

ROLL GROOVING ATTACHMENT

Table of Contents

1. Introduction
2. Safety Information
3. Product Overview and Specifications
4. Installation
5. Operation
6. Troubleshooting

1. Introduction

This manual covers the SMG RG12A Roll Grooving Attachment for use with the SMG PD Power Drive. It describes safe operation, installation, groove-forming procedure, and troubleshooting.

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

2. Safety Information

Safety Alert Definitions

The following signal words are used throughout this manual:

- **WARNING** — indicates a hazard that, if not avoided, could result in serious injury.
- **CAUTION** — indicates a hazard that, if not avoided, could result in minor or moderate injury or equipment damage.
- **NOTE** — provides additional information relevant to the procedure being described.

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.

Work Area Safety

- Keep your work area clean and well lit. Cluttered benches and dark areas can lead to accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Tools create sparks which may ignite the dust or fumes.
- Keep bystanders, children, and visitors away while operating a tool. Distractions can lead to accidents.
- Keep floors dry and free of slippery materials such as oil. Slippery floors can lead to accidents.
- Guard or barricade the area when the workpiece extends beyond the machine. A guard or barricade providing a minimum of one metre (1 m) clearance around the workpiece will reduce the risk of accidents.

Electrical Safety

- Earthed tools must be plugged into a power outlet that is correctly installed and earthed in accordance with all applicable codes and procedures. Never remove the earth pin or modify the plug in any way. Do not use adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly earthed.
- Avoid body contact with earthed surfaces. There is an increased risk of electric shock if your body is earthed.
- Do not expose electrical tools to rain or wet conditions. Water entering a tool increases the risk of electric shock.
- Do not abuse the cord. Never use the cord to carry the tool or to pull the plug from an outlet. Keep the cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately.

- Use only three-wire extension cords with three-pin earthed plugs and matching three-pole receptacles. Other extension cords will not earth the tool and increase the risk of electric shock.
- Keep all electrical connections dry and off the ground. Do not touch plugs or the tool with wet hands.

Personal Safety

- Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use the tool 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 jewellery. Contain long hair. Keep hair, clothing, and gloves away from moving parts.
- Avoid accidental starting. Be sure the switch is OFF before plugging in. Carrying tools with a finger on the switch, or plugging in tools with the switch ON, invites accidents.
- Use safety equipment. Always wear eye protection. Use a dust mask, non-skid safety shoes, hard hat, or hearing protection as appropriate for the conditions.

Roll Groover Safety

- The roll groover is made to groove pipe and tubing. Follow the instructions in this manual on machine use. Other uses may increase the risk of injury.
- Keep hands away from the grooving rolls. Do not wear loose-fitting gloves when operating the unit. Fingers could be caught between the grooving and drive rolls.
- Keep guards in place. Do not operate the groover with a guard removed. Exposure to grooving rolls may result in entanglement and serious injury.
- Set up the groover on a flat, level surface. Be sure the machine, stand, and groover are stable. A flat, level surface will prevent the unit tipping.
- Do not wear loose clothing. Keep sleeves and jackets buttoned. Do not reach across the machine or pipe. Clothing can be caught by the pipe, resulting in entanglement and serious injury.
- Do not use this roll groover with a power drive or threading machine that does not have a foot switch. The foot switch is a safety device that helps prevent serious injury.
- When grooving pipe, keep hands away from the end of the pipe. Do not reach inside the pipe end — this prevents cuts from sharp edges and burrs.
- Be sure the groover is properly secured to the power drive or threading machine. Carefully follow the setup procedures to prevent the pipe or grooving unit tipping.
- Properly support the pipe with pipe stands. Use two pipe stands to groove pipe over 900 mm (36 in) long. This prevents the unit tipping.
- Use only power drives and threading machines that operate under 58 RPM. Higher-speed machines increase the risk of injury.

3. Product Overview and Specifications

Description

The SMG RG12A Heavy Duty Roll Groover forms rolled grooves in steel and stainless steel tubing. The grooves are formed by the hydraulic feeding of a grooving roll into the pipe, which is supported by a drive roll.

The SMG RG12A Roll Groover includes two (2) groove and drive shaft sets that can groove the following pipe:

- 50 mm – 150 mm (2" – 6") Schedule 10 and 40
- 200 mm – 300 mm (8" – 12") Schedule 10, and 200 mm (8") Schedule 40

The SMG RG12A Heavy Duty Roll Groover is specifically designed for use with the SMG PD Power Drive.

CAUTION

Do not use to groove 200 mm (8") schedule 40 steel pipe harder than 150 BHN. Doing so may result in improperly formed grooves that do not meet required specifications.

Pipe / Tubing Length

Dia. (mm / in)	Min. Length (mm / in)	Max. Length (mm / in)
50 / 2"	203 / 8	914 / 36
65 / 2½"	203 / 8	914 / 36
80 / 3"	203 / 8	914 / 36
90 / 3½"	203 / 8	914 / 36
100 / 4"	203 / 8	914 / 36
115 / 4½"	203 / 8	914 / 36
125 / 5"	203 / 8	914 / 36
150 / 6"	254 / 10	711 / 28
200 / 8"	254 / 10	914 / 24
250 / 10"	254 / 10	914 / 24
300 / 12"	254 / 10	914 / 24

Pipe Maximum and Minimum Wall Thickness

Pipe wall thickness must not exceed the maximum, or fall below the minimum, values specified below.

Pipe size	Min (mm / in)	Max (mm / in)
2"	1.65 / .065	3.91 / .154

Pipe size	Min (mm / in)	Max (mm / in)
2 1/2"	2.11 / .083	5.16 / .203
3"	2.11 / .083	5.49 / .216
3 1/2"	2.11 / .083	5.74 / .226
4"	2.11 / .083	6.02 / .237
5"	2.77 / .109	6.55 / .258
6"	2.77 / .109	7.11 / .280
8"	2.77 / .109	8.18 / .322
10"	3.40 / .134	4.19 / .165
12"	3.96 / .156	4.57 / .180

Note: figures converted from the original imperial specification; imperial values retained in brackets.

4. Installation

Installing the SMG RG12A Roll Groover on the SMG PD Power Drive

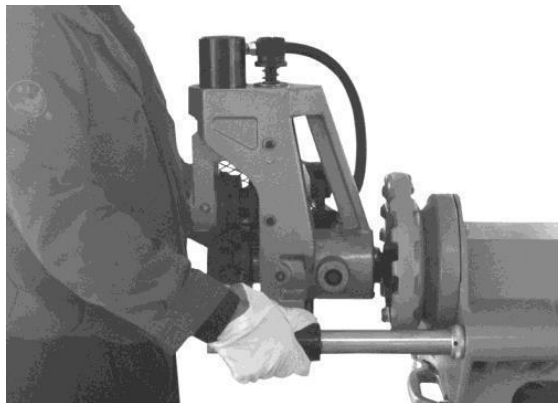


Fig 1 — Mounting the SMG RG12A groover onto the SMG PD power drive

1. Fully open the front chuck of the power drive.
2. Slide the base assembly onto the support arms of the SMG PD Power Drive. (Figure 1)
3. Align the notched flats of the drive shaft with the jaws on the power drive chuck.
4. Close and tighten the front chuck.

Pipe Preparation

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

NOTE

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

- All internal or external weld beads, flash, or seams must be ground flush at least 50 mm (2 in) back from the pipe end.

NOTE

Do not cut flats on the gasket seat area.

Pipe Set-Up

1. Pipe or tubing longer than the maximum lengths listed in the table in Section 3 must be supported with 2 pipe stands. The second pipe support should be located 3/4 of the pipe length from the roll groover.

WARNING

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

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

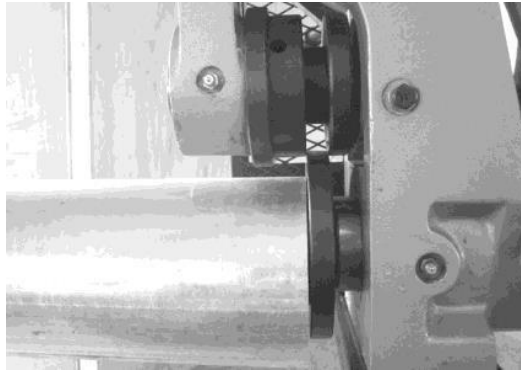


Fig 2 — Squaring pipe to the drive roll flange

4. Level the pipe by adjusting the pipe stand.

5. Operation

NOTE

If running the machine in forward, offset the pipe 1/2° away from the operator. (Figure 3)

NOTE

If running the machine in reverse, offset the pipe 1/2° toward the operator. (Figure 4)



Figure 3 — Forward offset



Figure 4 — Reverse offset

Adjusting Roll Groove Depth

NOTE

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

1. Advance the upper groove roll by pumping the handle until the upper roll contacts the pipe to be grooved.

CAUTION

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

2. Turn down the indexed depth adjustment knob (clockwise) until it stops against the top of the machine.
3. Back the depth adjustment knob off to leave the proper distance for groove depth. (Figure 5)



Fig 5 — Depth adjustment knob

Forming the Roll Groove

Pipe wall thickness must not exceed the maximum wall thickness specified in the Pipe Maximum and Minimum Wall Thickness table (Section 3). Do not use to groove 200 mm (8") schedule 40 steel pipe harder than 150 BHN.

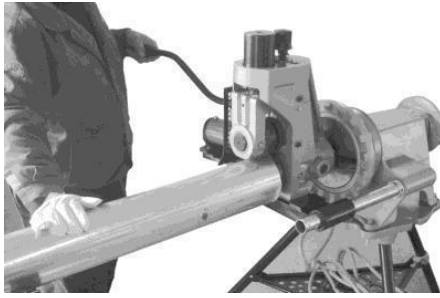


Fig 6 — Applying pressure, FORWARD mode



Fig 7 — Applying pressure, REV mode

NOTE

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

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

Roll Grooving Tips

- If the pipe tends to "walk off" the drive roll, increase the offset dimension. (Figures 3 & 4)
- If the drive roll flange shaves the pipe end, decrease the offset dimension.
- If the pipe end flare is excessive, lower the pipe end to level with the roll groover.
- If the pipe wobbles and/or "walks off" the drive roll, raise the pipe end to level with the roll groover.
- Short lengths of pipe (under one metre) may require slight pressure to maintain the degree offset dimension.

6. Troubleshooting

Problem	Cause	Correction
Rolled 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 is not straight.	Use a straight pipe.
	Pipe end not square with pipe axis.	Cut pipe end square.
Pipe does not track while grooving.	Pipe not level.	Adjust stand to level pipe.

Problem	Cause	Correction
	Groover not level.	Level groover.
	Pipe axis not offset 1/2 degree from drive roll axis.	Offset pipe 1/2 degree (see Figures 3 & 4).
	1/2 degree offset not sufficient.	Offset pipe slightly more.
	Not applying pressure to pipe.	Apply pressure to pipe (see Figures 6 & 7).
	Excessive weld seam.	Grind flush 50 mm (2 in) from end of pipe.
	Pipe end not square.	Cut pipe end square.
Pipe flared at groove end.	Pipe not level.	Adjust stand to level pipe.
	Operator is advancing groove roll too fast.	Slow down pumping action. (Refer to proper operating instructions.)
	Pipe is too hard.	Replace 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.
	Hard spots in pipe material or weld seams harder than pipe.	Use high quality pipe of uniform hardness.
	Grooving roll feed rate too slow.	Feed grooving roll into pipe faster.
	Pipe support stand rollers not in correct location for pipe size.	Position pipe stand rollers for the pipe size being used.
Groover does not roll groove in pipe.	Pipe wall maximum thickness exceeded.	Check pipe capacity chart (Section 3).
	Wrong rolls.	Install correct rolls.
	Pipe material too hard.	Replace pipe.
	Adjustment nut not set.	Set depth.
Pipe slips on driving roll.	Driving roll knurling plugged with metal or worn flat.	Clean or replace the driving roll.
	Grooving roll feed rate too slow.	Feed grooving rolls into the pipe faster.
Pump not delivering oil, cylinder does not advance.	Pump release valve open.	Close release valve.

Problem	Cause	Correction
	Low oil in reservoir.	Check oil level per instructions.
	Dirt in the pump body.	Have the unit serviced by a qualified technician.