



Lloyd's
Register

Type Approval Certificate Extension

This is to certify that **Certificate No.08/10095 (E3)** for the undernoted product(s) has/have been extended and renumbered in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER RYCO Hydraulics.

PLACE OF PRODUCTION RYCO Hydraulics Pty. Ltd.
99 Calarco Drive, Derrimut, Victoria, 3026 Australia

RYCO Hydraulics Sdn. Bhd.
Plot 207, Kuala Ketil Industrial Estate, 09300 Kuala Ketil,
Kedah Darulaman, Malaysia

RYCO Hydraulics (Dalian) Ltd.
38 Ying Ri Road, Ying Cheng Zi Industrial Zone, Gan Jing Zi District,
Dalian 116036 China

DESCRIPTION Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings,
Designations:
Diehard R4SPD
Diehard R4SHD
HSPE Advantage

TYPE EN 856 4SP/4SH

APPLICATION For use on ships and offshore installations classed with Lloyd's Register, as short lengths in systems of fresh and seawater, hydraulics, pneumatics, fuel and lube oil.

Certificate No. 08/10095 (E4)

Issue Date 27 December 2018

Expiry Date 26 December 2023

Sheet 1 of 4



Chng Teck Wee
South Asia Technical Support Office
Lloyd's Register Singapore Pte. Ltd.

Lloyd's Register Asia
2 Science Park Drive, #02-05/06 Ascent, Singapore 118222

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STANDARD

Part 5, Chapter 12 of Lloyd's Register's Rules and Regulations for the Classification of Ships (July, 2013)

Part 5, Chapter 10 of Lloyd's Register's Rules and Regulations for the Classification of Mobile Offshore Units (September 1996 plus Notices Nos. 1, 2, 3, 4, 5 & 6 as applicable)

Fire Resistant Testing according to ISO 15540/15541

RATINGS

Sizes: DN 10 to DN 51

Maximum Working Pressure: 250 to 445 bar (see below)

Service Temperature: -40°C to +100°C (see below)

Coupling Material: Carbon Steel AISI

Stainless Steel (Option)

Electroplated Fe/Zn12c acc. to AS1789

OTHER CONDITIONS

The hoses may be used for the following working conditions

DIEHARD R4SPD	DN (mm)	Max. Pressure (bar)
R4SP06D	10	445
R4SP08D	12	420
R4SP10D	16	380
R4SP12D	19	380
R4SP16D	25	350
Temperature Range: -40°C to +100°C		

DIEHARD R4SHD	DN (mm)	Max. Pressure (bar)
R4SH12D	19	420
R4SH16D	25	380
R4SH20D	31	350
R4SH24D	38	300
R4SH32D	51	250

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Temperature Range: -40°C to +100°C

HSPE ADVANTAGE	DN (mm)	Max. Pressure (bar)
HSP08E	12	420
HSP10E	16	350
HSP12E	19	350
HSP16E	25	320
Temperature Range: -40°C to +100°C		

In seawater systems where failure of the hoses could give rise to the danger of flooding, the hoses are to be suitably enclosed.

Hoses used for continuous operation at temperature higher than 100°C will have their lifetime reduced. In such cases more frequent inspections and changes are necessary.

Where synthetic rubber hoses are used for oil fuel supply to burners, the hoses are to have external wire braid protection.


Carbon steel couplings are to be normalised for temperatures below -10°C.

In all cases the hoses are to be installed in accordance with the manufacturer's instructions and tested to the satisfaction of the attending surveyor.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Singapore Pte. Ltd. of any modification or changes to the equipment in order to obtain a valid certificate."

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Chng Teck Wee
 21 January 2022
 Marine and Offshore
 South Asia Technical Support Office
 Engineering System
 Lloyd's Register Singapore Pte. Ltd.



Chng Teck Wee
 South Asia Technical Support Office
 Lloyd's Register Singapore Pte. Ltd.

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The Design Appraisal Document No. 08/10095(E4) and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous **Certificate No. 08/10095(E3)** to which this extension should be attached.

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Issue Date	27 December 2018
Expiry Date	26 December 2023
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Chng Teck Wee
21 January 2022
Marine and Offshore
South Asia Technical Support Office
Engineering System
Lloyd's Register Singapore Pte. Ltd.
LR032 2016.09

Chng Teck Wee
South Asia Technical Support Office
Lloyd's Register Singapore Pte. Ltd.

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