

# 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.

<b>Manufacturer</b>	<b>Leaffield Marine Limited</b>
<b>Address</b>	9, Atworth Business Park, Bath Road, Atworth, Wiltshire, SN12 8SB, United Kingdom
<b>Type</b>	Gas Inflation System
<b>Description</b>	Liferaft Gas Inflation System Type GIS comprising: D91-210 series operating head or 1205002 operating head, D91-220 series cylinder valve or PD11538 cylinder valve & B91-160 series inlet valve or 1103001 series inlet valve. PD11538 – Gauged valve and variants (Max 450 BAR). Multi-port Inflation Valve (1701004 series up to 4 ports) 1607001 –Pyro/ Manual Operating Head
<b>Specified Standard</b>	IMO Resolution MSC.81 (70), Part 1 as amended BS ISO 15738:2019

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 EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

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.

**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No.**

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.

This Design Appraisal Document forms part of the Certificate.  
 This is renewal of certificate No: SAS S150087/M3

**EXAMINED DOCUMENTATION**

**Doc No. Rev Title or Description**

***Type D91-210 – series Operating Head***

D912101	04	Indented Bill of Materials Operating Head Assembly (30 mm cable) (GIS CV1)
D912102	03	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	01	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	3	Bill of Materials Inlet Valve (Low Profile 1.0mm)
B9116021.2	2	Bill of Materials Inlet Valve (Low Profile 1.2mm)
B9116021.8	3	Bill of Materials Inlet Valve (Low Profile 1.8mm)
B9116022.0	3	Bill of Materials Inlet Valve (Low Profile 2.0mm)
B9116022.2	3	Bill of Materials Inlet Valve (Low Profile 2.2mm)
B9116022.3	3	Bill of Materials Inlet Valve (Low Profile 2.3mm)
B9116022.4	2	Bill of Materials Inlet Valve (Low Profile 2.4mm)
B9116022.5	3	Bill of Materials Inlet Valve (Low Profile 2.5mm)
B9116022.6	2	Bill of Materials Inlet Valve (Low Profile 2.6mm)
B9116022.8	3	Bill of Materials Inlet Valve (Low Profile 2.8mm)
B9116032.4	3	Bill of Materials Inlet Valve (Ext Seal 2.4mm)
B9116032.7	3	Bill of Materials Inlet Valve (Ext Seal 2.7mm)
B9116041.0	3	Bill of Materials Inlet Valve (G3/8 male 1.0mm)

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B9116041.8	3	Bill of Materials Inlet Valve (G3/8 male)
B9116042.0	3	Bill of Materials Inlet Valve (G3/8 male)
B9116042.2	3	Bill of Materials Inlet Valve (G3/8 male 2.2mm)
B9116042.3	3	Bill of Materials Inlet Valve (G3/8 male)
B9116042.4	2	Bill of Materials Inlet Valve (G3/8 male)
B9116042.5	3	Bill of Materials Inlet Valve (G3/8 male)
B9116042.6	2	Bill of Materials Inlet Valve (G3/8 male)
B9116042.8	3	Bill of Materials Inlet Valve (G3/8 male 2.8mm)
EXA7018	0B	Bill of Materials Banjo Assembly (G3/8 male)
LEL-20018	7	General User Manual for Gas Inflation System
<b>Syphon Tube</b>		
17803	3	Syphon Tube Insert
<b>Actuator Cable</b>		
B91-211-Series	1	Actuator Cable Assembly
<b>Gauged Valve Assembly</b>		
PD11538	02d	Gauged Valve Assembly including variants listed
M-07-UM-GISPG	5	GAS Inflation System Manual with Pressure Gauge
<b>Multi Port Valves</b>		
1701004	01a	GIS Multi-Port Saginaw Valve Assembly Matrix
<b>Operating Head</b>		
1607001	01	Pyro/ Manual Operating Head Assembly

**TEST REPORTS**

<b><u>Report Title or Report Author</u></b>	<b><u>Report No.</u></b>	<b><u>Date</u></b>
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	1-Jun-2006
Report on Statutory Approval Testing of the Leaffield Marine Steel Weighted Syphon Tube (Part No. 17803-Rev.03).	M-07-TR-13GIS	14-May-2013
Report on Statutory Approval Testing of the Leaffield Marine GIS Operating Head Assembly for 300 bar and above (Part No. 1205002).	M-07-TR-15GIS	30-May-2013

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<b><u>Report Title or Report Author</u></b>	<b><u>Report No.</u></b>	<b><u>Date</u></b>
Report on Statutory Approval Testing of the Leaffield Marine Gauged Cylinder Valve Assembly (400 bar) for use in GIS (Part No PD11538)	M-07-TP-19GIS	22-Dec-2014
Salt spray testing, for the acceptance of bright nickel plated components in cylinder valve bodies.	Report No:15511	20 <sup>th</sup> April 2016
Test Report for the Statutory Approval Testing of Multi-port GIS Cylinder Valve for use in Gas Inflation Systems	M-07-TP-26GIS	21/10/2017
Report on Testing of the Leaffield marine Ltd Pyro/ Manual Operating Head assembly (Part No 1607001 rev 01)	M-07-TR-3PMOH	10 May 2017

**CONDITIONS OF CERTIFICATION**

1. Maximum working pressure single port 350 bar
2. Maximum working pressure multiport port (4 ports) 450 bar
3. Maximum number of ports: 4
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
5. If the specified standards are amended during the validity of this certificate, this product is to be re-approved prior to it being supplied to vessels to which the amended standards apply
6. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure compliance with SOLAS Regulation III/5
7. Production tests are to be conducted in accordance with the applicable requirements of IMO Resolution MSC.81 (70), Part 2 and each item, batch, or lot be delivered with an LR Certificate of SOLAS Production Testing issued by the attending LR Surveyors following their witness of the tests. This does not preclude any further testing to additional requirements of the Marine Administration of the country where the ship is registered (i.e. the flag state) or those acting on behalf of that Administration
8. Should a change of Place of Production from that stated below be required i.e. where the stages the manufacture/assembly/testing of this product take place, the new Place of Production is to be advised to us prior to the change taking place. This Certificate will require to be updated for Approval to be maintained

**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No.**

**PLACE OF PRODUCTION**

Leafield Marine Ltd  
9,Atworth Business Park  
Bath Road  
Atworth  
Wiltshire, SN12 8SB  
United Kingdom (UK)



Lijo Thomas  
Senior Specialist  
Fire & Safety, Statutory Discipline Team  
UK&I Technical Support Office, Marine & Offshore  
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).*