



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **P-14704**

This is to certify that the  
**Safety Valve for Pressure Vessel**

with type designation(s)  
**437, 438, 439**

Issued to  
**LESER GmbH & Co. KG**  
**HOHENWESTEDT, Germany**

is found to comply with  
**Det Norske Veritas' Offshore Standards**  
**Det Norske Veritas' Standards for Certification 2.9 No. 5-794.40**  
**Det Norske Veritas' Rules for Classification of Ships**

Application  
**The range of application for this valve type is steam (not boilers), liquids and gases (LNG/LPG)**

Type:	K. factor:
437	2,6 (do 6mm), 3,8 (do 10mm)
438	4,76 (do 10mm)
439	3,7 (do 10mm)

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2014-01-15**

DNV local station: **Essen**

Approval Engineer: **Adel Samieizafarghandi**

for **Det Norske Veritas AS**

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**Marianne Spæren Marveng**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.  
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

## Product description

Design: Angled type direct spring loaded  
 Disc seal: Metal (type 437)  
 Soft seal (type 438)  
 Vulcanized seal (type 439)  
 Connections inlet/outlet: Flanged or threaded  
 Opening characteristic: Normal  
 Caps: Packed knob H4  
 Pull button H3  
 (gastight) cap H2

Sizes and maximum set pressure:

Feature / Type	437	437	438	439
d <sub>0</sub> [mm]	6	10		
Inlet size	threaded: 3/8" to 1"			
Outlet size	flanged: DN15 – DN25 /NPS 1/2" – NPS 1"			
	threaded: 1/2" to 1"			
inlet	PN 400		PN250	
	outlet PN160			
Pressure rating (DIN / ANSI)	PN 40 - 400 / CL150 - CL2500			
Set pressure range [bar]	0,10 to 400	0,10 to 180	0,10 to 180	0,10 to 16

Material and temperature range:

Part / Type	4373		4374	4383 / 4393	4384 / 4394
d <sub>0</sub> [mm]	6	10	6 and 10	10	10
Outlet Body	1.4104 / 430		1.4404 / 316L	1.4104 / 430	1.4404 / 316L
Inlet Body	1.4404 / 316L	1.4104 / 430	1.4404 / 316L or 1.4404 stellited /316L stellited	1.4104 / 430	
Disc	MT440 or 1.4404 stellited /316L stellited		1.4404 / 316L or 1.4404 stellited /316L stellited	1.4404 / 316L	
Temperature range [°C]	-60 to +400	-10 to +400	-200 to +400	-10 to +220	-200 to +280

Place of manufacture:  
 Itzehoer Str. 63-65  
 24594 Hohenwestedt, Germany

## Application/Limitation

The valves are not to be used on boilers.

For use in connection with gasses or chemicals approval must be obtained in each case.

Each valve is to be:

- Subject to hydraulic test of body (1,5 times the design pressure)
- Subject to leakage test (at 90% of set pressure) after reset
- Supplied with material work's certificate

Each valve is to be inspected and certified by Det Norske Veritas when DNV certificate is required.

Parallel threads without o-ring seal is not allowed used in Class I piping systems.

## Type Approval documentation

- Manufacturer's complete catalogue (Compact performance catalogue Edition July 2012/1.000 0777.5681)
- VdTÜV "Bauteilgeprüftes Sicherheitsventil Bauteilprüfnr. 09-980" 09.2009
- Stamped drawings:
  - 351.7609-08-B01 dated 08.08.05
  - 351.7409-04-B01 dated 03.02.06
  - 351.7509-05-B01 dated 02.11.05
  - 136.4309-08-B01 dated 10.01.11
  - 136.4409-13-B01 dated 07.07.06
  - 123.6109-12-B01 dated 22.03.12
  - 123.6209-09-B01 dated 22.03.12
  - 136.5409-02-B01 dated 04.05.06
  - 200.8309-03-B01 dated 12.11.03
  - 200.8509-01-B01 dated 12.11.03
- Testrecords dated 2001-01-08
- Spring data list: LWN 060.18, 060.19, 060.25
- Manufacturer's test report witnessed by DNV Hamburg dated 2010-02-24 (HAM 600226-1)
- Type approval assessment report signed by DNV Hamburg (HAM-13-4606) dated 04.12.2013

## Tests carried out

Cryogenic type test.

## Marking of product

For traceability to this Type Approval the products are at least to be marked with:

- Manufacturer's name or trade mark
- Type designation

## Certificate Retention Survey

For the retention of the Type Approval, the DNV-surveyor shall perform a survey every second year and before the expiry date of this certificate to verify that the conditions for the type approval are complied with.

END OF CERTIFICATE