KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: ***HH - 02536***
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00010	*2*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*10"*	*Cl. 600* *BW* 273,0 x 4,19	*ASTM A 494* *CW-6MC*	*Valve Ident – No.: " **S 555** "* *LPI 3210-1LP* *Geeignet für den Sauerstoffeinsatz* Suitable for oxygen service

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 158 bar Wasser / water (120 sec)
Dichtheit Sitz / seat = 115 bar Wasser / water (120 sec)
Rückdichtung / backseat = 115 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (120 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00010	Absperrschieber	**" S555 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 494 CW-6MC	SVR	W341		28334
	10" Cl. 600 lbs.	Drawing No.: 10	2	Haube / bonnet	SVR-3210-00	ASTM A 494 CW-6MC	SVR	W341		
	BW 273,0x4,19mm geeign. für Sauerstoff	Rev.5	2	Keil / wedge	SVR-3210-00	ASTM A 494 CW-6MC	SVR	W341		
	Gate Valve			Sitz / seat		Integral body				
	10" Cl. 600 lbs.			Spindel / stem		Alloy 625				
	BW 273,0x4,19mm suitable for oxygen serv.			Packung / packing		Graphite				
				Dichtung / gasket		SPW Inconel 625 + Graphite				
				Schrb. / bolting		A 193 Gr.B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: 28334 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1230 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION FURNACE**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	10" – 600 Lbs	**Heat No.:**	W341
	Gate Bonnet	10" – 600 Lbs	**Heat No.:**	W341
	Gate Wedge	10" – 600 Lbs	**Heat No.:**	W341

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 494 CW-6MC	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	Fe			
Solicitado Requirements (max)	0.06	1.00	1.00	0.015	0.015	20.0-23.0	Balan.	8.0-10.0	3.15-4.50	5.0			
W341	0.054	0.700	0.474	0.001	0.003	22.026	59.950	8.110	3.210	4.600		6	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20ºC**		
Solicitado Requirements	Lo = 4D	12.5	485	275	25		232			
W341	Lo = 4D	12.5	506	293	39		157			

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B.** correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No. 3210-1LP

Work Order 3210-12/04	Item:
Customer VALVES ENTERPRISE	P. O. No.: P-200450
Valve Type: GATE 10" – 600#	Valve Tag: S555
Serial No	
Drawing: 1.600BW	Surface Conditions: MACHINED
Part: 100 % BW-ENDS	Material: A 494 CW-6MC

Reference Procedure:	E 165
Acceptance Standards:	ANSI B 16.34 Anex. D
Precleaned by	WATER
Type of penetrant	ARDROX 906P
Rinsed by	WATER
Type of developer	ARDROX 9D1B
Penetr. Time (min.):	17' TO 23'
Developer Time (min.):	19' TO 25'
Temperature (°C):	18 °C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Nonlinear indications	☐	☒	☒	☐

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by Fernando Level II Acc. to SNT-TC-1A	Approved by Fernando Level II Acc. To SNT-TC-1A	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign	Sign.	Sign.	Sign.
Date: 11/01/05	Date: 15/01/05	Date	Date

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
15 ENE 2005
QA/QC Department

KLAUS UNION

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D - 44713 Bochum
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D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.:
Job no.: *HH - 02536*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00020	2	Absperrschieber mit Handrad Gate valve with handwheel	2"	Cl.150 RF	ASTM A 351 CF8C	Valve Ident – No.: " **S 655** " LPI 20-S655-W5836 20-S655-W5837 RE W5873

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 30 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 22 bar Wasser / water (60 sec)
Rückdichtung / backseat = 22 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00020	Absperrschieber 2" Cl. 150 lbs. RF	**" S655 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	Y952		W5836-W5837
		Drawing No.: 20	2	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	Y952		
		Rev.5	2	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	Y952		
	Gate Valve 2" Cl. 150 lbs. RF			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5836-W5837 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	2" – 150 Lbs	**Heat No.:**	Y952
	Gate Bonnet	2" – 150 Lbs	**Heat No.:**	Y952
	Gate Wedge	2" – 150 Lbs	**Heat No.:**	Y952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
Y952	0.053	0.86	1.32	0.019	0.022	18.35	9.42	0.024	0.53			6	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
Y952	Lo = 4D	12.5	535	264	41	68	192	68	69	72

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 20-S655-W5836

Work Order: **W5836-06/12**	Item: 20
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 150Lb 2″**	Quantity: 1
Heat No.: **Y952**	Serials No.: W5836
Drawing: **1. 150Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A.
17 ENE 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 20-S655-W5837

Work Order: **W5837-06/12**	Item: 20
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 150Lb 2″**	Quantity: 1
Heat No.: **Y952**	Serials No.: W5837
Drawing: **1. 150Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. 17 ENE 2005 QA/QC Department

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5876

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	1500LB 2"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48023		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400, 360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	3 MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5		II	/	/	/	/	/	/	I	OK
R6	6		II	/	/	/	/	/	/	I	OK
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
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**********	*******	*******	********	*********	******	*********	********	*********	********	******	********

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

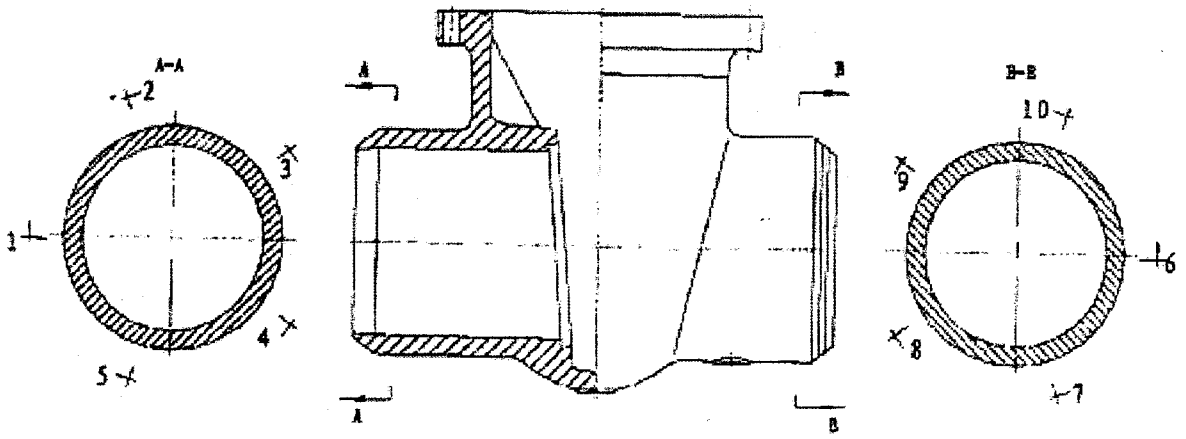
SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48023
Contract	HH-02536	Part No.	W5876
Drawing:	1500LB 2"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1 - R8	KODAK AA400	30	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: ***HH - 02536***
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00030	*4*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*2"*	*Cl.300* *RF*	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 655** "* *LPI 30-S655-W5838* *30-S655-W5839* *30-S655-W5840* *30-S655-W5841*

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 75 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 55 bar Wasser / water (60 sec)
Rückdichtung / backseat = 55 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00030	Absperrschieber	**" S655 "**	4	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5838+W5839+
	2" Cl. 300 lbs.	Drawing No.: 030-050	4	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5840+W5841
	RF	Rev.5	4	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
	Gate Valve			Sitz / seat		ASTM A 182 F321				
	2" Cl. 300 lbs.			Spindel / stem		ASTM A 182 F321				
	RF			Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5838-W5839-W5840-W5841 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 12
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	2" – 300 Lbs	**Heat No.:**	6952
	Gate Bonnet	2" – 300 Lbs	**Heat No.:**	6952
	Gate Wedge	2" – 300 Lbs	**Heat No.:**	6952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			12	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

Hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Departament.

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 30-S655-W5838

Work Order: **W5838-06/12**	Item: 30
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 300Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5838
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

❑ Accepted
❑ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ❑ YES ❑ NOT ❑ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 30-S655-W5839

Work Order: **W5839-06/12**	Item: 30
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 300Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5839
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 30-S655-W5840

Work Order: **W5840-06/12**	Item: 30
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 300Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5840
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 30-S655-W5841

Work Order: **W5841-06/12**	Item: 30
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 300Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5841
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH
17 ENE. 2005
QA/QC Departament

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: ***Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt***
Customer:

Bestell-Nr.: ***Lurgi Job – No.:*** ***69690-10***
Order no.: ***Lurgi OGC PO.-No.:*** ***4567571-000/1.69690/136***

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: ***HH - 02536***
Job no.:

Lieferumfang / range:

Pos	**Stck.** pcs.	**Gegenstand** object	**DN**	**PN**	**Werkstoff** material	**Bemerkung** comment
00040	*25*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*2"*	*Cl.600* *RF*	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 655** "* *LPI 40-S655-W5842 to* 40-S655-W5866

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = *150 bar Wasser / water* (60 sec)
Dichtheit Sitz / seat = *110 bar Wasser / water* (60 sec)
Rückdichtung / backseat = *110 bar Wasser / water* (60 sec)
Dichtheit Sitz / seat = *4-7 bar Luft / air* (60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge Walt Glass

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00040	Absperrschieber 2" Cl. 600 lbs. RF	**" S655 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5842 to
		Drawing No.: 040	2	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5866
		Rev.5	2	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
	Gate Valve 2" Cl. 600 lbs. RF			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5842 to W5866 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 75
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T.T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	2" – 600 Lbs	**Heat No.:**	6952
	Gate Bonnet	2" – 600 Lbs	**Heat No.:**	6952
	Gate Wedge	2" – 600 Lbs	**Heat No.:**	6952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			75	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

Hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5842

Work Order: **W5842-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5842
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5843

Work Order: **W5843-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5843
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER 17 ENE. 2005 QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5844

Work Order: **W5844-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5844
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. 17 ENE. 2005 QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5845

Work Order: **W5845-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5845
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5846

Work Order: **W5846-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5846
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5847

Work Order: **W5847-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5847
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5848

Work Order: **W5848-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5848
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5849

Work Order: **W5849-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5849
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5850

Work Order: **W5850-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5850
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5851

Work Order: **W5851-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5851
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5852

Work Order: **W5852-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5852
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5853

Work Order: **W5853-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5853
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5854

Work Order: **W5854-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5854
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5855

Work Order: **W5855-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5855
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5856

Work Order: **W5856-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5856
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5857

Work Order: **W5857-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5857
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5858

Work Order: **W5858-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5858
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5859

Work Order: **W5859-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5859
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5860

Work Order: **W5860-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5860
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

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VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5861

Work Order: **W5861-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5861
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5862

Work Order: **W5862-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5862
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5863

Work Order: **W5863-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5863
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. 17 ENE 2005 QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5864

Work Order: **W5864-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5864
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level III SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5865

Work Order: **W5865-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5865
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level III SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 40-S655-W5866

Work Order: **W5866-06/12**	Item: 40
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5866
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

❑ Accepted
❑ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ❑ YES ❑ NOT ❑ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: *HH - 02536*
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00050	*2*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*4"*	*Cl.300* *RF*	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 655** "* *LPI 50-S655-W5867* *50-S655-W5868*

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 75 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 55 bar Wasser / water (60 sec)
Rückdichtung / backseat = 55 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge Walli Glass
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00050	Absperrschieber 4" Cl. 300 lbs. RF	**" S655 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5867-W5868
		Drawing No.: 030-050	2	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
		Rev.5	2	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
	Gate Valve 4" Cl. 300 lbs. RF			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5867-W5868 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	4" –300 Lbs	**Heat No.:**	6952
	Gate Bonnet	4" – 300 Lbs	**Heat No.:**	6952
	Gate Wedge	4" – 300 Lbs	**Heat No.:**	6952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			6	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 50-S655-W5867

Work Order: **W5867-06/12**	Item: 50
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 300Lb 4″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5867
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Signament	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH 17 ENE. 2005 QA/QC

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 50-S655-W5868

Work Order: **W5868-06/12**	Item: 50
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 300Lb 4″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5868
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: ***HH - 02536***
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00060	*3*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*8"*	*Cl.600* *RF*	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 655** "* *LPI 60-S655-W5869* *60-S655-W5870* *60-S655-W5871*

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 150 bar Wasser / water (120 sec)
Dichtheit Sitz / seat = 110 bar Wasser / water (120 sec)
Rückdichtung / backseat = 110 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (120 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge Walter Glass

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00060	Absperrschieber 8" Cl. 600 lbs. RF	**" S655 "**	3	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48013/K48012		W5869
		Drawing No.: 060-070	3	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	Y952		W5870-W5871
		Rev.5	3	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
	Gate Valve 8" Cl. 600 lbs. RF			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5869 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	8" –600 Lbs	**Heat No.:**	K48013
	Gate Bonnet	8" – 600 Lbs	**Heat No.:**	Y952
	Gate Wedge	8" – 600 Lbs	**Heat No.:**	6952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48013	0.053	0.82	1.22	0.020	0.021	18.40	9.34	0.016	0.53			1	
Y952	0.053	0.86	1.32	0.019	0.022	18.35	9.42	0.024	0.53			1	
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			1	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48013	Lo = 4D	12.5	495	268	40	62	201	66	68	69
Y952	Lo = 4D	12.5	535	264	41	68	192	68	69	72
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

Hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5870-W5871 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	8" –600 Lbs	**Heat No.:**	K48012
	Gate Bonnet	8" – 600 Lbs	**Heat No.:**	Y952
	Gate Wedge	8" – 600 Lbs	**Heat No.:**	6952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS

COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48012	0.06	0.69	1.16	0.021	0.023	18.44	9.33	0.017	0.62			2	
Y952	0.053	0.86	1.32	0.019	0.022	18.35	9.42	0.024	0.53			2	
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter ∅	Resistencia Tensile Str. N/mm²	L. Elástico Yield Point N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20°C		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48012	Lo = 4D	12.5	505	261	38	62	188	62	72	69
Y952	Lo = 4D	12.5	535	264	41	68	192	68	69	72
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

I hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 60-S655-W5869

Work Order: **W5869-06/12**	Item: 60
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 8″**	Quantity: 1
Heat No.: **K48013**	Serials No.: W5869
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. 17 ENE. 2005 QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 60-S655-W5870

Work Order: **W5870-06/12**	Item: 60
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 8″**	Quantity: 1
Heat No.: **K48012**	Serials No.: W5870
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER 17 ENE 2005 Quality Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 60-S655-W5871

Work Order: **W5871-06/12**	Item: 60
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 8″**	Quantity: 1
Heat No.: **K48012**	Serials No.: W5871
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A.
VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.: *HH - 02536*
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00070	4	Absperrschieber mit Handrad Gate valve with handwheel	10"	Cl.600 RF	ASTM A 351 CF8C	Valve Ident – No.: " **S 655** " LPI 70-S655-W5872 70-S655-W5873 70-S655-W5874 70-S655-W5875

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	*150 bar Wasser / water*	(120 sec)
Dichtheit Sitz / seat	=	*110 bar Wasser / water*	(120 sec)
Rückdichtung / backseat	=	*110 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*4-7 bar Luft / air*	(120 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00070	Absperrschieber 10" Cl. 600 lbs. RF	**" S655 "**	4	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48011/K48012		W5872-W5874
		Drawing No.: 060-070	4	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	Y952		W5873-W5875
		Rev.5	4	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48011/K48012		
	Gate Valve 10" Cl. 600 lbs. RF			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5872-W5874 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	10" –600 Lbs	**Heat No.:**	K48011
	Gate Bonnet	10" – 600 Lbs	**Heat No.:**	Y952
	Gate Wedge	10" – 600 Lbs	**Heat No.:**	K48011

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48011	0.065	0.71	1.34	0.022	0.017	18.47	9.35	0.017	0.58			4	
Y952	0.053	0.86	1.32	0.019	0.022	18.35	9.42	0.024	0.53			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48011	Lo = 4D	12.5	501	255	38	68	195	68	69	75
Y952	Lo = 4D	12.5	535	264	41	68	192	68	69	72

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B.** correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

Hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5873-W5875 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T.T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	10" –600 Lbs	**Heat No.:**	K48012
	Gate Bonnet	10" – 600 Lbs	**Heat No.:**	Y952
	Gate Wedge	10" – 600 Lbs	**Heat No.:**	K48012

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0- 21.0	9.0- 12.0	0.50	8C- 1.00				
K48012	0.06	0.69	1.16	0.021	0.023	18.44	9.33	0.017	0.62			4	
Y952	0.053	0.86	1.32	0.019	0.022	18.35	9.42	0.024	0.53			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48012	Lo = 4D	12.5	505	261	38	62	188	62	72	69
Y952	Lo = 4D	12.5	535	264	41	68	192	68	69	72

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 70-S655-W5872

Work Order: **W5872-06/12**	Item: 70
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 10″**	Quantity: 1
Heat No.: **K48011**	Serials No.: W5872
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 70-S655-W5874

Work Order: **W5874-06/12**	Item: 70
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 10″**	Quantity: 1
Heat No.: **K48011**	Serials No.: W5874
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 70-S655-W5873

Work Order: **W5873-06/12**	Item: 70
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 10"**	Quantity: 1
Heat No.: **K48012**	Serials No.: W5873
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER 17 ENE. 2005 QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 70-S655-W5875

Work Order: **W5875-06/12**	Item: 70
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 10"**	Quantity: 1
Heat No.: **K48012**	Serials No.: W5875
Drawing: **1. 600Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER 17 ENE. 2005 QA/QC Departament

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.:
Job no.: *HH - 02536*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00080	2	Absperrschieber mit Handrad Gate valve with handwheel	2"	Cl.1500 BW 60,3 x 5,54	ASTM A 351 CF8C	Valve Ident – No.: " **S 656** " LPI 80-S656-W5876 80-S656-W5877 RE-Report: W5876, W5877

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 375 bar Wasser / water (600 sec)
Dichtheit Sitz / seat = 275 bar Wasser / water (600 sec)
Rückdichtung / backseat = 275 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge Walz
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00080	Absperrschieber 2" Cl. 1500 lbs. BW 60,3x5,54	**" S656 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48023		W5876-W5877
		Drawing No.: 080-090-	2	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
		110-130	2	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48023		
	Gate Valve 2" Cl. 1500 lbs. BW 60,3x5,54	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5876-W5877 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: ☐ Normalized:	Normalizado+Revenido ☐ Normalized+Tempered	Templado+Revenido: ☐ Quenched+Tempered:	Solubilización: ☒ Solution:

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: **INDUCTION MELTING** TYPE OF MELTING:

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	2" –1500 Lbs	**Heat No.:**	K48023
	Gate Bonnet	2" –1500 Lbs	**Heat No.:**	6952
	Gate Wedge	2" –1500 Lbs	**Heat No.:**	K48023

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	**CONDICIONES DE ENTREGA: TERMS OF DELIVERY:**	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48023	0.058	0.66	1.24	0.025	0.026	18.56	9.47	0.018	0.69			4	
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48023	Lo = 4D	12.5	500	258	39	69	198	67	69	77
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

I hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 80-S656-W5876

Work Order: **W5876-06/12**	Item: 80
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 2″**	Quantity: 1
Heat No.: **K48023**	Serials No.: W5876
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER 17 ENE. 2005 QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 80-S656-W5877

Work Order: **W5877-06/12**	Item: 80
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 2″**	Quantity: 1
Heat No.: **K48023**	Serials No.: W5877
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5877

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	150OLB 2"	**Radiographed at:**	**Shop:** ☐✓
Material :	CF8C Heat Number: K48023		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	3 MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5		II	/	/	/	/	/	/	I	OK
R6	6		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

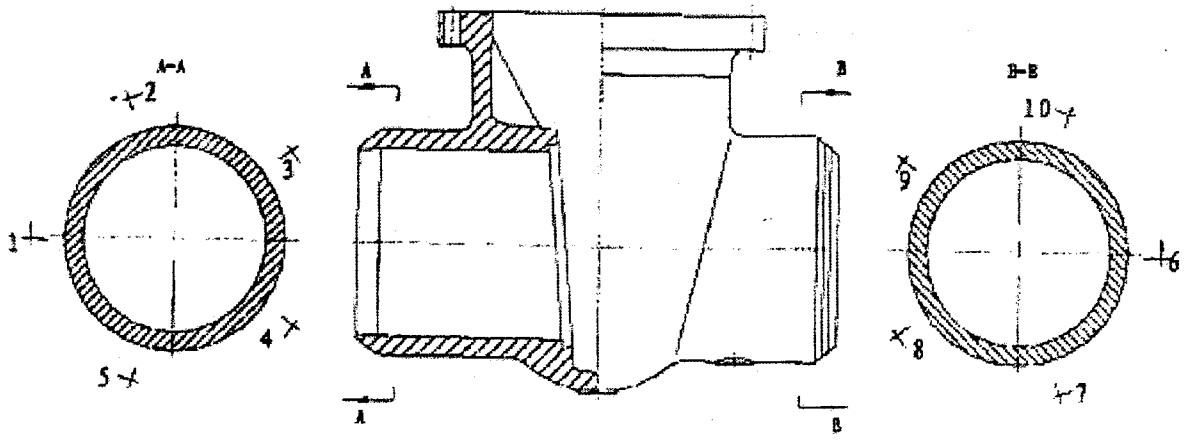
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48023
Contract	HH-02536	Part No.	W5877
Drawing:	150OLB 2"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1 - R6	KODAK AA400	30	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
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WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5876

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	1500LB 2"	**Radiographed at: Shop:**	□√
Material :	CF8C Heat Number: K48023	**Field:**	□

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400, 360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	3 MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5		II	/	/	/	/	/	/	I	OK
R6	6		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.
We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

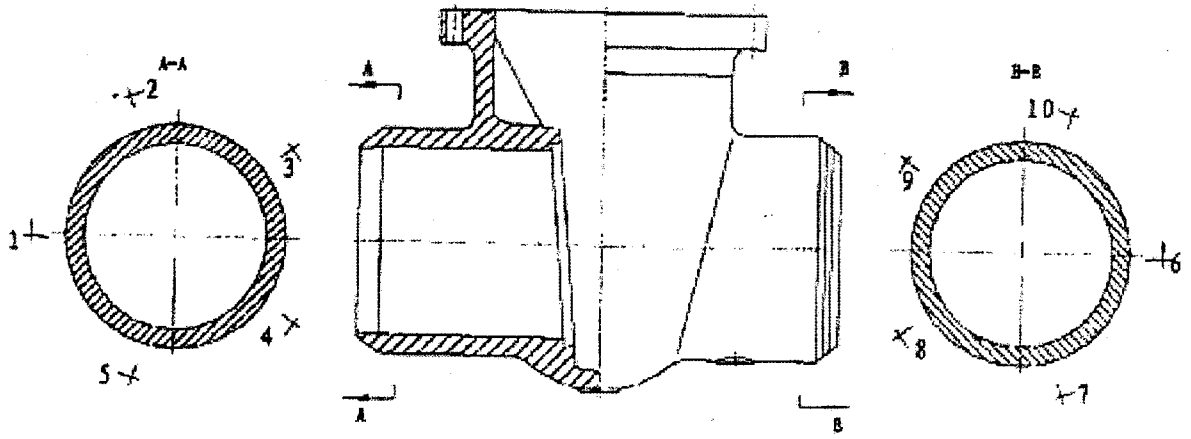
SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	**Heat:**	K48023
Contract	HH-02536	**Part No.**	W5876
Drawing:	1500LB 2"	**Descriptions:**	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shield
R1 - R8	KODAK AA400	30	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.:
Job no.: *HH - 02536*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00090	3	Absperrschieber mit Handrad Gate valve with handwheel	2"	Cl.1500 BW 60,3 x 8,74	ASTM A 351 CF8C	Valve Ident – No.: " **S 656** " LPI 90-S656-W5878 to W5880 RE W5878 to W5880

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 375 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 275 bar Wasser / water (60 sec)
Rückdichtung / backseat = 275 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00090	Absperrschieber 2" Cl. 1500 lbs. BW 60,3x8,74	**" S656 "**	3	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48023		W5878-W5879-
		Drawing No.: 080-090-	3	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5880
		110-130	3	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48023		
	Gate Valve 2" Cl. 1500 lbs. BW 60,3x8,74	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5878-W5879-W5880 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	2" –1500 Lbs	**Heat No.:**	K48023
	Gate Bonnet	2" –1500 Lbs	**Heat No.:**	6952
	Gate Wedge	2" –1500 Lbs	**Heat No.:**	K48023

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0- 21.0	9.0- 12.0	0.50	8C- 1.00				
K48023	0.058	0.66	1.24	0.025	0.026	18.56	9.47	0.018	0.69			4	
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20ºC**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48023	Lo = 4D	12.5	500	258	39	69	198	67	69	77
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B.** correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies with the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 90-S656-W5878

Work Order: **W5878-06/12**	Item: 90
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 2″**	Quantity: 1
Heat No.: **K48023**	Serials No.: W5878
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. VALVES 17 ENE. 2005 QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 90-S656-W5879

Work Order: **W5879-06/12**	Item: 90
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 2″**	Quantity: 1
Heat No.: **K48023**	Serials No.: W5879
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 90-S656-W5880

Work Order: **W5880-06/12**	Item: 90
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 2″**	Quantity: 1
Heat No.: **K48023**	Serials No.: W5880
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. 17 ENE. 2005 QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5878

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	150OLB 2"	**Radiographed at:**	**Shop:** ☐√
Material :	WC9 Heat Number: K48023		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	3 MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	A2	/	/	/	/	/	II	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5		II	/	B2	/	/	/	/	II	OK
R6	6		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

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VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

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VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48023
Contract	HH-02536	Part No.	W5878
Drawing:	150OLB 2"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1-R6	KODAK AA400	30	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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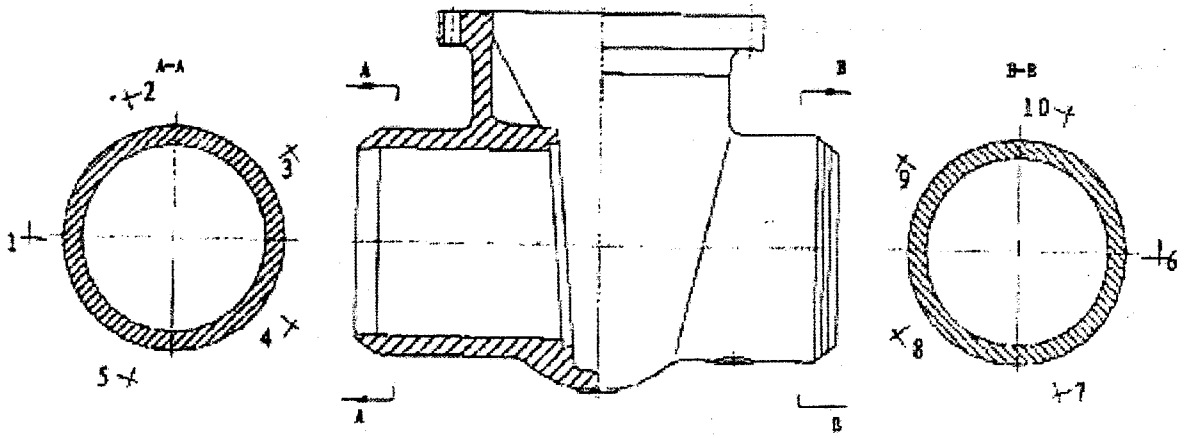

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
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	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5879

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	150OLB 2"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48023		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	Thickness+2mm
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	3 MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5		II	/	/	/	/	/	/	I	OK
R6	6		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH S.A.
VALVES MANUFACTURER
14 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48023
Contract	HH-02536	Part No.	W5879
Drawing:	150OLB 2"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shield
R1-R6	KODAK AA400	30	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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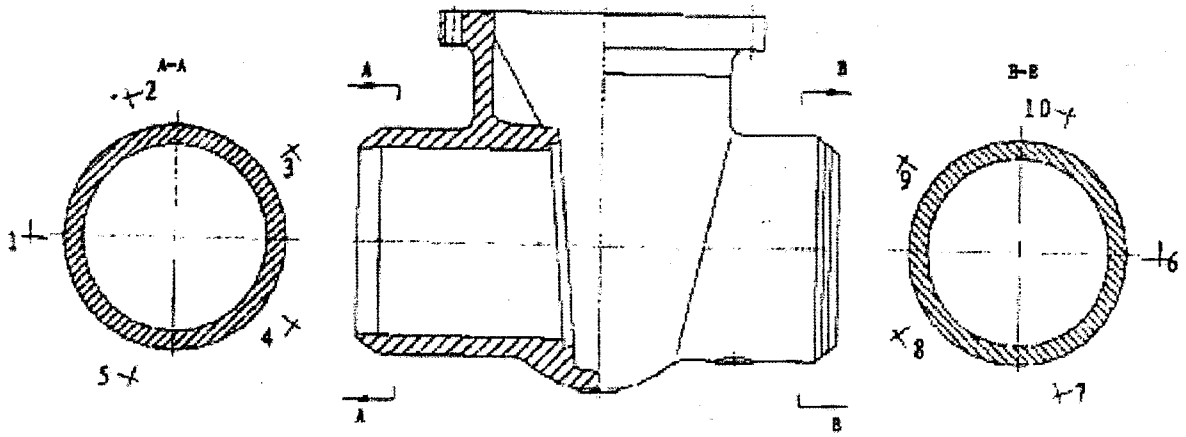

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5880

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE	**Extension of Test:**	BW-ENDS
Drawing :	150OLB 10"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48023		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	3MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	A1	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	B2	/	/	/	/	II	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5		II	/	/	/	/	/	/	I	OK
R6	6		II	/	B1	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

14 ENE 2005

QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48023
Contract	HH-02536	Part No.	W5880
Drawing:	1500LB 10"	Descriptions:	GATE

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shield
R1-R6	KODAK AA400	30	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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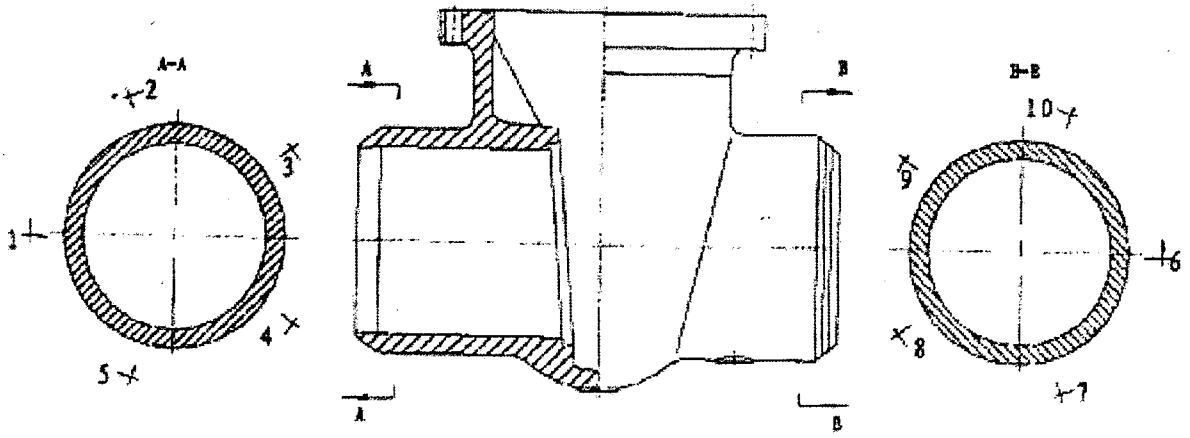

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: ***HH - 02536***
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00100	*9*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*3"*	*Cl.900* *BW* 88,9 x 5,49	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 656** "* *LPI 100-S656-W5881* *100-S656-W5882 to W5889* *RE W5881* *W5882 to 5889*

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 225 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 165 bar Wasser / water (60 sec)
Rückdichtung / backseat = 165 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00100	Absperrschieber 3" Cl. 900 lbs. BW 88,9x5,49	**" S656 "**	3	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48025/K48021		W5881 to
		Drawing No.: 100-120-	3	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48025/K48021		W5889
		140	3	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48025/K48021		
	Gate Valve 3" Cl. 900 lbs. BW 88,9x5,49	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5881 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

H.T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: **INDUCTION MELTING** TYPE OF MELTING:

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	3" –900 Lbs	**Heat No.:**	K48025
	Gate Bonnet	3" –900 Lbs	**Heat No.:**	K48025
	Gate Wedge	3" –900 Lbs	**Heat No.:**	K48025

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0- 21.0	9.0- 12.0	0.50	8C- 1.00				
K48025	0.061	0.78	1.25	0.022	0.031	18.63	9.56	0.017	0.71			3	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48025	Lo = 4D	12.5	500	244	37	62	196	61	68	63

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

I hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5882 to W5889 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 24
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: **INDUCTION MELTING** TYPE OF MELTING:

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	3" –900 Lbs	**Heat No.:**	K48021
	Gate Bonnet	3" –900 Lbs	**Heat No.:**	K48021
	Gate Wedge	3" –900 Lbs	**Heat No.:**	K48021

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48021	0.049	0.66	1.32	0.019	0.020	18.24	9.21	0.016	0.57			24	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48021	Lo = 4D	12.5	502	256	39	63	194	62	69	73

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B.** correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5881

Work Order: **W5881-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48025**	Serials No.: W5881
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (ºC): 15ºC

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5882

Work Order: **W5882-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5882
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level III SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5883

Work Order: **W5883-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5883
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5884

Work Order: **W5884-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5884
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level III SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A.
17 ENE 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5885

Work Order: **W5885-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5885
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5886

Work Order: **W5886-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5886
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. 17 ENE 2005 QA/QC Signature

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5887

Work Order: **W5887-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5887
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5888

Work Order: **W5888-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5888
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 100-S656-W5889

Work Order: **W5889-06/12**	Item: 100
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 3″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5889
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	Report No.:	W5881

Customer :	KLAUS UNION	Contract:	HH-02536
Description :	GATE	Extension of Test:	BW-ENDS
Drawing :	900LB 3"	Radiographed at: Shop:	□√
Material :	CF8C Heat Number: K48025	Field:	□

X Rays KV	Γ RAYS	Isotope :	IR 192	Curies:	40	Focal Spot Size:	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					IQI:	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					Material Thickness:	30
Density :	1.5-4.0	Source Film Distance :	600MM			Exposure Time:	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		Acceptance Standard	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	A2	/	/	/	/	/	I	OK
R2	2-1		II	A1	/	/	/	/	/	II	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	/	/	/	/	I	OK
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We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

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SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48025
Contract	HH-02536	Part No	W5881
Drawing:	900LB 3"	Descriptions:	GATE

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1 -R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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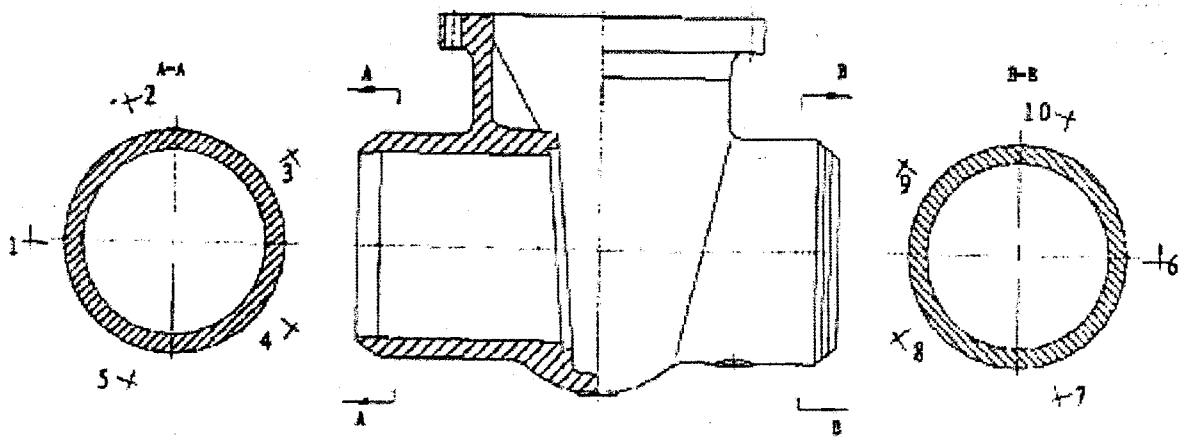

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PHONE:	+ (34) 94. 455. 51. 51
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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5882

Page: 1 / 2

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE	**Extension of Test:**	BW-ENDS
Drawing :	900LB 3"	**Radiographed at:**	**Shop:** □√
Material :	CF8C Heat Number: K48021		**Field:** □

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.03/0.10					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	B1	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	A2	/	/	/	/	/	II	OK
R7	7		II	/	/	CA1	/	/	/	I	OK
R8	8		II	/	/	/	/	/	/	I	OK
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	PHONE:	+ (34) 94. 455. 51. 51
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RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No:	W5882
Drawing:	900LB 3"	Descriptions:	GATE

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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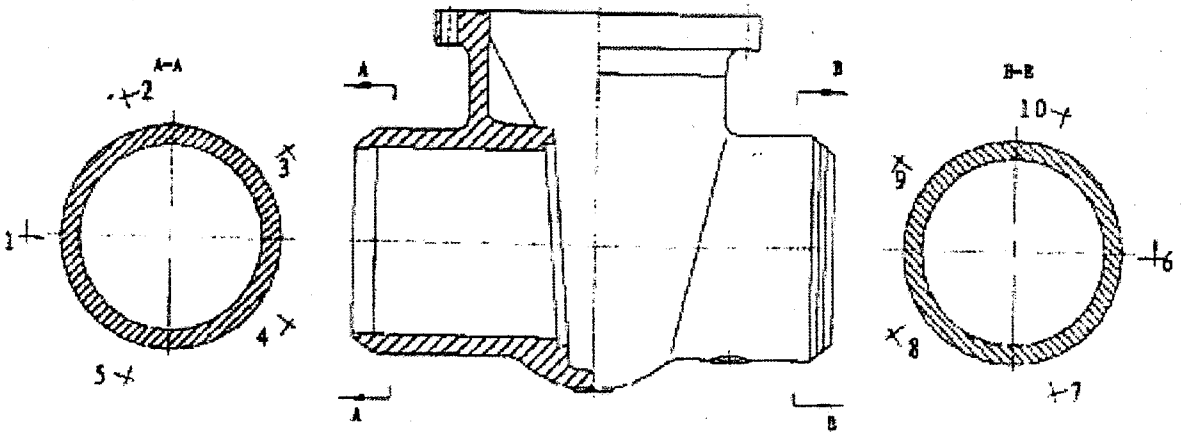

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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	Report No.:	W5883

Customer :	KLAUS UNION	Contract:	HH-02536
Description :	GATE BODY	Extension of Test:	BW-ENDS
Drawing :	900LB 3"	Radiographed at: Shop:	□√
Material :	CF8C Heat Number: K48021	Field:	□

X Rays KV	Γ RAYS	Isotope :	IR 192	Curies:	40	Focal Spot Size:	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					IQI:	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					Material Thickness:	30
Density :	1.5-4.0	Source Film Distance :	600MM			Exposure Time:	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		Acceptance Standard	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	CA2	/	/	/	II	OK
R3	3-4		II	/	/	CA2	/	/	/	II	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	/	/	/	/	I	OK
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RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.:	W5883
Drawing:	900LB 3"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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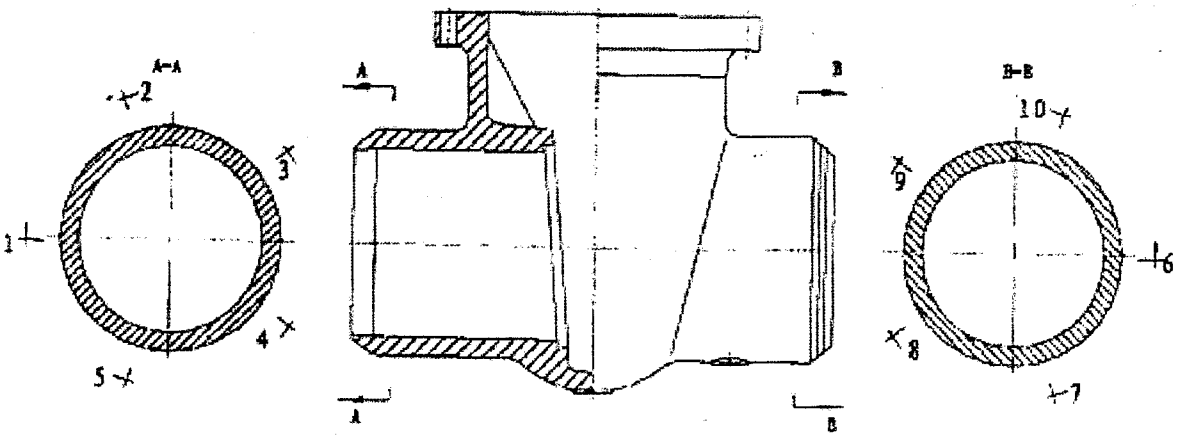

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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5884

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 3"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	A1	/	/	/	/	/	I	OK
R6	6-5		II	/	/	CA2	/	/	/	II	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	CB2	/	/	/	II	OK
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RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5884
Drawing:	900LB 3"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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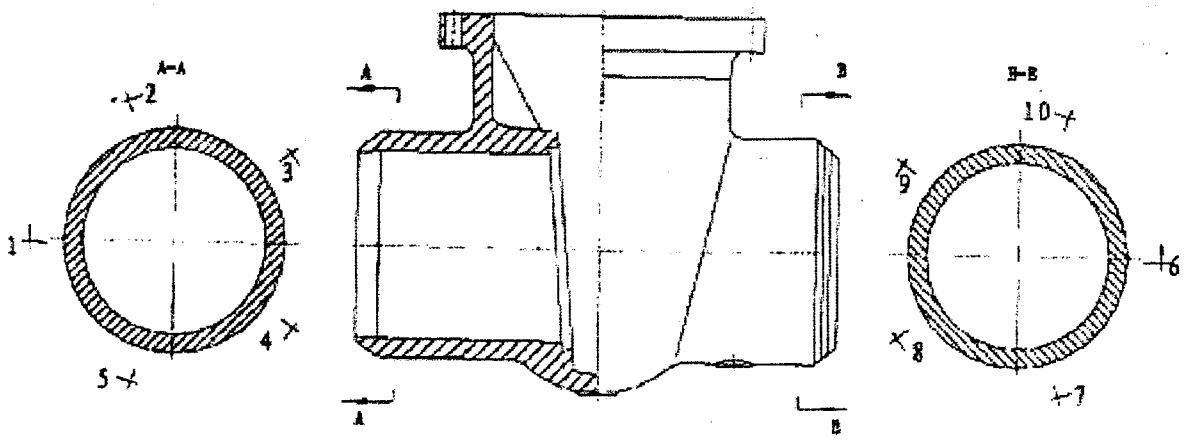

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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5885

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 3"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	B2	/	/	/	/	II	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	CA2	/	/	/	II	OK
R4	4-3		II	/	/	CA1	/	/	/	I	OK
R5	5-6		II	/	/	CA1	/	/	/	I	OK
R6	6-5		II	/	B2	/	/	/	/	II	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	/	/	/	/	I	OK
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RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5885
Drawing:	900LB 3"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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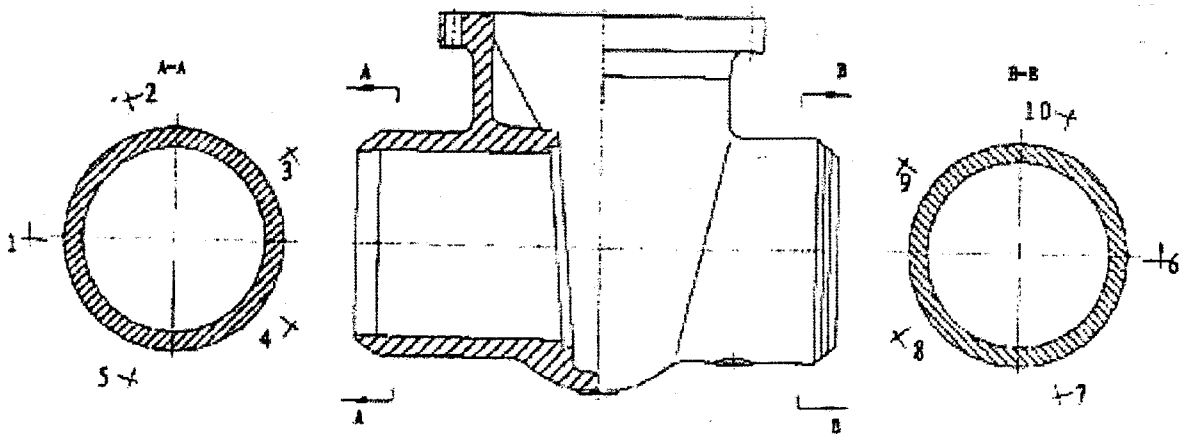

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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5886

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 3"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	A1	/	/	/	/	/	I	OK
R2	2-1		II	/	/	CA2	/	/	/	II	OK
R3	3-4		II	A1	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	/	/	/	/	I	OK
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We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5886
Drawing:	900LB 3"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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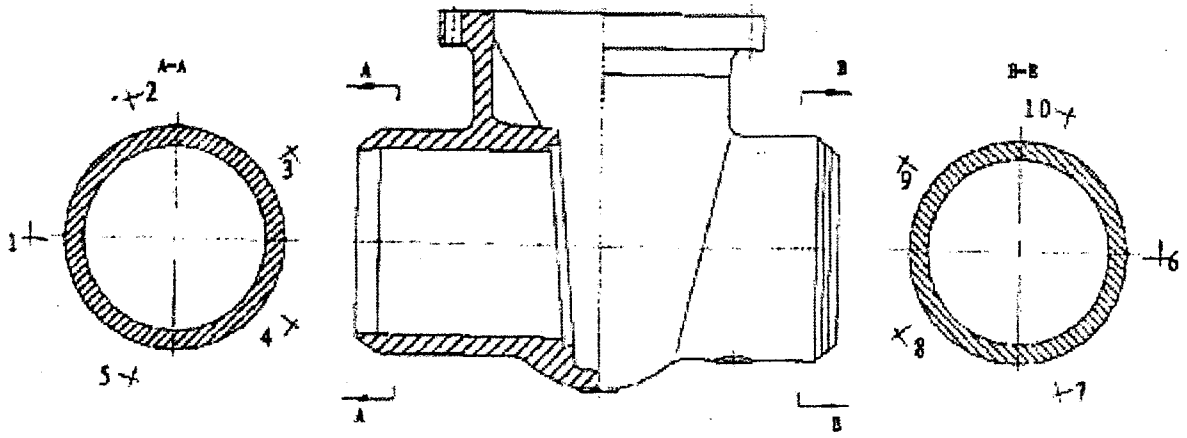

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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5887

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 3"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	CA2	/	/	/	II	OK
R8	8		II	/	/	/	/	/	/	I	OK
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We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

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RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	**Heat:**	K48021
Contract	HH-02536	**Part No.**	W5887
Drawing:	900LB 3"	**Descriptions:**	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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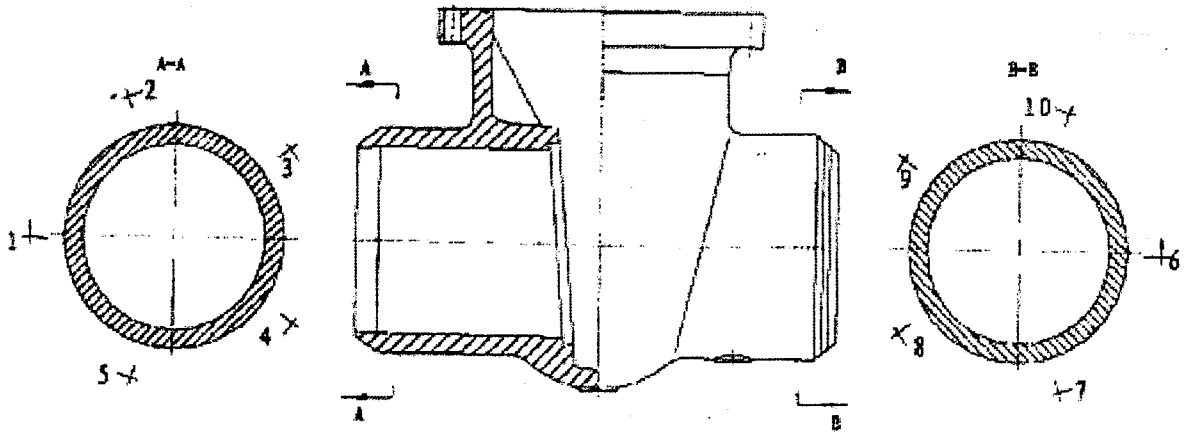
**********	**********	**********	*******	*******	*********	*******	**********



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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	Report No.:	W5888

Customer :	KLAUS UNION	Contract:	HH-02536
Description :	GATE BODY	Extension of Test:	BW-ENDS
Drawing :	900LB 3"	Radiographed at: Shop:	□√
Material :	CF8C Heat Number: K48021	Field:	□

X Rays KV	Γ RAYS	Isotope :	IR 192	Curies:	40	Focal Spot Size:	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					IQI:	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					Material Thickness:	30
Density :	1.5-4.0	Source Film Distance :	600MM			Exposure Time:	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		Acceptance Standard	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	CA2	/	/	/	II	OK
R8	8		II	/	/	/	/	/	/	I	OK
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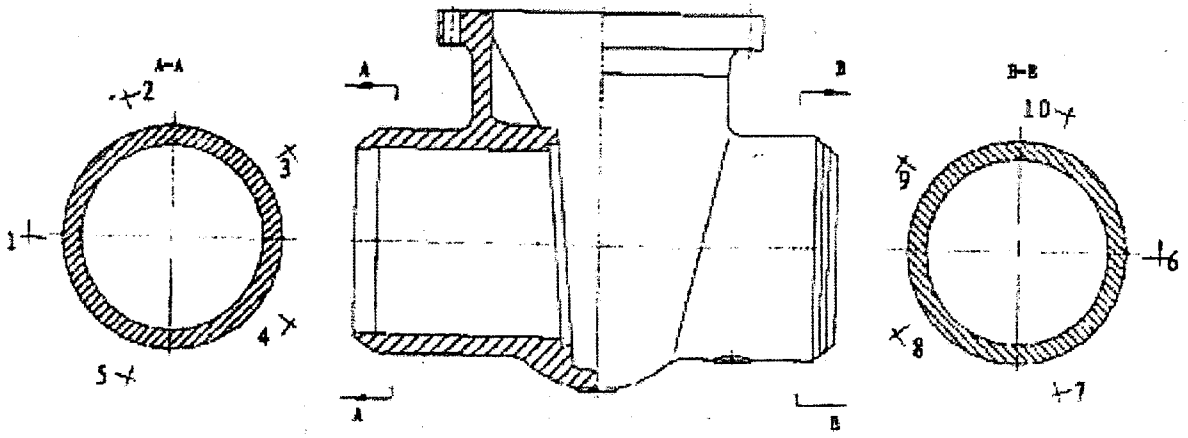
RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5888
Drawing:	900LB 3"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5889

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 3"	**Radiographed at:**	**Shop:** ☐✓
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	A2	/	/	/	/	/	II	OK
R5	5-6		II	/	B2	/	/	/	/	II	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	CA2	/	/	/	II	OK
R8	8		II	/	/	/	/	/	/	I	OK
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RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5889
Drawing:	900LB 3"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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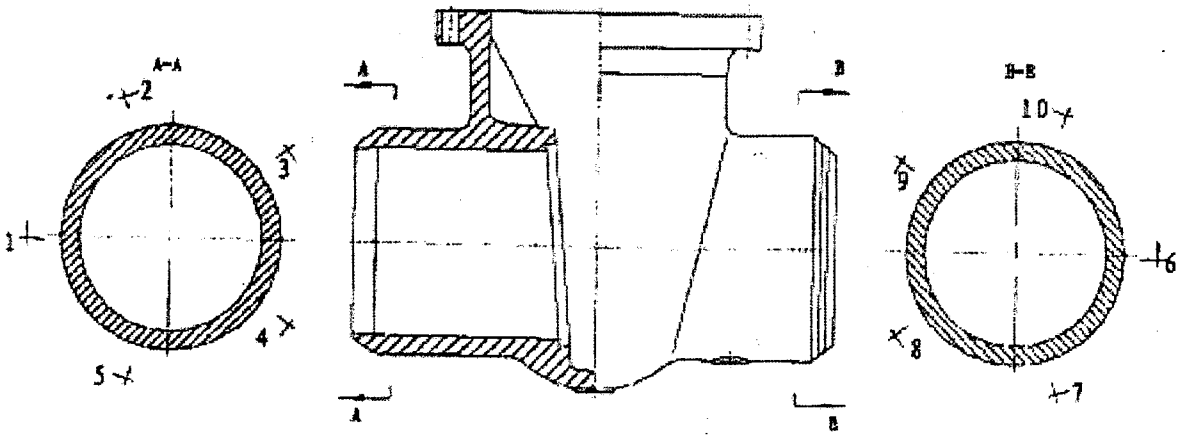

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer:
Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt

Bestell-Nr.:
Order no.:
Lurgi Job – No.: 69690-10
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.:
Job no.:
HH - 02536

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00110	1	Absperrschieber mit Handrad Gate valve with handwheel	3"	Cl.1500 BW 88,9 x 11,13	ASTM A 351 CF8C	Valve Ident – No.: " **S 656** " LPI 110-S656-W5890 RE 5890

Auslegung + Prüfung nach
Design and tests acc. to
API 600 / API 598 / Nace MR 0175

Sicht- und Funktionsprüfung:
visual and functional test:
o.k.

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	*375 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*275 bar Wasser / water*	(60 sec)
Rückdichtung / backseat	=	*275 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*4-7 bar Luft / air*	(60 sec)

Prüfungsergebnis:
result:
ohne Beanstandung !
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge Walter Glass

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00110	Absperrschieber 3" Cl. 1500 lbs. BW 88,9x11,13	**" S656 "**	1	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48022		W5890
		Drawing No.: 080-090-	1	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48022		
		110-130	1	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48022		
	Gate Valve 3" Cl. 1500 lbs. BW 88,9x11,13	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5890 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	3" –1500 Lbs	**Heat No.:**	K48022
	Gate Bonnet	3" –1500 Lbs	**Heat No.:**	K48022
	Gate Wedge	3" –1500 Lbs	**Heat No.:**	K48022

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48022	0.053	0.69	1.14	0.017	0.016	19.14	9.47	0.011	0.62			3	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48022	Lo = 4D	12.5	500	255	37	68	185	66	62	68

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
Quality Control Department
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 110-S656-W5890

Work Order: **W5890-06/12**	Item: 110
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 3″**	Quantity: 1
Heat No.: **K48022**	Serials No.: W5890
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5890

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	150OLB 3"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48022		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	40-45
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4min 20 s

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	CA2	/	/	/	II	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

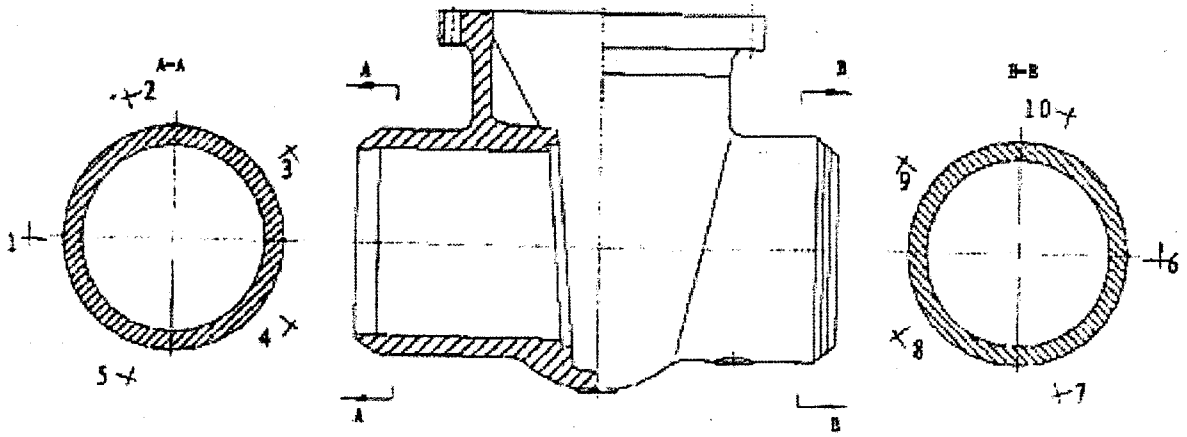
SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	VALVES ENTREPRISE, S.L.	Heat:	K48022
Contract	HH-02536	Part No.	W5890
Drawing:	150OLB 3"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer:
Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt

Bestell-Nr.:
Order no.:
Lurgi Job – No.: 69690-10
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.:
Job no.:
HH - 02536

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00120	2	Absperrschieber mit Handrad Gate valve with handwheel	4"	Cl.900 BW 114,3 x 6,02	ASTM A 351 CF8C	Valve Ident – No.: " **S 656** " LIP 120-S656-W5891 120-S656-W5892 RE W5891 W5892

Auslegung + Prüfung nach
Design and tests acc. to
API 600 / API 598 / Nace MR 0175

Sicht- und Funktionsprüfung:
visual and functional test:
o.k.

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	*225 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*165 bar Wasser / water*	(60 sec)
Rückdichtung / backseat	=	*165 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*4-7 bar Luft / air*	(60 sec)

Prüfungsergebnis:
result:
ohne Beanstandung !
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge Wolf Gl
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00120	Absperrschieber 4" Cl. 900 lbs. BW 114,3x6,02	**" S656 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48019		W5891-W5892
		Drawing No.: 100-120-	2	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48019		
		140	2	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48019		
	Gate Valve 4" Cl. 900 lbs. BW 114,3x6,02	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5891-W5892 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	4" –900 Lbs	**Heat No.:**	K48019
	Gate Bonnet	4" –900 Lbs	**Heat No.:**	K48019
	Gate Wedge	4" –900 Lbs	**Heat No.:**	K48019

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48019	0.050	0.75	1.30	0.019	0.021	18.65	9.47	0.014	0.72			6	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48019	Lo = 4D	12.5	495	235	36	68	188	72	65	78

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

I hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 120-S656-W5891

Work Order: **W5891-06/12**	Item: 120
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 4″**	Quantity: 1
Heat No.: **K48019**	Serials No.: W5891
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 120-S656-W5892

Work Order: **W5892-06/12**	Item: 120
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 4″**	Quantity: 1
Heat No.: **K48019**	Serials No.: W5892
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5891

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 4"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48019		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	30
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	3MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	CA1	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	CB2	/	/	/	II	OK
R9	9		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

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SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

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	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48019
Contract	HH-02536	Part No.	W5891
Drawing:	900LB 4"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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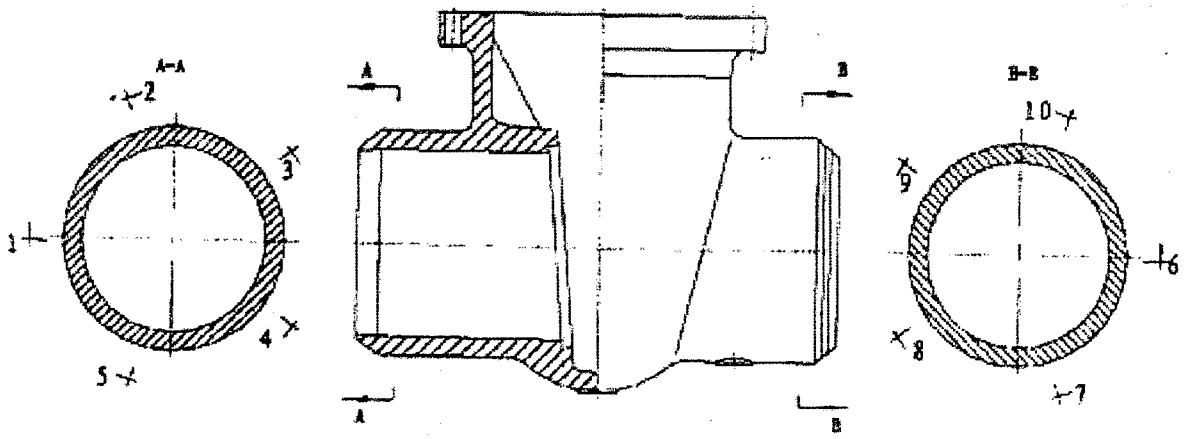
**********	**********	**********	*******	*******	*********	*******	**********



SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
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	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5892

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 4"	**Radiographed at:**	**Shop:** ☐✓
Material :	CF8C Heat Number: K48019		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	40
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	4MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	CA2	/	/	/	II	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48019
Contract:	HH-02536	Part No.	W5892
Drawing:	900LB 4"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	40	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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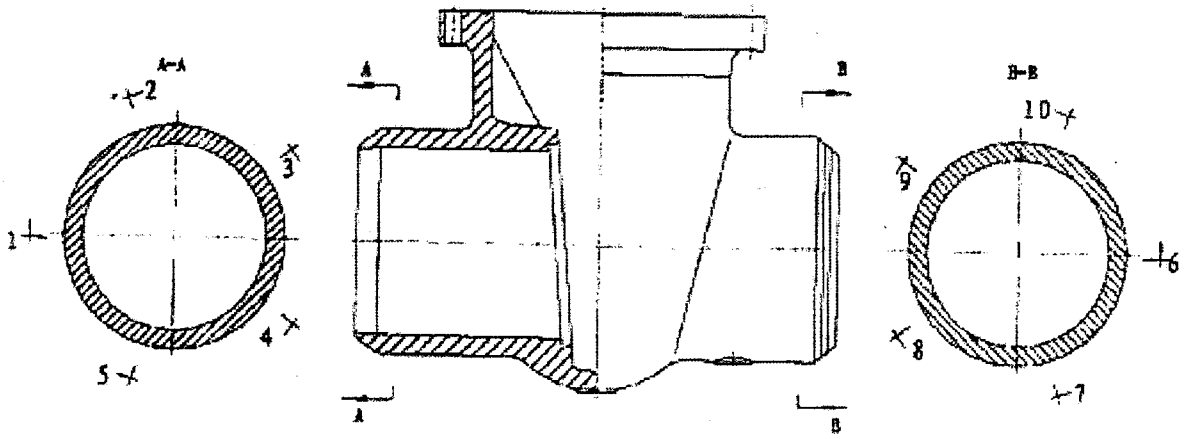
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: *HH - 02536*
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00130	2	Absperrschieber mit Handrad Gate valve with handwheel	4"	Cl.1500 BW 114,3 x 13,49	ASTM A 351 CF8C	Valve Ident – No.: " **S 656** " LPI 130-S656-W5893 130-S656-W5894 RE W5893 W5894

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	*375 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*275 bar Wasser / water*	(60 sec)
Rückdichtung / backseat	=	*275 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*4-7 bar Luft / air*	(60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00130	Absperrschieber 4" Cl. 1500 lbs. BW 114,3x13,49	**" S656 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48021		W5893-W5894
		Drawing No.: 080-090-	2	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48021		
		110-130	2	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48021		
	Gate Valve 4" Cl. 1500 lbs. BW 114,3x13,49	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5893-W5894 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	4" –1500 Lbs	**Heat No.:**	K48021
	Gate Bonnet	4" –1500 Lbs	**Heat No.:**	K48021
	Gate Wedge	4" –1500 Lbs	**Heat No.:**	K48021

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48021	0.049	0.66	1.32	0.019	0.020	18.24	9.21	0.016	0.57			6	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48021	Lo = 4D	12.5	502	256	39	63	194	62	69	73

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 130-S656-W5893

Work Order: **W5893-06/12**	Item: 130
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 4″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5893
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 130-S656-W5894

Work Order: **W5894-06/12**	Item: 130
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 1500Lb 4″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5894
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. 17 ENE 2005 QA/QC Department

SVR
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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5893

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	150OLB 4"	**Radiographed at:**	**Shop:** ☐✓
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	50
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	5MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	CA1	/	/	/	I	OK
R7	7		II	/	B2	/	/	/	/	II	OK
R8	8		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.
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SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

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	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5893
Drawing:	150OLB 4"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	50	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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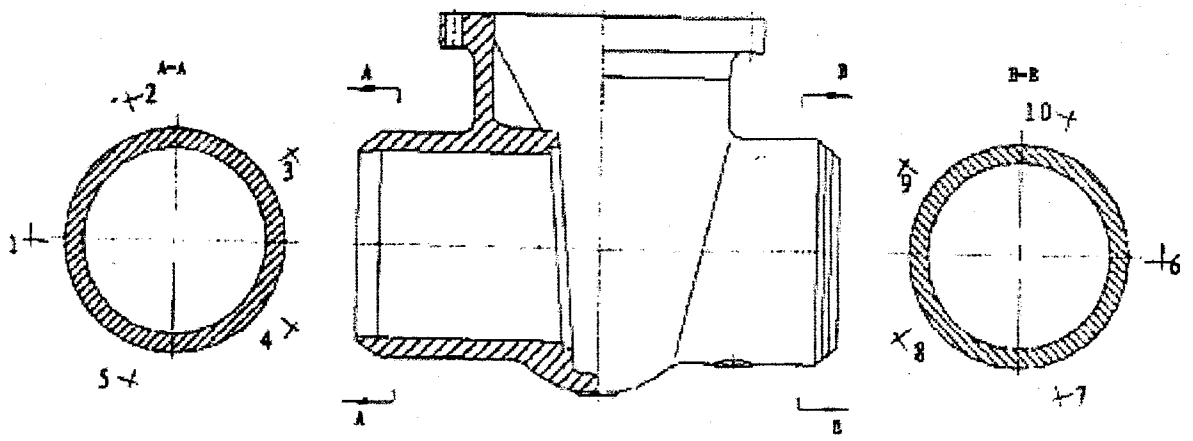

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WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5894

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	1500LB 4"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	50
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	5MIN

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	B2	/	/	/	/	II	OK
R6	6-5		II	/	/	CB2	/	/	/	II	OK
R7	7		II	/	/	/	/	/	/	I	OK
R8	8		II	/	/	CA2	/	/	/	II	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
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VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

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	PHONE:	+ (34) 94. 455. 51. 51
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	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5894
Drawing:	1500LB 4"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R8	KODAK AA400	50	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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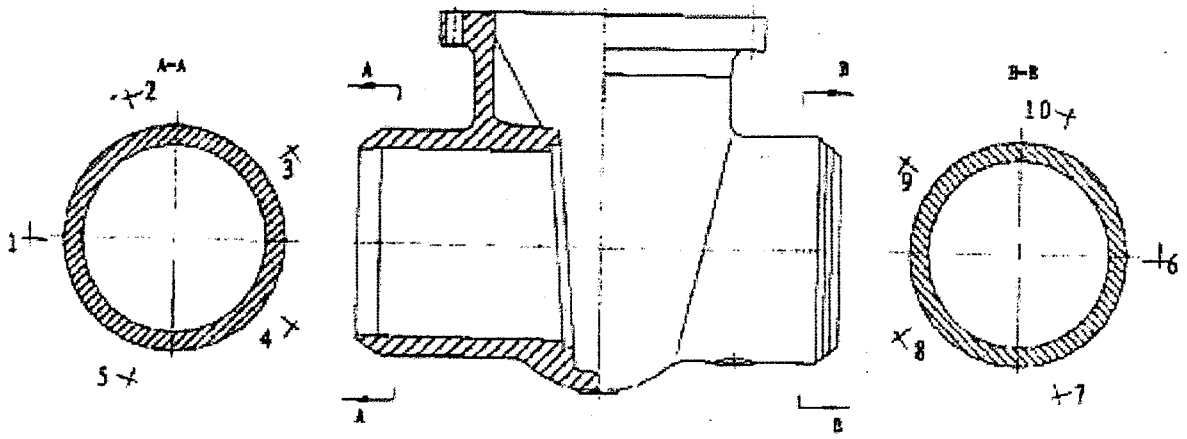
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4567571-000/1.69690/136*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: ***HH - 02536***
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00140	*2*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*6"*	*Cl.900* *BW* 114,3 x 6,02	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 656** "* *LPI 140-S656-W5895* *140-S656-W5896* *RE W5895, W5896*

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 225 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 165 bar Wasser / water (60 sec)
Rückdichtung / backseat = 165 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge Walter Glass
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00140	Absperrschieber 6" Cl. 900 lbs. BW 168,3x7,11	**" S656 "**	2	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48019		W5895-W5896
		Drawing No.: 100-120-	2	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48019		
		140	2	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48019		
	Gate Valve 6" Cl. 900 lbs. BW 168,3x7,11	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5895-W5896 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 6
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	6" –900 Lbs	**Heat No.:**	K48019
	Gate Bonnet	6" –900 Lbs	**Heat No.:**	K48019
	Gate Wedge	6" –900 Lbs	**Heat No.:**	K48019

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48019	0.050	0.75	1.30	0.019	0.021	18.65	9.47	0.014	0.72			6	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48019	Lo = 4D	12.5	495	235	36	68	188	72	65	78

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

I hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 140-S656-W5895

Work Order: **W5895-06/12**	Item: 140
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 6″**	Quantity: 1
Heat No.: **K48019**	Serials No.: W5895
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

❑ Accepted
❑ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ❑ YES ❑ NOT ❑ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 140-S656-W5896

Work Order: **W5896-06/12**	Item: 140
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 6″**	Quantity: 1
Heat No.: **K48019**	Serials No.: W5896
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5895

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 6"	**Radiographed at:**	**Shop:** ☐✓
Material :	CF8C Heat Number: K48019		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	40
Density :	1.5-4.0	**Source Film Distance :**	450MM			**Exposure Time:**	1min 20s

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	CB2	/	/	/	II	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-9		II	/	/	CA2	/	/	/	II	OK
R9	9-7		II	/	/	/	/	/	/	I	OK
R10	10		II	/	/	/	/	/	/	I	OK
R11	11		II	/	/	/	/	/	/	I	OK
R12	12		II	/	/	/	/	/	/	I	OK
R13	13		II	/	/	/	/	/	/	I	OK
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
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**********	*******	*******	********	*********	******	*********	********	*********	********	******	********

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

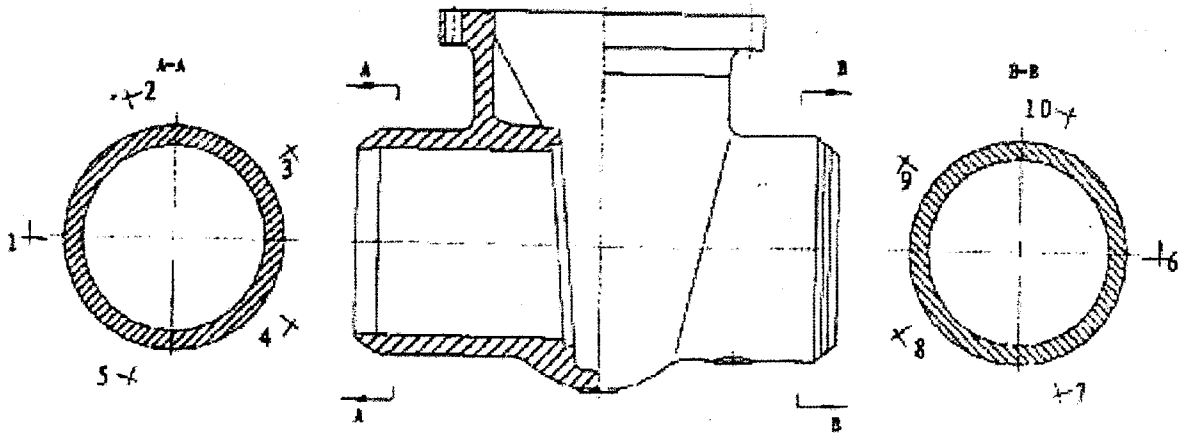
SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48019
Contract	HH-02536	Part No.	W5895
Drawing:	900LB 6"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R13	KODAK AA400	35	IR 192	ASTM 1B	450MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
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	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	Report No.:	W5896

Customer :	KLAUS UNION	Contract:	HH-02536
Description :	GATE BODY	Extension of Test:	BW-ENDS
Drawing :	900LB 6"	Radiographed at: Shop:	☐√
Material :	CF8C Heat Number: K48019	Field:	☐

X Rays KV	Γ RAYS	Isotope :	IR 192	Curies:	40	Focal Spot Size:	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					IQI:	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					Material Thickness:	35
Density :	1.5-4.0	Source Film Distance :	450MM			Exposure Time:	1min 20s

Evaluation standard for steel castings radiographic examination (See Back)		Acceptance Standard	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-1		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-3		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-5		II	/	/	/	/	/	/	I	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-9		II	/	/	/	/	/	/	I	OK
R9	9-7		II	/	/	/	/	/	/	I	OK
R10	10		II	/	/	/	/	/	/	I	OK
R11	11		II	/	/	/	/	/	/	I	OK
R12	12		II	/	/	/	/	/	/	I	OK
R13	13		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

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SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

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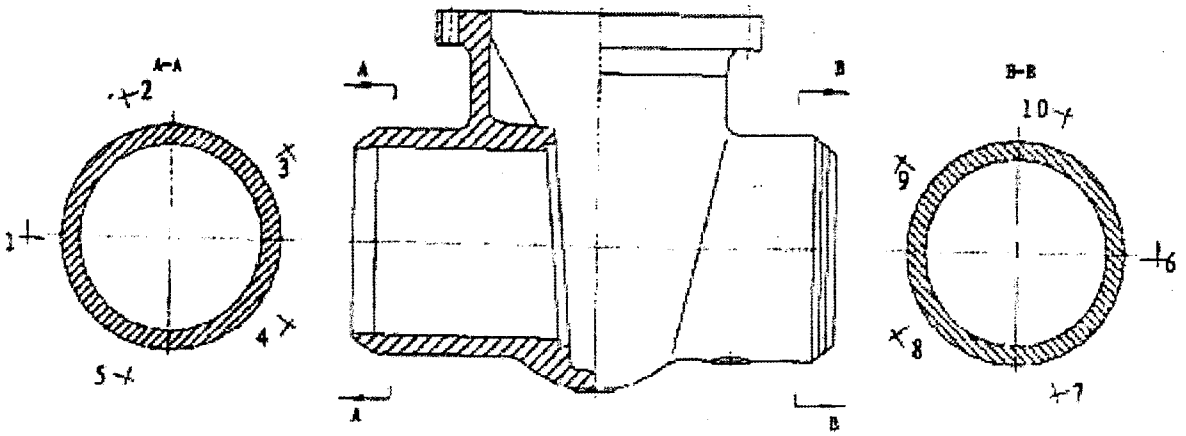
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48019
Contract	HH-02536	Part No.	W5896
Drawing:	900LB 6"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shield
R1-R13	KODAK AA400	35	IR 192	ASTM 1B	450MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer:
Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt

Bestell-Nr.:
Order no.:
Lurgi Job – No.: ***69690-10***
Lurgi OGC PO.-No.: ***4567571-000/1.69690/136***

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.:
Job no.:
HH - 02536

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00150	*4*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*2"*	*Cl 600* *BW* 60,3 x 5,54	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 658** "* *Geeignet für den Sauerstoffeinsatz* *Suitable for oxygen service* LPI 150-S658-W5897 to W5900 RE W5897 to W5900

Auslegung + Prüfung nach
Design and tests acc. to
API 600 / API 598 / Nace MR 0175

Sicht- und Funktionsprüfung:
visual and functional test:
o.k.

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = *150 bar Wasser / water* (60 sec)
Dichtheit Sitz / seat = *110 bar Wasser / water* (60 sec)
Rückdichtung / backseat = *110 bar Wasser / water* (60 sec)
Dichtheit Sitz / seat = *4-7 bar Luft / air* (60 sec)

Prüfungsergebnis:
result:
ohne Beanstandung !
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage:
enclosure
Dokumentation gemäß Material-Dokumentationsdeckblatt
Documentation acc. to material cover sheet

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00150	Absperrschieber	**" S658 "**	4	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5897 to
	2" Cl. 600 lbs.	Drawing No.: 150	4	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W5900
	BW 60,3x5,54 geeign. Für Sauerstoff	Rev.5	4	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
	Gate Valve			Sitz / seat		ASTM A 182 F321				
	2" Cl. 600 lbs.			Spindel / stem		ASTM A 182 F321				
	BW 60,3x5,54 suitable for oxygen serv.			Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5897-W5898-W5899-W5900 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 12
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: ☐ Normalized:	Normalizado+Revenido ☐ Normalized+Tempered	Templado+Revenido: ☐ Quenched+Tempered:	Solubilización: ☒ Solution:

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: **INDUCTION MELTING** TYPE OF MELTING:

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	2" –600 Lbs	**Heat No.:**	6952
	Gate Bonnet	2" –600 Lbs	**Heat No.:**	6952
	Gate Wedge	2" –600 Lbs	**Heat No.:**	6952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	**CONDICIONES DE ENTREGA: TERMS OF DELIVERY:**	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS

COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62			12	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
6952	Lo = 4D	12.5	500	242	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

I hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 150-S658-W5897

Work Order: **W5897-06/12**	Item: 150
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5897
Drawing: **1. 600Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. 17 ENE. 2005 QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 150-S658-W5898

Work Order: **W5898-06/12**	Item: 150
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5898
Drawing: **1. 600Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 150-S658-W5899

Work Order: **W5899-06/12**	Item: 150
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5899
Drawing: **1. 600Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

❑ Accepted
❑ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ❑ YES ❑ NOT ❑ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
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QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 150-S658-W5900

Work Order: **W5900-06/12**	Item: 150
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 2″**	Quantity: 1
Heat No.: **6952**	Serials No.: W5900
Drawing: **1. 600Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

17 ENE 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5897

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE	**Extension of Test:**	BW-ENDS
Drawing :	600LB 2"	**Radiographed at:**	**Shop:** □√
Material :	CF8C Heat Number: 6952		**Field:** □

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	20
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	2min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

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14 ENE. 2005
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SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	6952
Contract	HH-02536	Part No.	W5897
Drawing:	600LB 2"	Descriptions:	GATE

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1-R2	KODAK AA400	20	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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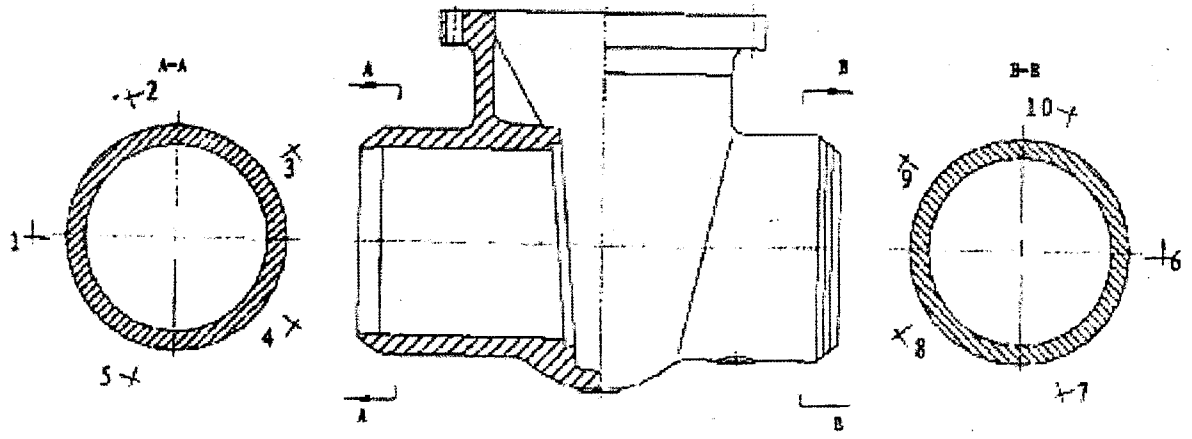

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5898

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE	**Extension of Test:**	BW-ENDS
Drawing :	600LB 2"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: 6952		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	20
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	2min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

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	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	6952
Contract	HH-02536	Part No.	W5898
Drawing:	600LB 2"	Descriptions:	GATE

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1-R2	KODAK AA400	20	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
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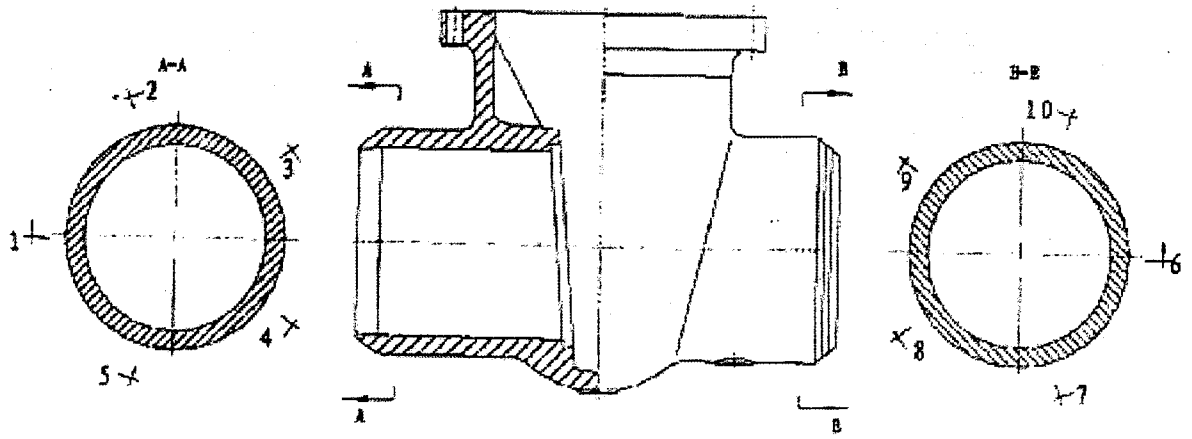

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	PHONE:	+ (34) 94. 455. 51. 51
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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5899

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE	**Extension of Test:**	BW-ENDS
Drawing :	600LB 2"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: 6952		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	20
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	2min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
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Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

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VALVES MANUFACTURER
14 ENE. 2005
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SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	6952
Contract	HH-02536	Part No.	W5899
Drawing:	600LB 2"	Descriptions:	GATE

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1-R2	KODAK AA400	20	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
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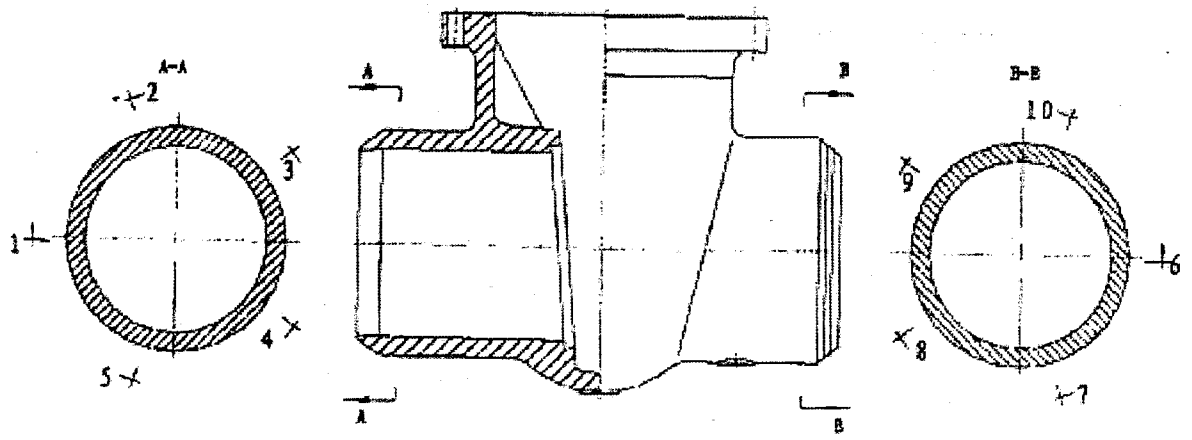

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5900

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE	**Extension of Test:**	BW-ENDS
Drawing :	600LB 2"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: 6952		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	20
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	2min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1		II	/	/	/	/	/	/	I	OK
R2	2		II	/	/	/	/	/	/	I	OK
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14 ENE. 2005
QA/QC Departament

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ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
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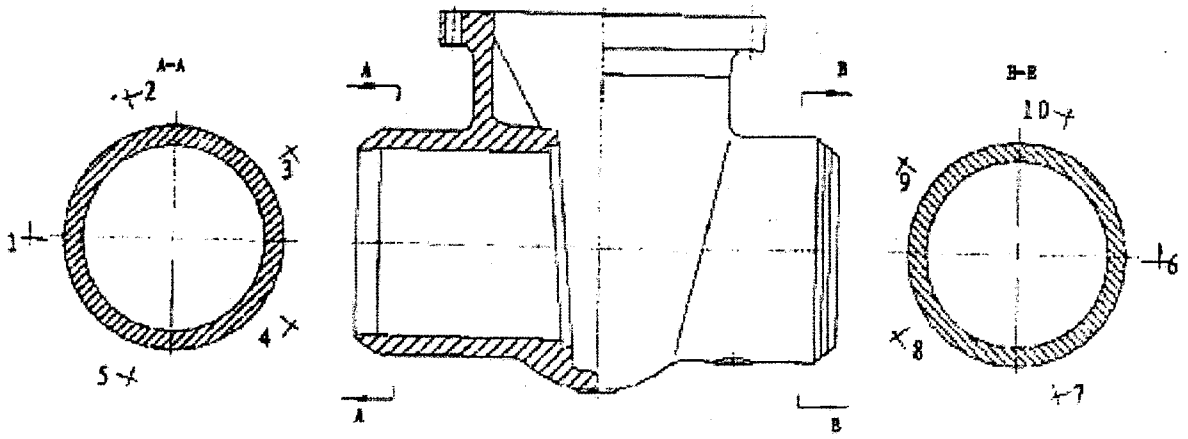
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	6952
Contract	HH-02536	Part No.	W5900
Drawing:	600LB 2"	Descriptions:	GATE

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1-R2	KODAK AA400	20	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.:
Job no.: *HH - 02536*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00160	1	Absperrschieber mit Getriebe Gate valve Gear operated	10"	Cl 900 BW 273,0 x 12,7	ASTM A 351 CF8C	Valve Ident – No.: " **S 657G** " LPI 160-S657G-W5901 RE W5901

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	*225 bar Wasser / water*	(120 sec)
Dichtheit Sitz / seat	=	*165 bar Wasser / water*	(120 sec)
Rückdichtung / backseat	=	*165 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*4-7 bar Luft / air*	(120 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter / Person in charge W. Glass
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	**Benennung**	**Spezifikation**	**Stück**	**Bauteil**	Ident-Nr.	**Werkstoff**	**Hersteller**	**Chargen-Nr.**	**Probe**	**Zeugnis-Nr.**
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00160	Absperrschieber,	**" S657G"**	4	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48058		W5901
	mit Antrieb	Drawing No.: 160-170-	4	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48058		
	10" Cl. 900 lbs.	-190	4	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48058		
	BW 273,0x12,7									
	Gate Valve	Rev.5		Sitz / seat		ASTM A 182 F321				
	Gear operated			Spindel / stem		ASTM A 182 F321				
	10" Cl. 900 lbs.			Packung / packing		Graphite				
	BW 273,0x12,7									
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

11.03.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5901 DATE: 14/12/04 SHEET: Rev.01

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: ☐ Normalized:	Normalizado+Revenido ☐ Normalized+Tempered	Templado+Revenido: ☐ Quenched+Tempered:	Solubilización: ☒ Solution:

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:				
	Gate Body	10" –900 Lbs	**Heat No.:**	K48058
	Gate Bonnet	10" –900 Lbs	**Heat No.:**	K48058
	Gate Wedge	10" –900 Lbs	**Heat No.:**	K48058

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48058	0.059	0.82	1.19	0.020	0.021	18.42	9.33	0.019	0.69			3	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20°C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48058	Lo = 4D	12.5	505	255	40	66	198	67	69	75

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

hereby certify that the material described above, has been tested and complies ne material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SVR SPECIALTY VALVES RESEARCH S.A. VALVES MANUFACTURER
14 FEB. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 160-S657G-W5901

Work Order: **W5901-06/12**	Item: 160
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 10″**	Quantity: 1
Heat No.: **K48058**	Serials No.: W5901
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. 17 FEB. 2005 QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5901

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 10"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48058		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	50-55
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	5min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-3		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-1		II	/	/	CB2	/	/	/	II	OK
R5	5-6		II	/	/	CA2	/	/	/	II	OK
R6	6-7		II	/	/	/	/	/	/	I	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-5		II	/	/	/	/	/	/	I	OK
R9	9-10		II	/	/	/	/	/	/	I	OK
R10	10-11		II	/	/	/	/	/	/	I	OK
R11	11-12		II	/	/	/	/	/	/	I	OK
R12	12-13		II	/	/	/	/	/	/	I	OK
R13	13-11		II	/	/	/	/	/	/	I	OK
R14	14		II	/	/	/	/	/	/	I	OK
R15	15		II	/	/	CB3	/	/	/	III	OK
R16	16		II	/	/	CB2	/	/	/	II	OK
R17	17		II	/	/	/	/	/	/	I	OK

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

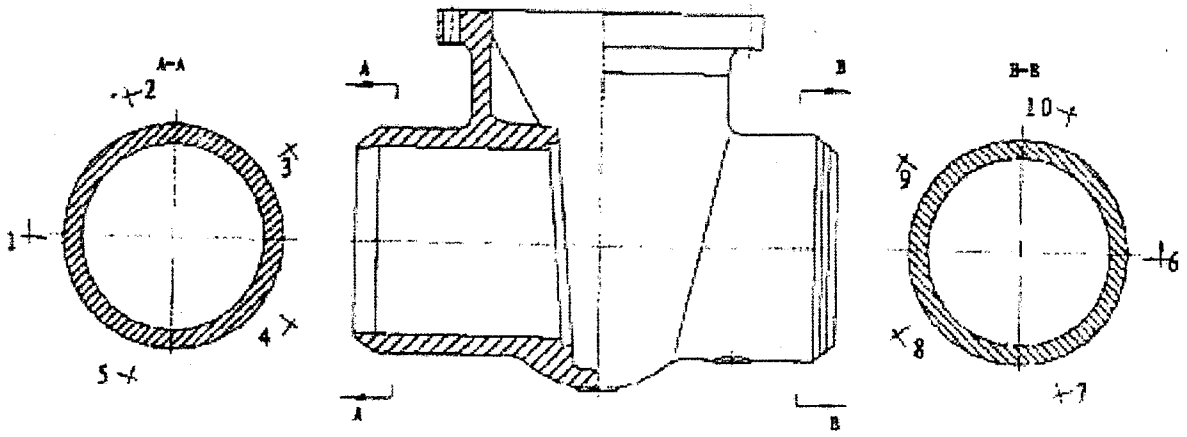
SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 FEB 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48058
Contract	HH-02536	Part No.	W5901
Drawing:	900LB 10"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R17	KODAK AA400	50-55	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.:
Job no.: *HH - 02536*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00170	2	Absperrschieber mit Getriebe Gate valve Gear operated	12"	Cl 900 BW 323,9 x 12,7	ASTM A 351 CF8C	Valve Ident – No.: " **S 657G** " LPI 170-S657G-W5902 170-S657G-W5903 RE W5902, W5903

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 225 bar Wasser / water (300 sec)
Dichtheit Sitz / seat = 165 bar Wasser / water (120 sec)
Rückdichtung / backseat = 165 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (120 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge Walt Glass
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00170	Absperrschieber,	**" S657G"**	4	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48020/K049021		W5902-W5903
	mit Antrieb	Drawing No.: 160-170-	4	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48020		
	12" Cl. 900 lbs.	-190	4	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48020		
	BW 323,9x12,7									
	Gate Valve	Rev.5		Sitz / seat		ASTM A 182 F321				
	Gear operated			Spindel / stem		ASTM A 182 F321				
	12" Cl. 900 lbs.			Packung / packing		Graphite				
	BW 323,9x12,7			Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5902 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	12" –900 Lbs	**Heat No.:**	K48020
	Gate Bonnet	12" –900 Lbs	**Heat No.:**	K48020
	Gate Wedge	12" –900 Lbs	**Heat No.:**	K48020

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS

COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48020	0.047	0.66	1.24	0.021	0.023	18.25	9.16	0.017	0.55			3	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter ∅	Resistencia Tensile Str. N/mm²	L. Elástico Yield Point N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20°C		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48020	Lo = 4D	12.5	502	240	38	67	195	68	63	61

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5903 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	12" –900 Lbs	**Heat No.:**	K48021
	Gate Bonnet	12" –900 Lbs	**Heat No.:**	K48020
	Gate Wedge	12" –900 Lbs	**Heat No.:**	K48020

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS

COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48021	0.049	0.66	1.32	0.019	0.020	18.24	9.21	0.016	0.57			1	
K48020	0.047	0.66	1.24	0.021	0.023	18.25	9.16	0.017	0.55			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter ∅	Resistencia Tensile Str. N/mm²	L. Elástico Yield Point N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20°C		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48021	Lo = 4D	12.5	502	256	39	63	194	62	69	73
K48020	Lo = 4D	12.5	502	240	38	67	195	68	63	61

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**, correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

ereby certify that the material described above, has been tested and complies e material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
Quality Control Department
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 170-S657G-W5902

Work Order: **W5902-06/12**	Item: 170
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 12″**	Quantity: 1
Heat No.: **K48020**	Serials No.: W5902
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. VALVES MANUFACTURER
17 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 170-S657G-W5903

Work Order: **W5903-06/12**	Item: 170
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 12″**	Quantity: 1
Heat No.: **K48021**	Serials No.: W5903
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. 17 ENE 2005 QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5902

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 12"	**Radiographed at:**	**Shop:** □√
Material :	CF8C Heat Number: K48020		**Field:** □

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	50-55
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	5min-5min 20s

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-3		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-5		II	/	/	/	/	/	/	II	OK
R5	5-1		II	/	/	/	/	/	/	II	OK
R6	6-7		II	/	/	/	/	/	/	I	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-9		II	/	/	/	/	/	/	I	OK
R9	9-10		II	/	/	/	/	/	/	I	OK
R10	10-6		II	/	/	/	/	/	/	I	OK
R11	11-12		II	/	/	CA2	/	/	/	I	OK
R12	12-13		II	/	/	CB2	/	/	/	I	OK
R13	13-14		II	/	/	CB2	/	/	/	I	OK
R14	14-15		II	/	/	/	/	/	/	I	OK
R15	15-11		II	/	/	/	/	/	/	III	OK
R16	16		II	/	/	/	/	/	/	II	OK
R17	17		II	/	/	/	/	/	/	I	OK
R18	18		II	/	/	/	/	/	/	I	OK
R19	19		II	/	/	/	/	/	/	I	OK
R20	20		II	/	/	/	/	/	/	I	OK
R21	21		II	/	/	/	/	/	/	I	OK

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.
We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

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	PHONE:	+ (34) 94. 455. 51. 51
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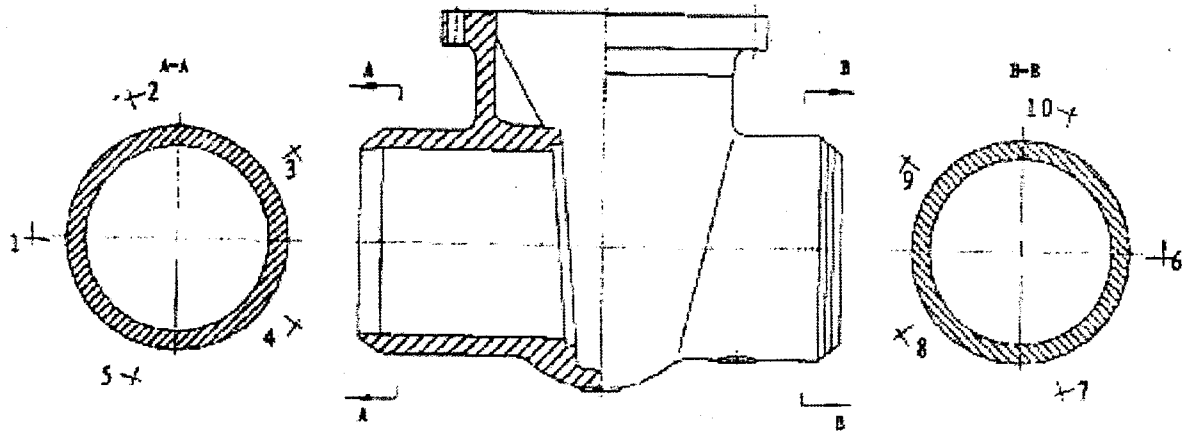
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48020
Contract	HH-02536	Part No.	W5902
Drawing:	900LB 12"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R21	KODAK AA400	50-55	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



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RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5903

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 12"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48021		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	50-55
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	5min-5min 20s

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-3		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-5		II	/	/	/	/	/	/	I	OK
R5	5-1		II	/	/	/	/	/	/	I	OK
R6	6-7		II	/	/	/	/	/	/	I	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-9		II	/	/	/	/	/	/	I	OK
R9	9-10		II	/	/	/	/	/	/	I	OK
R10	10-6		II	/	/	/	/	/	/	I	OK
R11	11-12		II	/	/	/	/	/	/	I	OK
R12	12-13		II	/	/	/	/	/	/	I	OK
R13	13-14		II	/	/	/	/	/	/	I	OK
R14	14-15		II	/	/	/	/	/	/	I	OK
R15	15-11		II	/	/	/	/	/	/	I	OK
R16	16		II	/	/	CA2	/	/	/	I	OK
R17	17		II	/	/	/	/	/	/	I	OK
R18	18		II	/	/	/	/	/	/	I	OK
R19	19		II	/	/	/	/	/	/	I	OK
R20	20		II	/	/	/	/	/	/	I	OK
R21	21		II	/	/	/	/	/	/	I	OK

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.
We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH, S.A.
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14 ENE. 2005
QA/QC Departament

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	PHONE:	+ (34) 94. 455. 51. 51
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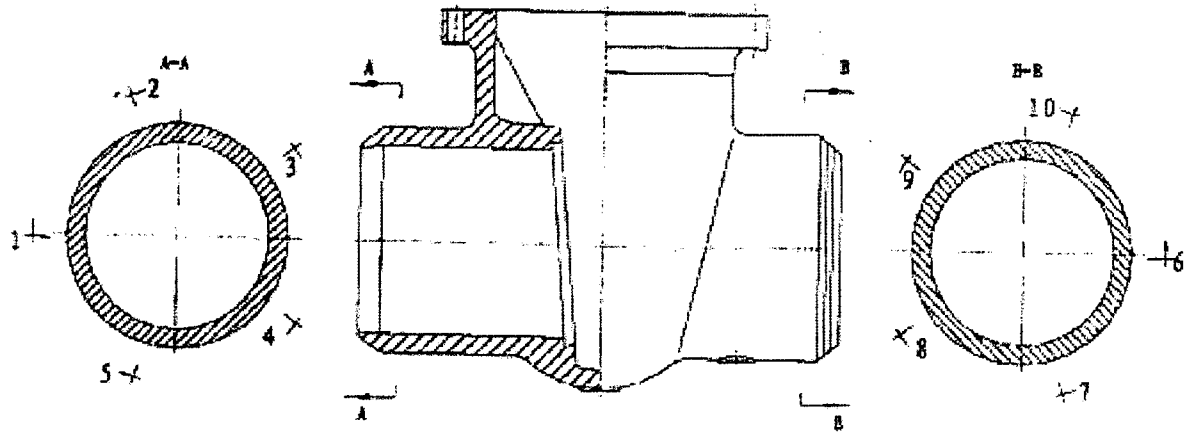
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48021
Contract	HH-02536	Part No.	W5903
Drawing:	900LB 12"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R21	KODAK AA400	50-55	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-000/1.69690/136

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.:
Job no.: *HH - 02536*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00180	2	Absperrschieber mit Antrieb Gate valve Gear operated	16"	Cl 600 BW 406,4 x 12,7	ASTM A 351 CF8C	Valve Ident – No.: " **S 657G** " LPI 180-S657G-W5904 180-S657G-W5905 RE W 5904, W5905

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	150 bar Wasser / water	(300 sec)
Dichtheit Sitz / seat	=	110 bar Wasser / water	(120 sec)
Rückdichtung / backseat	=	110 bar Wasser / water	(60 sec)
Dichtheit Sitz / seat	=	4-7 bar Luft / air	(120 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter W. Glass
Person in charge Walter Glß

Kommissions-Nr. / Reference No.

HH-02536

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00180	Absperrschieber, mit Antrieb 16" Cl. 600 lbs. BW 406,4x12,7	**" S657G"**	4	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48014/K48015		W5904-W5905
		Drawing No.: 180	4	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48009		
		Rev.5	4	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48009		
	Gate Valve Gear operated 16" Cl. 600 lbs. BW 406,4x12,7			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5904 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	16" –600 Lbs	**Heat No.:**	K48014
	Gate Bonnet	16" –600 Lbs	**Heat No.:**	K48009
	Gate Wedge	16" –600 Lbs	**Heat No.:**	K48009

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS

COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0- 21.0	9.0- 12.0	0.50	8C- 1.00				
K48014	0.059	0.79	1.26	0.018	0.020	19.36	9.28	0.019	0.58			1	
K48009	0.046	1.06	1.26	0.023	0.019	18.62	10.06	0.023	0.62			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter ∅	Resistencia Tensile Str. N/mm²	L. Elástico Yield Point N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20°C		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48014	Lo = 4D	12.5	512	246	39	69	185	68	67	66
K48009	Lo = 4D	12.5	490	225	39	68	188	60	64	63

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

ereby certify that the material described above, has been tested and complies e material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5905 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized:	Normalizado+Revenido Normalized+Tempered	Templado+Revenido: Quenched+Tempered:	Solubilización: ☒ Solution:

T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	16" –600 Lbs	**Heat No.:**	K48015
	Gate Bonnet	16" –600 Lbs	**Heat No.:**	K48009
	Gate Wedge	16" –600 Lbs	**Heat No.:**	K48009

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS

COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48015	0.051	1.23	0.89	0.021	0.018	18.2	9.6	0.024	0.78			1	
K48009	0.046	1.06	1.26	0.023	0.019	18.62	10.06	0.023	0.62			2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter ∅	Resistencia Tensile Str. N/mm²	L. Elástico Yield Point N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20°C		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48015	Lo = 4D	12.5	490	250	36	65	185	63	69	64
K48009	Lo = 4D	12.5	490	225	39	68	188	60	64	63

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

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Quality Control Department

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 180-S657G-W5904

Work Order: **W5904-06/12**	Item: 180
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 16″**	Quantity: 1
Heat No.: **K48014**	Serials No.: W5904
Drawing: **1. 600Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 180-S657G-W5905

Work Order: **W5905-06/12**	Item: 180
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 600Lb 16″**	Quantity: 1
Heat No.: **K48015**	Serials No.: W5905
Drawing: **1. 600Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		**INSPECTORS**	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A.
17 ENE. 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5904

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	600LB 16"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48014		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	60-68
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	6min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-3		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-5		II	/	/	/	/	/	/	I	OK
R5	5-1		II	/	/	/	/	/	/	I	OK
R6	6-7		II	/	/	/	/	/	/	I	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-9		II	/	/	/	/	/	/	I	OK
R9	9-10		II	/	/	/	/	/	/	I	OK
R10	10-6		II	/	/	/	/	/	/	I	OK
R11	11-12		II	/	/	/	/	/	/	I	OK
R12	12-13		II	/	/	/	/	/	/	I	OK
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Departament

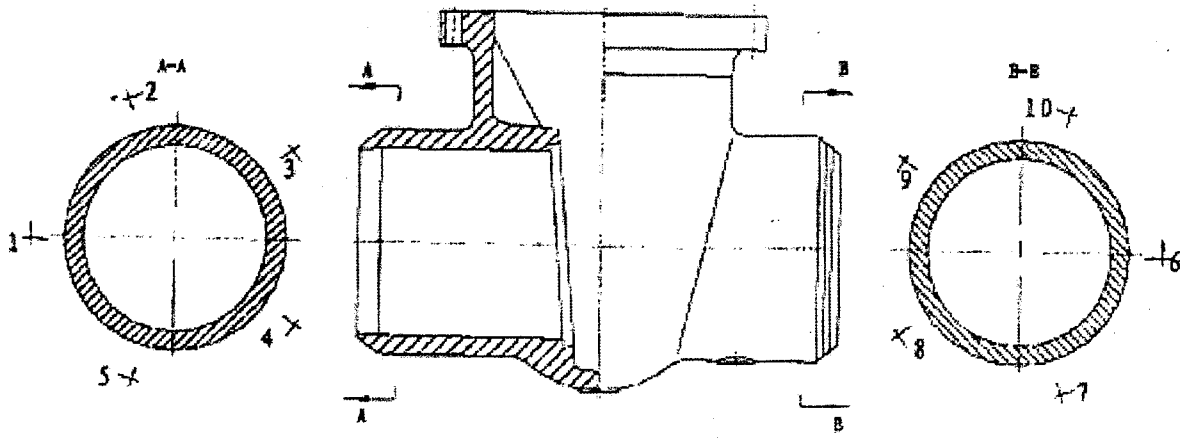
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48014
Contract	HH-02536	Part No.	W5904
Drawing:	600LB 16"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shieldi
R1-R12	KODAK AA400	60-68	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



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	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5905

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	600LB 16"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48015		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	60-68
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	6min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-3		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-5		II	/	/	/	/	/	/	I	OK
R5	5-1		II	/	/	/	/	/	/	I	OK
R6	6-7		II	/	/	CA2	/	/	/	II	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-9		II	/	/	/	/	/	/	I	OK
R9	9-10		II	/	/	/	/	/	/	I	OK
R10	10-6		II	/	/	/	/	/	/	I	OK
R11	11-12		II	/	/	/	/	/	/	I	OK
R12	12-13		II	/	/	/	/	/	/	I	OK
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********
**********	*******	*******	********	*********	******	*********	********	*********	********	******	********

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

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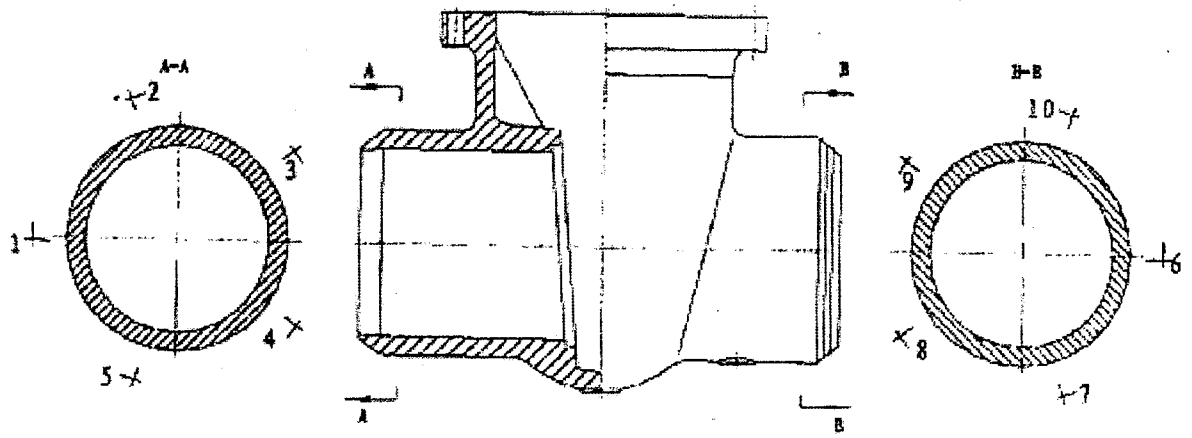
SPECIALTY VALVES RESEARCH, S.
VALVES MANUFACTURER
14 ENE 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48015
Contract	HH-02536	Part No.	W5905
Drawing:	600LB 16"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shield
R1-R12	KODAK AA400	60-68	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer:
Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt

Bestell-Nr.:
Order no.:
Lurgi Job – No.: ***69690-10***
Lurgi OGC PO.-No.: ***4567571-000/1.69690/136***

Project Name :
2nd Zagros Methanol Plant - Iran

Auftrag-Nr.:
Job no.:
HH - 02536

Lieferumfang / range:

Pos	**Stck.** pcs.	**Gegenstand** object	**DN**	**PN**	**Werkstoff** material	**Bemerkung** comment
00190	*1*	*Absperrschieber* *mit Antrieb* *Gate valve* *Gear operated*	*16"*	*Cl 900* *BW* 406,4 x 16,6	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 657G** "* *LPI 190-S657G-W5906* *RE W5906*

Auslegung + Prüfung nach
Design and tests acc. to
API 600 / API 598 / Nace MR 0175

Sicht- und Funktionsprüfung:
visual and functional test:
o.k.

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	*225 bar Wasser / water*	(300 sec)
Dichtheit Sitz / seat	=	*165 bar Wasser / water*	(120 sec)
Rückdichtung / backseat	=	*165 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*4-7 bar Luft / air*	(120 sec)

Prüfungsergebnis:
result:
ohne Beanstandung !
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Walt Gl

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION	Materialdokumentations - Deckblatt Material Cover Sheet	Datum / Date 25.02.2005 Seite / Page 1 Sachbearbeiter W. Glass Person in charge Walter Glass
Kommissions-Nr. / Reference No. **HH-02536**	Lurgi Job - No.: **69690-10** Lurgi OGC PO,- No.: **4567571 - 000 / 1.69690 / 136** **Project Name:** **2nd Zagros Methanol Plant - Iran**	

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00190	Absperrschieber,	**" S657G"**	1	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48016		W5906
	mit Antrieb	Drawing No.: 160-170-	1	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	K48016		
	16" Cl. 900 lbs.	-190	1	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	K48016		
	BW 406,4x16,6									
	Gate Valve	Rev.5		Sitz / seat		ASTM A 182 F321				
	Gear operated			Spindel / stem		ASTM A 182 F321				
	16" Cl. 900 lbs.			Packung / packing		Graphite				
	BW 406,4x16,6			Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

28.02.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W5906 DATE: 14/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer´s Logo / Inspector stamp:	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

H.T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	16" –900 Lbs	**Heat No.:**	K48016
	Gate Bonnet	16" –900 Lbs	**Heat No.:**	K48016
	Gate Wedge	16" –900 Lbs	**Heat No.:**	K48016

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS

COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Nb	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00				
K48016	0.046	1.06	1.26	0.023	0.019	18.62	10.06	0.023	0.61			3	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter ∅	Resistencia Tensile Str. N/mm²	L. Elástico Yield Point N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20ºC		
Solicitado Requirements	Lo = 4D	12.5	485	205	.30		232	60		
K48016	Lo = 4D	12.5	490	225	39	65	195	66	65	68

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

I hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

SPECIALTY VALVES RESEARCH, S.A.
Quality Control Department
14 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 190-S657G-W5906

Work Order: **W5906-06/12**	Item: 190
Customer: **KLAUS UNION**	P. O. No.: HH-02536
Valve Type: **Gate Valve 900Lb 16″**	Quantity: 1
Heat No.: **K48016**	Serials No.: W5906
Drawing: **1. 900Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 17, 2005	Date January 17, 2005	Date	Date

SPECIALTY VALVES RESEARCH S.A. VALVES MANUFACTURER
17 ENE. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

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PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
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E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W5906

Customer :	KLAUS UNION	**Contract:**	HH-02536
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 16"	**Radiographed at:**	**Shop:** ☐✓
Material :	CF8C Heat Number: K48016		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x50/360x80					**IQI:**	ASTM 1B
Screens Type and Thickness :	Pb,0.05/0.20					**Material Thickness:**	50-70
Density :	1.5-4.0	**Source Film Distance :**	600MM			**Exposure Time:**	5min 30s-7min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-3		II	/	/	/	/	/	/	I	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-5		II	/	/	/	/	/	/	I	OK
R5	5-1		II	/	/	/	/	/	/	I	OK
R6	6-7		II	/	/	/	/	/	/	II	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-9		II	/	/	/	/	/	/	I	OK
R9	9-10		II	/	/	/	/	/	/	I	OK
R10	10-6		II	/	/	/	/	/	/	I	OK
R11	11		II	/	/	/	/	/	/	I	OK
R12	12		II	/	/	CA2	/	/	/	II	OK
R13	13		II	/	/	/	/	/	/	I	OK
R14	14		II	/	/	/	/	/	/	I	OK
R15	15		II	/	/	/	/	/	/	I	OK
R16	16		II	/	/	/	/	/	/	I	OK
R17	17-18		II	/	/	/	/	/	/	I	OK
R18	18-19		II	/	/	/	/	/	/	I	OK
R19	19-20		II	/	/	/	/	/	/	I	OK
R20	20-21		II	A2	/	/	/	/	/	II	OK
R21	21-22		II	/	/	/	/	/	/	I	OK
R22	22-17		II	/	/	CB2	/	/	/	II	OK

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.
We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in

SVR
SPECIALTY VALVES RESEARCH S.A.
VALVES MANUFACTURER
14 ENE. 2005
QA/QC Department

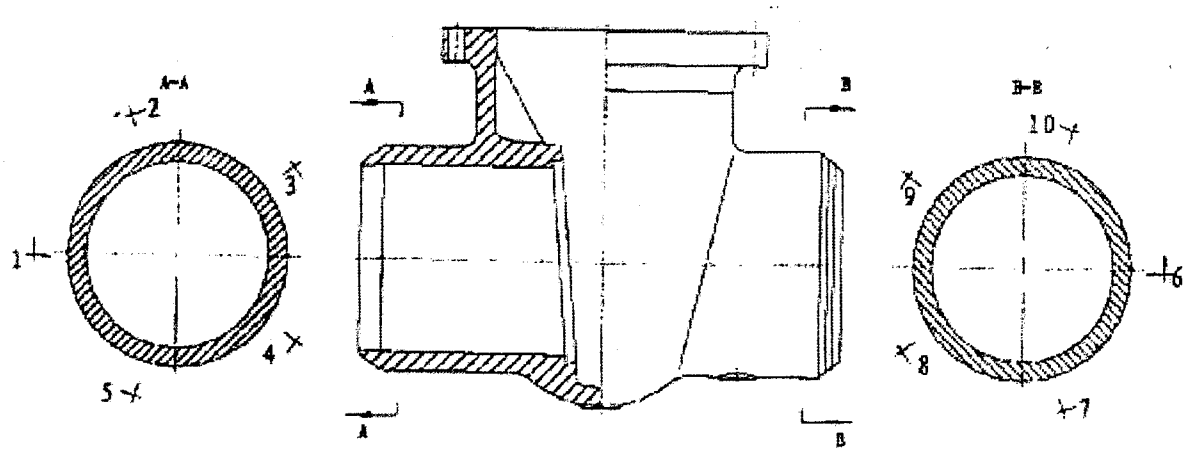
are exact transcription from the corresponding certificates, which are filed in our factory, emitted by homologated suppliers.

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48016
Contract:	HH-02536	Part No.	W5906
Drawing:	900LB 16"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1-R22	KODAK AA400	50-55	IR 192	ASTM 1B	600MM	1.5-3.0	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi AG, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.:* *69690-10*
Order no.: *Lurgi OGC PO.-No.:* *4567571-001/1.69690/145*

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.: ***HH – 02536- 02***
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00220	*2*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*2"*	*Cl.300* *RF*	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 655** "* *LPI S1276 / S1277*

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = *75 bar Wasser / water* (60 sec)
Dichtheit Sitz / seat = *55 bar Wasser / water* (60 sec)
Rückdichtung / backseat = *55 bar Wasser / water* (60 sec)
Dichtheit Sitz / seat = *4-7 bar Luft / air* (60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

K 007

Bochum, den 16.09.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

i.A. Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 16.09.2005
Seite / Page 1
Sachbearbeiter / Person in charge W. Glass

Kommissions-Nr. / Reference No.

HH-02536-02

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 001 / 1.69690 / 145**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00220	Absperrschieber 2" Cl. 300 lbs. RF	**" S655 "**	2	Gehäuse / body	SVR-3210-01	ASTM A 351 CF8C	SVR	8040		S1276/S1277
		Drawing No.: 00220	2	Haube / bonnet	SVR-3210-01	ASTM A 351 CF8C	SVR	8040		
		Rev. 1	2	Keil / wedge	SVR-3210-01	ASTM A 351 CF8C	SVR	Y040		
	Gate Valve 2" Cl. 300 lbs. RF			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SPW F321 + graphite				
				Schrb. / bolting		A 193 B8 Class2 / A 194 Gr.8				

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES MILL CERTIFICATE	Nº/Nr.: S1276-S1277 FECHA: DATE: 24-06-05

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536-02**	Cantidad: Quantity: 6
Klaus Union **Armaturen International** **Bremer Str. 53** **D-21244 Buchholz**	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: ☐ Normalized:	Normalizado+Revenido ☐	Templado+Revenido: ☐ Quenched+Tempered:	Solubilización: ☒ Solution:

H.T. CONDICION CONDITION T.T.	Solution 1050℃	MODO DE FUSION: **INDUCTION MELTING** TYPE OF MELTING:

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	GATE BODY	2" – 300 Lbs	**Heat No.:**	8040
	GATE BONNET	2" – 300 Lbs	**Heat No.:**	8040
	GEAT WEDGE	2" – 300 Lbs	**Heat No.:**	Y040

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A351 CF8C	**CONDICIONES DE ENTREGA: TERMS OF DELIVERY:**	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V			
Solicitado (Norma) Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	0.50	9.0-12.0					
8040	0.052	1.38	0.78	0.021	0.020	19.8	0.025	10.5				4	
Y040	0.045	1.21	0.65	0.020	0.022	20.2	0.028	9.36				2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**Resistencia Tensile Str. N/mm²**	**L. Elástico Yield Point N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20 °C**		
Solicitado Requirements	Lo = 4D	12.5	485	205	30	60	232	60		
8040	Lo = 4D	12.5	510	228	38	65	165	65	62	68
Y040	Lo = 4D	12.5	495	285	39	68	170	65	67	62

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SVR
SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
05 AGO. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: S1276

Work Order: **S1276**	Item: 00220
Customer: **KLAUS UNION**	P. O. No.: HH-02536-02
Valve Type: **Gate Valve 300Lb 2″**	Quantity: 1
Heat No.: **8040**	Serials No.: S1276
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date 05-08-2005	Date 05-08-2005	Date	Date

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
05 AGO. 2005
QA/QC Departament

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: S1277

Work Order: **S1277**	Item: 00220
Customer: **KLAUS UNION**	P. O. No.: HH-02536-02
Valve Type: **Gate Valve 300Lb 2″**	Quantity: 1
Heat No.: **8040**	Serials No.: S1277
Drawing: **1. 300Lb RF**	Surface Conditions: AS RAW
Part: **Flange end**	Material: ASTM A351 CF8C

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HP-ST
Rinsed by: HD-ST
Type of developer: HR-ST
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 15°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date 05-08-2005	Date 05-08-2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A. 05 AGO 2005 SAQC Departament

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi AG, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-002/1.69690/145

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.:
Job no.: *HH – 02536- 03*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00230	*1*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*3"*	*Cl.300* *RF*	*A 216 WCB*	*Valve Ident – No.: " **S 360** "* *S1549*

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test	=	*75 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*55 bar Wasser / water*	(60 sec)
Rückdichtung / backseat	=	*55 bar Wasser / water*	(60 sec)
Dichtheit Sitz / seat	=	*4-7 bar Luft / air*	(60 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 10.10.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

007

i.A. Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 10.10.2005
Seite / Page 1
Sachbearbeiter / Person in charge W. Glass

Kommissions-Nr. / Reference No.

HH-02536-03

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 002 / 1.69690 / 145**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00230	Absperrschieber	" S360 "	1	Gehäuse / body	SVR-3210-01	ASTM A 216 WCB	SVR	9828		S1549
	3" Cl. 300 lbs.	Drawing No.: 450-230	1	Haube / bonnet	SVR-3210-01	ASTM A 216 WCB	SVR	9810		
	RF	Rev. 3	1	Keil / wedge	SVR-3210-01	ASTM A 216 WCB+13%Cr overla	SVR	Y988		
	Gate Valve			Sitz / seat		ASTM A 216 WCB+13%Cr overla				
	3" Cl. 300 lbs.			Spindel / stem		ASTM A 182 F6				
	RF			Packung / packing		Graphite				
				Dichtung / gasket		SPW F304 + graphite				
				Schrb. / bolting		A 193 B7 / A 194 Gr.2H				

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES MILL CERTIFICATE	Nº/Nr.: S1549 FECHA: DATE: 12-08-05

Cliente/Client.:	Pedido Nº Purchase Order: HH-02536-03	Cantidad: Quantity: 3
Klaus Union Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☒	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☐

H.T. CONDICION CONDITION T.T.	Normalized 980℃×3h	MODO DE FUSION: TYPE OF MELTING: INDUCTION MELTING

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	GATE BODY	300LB-3"	Heat No.:	9828
	GATE BONNET	300LB-3"	Heat No.:	9810
	GATE WEDGE	300LB-3"	Heat No.:	Y988

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A216 WCB	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V			
Solicitado (Norma) Requirements (max)	0.30	0.60	1.00	0.040	0.045	0.5	0.50	0.20	0.30	0.03			
9828	0.22	0.33	0.76	0.023	0.019	0.06	0.022	0.003	0.030	0.007		1	
9810	0.20	0.38	0.80	0.020	0.021	0.07	0.019	0.017	0.016	0.001		1	
Y988	0.21	0.35	0.72	0.019	0.020	0.06	0.018	0.019	0.014	0.001		1	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter Ø	L. Elástico Yield Point N/mm²	Resistencia Tensile Str. N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20 °C		
Solicitado Requirements	Lo = 4D	12.5	250	485-655	22	35	232	27 J		
9828	Lo = 4D	12.5	285	485	28	38	150	42	28	36
9810	Lo = 4D	12.5	290	490	29	39	152	35	30	41
Y988	Lo = 4D	12.5	305	510	31	42	155	45	44	32

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados 3.1.B correspondientes s/ EN 10204, que obran en nuestro poder, emitidos por los suministradores homologados

We hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated exact transcription from the corresponding 3.1.B. certificates acc. to EN 10204, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

21 SEP. 2005

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi AG, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4567571-002/1.69690/145

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.:
Job no.: *HH – 02536- 03*

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00240	*1*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*2"*	*Cl.1500 BW*	*A 217 WC6*	*Valve Ident – No.: " **S 421** "* *LPI S1550*

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 375 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 275 bar Wasser / water (60 sec)
Rückdichtung / backseat = 275 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 10.10.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

K 007

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover shee*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 10.10.2005
Seite / Page 1
Sachbearbeiter / Person in charge W. Glass

Kommissions-Nr. / Reference No.

HH-02536-03

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4567571 - 002 / 1.69690 / 145**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00230	Absperrschieber 2" Cl. 1500 lbs. BW	" S421 "	1	Gehäuse / body	SVR-3210-01	ASTM A 217 WC6	SVR	K53623		S1550
		Drawing No.: 450-240	1	Haube / bonnet	SVR-3210-01	ASTM A 217 WC6	SVR	9860		
		Rev. 3	1	Keil / wedge	SVR-3210-01	ASTM A 217 WC6+STL overlay	SVR	Y966		
	Gate Valve 2" Cl. 1500 lbs. BW			Sitz / seat		ASTM A182 F304+STL overlay				
				Spindel / stem		ASTM A 182 F304				
				Packung / packing		Graphite				
				Dichtung / gasket		SPW F304 + graphite				
				Schrb. / bolting		A 193 B16 / A 194 Gr.4				

20.10.2005

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES MILL CERTIFICATE	Nº/Nr.: S1550 FECHA: DATE: 12-08-05

Cliente/Client.:	Pedido Nº Purchase Order: HH-02536-03	Cantidad: Quantity: 3
Klaus Union Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☒	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☐

H.T. CONDICION CONDITION T.T.	NORMALIZED 980 °C x 3H+Tempered 630 °C	MODO DE FUSION: TYPE OF MELTING: INDUCTION MELTING

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	GATE BODY	1500LB-2"	Heat No.:	K53623
	GATE BONNET	1500LB-2"	Heat No.:	9860
	GATE WEDGE	1500LB-2"	Heat No.:	Y988

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 217 WC6	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANALISIS QUIMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	W			
Solicitado (Norma) Requirements (max)	0.05-0.20	0.60	0.50-0.80	0.040	0.045	1.00-1.50	0.50	0.45-0.65	0.50	0.10			
K53623	0.12	0.42	0.65	0.021	0.025	1.25	0.028	0.52	0.027	0.001		1	
9860	0.18	0.37	0.72	0.022	0.027	1.08	0.025	0.55	0.035	0.001		1	
Y988	0.16	0.45	0.66	0.018	0.031	1.36	0.032	0.49	0.045	0.001		1	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter Ø	L. Elástico Yield Point N/mm²	Resistencia Tensile Str. N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20 °C		
Solicitado Requirements	Lo = 4D	12.5	275	485-655	20	35	232	27 J		
K53623	Lo = 4D	12.5	295	495	25	37	162	40	45	38
9860	Lo = 4D	12.5	325	525	32	45	165	43	42	30
Y988	Lo = 4D	12.5	285	498	29	39	160	39	34	38

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados 3.1.B. correspondientes s/ EN 10204, que obran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding 3.1.B. certificates acc. to EN 10204, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: S1550

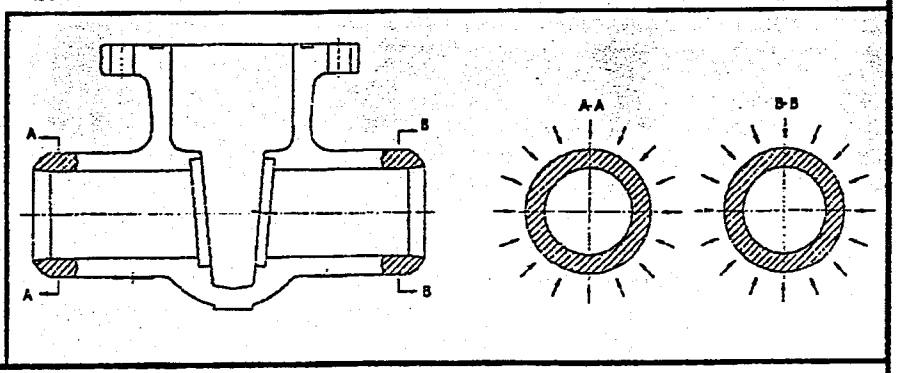
Work Order: **S1550-11/08**	Item: 00240
Customer: **VALVES ENTREPRISE**	P. O. No.: HH-02536-03
Valve Type: **Gate Valve 1500Lb 2"**	Quantity: 1
Heat No.: **K53623**	Serials No.: S1550
Drawing: **1. 1500Lb BW**	Surface Conditions: AS RAW
Part: **BW end**	Material: ASTM 217 WC6

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: WATER
Type of penetrant: HD-RS
Rinsed by: HD-BX
Type of developer: HD-YS
Penetr. Time (min.): 5-20 Developer Time (min.): 7-30
Temperature (°C): 25°C

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:



RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date 21/09/2005	Date 21/09/2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	Report No:	S 1550

Customer:	VALVES ENTREPRISE, S.L.	Contract:	HH-02536-03
Description:	GATE BODY	Extension of Test:	BW-ENDS
Drawing:	150OLB 2"	Radiographed at: Shop:	☑
Material:	WC6 Heat Number: K53623	Field:	☐

X Rays KV:	Γ RAYS	Isotope:	IR 192	Curies:	50	Focal Spot Size:	2x2
Film Type, Brand and Size:	AGFAC7, 360x80					IQI:	ASTM 1B
Screens Type and Thickness:	Pb,0.05/0.20					Material Thickness:	Thickness+2mm
Density:	1.5-3.5	Source Film Distance:	300MM			Exposure Time:	75Ci/5s

Evaluation standard for steel castings radiographic examination (See Back)		Acceptance Standard	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
S1550-1	1		II	/	/	/	/	/	/	I	OK
S1550-2	2		II	/	/	/	/	/	/	I	OK
S1550-3	3		II	/	/	/	/	/	/	I	OK
S1550-4	4		II	/	/	/	/	/	/	I	OK
S1550-5	5-6		II	/	B1	/	/	/	/	I	OK
S1550-6	6-5		II	/	/	/	/	/	/	I	OK
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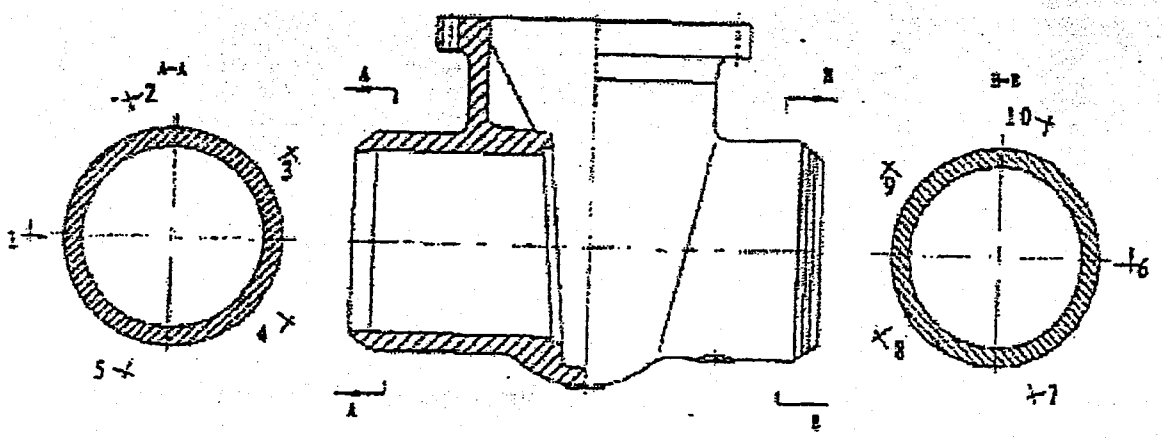
Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.
We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SVR SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	VALVES ENTREPRISE, S.L.	Heat:	K53623
Contract:	HH-02536-03	Part No:	S 1550
Drawing:	1500LB 2"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
C1 - C8	AGFAC7, 360x80	Thickness+2mm	IR 192	ASTM 1B	300MM	1.5-3.5	Pb
**********	**********	**********	*******	*******	*********	*******	**********
**********	**********	**********	*******	*******	*********	*******	**********



KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*
Customer:

Bestell-Nr.: *Lurgi Job – No.: 69690-10*
Order no.: *Lurgi OGC PO.-No.: 4569249-000/1.69690/136*

Project Name : *2nd Zagros Methanol Plant - Iran*

Auftrag-Nr.: *HH – 02536- 01*
Job no.:

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00010	*1*	*Absperrschieber* *mit Handrad* *Gate valve* *with handwheel*	*2"*	*Cl.600* *RF*	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 655** "* *LPI 10-S655-W6352*

Auslegung + Prüfung nach **API 600 / API 598 / Nace MR 0175**
Design and tests acc. to

Sicht- und Funktionsprüfung: *o.k.*
visual and functional test:

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 150 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 110 bar Wasser / water (60 sec)
Rückdichtung / backseat = 110 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (60 sec)

Prüfungsergebnis: *ohne Beanstandung !*
result: *no complaint !*

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: (Walter Glass)

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter / Person in charge W. Glass

Kommissions-Nr. / Reference No.

HH-02536-01

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4569249 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos. / Item	Benennung / Designation	Spezifikation / Valve Ident - No.:	Stück / Pc.	Bauteil / Piece parts	Ident-Nr. / Ident.-No.	Werkstoff / Material	Hersteller / Manufacturer	Chargen-Nr. / Heat No.	Probe / Sample No.	Zeugnis-Nr. / Cert. No.
00010	Absperrschieber 2" Cl. 600 lbs. RF	" S655 "	1	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		W6352
		Drawing No.: 10	1	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
		Rev.5	1	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR	6952		
	Gate Valve 2" Cl. 600 lbs. RF			Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W6352 DATE: 20/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: **HH-02536-01**	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

H.T. CONDICION CONDITION T.T.	SOLUTION 1050 °C	MODO DE FUSION: TYPE OF MELTING: **INDUCTION MELTING**

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	2" – 600 Lbs	**Heat No.:**	6952
	Gate Bonnet	2" – 600 Lbs	**Heat No.:**	6952
	Gate Wedge	2" – 600 Lbs	**Heat No.:**	6952

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

ANÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00			3	
6952	0.062	0.79	1.25	0.024	0.026	18.54	9.44	0.018	0.62				

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	**Probeta Test Sample**	**Diametro (mm) Diameter ∅**	**L. Elástico Yield Point N/mm²**	**Resistencia Tensile Str. N/mm²**	**Alargamiento Elongation %**	**Estricción Red. of Area %**	**Dureza Hardness HB**	**Resilencia Impact Test (ISO V Prob) J; T 20 °C**		
Solicitado Requirements	Lo = 4D	12.5	205	485	.30		232	60		
6952	Lo = 4D	12.5	242	500	39	62	196	65	67	66

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafía Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados

We hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding **3.1.B. certificates** acc. to **EN 10204**, which are field in our factory, emitted by our homologated suppliers.

Quality Control Department

25 ENE 2005

QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 10-S655-W6352

Work Order: **W6352-25/12**	Item: **10**
Customer: **KLAUS UNION**	P. O. No.: **HH-02536-01**
Valve Type: **Gate Valve 600Lb 2″**	Quantity: **1**
Heat No.: **6952**	Serials No.: **W6352**
Drawing: **1. 600Lb RF**	Surface Conditions: **AS RAW**
Part: **Flange end**	Material: **ASTM A351 CF8C**

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: **WATER**
Type of penetrant: **HP-ST**
Rinsed by: **HD-ST**
Type of developer: **HR-ST**
Penetr. Time (min.): **5-20** Developer Time (min.): **7-30**
Temperature (°C): **15°C**

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A** **EN 473**	Approved by **Level II SNT-TC-1A** **EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 28, 2005	Date January 28, 2005	Date	Date

QA/QC Department

KLAUS UNION

Postfach 10 13 49
D - 44713 Bochum
Blumenfeldstr. 18
D - 44795 Bochum

Telefon (0234) 4595 - 0
Telefax (0234) 43 23 87

Abnahmeprüfzeugnis DIN EN 10204 - 3.1B
Inspection certificate

Besteller:
Customer: *Lurgi Öl Gas Chemie GmbH, D-60295 Frankfurt*

Bestell-Nr.:
Order no.: *Lurgi Job – No.: 69690-10*
Lurgi OGC PO.-No.: 4569249--000/1.69690/136

Project Name : ***2nd Zagros Methanol Plant - Iran***

Auftrag-Nr.:
Job no.: ***HH – 02536 - 01***

Lieferumfang / range:

Pos	Stck. pcs.	Gegenstand object	DN	PN	Werkstoff material	Bemerkung comment
00020	*1*	*Absperrschieber* *mit Getriebe* *Gate valve* *Gear operated*	*10"*	Cl 900 BW 273,0 x 12,7	*ASTM A 351* *CF8C*	*Valve Ident – No.: " **S 657G** "* *LPI 20-S657G-W6353* RE W6353

Auslegung + Prüfung nach
Design and tests acc. to **API 600 / API 598 / Nace MR 0175**

Sicht- und Funktionsprüfung:
visual and functional test: *o.k.*

Festigkeits-/Dichtheitsprüfung:
strength-/tightness-test:

Festigkeit / shell test = 225 bar Wasser / water (120 sec)
Dichtheit Sitz / seat = 165 bar Wasser / water (120 sec)
Rückdichtung / backseat = 165 bar Wasser / water (60 sec)
Dichtheit Sitz / seat = 4-7 bar Luft / air (120 sec)

Prüfungsergebnis:
result: *ohne Beanstandung !*
no complaint !

Bochum, den 25.02.2005 - WG **KLAUS UNION** GmbH & Co. KG
Werksachverständiger:
Manufacturer's authorized inspector: Walter Glass

Anlage: *Dokumentation gemäß Material-Dokumentationsdeckblatt*
enclosure *Documentation acc. to material cover sheet*

KLAUS UNION

Materialdokumentations - Deckblatt
Material Cover Sheet

Datum / Date 25.02.2005
Seite / Page 1
Sachbearbeiter / Person in charge W. Glass

Kommissions-Nr. / Reference No.

HH-02536-01

Lurgi Job - No.: **69690-10**
Lurgi OGC PO,- No.: **4569249 - 000 / 1.69690 / 136**

Project Name: **2nd Zagros Methanol Plant - Iran**

Pos.	Benennung	Spezifikation	Stück	Bauteil	Ident-Nr.	Werkstoff	Hersteller	Chargen-Nr.	Probe	Zeugnis-Nr.
Item	**Designation**	**Valve Ident - No.:**	**Pc.**	**Piece parts**	Ident.-No.	**Material**	**Manufacturer**	**Heat No.**	**Sample No.**	**Cert. No.**
00020	Absperrschieber, mit Antrieb 10" Cl. 900 lbs. BW 273,0x12,7	**" S657G"**	4	Gehäuse / body	SVR-3210-00	ASTM A 351 CF8C	SVR	K48058		W6353
		Drawing No.: 20	4	Haube / bonnet	SVR-3210-00	ASTM A 351 CF8C	SVR			
			4	Keil / wedge	SVR-3210-00	ASTM A 351 CF8C	SVR			
	Gate Valve Gear operated 10" Cl. 900 lbs. BW 273,0x12,7	Rev.5		Sitz / seat		ASTM A 182 F321				
				Spindel / stem		ASTM A 182 F321				
				Packung / packing		Graphite				
				Dichtung / gasket		SS 321 + graphite				
				Schrb. / bolting		A 193 B8 C1.2 / A 194 Gr.8				

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	CERTIFICADO DE MATERIALES s/ MILL CERTIFICATE Acc. To	Nº/Nr.: W6353 DATE: 20/12/04 SHEET:

Cliente/Client.:	Pedido Nº Purchase Order: HH-02536-01	Cantidad: Quantity: 3
KLAUS UNION Armaturen International Bremer Str. 53 D-21244 Buchholz	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	

TRATAMIENTO TERMICO HEAT TREATMENT	Normalizado: Normalized: ☐	Normalizado+Revenido Normalized+Tempered ☐	Templado+Revenido: Quenched+Tempered: ☐	Solubilización: Solution: ☒

H.T. CONDICION CONDITION T.T.	SOLUTION 1050 ℃	MODO DE FUSION: TYPE OF MELTING: INDUCTION MELTING

DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Gate Body	10" – 900 Lbs	Heat No.:	K48058
	Gate Bonnet	10" – 900 Lbs	Heat No.:	K48058
	Gate Wedge	10" – 900 Lbs	Heat No.:	K48058

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 351 CF8C	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00

NÁLISIS QUÍMICO – CHEMICAL ANALYSIS												Nº de Piezas Ner. Pieces	Peso kgs. Weight
COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V			
Solicitado Requirements (max)	0.08	2.00	1.50	0.040	0.040	18.0-21.0	9.0-12.0	0.50	8C-1.00			3	
K48058	0.059	0.64	1.20	0.021	0.024	18.64	9.53	0.018	0.76				

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370										
COLADA HEAT No.	Probeta Test Sample	Diametro (mm) Diameter Ø	L. Elástico Yield Point N/mm²	Resistencia Tensile Str. N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB	Resilencia Impact Test (ISO V Prob) J; T 20 °C		
Solicitado Requirements	Lo = 4D	12.5	205	485	30		232	60		
K48058	Lo = 4D	12.5	253	505	42	65	199	68	60	69

Insp. Visual y C. Dimensional Visual Insp. And Dimens check	Ensayo Magnaflux Magnaflux test	Insp. Por Gammagrafia Gammagraphic Inspection	Ensayo de Presión Pressure Test	Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55	Satisfactory			

Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los **certificados 3.1.B**. correspondientes s/ **EN 10204**, que obran en nuestro poder, emitidos por los suministradores homologados.

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Quality Control Department

20 DEC 2005

QA/QC Department

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

LIQUID PENETRANT INSPECTION

Certificate No.: 20-S657G-W6353

Work Order: **W6353-25/12**	Item: **20**
Customer: **KLAUS UNION**	P. O. No.: **HH-02536-01**
Valve Type: **Gate Valve 900Lb 10″**	Quantity: **1**
Heat No.: **K48058**	Serials No.: **W6353**
Drawing: **1. 900Lb BW**	Surface Conditions: **AS RAW**
Part: **BW end**	Material: **ASTM A351 CF8C**

Reference Procedure: **E165**
Acceptance Standards: **ANSI B 16.34**
Precleaned by: **WATER**
Type of penetrant: **HP-ST**
Rinsed by: **HD-ST**
Type of developer: **HR-ST**
Penetr. Time (min.): **5-20** Developer Time (min.): **7-30**
Temperature (°C): **15°C**

INTERPRETATION OF TEST RESULTS:

	YES	NO	ACCEPT.	NOT ACCEPT.
Linear indications	☐	☒	☒	☐
Group of linear indications	☐	☒	☒	☐
Non linear indications	☐	☒	☒	☐

Sketch of Discontinuities:

RESULTS:

☒ Conforming
☐ Non Conforming

REPAIR OF DISCONTINUITIES MADE BY: **REINSPECTED BY:**

☐ Accepted
☐ Rejected

SVR - SPECIALTY VALVES RESEARCH		INSPECTORS	
Examination by **Level II SNT-TC-1A EN 473**	Approved by **Level II SNT-TC-1A EN 473**	WITNESS POINT CUSTOMER ☐ YES ☐ NOT ☐ OTHERS	
Sign.	Sign.	Sign.	Sign.
Date January 28, 2005	Date January 28, 2005	Date	Date

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAIN)
PHONE:	+ (34) 94. 455. 51. 51
FAX:	+ (34) 94. 455. 51. 50
WEBB:	www.svrvalves.com
E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC EXAMINATION REPORT FOR CASTINGS

Procedure:	ASME B 16.34	**Report No.:**	W6353

Customer :	KLAUS UNION	**Contract:**	HH-02536-01
Description :	GATE BODY	**Extension of Test:**	BW-ENDS
Drawing :	900LB 10"	**Radiographed at:**	**Shop:** ☐√
Material :	CF8C Heat Number: K48058		**Field:** ☐

X Rays KV	Γ RAYS	**Isotope :**	IR 192	**Curies:**	40	**Focal Spot Size:**	3x3
Film Type, Brand and Size :	KODAK AA400,360x80					**IQI:**	ASTM 1B 16
Screens Type and Thickness :	Pb,0.03/0.10					**Material Thickness:**	Thickness+2mm
Density :	1.5-4.0	**Source Film Distance :**	450MM			**Exposure Time:**	3 min - 30 min

Evaluation standard for steel castings radiographic examination (See Back)		**Acceptance Standard**	
Sketch of geometric arrangement of radiographs and location markers in attached form		ASME B 16.34	

Identification	Interval	Viewing	Evaluation	Observed Defects							
				Porosity	Sand	Shrinkage	Cracks	Hot Tears	Others	Superf.	Accepted
R1	1-2		II	/	/	/	/	/	/	I	OK
R2	2-3		II	/	/	CB2	/	/	/	II	OK
R3	3-4		II	/	/	/	/	/	/	I	OK
R4	4-1		II	/	/	/	/	/	/	I	OK
R5	5-6		II	/	/	/	/	/	/	I	OK
R6	6-7		II	/	B1	/	/	/	/	I	OK
R7	7-8		II	/	/	/	/	/	/	I	OK
R8	8-5		II	/	/	/	/	/	/	I	OK
R9	9-10		II	/	/	/	/	/	/	I	OK
R10	10-11		II	A2	/	/	/	/	/	II	OK
R11	11-12		II	A1	/	/	/	/	/	I	OK
R12	12-9		II	/	B1	/	/	/	/	I	OK
R13	13		II	/	/	CA1	/	/	/	I	OK
R14	14		II	/	/	/	/	/	/	I	OK
R15	15		II	/	/	CA2	/	/	/	II	OK
R16	16		II	/	/	/	/	/	/	I	OK
**********	*******	*******	*******	*********	******	*********	********	*********	********	******	********
**********	*******	*******	*******	*********	******	*********	********	*********	********	******	********

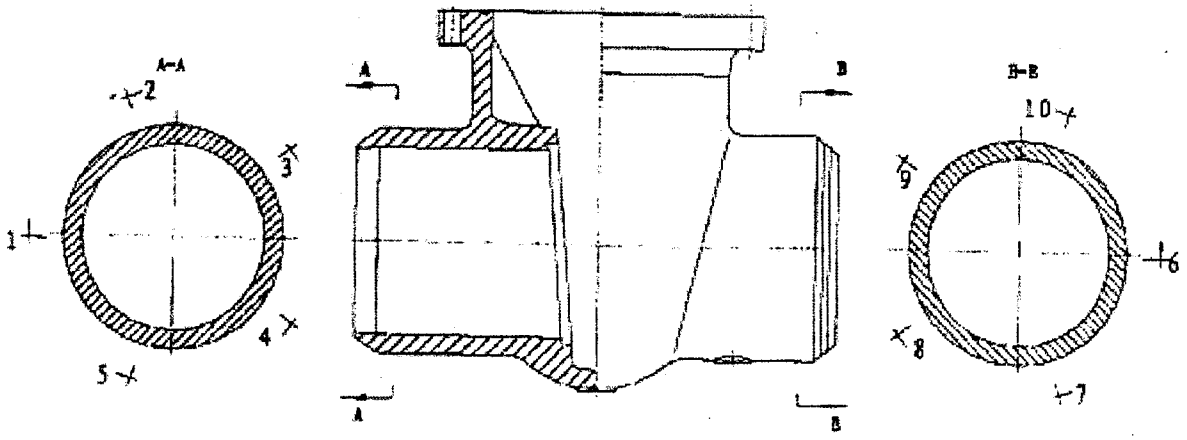
Certificamos que el material descrito aquí ha sido ensayado y cumple con los requisitos solicitados por el cliente. Los resultados arriba indicados son fiel reflejo de los certificados correspondientes, que abran en nuestro poder, emitidos por los suministradores homologados.

We hereby certify taht material described above, have been tested and cumplies to the material requirements of the purchase order. The results above indicated are exact transcription from the corresponding certificates, which are field in our factory, emitted by homologated suppliers.

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER
20 ENE 2005
QA/QC Department

SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	ADDRESS:	ARETXALDE, 150 48196 LEZAMA -BIZKAIA- (SPAII
	PHONE:	+ (34) 94. 455. 51. 51
	FAX:	+ (34) 94. 455. 51. 50
	WEBB:	www.svrvalves.com
	E-mail:	webmaster@svrvalves.com

RADIOGRAPHIC MAP

Procedure:	ASME B 16.34		
Customer:	KLAUS UNION	Heat:	K48058
Contract	HH-02536-01	Part No.	W6353
Drawing:	900LB 10"	Descriptions:	GATE BODY

Radiografy No.	Type and Size of Film	Thickness	Source	I.Q.I.	Focus-Film Distance	Density	Back Shielding
R1 - R16	KODAK AA400	50-60	IR 192	ASTM 1B 16	450MM	1.5-4.0	Pb
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