

## TRANSMITTAL OF CERTIFICATES

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

Company  
SPIRAX-SARCO s.r.l.  
Via per Cinisello 18  
I-20834 Nova Milanese (Mi)

Customers Oder-No.:	561067
LESER-Job-Nr.:	20265336 / 20
LESER-Customers-No.:	116383
LESER-Contact:	Jana Pouget
Fon:	40 25165 297
Fax:	40 25165 597
eMail:	pouget.j@leser.com

### 1 LESER Product designation

High Performance Safety Relief Valve, Type 441 DIN,  
closed bonnet, gastight lifting device H4,  
for steam, gas and liquid service

Art.-No.	Cold differential test pressure		Option Code: H03N05P2AX00H88H84H51H45H20H01			
4411.4424	6,06 barg	87,84 psig	Further SV-Info: 75440090214 - Com.: 62375			
Tag-No.:	LESER-Job-No.	Pos.-No	Serial-No.:	Body material	Nominal size: Inlet   Outlet	Pressure rating: Inlet   Outlet
	20265336	20	11036490	0.6025 CL55	DN 65   DN 100	PN 16   PN 16

### 2 Inspection certificates

Name	Description	Standard	Edition
LESER CGA	Inspection Certificate 3.1	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	Cast	LESER-Code
1	Body	0.6025 CL55	MAGNA	15/11/14	

### 4 Additional certificates and documents

Inspection certificate 3.1 acc. to DIN EN 10204: Testing of cold differential test pressure with air



## 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

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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 lifting device H4,  
for steam, gas and liquid service

Art.-No.	Cold differential test pressure		Option Code: <b>H03N05P2AX00H88H84H51H45H20H01</b>			
4411.4424	6,06 barg	87,84 psig	Further SV-Info: 75440090214 - Com.: 62375			
Tag-No.:	LESER-Job-No.	Pos.No.	Serial-No.:	Body material	Nominal size: Inlet   Outlet	Pressure rating: Inlet   Outlet
	20265336	20	11036490	0.6025 CL55	DN 65   DN 100	PN 16   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 14-576 05.19	G/S:	072020111Z0008/0/08-3 06.20	G/S:	
	F:	TÜV-SV 14-576 05.19	L:	072020111Z0008/0/08-3 06.20	L:	
Flow diameter	d <sub>0</sub>	60 [mm]	-	60 [mm]	-	[in.]
Flow area	A	2827,4 [mm <sup>2</sup> ]	A	2827,4 [mm <sup>2</sup> ]	A	[sq.in.]
Certified derated coefficient of discharge	a <sub>w</sub>	D/G: 0,70 F: 0,45	K <sub>dr</sub>	G/S: 0,70 L: 0,45	K	G/S: 0,000 L: 0,000
Certified capacity						
Lift	H	14,6 [mm]	h	14,6 [mm]	l	0,00 [in.]
Overpressure	c	D/G: 5 [%] or 0,1bar for p<1bar F: 10 [%] or 0,1bar for p<1bar	c	G/S: 5 [%] or 0,1bar for p<1bar L: 10 [%] or 0,1bar for p<1bar	-	G/S: [%] or 1,45psig for p<14,5 psig L: [%] or 1,45psig for p<14,5 psig
Cold differential test pressure	p	6,06 [bar g]	p <sub>e</sub>	6,06 [bar g]	cdtp	87,84 [psig]
Temperature	T	168,00 [°C]	T	168,00 [°C]	T	334 [°F]
Backpressure	p <sub>a</sub>	0,00 [bar g]	-	0,00 [bar g]	-	0,00 [psig]
Set pressure	p	6,00 [bar g]	p	6,00 [bar g]	p	87,02 [psig]

### 2 Conformity assessment procedure and LESER Management Systems

Conformity assessment procedure: Category IV according to PED 97/23/EC Modul B D/D1  
Notified Body: TÜV NORD Systems GmbH & Co. KG, Große Bahnstraße 31, D-22525 Hamburg  
Certification No.: 0045

LESER Management Systems: Quality Management System DIN EN ISO 9001  
Environmental Management System DIN EN ISO 14001  
Production Quality Assurance PED 97/23/EC Modul D/D1  
ASME Certificate of Authorization ASME Code Sec.VIII, Div.1

### 3 Regulations

LESER certifies with this CGA that design, marking, production an 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		ASME-Code Sec. VIII Div.1	API Std. 526
DIN EN 12266-1	AD 2000-Merkblatt A4		ASME PTC 25	API Std. 527
DIN EN 12266-2	AD2000-Merkblatt HP0		API RP 520	API RP 576

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BoM: Joachim Klaus, Mirko Engel, Alexander Vocke

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	Directive	DIN EN ISO	DIN EN 12266		ASME CODE	API			AD2000 Merkblatt			LESER Standard
	97/23/EC Annex 1	4126-1	Teil 1	Teil 2	Sec.VIII Div.1	526	527	576	A2	A4	HPO	LGS
Cdtp test	3.2.3	6.5			UG 136(d)(4)	4.2	2/3/4	6.2.14	11.1 11.4			LGS 0202-E
Seat tightness test		6.6	4.4 (P12)		UG 136(d)(5)	4.3	2/3/4	6.2.17				LGS 0201-E
Back seat tightness test				4. (P21)	UG 136(d)(3)							LGS 0201-E
Test of operability		7		4. (F20)					11.3			LGS 0217-E
Shell tightness test			4.4 (P11)									LGS 0201-E
Hydrostatic testing	3.2.2 7.4	6.3.1 6.3.2	4.4 (P10)		UG 136(d)(2)				6.1.(4)			LGS 0209-E
Nondestructive testing					UG 136(f)				6.1.(5)			LGS 0203-E - 0206-E
Material identification									6.1.(6)			LGS 0207-E
Marking					UG 77				8	7.1	4	LGS 0218-E
Check for dimensional accuracy									6.1.(3)			LGS 0216-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	Body	0.6025 CL55	MAGNA	15/11/14	

## 5 Tests

The tests specified in the following one were realized on basis of the stated LESER standards without any objection:

### 5.1. Shell test

Shell tightness test

Hydrostatic testing

Nondestructive testing

Material identification check for alloyed materials

The realization of the test took place through:

LESER GmbH & Co.KG

### 5.2. Valve setting and testing

Seat tightness

Back seat tightness

Operability

Cold differential test pressure

Setting at

with

at

☒ air

☒ ambient temperature

☐ water

☐ saturated steam temperature

6,06 ☒ barg ☐ psig

☐ saturated steam

☐ \_\_\_\_\_ ☐ °C ☐ °F

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 are conform with the requirements of Section VIII, Division 1 of the

ASME Boiler and Pressure Vessel Code,

UV Certificate of Authorization No.: 27,806



Joachim Klaus  
LESER GmbH & Co. KG



Date: 31.08.2015



Marinela Laschinski  
Inspection Representative Works Hohenwestedt  
Certified Individual (CI)

# INSPECTION CERTIFICATE

Acc. to European Standard EN 10204 - 3.1

<b>Point</b>	<b>Essence</b>												
<b>Foundry</b>	Name <b>Magna Electro Castings Ltd</b>				Address Thamaraikulam post, Kinathaukadavu, Pollachi Taluk, Coimbatore Dist, Tamilnadu-642109, India				Trade Mark <b>MAGNA</b>				
<b>Inspection Certificate</b>	Certificate No: 96817      Date of delivery: 26/Jun/2015 With consent of: TUV NORD for      EN-JL 1040      DIN EN 1561      Qualification No: 07 202 1423 WZ 1368/09												
<b>Purchaser</b>	Leser GmbH & Co KG      Hamburg Purchase order No: 4500144669      Date of Issue: 26/Jun/2015												
<b>Article</b>	Pos No.      Item      Mould Produced Date :-      15/11/2014 1      DN65 Body 1091810      109.1810.9000												
<b>Material Designation</b>	EN-JL 1040      DIN EN 1561								Edition/Addenda, ref to LESER DE Standard (LDeS)3289.07				
<b>Requirements</b>	As per LDeS 3290.01-EN These LESER Work Standard covers all requirements for above mentioned materials and additional requirements given in PED(Pressure Equipment Directive 97/23/EC); ASME Code: Section VIII-Section IIA; AD-2000-Merkblatt.A2.A4.W3/1, W10, HP2/1; DIN EN:1561, 1559-1, 1559-3; DIN1690 part 10; BNIF359-01; MSS SP55; SEW110; TRD: 108,110												
<b>List of delivery</b>	Pos No.	Number of Pieces		Article No			Unit Weight	Heat No		Test No			
	1	1		109.1810.9000			18.59	15/11/14					
<b>Chemical Composition</b>	Pos No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	Mg	
Required      Min		3.10	1.80	0.70	0.030	0.050	0.00	0.00	0.00	0.00		0.000	
Max		3.30	2.10	0.90	0.150	0.150	0.05	0.00	0.00	0.15		0.000	
Actual Value	1	3.192	1.933	0.837	0.053	0.110	0.018	0.000	0.000	0.066		0.000	
<b>Mechanical Properties</b>	Pos No.	Rm Tensile strength [N/Sq.mm]		Rp Yield Strength 0.2% [N/Sq.mm]		A Elongation After fracture[%]		Z Reduction area[%]		BHN Hardness		KV[J] Impact Value Charpy-V[J] DIN EN 10045-1 [J]	
Required (Min)		250.00		165.00		0.30		--		180 - 250		Min 0      J at 0      C      0	
Actual Value	1	285.00		182.00		0.51		--		193- 197			
<b>Heat Treatment</b>	Pos No.	Treatment		Temperature (°C)		Hold time (Hrs)		Cooling media					
<b>Supplementary Information</b>	The consignment does not contain any radioactive contaminated material <input checked="" type="checkbox"/> fulfilled												
<b>Quality Level</b>	DIN 1690 part10, quality level D <input checked="" type="checkbox"/> fulfilled BNIF 359-01 <input checked="" type="checkbox"/> fulfilled MSS SP-55 <input checked="" type="checkbox"/> fulfilled												
<b>Visual Inspection and dimension check</b>	Without objections <input checked="" type="checkbox"/> fulfilled												
<b>Assessment</b>	Castings fulfil the requirements      LDeS 3290.01-EN <input checked="" type="checkbox"/> fulfilled												
<b>Inspection Representatives</b>	Stamp  15/Dec/2014  Name <u>G. S. S. S. S. S.</u> Date of validation      Official position:												
<b>LESER Internal entries</b>	Check of this certificate by LESER QM	Cert No		The entries of this certification are complete <input type="checkbox"/> fulfilled									
		Code No		The requirements of LDeS 3290.01-EN <input type="checkbox"/> fulfilled									
		Approved		The requirements of AD-2000 W3/1 <input type="checkbox"/> fulfilled									
		Date											
	Ordering by LESER customer	LESER-Order-No											
		Customer-TAG-No											

This certification is written digitally and requires no handwritten signature  
(ACC, to DIN EN 10204, chapter 5)

TC Number : 96817 Component : DN65 Body 1091810

Heat No : 15/11/14 Unetched 100X




Heat No : 15/11/14 Etched 200X





# INSPECTION CERTIFICATE

Acc. to European Standard EN 10204 - 3.1

<b>Point</b>	<b>Essence</b>											
<b>Foundry</b>	Name <b>Magna Electro Castings Ltd</b>			Address Thamaraikulam post, Kinathaukadavu, Pollachi Taluk, Coimbatore Dist, Tamilnadu-642109, India					Trade Mark <b>MAGNA</b>			
<b>Inspection Certificate</b>	Certificate No: 102545						Date of delivery: 26/Jun/2015					
	With consent of: TUV NORD for						EN-JL 1040 DIN EN 1561		Qualification No: 07 202 1423 WZ 1368/09			
<b>Purchaser</b>	Leser Gmbh & Co KG Hamburg						Purchase order No: 4500144669					
							Date of Issue: 26/Jun/2015					
<b>Article</b>	Pos No. Item 1 DN65 Body 1091810						Mould Produced Date :- 19/06/2015 109.1810.9000					
<b>Material Designation</b>	EN-JL 1040 DIN EN 1561						Edition/Addenda, ref to LESER DE Standard (LDeS)3289.07					
	NA											
<b>Requirements</b>	As per LDeS 3290.01-EN These LESER Work Standard covers all requirements for above mentioned materials and additional requirements given in PED(Pressure Equipment Directive 97/23/EC); ASME Code: Section VIII+Section IIA; AD-2000-Merkblatt A2, A4, W3/1, W10, HP2/1; DIN EN: 1561, 1559-1, 1559-3; DIN 1690 part 10; BNIF 359-01; MSS SP55; SEW 110; TRD: 108, 110											
<b>List of delivery</b>	Pos No.	Number of Pieces		Article No		Unit Weight		Heat No		Test No		
	1	42		109.1810.9000		18.59		19/06/15				
<b>Chemical Composition</b>	Pos No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	Mg
Required Min		3.10	1.80	0.70	0.030	0.050	0.00	0.00	0.00	0.00		0.000
Max		3.30	2.10	0.90	0.150	0.150	0.05	0.00	0.00	0.15		0.000
Actual Value	1	3.127	2.000	0.800	0.051	0.094	0.025	0.000	0.000	0.045		0.000
<b>Mechanical Properties</b>	Pos No.	Rm Tensile strength [N/Sq.mm]		Rp Yield Strength 0.2% [N/Sq.mm]		A Elongation After fracture[%]		Z Reduction area[%]		BHN Hardness		KV[J] Impact Value Charpy-V[J] DIN EN 10045-1 [J]
Required (Min)		250.00		165.00		0.30		--		180 - 250		Min 0 J at 0 C
Actual Value	1	286.45		199.04		0.56		--		187- 197		
<b>Heat Treatment</b>	Pos No.	Treatment		Temperature (°C)		Hold time (Hrs)		Cooling media				
<b>Supplementary Information</b>	The consignment does not contain any radioactive contaminated material											<input checked="" type="checkbox"/> fulfilled
<b>Quality Level</b>	DIN 1690 part 10, quality level D BNIF 359-01 MSS SP-55											<input checked="" type="checkbox"/> fulfilled <input checked="" type="checkbox"/> fulfilled <input checked="" type="checkbox"/> fulfilled
<b>Visual Inspection and dimension check</b>	Without objections											<input checked="" type="checkbox"/> fulfilled
<b>Assessment</b>	Castings fulfil the requirements LDeS 3290.01-EN											<input checked="" type="checkbox"/> fulfilled
<b>Inspection Representatives</b>	Stamp  02/Jul/2015 Date of validation Name <u>G. S. L. P. S. S.</u> Official position: _____											
<b>LESER Internal entries</b>	Check of this certificate by LESER QM	Cert No	The entries of this certification are complete <input type="checkbox"/> fulfilled									
		Code No	The requirements of LDeS 3290.01-EN <input type="checkbox"/> fulfilled									
		Approved	The requirements of AD-2000 W3/1 <input type="checkbox"/> fulfilled									
		Date										
	Ordering by LESER customer	LESER-Order-No										
		Customer-TAG-No										

This certification is written digitally and requires no handwritten signature  
(ACC, to DIN EN 10204, chapter 5)

TC Number : 102545 Component : DN65 Body 1091810

Heat No : 19/06/15 Unetched 100X



Heat No : 19/06/15 Etched 200X





## Inspection certificate 3.1 acc. to DIN EN 10204

### TESTING OF COLD DIFFERENTIAL TEST PRESSURE WITH AIR [Option code N05]

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

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Fax:	40 25165 597
eMail:	pouget.j@leser.com

This LESER inspection certificate confirms that the tested components of the test object was tested according to the undermentioned test references.

#### 1 Test object

High Performance Safety Relief Valve, Type 441 DIN,  
closed bonnet, gastight lifting device H4,  
for steam, gas and liquid service

Art.-No.	Cold differential test pressure		Option Code: H03N05P2AX00H88H84H51H45H20H01			
4411.4424	6,06 barg	87,84 psig	Further SV-Info: 75440090214 - Com.: 62375			
Tag-No.:	LESER-Job-No.	Pos.No.	Serial-No.:	Body material	Nominal size inlet   outlet	Pressure rating: inlet   outlet
	20265336	20	11036490	0.6025 CL55	DN 65   DN 100	PN 16   PN 16

#### 2 Test reference

Testing of cold differential test pressure with air acc. to: DIN EN ISO 4126-1, chapter 7.2  
ASME Code Section I, PG-72  
ASME Code Section VIII Div. 1, UG 134  
AD 2000-Merkblatt A2, chapter 11

#### 3 Procedure

LESER Global Standard LGS 0202

#### 4 Test specification

Test equipment: Assembly test bench  
Test media: Air

#### 5 Acceptance criteria

The safety valve must open within the specified set pressure tolerance.  
The discharge of the air must be audible. An opening with pop must be achieved. Creep opening of the valve is not allowed.

#### 6 Test result

Required set pressure p [bar g]:	6,06
Minimum set pressure p [bar g]:	6,06
Maximum set pressure p [bar g]:	6,24

The test was realised without any objection. The requirements of the test references are fulfilled.

Marinela Laschinski

Hohenwestedt, 31.08.2015

Inspection Representative  
This certification is written digitally and requires no  
handwritten signature. (Acc. to EN 10204, chapter 5)