



Lloyd's
Register

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate supersedes certificate number 03/20032 (E2) issued on 15.11.2010 which is hereby cancelled.

This certificate is issued to:

PRODUCER	LESER GmbH & Co. KG Wendenstrasse 133-135 20537 Hamburg Germany
DESCRIPTION	Angled type, direct spring loaded, standard safety valve for steam, gases liquids; Connections: Flanged Lifting device: Packed lever H4 Plain lever H3 Cap (gas tight) H2
TYPES	431 / 433
APPLICATION	As safety features for steam, liquids and gases including LNG and LPG systems in marine and offshore installations.
OTHER CONDITIONS	Installation to be in accordance with producer's specification and recommendation.
STANDARDS	Lloyd's Register Rules and Regulations for the Classification of Ships and for the Carriage of Liquefied Gases in Bulk, January 2016; AD2000-Merkblatt; VdTÜV SV100; DIN EN ISO 4126-1; ISO 21013-1: 2008, Part 1;
Certificate No.	03 / 20032 (E3)
Issue Date	12 May 2016
Expiry Date	14 November 2020
Sheet	1 of 3



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RATINGS

DN	15*	20 - 32***	40**	50 - 150
Internal diameter do [mm]:	12	18	23	29 - 92
C-Value:	-	19,2		

Pressure ratings: PN 16 / 40 / 160; (CL 150 - CL 300)

Set pressure: 0,10 to 160 bar

431 / 433 up to 40 bar / up to 160 bar

Material and temperature range:

Types:	Body material:	Temperature range:
4315 / 4335	0.7043 / 60-40-18	-60°C ^{*1} to +350°C
4312 / 4332	1.0619 / WCB	-85°C ^{*1} to +450°C
4334	1.4408 / CF8M	-196°C to +400°C

Spheroidal graphite iron castings are not to be used for valves in Class I piping systems.

For temperatures above 50°C the maximum working pressure has to be reduced in accordance to the yield strength.

*1) for design temperatures

below -10°C to -60°C: $P_{wmax} = 0.75 \times P_N$

below -60°C to -85°C: $P_{wmax} = 0.25 \times P_N$

LIMITATIONS

Boilers and steam generators are to be fitted with not less than two safety valves, each having a minimum diameter of 25 mm.

* DN15 or valve cap type H2 are not to be used for boilers or steam generators.

** Small oil fired package boilers of the once through coil type used for auxiliary or domestic purposes, where the feed pump capacity limits the output, may have one safety valve not less than 19 mm internal diameter, or

*** two safety valves with internal diameter not less than 16 mm, provided the capacity is in accordance with Part 5, Ch. 10, Sect. 15.2.13.

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**PLACE OF
PRODUCTION**

LESER GmbH & Co. KG
Itzehoer Strasse 63-65
24594 Hohenwestedt
Germany


The Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

If the specified standards are 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.

The Design Appraisal Document No. HMD 10158-03, Issue No. 3 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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*Lloyd's Register EMEA
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