

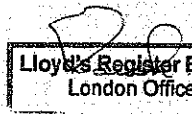

CERTIFICATE OF TYPE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer Address	Leafield Marine Limited Leafield Way Corsham Wiltshire, SN13 9SS United Kingdom (UK)
Product Type	GAS INFLATION SYSTEM
Product Description	Liferaft Gas Inflation System Type GIS comprising type D91-210 series operating head and type D91-220 series cylinder valves and type B91-160 series inlet valve.
Specified Standards	SOLAS 74, as amended, Regulations III/4 and 34, 35 & 36 IMO Resolution MSC.48(66), LSA Code, Reg I/1.2 and IV/4.1 & 4.2 Schedule 4 of MSN 1676(M) as required by Part 1, Regulation 2 of the Merchant Shipping (Life Saving Appliances for Ships other Than Ships of Classes III to VII(A)) Regulations 1999, Schedule 4 of MSN 1676(M) as required by Part 1, Regulation 2 of the Merchant Shipping (Life Saving Appliances for Ships of Classes III to VII(A)) Regulations 1999, IMO Resolution MSC.81(70), Part 1 Part 1, Section 1, Paragraph 18 and Part VI, Chapter 4 of Volume 2, Survey of Life Saving Appliances (Revised 1999). BS ISO 15738:2002

The attached Design Appraisal Document forms part of this certificate.
This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue	8 July 2005	Expiry date	7 July 2010
Certificate No.	SAS S050086	Signed	 
Sheet No	1 of 4	Name	S. Marsh Surveyor to Lloyd's Register EMEA A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid certificate.

"Lloyd's Register, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the Lloyd's Register Group'. The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract."

DESIGN APPRAISAL DOCUMENT

Date 17 July 2007	Quote this reference on all future communications LDSS/PAS/LSA/TCD/1-13786241
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS S050086

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

EXAMINED DOCUMENTATION

<u>Doc No.</u>	<u>Rev</u>	<u>Title or Description</u>
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Type D91-210 – series Operating Head

D912101	04b	Indented Bill of Materials Operating Head Assembly (30 mm cable) (GIS CV1)
D912102	03b	Indented Bill of Materials Operating Head Assembly (240 mm cable) (GIS CV2)
D912103	01	Indented Bill of Materials Operating Head Assembly (30 mm cable) (GIS CV3)
D912104	01	Indented Bill of Materials Operating Head Assembly (240 mm cable) (GIS CV4)
D912105	01a	Operating Head Assembly c/w

Type D91-220 – series Cylinder Valve

D912201	07	Indented Bill of Materials Cylinder Valve Assembly
D912202	07	Indented Bill of Materials Cylinder Valve Assembly
D912203	07	Indented Bill of Materials Cylinder Valve Assembly
D912204	07	Indented Bill of Materials Cylinder Valve Assembly
D912205	07	Indented Bill of Materials Cylinder Valve Assembly
D912206	05	Indented Bill of Materials Cylinder Valve Assembly

Type C91-230 – series Valve Body

C912231	07	Bill of Material GIS CV1
C912232	07	Bill of Material GIS CV2
C912233	07	Bill of Material GIS CV3
C912234	07	Bill of Material GIS CV4
C912235	07	Bill of Material GIS CV5
C912236	07	Bill of Material GIS CV6

Type B91-160 – series Inlet Valve

B9116021.0	3b	Bill of Materials Inlet Valve (Low Profile 1.0mm)
B9116021.2	2b	Bill of Materials Inlet Valve (Low Profile 1.2mm)
B9116021.8	3b	Bill of Materials Inlet Valve (Low Profile 1.8mm)
B9116022.0	3b	Bill of Materials Inlet Valve (Low Profile 2.0mm)
B9116022.2	3b	Bill of Materials Inlet Valve (Low Profile 2.2mm)
B9116022.3	3b	Bill of Materials Inlet Valve (Low Profile 2.3mm)
B9116022.4	2b	Bill of Materials Inlet Valve (Low Profile 2.4mm)
B9116022.5	3b	Bill of Materials Inlet Valve (Low Profile 2.5mm)
B9116022.6	2b	Bill of Materials Inlet Valve (Low Profile 2.6mm)
B9116022.8	3b	Bill of Materials Inlet Valve (Low Profile 2.8mm)
B9116032.4	3b	Bill of Materials Inlet Valve (Ext Seal 2.4mm)
B9116032.7	3b	Bill of Materials Inlet Valve (Ext Seal 2.7mm)

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B9116041.0	3b	Bill of Materials Inlet Valve (G3/8 male 1.0mm)
B9116041.8	3b	Bill of Materials Inlet Valve (G3/8 male)
B9116042.0	3b	Bill of Materials Inlet Valve (G3/8 male)
B9116042.2	3b	Bill of Materials Inlet Valve (G3/8 male 2.2mm)
B9116042.3	3b	Bill of Materials Inlet Valve (G3/8 male)
B9116042.4	2b	Bill of Materials Inlet Valve (G3/8 male)
B9116042.5	3b	Bill of Materials Inlet Valve (G3/8 male)
B9116042.6	2b	Bill of Materials Inlet Valve (G3/8 male)
B9116042.8	3b	Bill of Materials Inlet Valve (G3/8 male 2.8mm)
EXA7018	0Ba	Bill of Materials Banjo Assembly (G3/8 male)
LEL-20018	4	General User Manual for Gas Inflation System

TEST REPORTS

<u>Report Title or Report Author</u>	<u>Report No.</u>	<u>Date</u>
Gas Inflation System Corrosion Tests	LML-20554, Issue 1	28-Nov-2000
Test Procedure for Department of Transport Approval of the LEL Type D91-220 Series Gas Cylinder Valve and LEL Type D91-210 Series Operating Head	LEL-16-TS-02111, Issue 3	July 1992
Summary of Approval Tests of Leaffield Engineering Ltd Gas Inflation System	LEL-16-TR-02202, Issue 1	April 1993
MCA Certificate of Inspection and Tests for Leaffield Type D91210 Series Operating head and Type D91220 Series Cylinder Valve	-	4-Jan-2001
MCA Certificate of Inspection and Tests for Leaffield Type B91-160 Series Inlet Valve	-	24-Jan-2001
Liferaft Prototype Test Evaluation and Test Report, Type 101 DKS Emergency Pack Type A	Proto 1, 703	01 June 2006

CONDITIONS OF CERTIFICATION

1. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that they are produced to the same standard as the prototype approved and to keep records of any production tests carried out.
2. Production tests are required to be conducted in accordance with the UK MCA's Instructions to Surveyors, Section 2, Part VI, Chapter 4 of Volume 2, Survey of Life Saving Appliances (Revised 1999).
3. Should the specified standards be amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

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Document number	SAS S050086
Issue number	4

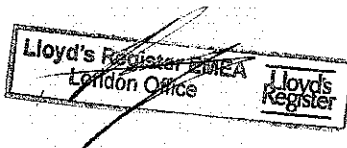
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4. The final determination of suitability of a system shall be made on the basis of testing the end product in which the system is to be used in accordance with IMO Resolution MSC.81 (70). The suitability of any component covered by this certificate is generally dependent upon its relationship to the size, number and arrangement of the other components of the system in the end product.

PLACE OF PRODUCTION

Leaffield Marine Ltd
Unit B
Leaffield Way
Leaffield
Corsham
Wiltshire, SN13 9SS



Tio Devaney
Senior Surveyor
Product Approval Services
London Design Support Services
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).