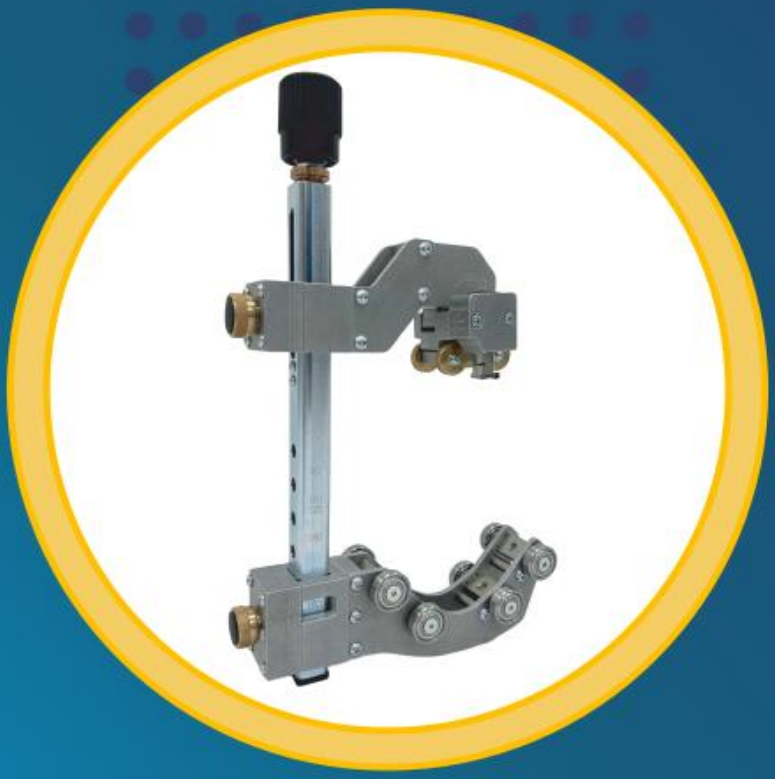
Hy-Ram Engineering

User Manual, Operating Instructions and Specifications



PatchMaster Multi Mechanical Scraping Tool

ELECTROFUSION

• INNOVATION • DESIGN • MANUFACTURE • SUPPLY

Hy-Ram Engineering

Pipe tool and equipment expertise

User Manual, Operating Instructions and Specifications

PrepMaster Multi mechanical pipe scraping tools for PE pipe

Description	Product Code
PatchMaster Multi – Ø20mm – 63mm	700-000185
PatchMaster Multi – Ø75mm – 180mm	700-000186
PatchMaster Multi – Ø90mm – 315mm	700-000187

Table of Contents

Product description 3

Health and Safety Introduction 4

Warning 4

Caution 4

Photo Gallery 5

Component Part Numbers – Ø20mm – 63mm PatchMaster 8

Component Part Numbers – Ø75mm – 200mm PatchMaster 9

Component Part Numbers – Ø90mm – 315mm PatchMaster 10

Specification 11

Standards 11

Operating Instructions: 12

Operating Instructions: 13

Product Calibration 14

Storage and Maintenance 14

Service Schedule 14

Certificate of calibration 18

Decommissioning & Disposal Instructions 18

Warranty. 18

Extent of Warranty. 18

Annex 20

Revision Table 20

Manual Handling 20

Contact Hy-Ram 20

Product description

The Hy-Ram PatchMaster Multi is a manually operated, mechanical rotary pipe Scraper. The intended use of the unit is to remove the outer oxidised surface of the polyethylene (PE80 and PE100) pipe prior to the electrofusion process.

The unit is intended for use in the mid-section of the pipe, as opposed to other tools that are intended for use at the pipe end. As such the unit is useful for scraping a 'band' around the pipe prior to the installation of an Electrofusion Top Tee.

The unit is adjusted for differing pipe diameters by sliding the body on the adjustment pillar.

There are three models to cover different pipe diameter ranges, however all work on the same principle in their operation and execution of removing the outer layer of pipe.

The Hy-Ram PatchMaster Multi range of scraping tools incorporate a hardened steel blade to give a controlled depth of cut over the range of pipe diameters.
The tools remove a layer in the order of 0.20 - 0.30mm thick from the outer surface of the pipe.
The tools remove a continuous strip of swarf over the insertion length of the fitting around the whole circumference of the pipe.

[The tools are not intended for use on PE pipes with removable skin. Removal of this skin should be carried out with an appropriate approved tool].

Note:
No other uses are considered appropriate for this unit.
To use this unit for other purposes could lead to the unit being used for dangerous applications that may cause injury and could result in bad practice and poor-quality workmanship.
The information contained in these instructions is to assist with the safe installation, operation and maintenance of the equipment.
This information should be made available to all persons who are required to work with or on the equipment.

Future amendments issued by Hy-Ram Engineering Co. Ltd. should be attached to this document.

In the case of any doubt with any aspect of this equipment, including the application, safe use and instructions within this document; contact for clarification and advice.

Health and Safety Introduction

This document explains about the tool and how to use and maintain it and should be available to all persons who are likely to use or work with or on the tool. Understand the following statements before using the tool.

Warning	Informs of hazardous conditions which may cause bodily harm
Caution	Informs of conditions which may cause damage to the equipment
Notes	Explains additional or helpful information

Warning

- Prior to use, read and understand the Operating Instructions and Specifications. Ensure all component parts are present and in serviceable condition.
- Always wear appropriate Personal Protective Equipment (PPE). Operatives should wear eye protection, gloves, safety headwear and footwear when using this equipment.
- It is not envisaged that this equipment can be used by untrained operatives. Only trained operators, familiar with the industry should use this equipment.
- The PatchMaster Multi tools remove a continuous strip of swarf around the circumference of the pipe. There is a danger of swarf causing injury to eyes.
- The PatchMaster Multi tool presents dangers from trapping parts of the body between the moving parts. Particular dangers are when mounting the tool and tightening the spring-loaded mechanism.
- The PrepMaster Multi tool works by being manually rotated around the pipe. This can present dangers in terms of injury to fingers/hands if there is insufficient room or clearance around the whole circumference of the pipe. The information contained in these instructions is to assist with the safe installation, operation, and maintenance of the equipment.
- The PrepMaster Multi range of scraping tools incorporate a hardened steel blade to give a controlled depth of cut for a specific pipe diameters/SDR. The cutting blade is sharp, and care must be taken when handling the tool and especially the blade.

Caution

- It is the responsibility of the operator of the tool to ensure that the PE pipe is suitable for this kind of pipe preparation and that the tool will conform to the specified welding standard. In case of any doubt, contact the pipe manufacturer and/or the relevant controlling authority.
- Only use the tool for the purpose of its design and on pipes within the specified diameters/SDR's. Always use in accordance with approved site operating procedures, approved by the network/asset owner/water company, in line with relevant industry standards and procedures.
- The cutter blade spring tension applied by turning the Cam is factory set and must not be tampered with or adjusted in anyway without prior consent from Hy-Ram or an authorised dealer.

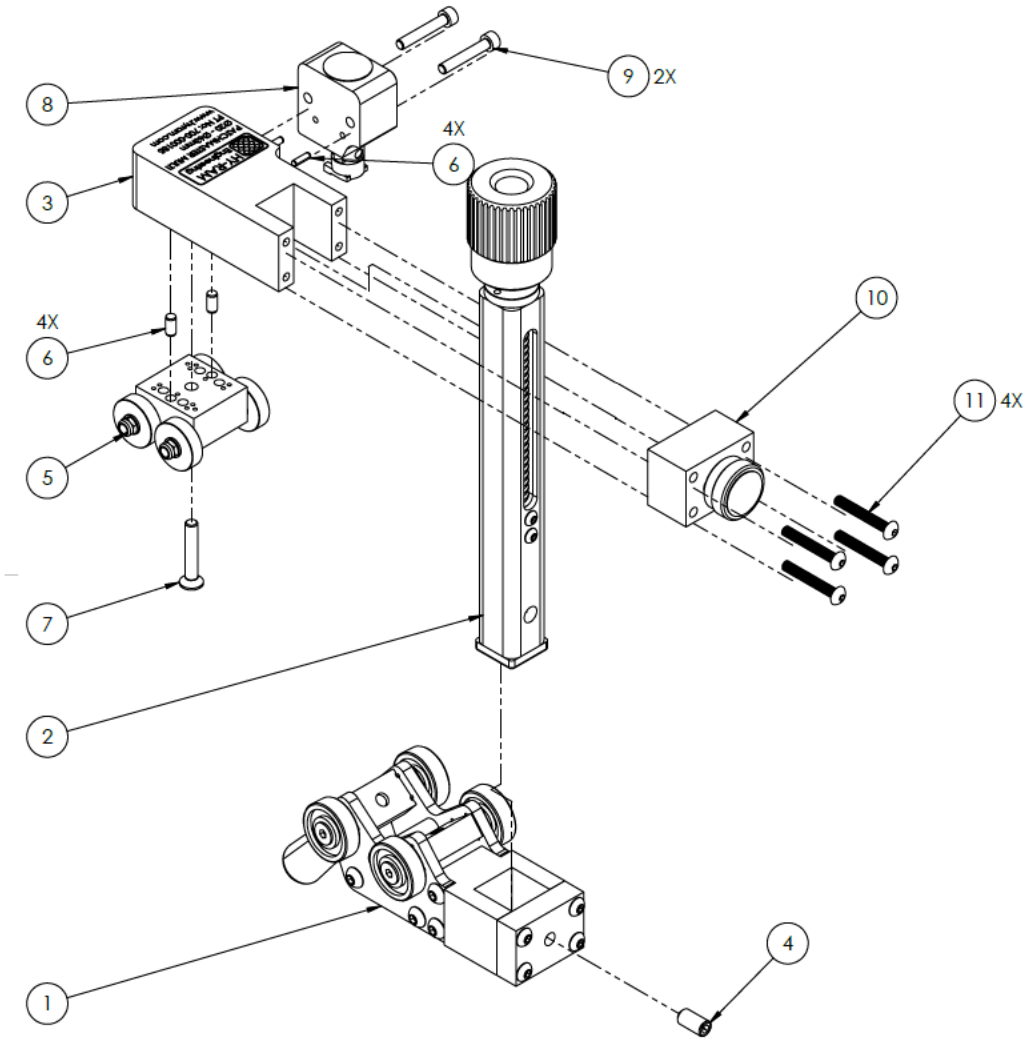
Photo Gallery




75
90
110
125
140
180

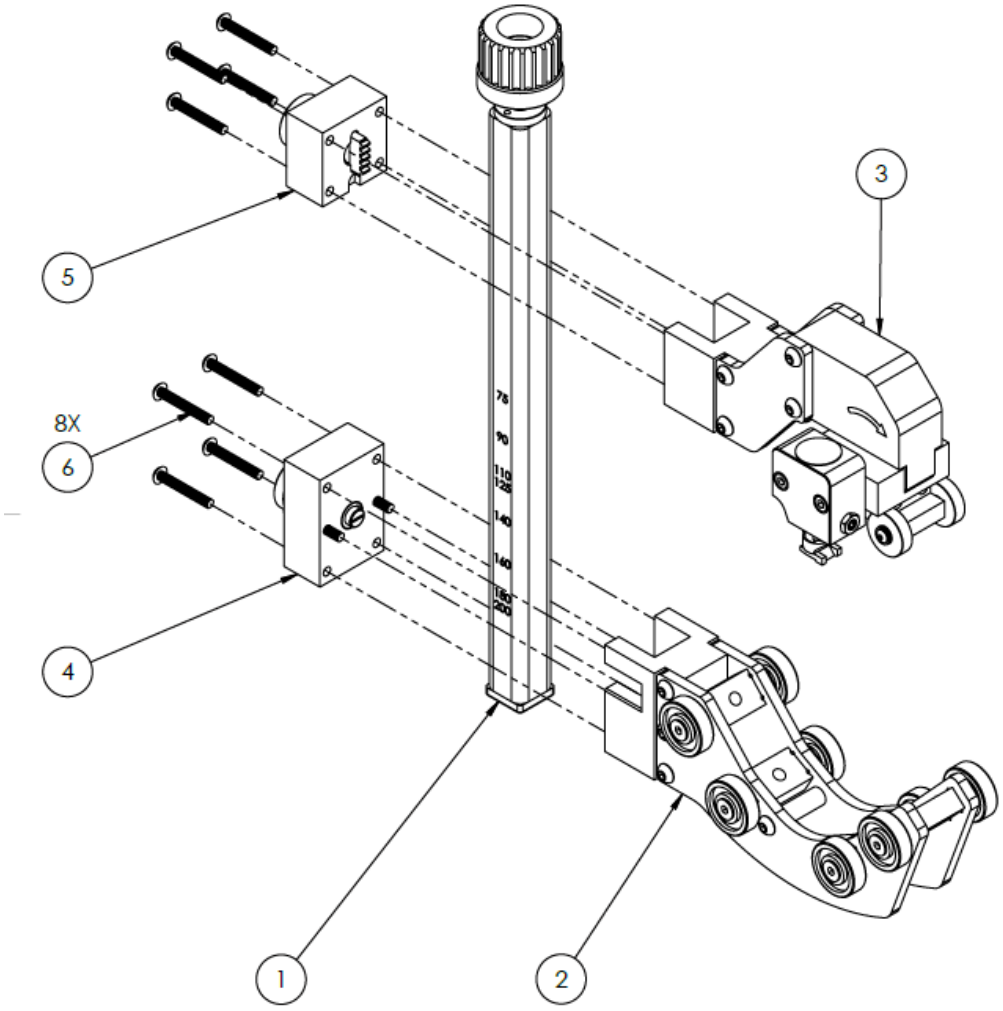

315
280
250
140
125
110
90

Component Part Numbers – Ø20mm – 63mm PatchMaster



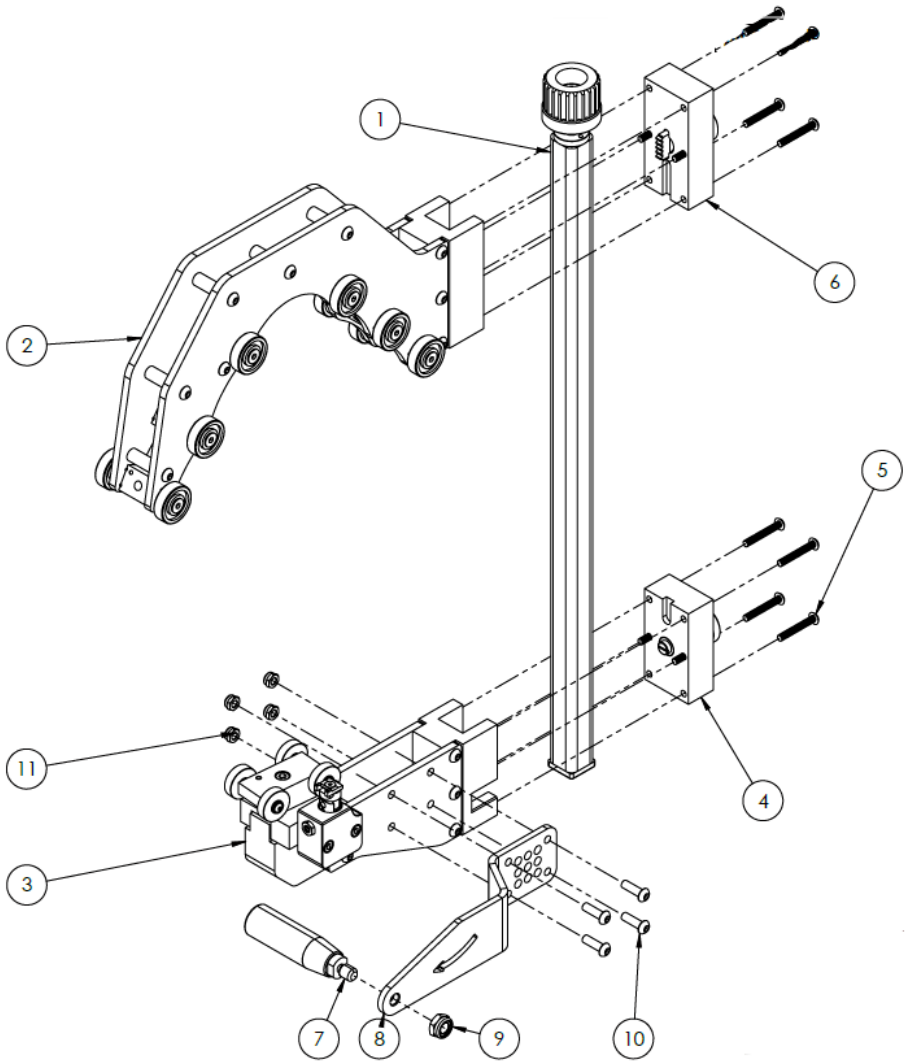
ITEM NO.	Part No	Description	QTY
1	046-000117	BOTTOM CARRIAGE ASSEMBLY	1
2	023-000400	SPINE BAR ASSEMBLY	1
3	046-000118	BLADE & TROLLY CARRIER	1
4	SCRW-M8x16mmSSCPBZP	M8 x 16mm HEX SOCKET CUP POINT SET SCREW	1
5	046-000087	TROLLY ASSEMBLY	1
6	DOWL-3x10-SS	Ø3mm x 10mm STAINLESS STEEL DOWEL PIN	4
7	SCRW-M6x35mmCSKBZP	M6 x 35mm HEX SOCKET COUNTERSUNK SCREW	1
8	046-000116	BLADE CARRIER ASSEMBLY	1
9	SCRW-M5x30mmCAPBZP	M5 x 30mm HEX SOCKET CAP HEAD SCREW	2
10	045-000529	BLADE & TROLLY CARRIER REAR PLATE	1
11	SCRW-M5x35mmBHSBZP	M5 x 35mm HEX SOCKET BUTTON HEAD SCREW	4
12	041-000112	0.25mm BLADE	1

Component Part Numbers – Ø75mm – 200mm PatchMaster



ITEM NO.	Part No	Description	QTY
1	023-000420	SPINE BAR ASSEMBLY	1
2	046-000119	BOTTOM CARRIAGE ASSEMBLY	1
3	046-000120	TOP CARRIAGE ASSEMBLY	1
4	045-000563	BOTTOM CARRIAGE ASSEMBLY REAR PLATE	1
5	045-000561	BLADE & TROLLY CARRIER ASSEMBLY REAR PLATE	1
6	SCRW-M5x35mmBHSBZP	M5 x 35mm HEX SOCKET BUTTON HEAD SCREW	8
7	041-000112	0.25mm BLADE	1

Component Part Numbers – Ø90mm – 315mm PatchMaster



ITEM NO.	Part No	Description	QTY
1	023-000422	SPINE BAR ASSEMBLY	1
2	046-000121	BOTTOM CARRIAGE ASSEMBLY	1
3	046-000122	TOP CARRIAGE ASSEMBLY	1
4	045-000565	BLADE & TROLLY CARRIER ASSEMBLY REAR PLATE	1
5	SCRW-M5x35mmBHSBZP	M5 x 35mm HEX SOCKET BUTTON HEAD SCREW	8
6	045-000567	BOTTOM CARRIAGE ASSEMBLY REAR PLATE	1
7	171-000157	REVOLVING GRIP	1
8	053-000054	FOLDED SCRAPER HANDLE ARM	1
9	NUTS-M10HNYNBZP	M10 NYLOC HALF NUT	1
10	SCRW-M6x20mmBHSBZP	M6 x 20mm HEX SOCKET BUTTON HEAD SCREW	4
11	NUTS-M6HNYNBZP	M6 NYLOC HALF NUT	4
12	041-000117	0.30mm BLADE	1

Specification

Materials	
Mild Steel	S275
Stainless Steel	S304
Aluminium	6082 T6
Phosphor Bronze	PB102

Finishes	
Mild Steel	Zinc Plated

Marking	
Engraving	Laser Etch / DOT Matrix

Weights & Dimensions	
Ø20mm - 63mm PatchMaster Multi Boxed Kit	422mm x 366mm x 107mm x 3.4 Kg
Ø75mm – 200mm PatchMaster Multi Boxed Kit	512mm x 445mm x 163mm x 6.7 Kg
Ø90mm – 315mm PatchMaster Multi Boxed Kit	600mm x 515mm x 163mm x 9.8 Kg

Standards

The tool is designed and manufactured using the following design principles.

GIS/PL2-5: 2018
Specification for Polyethylene pipes and fittings for natural gas and suitable manufactured gas. Part 5: Electrofusion ancillary tooling.

WIS 4-32-08: 2016
Specification for the fusion jointing of polyethylene pressure pipeline systems using PE80 and PE100 materials.

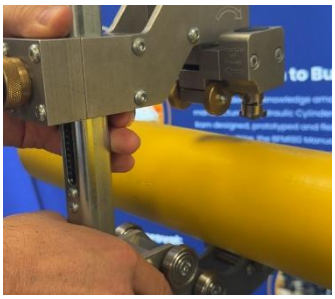
DVS Technical Code 2207-1: December 2016
Welding of thermoplastics. Heated tool welding of pipes, pipeline components and sheets made of PE-HD.

BS ISO 12176-2: 2025
Plastic pipes and fittings – Equipment for fusion jointing polyethylene systems. (Note – this specification is mainly for control units)

Operating Instructions:

Operation		
1		Ensure ALL maintenance and service checks have been carried out.
2		Check the pipe for any damage or abrasions that may be detrimental to the performance of the joint. Ensure the pipe ends to be jointed are cut square to the axis and burrs removed. If required, wash down the pipe ends in the area to be scraped to remove traces of dirt or mud. If using wet wipes, ensure they are in compliance with the relevant specification. Ensure the area to be scraped is dry before mounting the scraper tool.
3		Using a marker pen, mark the desired final position of the end of the fitting. Scraping should be carried out in beyond of this penetration depth.
4		Twist the knob on the bottom carriage assembly and slide it up or down to suit the required pipe diameter as shown in the window on the side.

Operating Instructions:

Operation		
5		Position the scraper over the pipe taking note of the direction of rotation and travel. Twist the knob on the top carriage assembly and slide to adjust close to the pipe surface. Twist the hand knob on top of the spine bar to engage the blade. Do not over-tighten.
6		Rotate the scraper until the desired length of scrape has been achieved. Dismount the tool from the pipe by twisting the hand knob. Do not touch or contaminate the scraped area.
7		Return the tool to its protective case when not in use.

Product Calibration

This product has no calibration requirement. Periodic safety inspections should be carried out by the operator if in any doubt please contact the manufacturer for further information.

Storage and Maintenance

- When the tool is not in use, always store in the plastic storage case.
- Ensure the tool is stored in a clean condition, free of dirt and mud.

Service Schedule

Before each use
Visual check

CE

EC DECLARATION OF CONFORMITY

1. Product description: Mechanical Rotary PE Pipe Scraping Tool

   Make: Hy-Ram
   Type: PatchMaster Multi Mechanical Pipe Scraping Tool

2. Manufactured by: Hy-Ram Engineering Co. Ltd., Pelham Street, Mansfield, Nottinghamshire, NG18 2EY.
3. This declaration is issued under the sole responsibility of the manufacturer.
4. The manufacture declares that the following machinery complies with the essential health and safety requirements of the Machinery Directive 2006/42/EC enacted in the United Kingdom by The Supply of Machinery (Safety) Regulations 2008.
5. This machinery has been designed and manufactured in accordance with the following transposed harmonised European standards or references to the other technical specifications in relation to which conformity is declared. The machinery complies with or is designed and manufactured so far as is possible to comply with the relevant essential health and safety requirements, taking into account the state of threat.

   - BS EN ISO 12100:2010 Safety of Machinery - General principles for design. Risk assessment and risk reduction.
   - BS EN ISO 13857:2008 Safety of Machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs.
   - BS EN 349:1993+A1:2008 Safety of Machinery – Minimum gaps to avoid crushing of parts of the human body.
   - GIS/PL2-5: 2018 Electrofusion ancillary tooling
   - WIS 4-32-08: 2016 Specification for the fusion jointing of polyethylene pressure pipeline systems using PE80 and PE100 materials.

6. A technical construction file for this machinery is retained at the address of the manufacturer stated above. Modifications to the equipment without prior written approval by the undersigned will render this declaration null and void.
7. The manufacturer applied the procedure for assessment of conformity with internal checks on manufacture. A conformity assessment body was not involved.
8. The technical documentation for the machinery is retained at the address of the manufacturer stated above.
9. Modifications to the equipment without prior written approval by the undersigned will render this declaration null and void.

For and on behalf of the manufacturer:
[Authorised representative of Hy-Ram Engineering Co Ltd].

Signature: *L Bullock-Jones*

Name: Lee Bullock Jones
Position: Technical Director
Date: 4th August 2026

Signature of this Declaration of Conformity authorises the manufacturer or his authorised representative to affix the CE mark to the equipment.

UK DECLARATION OF CONFORMITY

1. Product description: Mechanical Rotary PE Pipe Scraping Tool

   Make: Hy-Ram
   Type: PatchMaster Multi Mechanical Pipe Scraping Tool

2. Manufactured by: Hy-Ram Engineering Co. Ltd., Pelham Street, Mansfield, Nottinghamshire, NG18 2EY.
3. This declaration is issued under the sole responsibility of the manufacturer.
4. The manufacture declares that the following machinery complies with the essential health and safety requirements of the Machinery Directive 2006/42/EC enacted in the United Kingdom by The Supply of Machinery (Safety) Regulations 2008.
5. This machinery has been designed and manufactured in accordance with the following transposed harmonised European standards or references to the other technical specifications in relation to which conformity is declared. The machinery complies with or is designed and manufactured so far as is possible to comply with the relevant essential health and safety requirements, taking into account the state of threat.

   - BS EN ISO 12100:2010 Safety of Machinery - General principles for design. Risk assessment and risk reduction.
   - BS EN ISO 13857:2008 Safety of Machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs.
   - BS EN 349:1993+A1:2008 Safety of Machinery – Minimum gaps to avoid crushing of parts of the human body.
   - GIS/PL2-5: 2018 Electrofusion ancillary tooling
   - WIS 4-32-08: 2016 Specification for the fusion jointing of polyethylene pressure pipeline systems using PE80 and PE100 materials.

6. A technical construction file for this machinery is retained at the address of the manufacturer stated above. Modifications to the equipment without prior written approval by the undersigned will render this declaration null and void.
7. The manufacturer applied the procedure for assessment of conformity with internal checks on manufacture. A conformity assessment body was not involved.
8. The technical documentation for the machinery is retained at the address of the manufacturer stated above.
9. Modifications to the equipment without prior written approval by the undersigned will render this declaration null and void.

For and on behalf of the manufacturer:
[Authorised representative of Hy-Ram Engineering Co Ltd].

Signature: *L Bullock-Jones*

Name: Lee Bullock Jones
Position: Technical Director
Date: 4th August 2026

Signature of this Declaration of Conformity authorises the manufacturer or his authorised representative to affix the CE mark to the equipment.

Hy-Ram Engineering

Pipe tool and equipment expertise

Certificate of Conformity

This Certificate of Conformity certifies that the product detailed below has been designed, manufactured, inspected, and tested in accordance with our NQA approved:

Quality Management System ISO 9001:2015
Environmental Management System ISO 14001:2015
Occupational Health & Safety Management System ISO 45001: 2018

Product:
PatchMaster Multi Mechanical Pipe Scraping Tool

The product conforms to the following standards:

Safety of Machinery BS EN ISO 12100:2010 Safety of Machinery
General principles for design. Risk assessment and risk reduction.

GIS/PL2- 5: 2018 Electrofusion ancillary tooling
This unit is design and manufactured to meet the requirements of National Grid Gas Industry Standards.

WIS 4-32-08: 2016
Specification for the fusion jointing of polyethylene pressure pipeline systems using PE80 and PE100 materials.

Date: **4th August 2026**

Note! This product has no calibration period and periodic safety inspections should be carried out by the operator.
For further information contact the manufacturer. www.hyram.com

L Bullock-Jones
Lee Bullock Jones
Technical Director

PRODUCT CONFORMITY Hy-Ram Engineering Mansfield, England U.K.

Hy-Ram Engineering Co. Ltd.
Pelham Street
Mansfield
Nottinghamshire
NG18 2EY

Certificate of calibration

- This product has been designed, manufactured, inspected, and tested in accordance with our NQA ISO 9001:2015, NQA ISO 14001:2015 and ISO 45001:2018 systems.

Decommissioning & Disposal Instructions

- If a Hy-Ram product has reached the end of its useful working life dispose through a licensed scrap or waste disposal facility.
- Decommissioning and disposal are the responsibility of the customer. Take the product out of service safely and in compliance with essential Health and Safety requirements.

Warranty.

Extent of Warranty.

In the case that this product does not meet quality or performance expectations then Hy-Ram will replace the product to the customer's satisfaction. Hy-Ram will guarantee this product against breakage or defective workmanship for one year.

This guarantee is not valid in cases of abuse or exceptional damage beyond reasonable expectations or where incorrect use, or care of the product has occurred as described in the user manual and instructions. Additionally, the guarantee is not valid in cases of unauthorised modification, misuse, or any use not in accordance with the operating manual and good industry practice, operation outside the products specifications, improper site preparation or maintenance or when using with faulty pipe or fittings. Hy-Ram does not warrant the operation of any product to be uninterrupted or error free.

Any warranty or condition implied by law, shall be the replacement or parts, without charge, which are defective in material or workmanship, and which have not been misused, carelessly handled, or mis-repaired by persons other than the manufacturer or an Authorised Service Centre.

Hy-Ram Engineering Co Ltd offer a 1 year from date of despatch warranty only against defects in workmanship and materials. This limited warranty does not apply to any refurbished or reconditioned equipment and is non-transferable and subject to the conditions and limitations set forth herein. The standard Terms and Conditions of trade form part of this warranty.

Hy-Ram Engineering Co Ltd will, at its option, repair or replace (with a new or reconditioned unit of like condition).

All warranty work will be by Hy-Ram Engineering Co Ltd unless otherwise agreed or by authorised Hy-Ram Engineering Co Ltd service facilities.

If replacement parts are used in making repairs, these parts may be remanufactured or contain remanufactured materials.

In returning the product for repair, send in its original packaging or in packaging offering a sufficient degree of protection. With the product must be evidence of the date of purchase (see also the form at the rear of this document). Hy-Ram will not be responsible for any loss or damage incurred in connection with the return of the product. To the extent that this warranty statement is inconsistent with the law of the locality where the customer uses the product, this warranty statement shall be deemed modified by the minimum necessary to be consistent with such local

law. To the extent allowed by local law, the remedies provided in this warranty statement are the customer's sole and exclusive remedies. This tool has been designed for the range of pipe and fittings commercially available at the time of its design and development. Hy-Ram Engineering Co Ltd can accept no liability for the unit's ability or otherwise to work with new or different fittings that are subsequently introduced to the market.
The foregoing limited warranty is Hy-Ram Engineering's only warranty with respect to the product and Hy-Ram makes no other warranty whatsoever, written, or oral, express, or implied, regarding the product, including without limitation any warranty of merchantability, fitness for a particular purpose or non-infringement. In no event will Hy-Ram or its authorised dealers be liable for any loss of profits or special, consequential, or incidental damages even if such damages result from negligence or other fault.

Upon purchase, please complete the original purchase record below and keep it safely with your proof of purchase receipt. You will require it for any warranty claim.

Product Record (for any warranty claim)	
Company name and location	
Date of purchase	
Name and address of purchaser	
Type of tool	**PatchMaster Multi Mechanical Pipe Scraping Tool**
Serial number (if applicable)	

Annex

Note: Hy-Ram Engineering Co. Ltd. operate a policy of continual improvement and therefore reserves the right to modify product specifications without notice.

Revision Table

Version	Details	Section / Page	Date
V2.26	Original version	-	4th August 2026

Manual Handling

Please see the UK Health and Safety Executive for further guidelines regarding Manual Handling best practice.

- https://www.hse.gov.uk/msd/manual-handling/index.htm

Contact Hy-Ram

For service and repair please contact:

Hy-Ram Engineering Co. Ltd.
Pelham Street
Mansfield
Nottinghamshire
NG18 2EY
Tel: +44 (0)1623 422982
www.hyram.com

Hy-Ram Engineering

scan me for information on...

ELECTROFUSION

For Sales, Hire and Repair support contact our admin team or scan the QR code for further details

www.hyram.com

+44 (0) 1623 422982 enquiries@hyram.com

Head Office
Pelham Street
Mansfield
Notts
NG18 2EY

Mansfield Hire Depot
Unit 5
Abbey Industrial Estate
Hermitage Lane
Mansfield
Notts
NG18 5GH

Bury – North West
Unit 18
Peel Mills Industrial Estate
Bury
Lancashire
BL9 0LU

Enfield – South East
Unit 2
Riverwalk Business Park
Riverwalk Road
Enfield
EN3 7QN