



SOLUTIONS FOR THE REPAIR RENOVATION AND DECOMMISSIONING OF PIPELINES



Large Diameter PE Pipe Cutter

Operating Instructions

Steve Vick International Ltd

Treenwood Industrial Estate, Bradford on Avon, Wiltshire, BA15 2AU, UK

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1. INTRODUCTION

Since its foundation in 1981, Steve Vick International has been at the leading edge of trenchless techniques for the repair and renovation of underground **gas** distribution pipes.

In the UK, we are a major supplier to the gas distribution networks and many of our techniques have become accepted practice in the industry. We constantly seek to provide our customers with renewal methods which will minimise their costs and maximise their production.

The company has been supplying pipe handler equipment to the **water** utilities and their contractors for over 20 years. More recently we have entered the market with pipe cutting equipment and our sealant technology has been successfully adapted for use in the waste water sector.

In 2014 the company relocated and can be found at:

Steve Vick International Ltd

Treenwood Industrial Estate
Bradford on Avon
Wiltshire
BA15 2AU

Phone: +44 (0)1225 864 864

Email: info@stevevick.com

Website: stevevick.com

Social Media: #stevevick

2. PE Cutter Introduction

The PE Pipe Cutter is a chain mounted pneumatic device that uses a cutting tool to perform a full circumferential cut on Polyethylene pipe up to a diameter of 900mm. The machine is safer and faster than alternative cutting methods such as a chainsaw and can be used either in an excavation or above ground.

3. Scope

This method statement covers the assembly of the equipment, installation, and maintenance of the PE Pipe Cutter.

4. Site Safety Requirements

For the machine to travel 360 degrees around the pipe, 190mm of clearance to other utilities and obstructions is required above the pipe's surface. Whilst the best cutting results occur when transiting the machine clockwise, cutting can be performed in the reverse direction if required to avoid an obstruction, with the final section being completed using a manual cutting method.

The machine operator and any other on-site personnel are required to wear standard PPE such as eye protection, gloves, and protective footwear. When the cutter is active, ear defenders must also be worn. Local workplace rules may require additional equipment such as Personal Radiation Monitors – this will be at the discretion of the client.

5. Kit Contents

The following image shows the component parts of the PE Pipe Cutter that are provided as standard by SVI. Please note that all guards have been removed to allow for cleared imagery of the machine.

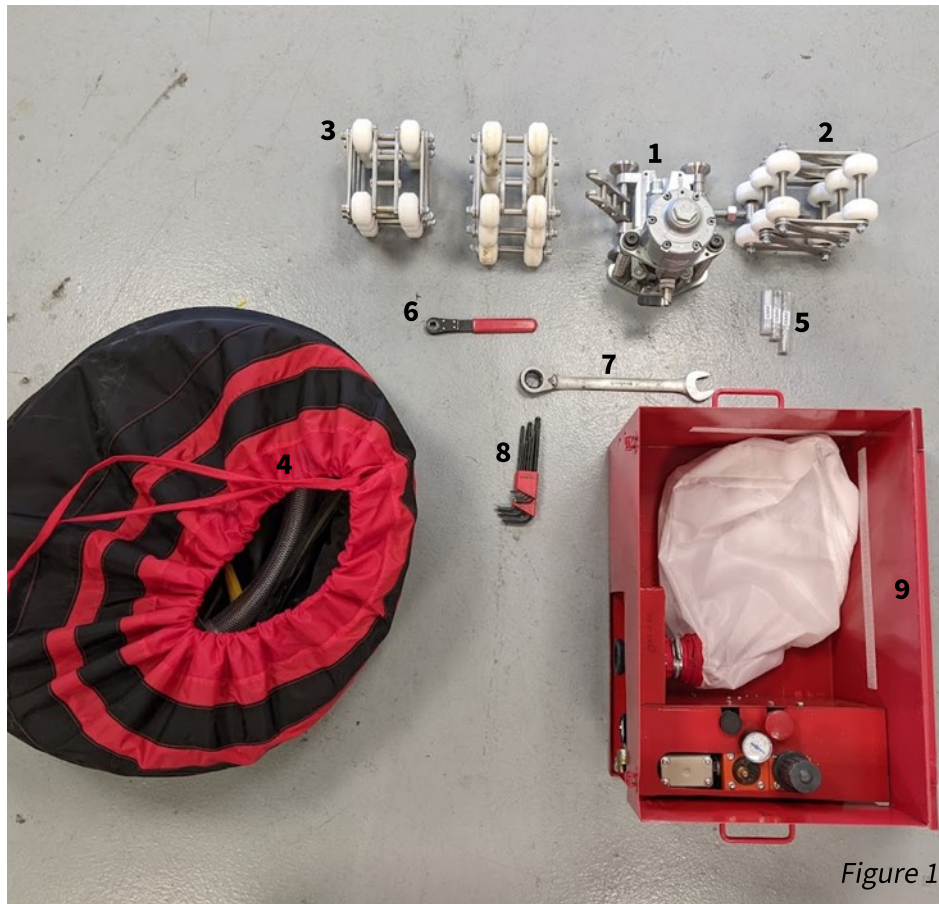


Figure 1

Image No.	Component
1	Machine Body
2	Primary Chain
3	Additional Chain Sections
4	Hose System
5	Cutter Set
6	10mm Ratchet Spanner
7	24mm Spanner
8	Allen Key Set
9	Pneumatic Control and Storage Box

6. Pipe Preparation and Assembly

6.1 Identify the amount of chain extension links required for the given pipe diameter, using the table below as a guide. These additional links can be easily hooked together to form a continuous chain. Please note that the PE Pipe Cutter is only provided with two extension links as standard and therefore can only cut up to 630mm without extra links. For additional lengths please contact SVI.

Chain Configuration	Suitable Pipe Diameters (mm)
Primary Chain Only	250 - 300
Primary + 1 Additional Chain Link	300 - 450
Primary + 2 Additional Chain Links	450 - 630

6.2 Based on the wall thickness of the pipe you are wishing to cut, select the correct cutting tool from the table below. Attach the cutting tool to the machine using the provided 4mm hex key, checking that the tool is pushed all the way up into the collet.

Cutting Tool	Suitable Wall Thicknesses (mm)
40mm	Less than 20
60mm	25 - 50
80mm	50 - 70

6.3 Before mounting the PE Pipe Cutter to the pipe, ensure the surface where the chain will be rolling is smooth and free of any mud or other contaminants. If cutting a large length of pipe, confirm that both halves of the PE will be supported once the cut is complete. Check all bolts and fasteners are fully tightened and secure.



Figure 2

6.4 Attach the threaded adjuster on the cutter body to the chain. Tighten until the square section of the adjuster is just protruding the chain link as shown.



Figure 3

6. Pipe Preparation and Assembly (CONTINUED)

6.5 Place the machine body on top of the pipe. With one hand keeping the machine stable.

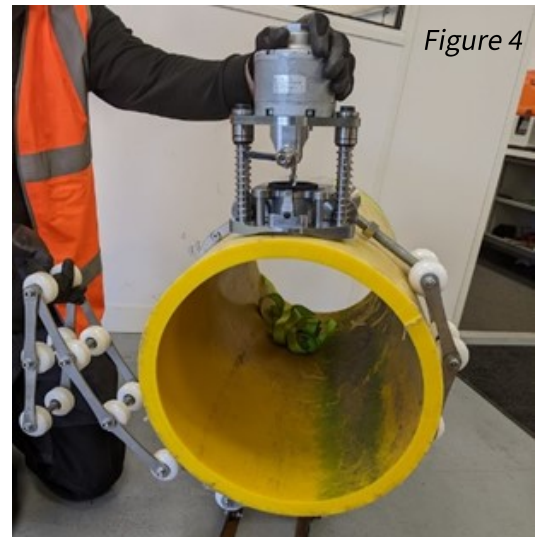


Figure 4

6.6 Wrap the chain around the pipe and hook onto the machine with the tightest chain link available.

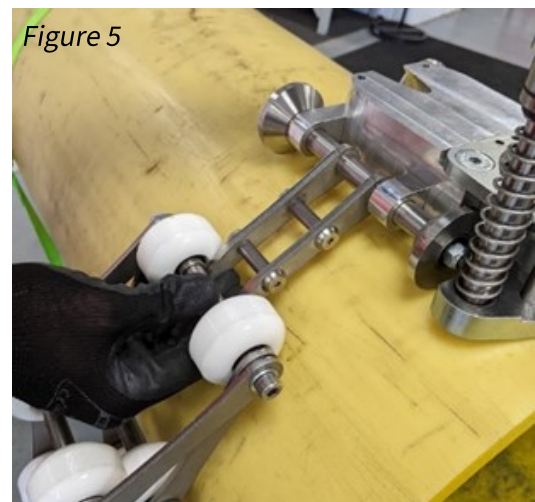


Figure 5

6.7 Tighten the screw thread adjuster using the provided 10mm ratchet spanner until the chain is tight but will still spin easily.

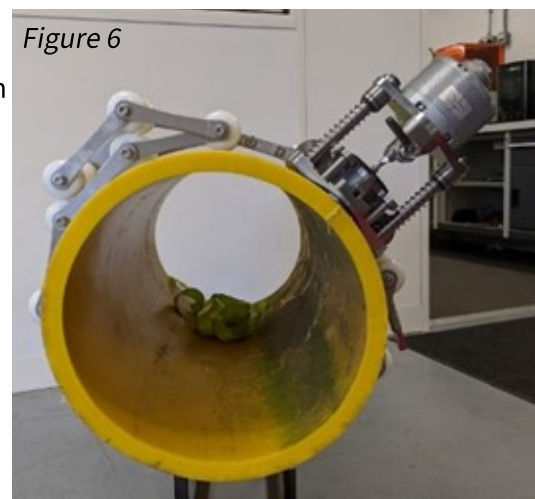


Figure 6

6.8 Rotate the assembly around the pipe three times to allow the chain to straighten. Ensure the cutting tool is positioned where the cut is required.



Figure 7

6. Pipe Preparation and Assembly (CONTINUED)

6.9 Tighten the screw thread adjuster until the machine can just hold its own weight at the 2 o'clock position without falling around the pipe.

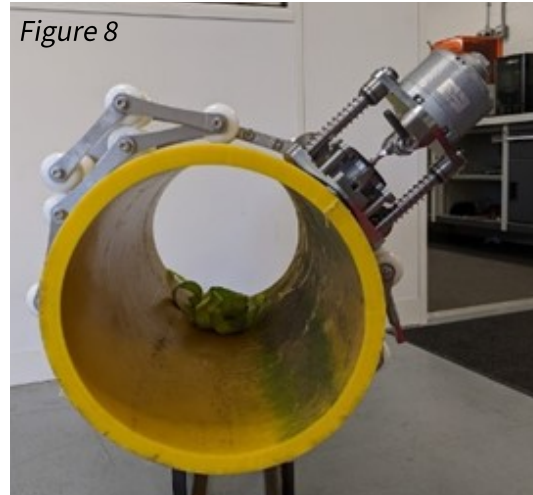


Figure 8

6.10 Use the 24mm spanner to lock the M12 nut against the threaded chain link.

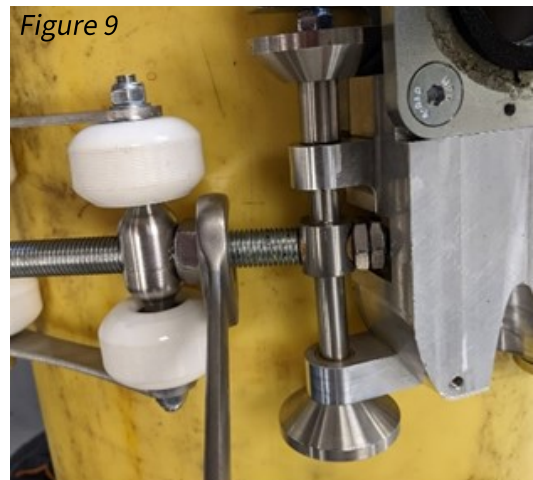


Figure 10

6.11 Empty the swarf bag before velcroing it in place inside the storage box.

6.12 Connect the three hoses at the machine end of the hose assembly to the ports at the rear of the PE Pipe Cutter body. The Hydraulic exhaust fitting should be tightened with a spanner.

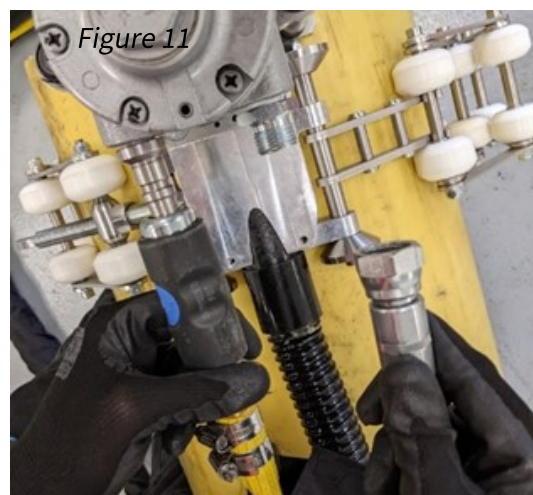


Figure 11

6. Pipe Preparation and Assembly (CONTINUED)

6.13 Connect the three hoses at the collection end of the hose assembly to the ports on the front of the box, taking care to line up the white tab on the pneumatic multi feed port.

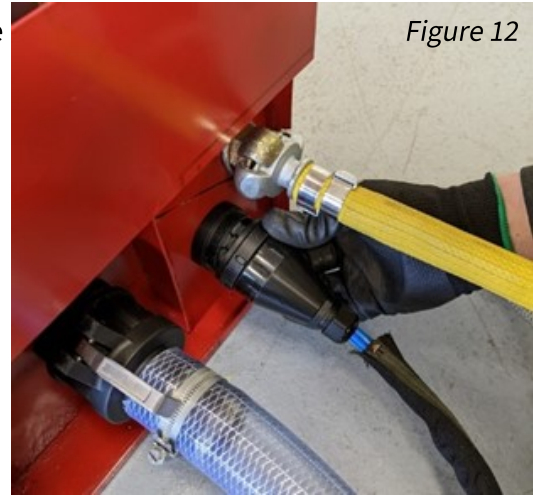


Figure 12

6.14 Attach the other end of the collection box to your air supply (hose not included). Check your surroundings are safe before turning on the air supply.

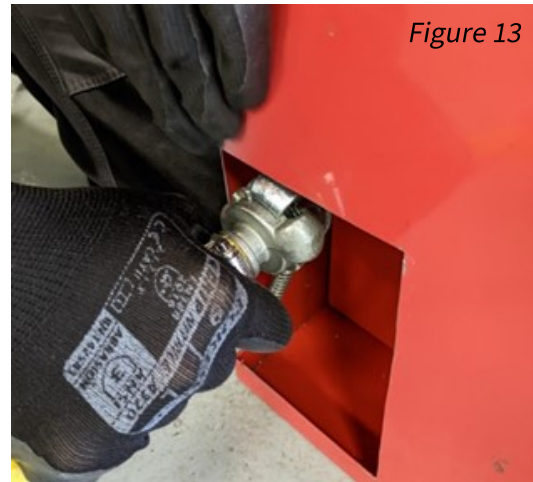


Figure 13

6.15 Check the pressure dial is reading between 6.5 and 7bar. The machine will operate at a lower pressure but with less performance. SVI do not recommend running at pressures above 7 bar. Ensure both the emergency stop mushroom buttons are disengaged and press the black recharge button to arm the control box. Close the lid of the box to dampen the noise from cutting.



Figure 14

7. Operation

7.1 Ensure that the cutting area is safe and clear of any unrequired personnel and that all the PPE described in section 4 is worn.



Figure 15

7.2 With one hand on the top of the body to hold it steady, turn the machine on using the green button on the control box. If you wish to turn the machine off press the red button. The emergency stop button cuts the air supply completely and requires the black recharge button in the box to be pressed before the machine will cut again.

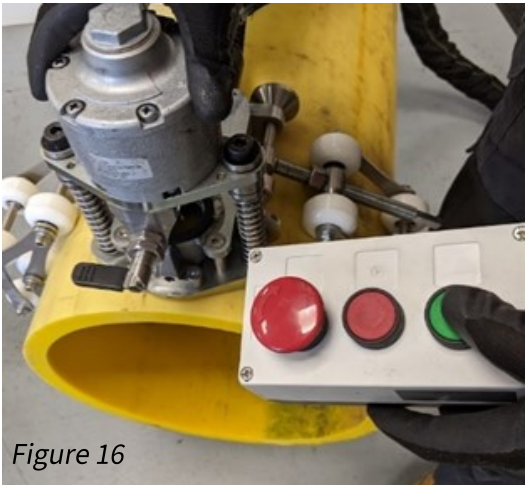


Figure 16

7.3 Press down on the top of the motor to plunge the cutter in to the cut, periodically releasing pressure in a pecking motion to allow swarf to be relieved from the cutter. Once the machine is fully engaged with the pipe the index pin will automatically lock in place.



Figure 17

7.4 Start to move the machine by slowly rolling the chain with your hands. For best cutting results the machine should be rotated clockwise (if you are looking at the cutter from the front). The optimum feed rate is steady and controlled, with the motor sounding consistent. A complete cut should take 2-4 minutes depending on the pipe size.



Figure 18

7. Operation (CONTINUED)

7.5 As the machine gets close to completing the cut, check that the pipe can separate freely without falling or endangering any other personnel. The pipe should separate after 360 degrees of rotation.



Figure 19

7.6 Turn the machine off using the stop button on the control box, then disengage the locking pin by turning the lever 180 degrees clockwise.



Figure 20

8. Disassembly

8.1 Turn off the compressor, before bleeding the air system using the green on button. Take care as the motor will spin during the bleeding process. All six connections of the hose assembly can now be detached.

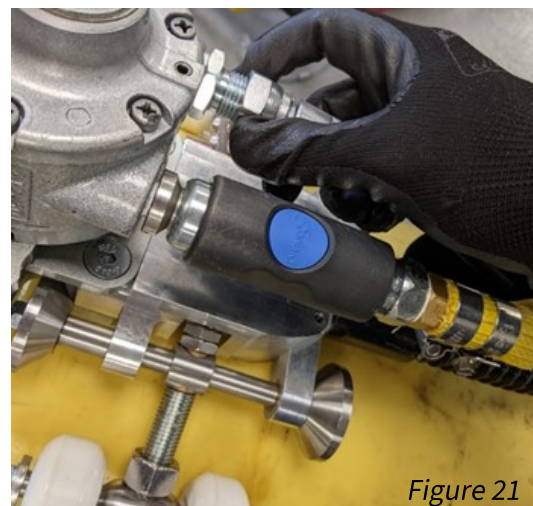


Figure 21

8. Disassembly (CONTINUED)

8.2 Lower the chain to the floor and take the machine and chain off the pipe. Fully disengage the thread adjuster to separate the chain from the machine body. Remove the cutting tool from the collet using the 4mm hex key. Empty the collector box if there is a suitable facility waste nearby. Place all components back into the storage box, taking care to clean off any dirt or other contaminants to prolong the life of the machine.