User Manual, Operating Instructions and Specifications

SOU250

Auto Squeeze Off Tool

Pipe Range: 90 – 250mm

PE PIPE SQUEEZE OFF

• INNOVATION • DESIGN • MANUFACTURE • SUPPLY

PRODUCT DESCRIPTION

The Hy-Ram SOU250 Squeeze Off Unit has the facility to enable four simultaneous Squeeze points to be executed. The 'A' Frame assembly provides the hydraulic power to squeeze the pipe to the optimum compression, (squeeze gap set by pipe stop), then the Top and Bottom Beams are very simply mechanically locked together.

The Hydraulic Cylinder can then be released from the Top Beam and the Piston Rod Retracted. Then the 'A' Frame assembly can be easily disconnected from the Beams and Pipe and carried to the desired position for the next squeeze point. The 'A' Frame can now be connected to a second Beam Set and a second squeeze operation can be carried out. With four Beam Sets being supplied in the standard kit, by repeating the procedure above, four simultaneous squeeze points can be achieved

This unit is intended for Squeezing off PE pipes within the Gas industry.
No other uses are considered appropriate for this unit.

To use this unit for other purposes without first consulting Hyram Engineering Co Ltd. could lead to the unit being used for dangerous applications and may cause injury.

The information contained in this manual is to assist with the safe installation, operation, maintenance and repair of the equipment.

This information should be made available to all persons who are required to work with or on the equipment.

If in any doubt as to any aspects of this equipment, the application of this equipment or the instructions in this handbook, you should contact Hy-Ram Engineering Co Ltd. for clarification or advice.

SOU 250

SOU250 with pneumatic input / hydraulic output power unit

Pipe Stops

SOU250 – Hydraulic Squeeze Off Unit
Pipe range: 180 – 250mm diameter

Pioneering 'A' Frame design that is extremely lightweight yet very robust for 'in-trench' conditions... the Frame folds and can be locked 'flat' for ease of carrying and transportation.

The principle of operation is that the squeeze is carried out, the Top and Bottom beams are then mechanically locked together and then the 'A' Frame is detatched and used in conjunction with a second beam set. Using this concept all four squeeze points are accomplished using just one 'A' Frame assembly and one Power Unit.
The squeeze is carried out, the Top and Bottom beams are then mechanically locked together and then the hydraulic cylinders are 'unclipped' and used in conjunction with a second beam set. Using this concept... all four squeeze points are accomplished using just one pair of hydraulic cylinders. Available in two options... as shown, with a pneumatic input / hydraulic output power unit for easy and safe operation from a compressor, or with a hydraulic hand-pump in lieu of the power unit and 'spring return' hydraulic cylinder.

The Top Squeeze beam is fitted with 'Pipe Stops' to suit the diameter and wall thickness (SDR) of the pipe to be squeezed. These Pipe stops form a positive 'stop' between the Top and Bottom beams and hence optimise the squeeze gap in order to ensure the pipe is not over-squeezed.

Product code	Qty	Description	
089-000095		SOU 250 Manual Squeeze Off Tool (Handpump)	R H
089-000055		SOU 250 Auto Hydraulic Squeeze Off Tool (Power Unit)	R H
Kit Includes			
	1	'A' Frame	
	4	Top Beam Assembly (incorporating Pipe Stops)	
	4	Bottom Beam Assembly	
	1	Power Unit (Handpump not shown)	

A. INTRODUCTION

This manual explains about the machinery and how to use and maintain it. It is intended for Users and should be made available to all persons who are likely to use the machinery.

There are a number of Warning, Caution and Note Statements and these notify you of important points:

WARNING: Informs of hazardous conditions which may cause serious bodily harm.
CAUTION: Informs of conditions which may cause damage to equipment.
NOTE: Explains additional or helpful information.

B. HEALTH AND SAFETY NOTES

General

This Squeeze off unit present dangers from trapping parts of the body between the slow moving parts and from the hydraulic oil should a hose burst. The danger zone is the immediate area around the top and bottom beams where the PE pipe is being squeezed off.

WARNING

BEFORE any work is carried out on this unit, the equipment should be isolated from the compressor (not supplied)

Other hazards are those involving the lifting of the unit and its component parts. There are handles on the unit that can be used as lifting points for the component parts. These are designed to lift the **component only** and not the unit complete. It is not envisaged that the assembled unit can be manually handled without the aid of specific mechanical assistance.

Component Weights

'A' Frame	*38*	*Kg*
Top Beam	*14.5*	*Kg*
Bottom Beam	*12*	*Kg*
Air operated power unit	*32*	*Kg*

This machine is designed to be adjusted and maintained without placing persons at risk.

WARNING

Users are responsible for ensuring compliance with the Noise at Work Regulations.

C. ASSEMBLY AND USAGE

Equipment

1 x Pneumatic Hydraulic Power Unit
1 x 'A' Frame Assembly comprising Hydraulic Cylinder and Hoses
1 x Top Beam
1 x Bottom Beam
1 x Pair of stops diameter/SDR to suit pipe to be squeezed

WARNING

These instructions should be followed in sequential order.
Ensure compressor to be used has an outlet pressure of a minimum of 80 psi (5.5 bar) and a maximum of 100 psi (6.9 bar).

If pressure is outside this range: DO NOT USE!

Compressor unit to be around 70 cfm (2000L/minute), a smaller unit will operate the SOU slower and a larger unit will operate quicker.

NOTE

Use hydraulic oil ISO VG 32, The reservoir to be filled to ¾ full with new clean oil, approx 3.5 litre.

Grade ISO VG 46 oil to be used in temperatures of 40°C and above.

E. OPERATING INSTRUCTIONS

1.0 PREPARATION

1.1 The Hydraulic Ram should always be transported with the Ram closed. This is to protect the Piston Rod from being damaged.

1.2 Ensure that the Top Beam is fitted with the correct pipe stops for the diameter/SDR combination to be squeezed.

1.3 Attach Top Beam to Hydraulic Cylinder and tighten thumbscrew (B1) to lock into position.

1.4 Position the 'A' Frame assembly centrally over the pipe to be squeezed at the desired squeeze off point (Refer to figure 1.0).

1.5 Slide in the Bottom Beam ensuring that the bottom of the 'A' Frame locates in grooves on the underside of the Bottom Beam (Refer to figure 2.0).

1.6 Connect hydraulic hoses (CON1, CON2) from A Frame to Power Unit (Refer to figure 3.0).
ALWAYS ENSURE COUPLINGS ARE CLEAN BEFORE CONNECTION.

NOTE:
The connections are Male/Female screw type quick release couplings. When making coupling connections ensure that they are fully 'made; (i.e. Fully tightened together).

The unit is now ready for connection to the compressor.

2.0 CONNECTION TO THE COMPRESSOR

POWER UNIT

2.1 Ensure Vent Valve on Power Unit is in 'Vent' position.`

2.2 Ensure Directional Valve on 'A' Frame is in 'neutral' (centre) position.

2.3 Ensure Compressor has outlet pressure within the range 80-100psi (5.5-6.9 Bar)

If pressure is outside this range: ***DO NOT USE!***

2.4 Ensure Compressor outlet valve(s) are in closed position and start compressor.

2.5 Check outlet pressure is within range 80-100psi (5.5-6.9 Bar).

2.6 Using suitable hose, connect compressor outlet to inlet port on the pressure regulator on the Power Unit

WARNING! *The pressure regulator is factory preset.* ***DO NOT ATTEMPT TO ADJUST IT!***

2.7 Open compressor outlet valve to supply pneumatic pressure to the Power Unit. The Power Unit will automatically power up and hydraulic fluid will be pumped around the vent circuit within the power unit recycling fluid internally.

3.0 OPERATION: SQUEEZE OFF

3.1 Turn the directional control valve on the 'A' Frame assembly to the 'Release' position. This will ensure the cylinder is fully retracted prior to squeezing off.

3.2 Turn the directional control valve on the 'A' Frame Assembly to the 'Squeeze Off' position and operate lever. The Top Beam will begin to travel downwards and start to squeeze the pipe. WARNING! Ensure the pipe is loaded centrally across the width of the beams.

3.3 Continue to squeeze until the pipe has fully squeezed off and the pipe stops are sandwiched tight between the Top and Bottom Beams. When the Pipe is squeezed the pressure will build up and the power unit will stop.

3.4 Mechanically lock the Top Beam to the Bottom Beam by tightening the Cap Head Screws provided (C1) through the stops into the Bottom Beam. The Beams are now mechanically locked together. (Figure 5.0)

3.5 Release the Top Beam from the A Frame by releasing thumbrscrew (B1) and turn direction control valve to the 'Release' position. The cylinder will retract leaving the Top and Bottom Beam mechanically locked together. (Refer to figure 5.0). Allow cylinder to fully retract.

3.6 Position directional valve in 'Neutral' position and open Bypass Valve and flick between open and close to relieve pressure from cylinder. The hydraulic hoses can now be disconnected from the

Hydraulic Power Unit and then the 'A' Frame can now be expanded and disassembled from the Bottom Beam set (Refer to figure 6.0).

3.7 One squeeze off point is now completed. Other squeeze off points can be carried out by repeating instructions from 1.1-2.6, using additional beamsets together with the original Hydraulic Power Unit and 'A' Frame Assembly.

4.1 OPERATION: RELEASE

4.2 To release a squeeze off point, the 'A' Frame should be re-assembled onto the relevant Beamset

4.3 Close the Bypass Valve on power unit with the valve on the 'A' Frame to neutral position with the directional valve in the 'Squeeze Off' position until the Piston Road of the Hydraulic Cylinder reaches the Top Beam. Ensure the rod fully engages in the collar of the Top Beam. Retighten thumb screw (B1). The squeeze off load is now taken up by the Hydraulic Cylinder when the Power Unit stops.

WARNING! Never attempt to release a squeeze off until the load is taken up on the hydraulic cylinder.

4.4 Release the mechanical lock by removing the Cap Head Screws holding the Top and Bottom Beams together.

4.5 The squeeze off can now be released by operating the valve in the 'Release' position. The Top Beam will travel upwards and the squeeze off released.

4.6 Allow the Top Beam to fully retract. The Bottom Beam can then be removed and then the 'A' Frame assembly can be taken away from the pipe (Refer to figure 6.0).

4.7 The squeeze off release is now completed and other squeeze points can be released in the same manner repeating steps 3.1 – 3.5.

CAUTION! It is critical that the hoses are maintained in pairs when being connected to the hydraulic rams.

5.0 DIAGRAMS

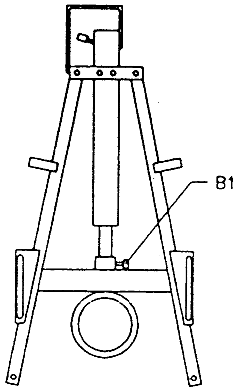

Figure 1.0 – Install Top Beam Then Lower Onto Pipe

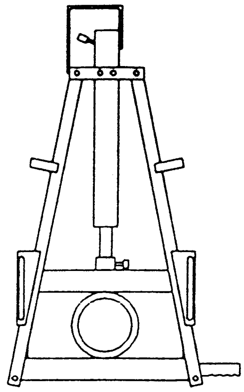

Figure 2.0 – Install Bottom Beam

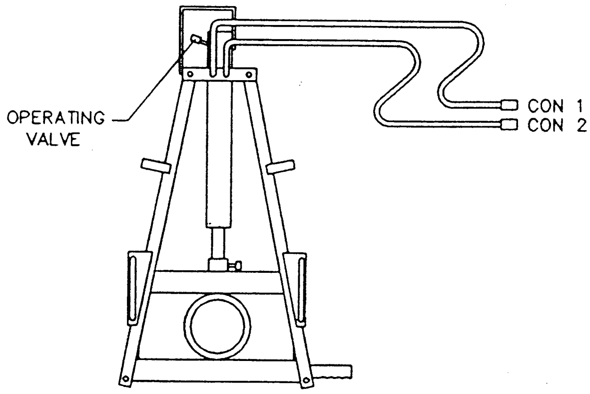

Figure 3.0 – Hydraulic Connection

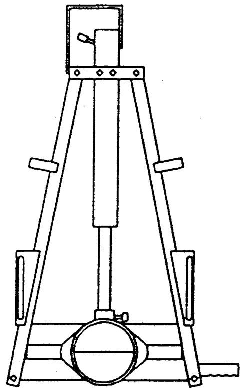

Figure 4.0 – Hydraulic Squeeze Off

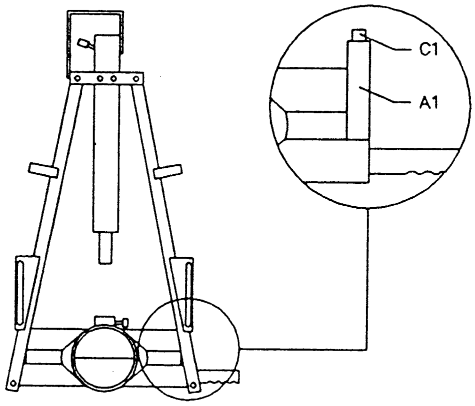

Figure 5.0 – Mechanically Lock Top Beam To Bottom Beam

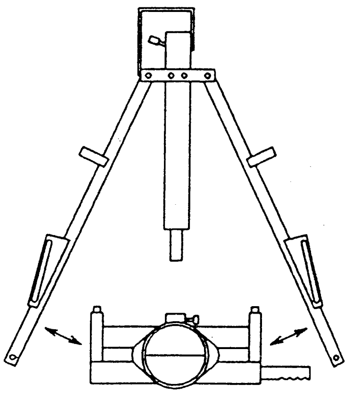

Figure 6.0 – Expand 'A' Frame & Remove From Beam Assembly

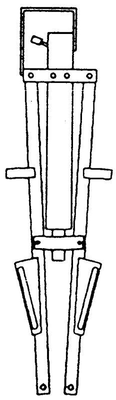

Figure 7.0 – Close 'A' Frame & Carry To Next Beam Set

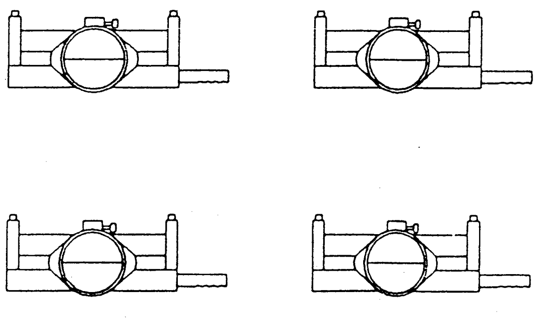

Figure 8.0 – 4 Squeeze Off Points Completed With One Kit

HIRE EQUIPMENT

Hy-Ram has more than 30 years' experience in hiring specialist equipment and tools to the utility industries. From our depots stock…we have an extensive range of equipment available for most piping operations.

Butt Fusion

Fully Automatic, Semi-Automatic and Manual Control.
BFM180, BFM250, BFM315, BFM400, BFM500, BFM630,
TracStar™T500, TracStar™T900
Generators, Tents, Pipe Rollers, , McElroy PolyHorse™, Debeaders

Electrofusion

Manual, Auto Recognition and Bar Code Control.
Generators, Tents, Manual and Mechanical Scrapers, Re-Rounding Clamps, Alignment Clamps, Positioning Kits

Squeeze Off

Mechanical, Hydraulic and Controlled Release Units
SOU63, SOU125, SOU180, SOU200, SOU250, SOU400, SOU500,
SOU-Controlled Release

Pipe Cutting

Plastic Pipe: Guillotine-125, Guillotine-225, Guillotine-315, Hy-Ram PE Power Saw
Metallic Pipe: Ridgid246, Wheeler-Rex Crackers, Hinged Cutters, Keel Cutter, Fein Reciprocating Saw, UPC Reed Cutter

Underpressure Drilling

No.1 Drilling machine, Universal Drilling machine, WASK Teeset, Compact 4 Branch Drill, Compact 6 Branch Drill, LR67 Hi-Flow Drilling Machine, PEART150

Flow Stopping

WASK Gas Bagging Off Kit, WASK Aquastop & Hyrant Wizard, WASK By-Pass

Pipe Handling

Pipe Handlers, Pipe Pushers, Pipe Rollers, McElroy PolyHorse™

Trenchless

Moles (45 – 180mm), Towing Heads (50 – 450mm), Pipe Pushing Machines (63 - 400mm), Pipe Breakers 2 - 8"

General Equipment

Clegg Testers, Gas Monitors, Test Pumps, Submersible Pumps, Cable Detectors, Cobra Rods and Reels, Pipe Expanders, Breathing Apparatus

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