



TYPE APPROVAL CERTIFICATE
No. MAC076711XG

This is to certify that the product identified below is in compliance with the regulations herewith specified.

<i>Description</i>	SAFETY VALVES
<i>Type</i>	532-534
<i>Applicant</i>	LESER GMBH & CO KG QMP/ABN DOKU WENDENSTRASSE 133 / 135 D_20537 HAMBURG (GERMANY)
<i>Manufacturer</i>	LESER GMBH & CO KG QMP/ABN DOKU
<i>Place of manufacture</i>	Itzehoer Str. 63/65 D_24594 Hohenwestedt (GERMANY)
<i>Reference standards</i>	RINA RULES FOR THE CLASSIFICATION OF SHIPS

Issued in **HAMBURG** on **October 4, 2011**. This Certificate is valid until **October 3, 2016**



RINA

Daniele Chirulli

This certificate consists of this page and 1 enclosure

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Reference documents

- Leser complete catalogue for safety valve type 532 and 534:
DN15-150 "Proportional in-line relief valves up to PN40 spring loaded for steam, gases and liquids", LWN 486.01 pages 01/01 up to 01/03.
- VdTÜV-"Merkblatt" type test approval No.: 11- 432 of 06.2011
- EC type-examination certificate No.: 07 202 0111 Z 0008/0/15 Rev.1 dated 29.6.2010
- Valve drawings:
 - Valve size DN 15 Leser drawing number 101.0309
 - Valve size DN 20 Leser drawing number 101.0709
 - Valve size DN 25 Leser drawing number 101.1109
 - Valve size DN 32 Leser drawing number 101.1509
 - Valve size DN 40 Leser drawing number 101.1909
 - Valve size DN 50 Leser drawing number 101.2709
 - Valve size DN 65 Leser drawing number 101.3109
 - Valve size DN 80 Leser drawing number 101.3509
 - Valve size DN 100 Leser drawing number 101.3909
 - Valve size DN 125 Leser drawing number 101.4309
 - Valve size DN 150 Leser drawing number 101.4509

Materials/Components

As listed in the above mentioned Leser catalogue and subject to the limitations indicated on the certificate, as appropriate.

Technical characteristics

- The valves type 532 and 534 are proportional in-line safety relief valves, direct spring loaded.
- Valve sizes:
 - Sizes: DN15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150;
 - do [mm]: 15, 20, 25, 32, 40, 50, 50, 64, 78, 98, 125.
- Connections inlet/outlet: flanged
- Lifting devices (open or gastight):
 - Screwed Cap H2
 - Packed Lever H4
 - Plain Lever H3
- Pressure range:
 - For valve body material GG-25 (0.6025) up to PN16;
 - For valve body material GP240GH (1.0619/WCB) up to PN 40
- Temperature range:
 - 0°C to +220°C for GG-25 (0.6025)
 - 85°C to +400°C for GP 240 GH (1.0619/WCB)
- Other characteristics: as per above mentioned Leser catalogue, as appropriate.

Fields of application

Steam, gases and liquids, intended for piping, boilers and pressure vessels.



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Limitations

- These valves are not approved for LPG/LNG services.
- The valves with gastight cap H2 are not approved for use on steam boilers and steam generators.
- The valves in grey cast iron GG-25 are not accepted for the use on steam boilers and steam generators.
- The valves are not to be used on pressure vessels intended for transport of dangerous goods or for piping conveying toxic fluids.
- The valves in grey cast iron GG-25 are subject to the limited applications, due to design pressure/temperature and medium discharged, which are to fully comply with requirements stated in Table 4 Part C Chapter 1 Section 10 of RINA Rules.
- Valve material of carbon steel is to have minimum impact test value of 27J at test pressure. For design temperatures below 0°C the impact test is to be performed at 5°C below the design temperature or - 20°C, whichever is lower.

Acceptance conditions

- The following values of discharge flow coefficient α_w , corresponding to RINA coefficient **Z**, are as per Leser's spring tables and VdTÜV-"Merkblatt" type test approval No.: 11- 432:

For steam and gases

Z=0.08 for sizes DN15 to DN50

Z=0.12 for sizes DN65 to DN150

For liquids

Z=0.09 for sizes DN15 to DN50 (with O-ring disc only)

The aforesaid **Z** values will be appropriately selected on a basis of intended fluids (steam, gases and liquids), and appropriately considered by RINA to determine, when required, the discharge capacities of the valves.

- The safety valves are to be equipped with the springs foreseen by the Leser specifications for the intended set pressure.
- The materials are to be suitable for the intended pressure, temperature and medium discharged.
- The acceptance of the a.m. products on board a ship and other units classed with RINA is subject to the satisfactory outcome of testing as per RINA rules.
- The installation to be in accordance with manufacturer's specification.

Remarks

This Certificate annuls and replaces the previous Type Approval Certificate No. MAC137506CS/001 dated 04/10/2006.

HAMBURG August 19, 2011



A handwritten signature in blue ink, appearing to be 'R. Chelli', is written over the RINA logo.