe surface for at least 2" (50 mm) from the pipe end**.
4. Remove scale, dirt, rust, oil, grease, and other contamination from the grooving area for at least **2" (50 mm) from the pipe end**.
5. Inspect the prepared pipe end for damage, deformation, or other conditions that could prevent proper grooving.
6. Support the pipe with suitable pipe stands. Long or heavy pipe must be adequately supported so it cannot **tip, fall, shift unexpectedly, or place excessive load on the groover or power drive**.
7. Before grooving, confirm that the pipe is properly positioned and stable and that the groover is correctly aligned with the pipe.

## POWER-DRIVE SETUP

### WARNING

**Disconnect the power drive/threading machine from power before installing or adjusting the groover.**

1. Place the power drive or threading machine on a **stable, level surface** and set it up according to the manufacturer's instructions.
2. Install the drive-bar adapter onto the groover drive shaft. Align the set screws with the flats on the drive shaft and tighten securely.
3. Install the groover support arms and position the groover on the power drive or threading machine. Confirm that the groover and support arms are **fully seated and stable**.
4. Secure the drive-bar adapter in the power-drive chuck. Confirm that the adapter is **centered, firmly gripped, and properly aligned**.
5. Position suitable pipe stand(s) and adjust their height and location so the pipe is stable, adequately supported, and properly aligned with the groover.
6. Confirm that the power drive or threading machine will operate at **57 RPM or less. Do not operate the RGM-612 above 57 RPM.**
7. Verify that the power-drive controls and **momentary foot switch** are properly positioned so one operator can control both the grooving operation and powered rotation.
8. Inspect the complete setup before reconnecting power. Confirm that the groover, adapter, support arms, pipe stands, and pipe are properly positioned and secure.

9. Reconnect power and, **before beginning the groove**, briefly operate the foot switch to verify proper rotation and confirm that releasing the foot switch immediately stops powered rotation.
10. If the pipe, groover, or power drive moves, shifts, or does not track correctly during the initial rotation, **stop immediately and correct the setup before continuing**.

## MANUAL / IN-PLACE SETUP

### WARNING

The pipe must be rigidly mounted and capable of supporting the groover's weight plus grooving torque. Keep personnel clear below the tool.

1. Confirm that the pipe is securely mounted and cannot rotate, shift, or move unexpectedly during grooving.
2. Confirm that the correct drive roller and groove roller are installed for the pipe size, material, and wall thickness.
3. Retract the groove roller sufficiently to position the drive roller inside the prepared pipe end.
4. Position the groover squarely on the pipe with the machine fully seated against the pipe end.
5. Advance the feed screw by hand until the groove roller makes light contact with the outside of the pipe. **Do not apply excessive feed pressure during setup.**
6. Confirm that the groover is properly seated and securely retained on the pipe before beginning manual rotation.
7. Position the ratchet so the groover can be rotated safely while maintaining stable footing and control of the machine.
8. Maintain physical control of the groover throughout the operation. **Do not allow the machine to hang unsupported where it could fall if it becomes disengaged from the pipe.**
9. When working overhead or in an elevated position, **never stand directly below the groover and do not allow other persons beneath the work area.**

## GROOVE SETUP AND VERIFICATION

A groove may appear acceptable while being dimensionally incorrect. **Always verify groove dimensions before placing the grooved pipe into service.** The current groove specifications and installation requirements of the coupling or fitting manufacturer control acceptance of the finished groove.

### Test Groove

1. Whenever the **pipe size, material, wall thickness, or roller set changes**, make a test groove before beginning production grooving.
2. When practical, use a test section of the **same pipe material, outside diameter, and wall thickness** as the pipe to be installed.
3. Set the feed and stop adjustment conservatively and form the test groove gradually. **Do not over-feed the groove roller.**
4. Measure the finished **groove diameter and any other required groove dimensions** using an appropriate groove tape, gauge, or measuring instrument.
5. Check **pipe-end flare** when required by the coupling or fitting manufacturer.
6. Compare the finished groove with the current specifications for the coupling or fitting system being installed.
7. If the groove is outside the required specification, **do not use the groove as a production reference.** Correct the setup and make another test groove.
8. After producing a satisfactory test groove, set the **stop nut** to provide a repeatable groove-depth reference for the same pipe size, material, and wall thickness.
9. Re-check groove dimensions **periodically during production** and whenever pipe stock, tracking, operating force, machine setup, or groove appearance changes.

**IMPORTANT:** The stop nut is a setup aid and **does not replace measurement of the finished groove**. Pipe dimensions, material, roller wear, and other operating conditions can affect the final groove dimensions.

## Power-Driven Grooving

1. Complete the **Pre-Operation Inspection, Work Area and Pipe Preparation, Power-Drive Setup, and Groove Setup and Verification** procedures before beginning operation.
2. Confirm that the correct drive roller and groove roller are installed for the pipe size, material, and wall thickness.
3. Position the prepared pipe on the drive roller and support it securely with suitable pipe stand(s). Confirm that the pipe is stable and properly aligned with the groover.
4. Advance the feed screw until the groove roller makes light contact with the outside of the pipe. Then advance the feed screw approximately **one-quarter turn (about 0.020" / 0.5 mm)**.
5. Using the momentary foot switch, operate the power drive and allow the pipe to make **at least one complete revolution**. Keep hands and clothing away from the rotating pipe, rollers, and pinch points.
6. Release the foot switch and allow rotation to stop completely. Advance the feed screw gradually.
7. Repeat the process of **full pipe rotation followed by gradual feed adjustment** until the groove approaches the required diameter. Do not over-feed the groove roller.
8. Stop rotation completely and measure the groove using an appropriate groove tape, gauge, or measuring instrument. Compare the finished groove dimensions with the requirements of the coupling or fitting manufacturer.
9. If additional groove depth is required, continue with gradual feed adjustments and complete pipe revolutions until the required groove dimensions are obtained.
10. After producing a satisfactory test groove, set the stop nut to provide a repeatable groove-depth reference for subsequent pipe of the **same size, material, and wall thickness**.
11. Periodically verify finished groove dimensions during production and whenever pipe stock, tracking, operating force, machine setup, or groove appearance changes. **Do not rely solely on the stop nut or visual appearance to determine groove acceptance.**

## Tracking / Preventing Spiral Grooves

The pipe should remain properly engaged with the drive roller and track consistently during grooving. If the pipe begins to walk off the rollers or a spiral groove develops, **release the foot switch and allow all rotation to stop before making any adjustment.**

Check the following before continuing:

- Confirm that the correct rollers are installed.
- Verify that the pipe is properly supported and that the pipe stand(s) are correctly positioned.
- Inspect the pipe end for improper preparation, deformation, or other irregularities.
- Verify groover-to-pipe alignment.
- Confirm that the groove roller is being advanced gradually and is not being over-fed.

If additional tracking correction is required, the pipe may be positioned at a slight angle of approximately  $\frac{1}{2}^\circ$  (**about 1" over 10 ft / 25 mm over 3 m**) relative to the groover, as described in the setup procedure.

**Do not push, pull, or apply excessive hand force to a rotating pipe in an attempt to correct tracking. Stop the machine and correct the setup instead.**

**WARNING:** Maintain control of the groover throughout the operation. When working overhead, **never stand below the groover and keep all other persons clear of the area beneath the tool.**

1. Securely mount the pipe and install the groover as described in the **Manual / In-Place Setup** section. Confirm that the pipe and groover are stable before beginning operation.
2. Advance the feed screw until the groove roller makes light contact with the outside of the pipe. Then advance the feed screw approximately **one-quarter turn (about 0.020" / 0.5 mm)**.

3. Position the ratchet on the drive shaft and manually rotate the groover through **at least one complete revolution around the pipe**.
4. Return the ratchet to the feed screw and advance the groove roller gradually. **Do not over-feed the groove roller.**
5. Return the ratchet to the drive shaft and rotate the groover through another complete revolution.
6. Continue alternating between **complete revolutions and gradual feed adjustments** until the groove approaches the required diameter.
7. Measure the groove using an appropriate groove tape, gauge, or measuring instrument. If additional depth is required, continue with gradual feed adjustments and complete revolutions until the finished groove meets the requirements of the coupling or fitting manufacturer.
8. When grooving is complete, **support the weight of the groover before retracting the groove roller.** Fully retract the groove roller and carefully remove the machine from the pipe.
9. Do not allow the groover to hang unsupported or fall as it disengages from the pipe.

## SHEAR-PIN PROTECTION

The RGM-612 uses a **3/16" (5 mm) shear pin** designed to help protect the drive system from excessive torque.

If the shear pin breaks:

1. **Stop operation immediately.**
2. Inspect the setup and determine the cause of excessive torque. Check the pipe material and wall thickness, roller selection, pipe and machine alignment, lubrication, feed rate, and the machine for binding or obstruction.
3. Correct the cause before installing a replacement shear pin.
4. Replace the pin only with the **specified 3/16" (5 mm) shear pin**.

**WARNING:** Never substitute a bolt, drill shank, hardened pin, or other improvised part for the specified shear pin. **Do not modify or defeat the shear-pin protection system.**

### WARNING

Use only the specified shear pin. Never substitute a harder pin, bolt, drill shank, or improvised part. Defeating the shear-pin protection can cause machine damage or sudden hazardous failure.

## ROLLER CHANGES

### WARNING

Disconnect any power drive/threading machine from power before changing rollers.

Use the correct groove roller and drive roller for the **pipe size, material, and wall thickness** being grooved.

### Groove Roller

1. Retract the feed screw as necessary to remove pressure from the groove roller.
2. Loosen the **slide-block set screw** using the appropriate hex wrench.
3. Support the groove roller and carefully withdraw the **groove roller shaft**.
4. Remove the groove roller and bearings. Note the position and orientation of the bearings and other components for correct reassembly.
5. Clean the groove roller shaft and mounting surfaces. Inspect the shaft, roller, bearings, and related components for wear, damage, contamination, or binding.
6. Apply a light coat of suitable grease to the groove roller shaft.
7. Install the correct groove roller and bearings in their proper orientation.

8. Reinstall the groove roller shaft and tighten the slide-block set screw securely.
9. Rotate the groove roller by hand and confirm that it is properly seated and rotates freely without binding.

### Drive Roller

1. Remove the **drive-roller retaining bolt** using the appropriate hex wrench.
2. Prevent the drive shaft from rotating as necessary and carefully remove the drive roller.
3. Clean the drive shaft, drive-roller bore, and surrounding mounting surfaces.
4. Inspect the drive roller, knurls, shaft, retaining bolt, and mounting surfaces for excessive wear or damage.
5. Apply a light coat of suitable grease to the drive shaft and mounting surfaces as specified in the **Maintenance** section.
6. Install the correct drive roller and confirm that it is fully seated.
7. Reinstall and securely tighten the drive-roller retaining bolt.
8. Rotate the drive roller by hand and confirm that it is properly seated, secure, and rotates freely without binding.

### After Changing Rollers

Before returning the groover to service:

- Confirm that all shafts, set screws, retaining bolts, bearings, and rollers are correctly installed and secure.
- Confirm that both rollers move freely without binding.
- Verify that the installed rollers are the correct combination for the pipe being grooved.
- **Make and measure a test groove before beginning production work.**

## PERIODIC INSPECTION AND MAINTENANCE

### WARNING

**Disconnect the tool from any power source before cleaning, adjustment, inspection, roller changes, or service.**

| Interval                       | Maintenance                                                                                                               |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Before each use</b>         | Inspect tool condition; check rollers/shafts; confirm fasteners; inspect shear pin; clean drive knurls and work surfaces. |
| <b>Every 4 operating hours</b> | Lubricate the groove shaft and add a small amount of grease to the feed-screw thread hole.                                |
| <b>Monthly</b>                 | Add grease to the drive-shaft lubrication fitting.                                                                        |
| <b>When changing rollers</b>   | Clean shafts and cavities; apply a light film of grease.                                                                  |
| <b>As needed</b>               | Replace worn bearings, seals, rollers, shafts, shear pins, or damaged components with correct service parts.              |
| <b>Storage</b>                 | Clean and dry the machine; protect exposed metal/moving parts against corrosion; store securely in a dry location.        |

Do not continue operating the groover if inspection reveals a damaged, excessively worn, loose, or binding component. Correct the condition before returning the machine to service.

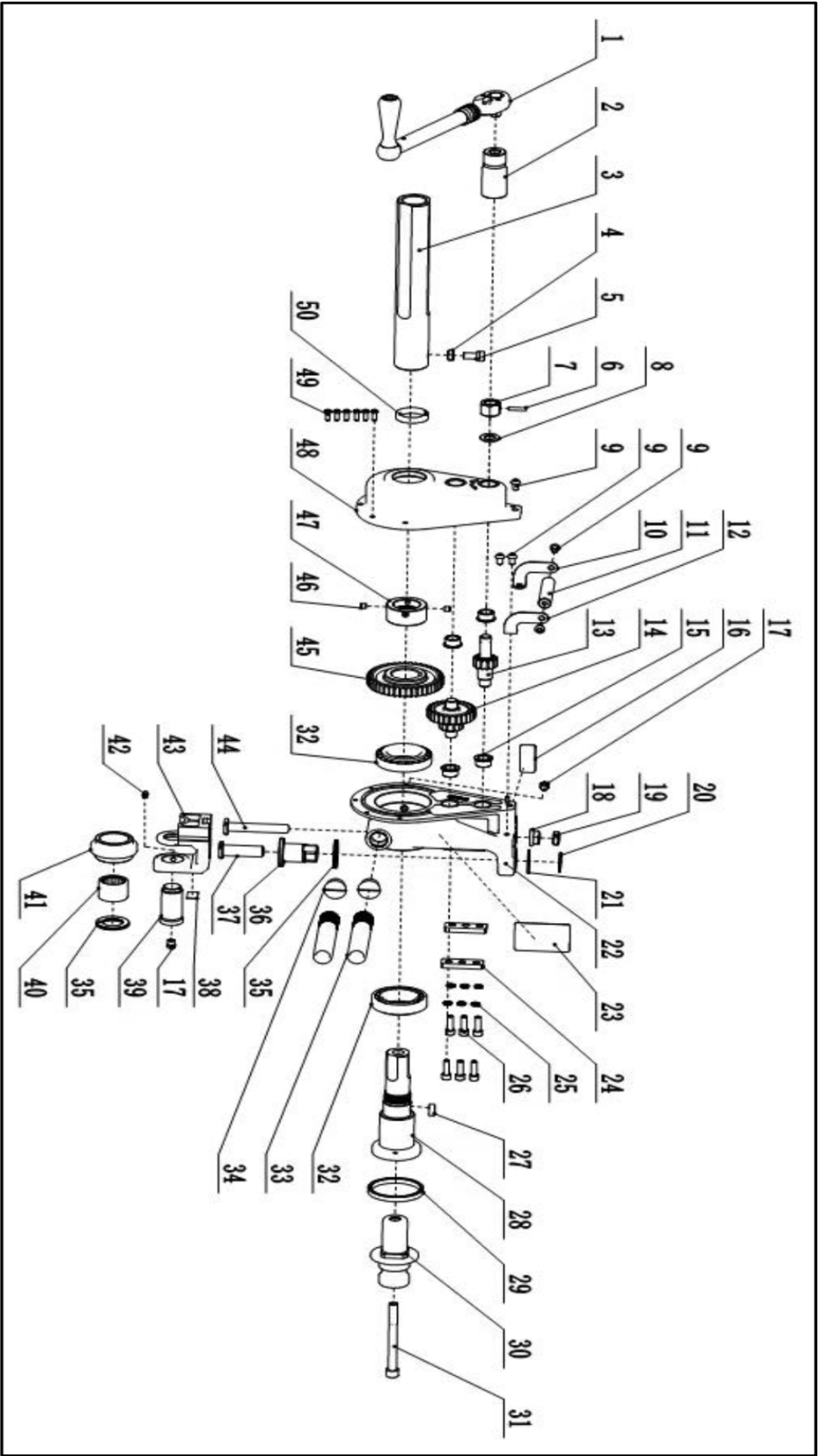
## Gearbox Lubrication

The gearbox is **factory lubricated and normally does not require periodic lubrication**. Additional gearbox lubrication is not required unless the gearbox is opened for service.

## TROUBLESHOOTING

| Condition                      | Possible Cause                                                                                    | Corrective Action                                                                                                                                                                                                        |
|--------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pipe slips / poor tracking     | Dirty or worn drive-roller knurls; incorrect alignment; inadequate pipe support; incorrect roller | Stop operation. Clean and inspect the drive-roller knurls. Confirm correct roller selection, pipe support, and alignment. Replace a worn drive roller if necessary.                                                      |
| Spiral groove / pipe walks off | Incorrect pipe alignment or stand position; excessive feed; improper pipe-end preparation         | Stop operation. Correct pipe support and alignment. Verify pipe-end preparation and reduce the amount of feed applied per revolution.                                                                                    |
| Groove too shallow             | Feed or stop-nut adjustment incorrect; insufficient feed                                          | Adjust the feed/stop setting and make a new test groove. Measure the finished groove before production use.                                                                                                              |
| Groove too deep                | Feed or stop-nut adjustment incorrect; excessive feed                                             | Stop operation. Reset the feed/stop adjustment and make a new test groove. Do not use an out-of-specification groove unless accepted by the coupling or fitting manufacturer.                                            |
| Excessive pipe-end flare       | Incorrect pipe support or alignment; excessive feed; pipe outside machine capacity                | Correct pipe support and alignment. Reduce feed rate and verify pipe size and wall thickness are within machine capacity. Check finished groove and flare dimensions against the coupling manufacturer's specifications. |
| Shear pin breaks               | Excessive torque; excessive feed; pipe wall too heavy; binding; incorrect roller                  | Stop operation and determine the cause of excessive torque. Verify pipe capacity, roller selection, alignment, lubrication, and feed rate. Correct the condition before installing the specified 3/16" (5 mm) shear pin. |
| Rollers bind / rotate roughly  | Dirt or contamination; inadequate lubrication; damaged bearing, roller, or shaft                  | Stop operation. Clean and lubricate the affected components. Inspect rollers, bearings, and shafts for damage or excessive wear. Replace damaged components before further use.                                          |
| Abnormal noise / looseness     | Loose, worn, damaged, or improperly installed component                                           | Stop operation immediately. Inspect the machine and correct the condition before returning it to service.                                                                                                                |

EXPLODED DIAGRAM / PARTS LIST



| Part # | Item Code | Specification              | Qty | Part # | Item Code. | Specification.             | Qty. |
|--------|-----------|----------------------------|-----|--------|------------|----------------------------|------|
| 1      | 15030     | ratchet                    | 1   | 30     | 15012      | grease seal                | 1    |
| 2      | 15029     | ratchet socket<br>5/8"     | 1   | 30     | 11008      | drive roller 8" ~<br>12"   | 1    |
| 3      | 11015     | drive bar adaptor          | 1   | 30     | 11011      | drive roller 1"            | 1    |
| 4      | 15021     | hex nut                    | 1   | 30     | 11010      | Drive roller 1<br>¼"~1 ½"  | 1    |
| 5      | 15045     | hex screw                  | 1   | 30     | 11009      | Drive roller<br>2"~6"      | 1    |
| 6      | 15025     | shearing pin               | 1   | 31     | 15004      | drive roller bolt          | 1    |
| 7      | 11005     | input nut                  | 1   | 31     | 15006      | drive roller bolt          | 1    |
| 8      | 15120     | flat washes φ16            | 1   | 32     | 15001      | roller bearing             | 2    |
| 9      | 15121     | hex screw M8x16            | 5   | 33     | 11016      | support arms               | 2    |
| 10     | 14007     | handle plate left          | 1   | 34     | 15028      | thread plug                | 2    |
| 11     | 11072     | handle                     | 1   | 35     | 15002      | roller bearing             | 3    |
| 12     | 14008     | handle plate right         | 1   | 36     | 11002      | feed nut                   | 1    |
| 13     | 12002     | input pinion               | 1   | 37     | 11001      | stop nut                   | 1    |
| 14     | 12003     | transfer gear              | 1   | 38     | 17006      | warning sign               | 1    |
| 15     | 11004     | copper bearing             | 4   | 39     | 11012      | groove shaft               | 1    |
| 16     | 17007     | name plate                 | 2   | 40     | 15003      | roller bearing             | 3    |
| 17     | 15027     | grease nuzzle              | 2   | 41     | 12005      | ^groove roller<br>8" ~ 12" | 1    |
| 18     | 15014     | S.S. flange nut            | 1   | 41     | 12016      | ^groove roller<br>1" ~ 6"  | 1    |
| 19     | 15013     | S.S. hex nut               | 1   | 42     | 15018      | set screw                  | 1    |
| 20     | 15019     | retainer collar            | 1   | 43     | 18001      | slide block                | 1    |
| 21     | 14001     | friction plate             | 1   | 44     | 11003      | stop nut                   | 1    |
| 22     | 18008     | main housing<br>assembly   | 1   | 45     | 12004      | large drive gear           | 1    |
| 23     | 17004     | groove size<br>description | 1   | 46     | 15049      | set screw                  | 2    |
| 24     | 13001     | slide key                  | 2   | 47     | 11007      | drive shaft<br>locknut     | 1    |
| 25     | 15074     | spring washes              | 6   | 48     | 20001      | rear cover<br>housing      | 1    |
| 26     | 15121     | hex screw                  | 6   | 49     | 15119      | hex screw                  | 5    |
| 27     | 15046     | hex screw                  | 1   | 50     | 15011      | grease seal                | 1    |
| 28     | 15024     | flat key                   | 1   | /      | 96006      | user manual                | 1    |
| 29     | 11006     | main drive shaft           | 1   | /      | 98034      | HDPE tool box              | 1    |

## LIMITED WARRANTY

### 1-Year Limited Warranty

The BLUEROCK RGM-612 is covered by a 1-Year Limited Warranty against defects in materials and workmanship, subject to the BLUEROCK Tools Limited Warranty terms and conditions in effect at the time of purchase.

During the applicable warranty period, BLUEROCK Tools may, at its discretion and subject to the terms of the warranty, repair or replace a covered component determined to be defective in materials or workmanship.

This limited warranty applies only when the machine has been operated, maintained, transported, and stored in accordance with this manual.

### Normal Wear and Consumable Components

- Drive and groove rollers subject to normal wear
- Bearings, seals, shear pins, and other service components
- Ratchets, sockets, fasteners, and components subject to normal deterioration
- Routine cleaning, adjustment, inspection, lubrication, and groove measurement

### Warranty Exclusions

- Misuse, abuse, neglect, or operator error.
- Use outside stated pipe sizes, materials, wall thicknesses, or intended applications.
- Failure to follow safety, setup, groove-verification, operating, or maintenance instructions.
- Continued operation after abnormal noise, binding, poor tracking, excessive torque, a broken shear pin, or other warning sign.
- Use of incorrect, damaged, incompatible, or improperly installed rollers or accessories.
- Use of an incorrect shear pin or modification of the shear-pin protection system.
- Unauthorized alteration, modification, repair, or disassembly.
- Accident, impact, dropping, improper handling, transportation, or storage.
- Corrosion, contamination, water damage, or operation outside stated specifications.
- Normal wear and deterioration associated with ordinary use.

### Obtaining Warranty Assistance

If you believe the RGM-612 has developed a defect covered by warranty, contact BLUEROCK Tools before returning or shipping the machine. Be prepared to provide proof of purchase, model, serial number, purchase date, a description of the problem, and photographs/video or other diagnostic information when requested. Do not ship or return the machine without return or service instructions.

### Replacement Parts and Technical Support

Replacement and service parts are available for the RGM-612 through BLUEROCK Tools. BLUEROCK Tools also provides Lifetime U.S.-Based Technical Support for assistance with machine operation, troubleshooting, maintenance, and replacement-part identification.

**IMPORTANT:** This manual provides a summary of warranty coverage and does not replace the complete BLUEROCK Tools Limited Warranty terms and conditions. In the event of a conflict, the applicable BLUEROCK Tools Limited Warranty terms and conditions in effect at the time of purchase will govern.