NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: *08-08-11-120*

Note: the prompts given below are only a guide to the information required for approval. Dependent on the type of equipment or system that requires approval delete any section that is not applicable or include additional information if necessary. Mandatory fields are marked with an asterisk (*).

1 **Equipment or System to be approved** *

Portec Rail Products (UK) Limited PW series lubricators **http://www.portecrail.com/home.htm**

2 **Originator** *

Name: Stephen Mackie Company: ARTC

3 **Introduction** *

The PW series hydraulic lubricator is a trackside rail mounted system designed to provide economic and effective rail and flange lubrication for all track and traffic conditions.

The system comprises a hydraulic plunger/actuator assembly clamped to the field side of the rail, with a single hydraulic line connecting to a grease pump externally mounted on the grease reservoir. From the grease pump a hose connects to grease distribution units clamped to the gauge side of the rail.

Grease Reservoir - Robust, fabricated steel construction - available in 12.5 kg (25 lbs), 25 kg (55 lbs) or 37.5 kg (80 lbs) grease capacities, usually set in the track ballast or mounted on a concrete plinth. The hydraulic line length of 1.2 metres (approximately 47 inches) allows the reservoir to be sited a suitable distance from the track.
Longer lengths available upon request.

Hydraulic Plunger/Actuator Assembly - Designed for specific rail section. Clamped to the field side of the rail, either over or between tie/sleepers, with the plunger protruding above the rail head – adjustment by means of shims. Vertical mounting arrangement allows plunger depression with minimum side loading. Built in relief valve minimizes hydraulic pressure surge.
One piece clamps for ease of installation.

Grease Pump - Positive displacement with filtered inlet and outlet non-return valves – easily removable. Fixed directly to housing on reservoir side-wall, output controlled by external regulator valve. A foot operated pedal is provided for rapid priming of grease system during installation and refilling.

Grease Distribution Units and Hose System - MC-4® type grease distribution units equipped as standard on all running rail applications. The MC-4® unit incorporates accurately machined, Teflon coated internal grease channels of equal length to provide uniform grease delivery at all 18 outlet ports and to minimize grease solidification. The distribution blade of manganese carbon steel incorporates 10 mm (3/8") of vertical adjustment and is self sealing (i.e. no external sealing strips or plugs, and provides stable and tight contact on the rail head). The one piece clamps allow for quick and simple installation by one person.

The delivery hose system features a telescopic sleeve to each distribution unit to allow for tie sleeper spacing variations and thus eliminates the need to cut hoses on site. All hoses incorporate threaded compression fittings.

The manufacturer is ISO 9001 certified (see attachment 1)

4 **Determination of Need** *

It is intended that as the current RTE or P&M style lubricators fail in service or become to difficult to maintain or source parts for that these units be replaced either fully or in part. Installation and maintenance manuals, accurate drawings, or parts listings for either of these units have not been found.

Currently the RTE units are difficult to get parts for, the equipment is of poor design and/or construction, the amount of adjustment for setting pump heights and blade heights is restricted by their basic design flaws, and, the outputs from the blades is inconsistent in that the outlet ports tend to not have an even distribution of product, or, the outlet ports block up due to a loss of pressure.

Currently the P&M units are out of manufacture, so it is impossible to get new parts for them.

The use of the PW MC4 is expected to enhance the gauge face lubrication practice in that it will dispense a consistent volume and output.

5 **Significant Change or Not** *

This change in equipment or system is assessed as minor

6 **Review Panel** *

- John Furness - Manager Standards
- Graeme Templer – Executive Manager Maintenance
- Alice Weatherford – Track and Civil Standards Engineer

7 **Safety**

There are no Australian Standards that apply to rail lubrication, and ARTC standards are mostly maintenance-focussed. Even distribution of grease is important to the safety of lubrication systems, and as discussed in section 4, it is expected that these units will give a more even distribution than the ones currently in service.

In addition, the configuration makes it easier to perform maintenance on these units than the existing ones, therefore making them safer on busy lines.

8 **Performance and Suitability**

There are no Australian Standards that apply to rail lubrication

Attached references from EuroStar (attachment 2) and British railway maintainers GTRM (attachment 3) provide testimonials on the performance of the units on their networks.

(i) **Use in other rail networks**

These are common in the UK and America, and there are some in use by PTA of WA and QR. Approval certificates for RailTrack and Network Rail attached (attachments 4 &5).

(ii) **Use in the ARTC network**

These are not in use within the ARTC network.

(iii) **Issues arising from usage of the equipment/system**

None.

(iv) **Changes required to infrastructure or systems for use of the equipment**

No major changes. Some training may be required in installation and maintenance of these units.

9 **Reliability**

10 **Maintainability**

The reason for the approval of this equipment is because it is expected to be more easily maintained and more reliable than the existing RTE and P&M units.

They come with a comprehensive Installation and Maintenance Manual that covers a General description, Installation, Routine Maintenance and a Parts List.

11 **Approval** *

Approval is sought across the entire ARTC network for the PW series of lubricators.

12 **Conditions of Approval** *

National Rail Husbandry Manager to review the following current documentation on rail lubrication as it is very product-specific and needs to include all lubricators in use:

RC2411 Guidelines for Trackside Lubrication

RAP5140 Inspection and Maintenance of Rail Lubricators

CTN 02 05 Trackside Lubrication

CTN 02 16 Lubrication after re-railing

TEP08 Track Examination – Examination of Rail Lubricators

In addition to the above, the National Rail Husbandry Manager will be putting together a presentation on the subject of Rail Lubrication and conducting a workshop on installation.

Installation and maintenance to be as per the installation manual.

13	**Does the Originator accept the additional Conditions of Approval as set by the Review Panel:**	Yes	☐	No	☐	N/A	☐

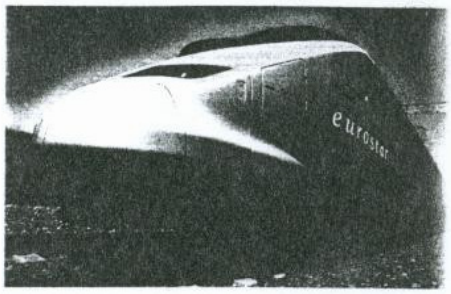
14 **Sign off** ***ARTC office use only***

Review Panel: GT Templer Date: 12-2-09

	Date: 12/2/09.
	Date: 12/02/09

Attachments:

1. ISO 9001 certification
2. Reference from Eurostar
3. Reference from GTRM
4. RailTrack approval
5. Network Rail approval



Eurostar (U.K.) Limited
Eurostar House
Waterloo Station
London SE1 8SE

tel: **0171 902 3268**
fax: **0171 922 4510**

02 March 1998

TO WHOM IT MAY CONCERN

Subject: Portec PW Series Rail & Flange Lubricator

The above type of lubricator has been used successfully for the last 3 years in the UK for Eurostar International high speed passenger trains on Channel Tunnel Routes running out of Waterloo International London.

Maximum line speed on this section is 160 km/hour. However it is unlikely that lubricators are required on curves where line speed is greater than 160 km/hour. For your information the maximum radius on Channel Tunnel Routes for which trackside lubricators were installed for Eurostar trains was 1000m. The curves selected for lubrication dependent on a combination of track radius and length of curve.

Since the introduction of the above type of lubricator, considerable cost savings have been made with regard to Eurostar train wheel flange life. Typical savings are :

- Interval between tyre turning increased from 75,000 km to greater than 400,000 km
- The maintenance costs due to flange wear have reduced by approximately 80%
- The predicted interval between replacing wheels has increased from 1 year to 5 years

It is very important, to ensure optimum performance, that trackside lubricators are positioned and adjusted correctly, and also that a planned maintenance programme is implemented.

Louis Searle
Mechanical Systems Engineer

Eurostar is proud to support the UK Presidency of the European Union, January – June 1998.

UK Presidency of the European Union

GTRM

Your Ref:
Our Ref: 324/4/PJM

G T Railway Maintenance Limited
Room 904
Rail House
Gresty Road
Crewe CW2 6EA

Direct : 01270 533592
Fax: 01270-532644

To Whom It May Concern

20 February 1998

Dear Sir,

Re: Portec PW Series Rail & Flange Lubricators

The above type lubricator has been used successfully for at least the last 10 years in the UK on the West Coast Main Line which runs from London, Euston Station to Glasgow. Maximum line speed is 180 km/hr and on the section of track maintained from this office between Warrington and Carlisle, a distance of 186 km, we have in excess of 180 units which are installed, maintained and refilled by our own staff.

GTRM is jointly owned by GEC Alsthom and Tarmac and is one of the largest railway infrastructure companies in the UK. As a principal contractor to Railtrack, we provide maintenance and renewal work on the prestigious West Coast Main Line and the central band of England and Wales. Our activities cover track, signals, structures, electrical supply and overhead equipment engineering.

Yours faithfully,

Philip Millington
Technical Support Manager

[k:pm-lubr/dr]

RAILTRACK

Portec Rail Products (UK) Ltd.
Vauxhall Industrial Estate,
Ruabon,
Wrexham. LL14 6UY

Civil Engineer, Strategy,
Railtrack Civil Engineering,
Floor 6, Railtrack House,
Euston Square,
London NW1 2EE

Tel: 0171-557-8349

Fax: 0171-557-9131

Date: 27th February, 1998

Dear Sirs,

CERTIFICATE OF ACCEPTANCE

CERTIFICATE NO. RT/26/0532

The undermentioned products have not been technically evaluated by Railtrack but based on evidence of usage that you have provided they are acceptable for use in Railtrack's infrastructure subject to any conditions shown.

Any proposed modification to the product/process must be made known to Railtrack in writing at the above address so that the proposal can be evaluated. A revised 'certificate of acceptance' will be issued if appropriate.

Any problems relating to the safety or performance of the product/process must be made known to Railtrack in writing at the above address.

PRODUCT/PROCESS NAME **Portec PW series Lubricator.**

APPROVED FOR UNLIMITED USE (SUBJECT TO AGREEMENT OF RAILTRACK ZONAL TRACK ENGINEERS) **at sites with maximum line speeds of 125 mph (201km/hour).**

Inclusion of Railtrack's approval in your promotional material is encouraged.

Yours faithfully,

D. Ventry
On behalf of Director, Civil Engineering.

FORM APP.5

Any enquiries regarding this certificate should be addressed to the Assistant Permanent Way Standards Engineer at the above address. Telephone No. 0171 557 8362 - Fax No. 0171 557 9132.

Network Rail
40 Melton Street
London NW1 2EE
Tel: +44(0)20 7557 8063
Fax: +44(0)20 7557 9013

Ref : PA05/0189

Y/Ref:

Date : 21st July 2003

Portec Rail Products (UK) Ltd
Vauxhall Industrial Estate
Ruabon
Wrexham
LL14 6UY

23 JUL 2003

PRODUCT ACCEPTANCE: MC3 AND MC4 GREASE DISTRIBUTION UNITS

Further to your application for acceptance, I can confirm that you have been successful and have pleasure in enclosing a Certificate Of Acceptance, allowing the product to be used on Network Rail infrastructure. When offering your product to our contractors I suggest that you quote the acceptance certificate number.

You will need to secure suitable entries in the Network Rail sponsored PADS database (Parts And Drawings System). Such entries are free of charge and can be arranged with our agent NRS Ltd, Gresty Road, Crewe, CW2 6EH (F.A.O. Steve Adams) Tel 01270 532495.

To compliment your product details in PADS, it is possible to include an image(s) for users to view. If you wish to take advantage of this facility please let me have an electronic image (JPEG) or a good quality colour photograph as soon as possible.

Should you have any queries, please do not hesitate to contact me.

Delores Hudson
Acceptance Systems Manager

HSQE Systems
Network Rail
40 Melton Street
London. NW1 2EE

Certificate of Acceptance

Certificate No: PA05/00189 Issue: 2 Date: 08.07.03
Effective date: 08.07.03

Product: MC3 and MC4 Grease Distribution Units

Manufacturer: Portec Rail products (UK) Ltd
Vauxhall Industrial Estate,
Ruabon,
Wrexham LL14 6UY

General Conditions:

The product identified above is accepted for use on the Network Rail infrastructure within the scope of acceptance defined below.

Acceptance of any change to the accepted product is liable to a demonstration that risk arising from the change has been assessed and is negligible. **Corresponding change in product configuration (to the actual product or its application) shall be notified to Network Rail Acceptance Services.**

Any deficiency affecting the product shall be reported in writing to Network Rail Acceptance Services.

Scope of Acceptance:

Grease distribution units (GDU's) for Portec Rail Flange Lubricators

Specific Conditions:

See Page 2 for the product configuration and specific conditions of use.

Signature:

David Ventry B.Eng (Hons), CEng, FICE
Professional Head of Track Engineering

Network Rail

Certificate of Acceptance

Certificate No: PA05/00189 Issue: 2 Date: 08.07.03
Effective date: 08.07.03

PRODUCT CONFIGURATION

Part No.	Description	PADS No.
MC3	Grease Distribution Unit	057/051175
MC4	Grease Distribution Unit	057/051200

SPECIFIC CONDITIONS

- MC3 Grease Distribution Unit is for use on all rail sections.
- MC4 Grease Distribution Unit is for use on 110/113A/CEN60 rail sections.

ASSESSED DOCUMENTATION

Reference	Title	Date
-	Original acceptance papers for the MC3 GDU.	-
-	E-mail from Portec	26.06.03
	E-mail from Portec	23.01.03
10312	Portec drawing for MC4 GDU	29.05.03
PL6779	Portec drawing for MC3 GDU	22.05.03

CERTIFICATE HISTORY

This certificate is the second issue and supersedes issue 1 dated 10.09.96.
Certificate re-issued to incorporate the MC4 GDU.

FILE REFERENCE

Network Rail

Certificate of Acceptance

Certificate No: PA05/00189 Issue: 2 Date: 08.07.03
Effective date: 08.07.03

DISTRIBUTION

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Ruabon,
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