Hy-Ram Engineering

User Manual, Operating Instructions and Specifications

PrepMaster Multi

Mechanical Rotary PE pipe end Scraping Tool

Diameter Size Range: 63 – 315mm Product Code: 700-000146

ELECTROFUSION

• INNOVATION • DESIGN • MANUFACTURE • SUPPLY

Contents

Product description

The Hy-Ram PrepMaster Multi 63-315mm 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 end prior to the pipe being inserted into the electrofusion fitting at the start of the electrofusion process.
The Hy-Ram PrepMaster Multi range of scraping tools incorporate a hardened steel blade to give a controlled depth of cut over a range of pipe diameters.
The tools remove a layer in the order of 0.2 - 0.4mm 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 PrepMaster Multi 63-315mm unit is designed for use on Polyethylene pipes with an outside diameter range of 63mm to 315mm with no restriction on wall thickness or SDR.
[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.
In the case of any doubt with any aspect of this equipment, including the application, safe use and instructions within this document; contact Hy-Ram Engineering Co. Ltd. for clarification and advice.

Introduction

This document 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 or work on the machinery.

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

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

Health and Safety Notes

Warning:
The PrepMaster Multi range of scraping tools incorporate a hardened steel blade to give a controlled depth of cut over a range of pipe diameters.
The cutting blade is sharp and care must be taken when handling the tool and especially the blade [The cutting blade is 4-sided and can be easily rotated using a 2.5mm Allen key].

Other hazards:
The PrepMaster Multi tools present dangers from trapping parts of the body between the moving parts. Particular dangers are when mounting the tool on the pipe, adjusting the roller carriage, trolley and insert block.
The PrepMaster Multi tools work 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 PrepMaster Multi tools remove a continuous strip of swarf around the circumference of the pipe. There is a danger of swarf causing injury to eyes.

Appropriate Personal protective Equipment (PPE) must be worn: Gloves, safety eyewear, safety headwear and safety footwear are mandatory.

Safety Instructions

Prior to use: 1. Read and understand the Operating Instructions and Specifications.
2. Ensure all component parts are present and in serviceable condition.
In particular, the cutter blade should be checked for damage or excessive wear. (Note: the cutter blade is 4 sided and can be rotated by using a 2.5mm Allen key)

Only use the tool for the purpose of its design and on pipes within the specified diameters.

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.

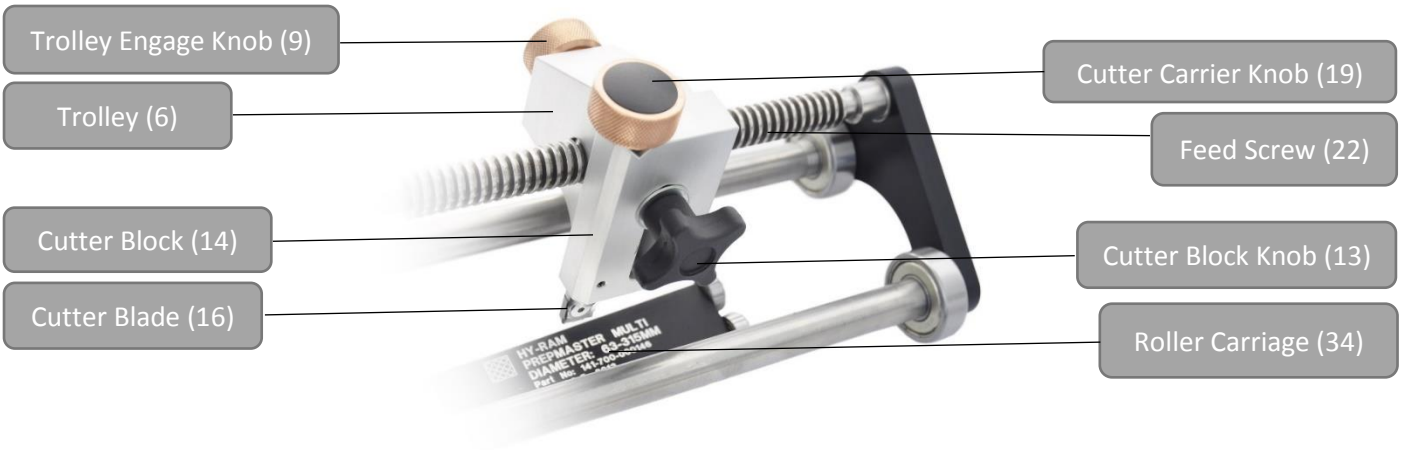
Always wear appropriate Personal Protective Equipment (PPE), see note in 'Hazards' above.

Take all possible precautions to avoid unexpected pipe movement whilst the tool is in use.

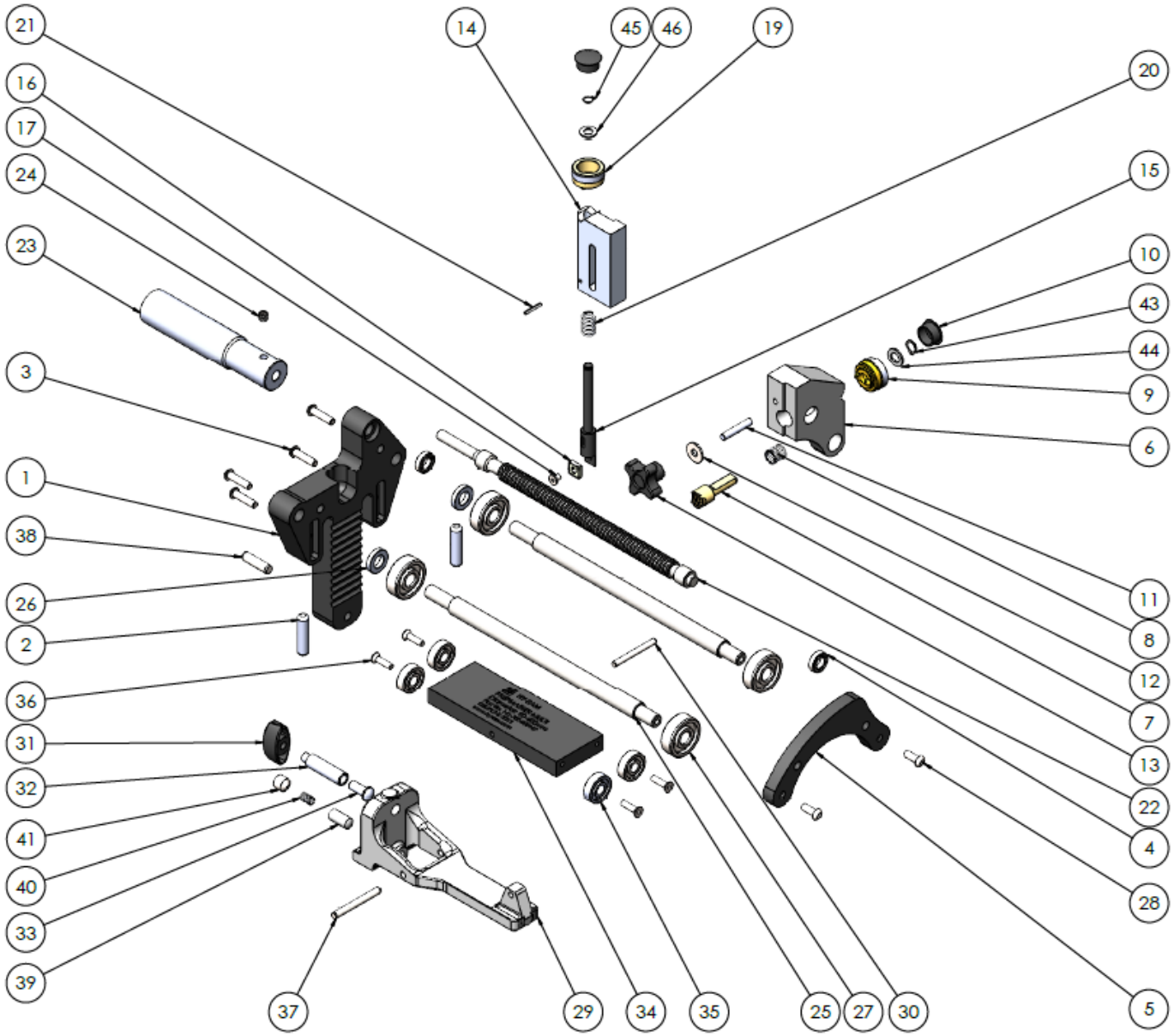
The cutter blade holder spring tension is factory set and must not be tampered with or adjusted without adequate training.

Photo gallery

Hy-Ram PrepMaster
63-315mm
Complete with steel
Carrying Case



Schematic parts drawing



Parts list and component part numbers

ITEM NO.	QTY	PART NO:	DESCRIPTION
1	1	645-000260	FRONT PLATE
2	2	023-000276	RUBBING BAR
3	2	SCRW-M6x16mmBHSBZP	M6 x 16LG HEX SKT BUTTON HD SCREW, BZP
4	1	033-000020	DEEP GROOVE BALL BEARING
5	1	645-000261	BACK PLATE
4	1	033-000020	DEEP GROOVE BALL BEARING
6	1	046-000041	TROLLEY
7	1	648-000091	PLUNGER
8	1	713-100033	SPRING
9	1	171-000096	TROLLEY ENGAGE KNOB
10	1	657-000081	PLASTIC CAP
11	1	058-000027	M6 STUD
12	1	760-000080	M6 PLAIN WASHER, BZP
13	1	171-000124	CUTTER BLOCK KNOB
14	1	042-000064	CUTTER BLOCK
15	1	174-000007	CUTTER HOLDER
16	1	117-000291	CUTTER
17	1	SCRW-M4x8mmCSKBZP	M4 x 8LG HEX SKT CSK HD SCREW, BZP
18	1	657-000082	PLASTIC CAP
19	1	171-000103	CUTTER CARRIER KNOB
20	1	SPRI-S298	SPRING
21	1	SELL-3mmx20mm-BZP	Ø3 x 20LG SELOC PIN, BZP
22	1	400-000102	FEED SCREW
23	1	171-000097	HANDLE
24	1	SCRW-M8x8mmCPGBZP	M8 x 8LG HEX SKT CONE POINT GRUB SCREW
25	2	023-000265	TIE BAR
26	2	760-000098	WASHER
27	4	033-000021	DEEP GROOVE BALL BEARING
28	2	SCRW-M6x16mmBHSBZP	M6 x 16LG HEX SKT BUTTON HD SCREW, BZP
29	1	046-000043	CARRIAGE ARM
30	1	DOWL-6mmx45mm-TypeA	Ø6 x 45LG PLAIN DOWEL PIN TYPE
31	1	171-000125	CARRIAGE ARM KNOB
32	1	400-000110	WING KNOB SCREW
33	1	184-000010	WING KNOB INSERT
34	1	046-000042	ROLLER CARRIAGE
35	4	033-000023	DEEP GROOVE BALL BEARING
36	4	SCRW-M5x12mmCSKBZP	M5 x 12LG HEX SKT CSK HD SCREW, BZP
37	1	DOWL-5mmx30mm-TypeB	Ø5 x 30LG PLAIN DOWEL PIN
38	1	DOWL-8mmx25mm-TypeB	Ø8 x 25LG PLAIN DOWEL PIN
39	1	648-000093	PLUNGER
40	1	SPRI-S213	SPRING
41	1	SCRW-M12x12mmCPGBZP	M12 x 12LG HEX SKT CONE POINT GRUB SCREW, BZP
42	2	SCRW-M6x16mmBHSBZP	M6 x 16LG HEX SKT BUTTON HD SCREW, BZP
43	1	087-140010	Ø10 EXTERNAL CIRCLIP
44	1	760-000108	Ø10 NARROW FLAT WASHER DIN433 (SMALL O/Dia), BZP
45	1	087-140008	Ø8 EXTERNAL CIRCLIP
46	1	760-000109	Ø8 NARROW FLAT WASHER DIN433 (SMALL O/Dia), BZP

Specifications

Materials:	Mild Steel – 070-M20 Stainless Steel – S 303 Aluminium Castings – LM4 Aluminium – 6082 T6 Brass – SAE660
Finishes:	Anodising on certain aluminium components
Marking:	Laser etch
Weight:	The tool is suitable for one-man operation. 700-000146 PrepMaster Multi 63-315mm: 3.0 Kg 045-000288 Carrying Case (Steel): 3.2 Kg
Dimensions:	700-000146 PrepMaster Multi 63-315mm: L 412 x W 147 x H 219 mm 045-000288 Carrying Case (Steel): L 427 x W 159 x H 245 mm
Typical depth of cut:	0.2 – 0.4mm
Maximum length of cut:	177 mm
Approximate feed-rate:	4 mm per rotation
Standards:	The tool is designed and manufactured to meet the requirements of: GIS/PL2-5: 2013 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: August 2007 Welding of thermoplastics. Heated tool welding of pipes, pipeline components and sheets made of PE-HD. BS ISO 12176-2: 2008 Plastic pipes and fittings – Equipment for fusion jointing polyethylene systems. (Note – this specification is mainly for control units)

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

Operating Instructions

1. Check the pipe for any damage or abrasions that may be detrimental to the performance of the joint. Ensure the pipe ends to jointed are cut square to the axis and burrs removed. If required, wash down the pipe ends in excess of 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 scraper tool.

2. Using a marker pen, mark the desired final position of the end of the fitting. (Scraping should be carried out in excess of this penetration depth).

3. Release the Cutter Block Knob (13) and slide the Cutter Block (14) to the fully raised position and then tighten the Cutter Block Knob (13) to lock the Cutter Block (14) in this raised position. This ensures that the Cutter Block is out of the way when mounting the scraper on the pipe.

4. Release the Carriage Arm Knob (31). Mount the Scraping tool on the pipe; the 4 x Bearings (27) should contact the outside diameter of the pipe and the Roller Carriage (34) is inserted into the bore of the pipe. The Carriage Arm (29) should then be adjusted into position by pushing it up the Front Plate (1). The pipe scraper is mounted correctly when the 4 x Bearings (35) are in contact with the inside wall of the pipe and the 4 x Bearings (27) and in contact with the outside of the pipe wall. The Carriage Arm Knob (31) should then be tightened; effectively clamping the scraping tool to the pipe wall. Ensure all 8 x Bearings (4 x inner and 4 x outer) are in good contact with the pipe by rotating the scraper one revolution.

5. Release Trolley Engage Knob (9) [1/4 turn] in order that the Trolley (6) can traverse freely along the Feed screw (22). Set the position of the Trolley ensuring sufficient length of cut – in excess of the penetration depth (refer to point 2. above). Once the position of the Trolley is set, engage the Trolley back onto the Feed screw (22) by turning Trolley Engage Knob (9) [1/4 turn].

6. Rotate Cutter Carrier Knob (19) [1/4 turn] to raise the Cutter Insert Holder (15) to the 'up' position.

7. Release the Cutter Block Knob (13) and slide the Cutter Block (14) downwards so that the Cutter Blade is in contact with the pipe. Lock the Cutter Block Knob (13) in this position.

8. Rotate Cutter Carrier Knob (19) [1/4 turn] to effectively apply spring tension to the Cutter Holder (15), thus causing the Cutter Blade to engage into the pipe wall.

9. Hold the Handle (23) and manually rotate the scraper tool around the pipe in a clockwise direction.

10. The Trolley (6) will begin to traverse on the Feed screw (22) and swarf can be seen to be generated as the Cutter Blade scrapes the pipe. It is possible to halt the process periodically to remove the surplus swarf.

11. Continue to rotate the scraping tool until the Cutter Blade has reached the very end of the pipe. The scraping tool can then be dismounted from the pipe taking care not to touch or contaminate the scraped surface.

12. To dismount; release the Cutter Block Knob (13) and slide the Cutter Block (14) to the fully raised position and then tighten the Cutter Block Knob (13) to lock the Cutter Block (14) in this raised position. This ensures that the Cutter Block is out of the way when dismounting the scraper from the pipe.

13. Release the Carriage Arm Knob (31) and slide the Carriage Arm (29) down the Front Plate (1) towards the centre of the pipe to effectively release the pipe scraper from the pipe. Carefully dismount the pipe scraper from the pipe.

Maintenance and storage

1. When the tool is not in use always store in the steel carrying case.
2. Ensure the tool is stored in a clean condition free of dirt and mud.
3. Before storing, ensure the Cutter spring tension is released. i.e. rotate Cutter Carrier Knob (19) [1/4 turn] in order that the Cutter Holder (15) is in the low/engaged position.
4. Lubricate all moving parts on a periodic basis.

CE

EC DECLARATION OF CONFORMITY

We hereby declare 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.

Product description: Mechanical Rotary PE pipe end Scraping Tool

Make: Hy-Ram
Type: PrepMaster Multi 63 – 315mm

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

This machinery has been designed and manufactured in accordance with the following transposed harmonised European standards.
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.

Safety of Machinery
BS EN ISO 12100:2010 Safety of Machinery - General principles for design. Risk assessment and risk reduction.
and
Gas Industry Standard
GIS/PL2-5:2013 Electrofusion Ancillary Tooling

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.

For and on behalf of the manufacturer:
[Being a nominated person appointed by the manufacturer, and employed by Hy-Ram Engineering Co Ltd].

Signature: ……..

Name: ……..

Position: ……

Date: ……

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

Certificate of calibration.

- This product has been designed, manufactured, inspected and tested in accordance with our LRQA approved ISO 9001: 2015 quality control systems and our LRQA approved ISO 14001: 2015 environmental procedures.

- This product has no calibration period and periodic safety inspections should be carried out by the operator. If in any doubt please contact the manufacturer for further information

Decommissioning & Disposal Instructions

- If a Hy-Ram product has reached the end of its useful working life and cannot be refurbished it must be disposed of through a licensed scrap or waste disposal facility. Alternatively, a reverse engineering company could be used to strip the equipment for recycling purposes, or the product can be returned back to the manufacturer.

- Decommissioning and disposal is the responsibility of the customer. The product must be taken out of service safely and in compliance with essential Health and Safety requirements.

Warranty.

1. 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 Additional 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 carried out 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, the product must be delivered in its original packaging or in packaging offering a sufficient degree of protection. The product must be accompanied by written 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.

Please complete this information and keep it safely with your proof of purchase receipt. You will require it for any warranty claim.

Name and location of seller .....

Date of purchase: .....

Name and address of purchaser: .....

.....

.....

Type of tool: .....

Serial number (if applicable): .....

<u>For service and repair please contact:</u>

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