

918

Roll Groover

RIDGID®

**OPERATOR'S
MANUAL**



⚠️ WARNING!

Read this Operator's Manual carefully before using this tool. Failure to understand and follow the contents of this manual may result in electrical shock, fire and/or serious personal injury.

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General Safety Information

WARNING! Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious personal injury.

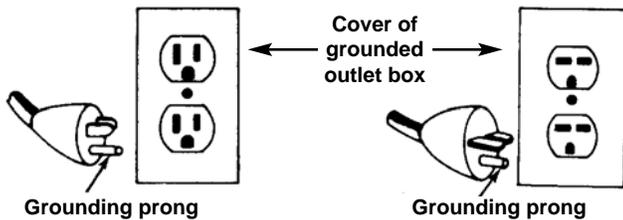
SAVE THESE INSTRUCTIONS!

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
- **Do not operate electric tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Electric motors create sparks which may ignite the dust or fumes.
- **Keep bystanders, children, and visitors away while operating a tool.** Distractions can cause you to lose control.
- **Keep floors dry and free of slippery materials such as oil.** Slippery floors invite accidents.

Electrical Safety

- **Grounded tools must be plugged into an outlet, properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.



- **Avoid body contact with grounded surfaces.** There is an increased risk of electrical shock if your body is grounded.
- **Don't expose electrical tools to rain or wet conditions.** Water entering an electrical tool will increase the risk of electrical shock.
- **Do not abuse cord. Never use the cord to pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electrical shock.

- **When operating a tool outside, use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electrical shock.
- **Keep all extension cord connections dry and off the ground. Do not touch plugs with wet hands.** This practice reduces the risk of electrical shock.
- **Use only three-wire extension cords which have three-prong grounding plugs and three-pole receptacles which accept the machine plug.** Use of other extension cords will not ground the tool and increase the risk of electrical shock.
- **Use proper extension cords.** (See chart.) Insufficient conductor size will cause excessive voltage drop, loss of power.

Minimum Wire Gauge for Extension Cord			
Nameplate Amps	Total Length (in feet)		
	0-25	26-50	51-100
0-6	18 AWG	16 AWG	16 AWG
6-10	18 AWG	16 AWG	14 AWG
10-12	16 AWG	16 AWG	14 AWG
12-16	14 AWG	12 AWG	NOT RECOMMENDED

Personal Safety

- **Stay alert, watch what you are doing and use common sense when operating a tool. Do not use tools while tired or under the influence of drugs, alcohol, or medications.** A moment of inattention while operating tools may result in serious personal injury.
- **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair and clothing away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
- **Avoid accidental starting. Be sure switch is OFF before plugging in.** Plugging tools in that have the switch ON invites accidents.
- **Remove wrenches or adjusting keys before turning the tool ON.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
- **Do not over-reach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

Tool Use and Care

- **Do not use tool if switch does not turn it ON or OFF.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce risk of starting the tool accidentally.
- **Store idle tools out of the reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool’s operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another tool.
- **Keep handles dry and clean; free from oil and grease.** This allows for better control of the tool.

Service

- **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified repair personnel could result in injury.
- **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance Section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electrical shock or injury.

Specific Safety Information

▲ WARNING

Read this operator’s manual carefully before using the Roll Groover. Failure to understand and follow the contents of this manual may result in electrical shock, fire and/or serious personal injury.

▲ WARNING Foot Switch Safety

Using a threading machine without a foot switch increases the risk of serious injury. A foot switch provides better control by letting you shut off the motor by removing your foot. If clothing should become caught in the machine, it will 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.

Roll Groover Safety

- **Roll Groover is made to groove pipe and tubing. Follow instructions in Operator’s Manual on machine uses.** Other uses may increase the risk of injury.
- **Keep hands away from grooving rolls. Do not wear loose fitting gloves when operating unit.** Fingers could get caught between grooving and drive rolls.
- **Keep guards in place. Do not operate the groover with guard removed.** Exposure to grooving rolls may result in entanglement and serious injury.
- **Set-up Groover on a flat, level surface. Be sure the machine, stand, and groover are stable.** Will prevent tipping of the unit.
- **Do not wear loose clothing. Keep sleeves and jackets buttoned. Do not reach across the machine or pipe.** Clothing can be caught by the pipe resulting in entanglement and serious injury.
- **Do not use this Roll Groover with a Power Drive or Threading Machine that does not have a foot switch.** Foot switch is a safety device to prevent serious injury.
- **When grooving pipe, keep hands away from the end of the pipe. Do not reach inside pipe end.** Will prevent being cut on sharp edges and burrs.
- **Be sure groover is properly secured to the power drive or threading machine.** Carefully follow the set-up procedures. Will prevent tipping of the pipe or grooving unit.
- **Properly support pipe with pipe stands. Use two pipe stands to groove pipe over 36” long.** Prevents tipping of the unit.
- **Use only power drives and threading machines that operate under 58 RPM.** Higher speed machines increase the risk of injury.
- **Lock foot switch when not in use. (See Figure 1.)** Avoids accidental starting.

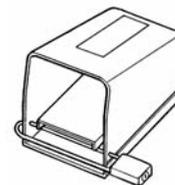


Figure 1 – Locked Foot Switch

Description, Specifications and Standard Equipment

Description

The RIDGID 918 Heavy Duty Roll Groover forms rolled grooves in steel, stainless steel, aluminum, PVC pipe and copper tubing. The grooves are formed by the hydraulic feeding of a grooving roll into the pipe which is supported by a drive roll.

The 918 Roll Groover includes two (2) groove and drive shaft sets that can groove the following pipe:

- 2" – 6" Schedule 10 and 40
- 8" – 12" Schedule 10 and 8" Schedule 40

With additional roll sets, the groover can also be adapted to groove the following:

- 2" – 6" copper tubing (Types K, L, M, DWV);
- 1" Schedule 10 and 40;
- 1 1/4" – 1 1/2" Schedule 10 and 40.

The 918 Heavy Duty Roll Groover is specifically designed for use with the RIDGID 300 Power Drive, as well as RIDGID 535, 535A, 1822, and 1224 Threading Machines. Different mounting kits are required for each power source.

CAUTION When properly used, the Model 918 makes grooves that are dimensionally within the specifications of AWWA C606-87. Selection of appropriate materials and joining methods is the responsibility of the system designer and/or installer. Before any installation is attempted, careful evaluation of the specific service environment, including chemical environment and service temperature, should be completed.

Specifications

Roll Grooving Capacity

(See Table II for wall thickness)

- 1" – 12" Schedule 10
- 1" – 8" Schedule 40
- 2" – 6" Copper types K, L, M, DWV
- 2" – 8" Schedule 40 PVC

CAUTION Do not use to groove 8" schedule 40 steel pipe harder than 150 BHN. Doing so may result in improperly formed grooves that do not meet required specifications.

Depth AdjustmentIndexed adjustment knob

ActuationHydraulic hand pump

Used in Conjunction with the Following Power Drives and Threading Machines

- 300 Power Drive (38 and 57 RPM)
- 535 Threading Machine (38 and 54 RPM)
- 1822 Threading Machine
- 1224 Threading Machine
- 535 Automatic Threading Machine

Standard Equipment

918 Roll Groover Only

- 918 Groover with 2" – 6" drive shaft and groove set
- 8" – 12" Drive shaft and groove set
- Carrying case for drive shaft and groove set
- 1/8" T-Handle hex wrench (groove roll change out)
- Wrench (drive shaft changeout)

918 Roll Groover Models

Catalog No.	Model No.	Description	Weight	
			lb.	kg.
48297	918-1	918 Roll Groover w/300 Power Drive Mount Kit	81	36,7
48377	918-2	918 Roll Groover w/1822 Carriage Mount Kit	81	36,7
48382	918-4	918 Roll Groover w/1224 Carriage Mount Kit	81	36,7
48387	918-5	918 Roll Groover w/535 Carriage Mount Kit	81	36,7
47222	918 Only	918 Roll Groover Only	75	34,0
Mounting Kit Only				
48292	911	300 Power Drive Mount Kit Only	9	4
48392	912	1822 Carriage Mount Kit Only	39	17,7
48397	914	1224 Carriage Mount Kit Only	36	16,4
48402	915	535 Carriage Mount Kit Only	22	10

Roll Groover Assembly Instructions

⚠ WARNING



The 918 Roll Groover should only be used with the following power drives and threading machines.

- **300 Power Drive (38 and 57 RPM)**
- **535 Threading Machine (38 and 54 RPM)**
- **1822 Threading Machine**
- **1224 Threading Machine**
- **535 Automatic Threading Machine**

Use only power drives and threading machines that operate at 58 RPM or less. Higher speed machines increase risk of injury.

To prevent serious injury, proper assembly of the Roll Groover is required. The following procedures should be followed:

Installing the 918-1 Roll Groover on the 300 Power Drive



Figure 2 – Installing on 300 Power Drive

1. Remove carriage or other attachments from the 300 Power Drive.
2. Fully open front chuck of power drive.
3. Slide the base assembly onto the support arms of the 300 Power Drive. (*Figure 2*)
4. Align the notched flats of the drive shaft with the jaws on the 300 Power Drive chuck.
5. Close and tighten the front chuck.

Installing the 918-2 Roll Groover on the 1822 Threading Machine

Sub-Assembly

1. Position 918 Roll Groover on the mounting base as shown in *Figure 3*.
2. Install and tighten the (2) 1/2" x 1 1/4" hex bolts which connect 918 to mounting base.
3. Position hydraulic pump and securely bolt in place with (4) 1/4" x 3/4" hex bolts.
4. Attach drive bar adapter to roll groover by tightening two (2) set screws.

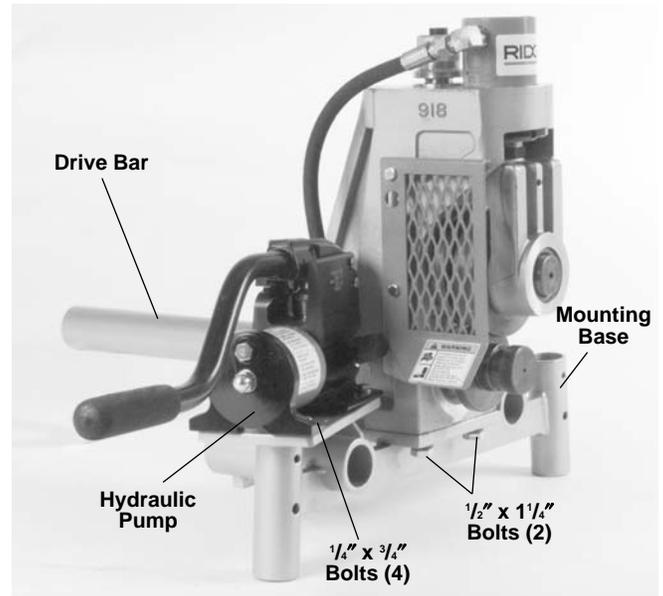


Figure 3 – 918 Heavy Duty Roll Groover on 1822 Mounting Base

Installing on 1822 Threading Machine with 1406 Stand

1. Position carriage towards front chuck and swing tools to the rear position. Remove carriage stop pin at the end of rail.

▲ CAUTION Position reamer inside the die head to prevent accidental contact.

2. Front chuck must be open. Position 918-2 so that the base slides onto the support rails and drive bar feeds into open chuck.
3. Place carriage stop pin in support rail hole.
4. Install support legs into socket holes on the base. (*Figure 4*) and tighten locking bolts.

▲ WARNING Drive bar must be centered in front chuck jaws. All bolts must be tight and the drive bar must be securely held in chuck when closed.

Installing on 1822 Threading Machine with 100, 150, or 200 Stands

1. Position carriage towards front chuck and swing tools to the rear position. Remove carriage stop pin at the end of the rail.

▲ CAUTION Position reamer inside the die head to prevent accidental contact.

2. Front chuck must be open. Position 918-2 so that the base slides onto the support rails and drive bar feeds into open chuck.
3. Replace carriage stop pin in support rail hole.

NOTE! Support legs are not needed when when using these stands.

▲ WARNING Drive bar must be centered in front chuck jaws. All bolts must be tight and the drive bar must be securely held in chuck when closed.

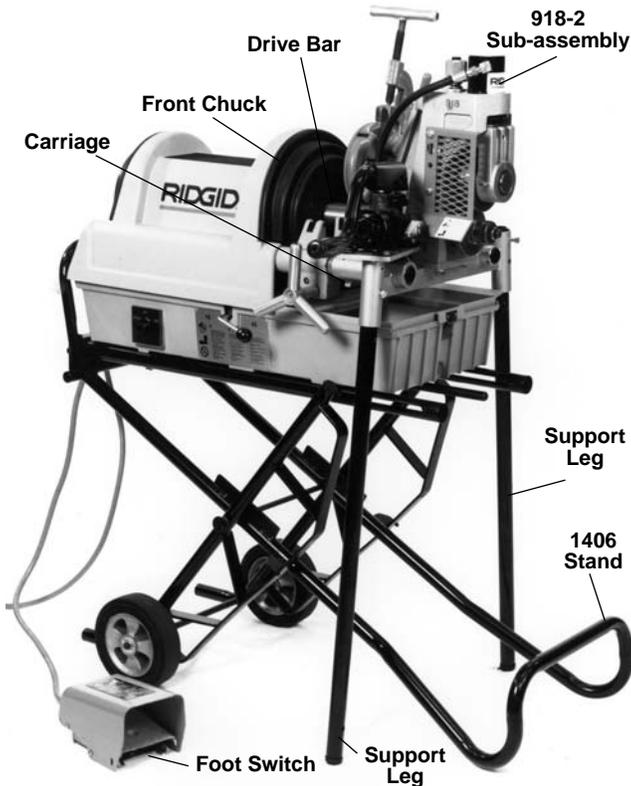


Figure 4 – 918 Roll Groover Mounted on 1822 with 1406 Stand

Installing the 918-4 Roll Groover on the 1224 Threading Machine

Sub-Assembly

1. Align housing plate in recessed area of 1224.
2. Align 918 on the 1224 mounting base. (Figure 5)
3. Install and tighten the (2) 1/2" x 1 1/4" hex bolts which connect the 918 to mounting base.
4. Attach pump bracket with the two (2) 3/8" x 1/2" hex bolts.
5. Position hydraulic pump and securely bolt in place with (4) 1/4" x 3/4" hex bolts.
6. Attach drive bar adapter to roll groover by tightening (2) set screws.

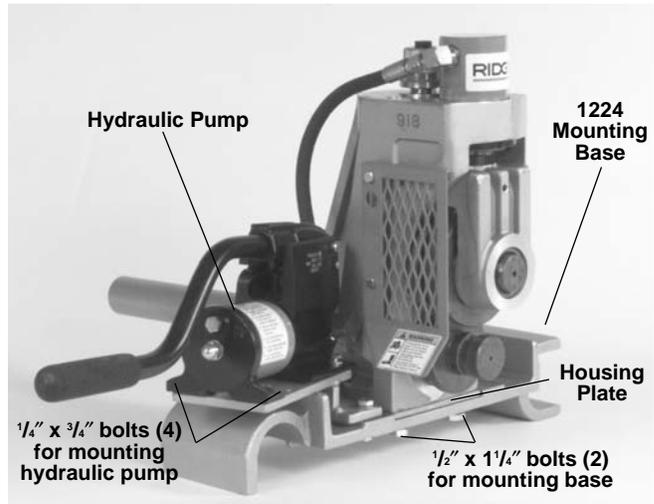


Figure 5 – 918 Heavy Duty Roll Groover on 1224 Threading Machine Mounting Base

Installing on 1224 Threading Machine

1. Position carriage towards front chuck and swing carriage tools to rear position.

▲ CAUTION Position reamer inside the die head to prevent accidental contact.

2. Place 918-4 on the far side carriage rail and lower onto near side rail. (Figure 6)
3. Position base so that the drive bar feeds into the open chuck.
4. Tighten chuck jaws securely into drive bar.

▲ WARNING Drive bar must be centered in front chuck jaws. All bolts must be tight and the drive bar must be securely held in chuck.

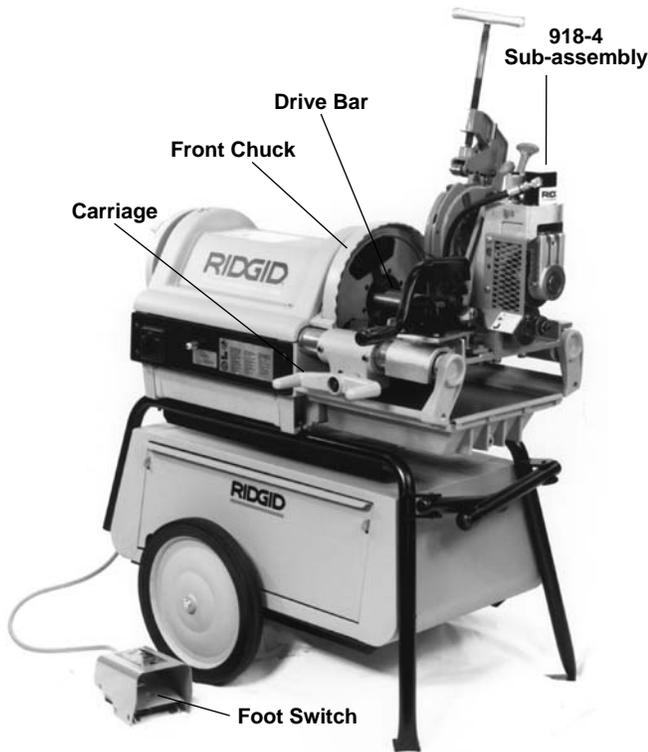


Figure 6 – 918-4 Roll Groover on 1224 Threading Machine

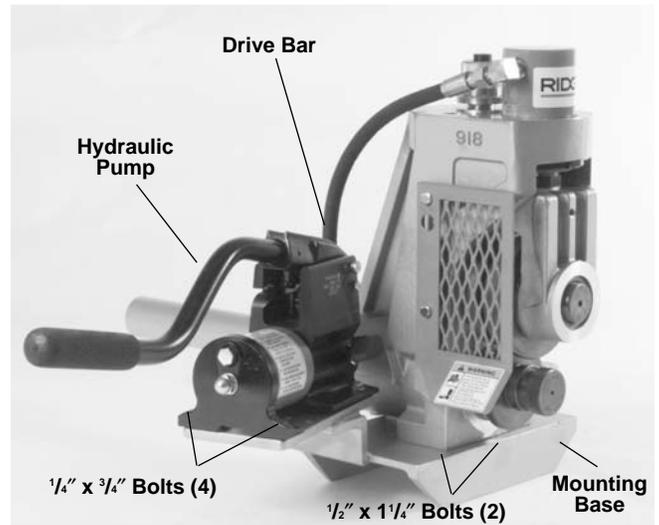


Figure 7 – 918 Roll Groover on 535 Threading Machine Mounting Base

Installing the 918-5 Heavy Duty Roll Groover on the 535 Manual and Automatic Threading Machines

Sub-Assembly

1. Position 918 Roll groover on the mounting base as shown. (Figure 7)
2. Install and tighten the (2) 1/2" x 1 1/4" hex bolts which connect 918 to mounting base.
3. Position hydraulic pump and securely bolt in place with (4) 1/4" x 3/4" hex bolts.
4. Attach drive bar adapter to roll groover by tightening two (2) set screws.

Installing on 535 Manual and Automatic Threading Machines

1. Position carriage towards front chuck and swing carriage tools to the rear position.

CAUTION Position reamer inside the die head to prevent accidental contact.

2. Place 918-5 on far side of carriage rail, lower onto front rail and tighten front chuck (Figure 8).
3. Position base so that drive bar feeds into open chuck.
4. Tighten chuck jaws securely on to drive bar.

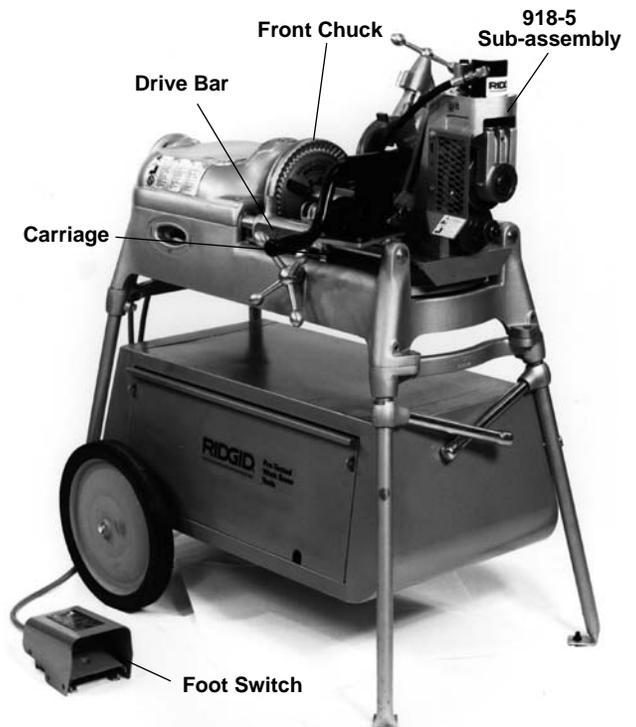


Figure 8 – 918-5 Roll Groover on 535 Threading Machine

Machine Inspection

▲ WARNING



Do not use this Roll Groover with a power drive or threading machine that does not have a foot switch.

To prevent serious injury, inspect your Roll Groover and machine. The following inspection procedures should be performed on a daily basis.

1. Make sure machine is unplugged and the directional switch is set to the OFF position.
2. Make sure the foot switch is present and attached to the machine.
3. Inspect the power cord and plug for damage. If the plug has been modified, is missing the grounding pin or if the cord is damaged, do not use the machine until the cord has been replaced.
4. Make sure all bolts holding the Roll Groover and hydraulic pump to the base are tight.
5. Drive bar must be centered and securely held in the front chuck.
6. Check that guard mounted to the roll groover is in place (Figure 3).

▲ WARNING Do not operate Roll Groover with guard removed. Exposure to moving grooving rolls may result in fingers being crushed.

7. Inspect the Roll Groover and machine for any broken, missing, misaligned or binding parts as well as any other conditions which may affect the safe and normal operation of this equipment. If any of these conditions are present, do not use the Roll Groover until any problem has been repaired.
8. Lubricate the Roll Groover if necessary according to the Maintenance Instructions.
9. Use groover rolls and accessories that are designed for your Roll Groover and meet the needs of your application. The correct groover tools and accessories allow you to do the job successfully and safely. Accessories suitable for use with other equipment may be hazardous when used with this Roll Groover.
10. Clean any oil, grease or dirt from all equipment handles and controls. This reduces the risk of injury due to a tool or control slipping from your grip.

11. Inspect the groove rolls to insure they are not damaged or worn. Worn groover rolls can lead to pipe slippage and poor quality grooves.

Machine and Work Area Set-Up

▲ WARNING



To prevent serious injury, proper set-up of the machine and work area is required. The following procedures should be followed to set-up the machine:

1. Locate a work area that has the following:
 - Adequate lighting
 - No flammable liquids, vapors or dust that may ignite.
 - Grounded electrical outlet
 - Clear path to the electrical outlet that does not contain any sources of heat or oil, sharp edges or moving parts that may damage electrical cord.
 - Dry place for machine and operator. Do not use the machine while standing in water.
 - Level ground
2. Clean up the work area prior to setting up any equipment. Always wipe up any oil that may be present.
3. Place machine on a flat level surface. Be sure the machine, stand and groover are stable.
4. Properly support the pipe with pipe stands. See *Chart "A"* for maximum pipe lengths to be grooved with one stand.

▲ WARNING Failure to properly support the pipe can result in the unit tipping or the pipe falling.

5. Make sure FOR/OFF/REV switch is in the OFF position.
6. Position the foot switch so that the operator can safely control the machine, roll groover and work-piece. It should allow the operator to do the following:
 - Stand facing the hydraulic pump.
 - Use the foot switch with his left foot.
 - Have convenient access to the groover and hydraulic controls without reaching across the machine.

Machine is designed for one person operation.

7. Plug the machine into the electrical outlet making sure to position the power cord along the clear path selected earlier. If the power cord does not reach the outlet, use an extension cord in good condition.

▲ WARNING To avoid electrical shock and electrical fires, never use an extension cord that is damaged or does not meet the following requirements.

- The cord has a three-prong plug similar to shown in Electrical Safety section.
- The cord is rated as “W” or “W-A” if being used outdoors.
- The cord has sufficient wire thickness (14 AWG below 25’/12AWG 25’ - 50’). If the wire thickness is too small, the cord may overheat, melting the cord’s insulation or causing nearby objects to ignite.

▲ WARNING To reduce risk of electrical shock, keep all electrical connections dry and off the ground. Do not touch plug with wet hands.

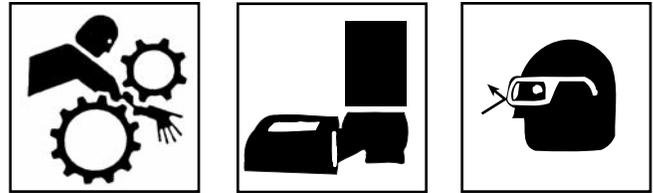
8. Check the unit to insure it is operating properly.
 - Flip the directional switch to FOR (Forward). Press and release the foot switch. Check that the groove roll rotates in a counterclockwise direction as you are facing the groover. Have the power drive or threading machine serviced if it rotates in the wrong direction or if the foot switch does not control its stopping or starting.
 - Depress and hold the foot switch. Inspect the moving parts for misalignment, binding, odd noises or any other unusual conditions that may affect the safe and normal operation of the machine. If such conditions are present, have the roll groover drive serviced.
 - Check the speed of the machine to insure it rotates under 58 RPM. Higher speed machine increases the risk of injury.
 - Flip the directional switch to REV (Reverse) (Except 1822-I and 535 Automatic machines). Press and release the foot switch. Check that the drive roll rotates in a clockwise direction as you are facing the roll groover.
 - Release the foot switch and flip the directional switch to OFF.

9. Check the groove and drive rolls to insure they are the correct size.

CAUTION Use of roll sets on both carbon and stainless steel pipe can lead to contamination of the stainless steel material. This contamination could cause corrosion and premature pipe failure. To prevent ferrous contamination, use roll sets dedicated for stainless steel grooving.

Operating the 918 Roll Groover

▲ WARNING



Do not wear loose clothing when operating a Roll Groover. Keep sleeves and jackets buttoned. Do not reach across the machine or pipe.

Do not use this Roll Groover with a Power Drive or Threading Machine that has a broken or missing foot switch. Always wear eye protection to protect eyes from dirt and other foreign objects.

Keep hands away from grooving rolls. Do not wear loose fitting gloves when operating groover. Use pipe stands to support pipe.

Pipe Preparation

1. Pipe ends must be cut square. Do not use cutting torch.
2. Pipe out-of-roundness must not exceed the total O.D. tolerance listed in groove specifications, *Table 1*.

NOTE! Determine out-of-roundness by measuring maximum and minimum O.D. at 90 degrees apart.

3. All internal or external weld beads, flash or seams must be ground flush at least 2” back from pipe end.

NOTE! Do not cut flats on gasket seat area.

Pipe/Tubing Length

Chart A lists the minimum length of pipe or tubing to be grooved and the maximum length to be grooved with (1) pipe stand.

Groovable Pipe Lengths – Inches					
Nom. Size	Min. Length	Max. Length	Nom. Size	Min. Length	Max. Length
1	8	36	4	8	36
1¼	8	36	4½	8	32
1½	8	36	5	8	32
2	8	36	6 O.D.	10	30
2½	8	36	6	10	28
3	8	36	8	10	24
3½	8	36	10	10	24
			12	10	24

Chart A – Minimum/Maximum Pipe Length

Pipe Set-Up

1. Pipe or tubing longer than the specified maximum

lengths listed in *Chart A* must be supported with 2 pipe stands. The second pipe support should be located $\frac{3}{4}$ of pipe length from roll groover.

▲ WARNING Failure to use two stands may result in the unit tipping or the pipe falling.

2. Raise upper groove roll housing by placing pump release lever in RETURN position (away from operator). (Figure 9)
3. Square pipe and pipe support to roll groover making sure pipe is flush against drive roll flange. (Figure 10)

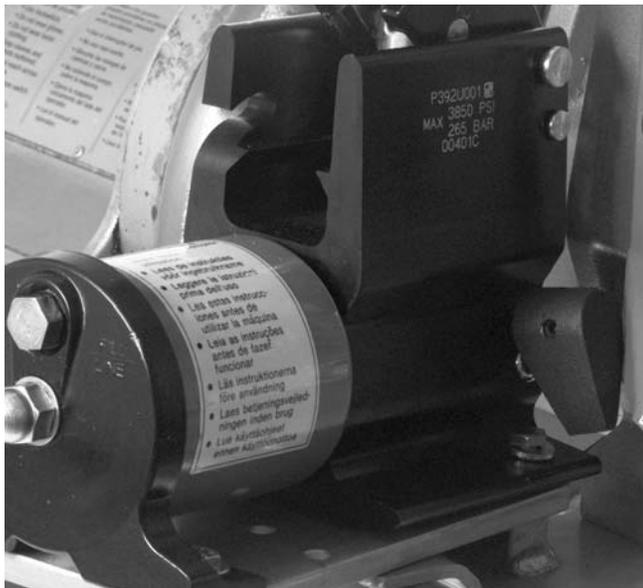


Figure 9 – Close-Up of Release Lever on 918 Pump

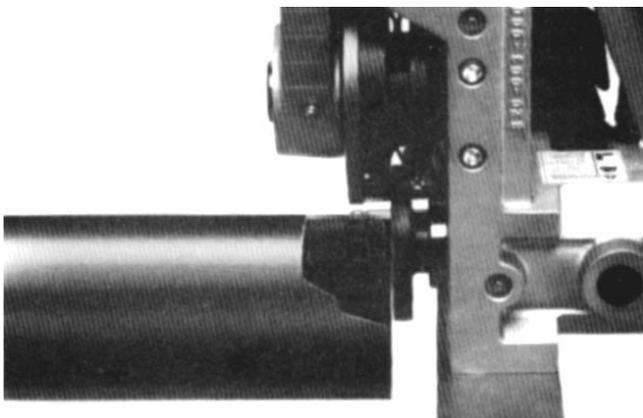


Figure 10 – Close-Up of Pipe Against Drive Roll Flange

4. Level pipe by adjusting pipe stand. (Figure 11)
5. Slightly offset pipe and pipe stand (approx. $\frac{1}{2}^\circ$ away from or toward operator as directed below:

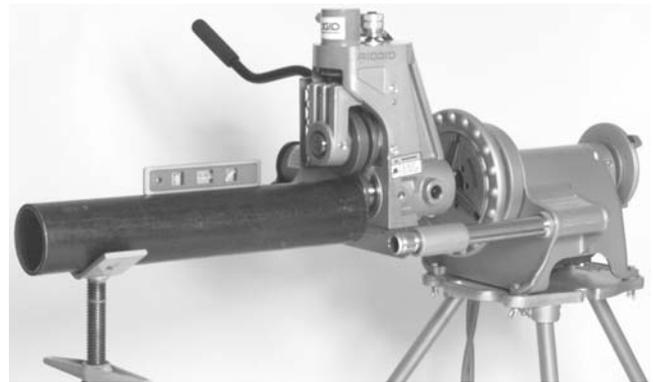


Figure 11 – Leveling Pipe on Pipe Support and 918

Mount	Setting	Degree
300	REV	$\frac{1}{2}^\circ$ toward operator
300	FOR	$\frac{1}{2}^\circ$ away from operator
1822	FOR	$\frac{1}{2}^\circ$ away from operator
1224	REV	$\frac{1}{2}^\circ$ toward operator
1224	FOR	$\frac{1}{2}^\circ$ away from operator
535	REV	$\frac{1}{2}^\circ$ toward operator
535	FOR	$\frac{1}{2}^\circ$ away from operator

NOTE! If running machine in forward, offset pipe $\frac{1}{2}^\circ$ away from operator. (Figure 12)

NOTE! If running machine in reverse, offset pipe $\frac{1}{2}^\circ$ toward operator. (Figure 13)



Figure 12 – Offset Pipe on 918 in FORWARD Position



Figure 13 – Offset Pipe on 918 in REVERSE Position

Adjusting Roll Groove Depth

NOTE! Due to differing pipe characteristics, a test groove should always be performed when setting up or changing pipe sizes. The index depth adjustment knob must be reset for each diameter of pipe/tube.

1. Advance the upper groove roll by placing the pump release lever in ADVANCE position (toward operator) and pump the handle until the upper roll contacts the pipe to be grooved.

NOTE! Upper roll should only touch the pipe surface. Care must be taken not to penetrate pipe surface with upper roll by applying excessive pressure.

2. Turn down the indexed depth adjustment knob (clockwise) until it stops against the top of the machine.
3. Back the depth adjustment knob off one turn. (Figure 14)



Figure 14 – Close-Up of Depth Adjustment Knob Backed Up with Gap Between Bottom of Knob and Casting

Forming the Roll Groove

CAUTION Pipe wall thickness cannot exceed the maximum wall thickness specified in the “Pipe Maximum and Minimum Wall Thickness” Table II. Do not use to groove 8” schedule 40 steel pipe harder than 150 BHN.

1. Flip the directional switch from OFF and step on power drive or threading machine foot switch while applying downward pressure on the 918 pump handle. Allow one full pipe rotation between quarter strokes of the pump handle.

▲ WARNING If pipe begins to “walk off” the drive roll, stop the machine and check “Pipe Set-Up” procedure.

2. To help prevent “walking”, apply pressure on outside of pipe with right hand: away from operator when running the power drive or machine in FORWARD mode (Figure 15); toward operator when running the power drive or machine in REVERSE mode (Figure 16)

▲ WARNING Keep hands away from the end of pipe. Do not reach inside pipe end. Will prevent being cut on sharp edges and burrs.

NOTE! Do not overfeed upper groove roll. Maintain constant downward pressure, pausing to allow one pipe revolution per quarter stroke of the pump handle.

3. When the depth adjustment knob contacts the machine casting, allow two complete pipe revolutions to even out groove depth.
4. Release foot switch and retract upper groove roll by

placing the pump release lever in the RETURN position (toward operator).

5. Check groove diameter before proceeding with additional grooves.



Figure 15 – Applying Pressure on Pipe with Power Drive in FORWARD Mode



Figure 16 – Applying Pressure on Pipe with Power Drive in REV Mode.

NOTE! Groove diameter should be measured using a Diameter - tape. To increase groove depth, rotate the index depth adjustment knob one mark counter clockwise. To decrease groove depth, rotate the depth adjustment knob clockwise.

6. Periodically check groove with a Diameter-Tape or similar measuring device.

Roll Grooving Tips with 918

1. If pipe tends to “walk off” drive roll, increase offset dimension. (Figures 12 & 13)
2. If drive roll flange shaves pipe end, decrease offset dimension.
3. If pipe end flare is excessive, lower pipe end to level with roll groover.

4. If pipe wobbles and/or “walks off” the drive roll, raise pipe end to level with roll groover.
5. Short lengths of pipe (under three feet) may require slight pressure to maintain the 1/2 degree offset dimension.

Grooving Short Lengths of Pipe

1. When running machine in forward direction, exert pressure on pipe away from operator. (Figure 15)
2. When running machine in reverse, exert pressure on pipe toward operator. (Figure 16)

▲ WARNING Do not attempt to groove any pieces of pipe shorter than 8”. Increases risk of fingers being crushed in the grooving rolls.

Removing and Installing Groove Roll and Drive Shaft

NOTE! As groove dimensions are determined by the roll set geometry, specific roll sets are required when grooving the following:

- 2” – 6” Schedule 10, 40
- 8” – 12” Schedule 10
- 8” Schedule 40
- 2” – 6” Copper tubing (Types K, L, M, DWV)
- 1” Schedule 10, 40
- 1 1/4” - 1 1/2” Schedule 10, 40

▲ WARNING Make sure power drive or threading machine is unplugged from power source before changing the Roll Sets or removing the Roll Groover.

▲ WARNING When removing rolls and shafts, be sure they are properly supported.

Removing and Installing Roll Sets with Solid Drive Shafts (2” – 6”, 8” – 12”)

1. Recommend removing 918 Roll Groover from power drive or machine, and placing it on a work bench in an upright position. If a suitable workplace is not available, roll sets can be changed with Groover mounted on the machine.

▲ WARNING Use care that the Groover does not slide off the support arms on the Model 300 Power Drive.

2. Removing Groove Rolls:
 - Fully raise the upper roll housing by moving the pump release lever to the return position, away from the operator.
 - Loosen groove roll set screw (Figure 17). Grasp groove roll and remove upper shaft and groove roll from groover (Figure 18).

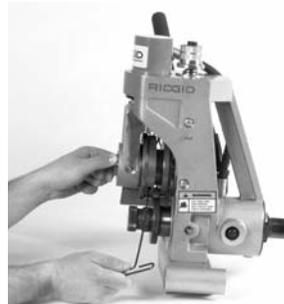


Figure 17 – Loosening Grooving Roll Set Screw



Figure 18 – Removing Retaining Shaft and Groove Roll

3. Removing Solid Drive Shaft:

- Manually rotate the drive shaft while applying pressure to the spindle lock pin until the lock pin engages the spindle lock hole in the driveshaft.
- With the spindle lock engaged, use the box wrench to remove the drive shaft bearing retaining nut (Figure 19).
- Release pressure on the spindle lock pin, allowing to retract.
- Remove the drive shaft (Figure 20).



Figure 19 – Engaging Spindle Lock and Removing Drive Shaft Retaining Nut



Figure 20 – Removing Drive Shaft

4. Installing Solid Drive Shaft:

- Install new drive shaft.
- Install the drive shaft bearing retaining nut, with text out.
- Manually rotate the drive shaft while applying pressure to the spindle lock pin until the lock pin engages the spindle lock hole in the drive shaft.
- With the spindle lock engaged, use the box wrench to tighten the drive shaft bearing retaining nut.
- Release pressure on the spindle lock pin, allowing to retract.

5. Installing groove roll:

- With upper roll housing fully raised and driveshaft in place, insert groove roll into upper roll assembly and fully insert upper roll shaft through bearings and groove roll.
- Tighten groove roll set screw into detent on upper roll shaft.

6. Using a grease gun, grease the drive shaft through the fitting on the side of the Groover.

Removing and Installing Roll Sets with Two-Piece Drive Shafts (1", 1 1/4" - 1 1/2", 2" - 6" Copper)

1. Recommend removing 918 Roll Groover from power drive or machine, and placing it on workbench in an upright position. If a suitable workplace is not available, roll sets can be changed with the Roll Groover mounted in the machine.

▲ WARNING Use care that the Groover does not slide off the support arms on the 300 Power Drive.

2. Removing groove roll:

- Fully raise the upper roll housing by moving the pump release lever to the return position, away from the operator.
- Loosen groove roll set screw (Figure 17). Grasp groove roll and remove upper shaft and groove roll from the Groover (Figure 18).

3. Removing drive shaft:

- Manually rotate the drive shaft while applying pressure to the spindle lock pin until the lock pin engages the spindle lock hole in the drive shaft.
- With the spindle lock engaged, use a wrench to loosen the draw bolt (Figure 21).
- Tap draw bolt with a mallet to release drive roll from drive shaft.
- Unthread draw bolt from drive roll, remove drive roll.

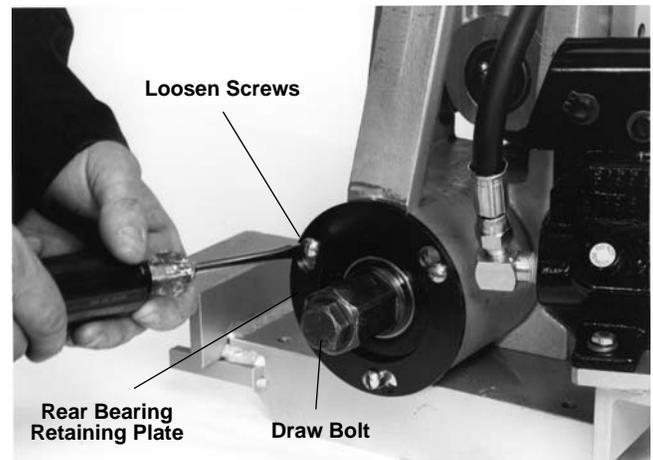


Figure 21 – Loosening Draw Bolt and Retaining Plate Hex Screws

4. Installing new drive roll:

- Install new drive roll, insert and hand tighten draw bolt.
- Manually rotate the drive shaft/drive roll assembly while applying pressure to the spindle lock pin until the lock pin engages the spindle lock hole in the drive shaft.
- With the spindle lock engaged, use a wrench to tighten the draw bolt.
- Release pressure on the spindle lock pin, allowing to retract.

5. Installing Groove Roll:

- With upper roll housing fully raised and drive shaft in place, insert groove roll into upper roll assembly and fully insert upper roll shaft through bearings and groove roll.

- Tighten groove roll set screw into detent on upper roll shaft.
6. Using a grease gun, grease the drive shaft through the fitting on the side of the Groover.

Changing from Solid Drive Shaft Roll Set to Two-Piece Drive Shaft

1. Recommended removing 918 Roll Groover from power drive or machine, and placing it on workbench in an upright position. If a suitable workplace is not available, roll sets can be changed with the Roll Groover mounted on the machine.

▲ WARNING Use care that the Groover does not slide off the support arms on the 300 Power Drive.

2. Removing groove roll:
 - Fully raise the upper roll housing by moving the pump release lever to the return position, away from the operator.
 - Loosen groove roll set screw (Figure 17). Grasp groove roll and remove upper roll shaft and groove roll from Groover (Figure 18).
3. Changing solid drive shaft rollset to two-piece drive shaft:
 - Manually rotate the drive shaft while applying pressure to the spindle lock pin until the lock pin engages the spindle lock hole in the drive shaft.
 - With the spindle lock engaged, use the box wrench to remove the drive shaft bearing retaining nut (Figure 19).
 - Release pressure on the spindle lock pin, allowing to retract.
 - Remove the drive shaft (Figure 20).
 - Remove the three 1/4" bolts that hold the retaining plate in place, remove retaining plate, remove bearing (Figure 21).
 - Insert drive shaft/bearing assembly (for two-piece driveshaft) into Groover. Replace retaining plate and bolt, tighten bolts.
 - Install new drive roll, insert and hand tighten draw bolt.
 - Manually rotate the drive shaft/drive roll assembly while applying pressure to the spindle lock pin until the lock pin engages the spindle lock hole in the drive shaft.
 - With the spindle lock engaged, use a wrench to tighten the draw bolt.
 - Release pressure on the spindle lock pin, allowing to retract.

4. Installing groove roll:
 - With upper housing fully raised and drive shaft in place, insert groove roll into upper roll assembly and fully insert upper roll shaft through bearings and groove roll.
 - Tighten groove roll set screw into detent on upper roll shaft.
5. Using a grease gun, grease the drive shaft through the fitting on the side of the Groover.

Installing and Operating Pipe Stabilizer/Nipple Bracket

NOTE! The pipe stabilizer/nipple bracket works on 300 Power Drive Mounting only. Use for grooving nipples and pipe 2 1/2" through 12" nominal pipe sizes.

▲ WARNING Make sure machine is unplugged from power source before installing pipe stabilizer/nipple.

Installation

1. Align mounting bracket onto base of roll groover so that the bolt holes in the mounting bracket line up with bolt holes in the base. (Figure 22)
2. Install and tighten two bolts through the bottom of the roll groover base.

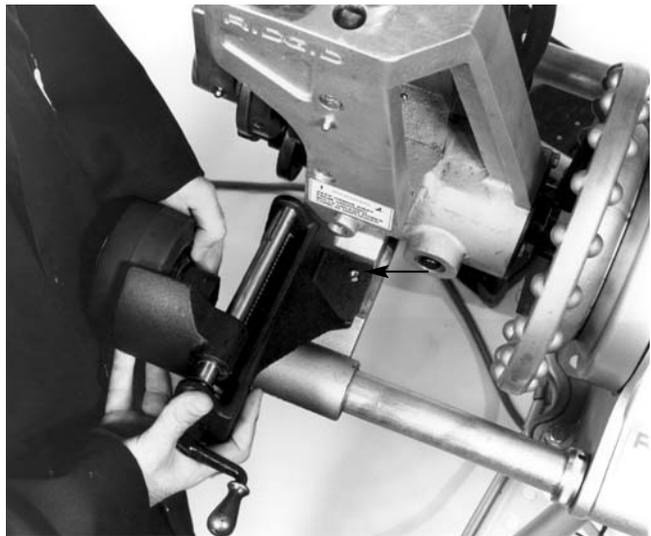


Figure 22 – Line Up Bolt Holes in the Mounting Bracket with Bolt Holes in the Base

Stabilizer Operation

NOTE! Once the stabilizer is adjusted for a selected pipe diameter, it does not have to be readjusted.

1. Place pipe on to drive roll on Model 918 Roll Groover.

2. Properly set-up pipe to ensure pipe is level and square on the shoulder of the drive roll.
3. Engage hydraulic pump and bring groove roll (upper roll) down until it contacts the pipe.
4. Tighten stabilizer roll until roll contacts the pipe. Continue to tighten stabilizer one full turn after contacting workpiece (*Figure 23*).

▲ WARNING Do not reach across pipe to adjust stabilizer.



Figure 23 – Stabilizer Positioning

NOTE! If pipe “walks off” the drive shaft, tighten stabilizer 1/2 turn.

▲ WARNING Do not use the pipe stabilizer/nipple bracket on 8” or shorter workpieces. Increases risk of fingers being crushed in the grooving rolls.

Accessories

▲ WARNING Only the following RIDGID products have been designed to function with the 918 Roll Groover. Other accessories suitable for use with other tools may become hazardous when used on this Roll Groover.

To prevent serious injury, use only the accessories listed below.

Catalog No.	Model No.	918 Accessories
48405	—	Roll Set for 8” Sch. 40, Tool Box Included
48407	—	Roll Set for 1 1/4” to 1 1/2” Sch. 10/40. Tool Box Includes Drive Shaft, Bolt and Tools
48412	—	Roll Set for 1” Sch. 10/40 and 1 1/4” to 1 1/2” Sch. 10/40. Tool Box Includes Drive Shaft, Bolt and Tools
48417	—	Roll Set for Copper (2” - 6”) Types K, L, M and DWV
59992	—	1” - 12” Stabilizer for Grooving Nipples. For 918 w/300 Mounting Kit or 918-I
49662	—	Tool Box
76822	—	English Diameter Tape
76827	—	Metric Diameter Tape
		Pipe Stands (See Ridge Tool Catalog)

NOTE! A Roll Set consists of a Groove Roll and a Drive Roll.

Table I. Standard Roll Groove Specifications¹

NOTE! All Dimensions are in Inches.

NOM. PIPE SIZE	PIPE DIAMETER		T MIN. WALL THK.	A GASKET SEAT +.015/-0.030	B GROOVE WIDTH +.030/-0.015	C GROOVE DIAMETER		D NOM. GROOVE DEPTH (Ref. #2)
	O.D.	TOL.				O.D.	TOL.	
1	1.315	+0.013 -0.013	.065	.625	.281	1.190	+0.000 -0.015	.063
1¼	1.660	+0.016 -0.016	.065	.625	.281	1.535	+0.000 -0.015	.063
1½	1.900	+0.016 -0.016	.065	.625	.281	1.775	+0.000 -0.015	.063
2	2.375	+0.024 -0.016	.065	.625	.344	2.250	+0.000 -0.015	.063
2½	2.875	+0.030 -0.018	.083	.625	.344	2.720	+0.000 -0.015	.078
3	3.50	+0.030 -0.018	.083	.625	.344	3.344	+0.000 -0.015	.078
3½	4.00	+0.030 -0.018	.083	.625	.344	3.834	+0.000 -0.015	.083
4	4.50	+0.035 -0.020	.083	.625	.344	4.334	+0.000 -0.015	.083
5	5.563	+0.056 -0.022	.109	.625	.344	5.395	+0.000 -0.015	.084
6	6.625	+0.050 -0.024	.109	.625	.344	6.455	+0.000 -0.015	.085
8	8.625	+0.050 -0.024	.109	.750	.469	8.441	+0.000 -0.020	.092
10	10.75	+0.060 -0.025	.134	.750	.469	10.562	+0.000 -0.025	.094
12	12.75	+0.060 -0.025	.156	.750	.469	12.531	+0.000 -0.025	.110

1. As per AWWA C606-87.

2. Nominal Groove Depth is provided as a reference dimension. Do not use groove depth to determine groove acceptability.

NOTE! Fitting manufacturer's recommendations should be followed regarding maximum allowable flare diameters.

Table II. Pipe Maximum and Minimum Wall Thickness

NOTE! All Dimensions are in Inches.

Pipe Size	CARBON STEEL OR ALUMINUM PIPE OR TUBE		STAINLESS STEEL PIPE OR TUBE		PVC PIPE	
	Wall Thickness		Wall Thickness		Wall Thickness	
	Min.	Max.	Min.	Max.	Min.	Max.
1"	.065	.133	.065	.109	.133	.133
1¼"	.065	.140	.065	.140	.140	.140
1½"	.065	.145	.065	.145	.145	.200
2"	.065	.154	.065	.154	.154	.154
2½"	.083	.203	.083	.188	.203	.276
3"	.083	.216	.083	.188	.216	.300
3½"	.083	.226	.083	.188	.226	.318
4"	.083	.237	.083	.188	.237	.337
5"	.109	.258	.109	.188	.258	.258
6"	.109	.280	.109	.188	.280	.280
8"	.109	.322	.109	.188	.322	.322
10"	.134	.165	.134	.188	—	—
12"	.156	.180	.156	.188	—	—

CAUTION: Do not use to groove 8" schedule 40 steel pipe harder than 150 BHN. Doing so may result in improperly formed grooves that do not meet required specifications.

Table III. Troubleshooting

PROBLEM	CAUSE	CORRECTION
Rolled groove too narrow or too wide.	Incorrect size of grooving and driving rolls. Mismatched grooving and driving rolls. Grooving roll and/or driving roll worn.	Install correct size of grooving and driving rolls. Match grooving and driving rolls. Replace worn roll.
Rolled groove not perpendicular to pipe axis.	Pipe length not straight. Pipe end not square with pipe axis.	Use straight pipe. Cut pipe end square.
Pipe does not track while grooving.	Pipe not level. Groover not level. Pipe axis not offset 1/2 degree from drive roll axis. 1/2 degree offset not sufficient. Not applying pressure to pipe. Not using stabilizer. Excessive weld seam. Pipe end not square.	Adjust stand to level pipe. Level groover. Offset pipe 1/2 degree (<i>See Figs. 12 & 13</i>). Offset pipe slightly more. Apply pressure to pipe (<i>See Figs. 15 & 16</i>). Use stabilizer. Grind flush 2" from end of pipe. Cut pipe end square.
Pipe flared at groove end.	Pipe not level. Operator is advancing groove roll too fast. Pipe is too hard. Stabilizer too tight.	Adjust stand to level pipe. Slow down pumping action. (<i>Refer to proper operating instructions.</i>) Replace pipe. Adjust stabilizer.
Pipe drifts back and forth on driving roll axis while grooving.	Pipe length not straight. Pipe end not square with pipe axis.	Use straight pipe. Cut pipe end square.
Pipe rocks from side to side.	Pipe stand too close to end of pipe. Pipe end flattened or damaged. Hard spots in pipe material or weld seams harder than pipe. Grooving roll feed rate too slow. Power drive speed exceeds 57 rpm. Pipe support stand rollers not in correct location for pipe size.	Move pipe stand in 1/4 distance from end of pipe. Cut off damaged pipe end. Use high quality pipe of uniform hardness. Feed grooving roll into pipe faster. Reduce speed to 57 rpm. Position pipe stand rollers for pipe size being used.
Groover does not roll groove in pipe.	Pipe wall maximum thickness exceeded. Wrong rolls. Pipe material too hard. Adjustment nut not set.	Check pipe capacity chart. Install correct rolls. Replace pipe. Set depth.
Groove does not meet specification.	Maximum pipe diameter tolerance exceeded. Mismatched grooving and driving rolls. Grooving 8" Sch. 40 steel pipe harder than 150 BHN.	Use correct diameter pipe. Use correct set of rolls. Do not groove hard pipe.
Pipe slips on driving roll.	Driving roll knurling plugged with metal or worn flat. Grooving roll feed rate too slow.	Clean or replace driving roll. Feed grooving roll into pipe faster.

Table III. Troubleshooting (cont.)

PROBLEM	CAUSE	CORRECTION
Pipe raises or tends to tip groover over backwards.	Not level.	Adjust stands to level pipe.
Pump not delivering oil, cylinder does not advance.	Pump release valve open.	Close release valve.
	Low oil in reservoir.	Check oil level per instructions.
	Dirt in pump body.	Have serviced by qualified technician.
	Seats worn or not seating.	Have serviced by qualified technician.
	Too much oil in reservoir.	Check oil level per instructions.
Pump handle operates with "spongy" action.	Air trapped in system.	Position ram lower than pump by tipping the machine on its side opposite the operator. Extend and return the cylinder piston several times to permit air to return to the pump reservoir.
	Too much oil in reservoir.	Check oil level per instructions.
Cylinder extends only partially.	Pump reservoir is low on oil.	Fill and bleed system.
	Depth adjustment set incorrectly.	Follow depth adjustment instructions.

Table IV. Copper Roll Groove Specifications

1	2		3	4	5	6	7	8
Nom. Size Inches	Tubing Outside Diameter O.D.		A Gasket Seal A	B Groove Width	C Groove Dia.	D Nominal ¹ Groove Depth	T Min. Allow. Wall Thick.	Max. Allow. Flare Dia.
	Basic	Tolerance	+0.03 -.00	+0.03 -.00	+0.00 -.02			
2"	2.125	±0.002	0.610	0.300	2.029	0.048	0.064	2.220
2½"	2.625	±0.002	0.610	0.300	2.525	0.050	0.065	2.720
3"	3.125	±0.002	0.610	0.300	3.025	0.050	0.045	3.220
4"	4.125	±0.002	0.610	0.300	4.019	0.053	0.058	4.220
5"	5.125	±0.002	0.610	0.300	5.019	0.053	0.072	5.220
6"	6.125	±0.002	0.610	0.300	5.999	0.063	0.083	6.220

¹ Nominal groove depth is provided as a reference dimension. Do not use groove depth to determine groove acceptability.

Maintenance Instructions

▲ WARNING Make sure machine is unplugged from power source before performing maintenance or making any adjustments.

Hydraulic Fluid Level

Remove the reservoir filler cap (Figure 24). The oil level should come to the fill line when the pump is resting on its base and the ram is fully retracted. Use only high grade hydraulic oil.



Figure 24 – Reservoir Filler Cap

Lubrication

Drive shaft and Groove roll shaft bearings.

Lubricate with multi-purpose grease through fittings located on groove roll shaft and lower roll housing once a month, and after every roll change.

Machine Storage

▲ WARNING Motor-driven equipment must be kept indoors or well covered in rainy weather. Store the machine in a locked area that is out of reach of children and people unfamiliar with roll groover equipment. This machine can cause serious injury in the hands of untrained users.

Service and Repair

▲ WARNING



Service and repair work on this Roll Groover must be performed by qualified repair personnel. Machine should be taken to a RIDGID Independent Authorized Service Center or returned to the factory. All repairs made by Ridge service facilities are warranted against defects in material and workmanship.

▲ WARNING When servicing this machine, only identical replacement parts should be used. Failure to follow these instructions may create a risk of serious injury.



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