

TRANSMITTAL OF CERTIFICATES

LESER GmbH & Co. KG · Postfach 26 16 51 · 20506 Hamburg, Germany

Firma
Air Liquide AGS GmbH
Depotstr. 1
63457 Hanau

Customers Order-No.: Z50 / 4500025823 · LP 119 / 40009
LESER-Job-Nr.: 20017957 / 10300
LESER-Doc.-Nr.:
LESER-Customers-No.: 112546

LESER-Contact: Dieter Bohmsach
Fon: 04871 27 150
Fax: 04871 27 298
eMail: bohmsch.d@leser.com

1 LESER Product designation

High Performance Safety Relief Valve, Type 441 DIN,
closed bonnet, gastight cap H2,
for steam, gas and liquid service

Art.-No.	Test pressure		Option Code: M33H03J78H88H84H51H47H28S54H01 J85			
4414.4692	16,00 barg	232,06 psig	Further SV-Info:			
Tag-No.:	LESER-Job-No.	Pos.No.	Serial-No.:	Body material	Nominal size: Inlet Outlet	Pressure rating: Inlet Outlet
Z 73150	20017957	10300	10046155	1.4408 / CF8M	DN 80 DN 125	PN 40 PN 16

2 Inspection certificates

Name	Description	Standard	Edition
LESER CGA	Inspection Certificate 3.1	DIN EN 10204	2004
TÜV-Abnahmeprüfzeugnis	Inspection Certificate 3.2	DIN EN 10204	2004

3 Material inspection certificates according to DIN EN 10204

The allocation of the inspection certificates to each part is given by LESER-Code as well as by heat no/batch stated below:

Pos	Description	Material	Manufacturer	Heat No./Batch	LESER-Code
1	ECKGEH DN 80 +SITZ H47H51H84H88	1.4408 / CF8M	LACUNZA	G861	

LESER CERTIFICATE FOR GLOBAL APPLICATION

Inspection certificate 3.1 according to DIN EN 10204

Declaration of conformity according to Pressure Equipment Directive 97/23/EC

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Firma

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Depotstr. 1

63457 Hanau

Customers Order No.: Z50 / 4500025823 - LP 119 I 40009

LESER-Job-No.: 20017957 / 10300

LESER-Customers-No.: 112548

LESER-Contact: Dieter Bohmsch

Fon: 04871 27 150

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eMail: bohmseh.d@leser.com

This LESER CGA confirms that the undermentioned LESER safety valves are manufactured and certified according to the rules world-wide. LESER makes the world-wide employment possible of the safety valves by the reference on these regulations.

1 Test object

High Performance Safety Relief Valve, Type 441 DIN,
closed bonnet, gastight cap H2,
for steam, gas and liquid service

Art.-No.	Cold differential test pressure		Option Code:			
4414.4692	16,00 barg	232,06 psig	M33H03J78H88H84H51H47H28S54H01 J85			
Further SV-Info:						
Tag-No.:	LESER-Job-No.	Pos.No.	Serial-No.:	Body material	Nominal size: Inlet Outlet	Pressure rating: Inlet Outlet
	20017957	10300	10046155	1.4408 / CF8M	DN 80 DN 125	PN 40 PN 16
Kind of certification	VdTUEV-Type test approval			EC Type-examination		ASME certification
Rules	AD 2000-Merkblatt A2:			DIN EN ISO 4126-1:		ASME-Code Sec.VIII, Div.1:
Certification No./ valid until	D/G:	TÜV-SV 04-576	31.05.09	G/S:	072020111Z0008/0/08-2 01.07.10	G/S: M37044 17.02.07
	F:	TÜV-SV 04-576	31.05.09	L:	072020111Z0008/0/08-2 01.07.10	L: M37055 30.01.07
Flow diameter	d ₀	74 [mm]	-	74 [mm]	-	2,913 [in.]
Flow area	A	4300,8 [mm ²]	A	4300,8 [mm ²]	A	6,665 [sq.in.]
Certified derated coefficient of discharge	a _w	D/G: 0,70 F: 0,45	K _{dr}	G/S: 0,70 L: 0,45	K	G/S: 0,699 L: 0,521
Certified capacity						
Lift	H	18,0 [mm]	h	18,0 [mm]	l	0,71 [in.]
Overpressure	c	D/G: 5 [%] F: 10 [%]	c	G/S: 5 [%] L: 10 [%]	-	G/S: 10[%] L: 10[%]
Cold differential test pressure	p	16,00 [bar g]	p _e	16,00 [bar g]	cdtp	232,1 [psig]
Temperature	-	20,00 [°C]	T ₀	293,2 [K]	T	68 [°F]
Backpressure	-	0,00 [bar g]	p _b	0,00 [bar g]	p ₀	0,00 [psig]
Set pressure	-	16,00 [bar g]	p	16,00 [bar g]	p	232,1 [psig]

2 Conformity assessment procedure and LESER Management Systems

Conformity assessment procedure:

Category IV according to PED 97/23/EC

Notified Body:

TÜV NORD GmbH, Große Bahnstraße 31, D-22525 Hamburg

Certification No.:

0045

LESER Management Systems:

Quality Management System

DIN EN ISO 9001:2000

Certification No. 07 100 0068

Environmental Management System

DIN EN ISO 14001:2000

Certification No. 07 104 0068

Production Quality Assurance

PED 97/23/EC Modul D/D1

Certification No. 07 2020111 Z 0008/0/01-2

ASME Certificate of Authorization

ASME Code Sec.VIII, Div.1

27,806

3 Regulations

LESER certifies with this CGA that design, marking, production and approval of this pressure equipment corresponds to the requirements of the following regulations (directives, codes, rules and standards).

Harmonized standards: Other regulations:

DIN EN ISO 4126-1

PED 97/23/EC VdTÜV SV 100

ASME-Code Sec. II

API RP 521

DIN EN ISO 4126-7

AD 2000-Merkblatt A2

TRD 110

ASME-Code Sec. VIII Div.1

API Std. 526

DIN EN 12266-1

AD 2000-Merkblatt A4

TRD 421

ASME PTC 25

API Std. 527

DIN EN 12266-2

AD2000-Merkblatt HPO

TRD 721

API RP 520

API RP 576

LESER GmbH & Co. KG Hamburg HRA 82 424
GF · BoD Joachim Klaus, Martin Leser
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20506 Hamburg, P.O. Box 26 16 51

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BLZ 200 300 00, Konto - Account 3203171
BIC: HYVEDE3300
IBAN: DE64 2003 0000 0003 2031 71
USDID - VAT DE 118540936

LESER - The Safety Valve

	Directive	DIN EN ISO	DIN EN 12286		ASME CODE	API				AD2000 Merkblatt			TRD	LESER Standard
	97/23/EC Annex 1	4126-1	Tell 1	Tell 2	Sec.VIII Div.1	520	526	527	576	A2	A4	HPO	TRD 110	LWN
Cdtp test	3.2.3	6.5			UG 136(d)(4)		4.2	2/3/4	6.2.14	11.1				220.04-E
Seat tightness test		6.6	4.4 (P12)		UG 136(d)(5)		4.3	2/3/4	6.2.17					220.01-E
Back seat tightness test				4. (P21)	UG 136(d)(3)									220.07-E
Test of operability	3.2.3			4. (F20)	UG 136(d)(5)	10.2			6.2.9	11.3				618.23-E
Design review											6.1.(1)		4.2.1(1)	300.00-E
Visual inspection	3.2.1										6.1.(2)		4.2.1(2)	618.23-E
Dimensional check											6.1.(3)		4.2.1(3)	618.23-E
Shell tightness test			4.4 (P11)								6.1.(4)		4.2.1(4)	220.07-E
Hydrostatic testing	3.2.2	6.3.1	4.4 (P10)		UG 136(d)(2)						6.1.(5)		4.2.1(5)	275.18-E
Nondestructive testing	7.4	6.3.2			UG 136(f)						6.1.(6)		4.2.1(6)	275.30-E
Material identification											6.1.(7)		4.2.1(7)	275.40-E
Marking					UG 77					8	7.1	4	5.	201.04-E

4 Material suitability and marking

4.1. LESER certifies that the suitability of the used materials corresponds to the regulations quoted in chapter 3.

4.2. The marking of the materials as well as their transmission took place as follows:

Pos	Description	Material	Manufacturer	Cast	LESER-Code
1	ECKGEH DN 80 +SITZ H47H51H84H88	1.4408 / CF8M	LACUNZA	G861	

5 Tests

The tests specified in the following one were realized on basis of the stated LESERS works standard (LWN) without any objection:

5.1. Shell test

Design review in respect of stresses and technical safety:

LWN 300.00-E

Visual inspection of machined body:

LWN 618.23-E

Dimensional check of machined body

LWN 618.23-E

Shell tightness test:

LWN 220.07-E

Hydrostatic testing:

LWN 275.18-E

Nondestructive testing:

LWN 275.30-E

Material identification check for alloyed materials:

LWN 275.40-E

The realization of the test took place through:

LESER GmbH & Co.KG

5.2. Valve setting and testing

Seat tightness

LWN 220.01-E

Back seat tightness

LWN 220.07-E

Operability

LWN 618.23-E

Cold differential test pressure

LWN 220.04-E

Setting at

with

☒ air

☐ water

16.00 ☒ barg ☐ psig

☐ saturated steam

at

☒ ambient temperature

☐ saturated steam temperature

☐ °C ☐ °F

according to LWN 220.04.

The safety valve is protected by a seal marked with:



Setting and testing were done by:

LESER GmbH & Co. KG

6 CERTIFICATE OF SHOP COMPLIANCE

By the signature of the Certified Individual (CI) noted below, we certify that the statements made in this report are correct and that all details for design, material, construction, and workmanship of the pressure relief devices conform with the requirements of Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

UV Certificate of Authorization No. 27,806

Expires June 16,2006

Martin Leser
LESER GmbH & Co. KG

Date: 13.02.2006

Manfred Orłowski
Inspection Representative Works Hohenwestedt
Certified Individual (CI)

LESER GmbH & Co. KG Hamburg HRA 82 424
GF - BoD Joachim Klaus, Martin Leser
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20506 Hamburg, P.O. Box 26 18 51

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E-Mail sales@leser.com
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BLZ 200 300 00, Konto - Account 3203171
BIC: HYVEDE3300
IBAN: DE84 2003 0000 0003 2031 71
USt-ID - VAT DE 118840936

LESER - The Safety Valve

TÜV Nord Systems GmbH & Co.KG

Geschäftsstelle Kiel

Segeberger Landstraße 2b 24143 Kiel Tel. 0431-7307-0

**LESER GmbH & Co.KG**Postfach 26 16 51 D-20506 Hamburg
Wendenstr. 133-135 D-20537 Hamburg

Firma

Air Liquide AGS GmbH

Depotstr. 1

63457 Hanau

Customers Order No.: 4500025587 L.-Nr. 128770

LESER-Job-No.: 20017957 / 10300

LESER-Doc.-No.:

LESER-Customers-No.: 112546

LESER-Contact: Dieter Bohmsch

Fon: 04871 27 150

Fax: 04871 27 298

eMail: bohmsch.d@leser.com

Inspection certificate 3.2 according to DIN EN 10204 for setting of safety valves

in according to AD 2000-Merkblatt A2 chapter 11.4, AD 2000-Merkblatt HP 512R chapter 5, HP 512 chapter 7 und PED 97/23/EG, annex I chapter 3.2.3

Test objectHigh Performance Safety Relief Valve, Type 441 DIN,
closed bonnet, gastight cap H2,
for steam, gas and liquid service

Art.-No.	cold differential test pressure		Option Code:	M33H03J78H88H84H51H47H28S54H01 J85		
4414.4692	16,00 barg	232,1 psig	remarks:			
Tag-No.:	LESER-Job-No.:	Pos.-No.:	Serial-No.:	Body material	Nominal size: Inlet Outlet	Pressure rating: Inlet Outlet
	20017957	10300	10048155	1.4408 / CF8M	DN 80 DN 125	PN 40 PN 16
Kind of certification		VdTUEV Type Test Approval		EG-Type Examination		ASME Certification
Rules		AD 2000-Merkblatt A2:		DIN EN ISO 4126-1:		ASME-Code Sec.VIII, Div.1:
Certification No./ valid until		D/G: TÜV-SV 04-576	31.05.09	G/S: 072020111Z0008/0/08-2 01.07.10		G/S: M37044 17.02.07
		F: TÜV-SV 04-576	31.05.09	L: 072020111Z0008/0/08-2 01.07.10		L: M37055 30.01.07
Flow diameter	d ₀	74 [mm]	-	74 [mm]	-	2,913 [in.]
Flow area	A	4300,8 [mm ²]	A	4300,8 [mm ²]	A	6,665 [sq.in.]
Certified derated coefficient of discharge	a _w	D/G: 0,70 F: 0,45	K _{dr}	G/S: 0,70 L: 0,45	K	G/S: 0,699 L: 0,521
Lift	H	18,0 [mm]	h	18,0 [mm]	l	0,71 [in.]
Overpressure	c	D/G: 5 [%] F: 10 [%]	c	G/S: 5 [%] L: 10 [%]	-	G/S: 10[%] L: 10[%]
Cold differential test pressure	p	16,00 [bar g]	p _g	16,00 [bar g]	cdtp	232,1 [psig]
Temperature-correction	-	20,00 [°C]	T ₀	293,2 [K]	T ₀	68 [°F]
Backpressure-correction	-	0,00 [bar g]	p _b	0,00 [bar g]	p ₀	0,00 [psig]
Set pressure	-	16,00 [bar g]	p	16,00 [bar g]	p	232,1 [psig]

Setting

Setting at

with

at

according to LWN 220.04.

☒ air☒ ambient temperature☐ water☐ saturated steam temperature16,00 ☒ barg ☐ psig☐ saturated steam☐ _____ ☐ °C ☐ °F

The safety valve is locked by a seal, marked with.

Representative of the Technischer Ueberwachungs-Vereins Nord e.V.
Testing Laboratories for Pressure Equipment of TÜV Nord Systems GmbH & Co.KG

Dipl.-Ing. (Name)

Date

27.01.06



ACEROS MOLDEADOS DE LACUNZA S.A.

Certificado según
Certificate acc. to
Abnahmeprüfzeugnis nach

DIN - EN 10204
3.1.B.

Certificado N.º
Certificate Nr.
APZ - Nr

73060

Fecha
Date
Datum

2/12/2004

Abarrategui s/n
31830 Lacunza - Navarra
Spain

Cliente
Customer
Besteller

LESER GmbH and Co. KG

Sello del Inspector
Inspector stamp
Stempel des Sachverständigen



Logotipo del fabricante
Brand of manufacturer
Hersteller Kennzeichen



Pedido N.º
Order Nr.
Bestell - Nr.

3504562

Orden de fabricación N.º
Works Nr.
Werk Nr.

23269

Proceso de fusión
Melting process
Erschmelzungsart

Inducción

Normas de control / especificaciones
Technical requirements / specifications
Prüfgrundlagen / Anforderungen

TRD 110 in Verbindung mit TRD 103
und ASME SECT. II ADD. 2001 SA351, LWN289.01
+290.05 AD-2000 W5, W10+TRB 801 N45

Material
Material
Werkstoff
1.4408+CF8M

Según norma
According to
Entsprechend
EN10213+ASME SA351

Marcado de identificación
Marking / Kennzeichnung

Material / N.º Colada (Heat number)

N.º de piezas
Quantity
Stückzahl

Designación del Artículo
Designation
Gegenstand

Colada N.º
Heat Nr.
Schmelze Nr.

Probeta N.º
Test N.º
Probe Nr.

Peso (Kg.)
Weight
Gewicht

6

Eckgehäuse DN80

108.90.40

G861

61

32.2

Análisis Químico / Chemical Analysis / Chemische Analyse

Colada N.º Heat Nr. Schmelze Nr.	C %	Mn %	Si %	P %	S %	Cr %	Ni %	Mo %	Nb %	Cu %	N %	V %	W %		
Max.	0.070	1.50	1.50	0.040	0.030	20.00	12.00	2.50		0.500		0.080			
Min.						18.00	9.00	2.00							
G861	0.045	0.93	1.31	0.027	0.002	18.72	9.17	2.24		0.217		0.058			

Ensayos Mecánicos / Mechanical Test Results / Mechanische Prüfungen

Probeta N. Test N. Probe Nr.	Colada N. Heat Nr. Schmelze Nr.	Dimensión probetas Dimension of specimen Probeabmessungen		Temperatura ensayo Test temperature Prüftemperatur °C	Límite elástico Yield point Dehngrenze 0.2 % N/mm ²	Límite elástico Yield point Dehngrenze 1.0 % N/mm ²	Carga rotura Tensile strength Zugfestigkeit N/mm ²	Elongación Elongation Bruchdehnung Lo = %	Estricción Reduction of area Bruchseinschnürung %	ISO - V (Joules)					Expansión lateral Lateral expansion Breitung mm x 10 ⁻²	Dureza HB Hardness Härte
		Espesor Thickness Dicke mm	Ancho, Ø Width, Ø Breite, Ø mm							Resiliencia Energy of impact Schlagarbeit						
										Valores - Values - Werte						
										Temp. C°	1	2	3	Σ/n		
Max.	G861	10.0	14.0	20			640			-196				60		
Min.	G861			20	205	210	485	30.00								
61	G861			20	279	301	542	55.00								
61	G861									-196	128	122	128	126		

Tratamiento Térmico
Heat treatment
Wärmebehandlung

Solution Annealed 1110 °C
4h. / Quench in Water

Corrosión Intergranular
Intergranular corrosion test
Interkristalline Korrosion

Satisfactory acc. to DIN 50.914

Control Visual
Visual Test
Besichtigung

Satisfactory according to
BNIF 359 2S1, BIS 3S1-WSS-SP-55

Control Dimensional
Dimensional Test
Masskontrolle

Satisfactory

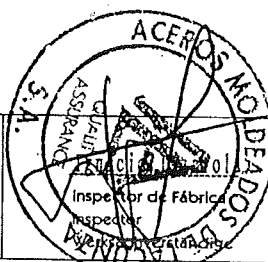
Observaciones
Remarks
Bemerkungen

Dye Penetrant ES4....Satisfactory
X-Ray inspection RV4.Satisfactory

Homologado por:
Certificates of:
Zertifikate:

- TÜV Süddeutschland
- Lloyd's Register of Shipping
- Germanischer Lloyd
- Det Norske Veritas

- Bureau Veritas
- NKK - Nippon Kaiji Kyokai



Inspector del Cliente
Customer Inspector
Sachverständige des Kunden