RIDGID

Roll Groover Manual

916 Roll Groover

Table of Contents

***Original Instructions - English**

916 Roll Groover

For Models No. 300PD, 300 Compact, 535 or 1822-I Threading Machine

⚠ 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.

Safety Symbols

In this operator's manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and symbols.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE NOTICE indicates information that relates to the protection of property.

This symbol means read the operator's manual carefully before using the equipment. The operator's manual contains important information on the safe and proper operation of the equipment.

This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.

This symbol indicates the risk of machine tipping, causing striking or crushing injuries.

This symbol indicates the risk of fingers and hands being crushed between the groove rolls.

This symbol indicates that the pipe to be grooved should be a minimum of 8" (200 mm) long to reduce the risk of injury.

This symbol means do not reach inside of pipe being grooved to reduce the risk of entanglement, cutting, crushing and other injuries.

This symbol means always use a foot switch when using the machine to reduce the risk of injury.

General Power Tool Safety Warnings

⚠ WARNING

Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE!

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

Personal Safety

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- **Prevent unintentional starting. Ensure the switch is in the OFF-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energizing power tools that have the switch ON invites accidents.
- **Remove any adjusting key or wrench before turning the power tool ON.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- **Dress properly. Do not wear loose clothing or jewelry. Keep your hair and clothing away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
- **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

Power Tool Use and Care

- **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it is designed.
- **Do not use power tool if the switch does not turn it ON and OFF.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- **Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
- **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

Service

- **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

Specific Safety Information

⚠ WARNING

This section contains important safety information that is specific to this tool. Read these precautions carefully before using 918 Roll Groover to reduce the risk of electrical shock or other serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE!

Keep this manual with the machine for use by the operator.

Roll Groover Safety

- **Keep hands away from groove rolls.** Do not wear loose fitting gloves. Fingers can be crushed between groove rolls, groove roll and pipe.
- **Keep hands away from ends of pipe. Do not reach inside pipe. Do not touch groove while operating.** Burrs and sharp edges can catch and cut. Fingers can be crushed between groove rolls or between groove roll and pipe.
- **Only groove pipe 8" (200 mm) or longer.** Grooving shorter than specified pipe can result in entanglement and crushing injuries.
- **Do not wear loose clothing when operating machine. Keep sleeves and jackets buttoned. Do not reach across the machine or pipe.** Clothing can be caught by the pipe or machine resulting in entanglement.
- **Do not use this roll groover with a power drive or threading machine that does not have a foot switch. Never block a foot switch in the ON position so it does not control the machine.** A foot switch provides better control by letting you shut off the machine motor by removing your foot. If entanglement should occur and power is maintained to the motor, you will be pulled into the machine. This machine has high torque and can cause clothing to bind around your am or other body parts with enough force to crush or break bones or cause striking or other injuries.

- **Be sure that the roll groover, pipe, stands and machine are stable.** Be sure the roll groover is properly set up and secured. This will help prevent tipping of the equipment and pipe. **Properly support the pipe.** This will help to prevent the tipping of the pipe and equipment.
- **Properly prepare and handle pipe.** Burrs and sharp edges can catch and cut.
- **One person must control the work process, machine operation and foot switch.** Only the operator should be in the work area when the machine is running. This helps reduce the risk of injury.
- **Restrict access or barricade the area when workpiece extends beyond machine to provide a minimum of one meter (3 feet) clearance from the workpiece.** Restricting access or barricading the work area around the workpiece will reduce the risk of entanglement.
- **Only use power drives and threading machines that operate under 58 rpm.** Higher speed machines increase the risk of injury.
- **Always wear appropriate personal protective equipment while setting up and using the roll groover.** Appropriate personal protective equipment always includes eye protection and may include equipment such as tight fitting leather gloves and steel toed footwear.
- **Only use roll groover to groove pipe of recommended sizes and types according to these instructions.** Other uses or modifying the roll groover for other applications may increase the risk of injury.
- **Before operating roll groover, read and understand:**
  - This operator's manual
  - The operators' manual for Power Drive or Threading Machine
  - The fitting manufacturer's installation instructions
  - The instructions for any other material or equipment used with this tool

  Failure to follow all instructions and warnings may result in property damage and/or serious injury.

RIDGID Contact Information

If you have any question concerning this RIDGID® product:

– Contact your local RIDGID distributor.

– Visit RIDGID.com to find your local RIDGID contact point.

– Contact Ridge Tool Technical Service Department at rtctechservices@emerson.com, or in the U.S. and Canada call (800) 519-3456.

Description, Specifications, Standard Equipment and Accessories

Description

The RIDGID Model No. 916 Roll Groover forms standard roll grooves in steel, stainless steel and aluminum pipe. The No. 916 is a portable lightweight roll groover designed for 1¼″ - 6″ Schedule 10 pipe (1¼″ - 3″ Schedule 40 pipe); also can be adapted for 1″ Schedule 10, 1″ Schedule 40, 2″ - 6″ copper types K, L, M, and DWV with a roll change. The grooves are formed by a grooving roll fed into a drive roll to the specifications required for mechanical coupling systems. The only adjustment needed is for the depth of the groove.

The No. 916 Roll Groover is designed for specific use with the RIDGID No. 300 Power Drive, 300 Compact, 535M, 535A and 1822-I Threading Machines. Different 916 models are *required* for every power source or mounting operation.

NOTICE When properly used, the 916 Roll Groover makes grooves that are dimensionally within the specifications of Table I, which is based on AWWA C606-15. The only exception is 1¼" and 1½" grooves made with the standard 1¼" to 6" roll set, which will be wider (0.344") than the AWWA standard 0.281" groove width. If AWWA C606 specification groove widths are needed for 1¼" and 1½" grooves, use the AWWA roll sets mentioned in the *Optional Equipment* section.

⚠ CAUTION 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

- 1¼″ - 6″ Schedule 10
- 1¼″ - 3″ Schedule 40

(See Table II for Wall Thickness)

- 2″ - 6″ Copper Types (K,L,M, DWV)
- 1″ Schedule 10
- 1″ Schedule 40

Depth Adjustment .....Adjustment Screw

Actuation.....Integral Single Stroke Handle Mechanism

Power Drive Mounting .....300 Power Drive, 1822 -I Threading Machine, 535M, 535A Threading Machines, 300 Compact Threading Machine

Weight.....33 lbs.

Standard Equipment

Grooving Roll.....1¼″- 6″ (1¼″ - 3″ Schedule 40, 6″ Schedule 10)

Driving Roll.....1¼″ - 6″ (1¼″ - 3″ Schedule 40, 6″ Schedule 10)

Feed Handle.....Tubular Design

Drive Bar Adapter.....(When Required)

916 Roll Grooving Models

Catalog No.	Model No.	Description	Weight lb.	Weight kg.
45007	916	Roll Groover for 300 Power Drive	33	15,0
46852	916	Roll Groover for Copper Tubing for 300 P.D.	34	15,5
60382	916	Roll Groover for 535	33	15,0
48307	916	Roll Groover for 1822	33	15,0
48307	916	Roll Groover for 300 Compact Mounted on 100, 150 and 200 Stands	33	15,0
45007	916	Roll Groover for 300 Compact Mounted on 250 Stand (Also requires 67662 Adapter Bracket)	33	15,0
		Accessories		
45347	—	Roll Set for 1″ Schedule 10, 40 (Optional)	6	2,6
45352	—	Roll Set for Copper (Optional)	6	2,6
69667	—	Roll Set for 1¼″ - 1½″ AWWA (Optional)	6	2,6
69692	—	Roll Set for 2″ - 6″ AWWA (Optional)	6	2,6
67662	—	Adapter Bracket for 300 Compact	30	13,6
76822	—	English Diameter Tape	0.3	0,1
76827	—	Metric Diameter Tape	0.3	0,1

Roll Groover Assembly Instructions

⚠ WARNING

The 916 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**
- **535 Automatic Threading Machine**
- **300 Compact 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 on No. 300 Power Drive

1. Remove carriage or other attachments from the 300 Power Drive.
2. Fully open front chuck of power drive.
3. Position 916 on far side carriage rail and lower onto near side rail. *(Figure 1)*
4. Align the notched flats of drive shaft with the jaws on the No. 300 Power Drive chuck.
5. Tighten front chuck securely on drive shaft.

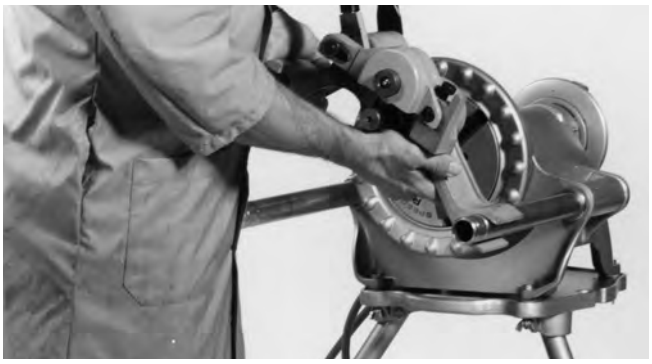


Figure 1 – Mounting on No. 300 Power Drive

Installing Drive Bar Adapter For 1822-I, 535 or 300 Compact Threading Machines

NOTE! Drive bar adapter must be installed on the 916 Roll Groover when using the 535A, 535M, 1822I or the 300 Compact Threading Machines as a power source.

Installing Drive Bar Adapter

1. Install drive bar adapter on roll groover drive shaft. Align set screws with flats on drive shaft and tighten screws.

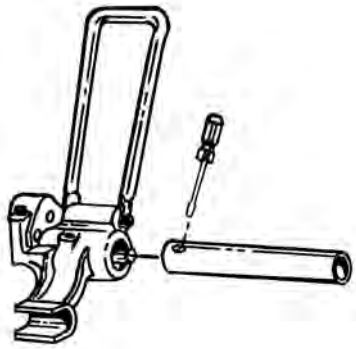


Figure 2 – Tighten Set Screws

Installing on 535A, 535M, 1822-I or 300 Compact Threading Machines Mounted on 100, 150 or 200 Stands

NOTE! 535 Threading Machines use the Model 916 Catalog No. 60382. Attached to the groover is a mounting plate that properly positions the unit on the rails of the 535.

1822I and the 300 Compact Threading Machines use the Model 916 Catalog No. 48307. The lower roll housing is specifically designed for mounting of the rails of these 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. Fully **OPEN** front chuck.
3. Place 916 on far side of carriage rail, lower onto front rail *(Figure 3)*.
4. Position base so that drive bar feeds into open chuck and tighten front chuck onto drive bar.

⚠ WARNING Drive bar must be centered in front jaws.

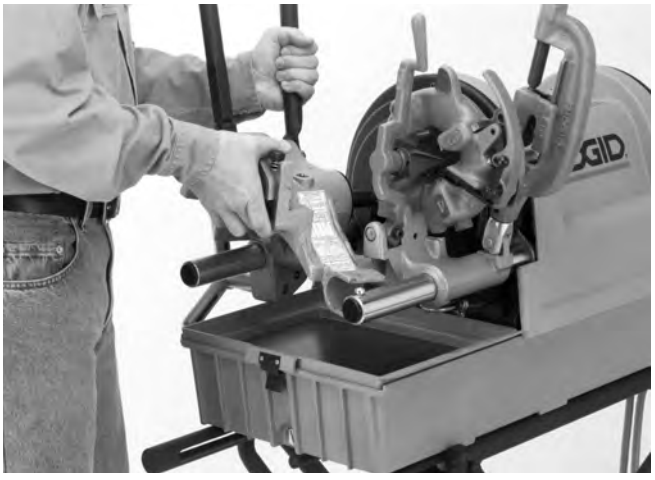


Figure 3 – Mounting on No. 1822-I Threading Machine (Same applies to Models 300 Compact and 535 Threading Machines)

Installing on 1822-I Threading Machine Mounted on 1406 Stand

NOTE! 1822I Threading Machines use the Model 916 Catalog No. 48307.

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

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

2. Front chuck must be open. Position 916 so that the base slides onto the support rails and drive bar feeds into open chuck.

⚠ WARNING Drive bar must be centered in front jaws.

3. Tighten chuck jaws securely onto drive bar.

Installing on 300 Compact Threading Machine with the 250 Stand.

NOTE! 300 Compact Threading Machines use the Model 916 Catalog No. 45007 and Adapter Bracket No. 67662 when mounted on a 250 Stand.

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 the adapter bracket onto the rails of the 300 Compact and lock into place using the attached pin *(Figure 4)*.

⚠ WARNING Adapter bracket must be used with the 250 Stand to provide clearance for the pipe. Failure to use this bracket will result in the pipe hitting the stand.

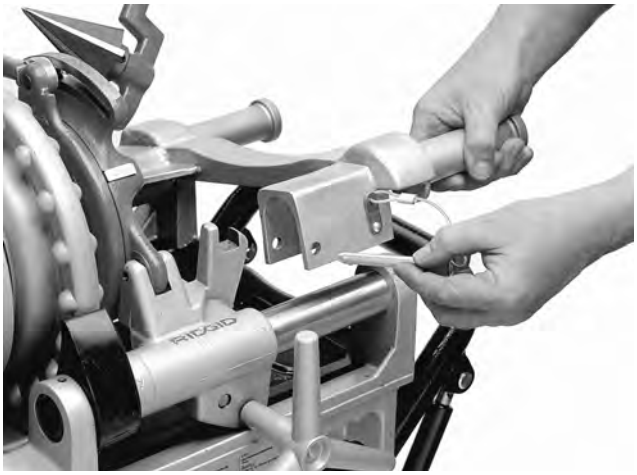


Figure 4 – Attaching Adapter Bracket to 300 Compact Threading Machine

3. Place the 916 on the arms of the adapter.
4. Position base so that the drive bar feeds into the open chuck.

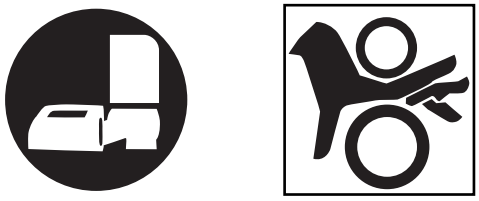
5. Tighten chuck jaws securely into drive bar.

⚠ WARNING Drive bar must be centered in front chuck jaws. Drive bar must be securely held in chuck.

NOTE! Before transporting the 300 Compact using the No. 250 Stand, the 916 Roll Groover and 916 Roll Groover Adapter Bracket MUST be disassembled and removed from the machine. If left intact, these items will not allow the No. 250 Stand to lock in the folded position.

Pre-Operation Inspection

⚠ WARNING



Do not use this roll groover with a power drive/-threading machine that does not have a foot switch

Before each use, inspect your roll groover and correct any problems to reduce the risk of serious injury from crushing injuries and other causes and prevent roll groover damage.

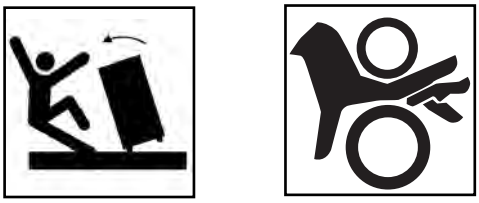
1. If installed on a machine, place the machine switch in the OFF position and unplug.
2. Clean any oil, grease or dirt from the roll groover, including the pump handle. This aids inspection and helps prevent the machine or control from slipping from your grip.
3. Inspect the roll groover for the following:
   - Proper assembly, maintenance and completeness.
   - Broken, worn, missing, misaligned or binding parts.
   - Presence and readability of the warning label *(see Figure 5)*.
   - Condition of the groove roll and drive roll. If the drive roll knurls are dirty, clean with a wire brush. Dirty or worn knurls can cause pipe slippage and tracking issues during grooving.
   - Any other condition which may prevent safe and normal operation.
   - If any issues are found, do not use the roll groover until the issues have been repaired.

Figure 5 – Warning Label

4. Inspect and maintain any other equipment being used per its instructions to make sure it is functioning properly. Confirm that the Power Drive or Threading Machine has a foot switch in good working condition.

Machine and Work Area Set-Up

⚠ WARNING



Set up the roll groover and the work area according to these procedures to reduce the risk of injury from machine tipping, crushing and other causes, and to help prevent machine damage.

Secure roll groover to power drive or threading machine. Properly support pipe. This will reduce the risk of falling pipe, tipping and serious injury.

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. Use two pipe stands to groove pipe over 36″.

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

5. Set up the Power Drive or Threading Machine per its instructions in the flat level area. Confirm that the REV/O-OFF/FOR switch is in the OFF position.
6. Position the foot switch so that the operator can safely control the machine, roll groover and workpiece. It should allow the operator to do the following:
   - Stand with left hand on feed handle.
   - Use the foot switch with his left foot.
   - Have convenient access to the groover without reaching across the machine.

   Machine is designed for one person operation.
7. Check the unit to ensure 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 ensure 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.
8. Check the groove and drive rolls to ensure 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.

Operation

⚠ WARNING

Keep hands away from grooving rolls. Do not wear loose fitting gloves. Fingers can be crushed between groove rolls, groove roll and pipe.

Keep hands away from ends of pipe. Do not reach inside pipe. Do not touch groove while operating. Burrs and sharp edges can catch and cut. Fingers can be crushed between groove rolls or between groove rolls and pipe.

Only groove pipe 8" (200 mm) or longer. Grooving shorter than specified pipe can result in entanglement and crushing injuries.

Do not use this roll groover with a power drive or threading machine that does not have a foot switch. Never block a foot switch in the ON position so it does not control the machine. A foot switch provides better control by letting you shut off the machine motor by removing your foot. If entanglement should occur and power is maintained to the motor, you will be pulled into the machine. This machine has high torque and can cause clothing to bind around your am or other body parts with enough force to crush or break bones or cause striking or other injuries.

Be sure that the roll groover, pipe, stands and machine are stable. Be sure the roll groover is properly set up and secured. This will help prevent tipping of the equipment and pipe. Properly support the pipe. This will help to prevent the tipping of the pipe and equipment.

Always wear eye protection. Wear steel toe footwear to help protect from tipping tools and falling pipe.

Set up and operate the roll groover according to these procedures to reduce the risk of injury from machine tipping, entanglement, crushing, striking and other causes, and to help prevent equipment damage.

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 III.*

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
1 1/4	8	36	4 1/2	8	32
1 1/2	8	36	5	8	32
2	8	36	6 O.D.	10	30
2 1/2	8	36	6	10	28
3	8	36			
3 1/2	8	36			

Chart A – Minimum/Maximum Pipe Length

⚠ WARNING Grooving pipe below 8″ in length increases the risk of fingers being crushed in the grooving rolls.

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 3/4 of pipe length from roll groover.

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

2. Lift up on feed handle and place pipe on drive roll and pipe support.
3. Square pipe and pipe support to roll groover making sure pipe is flush against drive roll flange. *(Figure 6)*
4. Level pipe by adjusting pipe stand (Model 300PD, 535) *(Figure 7).* See tip for 1822 and 300 Compact grooving on *page 11.*
5. Slightly offset (approximately 1/2°) pipe and pipe stand toward operator when the power source operates in REVERSE mode *(Figure 8A)*.

NOTE! If power source runs in FORWARD offset pipe 1/2° away from operator. *(Figure 8B)*

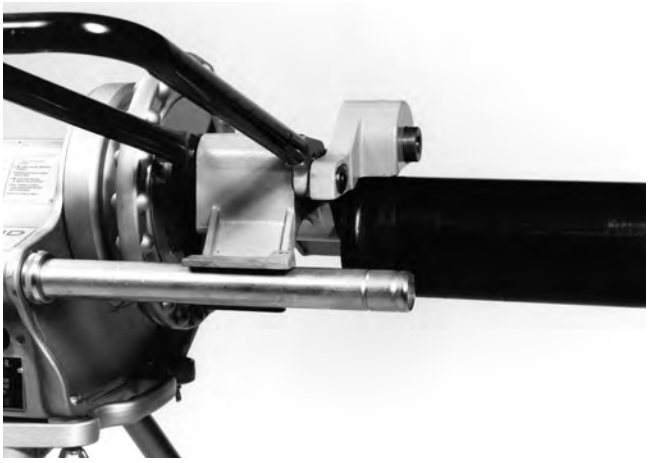


Figure 6 – Square Pipe & Pipe Support

Figure 7 – Leveling Pipe

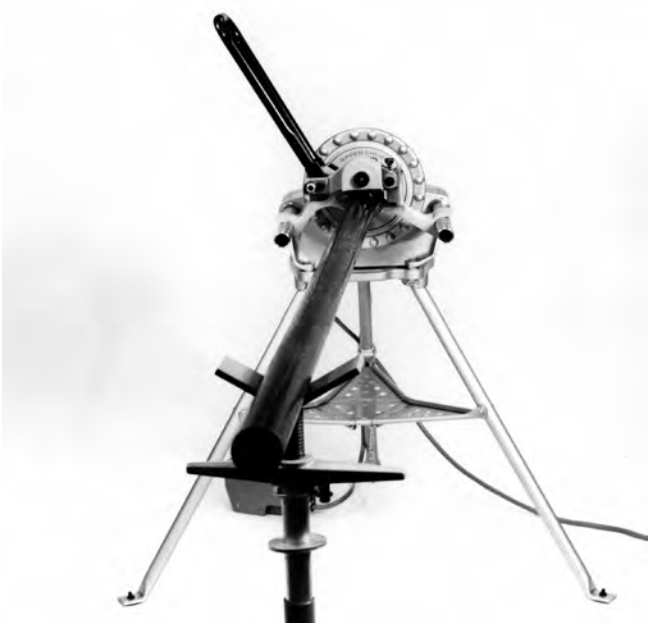


Figure 8A – Operating Machine in REVERSE (REV) Position

Figure 8B – Operating Machine in FORWARD (FOR) Position

Adjusting Roll Groove Depth

NOTE! To obtain the proper groove diameter, a test groove should be performed when setting up or changing pipe sizes.

1. Lift feed handle upward. *(Figure 9)*

Figure 9 – Feed Handle in UP Position

2. Fully loosen depth adjustment screw. *(Figure 10)*

Figure 10 – Loosen Depth Adjustment Screw

3. Tighten down depth adjustment screw the number of turns indicated in *Chart B. (Figure 11)*

NOTE! *Chart B* indicates adjustment needed when using the 916's standard roll set. See *Chart D* on *Page 12* for special note on 1¼, 1½ AWWA grooving and 1″ pipe grooving. *Chart C* is used when grooving copper.

Figure 11 – Tighten Depth Adjustment Screw

Pipe Diameter Reference		
Pipe Diameter	**Schedule 10 Minimum No. of Turns**	**Schedule 40 Minimum No. of Turns**
6	2 1/2	N/A
4	2 3/4	N/A
3 1/2	2 3/4	N/A
3	2 1/2	3/4
2 1/2	2 1/2	1
2	2 1/2	1 1/2
1 1/2	2 1/2	1 3/4
1 1/4	2 3/4	1 3/4

Chart B – Pipe Diameter and Turns

NOTE! Additional adjustment may be necessary to achieve proper depth. Chart above is for reference only.

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.*

1. Flip the directional switch from OFF and step on power drive or threading machine foot switch while applying slight downward pressure on the feed handle.

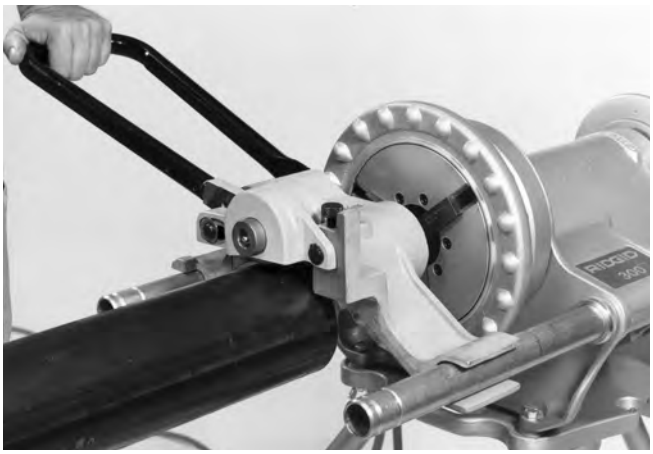


Figure 12 – Forming the Roll Groove

⚠ 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 pipe with right hand, away from operator when running the power drive or machine in FORWARD mode, toward operator when running the power drive or machine in REVERSE mode.

NOTE! If power source runs in FOR position, push the pipe *away* from operator. If power source runs in REV, pull the pipe *towards* operator.

3. With pipe tracking properly and backside of pipe against drive roll flange, step on foot switch and continue downward pressure until feed handle rests on the base of 916 Roll Groover.

NOTE! Do not overfeed upper groove roll. Maintain constant downward pressure, pausing to allow one pipe revolution before increasing downward pressure.

4. After feed handle comes to rest on base of 916 Roll Groover allow two (2) complete pipe revolutions to even out groove depth.

5. Release foot switch and slip directional switch to OFF.

6. Pull feed handle upward and check groove diameter *(See Table III)*.

NOTE! Two measurements 90 degrees apart should equal the "C" dimension or measure with a PI tape.

7. To decrease groove diameter, tighten depth adjustment screw. To increase groove diameter, loosen depth adjustment screw.

NOTE! Once groove depth is determined, additional grooves will have the same depth.

8. Periodically check groove depth with a "pi" or diameter tape. Coupling should fully seat in the groove without binding or excessive play.

NOTE! Pipe exceeding Fitting Manufacturer's "Maximum Flare Specifications" may prevent assembly of the couplings pad to pad, allowing possible pipe separation that could result in property damage. Also, joint leakage may result due to excessive gasket distortion/damage. Check to Fitting Manufacturer's specifications.

Model No. 916 Roll Grooving Tips

1. If pipe tends to *walk off* drive roll, increase offset dimension.

2. If drive roll flange shaves pipe end, decrease offset dimensions.

3. If pipe end flare is excessive, lower pipe end to level with roll groover.

4. If pipe wobbles and/or *walks off* drive roll, raise pipe end to level with groover.

5. Short lengths of pipe (under three feet) may require slight pressure to maintain the 1/2 degree offset dimension.

NOTE! When grooving pipe longer than 36″ on Models 300 Compact or 1822-I Threading Machines that are mounted on folding stands, adjust the pipe to the same angle of the 916's drive shaft *(Figure 13)*.

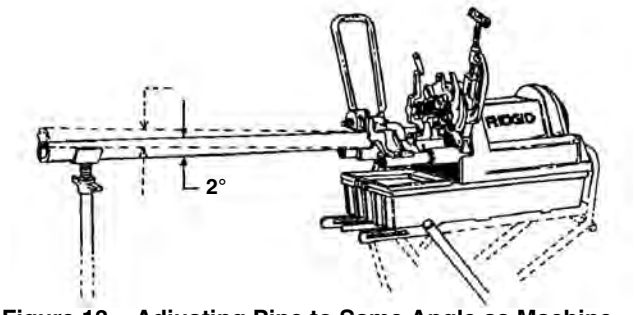


Figure 13 – Adjusting Pipe to Same Angle as Machine

Grooving Short Lengths of Pipe

1. When running machine in forward direction, exert pressure on pipe away from operator.
2. When running machine in reverse, exert pressure on pipe toward operator.

⚠ WARNING Do not attempt to groove any pieces of pipe shorter than 8″. Increases risk of fingers being crushed in the grooving rolls. Do not reach inside pipe end.

Roll Grooving Copper with No. 916

Tubing Preparation

1. Copper tubing ends must be cut square.
2. Tubing out-of-roundness must not exceed the total O.D. tolerance listed in *Table IV. Copper Roll Groove Specifications*

NOTE! Determine out-of-roundness by measuring maximum and minimum O.D. at 90 degrees apart. Make sure that copper drive and groove rolls are installed before attempting to roll groove copper.

Forming Roll Groove

1. Set adjustment screw for depth required. *(See Chart C below.)*

	Number of Turns			
Diameter	K	L	M	DWV
2″	4	4 1/4	4 1/2	—
2 1/2″	3 1/2	4	4 1/4	—
3″	3 1/4	3 1/2	4 1/4	4 3/4
4″	2 1/2	3 1/4	3 1/2	4 1/2
5″	1 3/4	2 3/4	3 1/4	4 1/4
6″	1 1/4	2 1/2	3	4 1/4

Chart C – Depth Adjustment Chart for Copper Pipe

Depth Adjustment Chart for Copper Roll Set

NOTE! Additional adjustment may be necessary to achieve proper groove diameter. Chart above is for reference only

2. Square copper tubing and pipe stand to roll groover, making sure the workpiece is flush against drive roll flange.
3. Level copper tubing by adjusting pipe stand. Copper tubing and machine should both be leveled.
4. Follow instruction in section *“Forming the Roll Groove”* on *page 11.*

Roll Grooving Smaller Diameter Steel Pipe

1. Adjust feed screw for depth required. *(See Chart D below.)*

Diameter	Schedule 10 Minimum No. of Turns	Schedule 40 Minimum No. of Turns
1″	5	4 1/4
1 1/4″	3 1/2	3
1 1/2″	3 3/4	3 1/2

Chart D

NOTE! Additional adjustment may be necessary to achieve proper depth. Chart above is for reference only.

2. Follow instructions in section *“Forming the Roll Groove”* on *page 11.*

NOTE! 1 1/4″ and 1 1/2″ in *Chart D* refers to the use of *optional AWWA roll set. See Chart B for adjustment* when using *standard* roll set.

Storage

⚠ WARNING The 916 Roll Groover 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 groovers. This machine can cause serious injury in the hands of untrained users.

Maintenance Instructions

⚠ WARNING

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

Maintain the 916 Roll Groover according to these procedures to reduce the risk of injury.

Cleaning

Use a soft damp cloth to clean the roll groover.

Clean the drive roll knurls with a wire brush before use and as necessary during operation. When grooving stainless steel pipe, thoroughly clean the entire roll set with a stainless steel wire brush.

Lubrication

Drive Shaft and Groove Roll Shaft Bearings - Lubricate with multi-purpose grease through fittings located on groove roll shaft and lower roll housing after every roll change.

Changing Roll Sets

Removing and Installing Groove Roll

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

2″ - 6″ Copper Tubing Types (K, L, M, DWV)

1″ Schedule 10 & 40

1¼″ - 6″ Schedule 10 (1¼″ - 3″ Schedule 40)

2″ - 3″ Schedule 40, 2″ - 6″ Schedule 10 AWWA

1¼″ - 1½″ AWWA 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.

1. Remove E-Ring that holds pivot pin. *(Figure 14)*

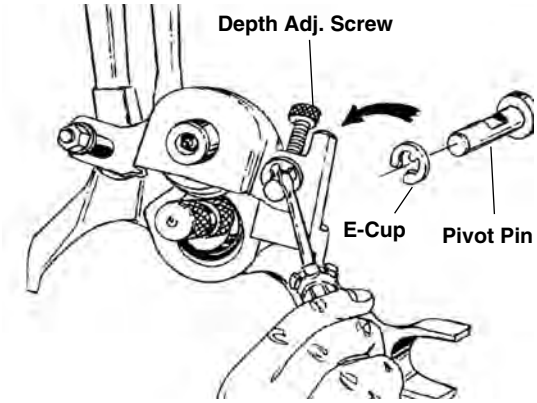


Figure 14 – Remove E-Ring

2. Push pivot pin back until stops.
3. Loosen depth adjustment screw.
4. Remove pivot pin.
5. Raise up groove roll housing. *(Figure 15)*

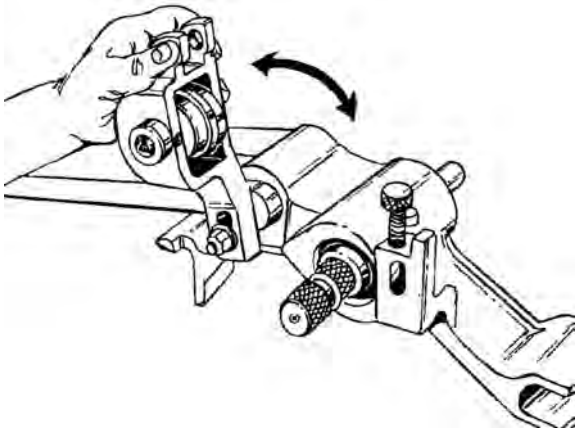


Figure 15 – Raise Up Roll Housing

6. Loosen set screw that holds groove roll shaft. *(Figure 16)*

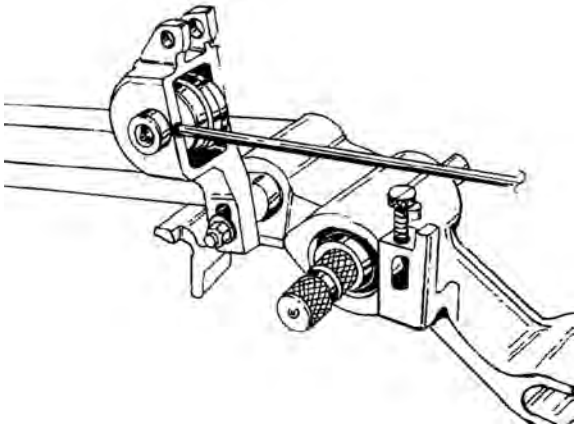


Figure 16 – Loosen Set Screw

7. Remove groove-roll shaft and groove roll.
8. Install proper groove roll in groove roll housing. Section of the groove roll that forms the groove goes towards the main housing.
9. When tightening set screw make sure it mates with drill point in shaft.
10. Re-install roll housing by reversing steps 5-1.

Removing or Installing Drive Roll

1. Remove 4 bolts that hold rear bearing retaining plate and remove plate. *(Figure 17)*

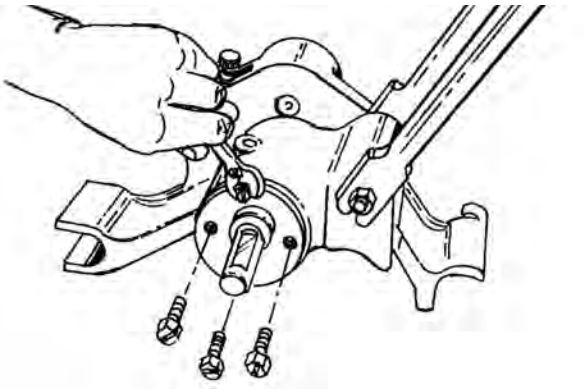


Figure 17 – Remove Retaining Plate

2. With mallet, lightly tap on front of drive shaft to release shaft and rear bearing from unit.
3. Pull drive shaft and bearing from unit, and replace with proper shaft.

NOTE! Replacement drive shaft come equipped with rear bearing.

Service And Repair

⚠ WARNING

Improper service or repair can make the machine unsafe to operate.

The *"Maintenance Instructions"* will take care of most of the service needs of this machine. Any problems not addressed by this section should only be handled by a RIDGID Authorized Independent Service Center. Use only RIDGID service parts.

For information on your nearest RIDGID Authorized Independent Service Center or any service or repair questions, see *Contact Information* section in this manual.

Optional Equipment

⚠ WARNING

To reduce the risk of serious injury, only use accessories specifically designed and recommended for use with the RIDGID 916 Roll Groover, such as those listed below.

Catalog No.	Model No.	916 Accessories
45347	—	Roll Set for 1″ Schedule 10, 40 (Optional)
45352	—	Roll Set for Copper (Optional)
69667	—	Roll Set for 1¼″ - 1½″ AWWA (Optional)
69692	—	Roll Set for 2″ - 6″ AWWA (Optional)
67662	—	Adapter Bracket for 300 Compact
76822	—	English Diameter Tape
76827	—	Metric Diameter Tape

For a complete listing of RIDGID equipment available for these tools, see the Ridge Tool Catalog online at RIDGID.com or see *Contact Information*.

Disposal

Parts of the 916 Roll Groover contain valuable materials and can be recycled. There are companies that specialize in recycling that may be found locally. Dispose of the components in compliance with all applicable regulations. Contact your local waste management authority for more information.

Table I. Troubleshooting

PROBLEM	CAUSE	CORRECTION
Roll Groove too narrow or too wide.	Incorrect size of Grooving and Driving Rolls.	Install correct size of Grooving and Driving Rolls.
	Mismatched Grooving and Driving Rolls.	Match Grooving and Driving Rolls.
	Grooving Roll and/or Driving Roll worn.	Replace worn Roll.
Rolled Groove not perpendicular to pipe axis.	Pipe length not straight.	Use straight pipe.
	Pipe end not square with pipe axis.	Cut pipe end square.
Pipe will not track while grooving.	Pipe not level.	Adjust stand to level pipe.
	Pipe axis not offset 1/2 degree from Driving Roll axis.	Offset pipe 1/2 degree.
	Groover not level.	Level Groover.
Pipe flared at grooved end.	Pipe not level.	Adjust stand to level pipe.
Pipe drifts back and forth on Driving Roll axis while grooving.	Pipe length not straight.	Use straight pipe.
	Pipe end not square with pipe axis.	Cut pipe end square.
Pipe rocks from side to side on Driving Roll while grooving.	Pipe stands too close to end of pipe.	Move pipe stand in 1/4 distance from end of pipe.
	Pipe end flattened or damaged.	Cut off damaged pipe end.
	Hard spots in pipe material or weld seams harder than pipe.	Hand feed Grooving Roll into pipe faster.
	Grooving Roll hand feed rate too slow.	Hand feed Grooving Roll into pipe faster.
	Power Drive speed exceeds 36 RPM.	Reduce speed to 36 RPM.
	Pipe supports Stand Rollers not in correct location for pipe size.	Position Pipe Stand Rollers for pipe size being used.
Groover will not roll groove in pipe.	Maximum pipe wall thickness exceeded.	Check pipe capacity chart.
	Wrong rolls.	Install correct rolls.
	Pipe material too hard.	Replace pipe.
	Adjustment screw not set.	Set depth.
	Power Drive does not supply required minimum torque.	Use RIDGID No. 300, 36-RPM Power Drive.
Groover will not roll groove to required diameter.	Maximum pipe diameter tolerance exceeded.	Use correct diameter pipe.
	Mismatched Grooving and Driving Rolls.	Match Grooving and Driving Rolls.
	Depth adjustment screw not set correctly.	Adjust depth setting.
Pipe slips on Driving Roll.	Grooving Roll hand feed rate too slow.	Hand feed Grooving Roll into pipe faster.
	Driving Roll knurling plugged with metal or worn flat.	Clean or replace Driving Roll.
Groover will not rotate pipe while grooving.	Power Drive does not supply minimum required torque.	Use RIDGID No. 300, 36 RPM Power Drive, 535 or 1822-I Machine.
	Chuck not closed on drive shaft flats.	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 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	.218
2½″	.083	.203	.083	.188	.203	.276
3″	.083	.216	.083	.188	.216	.216
3½″	.083	.120	.083	.188	.226	.226
4″	.083	.120	.083	.188	.237	.237
5″	.109	.134	.109	.188	.258	.258
6″	.109	.134	.109	.188	.280	.280

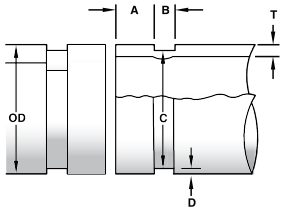


Table III. Standard Roll Groove Specifications(1)

NOTE: All Dimensions are in Inches.

NOM. PIPE SIZE	PIPE DIAMETER		T MIN. WALL THK.	A GASKET SEAT +.015/-.030	B GROOVE WIDTH +.030/-.015	C GROOVE DIAMETER		D NOM. GROOVE DEPTH (2)
	O.D.	TOL.				O.D.	TOL.	
1	1.315	+.013 -.013	0.065	0.625	0.281	1.190	+.000	0.063
1¼	1.660	+.016 -.016	0.065	0.625	0.281(3)	1.535	+.000 -.015	0.063
1½	1.900	+.019 -.019	0.065	0.625	0.281(3)	1.535	+.000 -.015	0.063
2	2.375	+.024 -.016	0.065	0.625	0.344	2.250	+.000 -.015	0.063
2½	2.875	+.029 -.016	0.083	0.625	0.344	2.720	+.000 -.015	0.078
3	3.50	+.035 -.031	0.083	0.625	0.344	3.344	+.000 -.015	0.078
3½	4.00	+.040 -.031	0.083	0.625	0.344	3.834	+.000 -.020	0.083
4	4.50	+.045 .031	0.083	0.625	0.344	4.334	+.000 -.015	0.083
5	5.563	+.056 .031	0.109	0.625	0.344	5.395	+.000 -.015	0.084
6	6.625	+.063 -.031	0.109	0.625	0.344	6.455	+.000 -.015	0.085
8	8.625	+.063 -.031	0.109	0.750	0.469	8.441	+.000 -.020	0.092
10	10.75	+.063 -.031	0.134	0.750	0.469	10.562	+.000 -.025	0.094
12	12.75	+.063 -.031	0.156	0.750	0.469	12.531	+.000 -.025	0.110

(1) As per AWWA C606-15
(2) Nominal Groove Depth is provided as a reference dimension only. Do not use groove depth to determine acceptability of a groove.
(3) Standard 1¼" to 6" 916 roll sets produce a groove width of 0.344" on 1¼" and 1½" pipe. See NOTICE in Description/Specification section.
NOTE: Follow fitting manufacturer's recommendations regarding maximum allowable flare dimension.

Table IV. 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 A ±.03	B Groove Width +.03 –.00	C Groove Dia. +.00 –.02	D Groove Depth Ref.	T Min. Allow. Wall Thick.	Max. Allow. Flare Dia.
	Basic	Tolerance						
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	0.064	2.720
3″	3.125	±0.002	0.610	0.300	3.025	0.050	DWV	3.220
4″	4.125	±0.002	0.610	0.300	4.019	0.053	DWV	4.220
5″	5.125	±0.002	0.610	0.300	5.019	0.053	DWV	5.220
6″	6.125	±0.002	0.610	0.300	5.999	0.063	DWV	6.220