



Catalog Number: RGCOMBO2
Item Code: 09200



OPERATOR'S MANUAL

RGCOMBO2 PORTABLE ROLL GROOVER

WARNING



Clothing/gloves can be caught in moving parts. Fingers can be crushed.



- Keep hands away from grooving rolls.
- Use footswitch.
- Read Operator's Manual.



REED MANUFACTURING COMPANY

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Description and Specifications

Description

The Reed Model RGCOMBO2 Roll Groover is designed to form standard rolled grooves in steel, stainless steel and aluminum pipe, from 1 1/4" to 6", in both Schedule 10 and Schedule 40 pipe. The groove is formed by the groove roll which is fed into the pipe wall. The pipe is supported on the inside by a drive roll, which is relieved to permit pipe wall deformation. The formed grooves comply with the specifications required for mechanical coupling systems. The only adjustment required is for the depth of the groove.

Designed for portability, the RGCOMBO2 Roll Groover is an economical solution to the job-site grooving requirements in mechanical piping system installations. Although the RGCOMBO2 design has many improvements over similar competitors' models, **it is not intended for production work in the fab shop.**

The RGCOMBO2 Roll Groover is designed for use with the Reed #05301 5301PD Power Drive.

Specifications

Capacity.....	1 1/4" - 6" (32 - 152 mm) Schedule 10 1 1/4" - 6" (32 - 152 mm) Schedule 40
Depth Adjustment.....	Adjusting Screw and Included Depth Gauges
Actuation.....	Feed Screw (included ratchet wrench)
REED 5301 Power Drive Mounting....	RIDGID® 300 Power Drive (38 RPM model only)
Weight.....	31 lbs.

Standard Equipment

Groove Roll.....	1 1/4" - 6" (32 - 152 mm)
Drive Roll (Drive Shaft).....	1 1/4" - 6" (32 - 152 mm)
Feed Handle.....	Included Ratchet Wrench
Support Means.....	Included Support Rods

Recommended Accessories

- Reed Model JHV Pipe Jack with JTA Ball Transfer Head, or JH2R Roller Head Jack
- Reed Model 2-71 Pipe Reamer
- Reed 5301PD Power Drive.

Important - Before Operating

Before operating the RGCOMBO2 Roll Groover, read and follow all safety information and instructions in the operator's manual.

Safety Information

WARNING!

Serious injury can occur if all safety information and operating instructions are not followed. These injuries could include:

Loss of fingers, hands, arms or other body parts if clothing or gloves get caught in moving parts;

Electrical shock or burns from contact with wires, motor or other power drive parts;

Impact injuries, including broken bones if machine tips over or workpiece falls.

Eye injuries, including being blinded by thrown workpiece or workpiece chips.

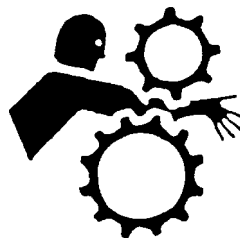
General Safety

Read and follow the safety information and instructions in the operator's manual.

Know the location and functions of all controls before using the machine.

Footswitch Safety

The footswitch of the power drive is for your safety. It lets you shut off the motor by removing your foot. If clothing



should become caught in the machine, it could continue to wind up, pulling you into the machine. Because the machine has high torque, the clothing itself can bind around your arm or other body parts with enough force to crush or break bones.



Power Drive Safety

Follow all of the power drive manufacturer's safety information and operating instructions included with the power drive.

WARNING!

Warning: Clothing/gloves can be caught in moving parts. Fingers, hands, arms or other body parts can be crushed or broken.

- Keep fingers away from grooving rolls.
- Use footswitch.
- Do not wear gloves.
- Keep sleeves and jacket buttoned.
- Do not reach across machine because clothing can be drawn into moving parts.
- Operate machine from switch side only.
- Do not disconnect or block footswitch.
- Keep footswitch in working order.
- Make sure switch is in the "off" position before plugging in power cord.
- Make sure you can quickly remove your foot from the footswitch.

Personal Safety

1. Wear snug-fitting clothes, safety shoes, hard hat and safety glasses. Cover up or tie up long hair. Do not wear loose clothing, gloves, unbuttoned jackets, loose sleeve cuffs, neckties, rings, watches or other jewelry.
2. Wear hearing protectors, ear plugs or muffs if you use the machine daily or in a very noisy area.
3. Operate the power drive and roll groover from the side with the power drive's "REV/OFF/FOR" switch.
4. Keep good footing and balance. Do not overreach.
5. Do not operate machine when you are tired.

Caution: Keep hands clear of the Power Drive Hand Wheel/ Chuck and Roll Groove Handle area while the tool is in operation.

Electrical Safety

Follow all of the power drive manufacturer's electrical safety information and operating instructions included with the power drive.

Work Area Safety

1. Keep children and visitors out of work area. If visitors must be in area, keep them far away from the machine and extension cords.
2. Keep work area clean, uncluttered and well lit.
3. Keep floors dry and free of slippery materials.
4. Clear machine and bench of all objects such as wrenches or tools before turning machine on.

Roll Groover Safety

1. Keep hands away from grooving rolls. Fingers could get caught between groove roll and drive shaft.
2. Set up Roll Groover on a flat, level surface. Be sure the machine, stand and Groover are stable and will not tip over.
3. Be sure Groover is properly secured to the power drive. Carefully follow set up instructions.
4. Use only 38 RPM model Power Drives to drive RGCOMBO2.
5. Do not use the RGCOMBO2 Roll Groover for any other purpose than roll grooving pipe and tubing.
6. Do not use excessive force in turning feed screw. Follow operating instructions.
7. Properly support pipe with pipe support.
8. Use recommended accessories. Use of other accessories may increase the risk of injury. Refer to the "Recommended Accessories" section in the front of this manual.



Machine Maintenance

1. Inspect groove roll and drive shaft. Replace worn rolls.
2. Lubricate with multi-purpose grease through the three grease fittings (see Figure 1).
3. Keep Ratchet Wrench and Adjusting Screw knob dry and clean. Keep free from oil and grease.
4. Follow all maintenance instructions provided with the Power Drive.

Powered Grooving Instructions

Assembling the RGCOMBO2 Roll Groover

1. Screw the two Support Rods into the sides of the main body of the Roll Groover (Figure 1). Tighten the support rods securely with a pipe wrench.
2. The included Ratchet Wrench may be inserted into the Feed Screw after set-up.

Installing the Power Drive

1. Remove carriage or other attachments from the power drive.
2. Fully open front chuck of power drive.
3. Set the RGCOMBO2 on the Power Drive with the RGCOMBO2 Support Rods resting on the Power Drive carriage rails. Steady the RGCOMBO2 with one hand.
4. With the other hand rotate the RGCOMBO2 drive shaft to align the flats with the jaws on the Power Drive chuck.
5. Tighten Power Drive chuck on the RGCOMBO2 drive shaft.

Pipe Preparation

1. Pipe ends must be cut square. Do not use cutting torch.
Note: When adjusting roll groover depth, the trial groove pipe should not have a large burr protruding inward. Use a Reed Model 2-71 Pipe Reamer for up to 2" pipe, or other suitable tool to deburr trial groove pipe. After groove depth has been set, deburring of pipe is not required.
2. Pipe out-of-roundness must not exceed the total O.D. tolerance given in groove specifications, listed in Table 1.
Note: Determine out-of-roundness by measuring maximum and minimum O.D. at 90° apart.
3. All internal or external weld beads, flash or seams must be ground flush at least 2 inches back from pipe end.
Note: Do not cut or grind flats on gasket seat area.

Pipe Length

The chart below lists the minimum length of pipe to be grooved and the maximum length to be grooved without a pipe jack.

Groovable Pipe Lengths - Inches

Nominal Pipe Size	Minimum Length	Maximum Length without pipe jack
1-1/4	8	36
1-1/2	8	36
2	8	36
2-1/2	8	36
3	8	36
3-1/2	8	36
4	8	36
4-1/2	8	32
5	8	32
6 O.D.	10	30
6	10	28

Pipe Set-Up

1. Pipe longer than the specified maximum lengths listed in the above chart must be supported with a pipe jack. The pipe jack should be located 3/4 of the pipe length from the roll groover. Long lengths may require two jacks.
2. Raise the RGCOMBO2 Groove Roll by retracting the Feed Screw. Install the pipe on the Drive Shaft and pipe jack.
3. Square the pipe and pipe jack to the roll groover making sure the pipe is flush against the Roll Groover Cover Plate.
4. Level the pipe by adjusting the pipe jack height. Pipe axis should be level with machine axis (Figure 2, page 8).
5. Square up the pipe tool.

Figure 1 - RGCOMBO2 Roll Groover

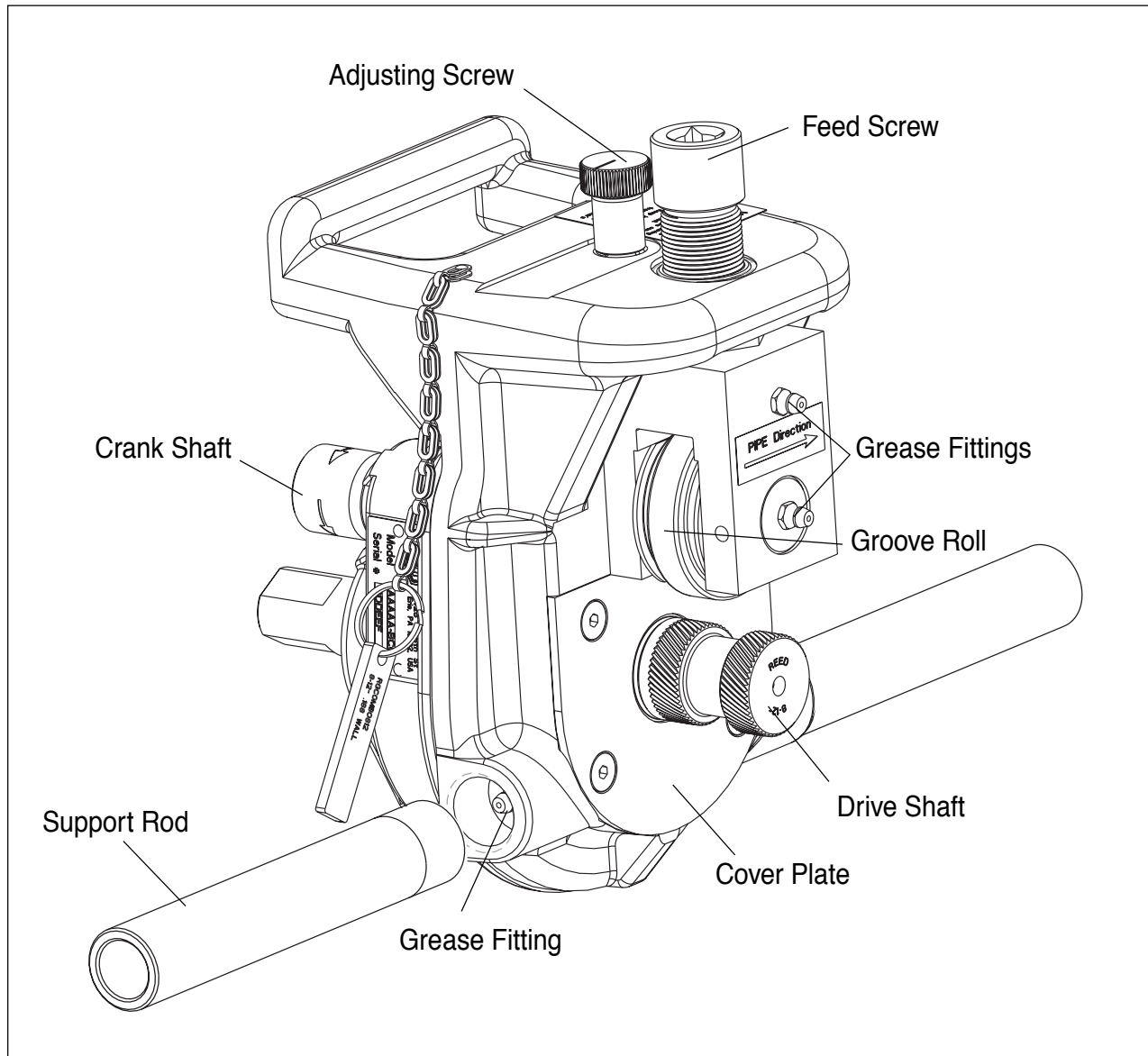
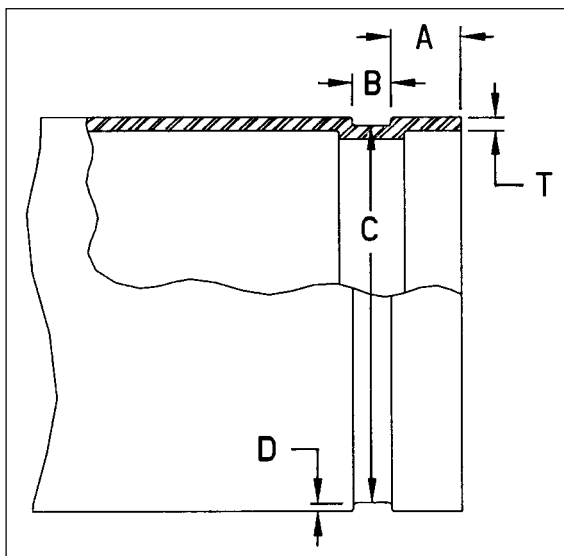



Table 1 - Standard Roll Groove Specifications

Note: All dimensions are in inches.

NOM. PIPE SIZE	PIPE DIAMETER O.D. TOL.	T MIN. WALL THK.	A GASKET SEAT ± .030	B GROOVE WIDTH ± .030	C GROOVE DIAMETER O.D. TOL.	D NORMAL GROOVE DEPTH
1-1/4	1.660 +.016 -.016	.065	.625	.281	1.535 +.000 -.015	.063
1-1/2	1.900 +.019 -.019	.065	.625	.281	1.775 +.000 -.015	.063
2	2.375 +.024 -.024	.065	.625	.344	2.250 +.000 -.015	.063
2-1/2	2.875 +.029 -.029	.083	.625	.344	2.720 +.000 -.018	.078
3 OD	3.00 +.030 -.030	.083	.625	.344	2.845 +.000 -.018	.078
3	3.50 +.035 -.031	.083	.625	.344	3.344 +.000 -.018	.078
3-1/2	4.00 +.040 -.031	.083	.625	.344	3.834 +.000 -.020	.083
4	4.50 +.045 -.031	.083	.625	.344	4.334 +.000 -.020	.083
4-1/2	5.00 +.050 -.031	.095	.625	.344	4.834 +.000 -.020	.083
5	5.563 +.056 -.031	.109	.625	.344	5.395 +.000 -.022	.084
6 OD	6.00 +.056 -.031	.109	.625	.344	5.830 +.000 -.022	.085
6	6.625 +.063 -.031	.109	.625	.344	6.455 +.000 -.022	.085


Table 2 - Feed Rates

Material	Wall Thickness inches/(mm)	Turns of Feed Screw to Advance the Feed
Steel and Stainless Steel	.217 to .280 (5.51 to 7.1)	1/5 turn
	.135 to .216 (3.43 to 5.49)	1/4 turn
	.120 to .134 (3.05 to 3.40)	1/3 turn
	.065 to .119 (1.65 to 3.02)	1/2 turn
Aluminum and Copper	.135 to .216 (3.43 to 5.49)	1/3 turn
	.120 to .134 (3.05 to 3.40)	1/2 turn
	.065 to .119 (1.65 to 3.02)	2/3 turn



Adjusting Groove Depth

Note: To insure the proper groove diameter, a trial groove should be performed.

Note: The Adjusting Screw must be set for each diameter of pipe.

1. Loosen Adjusting Screw (counterclockwise) enough to permit advancing of the Groove Roll down to the pipe.
2. Advance Feed Screw (clockwise) until Groove Roll is snug against top of pipe. Be sure Groove Roll contacts pipe and Adjusting Screw head does not bottom out.

Note: Trial groove pipe should be deburred for best results. Burr on inside of pipe will raise pipe away from drive shaft, causing inaccurate set-up adjustment. After proper groove depth has been verified by trial groove, deburring of following pipes is not required. See Step 1 of “**Pipe Preparation**”.

3. Using the Depth Gauge labeled with the pipe size being grooved, place Depth Gauge under head of Adjusting Screw using the flat gage slot.
4. Advance Adjusting Screw downward until underside of head touches Depth Gauge.
5. Remove Depth Gauge.
Note: It may be necessary to readjust Adjusting Screw after trial groove is made. Each 1/4 turn of Adjusting Screw will produce a .02” change in diameter of rolled groove. Tightening Adjusting Screw will increase groove diameter. Loosening Adjusting Screw will decrease groove diameter.

Forming the Groove

1. Place the power drive switch in the reverse (REV) position for clockwise rotation of the drive shaft and pipe.
2. Step on power drive footswitch and apply light pressure on pipe by advancing Feed Screw with the Straight Ratchet Wrench.

Warning: If pipe tends to “walk off” the tool.

- a. Verify the pipe sits level, if not level then correct.
- b. Verify the pipe rotates in the direction shown by the sticker on the tool.
- c. Offset the far end of the pipe toward the operator's side (the side with the power drive REV/OFF/FOR Switch). A pipe offset of 1 inch per 10 ft. should work. (See Figure 2).

Caution: Keep hands clear of the Power Drive Hand Wheel/Chuck and Roll Groove Handle area while the tool is in operation.

3. With pipe tracking properly and end of pipe against cover plate, step on footswitch and begin advancing Feed Screw with Ratchet Wrench, allowing one complete rotation of pipe between strokes of Ratchet Wrench.

Caution: Do not over-feed. Allow one complete rotation of pipe between advances. See Table 2 for details.

4. Continue feeding until Adjusting Screw makes contact with the top surface of the Roll Groover. Allow pipe to make two complete rotations in bottomed position to insure uniform groove depth.

Warning: Do not tighten Feed Screw after Adjusting Screw bottoms out. Damage to the Adjusting Screw may result.

5. Release footswitch to stop machine, and begin retracting Feed Screw by turning Ratchet Wrench counterclockwise. Retract Feed Screw enough to remove pipe from machine.
6. Measure groove diameter at two places 90° apart. Both measurements should be within the listed tolerance of the dimension shown in Table 1.
7. To increase groove diameter tighten Adjusting Screw. To decrease groove diameter loosen Adjusting Screw. **Each 1/4 turn of Adjusting Screw will change groove diameter by approximately .02”.**

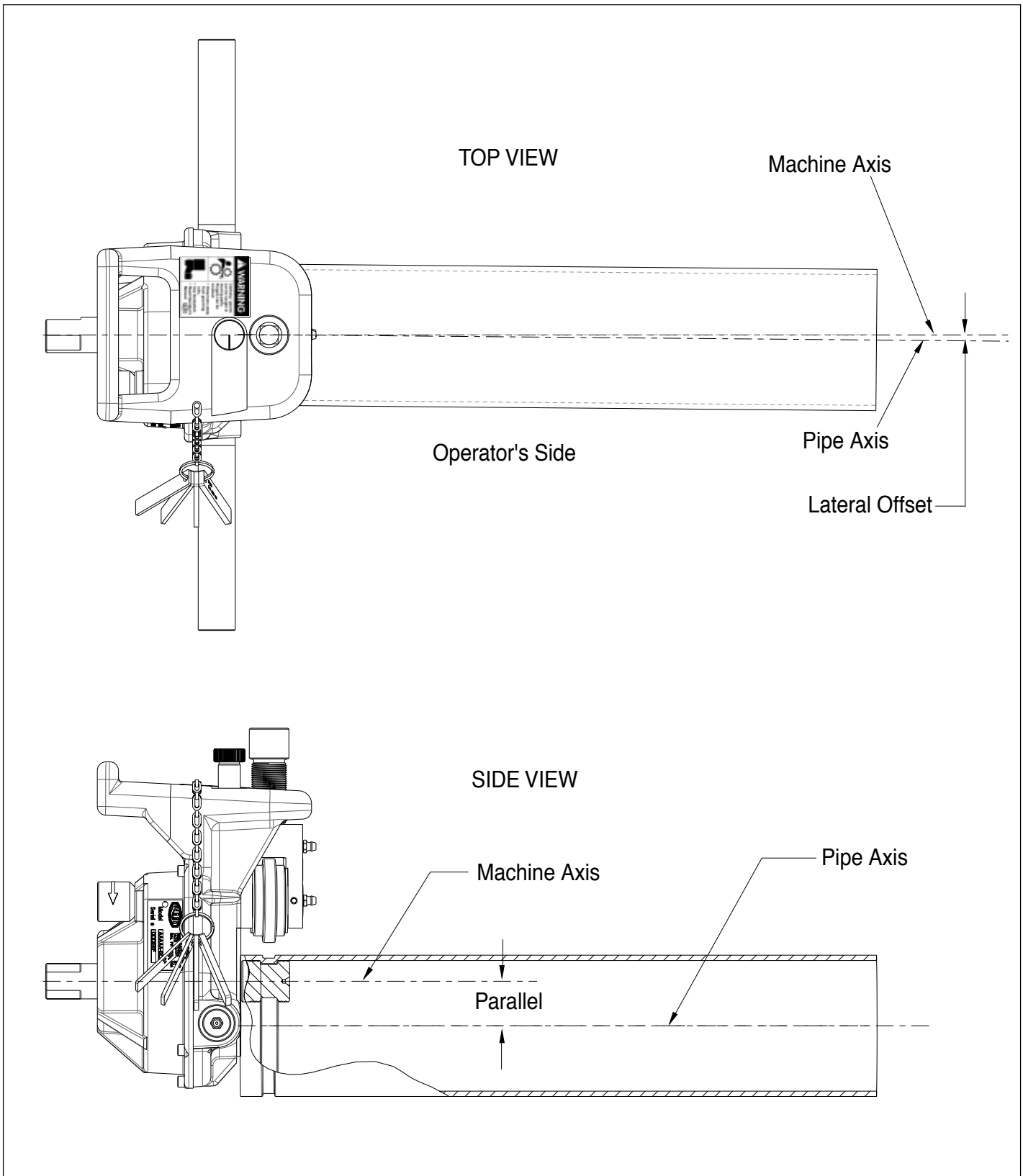
Note: Once groove depth has been set, following grooves will be same depth.
8. Periodically check groove depth with a mechanical coupling. **The coupling should fully seat in the groove without binding or excessive play.**

Roll Grooving Tips

1. If pipe tends to “walk off” drive shaft, increase lateral offset of pipe (see Figure 2 - Pipe Set-Up).
2. If Cover Plate shaves end of pipe, decrease lateral offset of pipe.
3. If pipe end flare is excessive, lower pipe end to level with roll groover.
4. If pipe wobbles and/or “walks off” Drive Shaft, raise pipe end to level with roll groover.
5. Short lengths of pipe (under three feet) may require slight hand pressure to maintain the lateral offset.



Figure 2 - Pipe Set-Up





Manual Grooving Instructions

1. Situation:

- a. Pipe secured to vise : Securely mount pipe vise (chain type) on a secure stand or workbench. Allow the pipe to overhang the vise 5 to 12" so the tool will rotate freely and not contact the vise. (See Figure 3)
- b. Pipe installed (grooving in place): Verify the pipe hangers can accommodate the weight of the RGCMB02 plus the manual effort required to operate the tool.

2. Mounting the Tool

- a. Retract the upper roller by turning the Feed Screw counterclockwise.
- b. Insert the Drive Shaft into the pipe with the Groove Roll on the outside.
- c. Draw the rolls closer together by turning the Feed Screw clockwise until the Driveshaft and Groove Roll contact the pipe lightly.
- d. Place Support Bar into Body of the tool. Place the Support Bar on the leading side of the tool. When placed correctly, the "Pipe Direction" arrow will point away from the support bar.

3. Set Groove Depth

Note: To insure the proper groove diameter, a trial groove should be performed.

Note: The Adjusting Screw must be set for each diameter of pipe.

- a. Loosen Adjusting Screw (counterclockwise) enough to permit advancing of Groove Roll down to pipe.
- b. Advance Feed Screw (clockwise) until Groove Roll is snug against top of pipe. Be sure Groove Roll contacts pipe and Adjusting Screw head does not bottom out.

Note: Trial groove pipe should be deburred for best results. Burr on inside of pipe will raise pipe away from drive shaft, causing inaccurate set-up adjustment. After proper groove depth has been verified by trial groove, deburring of following pipes is not required. See Step 1 of "**Pipe Preparation**".

- c. Using the Depth Gauge labeled with the pipe size being grooved, place Depth Gauge under head of Adjusting Screw using the flat gage slot.

- d. Advance Adjusting Screw downward until underside of head touches Depth Gauge.

- e. Remove Depth Gauge.

Note: It may be necessary to readjust Adjusting Screw after trial groove is made. Each 1/4 turn of Adjusting Screw will produce a .02" change in diameter of rolled groove. Tightening Adjusting Screw will increase groove diameter. Loosening Adjusting Screw will decrease groove diameter.

4. Forming the Groove

- a. Advance the Feed Screw the amount specified in Table 1. Place one hand on the support bar to keep the tool from twisting when advancing the Feed Screw.
- b. Using the Socket Extention and Bent Handle Ratchet, turn the Crankshaft so the pipe feeds into the tool as indicated by the arrow.
- c. Make one complete revolution of the tool around the pipe before advancing the Feed Screw again.
- d. Apply pressure on support bar if needed to keep tool tracking.
- e. Continue grooving until you reach the desired depth. (The Adjusting Screw can limit Feed Screw advance see the section on Adjusting Groove Depth for details).

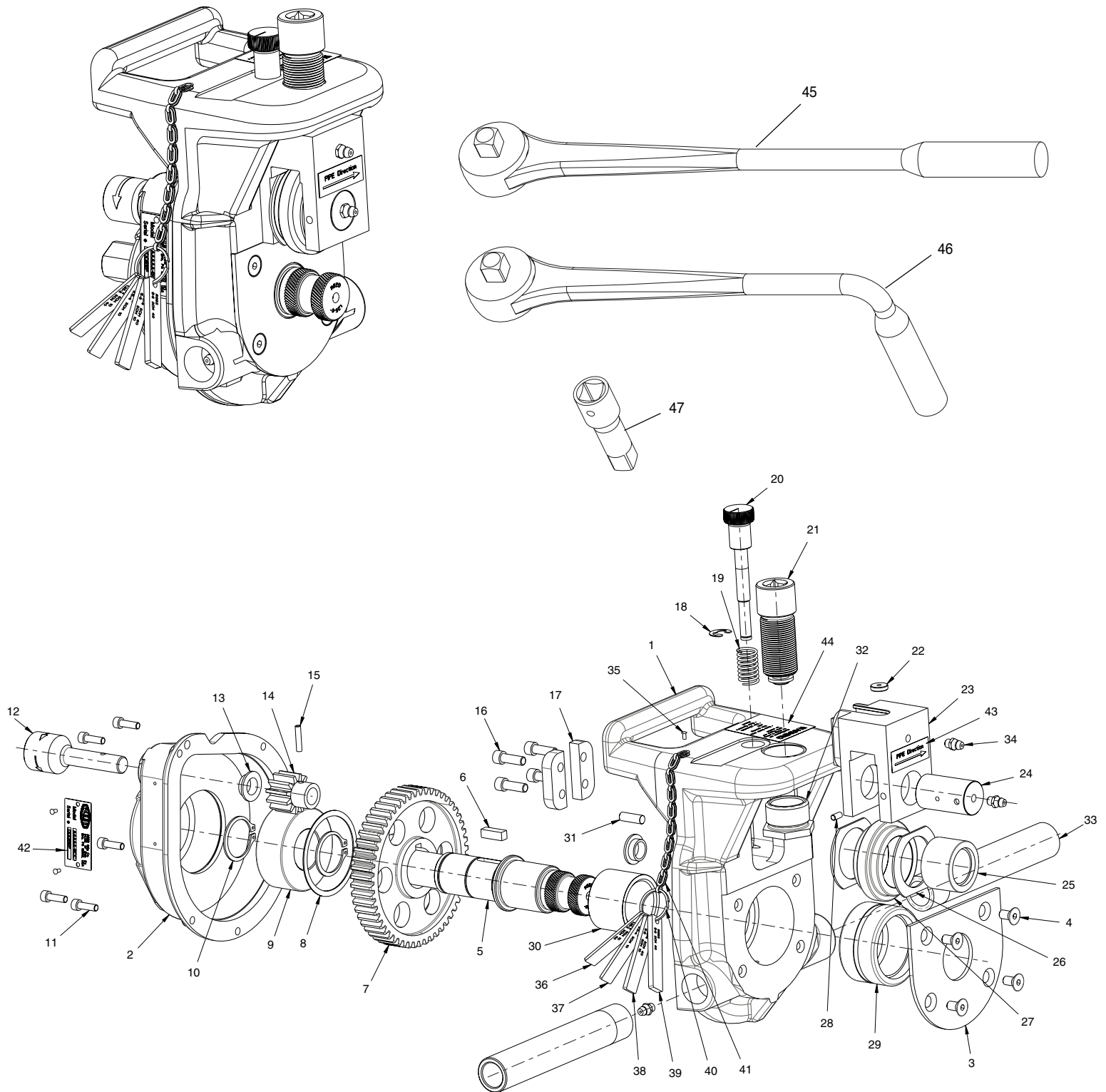
5. **Dismount the tool**, retract the Feed Screw fully, lift and remove the tool from the pipe.



Figure 3. Pipe Set-up



Parts Breakdown





Parts List

Ref. No.	Description	Item Code	Quantity
1	Main Body	99200	1
2	Gear Housing	99201	1
3	Cover Plate	99203	1
4	1/4 - 20 x 1/2 Flat Head Socket	30216	4
5	Driveshaft	99219	1
6	Key 1/4 x 1/4 x 3/4	39208	1
7	Gear, Manual Drive Shaft	99208	1
8	Retaining Ring	30207	1
9	Bottom Thrust Bearing	40432	1
10	Retaining Ring	30211	2
11	10 - 24 x 5/8 SHCS	39200	5
12	Crank Shaft	98587	1
13	Bronze Bushing	40461	2
14	Gear, Crankshaft	99210	1
15	Coil Spring Pin	38587	1
16	1/4 - 20 x 5/8 SHCS	30105	4
17	Slide Block Retainer	99218	2
18	Retaining Ring	30209	1
19	Compression Spring	30212	1
20	Adjusting Screw	98509	1
21	Feed Screw	98504	1
22	Thrust Washer	93044	1
23	Slide Block	99216	1
24	Groove Roll Shaft	98505	1
25	Sleeve Bearing	49207	1
26	Thrust Washer	98590	2
27	Groove Roll	98589	1
28	Socket Set Screw	30214	1
29	Bottom Roller Bearing	40433	1
30	Roller Bearing - Inner Ring	40430	1
31	Dowel Pin	38847	1
32	Threaded Bushing	99215	1
33	Support Bar	98511	2
34	Grease Fitting	40338	3
35	Standard Type U Zinc Plated	30133	3
36	Depth Gauge	98517	1
37	Depth Gauge	98514	1
38	Depth Gauge	98513	1
39	Depth Gauge	98512	1
40	Split Ring	40204	1
41	Brass Safety Chain	40434	1
42	Metalphoto Tag	99204	1
43	Pipe Direction Sticker	59209	1
44	Roll Groove Sticker	50516	1
45	Ratchet	40208	1
46	Ratchet - Bent Handle	98593	1
47	Socket Extension	48594	1



Reed Lifetime Warranty

Reed Hand Tools are for the professional trade and are warranted against all failure due to defects in workmanship and materials for the normal life of the tool.

FAILURES DUE TO MISUSE, ABUSE, OR NORMAL WEAR AND TEAR ARE NOT COVERED BY THIS WARRANTY.

Power units for Universal Pipe Cutters, Saw It[®], electric test pumps, and threading power drives are warranted for a period of one year from date of purchase.

NO PARTY IS AUTHORIZED TO EXTEND ANY OTHER WARRANTY. NO WARRANTY FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

No warranty claims will be allowed unless the product in question is received freight prepaid at the Reed factory. All warranty claims are limited to repair or replacement, at the option of the company, at no charge to the customer. REED IS NOT LIABLE FOR ANY DAMAGE OF ANY SORT, INCLUDING INCIDENTAL AND CONSEQUENTIAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

CAUTION: Safety reminders for a professional approach to tool selection and use.

- Proper maintenance of tools is critical to personal safety; worn tools should be repaired or replaced as required.
- Select the correct tool and tool size for the job. Never modify a tool to exceed its intended capacity.
- We recommend the Hand Tools Institute booklets for additional safety tips. Booklets are available from Reed or the Hand Tools Institute.



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