



Lloyd's
Register

Type Approval Certificate Extension

This is to certify that **Certificate No.08/10091 (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 T2D
T2E Advantage
Icebreaker T2C
Diehard TXA2D
Slider T2S
Survivor PQP2
Diehard Dinflex DF2D
DF2E Advantage

Certificate No. 08/10091 (E4)

Issue Date 27 December 2018

Expiry Date 26 December 2023

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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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Diehard DK2D
Slider DK2S

TYPE SAE 100R2

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

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 6 to DN 63
Maximum Working Pressure: 69 to 450 bar (see below)
Service Temperature: -50°C to +150°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 T2D	DN (mm)	Max. Pressure (bar)
T24D	6	420
T25D	8	350
T26D	10	350
T28D	12	350

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T210D	16	250
T212D	19	215
T216D	25	175
T220D	31	140
T224D	38	100
T232D	51	90
T240D	63	70
T248D	76	70
Temperature Range: -40°C to +100°C		

T2E ADVANTAGE	DN (mm)	Max. Pressure (bar)
T24E	6	420
T25E	8	350
T26E	10	350
T28E	12	345
T210E	16	250
T212E	19	215
T216E	25	175
T220E	31	140
T224E	38	100
T232E	51	90
T240E	63	70
Temperature Range: -40°C to +100°C		

ICEBEAKER T2C	DN (mm)	Max. Pressure (bar)
T24C	6	420
T25C	8	350
T26C	10	350
T28C	12	350

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T210C	16	250
T212C	19	215
T216C	25	175
T220C	31	140
T224C	38	100
T232C	51	90
Temperature Range: -50°C to +100°C		

DIEHARD TXA2D	DN (mm)	Max. Pressure (bar)
TXA28D	12	375
TXA210D	16	350
TXA212D	19	313
TXA216D	25	225
TXA220D	31	175
Temperature Range: -40°C to +100°C		

SLIDER T2S	DN (mm)	Max. Pressure (bar)
T24S	6	420
T25S	8	350
T26S	10	350
T28S	12	350
T210S	16	250
T212S	19	215
T216S	25	175
T220S	31	140
T224S	38	100
T232S	51	90
Temperature Range: -40°C to +100°C		

SURVIVOR	DN (mm)	Max. Pressure
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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.
18032_2016_09



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

Lloyd's Register Asia
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RQP2		(bar)
RQP24	6	400
RQP25	8	350
RQP26	10	350
RQP28	12	300
RQP210	16	250
RQP212	19	215
RQP216	25	167
RQP220	31	150
RQP224	38	100
RQP232	51	90
Temperature Range: Petroleum-base fluids: -40°C to +150°C Water/oil emulsions: to +121°C Diesel fuels: to +93°C Air: to +121°C (max. pressure must be reduced by 30%)		

DINFLEX DF2D	DN (mm)	Max. Pressure (bar)
DF24D	6	420
DF25D	8	350
DF26D	10	350
DF28D	12	295
DF210D	16	250
DF212D	19	215
DF216D	25	170
Temperature Range: -40°C to +100°C		

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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.
LR0322.2016.09

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Lloyd's Register Singapore Pte. Ltd.

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DF2E ADVANTAGE	DN (mm)	Max. Pressure (bar)
DF24E	6	420
DF26E	10	350
DF28E	12	295
DF210E	16	250
DF212E	19	215
DF216E	25	167
Temperature Range: -40°C to +100°C		

DIEHARD DK2D	DN (mm)	Max. Pressure (bar)
DK24D	6	450
DK25D	8	420
DK26D	10	385
DK28D	12	350
DK210D	16	290
DK212D	19	280
DK216D	25	200
DK220D	31	175
Temperature Range: -40°C to +100°C		

DIEHARD DK2S	DN (mm)	Max. Pressure (bar)
DK24S	6	450
DK25S	8	420
DK26S	10	385


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DK28S	12	350
DK210S	16	290
DK212S	19	280
DK216S	25	200
DK220S	31	175
Temperature Range: -40°C to +100°C		

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

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."

The Design Appraisal Document No. 08/10091(E4) and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous **Certificate No. 08/10091(E3)** to which this extension should be attached.

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