

TRANSMITTAL OF CERTIFICATES

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

Firma

Air Liquide AGS GmbH
Depotstr. 1
63457 Hanau

Customers Oder-No.: Z50 / 4500025823 · LP 119 | 40009
LESER-Job-Nr.: 20017957 / 20300
LESER-Doc.-Nr.:
LESER-Customers-No.: 112546

LESER-Contact: Dieter Bohmsch
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			
4414.4702	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 74009	20017957	20300	10051930	1.4408 / CF8M	DN 100 DN 150	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 DN100 +SITZ H47H51H84H88	1.4408 / CF8M	LACUNZA	G068	

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

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

Firma

Air Liquide AGS GmbH

Depotstr. 1

63457 Hanau

Customers Order No.: Z50 / 4500026823 - LP 119 | 40009
LESER-Job-No.: 20017957 / 20300
LESER-Customers-No.: 112546

LESER-Contact: Dieter Bohmsch
Fon: 04871 27 150
Fax: 04871 27 298
eMail: bohmsch.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: M33H03J78H88H84H51H47H28S54H01 J85			
4414.4702		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
		20017957	20300	10051930	1.4408 / CF8M	DN 100 DN 150	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	92 [mm]			-	92 [mm]	- 3,622 [in.]
Flow area	A	6647,6 [mm ²]			A	6647,6 [mm ²]	A 10,304 [sq.in.]
Certified derated coefficient of discharge	s _w	D/G: 0,70			K _{dr}	G/S: 0,70	K G/S: 0,699
		F: 0,45			L:	0,45	L: 0,521
Certified capacity							
Lift	H	22,4 [mm]			h	22,4 [mm]	l 0,88 [in.]
Overpressure	c	D/G: 5 [%]			c	G/S: 5 [%]	- G/S: 10[%]
		F: 10 [%]			L:	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 578

LESER GmbH & Co. KG Hamburg HRA 82 424
GF · BoD Joachim Klaus, Martin Leser
20537 Hamburg, Wendenstr. 133-135
20506 Hamburg, P.O. Box 26 16 51

Fon +49 (40) 251 65 - 100
Fax +49 (40) 251 65 - 500
E-Mail sales@leser.com
Internet www.leser.com

Bank HypoVereinsbank, Hamburg
BLZ 200 500 00, Konto · Account 3203171
BIC: HYVEDE3300
IBAN: DE64 2003 0000 0003 2031 71
USt-ID · VAT DE 118840936

LESER - The Safety Valve

	Directive	DIN EN ISO	DIN EN 12266		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 11.4				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 7.4	6.3.1 6.3.2	4.4 (P10)		UG 136(d)(2)					6.1.(5)			4.2.1(5)	275.18-E
Nondestructive testing					UG 138(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 DN100 +SITZ	H47H51H84H88	1.4408 / CF8M	LACUNZA	G068

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

16,00 [X] barg [] psig

with

[X] air

[] water

[] saturated steam

at

[X] 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 18,2006

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
20537 Hamburg, Wendenstr. 133-135
20506 Hamburg, P.O. Box 26 18 51

Fon +49 (40) 251 85 - 100
Fax +49 (40) 251 85 - 500
E-Mail sales@leser.com
Internet www.leser.com

Bank HypoVereinsbank, Hamburg
BLZ 200 300 00, Konto · Account 3203171
BIC: HYVEDE3300
IBAN: DE64 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 28 18 51 D-20508 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 / 20300
LESER-Doc.-No.:	
LESER-Customers-No.:	112548

LESER-Contact:	Dieter Bohmsach
For:	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: M33H03J78H88H84H51H47H28554H01			
4414.4702	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	20300	10051930	1.4408 / CF8M	DN 100 DN 150	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	92 [mm]	-		-	
Flow area	A	6647,8 [mm ²]	A		A	
Certified derated coefficient of discharge	a _w	D/G: 0,70	K _{dr}		K	
Lift	H	22,4 [mm]	h		I	
Overpressure	c	D/G: 5 [%]	c		-	
		F: 10 [%]	L: 10 [%]		L: 10 [%]	
Cold differential test pressure	p	16,00 [bar g]	p ₀		cdtp	
Temperature-correction	-	20,00 [°C]	T ₀		T ₀	
Backpressure-correction	-	0,00 [bar g]	p _b		p ₀	
Set pressure	-	16,00 [bar g]	p		p	

Setting

Setting at

with

at

according to LWN 220.04.

☒ air
☒ ambient temperature☐ water
☐ saturated steam temperature
☐ 16,00 [X] 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. 14 57 0																																	
Certificado según Certificate acc. to Abnahmeprüfzeugnis nach		DIN - EN 10204 3.1.B.		Certificado N.º Certificate Nr. APZ - Nr		71398		Fecha Date Datum		1/01/1998		Abarrategui s/n 31830 Lacunza - Navarra Spain		Pag. 1/1																					
Cliente Customer Besteller						LESER GmbH and Co. KG		Sello del Inspector Inspector stamp Stempel des Sachverständiges				Logotipo del fabricante Brand of manufacturer Hersteller Kennzeichen																							
Pedido N.º Order Nr. Bestell - Nr.				3503108				Orden de fabricación N.º Works Nr. Werk Nr.		22759		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																	
Mercado de identificación Marking / Kennzeichnung																		Material / NQ 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																					
4		Eckgehäuse DN100								109.2400-05-B06		G068		68		53.0																			
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		2.00		2.50		0.500		0.080		0.080		0.080											
Min.		0.050		1.13		1.27		0.030		0.004		18.67		9.71		2.42		0.198		0.063		0.063		0.063											
G068		0.050		1.13		1.27		0.030		0.004		18.67		9.71		2.42		0.198		0.063		0.063		0.063											
Ensayos Mecánicos / Mechanical Test Results / Mechanische Prüfungen																																			
Probeta N.º Test N.º Probe Nr.		Colada N.º Heat Nr. Schmelze Nr.		Dimensión probetas Dimension of specimen Probeabmessungen		Espesor Thickness Dicke		Ancho, Ø Width, Ø Breite, Ø		Temperatura ensayo Test temperature Prüftemperatur		Límite elástico Yield point Dehngrenze		Límite elástico Yield point Dehngrenze		Carga rotura Tensile strength Zugfestigkeit		Alargamiento Elongation Bruchdehnung		Estricción Reduction of area Bruchsehnung		ISO - V (Joules) Resiliencia Energy of impact Schlagarbeit				Expansión lateral Lateral expansion Breitung		Dureza Hardness Härte							
						mm		mm		°C		0.2 % N/mm²		1.0 % N/mm²		N/mm²		%		%		Valores - Values - Werte				mm x 10²		HB							
Max.		G068								20						640						-196													
Min.		G068								20		210		240		485		30.00				60													
68		G068								20		311		334		550		50.00				-196				127		118		134		126			
68		G068				10.0		14.0		10.0																									
Tratamiento Térmico Heat treatment Wärmebehandlung																		Solution Annealed 1110 °C 4h./ Quench in Water																	
Corrosión Intercristalina Intergranular corrosin test Interkristalline Korrosion										Satisfactory acc. to DIN 50.914										Observaciones Remarks Bemerkungen Dye Penetrant ES4....Satisfactory X-Ray inspection RV4.Satisfactory															
Control Visual Visual Test Beschligung										Satisfactory according to BNIP 359 281,BIS 381-WSS-SP-55																									
Control Dimensional Dimensional Test Masskontrolle										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																	