

920

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.

**Test Equipment
Depot**
1-800-517-8431

99 Washington Street
Melrose, MA 02176
Phone 781-665-1400
Toll Free 1-800-517-8431



Visit us at www.TestEquipmentDepot.com

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.

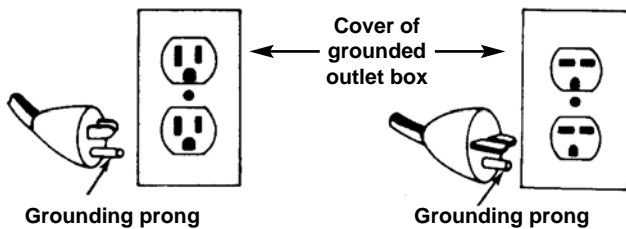
SAVE THESE INSTRUCTIONS!

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
- **Do not operate power 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 by-standers, 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.
- **Do not expose electrical tools to rain or wet conditions.** Water entering a 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 tool’s 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 and 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 power tools may result in serious personal injury.
- **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves 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 in tools 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 the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the 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 tools 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.** 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 power drive 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.
- **Only use the RIDGID Model 300 Power Drive with this groover.** Use of other power sources will result in improper set-up and possible tipping.
- **Keep hands away from grooving rolls and stabilizer wheel. Do not wear loose fitting gloves when operating unit.** Fingers could get caught between grooving and drive rolls.
- **Never groove pipe shorter than what is recommended.** Increases risk of fingers being crushed by grooving 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 that does not have a foot switch.** Foot switch is a safety device to prevent serious injury.
- **Be sure groover is properly secured to the power drive.** Carefully follow the set-up procedures. Will prevent tipping of the pipe or grooving unit.
- **Properly support pipe with pipe stands. Only use recommended pipe stands.** Prevents tipping of the unit.
- **Use only power drives that operate under 38 RPM.** Higher speed machines increase the risk of 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.
- **Lock foot switch when not in use. (See Figure 1.)** Avoids accidental starting.

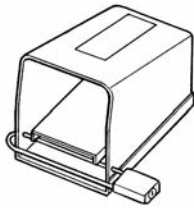


Figure 1 – Locked Foot Switch

Description, Specifications and Standard Equipment

Description

The RIDGID Model 920 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 920 Roll Groover includes three (3) groove and drive sets that can groove the following pipe:

- 2" - 6" Schedule 10 and 40
- 8" - 12" Schedule 10 and 40
- 14" - 16" Standard .375" Wall

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

- 18" - 20" .250" Wall
- 22" - 24" .250" Wall
- 2" - 8" Copper Tubing (Types K, L, M, DMV)

– See Table II for exact wall thickness.

The 920 Roll Groover is specifically designed for use with the RIDGID 300 Power Drive. A pipe stabilizer is provided to aid grooving.

CAUTION When properly used, this groover is designed to make 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 consideration of the specific service environment, including chemical environment and service temperature, should be made.

Specifications

Roll Grooving Capacity

(See Table II for Wall Thickness)

- 2" - 24" Schedule 10
- 2" - 12" Schedule 40
- 2" - 16" Standard Wall
- 2" - 8" Copper Types K, L, M, DWV

Depth AdjustmentIndexed Adjustment Knob and Integral Depth Setting Gauge

Actuation.....Hydraulic Hand Pump

Standard Equipment

- 920 Groover with 8" - 12" Roll Set
- 2" - 6" Roll Set
- 14" - 16" Roll Set
- Stabilizer
- 1/8" T-Handle Hex Wrench (Groove Roll change-out)
- No. 32 Transport Cart

NOTE! Roll Sets Consist Of Drive Roll & Groove Roll

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 failure of the pipe. To prevent ferrous contamination, it is recommended that separate roll sets be dedicated and only used to groove stainless steel pipe.

▲ WARNING

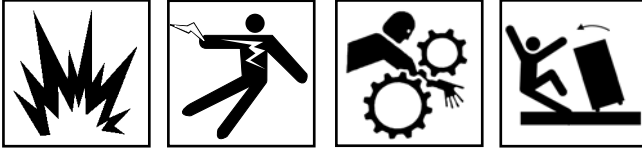
Only use with the RIDGID Model 300 Power Drive (38 RPM)



Figure 2 – 920 Roll Groover Attached to 300 Power Drive

Machine and Work Area Set-Up

▲ WARNING



To prevent serious injury, proper set-up of the machine and work area is required. The 920 Roll Groover is designed to be mounted on a RIDGID 300 Power Drive. Do not use other power sources.

The following procedures should be followed to set-up the machine.

Work Area

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 the electrical cord.
 - Dry place for machine and operator. Do not use the machine while standing in water.
 - Level ground
 - Space adequately to handle the pipe to be grooved.
2. Clean up the work area prior to setting up any equipment. Always wipe up any oil that may be present.

▲ WARNING Machine must be placed on a flat surface. The 300 Power Drive, groover and pipe stands must be stable. Failure to locate the groover on a level surface may result in the unit tipping or the pipe falling.

Installing the Groover on the 300 Power Drive

▲ WARNING Because of the heavy weight of the groover two (2) people are needed to lift and set-up the unit.

1. To remove the groover from the No. 32 Transport Cart, remove pin and slide the cart from the base (Figure 3).



Figure 3 – Removing Transport Cart

2. Remove the two hitch pins that lock the legs into the groover base and remove the legs. Turn the upper portion of each leg counterclockwise to shorten their length.
3. Prepare the 300 Power Drive for the attachment of the roll groover. If applicable, remove the die head and the 311A Carriage with the reamer and cutter and open the chuck jaws. Check that the power drive is properly fastened to a 1206 Stand and the legs are stiff and do not wobble. (See power drive operator's manual for instructions on increasing leg stiffness.)
4. Use two people to lift the groover onto the power drive. Slide the roll groover onto the support arms by aligning them with the tubes located on either side of the base (Figure 4).

▲ WARNING While the roll groover base is on the power drive without the legs attached, it is front heavy and could tip over. Push back on the tool head until the legs are in place and secure.



Figure 4 – Sliding Roll Groover Onto Support Arms

5. Align the drive shaft so that the flats engage the jaws of the chuck. Tighten the chuck jaws securely

onto the drive shaft by using repeated and forceful counterclockwise spins of the handwheel.

6. Lift each side of the groover and insert the legs into the sockets located in the base. Install the hitch pins (Figure 5).



Figure 5 – Installing Legs Into the Groover Base

7. Turn the upper portion of the leg counterclockwise until it makes contact with the ground. Adjust both legs until the unit is level (Figure 6).

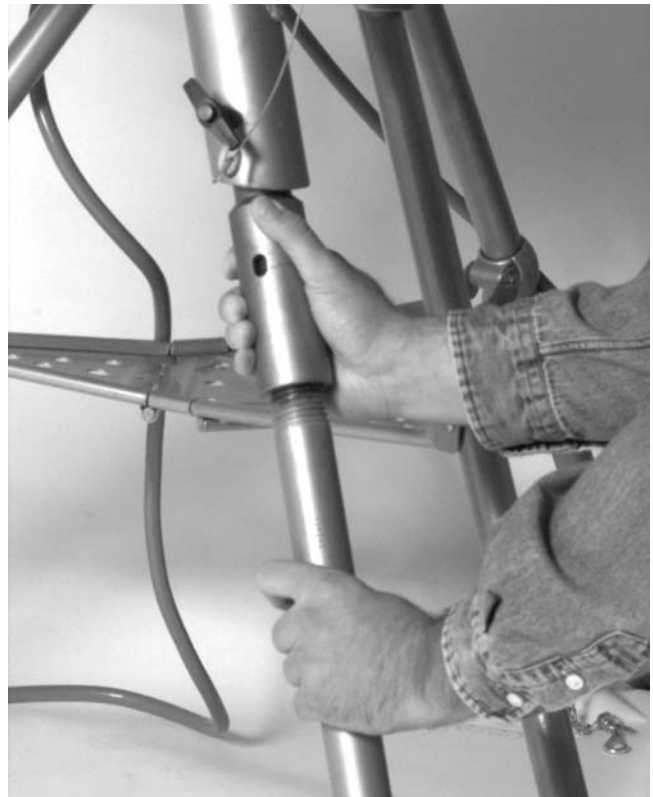


Figure 6 – Adjusting Legs to Level Groover

8. Check that the groover is level and the unit is stable (Figure 7).

▲ WARNING Failure to properly set up the unit may result in tipping.

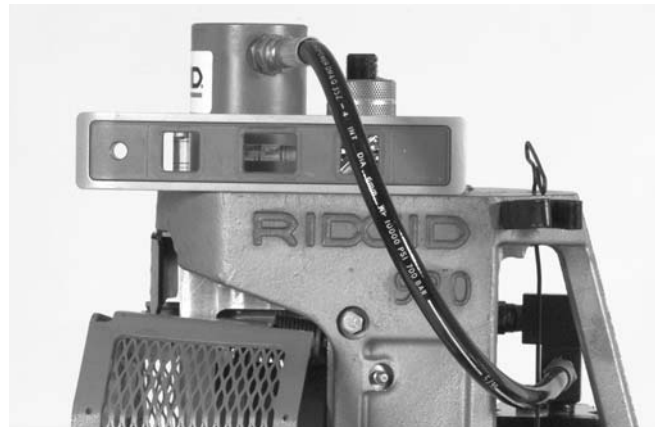


Figure 7 – Leveling Groover

9. Install pump handle by screwing it into the elbow (Figure 8).

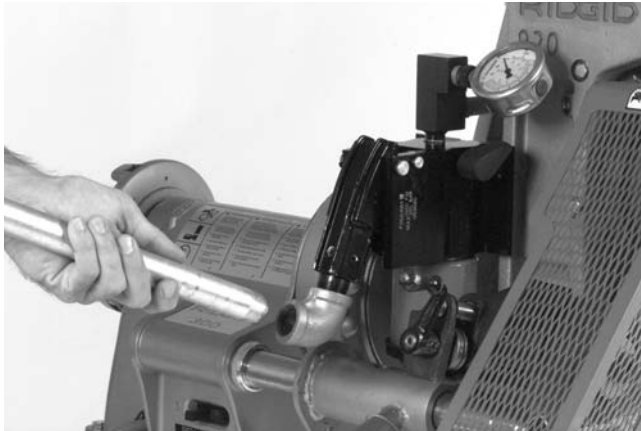
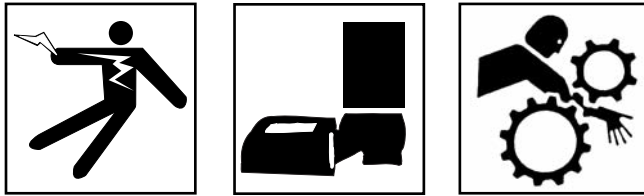


Figure 8 – Installing Pump Handle

Machine Inspection and Set-Up

▲ WARNING



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

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

Inspecting 920 Groover

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 stabilizer to the base are tight. Make sure all screws holding the pump to the Roll Groover 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 and operating properly (*See Page 11*).

▲ 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 Set-Up

1. Properly support pipe with pipe stands. Use pipe stands rated for the pipe size to be grooved.

NOTE! Six inch pipe and smaller should be supported with No. VJ-99 Pipe Stand. For lengths less than 36", one stand can be used; for lengths greater than 36", two stands should be used.

Six inch pipe and larger can be supported on the RJ624 pipe stand. One stand can be used for lengths less than 8 feet. When one stand is used, the pipe should be centered on the stand so that the center of gravity of the pipe is over the center of the stand.

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

2. Make sure FOR/OFF/REV switch is in the OFF position.
3. 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.

4. 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.

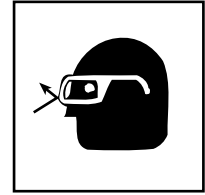
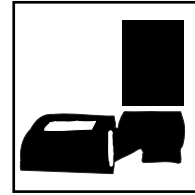
- The cord has a three-prong plug similar to shown in Electrical Safety section.
- The cord is rated as “W” or “W-A” if being used outdoors.
- The cord has sufficient wire thickness (14 AWG below 25’/12AWG 25’ - 50’). If the wire thickness is too small, the cord may overheat, melting the cord’s insulation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

5. 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 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 38 RPM. Higher speed machine increases the risk of injury.
 - Release the foot switch and flip the directional switch to OFF.
6. Check the groove rolls to insure they are the correct size. Refer to instructions on *Page 13* for changing the groove rolls.

Operating The 920 Roll Groover

▲ WARNING



Do not wear loose clothing or loose fitting gloves when operating a Roll Groover. Keep sleeves and jackets buttoned. Always wear eye protection to protect eyes from dirt and other foreign matter.

Do not use this Roll Groover with a Power Drive that has a broken or missing foot switch. Always groove with the power drive switch in FORWARD position so the unit will rotate in a counterclockwise direction.

Keep hands away from grooving rolls and stabilizer wheel. Do not reach across the machine or pipe. Never reach inside the pipe. Never groove pipe shorter than what is recommended.

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 I*.

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.

4. End of pipe, both inside and out, must be cleaned of coarse scale, dirt and other foreign material.

NOTE! Foreign material such as coarse scale or dirt might interfere with or damage the grooving rolls or distort the groove. Rust is an abrasive material and will tend to wear out the surface of the grooving rolls. For maximum grooving roll life, remove foreign material and loose rust.

Pipe/Tubing Length

Chart A lists the minimum length of pipe or tubing to be grooved and the maximum length to be grooved with one (1) VJ-99 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			
3½	8	36			

Chart A – Minimum/Maximum Pipe Length – 1” to 6” O.D.

Chart B lists the minimum length of pipe or tubing to be grooved and the maximum length to be grooved with one (1) RJ624 Pipe Stand.

Groovable Pipe Lengths – Inches					
Nom. Size	Min. Length	Max. Length	Nom. Size	Min. Length	Max. Length
8 O.D.	10	96	16	12	96
8	10	96	18	12	96
10	10	96	20	12	96
12	12	96	22	12	96
14	12	96	24	12	96
16	12	96			

Chart B – Minimum/Maximum Pipe Length – 8” to 24” O.D.

Pipe Set-Up

1. Pipe or tubing longer than the specified maximum lengths listed in *Charts A & B* must be supported with two (2) pipe stands. If only one stand is used, the pipe should be centered on the stand so that the pipe’s center of gravity is over the center of the stand.

▲ WARNING Failure to use two stands may result in unit tipping or the pipe falling. Make sure stands and pipe are stable.

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

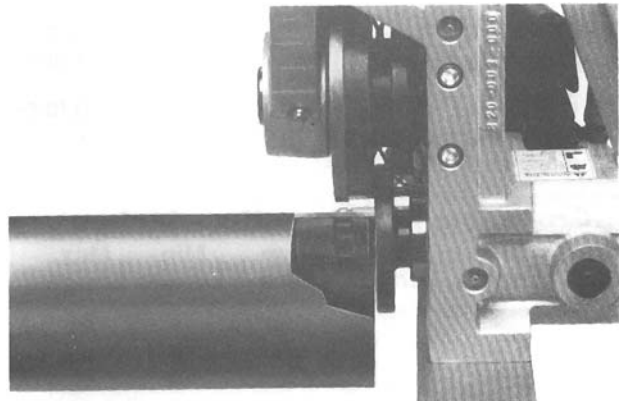


Figure 9 – Close-Up of Pipe Against Drive Roll Flange

4. Verify that the pipe is level or sloped slightly upward away from the operator.

NOTE! If the machine cannot be leveled, make sure that the slope of the pipe and the machine are the same.

CAUTION If pipe is grooved with free end of pipe (end of pipe which is not in tool) too much higher than the end being grooved, pipe may not track and pipe end flare may result. Pipe exceeding fitting manufacturer’s recommended flare specifications may prevent assembly of couplings pad-to-pad, allowing possible pipe separation, and result in property damage. Also, joint leakage may result due to excessive gasket distortion/damage.

5. Check that the pipe is square with the drive shaft or tilted upward ½° from the operator.

CAUTION “Tracking Angle” will affect pipe end flare (*Figure 10*). When pipe end flare is excessive, left-to-right tracking angle must be kept to a minimum. It may be necessary to use an angle less than ½°.

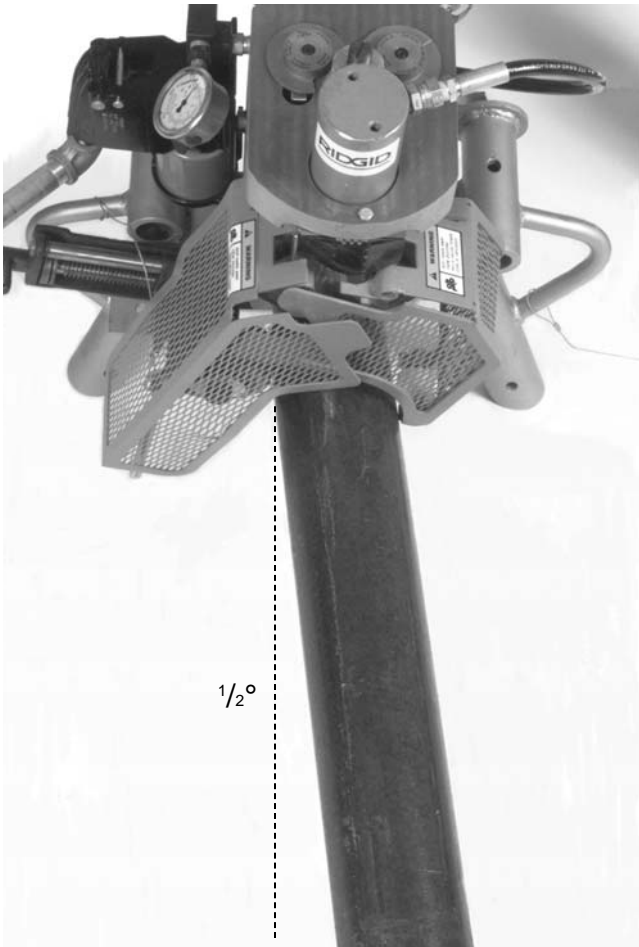


Figure 10 – Offset Away From Operator

Adjusting Stabilizer

NOTE! The stabilizer has two different positions. The position closest to the drive shaft will allow the stabilizer to work for 2" - 16" pipe. The second stabilizer position will work for 14" - 24" pipe.

1. Remove the two $\frac{3}{8}$ " bolt that hold the stabilizer in place ($\frac{9}{16}$ " wrench or socket) (Figure 11).

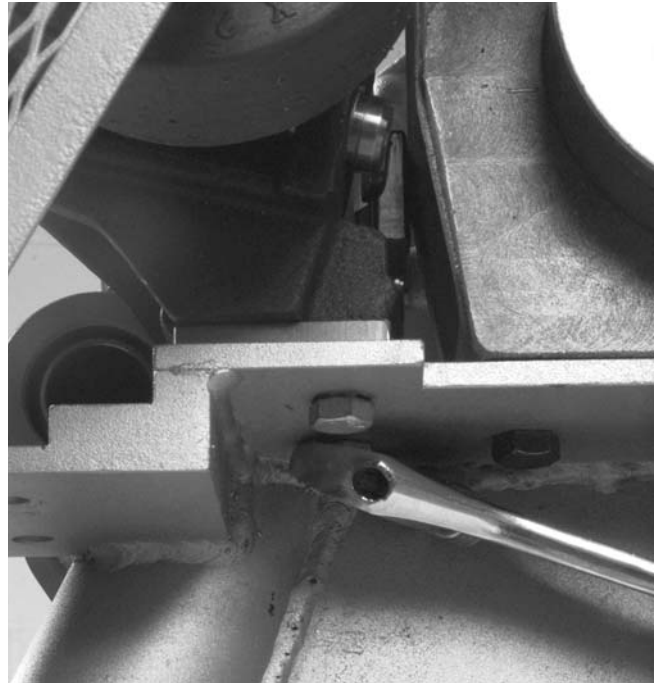


Figure 11 – Removing Bolts Holding Stabilizer

2. Move the stabilizer into the desired position (Figure 12).

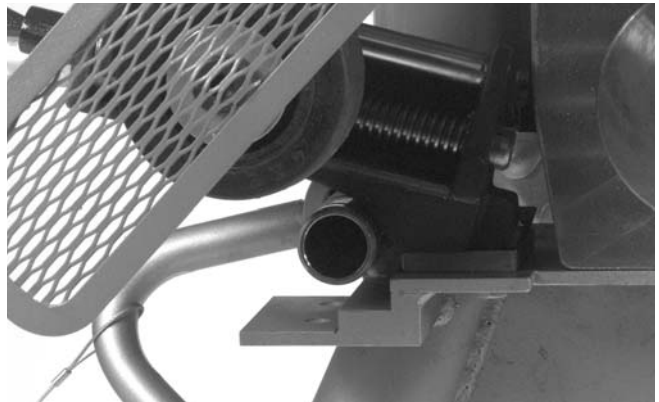


Figure 12A – 2" - 16" Position

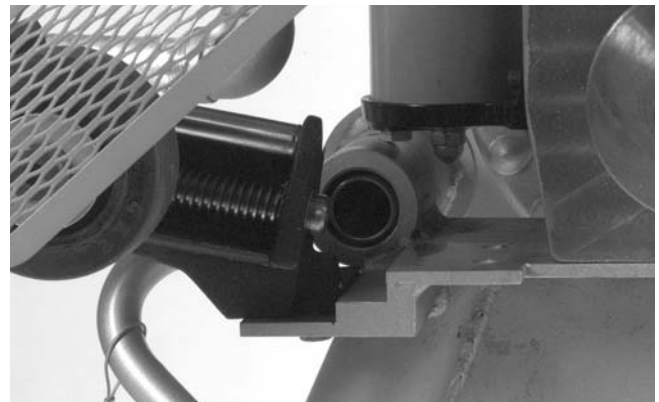


Figure 12B – 14" - 24" Position

3. Tighten the two 3/8" bolts that hold the stabilizer in place.

CAUTION It is recommended that the stabilizer be used for all lengths of pipe. Stabilizer will help prevent pipe walking off the groove rolls. It will also prevent swaying on the longer pipe lengths.

Roll Guards

The guards covering the grooving rolls and the stabilizer wheel will automatically close and open as the upper groove roll is moved in or out of the grooving position. The guard on the operator side will also adjust with the stabilizer.

WARNING Do not operate the Roll Groover with the guards removed. Make sure the guards are operating properly and are not damaged. Repair damaged guards before using the groover. Exposure to moving grooving rolls or stabilizer wheel may result in fingers being crushed.

1. Before placing the pipe into the groove rolls, check that the upper grooving roll is fully retracted by rotating the pump release lever counter-clockwise. The guards should be in the open position as shown in (Figure 13).



Figure 13 – Guards in Open Position

2. With pressure applied to the hydraulic cylinder and the upper roll in the grooving position, the guards should be in the closed or operating position as shown in Figure 14. The guard on the operator side will move in and out with the adjustment of the stabilizer.



Figure 14 – Guards in the Operating 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 depth adjusting nut must be reset for each diameter of pipe/tube.

Using the Groove Depth Setting Gauge

The groove depth gauge is designed to make an initial estimate of the depth required to achieve the required groove diameter.

1. Insert the pipe into the roll groover and actuate the hand pump until the cylinder builds up to approximately 500 psi.
2. Put the correct section of the gauge under the adjusting nut. (Figure 15)

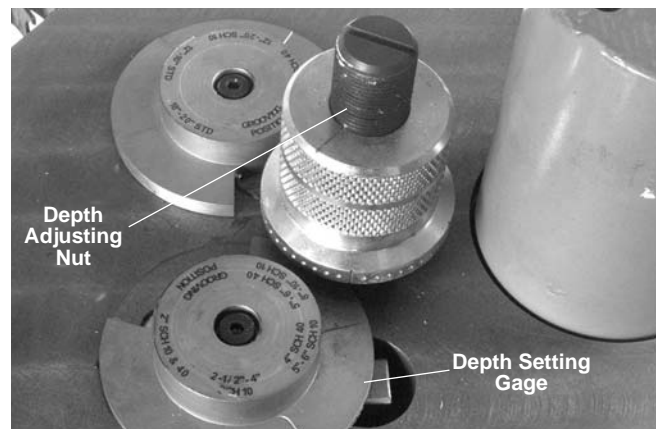


Figure 15

3. Tighten the adjusting nut to the gauge.
4. Back-off adjusting nut slightly and turn gauge to the grooving position. (Figure 16)



Figure 16

5. Groove pipe.
6. Check actual groove diameter.

NOTE! Because of the significant variability in pipe outside diameter, the depth setting gauge will not be 100% accurate in achieving the required groove diameter. The actual groove diameter should be measured with calipers or a PI tape. Each turn of the adjusting nut will change the groove diameter by .100”.

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 & III*.

1. Flip the directional switch to FORWARD.

CAUTION The power drive must be run in the FORWARD position to use the stabilizer.

2. Actuate the hand pump until the pressure is approximately 500 psi. The upper groove roll should contact the pipe and the guards should be in the closed position.
3. Tighten stabilizer until roll contacts pipe. Continue to tighten stabilizer one to one and a half turns after contacting the workpiece (*Figure 17*).

WARNING Keep hands away from grooving rolls, stabilizer wheel and end of pipe.

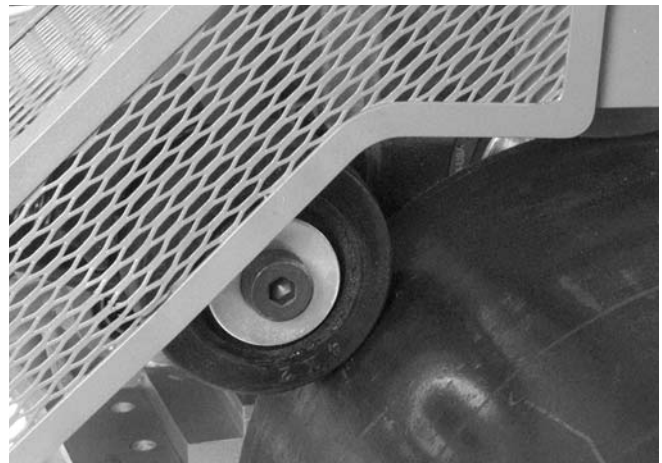


Figure 17 – Adjusting Stabilizer

4. Step on the foot switch and apply downward pressure on the hydraulic pump handle. Allow one full pipe rotation between quarter strokes of the pump handle. Use up to 5000 psi of pressure for thin wall pipe (Schedule 10) and 6000 psi for standard wall pipe or Schedule 40.

WARNING Do not reach inside or across pipe.

5. When the depth adjustment knob contacts the base, allow two complete pipe revolutions to even out groove depth.
6. Release foot switch and retract upper groove roll by placing the pump release lever in the RETURN position (toward operator).
7. Check groove diameter before proceeding with additional grooves.

NOTE! Groove diameter should be measured using a diameter tape. To increase groove depth, rotate the adjustment knob. Each turn will change the groove diameter by .100”.

8. Periodically check groove with a diameter tape or similar measuring device.

Roll Grooving Tips with 920

1. If pipe tends to “walk off” drive roll, check set-up. If correct, increase stabilizer pressure.
2. If flare is excessive, use less pressure and slope the pipe downward as it goes away from the machine.

Grooving Short Lengths of Pipe

WARNING Never groove pipe that is shorter than what is recommended. (*Refer to Charts A and B on Page 9*). Increases risk of fingers being caught in the grooving rolls. Use stabilizer and follow proper procedures.

Removing and Installing Groove Roll Sets

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, 40

14" - 16" Standard Wall (.375)

18" - 20" .250" Wall

22" - 24" .250" Wall

2" - 8" Copper Tubing (Types K, L, M, DWV)

▲ WARNING Make sure power drive is unplugged from power source before changing the roll sets.

Guards should not be removed to change groove rolls.

1. Loosen the chuck on the 300 Power Drive but do not remove. This will allow the drive shaft to spin freely so the stop pin can be engaged.
2. Back off the #1/4 - 20 set screw in the upper roll housing three turns (Figure 18) with the long T-handled hex wrench provided. DO NOT REMOVE SET SCREW.



Figure 18 – Loosening Set Screw In Upper Roll Housing

NOTE! It may be necessary to lower the upper roll housing slightly by actuating the pump handle. This will allow the guard to open enough to remove the upper roll shaft. It may also be necessary to retract the stabilizer.

3. Lightly tap the upper groove roll shaft from behind out of the upper roll housing until it clears the guards.
4. Remove the upper roll shaft and upper roll (Figure 19). Be sure the upper groove roll is supported. The groove upper rolls weigh up to 14 pounds and could drop suddenly.

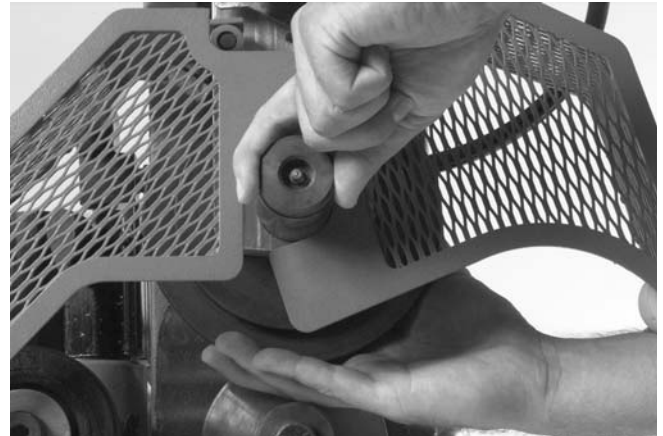


Figure 19 – Removing Upper Roll Shaft

5. Engage the locking pin in the drive shaft by manually spinning the drive shaft (Figure 20). Loosen the 5/8" draw bolt (15/16" hex) (Figure 21) and remove the drive roll.



Figure 20 – Engaging Lock Pin and Removing Drive Roll

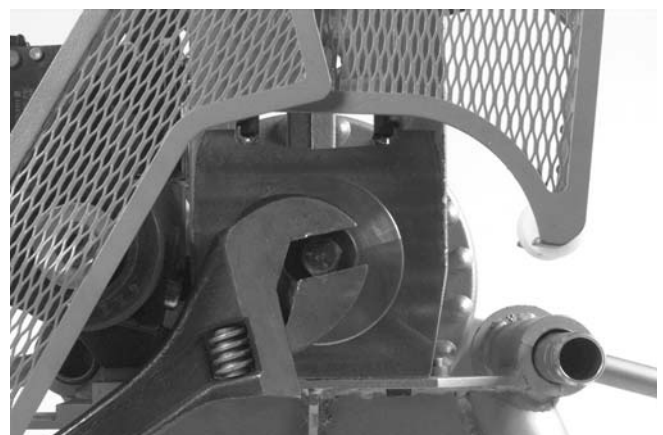


Figure 21 – Loosening The 5/8" Draw Bolt

6. Install the desired lower drive roll. Engage the locking pin in the drive shaft. Tighten the 5/8" draw bolt to approximately 150 ft. - lbs. (finger tight plus 3/4 turn).

CAUTION Failure to properly tighten bolt could result in damage to the groover.

7. Install the matching upper groove roll and shaft. Grease if necessary through the zerk (grease fitting) on the upper roll shaft. It may be necessary to lightly tap the upper roll shaft in place. Make sure to align the set screw hole on the upper roll housing with the groove on the upper roll shaft.

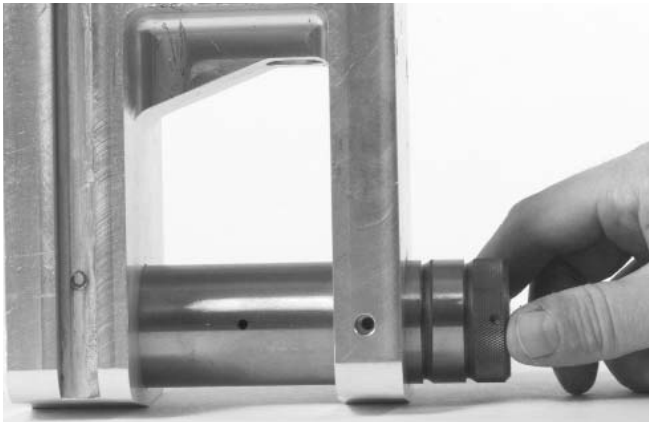


Figure 22 – Align Set Screw with Groove On Shaft

8. Tighten the #1/4 - 20 set screw in the upper roll housing until it contacts the upper roll shaft.
9. Tighten the chuck on the 300 Power Drive.

Removing Groover From 300 Power Drive

▲ WARNING Because of the heavy weight of the groover, two (2) people are needed to lift and remove the unit from the 300 Power Drive.

1. Using two people, remove the hitch pins holding the legs in the base sockets (Figure 23). Lift each side of the groover and remove the legs. Remove pump handle and set aside.

▲ WARNING While the roll groover base is on the power drive without the legs attached, it is front heavy and could tip over. Push back on the tool head.



Figure 23 – Removing Legs From Base

2. Loosen the chuck on the 300 Power Drive. Slide the groover off the support arms. Place groover on the ground being sure not to damage the guards.

Transporting the Groover

Use the No. 32 Transport Cart to move the 920 Groover.

▲ WARNING Because of heavy weight of the groover, two (2) people are needed to lift the unit.

1. To attach the transport cart to the groover, insert the cart into the socket located at the bottom of the base (Figure 24). Make sure the two alignment lugs on the cart are also inserted in the base.



Figure 24 – Mounting the Groover to the No. 32 Transport Cart

2. Insert pin in angled hole on transport cart.
3. Place the groover support legs into the base and insert the hitch pins (Figure 25). The support legs can be used as handles to wheel the groover to the work area.

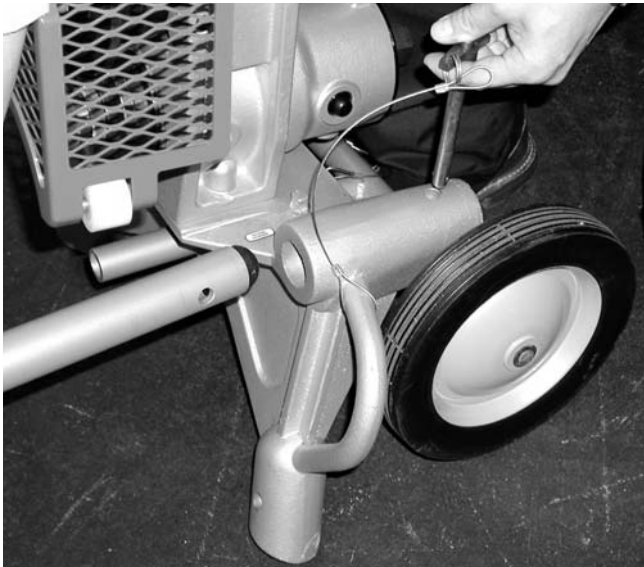


Figure 25 – Attaching the Support Legs

Accessories

▲ WARNING Only the following RIDGID products have been designed to function with the 920 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.	920 Accessories
10843	—	Roll Set for 2" - 6" Schedule 10, 40
96997	—	Roll Set for 4" - 6" Schedule 10, 40
10848	—	Roll Set for 8" - 12" Schedule 10, 40
10853	—	Roll Set for 14" - 16" Std. Wall
96987	—	Roll Set for 18" - 20" .250 Wall
96992	—	Roll Set for 22" - 24" .250 Wall
96982	—	Roll Set for 2" - 6" Copper Tubing (Types K,L,M,DMV)
76822	—	English Diameter Tape
76827	—	Metric Diameter Tape
96372	RJ-624	6" - 24" Dia. Pipe Stands (See Ridge Tool Catalog)

NOTE: A Roll Set Consists of a Groove Roll and a Drive Roll.

920 Roll Groover Maintenance Instructions

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

Hydraulic Fluid Level

Raise the upper groove roll housing by placing the pump release lever in the RETURN position.

Remove the pump from the lower roll housing.

Rotate the pump 180° so the filler cap is pointed up.

Raise the pump as much as possible.

Remove the filler cap and fill the reservoir with oil. Replace filler cap.

Put the pump back onto its position on the lower roll housing. Tighten all fasteners holding the pump in place.

Lubrication

Drive Shaft and Groove Roll Shaft Bearings

Lubricate with multi-purpose grease through fittings located on groove roll shaft and lower roll housing monthly or 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

Service and repair work on this Roll Groover must be performed only 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.

Table I. Standard Roll Groove Specifications¹

NOTE! All Dimensions are in Inches.

NOM. PIPE SIZE	PIPE DIAMETER		MIN. WALL THK.	GASKET SEAT +.015/-030	GROOVE WIDTH +.030/-015	GROOVE DIAMETER		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
14	14.00	+0.060 -0.025	.156	.938	.469	13.781	+0.000 -0.025	.110
16	16.00	+0.060 -0.025	.165	.938	.469	14.781	+0.000 -0.025	.110
18	18.00	+0.060 -0.030	.165	1.000	.469	17.781	+0.000 -0.025	.110
20	20.00	+0.060 -0.030	.188	1.000	.469	19.781	+0.000 -0.025	.110
22	22.00	+0.060 -0.030	.188	1.000	.500	21.656	+0.000 -0.025	.172
24	24.00	+0.060 -0.0230	.218	1.000	.500	23.656	+0.000 -0.025	.172

1. As per AWWA C606-87

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

NOTE! Fitting manufacturer's recommendations should be followed regarding Maximum Allowable Flare Diameter.

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.
2"	.065	.154	.065	.154	.154	.154
2 1/2"	.083	.203	.083	.203	.203	.276
3"	.083	.216	.083	.216	.216	.300
3 1/2"	.083	.226	.083	.226	.226	.318
4"	.083	.237	.083	.237	.237	.337
5"	.109	.258	.109	.258	.258	.258
6"	.109	.280	.109	.280	.280	.280
8"	.109	.322	.109	.322	.322	.322
10"	.134	.365	.134	.365	—	—
12"	.156	.406	.156	.406	—	—
14"	.156	.375	.156	.375	—	—
16"	.165	.375	.165	.375	—	—
18"	.165	.250	.165	.250	—	—
20"	.188	.250	.188	.250	—	—
22"	.188	.250	.188	.250	—	—
24"	.218	.250	.218	.250	—	—

Table III. Copper Roll Groove Specifications

NOTE! All Dimensions are in Inches.

1	2		3	4	5	6	7	8
Nom. Size Inches	Tubing Outside Diameter O.D.		A Gasket Seat	B Groove Width	C Groove Dia.	D Nominal ¹ Groove Depth	T Min. Allow. Wall Thick.	Max. Allow. Flare Dia.
	Basic	Tolerance	A ±.03	+ .03 - .00	+ .00 - .02			
2"	2.125	±0.002	0.610	0.300	2.029	0.048	0.064	2.220
2 1/2"	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
8"	8.125	+0.002 -0.004	0.610	0.300	7.959	0.088	.109	8.220

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

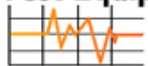
Table IV. Troubleshooting
Troubleshooting Table

PROBLEM	CAUSE	CORRECTION
Roll 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 will not track while grooving.	Pipe not level. Stabilizer wheel not engaging pipe. Groover not level.	Adjust stand to level pipe. Offset pipe 1/2 degree. Level Groover.
Pipe flared at grooved end.	Pipe too hard. Stabilizer too tight. Pressure too high.	Use other pipe. Adjust stabilizer. Lower pressure.
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.	Not using stabilizer. Pipe stands too close to end of pipe. Pipe end flattened or damaged. Hard spots in pipe material or weld seams harder than pipe. Grooving Roll hand feed rate too slow. Power Drive speed exceeds 38 RPM. Pipe support Stand Rollers not in correct location for pipe size.	Use stabilizer. Move pipe stand in 1/4 distance from end of pipe. Cut off damaged pipe end. Hand feed Grooving Roll into pipe faster. Hand feed Grooving Roll into pipe faster. Reduce speed to 38 RPM. Position Pipe Stand Rollers for pipe size being used.
Groover will not roll groove in pipe.	Maximum pipe wall thickness exceeded. Wrong rolls. Pipe material too hard. Adjustment screw not set. Power Drive does not supply required minimum torque.	Check pipe capacity chart. Install correct rolls. Replace pipe. Set depth. Use RIDGID No. 300, 36-RPM Power Drive.
Groover does not meet specification.	Maximum pipe diameter tolerance exceeded. Mismatched Grooving and Driving Rolls.	Use correct diameter pipe. Use correct set of rolls.
Pipe slips on Driving Roll.	Grooving Roll hand feed rate too slow. Driving Roll knurling plugged with metal or worn flat.	Hand feed Grooving Roll into pipe faster. Clean or replace Driving Roll.
Groover will not rotate pipe while grooving.	Power Drive does not supply minimum required torque. Chuck not closed on drive shaft flats.	Use RIDGID No. 300, 36 RPM Power Drive. Close chuck.
Pipe raises or tends to tip Groover over backwards.	Pipe Support Stand too close to Groover.	Move pipe stand 1/4 distance in from outer end of pipe.

Table IV. Troubleshooting (cont.)

PROBLEM	CAUSE	CORRECTION
<p>Pump not delivering oil, cylinder does not advance.</p>	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.
<p>Pump handle operates with “spongy” action.</p>	Air trapped in system.	Remove 920 from power drive. 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.
<p>Cylinder extends only partially.</p>	Pump reservoir is low on oil.	Fill and bleed system.
	Depth adjustment set incorrectly.	Follow depth adjustment instructions.
<p>Pipe rolls out of groove rolls.</p>	Pipe angle to machine is incorrect.	Refer to proper pipe level and angle setting instructions.
<p>Pipe end flares or forms bell shape when grooving.</p>	Operator is advancing grooving rolls too fast.	Slow down pumping action. Refer to proper operating instructions.
	Pipe not level.	Adjust stand to level pipe with groover.

**Test Equipment
Depot**



1-800-517-8431

99 Washington Street
Melrose, MA 02176
Phone 781-665-1400
Toll Free 1-800-517-8431



Visit us at www.TestEquipmentDepot.com



EMERSON

Commercial & Residential Solutions