



Lloyd's
Register

Type Approval Certificate

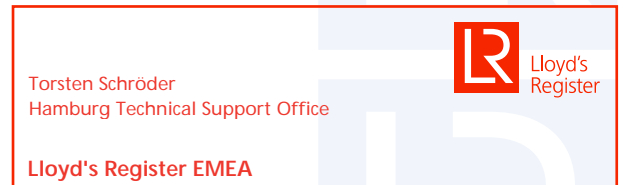
This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate supersedes certificate number 91/20021 (E6) 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, full lift safety valve for steam and gases; standard safety valve for liquids; Connections: Flanged Lifting device: Packed lever H4 Plain lever H3 Cap (gas tight) H2
TYPES	441/442 DIN and ANSI-Series
APPLICATION	As safety features for steam, liquids and gases including LNG and LPG systems in marine and offshore installations.
STANDARDS	Lloyd's Register Rules and Regulations for the Classification of Ships and for the Carriage of Liquefied Gases in Bulk, January 2016; ISO 21013-1: 2008, Part 1;
OTHER CONDITIONS	Installation to be in accordance with producer's specification and recommendation.

Certificate No.	91 / 20021 (E7)
Issue Date	12 May 2016
Expiry Date	14 November 2020
Sheet	1 of 3



Torsten Schröder
Hamburg Technical Support Office
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

Lloyd's Register EMEA
Is a subsidiary of Lloyd's Register Group

Lloyd's Register Group Limited, 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'. Lloyd's Register 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 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.



RATINGS

DN 25 to DN 400, C-Value: 38
 DN 20*, C-Value: 40
 Internal diameter do: 18 mm up to 295 mm
 Pressure ratings: PN 16 / 25 / 40; (CL 150 - CL 300)
 Set pressure: 0,10 to 40 bar

Material and temperature range:

Types:	Body material:	Temperature range:
4415 / 4425	0.7043 / 60-40-18	-60°C ¹ to +350°C
4412 / 4422 (DIN, ANSI, Full Nozzle, XXL)	1.0619 / WCB	-85°C ² to +450°C
	1.0460 / 1.0425	
4414 (DIN, ANSI, Full Nozzle, XXL)	1.4408 / CF8M	-196°C to +400°C
	1.4571 / 316Ti	-196°C to +550°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 cast iron to be stress relieved,

$$P_{wmax} = 0,75 \times P_N$$

*2) for design temperatures

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

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

LIMITATION

Boilers and steam generators are to be fitted with not less than two safety valves, each having a minimum diameter of 25 mm (DN 32-400).

*DN20-25 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 (DN25), or two safety valves with internal diameter not less than 16 mm (DN20), provided the capacity is in acc. with Pt. 5, Ch. 10, Sect. 15.2.13.

Certificate No. 91 / 20021 (E7)
Issue Date 12 May 2016
Expiry Date 14 November 2020
Sheet 2 of 3

Torsten Schröder
 Hamburg Technical Support Office

Lloyd's Register EMEA

LR031.1.2013.12

Torsten Schröder
 Hamburg Technical Support Office
 Lloyd's Register EMEA

Lloyd's Register EMEA
 71 Fenchurch Street, London EC3M 4BS

Lloyd's Register EMEA
 Is a subsidiary of Lloyd's Register Group



Lloyd's
Register

**PLACE OF
PRODUCTION**

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

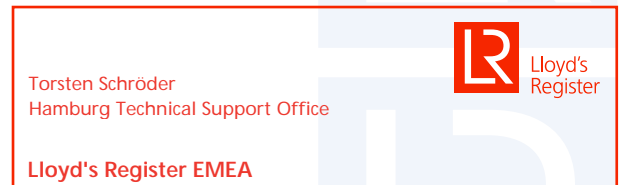
The Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

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 14589-05, Issue No. 3 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No. 91 / 20021 (E7)
Issue Date 12 May 2016
Expiry Date 14 November 2020
Sheet 3 of 3

*Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS*



Torsten Schröder
Hamburg Technical Support Office
Lloyd's Register EMEA

Lloyd's Register EMEA
Is a subsidiary of Lloyd's Register Group

Lloyd's Register Group Limited, 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'. Lloyd's Register 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 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.