



User Guide



Stressor (HSM70) and Power Pack

Permaquip Ltd
Brierley Industrial Park, Stanton Hill,
Sutton-In-Ashfield, Nottinghamshire, NG17 3JZ
Tel: +44 (0) 1623 513349
Fax: +44 (0) 1623 517742
E-mail: sales@permaquip.co.uk
www.permaquip.co.uk

CONTENTS

1	Issue and Revision Record	4
2	Introduction.....	5
3	Safe and Correct Use	5
4	Technical Specification	7
4.1	Physical Data for the Stressor Main Components..	7
4.2	Oil Specification.....	7
4.3	Fuel Specification	7
4.4	Operating Pressure	7
4.5	Operating Performance	8
4.6	Power Pack Specifications	8
4.7	Power Pack Engine Emissions	9
4.8	Noise	9
4.9	Product Compliance	10
5	General Layout.....	11
6	Operating Instructions.....	12
6.1	Pre-use Checks of the Stressor	13
6.2	Assembly of the Stressor.....	14
6.3	Operating and Removal of the Stressor.....	15
6.4	Pressure in Hoses and Rams	16
5.4.1	Using Screw Type Pressure Relief Tools.....	16
5.4.2	Using Flat Faced Female Pressure Relief Tools ..	17
5.4.3	Using Flat Faced Male Pressure Relief Tools...	17
7	Maintenance	18
8	Test Specification	19
9	Ordering	20
9.1	Main Components and Assemblies	20
9.2	Stressing Accessories	22
10	ISO46 Oil Material Safety Data Sheet.....	26

Please note

Whilst Permaquip Limited has taken every care in preparing this User Guide it is intended as a technical guideline only. Save to the extent that there are statutory rights to the contrary, Permaquip accepts no liability in relation to any use or reliance made of any information in this User Guide.

All information, illustrations and specifications in this User Guide are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Equipment operators and installers shall be responsible for ensuring that a safe working environment and safe systems of work are in place and in certain circumstances advice and permission from the controlling authority must be sought before any operation, installation or surveying work is carried out.

Permaquip™ is a trademark of Permaquip Ltd.

2 INTRODUCTION

The Permaquip™ HSM70 Stressor is designed to be used in pairs to adjust the gap between rail ends for rail stressing, rail welding, repairing rail failures and for installing insulated joints.

The non-slip type clamps enable the gap to be maintained accurately in order to facilitate a stress-free weld.

The Permaquip™ Power Pack is designed to provide power for the Stressor.

3 SAFE AND CORRECT USE

Please keep this User Guide for future reference.

To ensure safe and correct use of the Stressor and Power Pack the following should be noted:



Wear ear, eye, feet, head and hand protection when using the Stressor and Power Pack. Additional Personal Protective Equipment (PPE) should be worn according to local regulations.



During transit the Stressor and Power Pack should be secured and kept away from all electrified lines.



The Stressor and Power Pack, or parts of, must be replaced if damage occurs. Do not use the Stressor or Power Pack if any components are damaged.



Store the Stressor and Power Pack in a secure position.



Ensure that all hydraulic components and couplings are clean. Retract the rams and fit all quick release coupling dust caps after use.



Before using, undertake a Manual Handling Risk Assessment and follow the assessment guidelines at all times. Use the handles provided.



Use the Power Pack that has been approved by Permaquip Ltd and has been supplied for use with the Stressor.



Always retain the Stressor components together as identified by their unique serial number.



Refer to the Operating Manual supplied with the Power Pack for additional information.



Always use the correct, clean oil, as defined in the technical specification. The Stressor and Power Pack have been filled and tested with clean, new hydraulic oil to this specification. They must be properly maintained and not contain contaminated oil. No liability will be accepted for failure or malfunction of the equipment if this condition is not met.



Always use the correct, clean filtered fuel, as defined in the technical specification. The Power Pack has been tested with clean, new fuel to this specification and then drained. Contaminated fuel must not be used. When fuel is left in the engine it should be ran every for 5 minutes every 4 to 6 weeks. No liability will be accepted for failure or malfunction of the equipment if this condition is not met.



Only operate the Stressor with equal length Tie Bar Assemblies fitted.



Keep all components away from extreme temperatures.



Do not use the Hydraulic Hoses to move the Power Pack or Hydraulic Rams. Do not allow the hoses to kink, twist, curl or bend. Do not allow the hoses to come into contact with corrosive substances such as paint, oil, etc. Refer to Permaquip for further advice.



Do not use the Stressor or Power Pack for any other purpose than as described in the introduction.



Do not drag the Stressor or Power Pack along the ballast.



Dispose of used oil responsibly and in accordance with local regulations.

4 TECHNICAL SPECIFICATION

4.1 Physical Data for the Stressor Main Components

	Clamp Assembly	Ram Assembly	Short Tie Bar Assembly	Long Tie Bar Assembly (5')	Extended Tie Bar Assembly (10')
Length	635 mm	845 mm (closed)	467 mm	1610 mm	3050 mm
Depth	230 mm	180 mm	90 mm	90 mm	90 mm
Height	365 mm	235 mm	140 mm	140 mm	140 mm
Total Mass	66 kg	42 kg	9 kg	22 kg	37 kg
Centre of mass	Central	Central	Central	Central	Central

4.2 Oil Specification

The recommended oil is;

- Anti-wear hydraulic oil with an ISO viscosity grade 46.

Ensure that any alternatives used are to the same specification.

4.3 Fuel Specification

The fuel for the Power Pack engine is;

- Unleaded 95 RON petrol.

4.4 Operating Pressure

The maximum operating pressure of the Stressor is;

- Closed flow 8,500 p.s.i. (58.7 MNm⁻²)
- Open flow 2,800 p.s.i. (19.4 MNm⁻²)

4.5 Operating Performance

The performance limits of the Stressor are;

- Maximum Pulling Force 78 tonnes (39 tonne each Ram Assembly)
- Maximum Pushing Force 32 tonnes (15 tonne each Ram Assembly)
- Maximum Ram Stroke 380 mm

The Stressor can be used with the following rail sections;

- BS90A, 95A, 100A, 113A
- UIC50, 54 and 60
- IRS 75R and 90R
- 95 RBH
- S49

Note that the appropriate rail guide will need to be fitted.

Please contact Permaquip Ltd if the stressor is required to be used with other rail sections.

4.6 Power Pack Specifications

	Power Pack
Width	720 mm
Depth	480 mm
Height	480 mm
Total Mass (empty)	68 kg (65 kg)
Centre of mass	Central

The maximum operating pressure of the Power Pack is;

- Closed flow 8,500 p.s.i. (58.7 MNm⁻²)
- Open flow 2,800 p.s.i. (19.4 MNm⁻²)

An internal relief valve set at 8,500 p.s.i. prevents over-pressure conditions.

- The Power Pack is fitted with high pressure quick release couplings that are intended for connection with the Stressor and associated Hydraulic Hoses.

Please contact Permaquip Ltd if the Power Pack is required to be used for other applications.

4.7 Power Pack Engine Emissions



Do not use the Power Pack in confined spaces such as tunnels without adequate ventilation in place.

The Power Pack is fitted with a Honda GX100 engine, that is certified to meet the emissions shown below for 250 hours providing the correct maintenance is performed, as specified in the Operating Manual (supplied with the Power Pack).

	g/hp.hr
Hydrocarbons	8.6
NO_x	1.4
CO	332

4.8 Noise

The sound level measured is between 81 and 96 dB(A), depending on engine/pump load applied

4.9 Product Compliance

The Stressor is considered as having Network Rail Grandfather Rights.

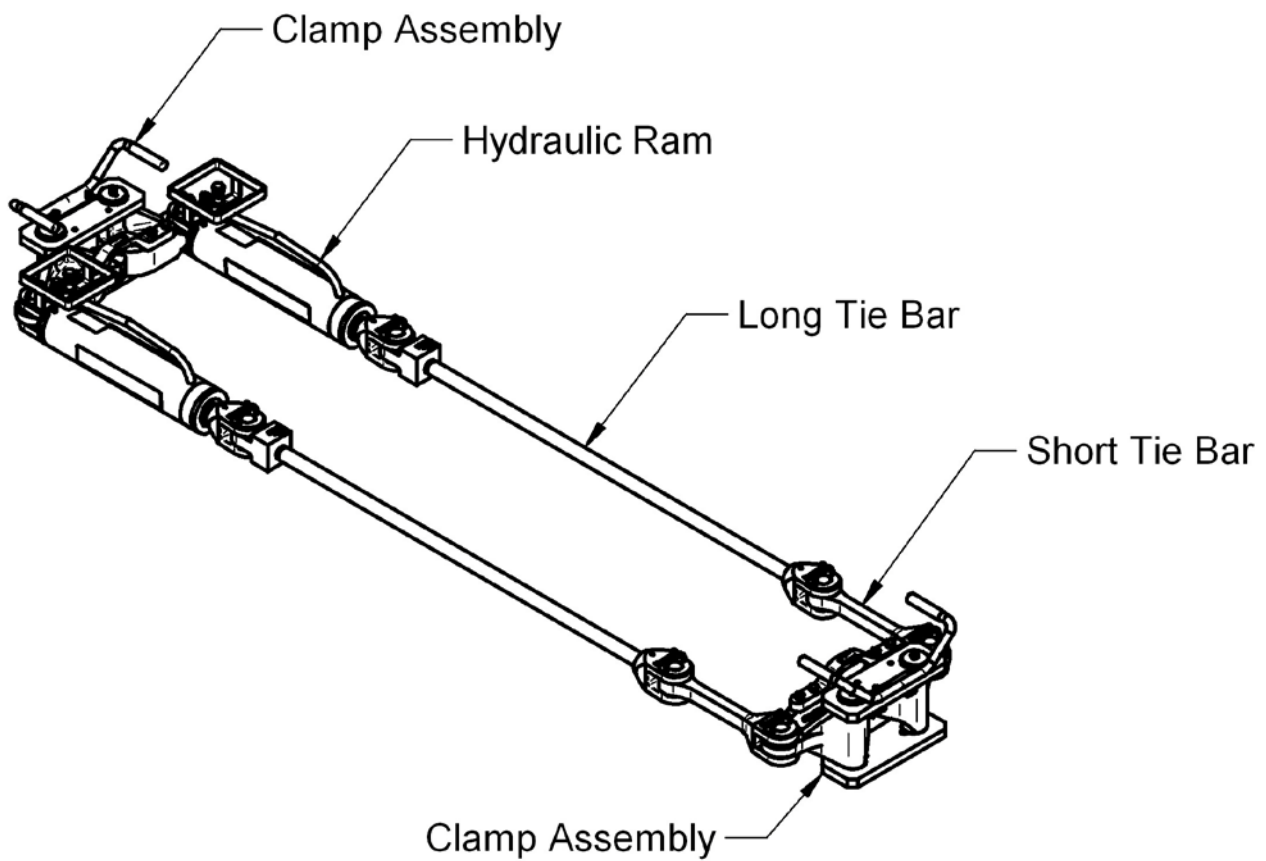
The Stressor complies with the following:

- SI 1994/2063 (SOMSR)
The Supply of Machinery (Safety) (Amendment) Regulations 1994
- Directive 2006/42/EC
Safety of Machinery.
- Directive 93/68/EEC
CE Marking.

CUSTOMER NAME AND ADDRESS		SUPPLIERS NAME AND ADDRESS	
		Harsco Rail Ltd Unit 1 Chewton Street Eastwood Nottingham NG16 3HB	
CUSTOMER ORDER No.		HARSCO RAIL REFERENCE	
CERTIFICATE No.		DATE OF MANUFACTURE	
MACHINE TYPE	Hydraulic	PART No.	26910
QUANTITY	1	SAFE WORKING PRESSURE	7700psi
DESCRIPTION OF EQUIPMENT	HSM70 Stressor	PADS / CAT No.	69/26018
SERIAL NO.			
RESPONSIBLE PERSON		Permaquip Manager Harsco Rail Ltd	
MANUFACTURER		Harsco Rail Ltd Unit 1 Chewton Street, EASTWOOD, Notts. NG16 3HB	
DIRECTIVES COMPLIED WITH		Machinery Directive 2006/42/EC Note: (When powered by a Permaquip Power Pack)	
PERSON EMPOWERED TO SIGN ON BEHALF OF THE RESPONSIBLE PERSON			
MANUFACTURING CONFORMITY EXAMINATION USED: Tensile and Pressure overload tested to 130% of safe working load.			
SIGNATURE:		DATE:	

5 GENERAL LAYOUT

The following shows the main components of the Stressor (Power Pack and Hose Assembly not shown).



6 OPERATING INSTRUCTIONS

The following procedure outlines the correct method for operation.



Should any of the checks fail do not use the equipment.



All work should only be performed by competent personnel.



Always follow local regulations.



Observe Manual Handling Regulations.

6.1 Pre-use Checks of the Stressor

Hoses

1. Check that the quick release couplings on the Rams and Hose Assemblies are not damaged and are clean.
2. Check the Hydraulic Hoses are not damaged.

Note that new hoses are delivered empty of hydraulic oil.

Long and Extended Tie Bars

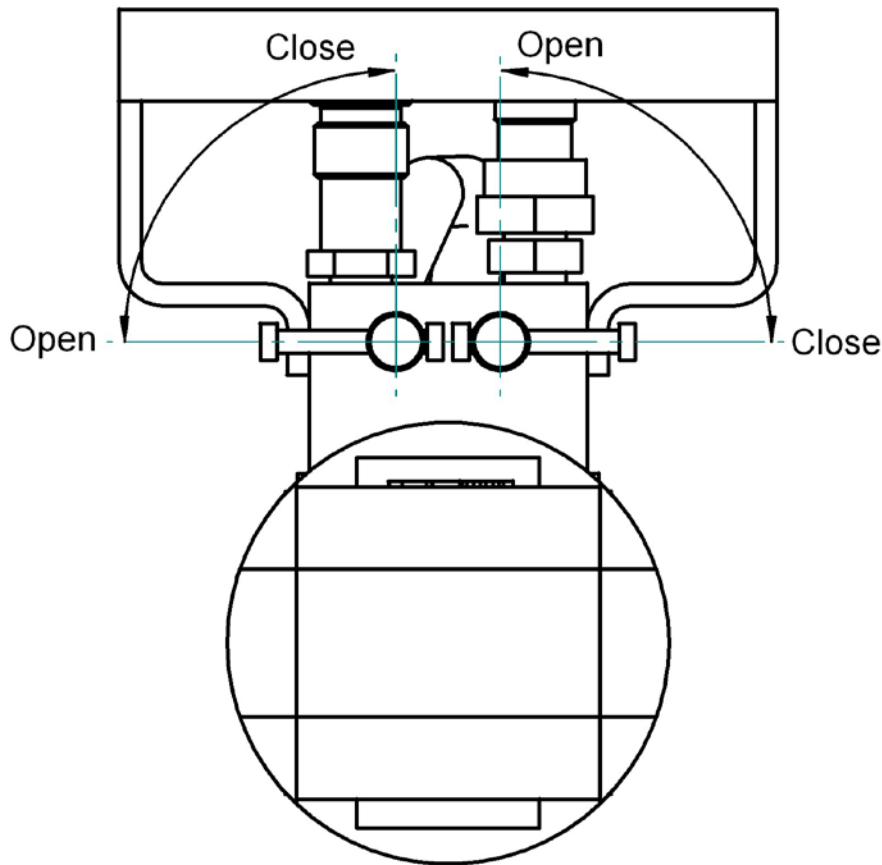
1. Ensure that the Fork and Clevis Ends have full thread engagement and do not rotate on the Tie Bar. Check the securing pins are in position.
2. Check that the pins in the Fork and Clevis Ends fit easily without excessive play.
3. Check that the Tie Bar is free of damage.

Clamp Assemblies

1. Check that the Lever Arms pivot freely in the Top Plate and that there is no excessive play.
2. Ensure that the teeth on the Jaws are clean. Use a wire brush when required.
3. Check that the Jaws rotate 2° or 3° in the Lever Arms. Do not use if they rotate more than this or if they are seized.
4. Check that all fasteners are secure. These should never be slackened off to assemble the unit onto the rail.

Hydraulic Rams

1. Upon first use (no pressure inside the Rams), rotate the Bleed Screws to their 'Open' position, as shown below. Fill with oil using the Power Pack. Once full, close the Screws.



2. Ensure that the Fork Ends have full thread engagement and do not rotate on the Ram Piston rod. Check that the securing pins are in position.
3. Check that the pins in the Fork and Clevis Ends fit easily without excessive play.
4. Connect the Hose Assembly to the Hydraulic Rams.
5. Rotate the Pressure Release Bleed Screws to their 'Closed' position.
6. Operate the Power Pack in accordance with the Operating Instructions so the Hydraulic Rams are fully extended and the maximum working pressure of 3,000 p.s.i is reached.
7. Check that the system is free from leaks.
8. Ensure that the Hydraulic Ram Piston rods are free from damage.
9. Operate the Power Pack in accordance with the Operating Instructions so the Hydraulic Rams are fully retracted and the maximum working pressure of 7,700 p.s.i is reached.
10. Lock in the pressure and turn off the Power Pack.
11. Maintain the system pressure for 5 minutes. Check the system is free from leaks and that the pressure does not decay.
12. Release the pressure, disconnect the Hydraulic Hoses and replace all dust caps.

6.2 Assembly of the Stressor

1. Position the Stressor components by the rail to be welded.

2. Ensure that the Pressure Release Bleed Screws are in their 'Closed' position.
3. Remove all quick release coupling dust caps and connect the Hoses to the Hydraulic Rams.
4. Operate the Power Pack in accordance with the Operating Instructions so that the Rams are fully extended. If partial extension is required ensure that the Rams are of equal length.
5. Rotate the Lever Arms of the Clamp Assemblies by 90°. Place the Clamp Assemblies over the rail. Ensure that there is enough clearance between the bottom Cross-plate and the adjacent sleepers.
6. Engage the bottom Cross-plate (with the flat side facing upwards) by rotating back the Lever Arms by 90°.
7. Connect the Hydraulic Ram ends to one of the Clamp Assemblies, ensuring that the pins are fully in.
8. Connect the Long Tie Bars to the other Clamp Assembly, ensuring the pins are fully in with the Washer flat aligning with the lug. When using Long or Extended Tie Bars, ensure that the centre of the bar is adjacent to the weld gap (indicated by the black mark on the bar centre).
9. Connect the remaining end of the Long Tie Bars to the remaining end of the Hydraulic Ram Piston Rod. Ensure that the pins are fully in with the Washer flat aligning with the lug.
10. Open the Lever Arms a few degrees and pull the Clamp Assemblies away from each other to remove any slack in the Tie Bars.
11. Ensure that the Clamp Assemblies are square to the rail and pull the Clamp Assemblies away from each other again to engage the Jaws onto the rail web.
12. Fully close the Lever Arms.

6.3 Operating and Removal of the Stressor

1. Move the hydraulic valve manifold release lever to the disengaged position (to reduce the load on the engine when starting).
2. Operate the Power Pack until the required gap is obtained.
3. When the operation has been completed extend the Hydraulic Rams until all tensile load is removed from the assembly.
4. Remove all connecting pins.
5. Operate the Power Pack until the Hydraulic Rams are fully retracted.
6. Now operate the Power Pack to extend the Hydraulic Rams slightly (say 5 to 10mm) to reduce the possibility of entrapped pressure preventing the connection of the couplings at a later date.
7. Disconnect the Hoses and refit all quick release coupling dust caps.

6.4 Pressure in Hoses and Rams



Ensure that the hydraulic hoses are kept out of the sun, as the heat may cause an increase in internal pressure, causing difficulties when connecting.

Should a hose or ram be incorrectly uncoupled whilst pressurised, the hose or ram assembly should be returned to the appropriate Maintenance Depot. The pressure can then be removed by using the Pressure Relief Tools for either the screw type or flat faced coupling by competent personnel using the correct facilities.

Do not attempt to release the pressure by any other means.



Wear Personal Protective Equipment (PPE) with special attention to eye and hand protection.



Dispose of used oil responsibly and in accordance with local regulations.

5.4.1 Using Screw Type Pressure Relief Tools

1. Ensure before connecting to the pressurised hose or ram, that the Pressure Relief Screw is unscrewed by at least 10mm.
2. Connect the appropriate valve to the male/female hose coupling and ensure that it is tightened by hand so that the two faces mate.
3. Slowly screw in the Pressure Relief Screw to release the pressure within the hose or ram and containing the oil into the vessel.
4. Carefully remove the Pressure Relief Tool from the hose or ram and remove any released oil from the vessel.

5.4.2 Using Flat Faced Female Pressure Relief Tools

1. Ensure the yellow plunger is pushed fully into the vessel and that the attachment head is screwed forward away from Pressure Relief Tool until internal surfaces are flush.
2. Ensure that the tapered locking ring and fibre seal are in place inside the attachment head then push onto the female coupling until fully engaged. Lock in place by tightening the outer clamp nut.
3. Firmly grip attachment head and coupling in one hand then slowly screw the Pressure Relief Tool into the attachment head. Any trapped pressure will then force oil through the coupling filling the vessel, and push the yellow plunger handle out.
4. When the yellow plunger handle stops moving, unscrew the clamping nut to release and remove the Pressure Relief Tool from the coupling.
5. To empty the Pressure Relief Tool, point the head in a clean container and carefully depress the yellow plunger.

5.4.3 Using Flat Faced Male Pressure Relief Tools

1. Ensure the yellow plunger is pushed fully into Pressure Relief Tool and that the female coupling is screwed fully forward away from Pressure Relief Tool.
2. Push female coupling on to male coupling and ensure that the coupling sleeve jumps forward and turns away from the locking ball.
3. Firmly grip the two connected coupling in one hand then screw the Pressure Relief Tool into the female half. Any trapped pressure will then force oil through the coupling filling the vessel, and push the yellow plunger handle out.
4. When the yellow plunger handle stops moving, twist the sleeve of the female coupling to align gap with locking ball and pull back to release from male half.
5. To empty, point female coupling at a clean container and carefully depress the yellow plunger.

7 MAINTENANCE



All work should only be performed by competent personnel.



Always follow local regulations.



Observe Manual Handling Regulations.

1. Follow the Pre-use checks outlined under the Operating Instructions.
2. Check that the oil level is correct. Use oil to the correct specification. Do not over fill.
3. Bleed any trapped air from the system. Ensure the Hydraulic Rams are lower than the Power Pack pump (this allows air to be released into the pump reservoir). Then operate the system through several cycles of fully extending and retracting the Hydraulic Ram without any load.
4. Check the low pressure stage of the hand pump unit.
 - Connect the hoses to one side of the Power Pack.
 - Connect the hoses together by joining male and female quick release couplings.
 - Turn the pump control to the closed position.
 - Operate the hand pump handle. The correct pump action should feel positive through the downward stroke. If the pump action is slack, the hand pump requires internal inspection.
 - Disconnect the quick release couplings.
 - Repeat for the other side of the Power Pack.
5. Check the high pressure stage of the hand pump unit.
 - Connect the hoses to one side of the Power Pack.
 - Lay out the hoses in a straight line and on a surface where leaks can be easily observed.
 - Turn the pump control to the 'Closed' position.
 - Operate the hand pump handle until 5,000 p.s.i. is achieved. Ensure the pressure does not drop and no leaks are evident. If the pressure drops but there are no leaks then the hand pump will require an internal inspection. Repeat for 7,700 p.s.i. In both cases the correct pump action should feel positive through the downward stroke. If the pump action is slack, the hand pump requires internal inspection.
 - Turn the pump control to the 'Open' position.

- Operate the hand pump until the pressure is zero. Operate the hand pump for a further 10 strokes and check for leaks. After a further 4 strokes the relief valve should be heard operating.
- Disconnect the quick release couplings.
- Repeat for the other side of the Power Pack.

8 TEST SPECIFICATION

The Stressor should be tested to the following specification after the Maintenance procedures have been completed.

1. Set the Clamp Assemblies onto the Test Rig, positioned for the 'pull' operation.
2. Ensure that the correct Rail Guides are fitted and are correctly positioned.
3. Extend the rams to **halfway** of their stroke. Do not test with the rams positioned at either end of their stroke.
4. Fit the Rams, Short and Long Tie Bars, with the Long Tie Bars to the Rams. Check that the Pins are fully engaged in the Fork Ends and Clevises and that the flat edges of the Washers engage against the Fork End stop shoulders.
5. Using a calibrated hydraulic Power Pack, apply a low hydraulic pressure (up to 3,000 p.s.i.) to retract the Hydraulic Rams and to take up slack in the complete assembly.
6. Increase the test pressure to 8000 p.s.i. and lock off the control valve. Leave the system pressurised for 20 minutes and then check the system pressure. It should not have fallen by more than 200 p.s.i.
7. Release the pressure and carry out a visual inspection of the complete assembly. There should be no oil leaks and all components should be in good condition and free from damage or deformation.
8. If the complete assembly has passed all tests then ensure that all components carry the same serial number, re-mark as necessary and re-certify.





Note that the Maintenance and Testing of the Stressor Power Pack Pressure Gauge is defined as Railway Safety Critical under CoP0010, Railway Safety Critical Maintenance Elements of Small Plant and Equipment.


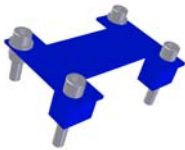





Therefore ensure that the pressure gauge is correctly operating and has an appropriate Calibration Certificate.




Permaquip Ltd offer a testing and maintenance service – please contact us for further details.

9 ORDERING

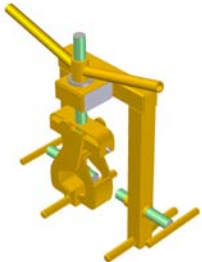



9.1 Main Components and Assemblies



DESCRIPTION		PADS Cat. No.	PART NO
<p>Stressor with Screw-in Quick Release Couplings (Standard excluding the Power Pack and Hoses)</p>		<p>69/26018</p> <p>LUL Certificate Number PE007/1306</p>	26910
<p>Stressor with Flat-face Quick Release Couplings (Standard excluding the Power Pack and Hoses)</p>			33296
<p>Stressor with Screw-in Quick Release Couplings (For UIC60 excluding the Power Pack and Hoses)</p>			32763
<p>Stressor Power Pack with Screw-in Quick Release Couplings</p>		65/029038	32834

Stressor Power Pack with Flat-face Quick Release Couplings			33282
Hose Assembly with Screw-in Quick Release Couplings (1/2 set)		65/029241	29657
Hose Assembly with Flat-face Quick Release Couplings (1/2 set)			33281
UIC60 Rail Guide Kit (1/2 set)			31803
Ram Seal Kit			05674
Hydraulic Ram Assembly with Screw-in Quick Release Couplings			05024
Hydraulic Ram Assembly with Flat-face Quick Release Couplings			33293
Clamp Assembly (Standard)			03070
Clamp Assembly (UIC60)			33079
Short Tie Bar Assembly			05039

Long Tie Bar Assembly (5')			03071
Extended Tie Bar Assembly (10')			06194
'C' Spanner (for replacement of Ram Seals)			05058

9.2 Stressing Accessories

DESCRIPTION		PADS Cat. No.	PART NO
Rail Lifter			28797
Side Support Roller 'E' Plus Clip			33421
Standard Padscraper		39/53210	02296
Heavy Duty Padscraper		39/53212	03281

Under Rail Roller		39/51338	07160
PAN/SHC Side Support		39/63675	02349

DESCRIPTION		PADS Cat. No.	PART NO
AD Side Support		39/63671	04940
Mills Side Support		39/63676	03073
BJB Side Support		39/63672	26852
Pressure Relief Tools (Screw type)			34414

Pressure Relief Tools
(Flat faced)



35211

For spare parts please see the Spare Parts List.

Please contact Permaquip Ltd for further information and support.

Our contact details are shown on the front of this User Guide.

In order to avoid delay and to have your orders fulfilled promptly,

Please telephone, e-mail, fax or write giving the following information:

- 1. Company name.**
- 2. Contact details.**
- 3. Invoicing and delivery details.**
- 4. Purchase order number.**
- 5. Method of delivery.**
- 6. Part number, description and quantity for each item.**

10 ISO46 OIL MATERIAL SAFETY DATA SHEET

The following outlines the oil supplied within the Stressor.

SAFETY DATA SHEET				
1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY				
NAME OF MANUFACTURER/SUPPLIER: FUCHS LUBRICANTS (UK) PLC		Sheet 1 of 4 Revision Number 4 Last revision 23 September 2004 Issue date 23/09/2004		
ADDRESS: New Century Street, Hanley, Stoke-on-Trent ST1 5HU				
Business Telephone: 08701 200400 Fax: 01782 202072				
PRODUCT NAME: RENOLIN CL46		Product Code: T153		
APPLICATION: An industrial hydraulic oil.				
2. COMPOSITIONAL INFORMATION:				
A blend of highly refined mineral oils with multifunctional additives				
Hazardous ingredient	Risk codes	CAS Number	EEC Number	% range
Mineral oil	OEL assigned			>80%
3. HAZARDS IDENTIFICATION:				
The product is not dangerous when handled with care and according to its determined use. Skin irritation is possible, however, due to prolonged direct exposure.				
Special hazards of product after use:	None if used for the intended purpose.			



PRODUCT NAME:**RENOLIN CL46**

Sheet 2 of 4

Revision Number

4

Last revision 3 September 2004

Issue date 23/09/2004

4. FIRST AID MEASURES:

Eyes: Wash immediately with copious amounts of water/eyewash, holding the eyelids open. Obtain treatment by a Doctor if symptoms persist.

Skin: Wash skin with soap and water. Wash at intervals dictated by good standards of industrial hygiene

Inhalation: Remove to fresh air. If effects persist, seek treatment by a Doctor.

Ingestion: DO NOT INDUCE VOMITING. Wash mouth out with water. Obtain immediate treatment by a Doctor and provide a copy of this sheet.

Pressure injection: ALWAYS OBTAIN IMMEDIATE MEDICAL ATTENTION EVEN THOUGH THE INJURY MAY APPEAR MINOR.

5. FIRE FIGHTING MEASURES

Flammability: Combustible

Flash point (*C,PMCC): >100

Extinguishing media: Use foam, dry powder, CO2. Never use water .

Products of combustion: Oxides of carbon together with dense smoke

6. ACCIDENTAL RELEASE MEASURES.

Personal precautions: Good standards of industrial hygiene are recommended for use of this product

Environmental precautions: Prevent liquid entering land, sewers, drains or water courses.

Decontamination: Absorb in earth or sand or other suitable material. Transfer to suitable and labelled containers for subsequent disposal.

7. HANDLING AND STORAGE.

Keep containers tightly closed. Store under cover. Compatible with most common metals; may soften certain rubbers - use resistant seals. A bunded area may be required.

Storage temperature: <60 C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION.

Occupational exposure limits	Substance	LTEL	STEL	Source/other information
	Mineral oil (mist)	5mg/m ³	10mg/m ³	EH40(UK)

Engineering control measures Local exhaust ventilation is recommended when excessive product misting occurs.

Personal protection Select PPE appropriate for the product properties/operations taking place. No eating, drinking or smoking in the work area. Wash before breaks and at end of shift/day. Do not keep contaminated cloths in pockets. Launder coveralls at regular intervals.

PRODUCT NAME:

Sheet 3 of 4

Revision Number

4

Last revision September 2004

Issue date 23/09/2004

RENOLIN CL46**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Amber fluid	Odour:	Mild mineral
Specific gravity @ 15.6°C:	0.873	pH:	
Vapour pressure (mm Hg)@ 20°C:		Vapour density (air=1)	
Boiling point (°C):		Pour point/Melting point (°C)	-27
Flash point (°C, PMCC):	>100	Autoignition temperature, °C	>250
Flammability limit in air, % by volume:	LEL:	UEL:	
Volatile organic compounds, %:			
Kinematic viscosity(cSt) @ 40°C:	46		
Solubility:	Insoluble in water. Soluble in petroleum solvents.		

PLEASE NOTE: THESE PROPERTIES ARE FOR GUIDANCE ONLY. THEY DO NOT CONSTITUTE A SPECIFICATION

10. STABILITY AND REACTIVITY

Stability:	The product is stable and not subject to polymerisation
Conditions to avoid:	Avoid exposure to extreme heat.
Materials to avoid:	Incompatible with strong oxidising agents
Hazardous decomposition products:	Oxides of carbon and water vapour with unidentified organic compounds. dense, white, irritating smoke.

11. TOXICOLOGICAL INFORMATION

The following toxicological assessment is based on a knowledge of the toxicity of the product's components

Estimated oral LD50 Rat, >2000mg/Kg.

HEALTH EFFECTS

On eyes:	May cause temporary irritation and discomfort.
On skin:	Generally non-irritant on incidental contact. Excessive or prolonged contact may give rise to slight irritation.
By inhalation:	Harmful concentrations of vapour do not normally arise except under high temperature or high atomisation. High concentrations of mist may give rise to respiratory irritation.
By ingestion:	Ingestion of large quantities may cause nausea, sickness and diarrhoea.
Chronic:	No hazard anticipated
Other:	Products which have become contaminated might present more serious health effects.

12. ECOLOGICAL INFORMATIONBiodegradability: <50% (CEC L-33-T-82) Chemical oxygen demand (mgO₂/l): Not determined

Not readily biodegradable but inherently biodegradable. Leaching and penetration through surface soils is generally regarded as resulting in long term persistence. Fresh or used product may be harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Used, degraded or contaminated product may be classified as special waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international regulations.

PRODUCT NAME**RENOLIN CL46**

Sheet 4 of 4

Revision Number

4

Last revision 3 September 2004

Issue date 23/09/2004

14. TRANSPORT INFORMATION

Classification for transport: Not classified for transport

Shipping name: n.a.

UN number: n.a.

Packing Group: n.a.

UN Class: n.a.

Marine pollutant: No

ADR/RID: n.a.

EmS number:

ICAO/IATA: n.a.

MFAG number:

15. REGULATORY INFORMATION

Hazard label data Not classified as hazardous for supply.

R/S Phrases None assigned.

None assigned.

EC Directives Framework waste directive, 91/156/EEC Waste oil directive, 87/101/EEC

Statutory information HASWA. Control Of Substances Hazardous to Health Regulations. Chemicals (Hazard Information and Packaging) Regs., as amended (CHIP3). Environmental Protection Act. Waste Management Duty of Care Regs. Special Waste Regs.

European Waste Catalogue No: 13 01 07

16. OTHER INFORMATION

The data and advice given apply when the product is sold for the stated application(s). The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this sheet. You should not use the product other than for the stated application or applications without seeking advice from us.

If you have purchased the product for supply to a third party for use at work, it is your duty to take all necessary steps to secure that any person handling or using the product is provided with the information in this sheet

If you are an employer, it is your duty to tell your employees and others who may be affected of any hazards described in this sheet and of any precautions which should be taken.

Approved Codes of Practice**Guidance notes**

Guidance Note EH 40. "Occupational Exposure Limits" Guidance Note EH 58. "The Carcinogenicity of Mineral Oils" IND (G) 165-169: Metalworking fluids. SHW 397 Effects of Mineral Oil on the Skin. MS/B/5 "Skin cancer caused by oil" MS 24: Health surveillance

Your Notes

Your Notes

