

GRUVLOK®

Model 3006/3006C Roll Groover Operating Instructions



IMPORTANT SAFETY NOTICE

Carefully read and understand instructions before assembling and operating the Groover. Become thoroughly familiar with the Groover operation, usage and possible hazards specific to the Groover.



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SECTION I - SAFETY INSTRUCTIONS



CAUTION - The Gruvlok® Model 3006/3006C Roll Groovers are to be used only for roll grooving of pipe. These operating instructions provide important information for the safe operation of the Groover to protect the operator from possible, serious injury. The Groover is designed for safe, reliable operation. However, unforeseen circumstances, impossible to predict, could result in an accident. Following the information in these operating instructions will permit safe operation of the Groover.

A. GENERAL

1. Carefully read and understand these operating instructions before assembling and operating the Groover.
2. Read and follow the safety labels on the Groover.
3. Understand the function and the location of all power and grooving controls before using the Groover.

B. OPERATOR SAFETY

- 1) Do not wear loose clothing, loose sleeve cuffs, loose fitting gloves, or jewelry that could get caught in moving parts.
2. Wear safety glasses and safety shoes.
3. Tie-up or cover long hair.
4. Wear ear protection if using the Groover in a high noise area or for prolonged periods of grooving.
5. Do not operate the Groover if you are tired from fatigue or medication.
6. Do not allow horseplay around the Groover.

C. GROOVER SET-UP

1. Provide a safe work area. Keep the work area well lighted and maintain a clear, uncluttered space for operation of the Groover.
2. Do not use the Groover in wet or damp locations. The floor area around the Groover must be dry and free of slippery materials.
3. Set-up the Groover on firm, level ground. Do not locate the Groover on sloped or irregular ground conditions.
4. Remove all tools, wrenches, etc., from the Groover and power drive base before applying power to the Groover.
5. Do not attempt to lift the Groover by yourself.
6. Use the Model 3006/3006C Groover only with a Ridgid® 300 Power Drive with 38 RPM operation.

7. The Model 3006/3006C Groovers must be properly mounted on the Ridgid® 300 support arms and the Groover drive shaft firmly tightened into the Ridgid® 300 chuck jaws.
8. Unplug the Ridgid® 300 drive power cord prior to adjusting, servicing or changing Groover parts.

D. GROOVER OPERATION

1. All safety guards must be in place. Never operate the Groover with the guards removed.
2. Do not operate the Groover without a foot switch. A foot switch is required for safe operation of the Groover.
3. Operate the Groover only from the pump side of the Groover.
4. Keep hands away from guide and grooving rolls. The Groover is designed for hands clear grooving.
5. Maintain balanced footing keeping the foot switch within comfortable reach. Do not reach across the Groover or pipe. Keep hands and clothing away from all moving parts.
6. Do not place excessive force on the hydraulic pump handle. Follow grooving instructions for safe Groover operation.
7. Provide support for piping spool pieces through the use of an appropriate pipe stand properly fastened to the floor or ground.
8. Use the Groover only for roll grooving of the size and wall thickness pipe for which it was designed.
9. Do not operate the Groover if any part of the Groover is damaged or broken.
10. Do not attempt to groove pipe shorter than 5" in length.
11. Keep all visitors and bystanders at a safe distance from the Groover, pipe and power cords.

E. ELECTRICAL SAFETY

1. The Ridgid® 300 Power Drive should be connected to an integrally grounded electrical system protected by a Ground Fault Current Interrupter (GFCI).
2. Never use worn or damaged cords.

SECTION II - GROOVER DESCRIPTION

A. 3006 STANDARD EQUIPMENT – Roll Groover complete with Adjustable Support Leg Assembly and roller sets for grooving 2"-6" and 8"-12" steel pipe, Steel Guide Roll Assembly, hydraulic pump with pressure gauge, and two depth adjustment gauges. This unit is designed for direct attachment to your Ridgid® 300 Power Drive. Complete with comprehensive setup, operating and troubleshooting instructions. Shipped in a reusable wooden storage crate. Approximate shipping weight: 225 pounds.
Required Ridgid® 300 Power Drive not included.

A. 3006C STANDARD EQUIPMENT – Roll Groover complete with Adjustable Support Leg Assembly and Copper Method roller set for grooving 2"-6" copper tube, Copper Guide Roll Assembly, hydraulic pump with pressure gauge, and 2"-6" Universal Diameter Gauge. This unit is designed for direct attachment to your Ridgid® 300 Power Drive. Complete with comprehensive setup, operating and troubleshooting instructions. Shipped in a reusable wooden storage crate. Approximate shipping weight: 215 pounds.
Required Ridgid® 300 Power drive not included.

B. 3006 OPTIONAL EQUIPMENT –

Copper Option – Consisting of 2"-6" Copper Method top and bottom rollers, Copper Guide Roll Assembly, and 2"-6" Universal Diameter Gauge.
2"-6" Universal Diameter Gauge

B. 3006C OPTIONAL EQUIPMENT –

Steel Option – Consisting of 2"-6" and 8"-12" roller sets, Steel Guide Roll Assembly, and two depth adjustment gauges.

Note: See Section XI for further details of parts for the 3006 and 3006C Roll Groover.

C. 3006/3006C GROOVER CAPABILITY

GROOVER CAPABILITY								
Pipe Material	Pipe Size/Wall Thickness (Schedule) ^{1,2}							
	2	2½	3	4	6	8	10	12
Steel	Schedule 40						.188"	.219"
Stainless Steel	Schedule 40S					n/a	n/a	n/a
Copper	K, L, M & DWV					n/a	n/a	n/a

1. All wall thicknesses shown are the maximum wall thicknesses for the indicated pipe material.
2. Minimum wall thickness for each pipe material and size is:
 Steel: All listed sizes - Schedule 10
 Stainless Steel: Schedule 40S
 Copper: 2" - 2½" - Type M
 3" - 6" - Type DWV
3. Please contact Gruvlok for information on grooving alternate materials and wall thickness.

D. Grooving Times – This chart shows approximate grooving times with the groover set-up for the proper size and groove diameter and the pipe properly positioned on the groover. The times shown are average times from the start of rotation of the pipe in the grooving rolls to completed groove.

MODEL 3006 & MODEL 3006C STEEL PIPE GROOVING TIMES (MIN: SEC.)								
Pipe Size (Inches)/Max Steel Pipe Wall Thickness								
2	2½	3	4	6	8	10	12	
0:20	0:20	0:25	0:30	1:20	1:55	0:40	1:20	

SECTION III - INSTALLING SUPPORT LEG ASSEMBLY

Use the Adjustable Support Leg Assembly for the 3006/3006C Roll Groover whenever long pieces of pipe/tubing or heavier wall thicknesses are being grooved.

1. Slide round tubing over left support arm of Ridgid® 300 tool so that flat plate is under both arms. Push tubing back as far as allowed on the arms.
2. Insert each lower leg (with feet) into each upper leg so that they overlap by approximately 12 inches. Hand tighten the hex head bolts to temporarily hold in place.
3. Starting with the right leg, insert each upper leg into socket under the flat plate. Loosen the hex bolt holding the lower leg and adjust so that the feet are pointing out from the Ridgid® 300 tool. Repeat with left leg. Tighten the hex bolts on the upper leg and socket to lock legs in place. (⁹/₁₆" wrench) Base should look like assembled picture.
4. Slide 3006/3006C tool onto Ridgid® 300 Tool as described in Section IV. Back of tool should sit over flat plate with sockets underneath.



SECTION IV - GROOVER SET-UP

THE GRUVLOK® MODEL 3006/3006C ROLL GROOVERS ARE DESIGNED FOR USE WITH A RIDGID® 300 POWER DRIVE



CAUTION - Removal of the Groover from the wooden crate and mounting of the Groover to the Ridgid® 300 drive should be accomplished by 2 persons. To avoid possible injury DO NOT ATTEMPT TO LIFT THE FIGURE 3006/3006C ROLL GROOVERS WITH LESS THAN TWO PEOPLE .

1. Extend the mounting arms of the Ridgid® 300 power drive, approximately 12" out from the body of the drive.



2. Grasp the Groover base on opposite sides, lift the Groover out of the shipping box and place the mounting wings in the Groover base over the extended mounting arms.



3. Align the flats on the triangular shaft tailpiece with the Ridgid® 300 chuck jaws and slide the Groover back into the chuck jaws. Securely tighten the chuck jaws.



4. Push extension arms in flush with the groover mounting base front.



5. The Groover should be leveled for best grooving results. Adjusting the Ridgid® 300 support legs assures level position of the Groover and provides a firm fixed base location for both the Groover and power drive.



6. Position the pump to the desired position for ease of operation. Tighten bolt to lock pump in position or if desired, back off just slightly to permit pump to be oriented by operator to most comfortable position during Groover operation. (¹⁵/₁₆" wrench)



SECTION V - PIPE SET-UP & POSITIONING

The Model 3006 Groover comes with 2" through 6" IPS pipe size grooving rolls installed unless otherwise requested on your order. The Model 3006C Groover comes with 2" through 6" Copper grooving rolls installed. To change grooving rolls for other size(s), for copper tubing, or for steel pipe refer to Section VIII for grooving rolls and guide roll plate changeout.

1. Set both rubber guide rolls located on the front of the Groover, into the correct holes for the size pipe being grooved. ($\frac{1}{4}$ " allen wrench)



2. Insert pipe over the bottom roll (groove roll) positioning the pipe flush against the front flange of the bottom roll.



3. Using the slot on top of the roller plate adjustment rod, raise (counterclockwise rotation) the guide roll mounting plate sufficiently to ensure that the top grooving roll makes contact with the pipe prior to guide roll contact.



4. Close the release valve on the hydraulic pump by turning the knob clockwise. Pump the hydraulic hand pump to lower the top grooving roll into light firm contact (approx. 100 psi) with the pipe.



Make sure that the groove diameter stop (consisting of two 7/8-14 hex nut located on the top back of the Groover) is not in contact with the top surface of the housing. If contact is noted, release hydraulic pressure by turning the release valve knob counterclockwise allowing the groover head to raise upward. Turn the nut counterclockwise sufficiently to allow clearance between the bottom of nut and top of housing when the top grooving roll is in contact with the pipe.

5. (FOR IPS PIPE ONLY): Using the slot on top of the roller plate adjustment rod, lower the guide rolls into firm contact with the pipe.



6. Adjust the outboard pipe stand to assure proper contact with the guide rolls. Pipe stand should be 65 - 75% of the pipe length away from Groover. Looking at the front of the Groover, the pipe stand should be positioned to angle the tube approximately 0° to $\frac{1}{4}^\circ$ downward, away from the front of the Groover and $\frac{1}{4}^\circ$ to the left side at the Groover. See Figures Below.




SECTION VI - SETTING GROOVE DIAMETER



FOR IPS PIPE ONLY:

Set-up and position the pipe as shown in Section V.

A. WITH DEPTH GAGE

1. Maintain approximately 100 psi pump pressure as established in Section V, paragraph 4.
2. Slide the U-shaped groove diameter gage, for the pipe size to be grooved under the lowest hex nut (groove diameter stop) at the top back of the Groover. Each gage is marked with two (2) pipe size ranges. Place the correct pipe size area, for the size of pipe being grooved, under the lower hex nut (groove diameter stop).
 
3. Turn the lowest hex nut (groove diameter stop) to snug against the surface of the groove diameter gage. Turn the jam nut (upper hex nut) to snug with lower hex nut (groove diameter stop). Release the pump pressure by turning the pump relief valve counter-clockwise and remove the groove diameter gage.

B. OPTIONAL METHOD – WITHOUT DEPTH GAGE

1. Increase the pump pressure so that the pipe is firmly held between the groove and drive rollers without forming a dent.
 
2. Turn the lowest hex nut (groove diameter stop) to snug against the top surface of the Groover.
 

3. Back the hex nut (groove diameter stop) off the number of turns specified in the accompanying chart. Turn the jam nut (upper hex nut) to snug with lower hex nut (groove diameter stop). Release the pump pressure by turning the pump release valve counterclockwise.

HEX NUT TURNS									
	Pipe Diameter								
	2	2½	3	4	5	6	8	10	12
Portion of Turn	½	½	½	½	⅔	⅔	⅔	⅔	⅓

SECTION VII - GROOVING IPS PIPE

1. Recheck for correct pipe set-up and position on the bottom roll and adjust as required. Close the release valve on the hydraulic hand pump and increase pump pressure so that the groove roll is in firm contact with the pipe OD.

Check to see that the Ridgid® 300 drive directional switch is set to reverse (clockwise rotation of the pipe looking at the front of the Groover.)



2. Start the drive motor by depressing the foot switch to rotate the pipe. Assure that the pipe is tracking firmly against the back of the bottom roll.

3. With the pipe rotating, increase grooving force by slowly pumping the hydraulic pump handle to raise pump pressure. Do not pump too fast. Continue to raise the pressure until a groove starts being formed. Use the following table as a guide for grooving pressures.



4. Maintain grooving force until the hex nut (groove diameter stop) comes into full, firm contact with the top of the groover base head. Allow the pipe to rotate 1 to 2 revolutions assuring completion of the groove. Release the foot switch to allow the pipe to stop rotation.



5. Open the hydraulic hand pump release valve by turning counterclockwise. Remove the pipe from the Groover.

Using a pi tape, check the groove diameter produced and compare it to specifications presented in Section XII. If required, adjust groove diameter stop to ensure grooves produced are within specified limits.



Note: Adjustment of the hex nut groove diameter stop will produce the below listed groove diameter changes.

Hex Nut Adjustment	Groove Diameter Change
1/6	.024"
1/3	.048"
1/2	.071"
2/3	.095"
5/6	.119"
1	.142"

Clockwise rotation — Increase groove diameter
Counterclockwise rotation — Decrease groove diameter

6. After adjustment of the groove diameter stop, if the groove diameter is large (i.e. shallow groove depth), place the pipe end back into the Groover and complete the same groove to the new diameter stop setting. If the groove diameter is small (i.e. deep groove depth), put an unfinished end into the Groover and roll a new groove. Recheck the groove diameter for conformance to grooving specifications.

RECOMMENDED GROOVING PRESSURE

Pipe Size (In)	Wall/Schedule	Grooving Pressure (psig)
2" - 6"	10	1,200 - 1,600
8"	10	4,600 - 5,000
10"	.188"	4,600 - 5,000
12"	.219"	4,600 - 5,000
2"	40	2,800 - 3,200
2 1/2" - 4"	40, 40S	4,200 - 4,600
5" - 8"	40	4,600 - 5,000
5" - 6"	40S	4,600 - 5,000

SECTION VIII – GRUVLOK COPPER METHOD

1. Check for correct tube set-up and position on the bottom roll and adjust as required. Close the release valve on the hydraulic hand pump and increase pump pressure so that the groove roll is in firm contact with the tube OD. Verify that hex nuts have been fully backed off and will not make contact with the top of the Groover throughout the forming process. Check to see that the Ridgid® 300 drive directional switch is set to reverse (clockwise rotation of the tube looking at the front of the Groover.)



2. Start the drive motor by depressing the foot switch to rotate the tube. Assure that the tube is tracking firmly against the back of the bottom roll.
3. With the tube rotating, increase grooving force by **slowly** pumping the hydraulic pump handle to raise pump pressure.



Do not pump too fast. Continue to raise the pressure until reaching the recommended value in the table.

4. Insert the Universal Diameter Gage from below the tubing into the groove being formed. Hold the fixed arm against the far side of the groove and observe the lead edge of the sliding arm's sleeve as it moves along the groove diameter.



5. When the lead edge of the sleeve centers* on the appropriate groove diameter line for the tube size being grooved, stop the groover motor by releasing the foot switch. Open the hydraulic hand pump release valve by turning counterclockwise. Remove the tube from the Groover.



*May vary from leading edge to center of line depending on actual gage used.



6. Using a pi tape check the groove diameter produced and compare it to the specifications presented in Section XII. If the groove diameter is *small*:
 - Re-insert tube into Groover.
 - Pump ram until pressure gage reads 100 psi.
 - Start the drive motor with the foot switch.
 - Quickly pump up to recommended pressure.
 - Monitor groove growth with universal diameter gage.



7. Repeat steps 1-6 for each groove.

Note: It is necessary to use the universal diameter gage while grooving every tube end.

Note: If the end of the tubing becomes dented after grooving, simply place that end back into the machine and re-run at approximately 400 psi for two to three tube revolutions.

RECOMMENDED GROOVING PRESSURE				
COPPER TUBING TYPE				
Tube Size	K Pressure (PSI)	L Pressure (PSI)	M Pressure (PSI)	DWV Pressure (PSI)
2"	2,200	2,200	1,800	-
2½"	2,600	2,600	2,200	-
3"	2,600	2,600	2,200	2,200
4"	3,000	3,000	2,400	2,200
5"	3,600	3,600	3,600	2,600
6"	4,600	4,600	4,000	3,600

SECTION IX – GROOVING ROLL CHANGE

1. ROLL REMOVAL

NOTE: First remove the guide roll mounting plate, then the top groove roll and last the bottom drive roll.

A. GUIDE ROLL MOUNTING PLATE

1. Place one hand under the guide roll mounting plate. Using a 3/4" wrench, remove the hex nut from the top of the adjustment shaft protruding from the top of the groover head.



2. Remove the guide roll mounting plate by lowering the shaft out of the mounting block at the front of groover head.



B. TOP (GROOVE) ROLL

1. Loosen (approximately 5 turns) the shaft locator set screw in the groover head to disengage the set screw from the slot in top roll shaft (5/32" allen wrench)



2. Screw the 1/4"-20 thumb screw (stored on the pump side of the main housing) into the drilled and tapped hole in the front of the top shaft.



3. Cradle one hand under the top roll and pull the top roll shaft from the front.

Caution: The top roll is heavy. Brace your hand to receive the weight of the top roll. As the shaft disengages from the top roll, the top roll will fall into your hand.



Lower the top roll from between the front and back plates of the grooving head.

4. Remove thumb screw from top shaft and return to storage location.

C. BOTTOM (DRIVE) ROLL

Note: There is no need to unchuck the Groover from the Ridgid® 300 drive.

1. Loosen the set screw on the sliding sleeve located between the front and back bearings on the bottom shaft. (5/32" allen wrench) If you cannot see the set screw, turn the power back on to the Ridgid® 300 drive and use the foot switch to rotate the sleeve until the screw can be seen. Then turn off the power to the Ridgid® 300 drive and unplug it. DO NOT PROCEED FURTHER UNTIL THE MACHINE HAS BEEN UNPLUGGED.



2. Slide the sleeve toward the back bearing, revealing the dowel pin hole in the shaft. Push the dowel pin completely out of the shaft. (3/8" pin driver)



3. Pull the bottom roller out from the front of the Groover.



SECTION IX – GROOVING ROLL CHANGE

2. ROLL INSTALLATION

A. BOTTOM (DRIVE) ROLL

1. Insert the bottom roll shaft through the front of the groover.



2. Rotate the bottom roll to align the dowel pin hole on the side of the machine.



3. Insert the dowel pin until it is flush with the bottom shaft surface.



4. Slide the retaining sleeve over the dowel pin hole and tighten the set screw. ($\frac{5}{32}$ " allen wrench)



B. TOP (GROOVE) ROLL

1. Raise the groove roll between the front and back plates of the groover head. The deep slot in the top roller should be located toward the back of the groover.



2. Insert the top shaft into the front of the machine so that the V-groove is towards the front. Push the shaft backward until the front is approximately even with the front face of the machine.



3. Tighten the locator socket setscrew ($\frac{5}{32}$ " allen wrench). This will align the V-groove with the locator set screw in the groover head. Care should be taken to avoid contacting the plain diameter of the shaft.



C. GUIDE ROLL MOUNTING PLATE

Select the correct mounting plate for either steel pipe or for copper tube.

1. Insert the adjustment shaft from the bottom, into the hole in the mounting block at the front of the groover head.



2. Slide the shaft up to expose the threaded portion at the top of mounting block.



3. Using a $\frac{3}{4}$ " wrench, install and snug the hex nut on the top of the adjustment shaft.



SECTION X -GROOVER MAINTENANCE

Routine maintenance of the model 3006/3006C Roll Groover requires periodic application of general purpose lithium grease (NLGI No. 2) to the front bearing and keyways. Under normal usage, the bearing should be lubricated monthly and the keyways should be lightly lubricated on a weekly basis. Frequency of lubrication should be increased in harsh environments.

A. Grease Fittings

1. Apply grease to front bearing with a grease gun with a ¼" fitting attachment to the lower grease fitting on the left side of the Groover.



2. Apply grease to left key with a grease gun with a ¼" fitting attachment to the upper grease fitting on the left side of the Groover.



3. Apply grease to right key with a grease gun with a ¼" fitting attachment to the right side of the Groover.



B. Replacement Parts

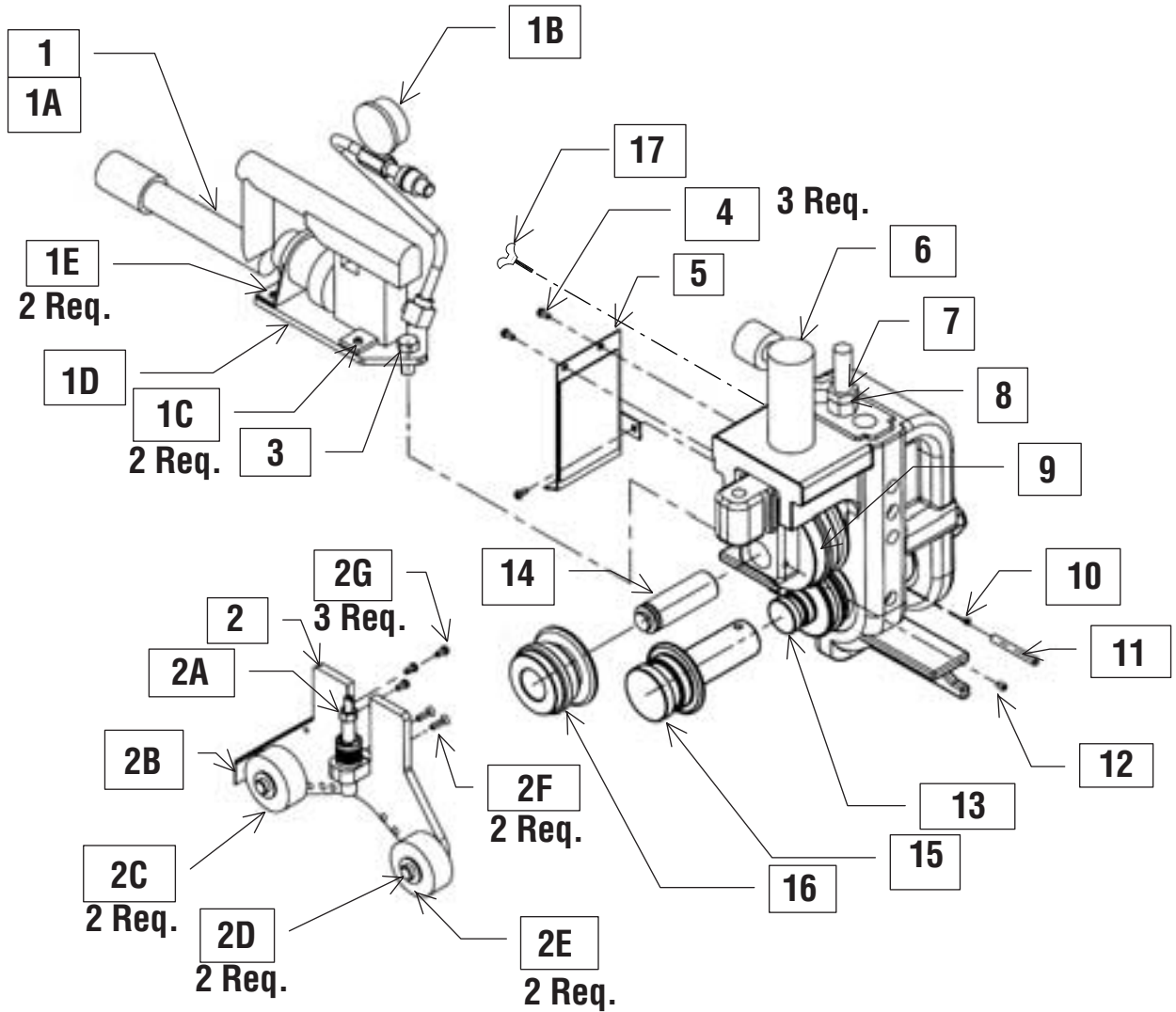
Please contact your local Gruvlok branch to purchase replacement parts for the Roll Groover. To ease ordering, an exploded drawing of each machine and a complete replacement parts list is given in the next section. For a list of Gruvlok representatives, please see the last page of this booklet.

C. Hydraulic Maintenance

If you are having problems maintaining hydraulic pressure, verify that the release valve knob on the pump is not hitting the pump housing prior to the valve closing completely. There should be a slight gap between the end of the knob and the pump body. If there is not, loosen the set screw on the knob and slightly pull it off the valve shaft so that the valve can be closed completely without interference. Then tighten set screw to lock the knob in the proper position. If this does not solve the hydraulic problem, please contact your local Gruvlok representative for further instructions.

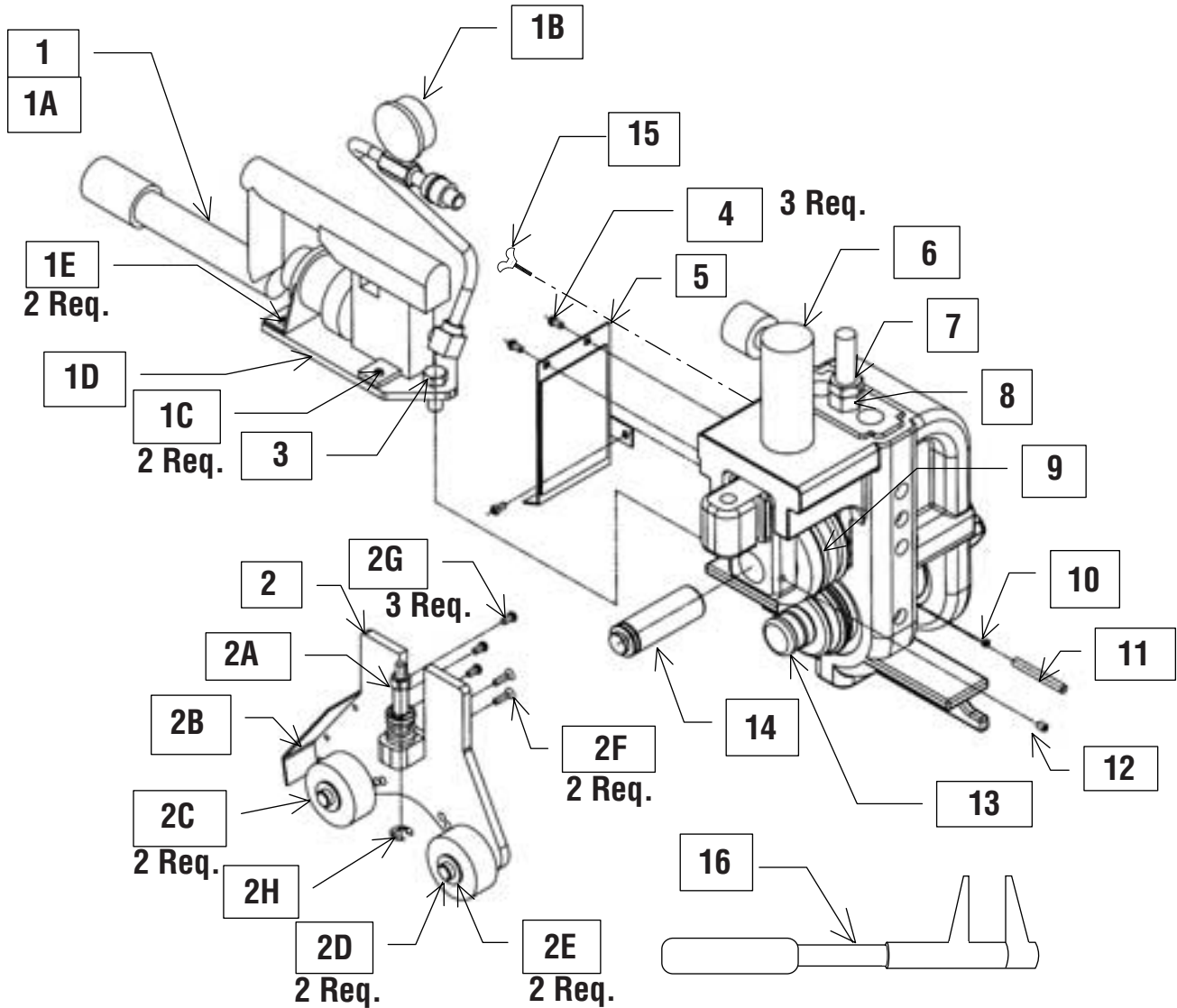


SECTION XI - REPLACEMENT PARTS LIST – 3006



ID No.	Part Name	Part No.	ID No.	Part Name	Part No.
1	Pump Assembly	GL11355	3	Hex Bolt, $\frac{5}{8}$ -11, L= 1.5"	GL11091
	The Pump Assembly consists of the following:		4	Cap Screw, $\frac{1}{4}$ -20, L= $\frac{1}{2}$ "	GL11230
	1A Hydraulic Pump	GL11356	5	Safety Mesh	GL11280
	1B Hydraulic Pressure Gage	GL11084	6	Hydraulic Ram	GL11095
	1C Cap Screw, $\frac{1}{4}$ -20, L= $\frac{5}{8}$ "	GL11093	7	Jam Nut, $\frac{7}{8}$ -14	GL11277
	1D Pump Plate	GL11297	8	Hex Nut, $\frac{7}{8}$ -14	GL11276
	1E Cap Screw, $\frac{1}{4}$ -20, L= $\frac{1}{2}$ "	GL11230	9	2-6" Steel Top Roller	GL11285
2	Steel Guide Roll Assembly	GL11291	10	Cup Point Set Screw, $\frac{5}{16}$ -18	GL11289
	The Guard Assembly consists of the following:		11	Dowel Pin	GL11290
	2A Hex Nut, $\frac{1}{2}$ "	GL11198	12	Cone Pt. Set Screw, $\frac{5}{16}$ -18	GL11282
	2B Guide Roll Guard	GL11304	13	2-6" Steel Bottom Roller	GL11284
	2C Guide Roll	GL11106	14	Top Shaft	GL11281
	2D Shoulder Bolt, $\frac{1}{2}$ "	GL11107	15	8-12" Steel Bottom Roller	GL11299
	2E Washer, $\frac{1}{2}$ "	GL11109	16	8-12" Steel Top Roller	GL11300
	2F Flat Head Screw, $\frac{1}{4}$ -20, L= $\frac{3}{4}$ "	GL11108	17	Thumb Screw $\frac{1}{4}$ -20, L=1"	GL11056
	2G Cap Screw, $\frac{1}{4}$ -20, L= $\frac{1}{2}$ "	GL11230		Support Leg Assembly	GL11374

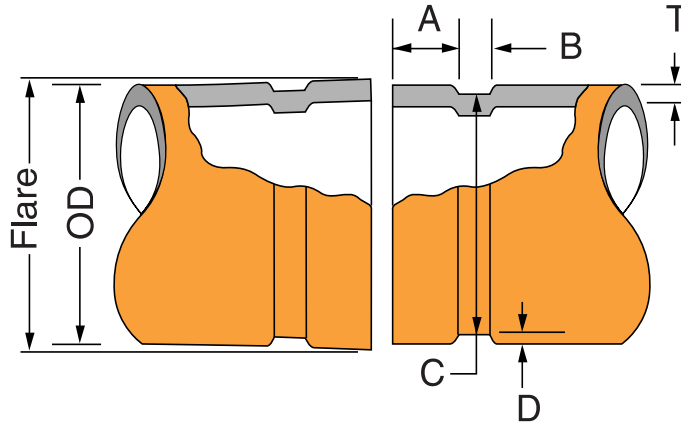
SECTION XI - REPLACEMENT PARTS LIST – 3006C



ID No.	Part Name	Part No.	ID No.	Part Name	Part No.
1	Pump Assembly	GL11355	3	Hex Bolt, 5/8-11, L=1.5"	GL11091
	The Pump Assembly consists of the following:		4	Cap Screw, 1/4-20, L= 1/2"	GL11230
1A	Hydraulic Pump	GL11356	5	Safety Mesh	GL11280
1B	Hydraulic Pressure Gage	GL11084	6	Hydraulic Ram	GL11095
1C	Cap Screw, 1/4-20, L= 5/8"	GL11093	7	Jam Nut, 7/8-14	GL11277
1D	Pump Plate	GL11297	8	Hex Nut, 7/8-14	GL11276
1E	Cap Screw, 1/4-20, L= 1/2"	GL11230	9	2-6" Copper Top Roller	GL11122
2	Copper Guide Roll Assembly	GL11352	10	Cup Point Set Screw, 5/16-18	GL11289
	The Guide Assembly consists of the following:		11	Dowel Pin	GL11290
2A	Hex Nut, 1/2"	GL11198	12	Cone Pt. Set Screw, 5/16-18	GL11282
2B	Guide Roll Guard	GL11304	13	2-6" Copper Bottom Roller	GL11349
2C	Guide Roll	GL11106	14	Top Shaft	GL11281
2D	Shoulder Bolt, 1/2"	GL11107	15	Thumb Screw 1/4-20, L=1"	GL11056
2E	Washer, 1/2"	GL11109	16	Universal 2-6" Diameter Gage	GL11133
2F	Flat Head Screw, 1/4-20, L= 3/4"	GL11108		Support Leg Assembly	GL11374
2G	Cap Screw, 1/4-20, L= 1/2"	GL11230			
2H	C-Clip	GL11078			

SECTION XII – GROOVE SPECIFICATIONS

GRUVLOK® ROLL GROOVE SPECIFICATIONS



GRUVLOK STANDARD ROLL GROOVE SPECIFICATION FOR STEEL & OTHER IPS													
-1-	-2-		-3-		-4-		-5-		-6-		-7-		-8-
Nominal IPS Pipe Size	Pipe OD Tolerance		Gasket Seat "A"		Groove Width "B"		Groove Diameter "C"		Groove Depth "D"		Min. Allow. Wall Thick. "T"		Max. Flare Dia.
In./DN(mm)	In./mm	+In./mm-In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm
2	2.375	+0.024 -0.024	0.625	0.344	2.250	-0.015	0.063	0.065	2.480				
50	60.3	+0.61 -0.61	15.88	8.74	57.15	-0.38	1.60	1.7	63.0				
2½	2.875	+0.029 -0.029	0.625	0.344	2.720	-0.018	0.078	0.083	2.980				
65	73.0	+0.74 -0.74	15.88	8.74	69.09	-0.46	1.98	2.1	75.7				
3	3.500	+0.035 -0.031	0.625	0.344	3.344	-0.018	0.078	0.083	3.600				
80	88.9	+0.89 -0.79	15.88	8.74	84.94	-0.46	1.98	2.1	91.4				
3½	4.000	+0.040 -0.031	0.625	0.344	3.834	-0.020	0.083	0.083	4.100				
90	101.6	+1.02 -0.79	15.88	8.74	97.38	-0.51	2.11	2.1	104.1				
4	4.500	+0.045 -0.031	0.625	0.344	4.334	-0.020	0.083	0.083	4.600				
100	114.3	+1.14 -0.79	15.88	8.74	110.08	-0.51	2.11	2.1	116.8				
5	5.563	+0.056 -0.031	0.625	0.344	5.395	-0.022	0.084	0.109	5.660				
125	141.3	+1.42 -0.79	15.88	8.74	137.03	-0.56	2.13	2.8	143.8				
6	6.625	+0.063 -0.031	0.625	0.344	6.455	-0.022	0.085	0.109	6.730				
150	168.3	+1.60 -0.79	15.88	8.74	163.96	-0.56	2.16	2.8	170.9				
8	8.625	+0.063 -0.031	0.750	0.469	8.441	-0.025	0.092	0.109	8.800				
200	219.1	+1.60 -0.79	19.05	11.91	214.40	-0.64	2.34	2.8	223.5				
10	10.750	+0.063 -0.031	0.750	0.469	10.562	-0.027	0.094	0.134	10.920				
250	273.1	+1.60 -0.79	19.05	11.91	268.27	-0.69	2.39	3.4	277.4				
12	12.750	+0.063 -0.031	0.750	0.469	12.531	-0.030	0.109	0.156	12.920				
300	323.9	+1.60 -0.79	19.05	11.91	318.29	-0.76	2.77	4.0	328.2				

COLUMN 1: Nominal IPS Pipe size.

COLUMN 2: IPS outside diameter.

COLUMN 3: Gasket seat must be free from scores, seams, chips, rust or scale which may interfere with proper sealing of the gasket. Gasket seat width is to be measured from the pipe end to the vertical flank in the groove wall.

COLUMN 4: Groove width is to be measured between vertical flank of the groove size walls

COLUMN 5: The groove must be of uniform depth around the entire pipe circumference. (See column 6).

COLUMN 6: Groove depth: for reference only. Groove must conform to the groove diameter "C" listed in column 5.

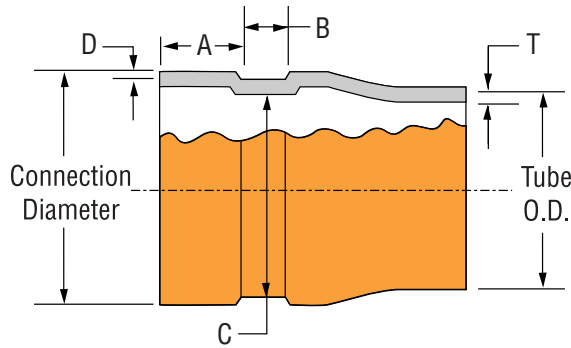
COLUMN 7: Minimum allowable wall thickness which may be roll grooved.

COLUMN 8: Maximum allowable pipe end flare diameter. Measured at the most extreme pipe end diameter of the gasket seat area.

- Out of roundness: Difference between maximum OD and minimum OD measured at 90° must not exceed total OD tolerance listed.
- For IPS pipe, the maximum allowable tolerance from square cut ends is 0.03" for 2" thru 3½"; 0.045" for 4" thru 6"; and 0.060" for sizes 8" and above measured from a true square line.
- Beveled End Pipe in conformance with ANSI B16.25 (37½°) is acceptable, however square cut is preferred.

SECTION XII – GROOVE SPECIFICATIONS

GRUVLOK® COPPER-METHOD: COPPER PREP SPECIFICATIONS



GRUVLOK COPPER PREP ROLL GROOVE SPECIFICATIONS FOR TYPES K, L, M AND DWV COPPER TUBING

-1-	-2-		-3-		-4-		-5-		-6-		-7-	-8-	-9-
Nominal Tubing Size	Tubing Outside Diameter Tolerance		Tube End Connection Diameter Tolerance		Gasket Seat A		Groove Width B		Groove Diameter "C"		Groove Depth D	Allow Wall Thick T	Max. Flare Dia.
In./DN(mm)	In./mm	+In./mm-In./mm	In./mm	+In./mm-In./mm	In./mm	±.030 ±.77	In./mm	±.030 ±.77	In./mm	Tol. +0.000	In./mm	In./mm	In./mm
2 50	2.125 54.0	0.002 0.05	0.002 0.05	2.375 60.33	0.045 1.14	0.024 0.61	0.625 15.88	0.344 8.74	2.250 57.15	-0.015 -0.381	0.063 1.60	0.059 1.50	2.447 62.15
2 1/2 65	2.625 66.7	0.002 0.05	0.002 0.05	2.875 73.03	0.029 0.74	0.029 0.74	0.625 15.88	0.344 8.74	2.720 69.09	-0.018 -0.46	0.077 1.96	0.065 1.65	2.962 75.23
3 80	3.125 79.4	0.002 0.05	0.002 0.05	3.500 88.90	0.035 0.89	0.031 0.79	0.625 15.88	0.344 8.74	3.344 84.94	-0.018 -0.46	0.078 1.98	DWV	3.566 90.58
4 100	4.125 104.8	0.002 0.05	0.002 0.05	4.500 114.30	0.045 1.14	0.031 0.79	0.625 15.88	0.344 8.74	4.334 110.08	-0.020 -0.51	0.083 2.11	DWV	4.576 116.23
5 125	5.125 130.2	0.002 0.05	0.002 0.05	5.562 141.27	0.056 1.42	0.031 0.79	0.625 15.88	0.344 8.74	5.395 137.03	-0.022 -0.56	0.084 2.13	DWV	5.650 143.51
6 150	6.125 155.6	0.002 0.05	0.002 0.05	6.625 168.28	0.063 1.60	0.031 0.79	0.625 15.88	0.344 8.74	6.455 163.96	-0.022 -0.56	0.085 2.16	DWV	6.719 170.66

- Notes:
- Out of roundness: Difference between maximum OD and minimum OD measured at 90° must not exceed tolerance listed.
 - The maximum allowable tolerance from square cut ends is 0.030" for 2" thru 3" and 0.045" for 4" thru 6"; measured from a true square line.

COLUMN 1: Nominal ASTM B88 copper tubing size.

COLUMN 2: Outside diameter of copper tubing in accordance with ASTM B88.

COLUMN 3: Outside diameter of Copper Prep roll grooved copper tubing.

COLUMN 4: Gasket seat and groove must be free from scores, seams, chips, or corrosion which may interfere with proper coupling assembly.

COLUMN 5: Groove width is to be measured between vertical flank of the groove size walls.

COLUMN 6: The groove must be of uniform depth around the entire tubing circumference. (See column 7).

COLUMN 7: Groove depth: for **reference only**. Groove must conform to the groove diameter "C" listed in column 6.

COLUMN 8: Minimum allowable copper tube wall thickness which may be prepared to Gruvlok Copper-Prep specifications.

COLUMN 9: Maximum allowable end flare diameter. Measured at the most extreme tubing end diameter of the gasket seat area.

SECTION XIII - TROUBLESHOOTING

TROUBLESHOOTING INSTRUCTIONS		
Problem	Possible Cause	Solution
1. Pipe will not stay in grooving rolls	Incorrect pipe positioning. Improper grooving technique. Power drive running counterclockwise Model 3006 / 3007 & 1007.	See "Pipe Set-up & Positioning" See "Grooving Pipe" Rigid 300 check setting in reverse Clockwise rotation of pipe
2. Pipe stops rotating during grooving.	Rust or dirt has built up on lower roll. Worn grooving rolls. Bottom roll dowel pin is sheared or missing. Rigid 300 chuck jaws not engaged properly. Steel Pipe – Groove Diameter Stop improperly adjusted. Copper Pipe – Groove Diameter Stop making contact with top surface of Groover.	Remove accumulation from lower roll with stiff wire brush. Inspect lower rolls for worn knurls, replace if worn. Replace dowel pin per instructions in Section IX. See "Groover Set-up" Adjust Groove Diameter Stop to correct IPS. Verify Groove Diameter Stop Nuts are fully backed off.
3. Pipe flare excessive	Pipe stand adjusted too high. Tool is tilted forward. Incorrect pipe stand offset positioning. Pipe is over "tracking". Warped drive shaft.	See "Pipe Set-up & Positioning" See "Groover Set-up" See "Pipe Set-up & Positioning" The rear collar of the drive shaft is missing. Replace damaged parts.
4. While grooving loud squeaks echo through the pipe.	Pipe or Tube not square cut. Incorrect pipe roller offset positioning Pipe is over "tracking".	Cut pipe or tube ends squarely. Move pipe stand for proper offset. See "Pipe Set-up & Positioning"
5. During grooving loud thumps or bangs occur about once every revolution of the pipe.	Pipe has a pronounced weld seam.	Grind welds flush with pipe surface inside & out 2" back from pipe end.
6. Tool won't groove pipe.	Hand pump is low on oil. Air in hydraulic system. Pipe wall thickness exceeds tool's capability.	See "Groover Maintenance" See "Groover Maintenance" See "Groover Description"

NOTES

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