



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER



CERTIFICATE Acc. To EN 10204 – 3.1.B.

CERTIF No.: SVR – 2917-10

REV.: 2

DATE: 2/12/2003

CLIENT: VALVES ENTREPRISE ORDER No.: P-200343 ITEM: 10 SERIAL No.: V 362
LURGI P.O.: 4558641-000/1.69666/136 LURGI ITEM NO: 00100 QUANTITY: 2
FIGURE NO.: J41Y600LB-3" DESCRIPTION: 3" - 600 Lbs. ENDS: FLANGE (X)
GLOBE VALVE BUTT WELD ()

DESIGN AND TEST ACCORDING TO:

API 600	X	API 598	X	BS 6755 Part. 1 rate B		DIN 3230 – 3		MSS - SP 82		NACE MR 0175	
OTHERS : ANSI/ASME B 16.34; B 16.5; B 16.10											

TYPE OF TEST	SHELL & PACKING 100%	SEAT (WATER)100%HP	BACKSEAT (WATER) 100% HP	SEAT (AIR) LP
DURATION (Sec)	60	60	60	60
RESSURE (Kg/cm ²)	158	115	115	4 - 7
RESULT	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

SPECIALTY VALVES RESEARCH, S.A. certify that all valves described above are in compliance with purchase order and specification requirements. This test report represents the actual attributes of the valves furnished and the test results are in compliance with the applicable specification and purchase order requirements.

TEST REPORT EN 10204 – 3.1.B. / 2.2

BODY & BONNET	ASTM A 216 WCB		
WEDGE	ASTM A 216 WCB + Stellite Overlay		
BODY RING	A 105 + Stellite Overlay		
STEM	A 182 F6		
PACKING	GRAPHITE		
GASKET	SPW 304 + Graphite		
BOLTING	A 193 B7 / A 194 Gr. 2h		

SPECIALTY VALVES RESEARCH, S.A. certifies that the above items are in full compliance with the listed material specifications and all purchase order requirements.

DIMENSIONAL EXAMINATION: ACCEPTABLE	VISUAL EXAMINATION: MSS SP 55 ACCEPTABLE	MARKING: MSS SP 25 ACCEPTABLE
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FOUNDRY MILL CERTIFICATE NUMBERS

BODY : YD-A0396-1, YD-A0396-2, YD-A0397-1, YD-A0397-2

BONNET: YD-A0396-1, YD-A0396-2, YD-A0397-1, YD-A0397-2

QUALITY CONTROL MANAGER:

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

02 DEC 2003

QA/QC Department

CUSTOMER'S INSPECTOR:



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0396-1

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 1 OF 2

Cliente/Cient.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 2

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H

MODO DE FUSION:
INDUCTION MELTING
TYPE OF MELTING:

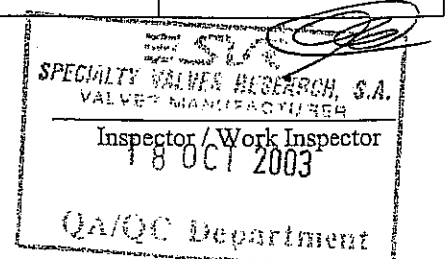
DENOMINACION DE LA PIEZA:	Globe Body	3" - 600 Lbs	Heat No.:	Y997
CASTING DENOMINATION:	Globe Bonnet	3" - 600 Lbs	Heat No.:	9785

CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 216 WCB	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00
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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)	0.30	1.00	0.60	0.04	0.045	0.50	0.20	0.50	0.30	0.03		
Y997	0.22	0.69	0.29	0.017	0.019	0.06	0.016	0.013	0.014	0.001	1	
9785	0.23	0.70	0.32	0.018	0.019	0.06	0.015	0.014	0.015	0.001	1	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370									Resiliencia Impact Test (ISO Prob) J; T °C
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		
Solicitado Requirements	Lo = 4D	12.5	250	485 - 655	22	35	232		
Y997	Lo = 4D	12.5	290	490	28	38	155		
9785	Lo = 4D	12.5	285	495	29	39	154		
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				OK			

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.
We hereby certify that the material described above, has been
and complies to the material requirements of the purchase order.





SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0396-2

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 2 OF 2

Cliente/Cient.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 2

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H

MODO DE FUSION:
INDUCTION MELTING
TYPE OF MELTING:

DENOMINACION DE LA PIEZA:
CASTING DENOMINATION:

Globe Disc

3" - 600 Lbs

Heat No.: 6387

CALIDAD DE ACERO:
STEEL QUALITY:

ASTM A 216 WCB

CONDICIONES DE ENTREGA:
TERMS OF DELIVERY:

NACE MR 01-75:00

NÁLISIS QUÍMICO - CHEMICAL ANALYSIS

COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.30	1.00	0.60	0.04	0.045	0.50	0.20	0.50	0.30	0.03			
6387	0.22	0.76	0.26	0.018	0.021	0.06	0.02	0.017	0.015	0.001		1	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

COLADA HEAT No.	Próbeta 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	Resiliencia Impact Test (ISO Prob) J; T °C
Solicitado Requirements	Lo = 4D	12.5	250	485 - 655	22	35	232	
6387	Lo = 4D	12.5	275	495	28	38	165	
Insp. Visual y C. Dimensional Visual Insp. And Dimens check		Ensayo Magnaflux Magnaflux test		Insp. Por Gammagrafia Gamma-graphic Inspection		Ensayo de Presión Pressure Test		Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55		Satisfactory				OK		

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.
We hereby certify that the material described above, has been
tested and complies to the material requirements of the purchase order.

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

Inspector / Work Inspector
18 OCT 2003

QA/QC Department

 SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	MATERIAL CERTIFICATES CERTIFICADO DE INSPECCION s/ INSPECTION CERTIFICATE Acc. To EN 10204 / 3.1.B.	Nº/Nr.: YD-A0397-1 FECHA: DATE: 18/10/2003 PAG.: DE SHEET 1 OF 2
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Cliente/Cliet.: VALVES ENTREPRISE Las Mercedes No. 23 - 6º Edificio Abra No.1 48930 LAS ARENAS -BIZKAIA-	<table style="width:100%;"> <tr> <td style="width:50%;"> Pedido Nº Purchase Order: P-200343 </td> <td style="width:50%;"> Cantidad: Quantity: 2 </td> </tr> <tr> <td colspan="2" style="text-align: center; vertical-align: middle;"> Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR </td> </tr> </table>	Pedido Nº Purchase Order: P-200343	Cantidad: Quantity: 2	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: SVR	
Pedido Nº Purchase Order: P-200343	Cantidad: Quantity: 2				
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:	☐
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. CONDICION CONDITION T.T.	NORMALIZED 980 °C x 3 H	MODO DE FUSION: INDUCTION MELTING TYPE OF MELTING:
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DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Globe Body Globe Bonnet	3" - 600 Lbs 3" - 600 Lbs	Heat No.: Heat No.:	Y997 9785
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CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 216 WCB	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00
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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)	0.30	1.00	0.60	0.04	0.045	0.50	0.20	0.50	0.30	0.03		
Y997	0.22	0.69	0.29	0.017	0.019	0.06	0.016	0.013	0.014	0.001	1	
9785	0.23	0.70	0.32	0.018	0.019	0.06	0.015	0.014	0.015	0.001	1	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370									Resiliencia Impact Test (ISO Prob) J; T °C
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		
Solicitado Requirements	Lo = 4D	12.5	250	485 - 655	22	35	232		
Y997	Lo = 4D	12.5	290	490	28	38	155		
9785	Lo = 4D	12.5	285	495	29	39	154		
Insp. Visual y G. 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				OK			

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.
 We hereby certify that the material described above, has been
 and complies to the material requirements of the purchase order.

SPECIALTY VALVES RESEARCH, S.A.

VALVES MANUFACTURER

18 OCT 2003

Inspector / Work Inspector

QA/QC Department



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0397-2

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 2 OF 2

Cliente/Cient.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 1

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H

MODO DE FUSION:

INDUCTION MELTING

TYPE OF MELTING:

DENOMINACION DE LA PIEZA:
CASTING DENOMINATION:

Globe Disc

3" - 600 Lbs

Heat No.:

6387

CALIDAD DE ACERO:
STEEL QUALITY:

ASTM A 216 WCB

CONDICIONES DE ENTREGA:
TERMS OF DELIVERY:

NACE MR 01-75:00

NÁLISIS QUÍMICO - CHEMICAL ANALYSIS

COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.30	1.00	0.60	0.04	0.045	0.50	0.20	0.50	0.30	0.03			
6387	0.22	0.76	0.26	0.018	0.021	0.06	0.02	0.017	0.015	0.001		1	

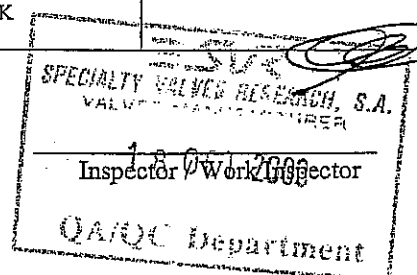
PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

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	Resiliencia Impact Test (ISO Prob) J; T °C
Solicitado Requirements	Lo = 4D	12.5	250	485 - 655	22	35	232	
6387	Lo = 4D	12.5	275	495	28	38	165	

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

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.

We hereby certify that the material described above, has been
tested and complies to the material requirements of the purchase order.





SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER



CERTIFICATE Acc. To EN 10204 – 3.1.B.

CERTIF No.: SVR – 2917-11

REV.: 2

DATE: 2/12/2003

CLIENT: VALVES ENTREPRISE	ORDER No.: P-200343	ITEM: 11	SERIAL No.: V 485
LURGI P.O.: 4558641-000/1.69666/136	LURGI ITEM NO: 00120	QUANTITY: 1	
FIGURE NO.: J41Y1500LB-2"	DESCRIPTION: 2" - 1500 Lbs. GLOBE VALVE	ENDS: FLANGE () BUTT WELD (X)	

DESIGN AND TEST ACCORDING TO:

API 600	X	API 598	X	BS 6755 Part. 1 rate B		DIN 3230 – 3		MSS - SP 82		NACE MR 0175	
OTHERS : ANSI/ASME B 16.34; B 16.5; B 16.10											

TYPE OF TEST	SHELL & PACKING 100%	SEAT (WATER)100%HP	BACKSEAT (WATER) 100% HP	SEAT (AIR) LP
DURATION (Sec)	60	60	60	60
RESSURE (Kg/cm ²)	393	287	287	4 - 7
RESULT	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

SPECIALTY VALVES RESEARCH, S.A. certify that all valves described above are in compliance with purchase order and specification requirements. This test report represents the actual attributes of the valves furnished and the test results are in compliance with the applicable specification and purchase order requirements.

TEST REPORT EN 10204 – 3.1.B. / 2.2

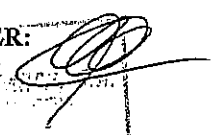
BODY & BONNET	ASTM A 217 WC9		
WEDGE	ASTM A 182 F22 + Stellite Overlay		
BODY RING	A 182 F304 + Stellite Overlay		
STEM	A 182 F304		
PACKING	GRAPHITE		
GASKET	SPW 304 + Graphite		
BOLTING	A 193 B16 / A 194 Gr. 4		

SPECIALTY VALVES RESEARCH, S.A. certifies that the above items are in full compliance with the listed material specifications and all purchase order requirements.

DIMENSIONAL EXAMINATION: ACCEPTABLE	VISUAL EXAMINATION: MSS SP 55 ACCEPTABLE	MARKING: MSS SP 25 ACCEPTABLE
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FOUNDRY MILL CERTIFICATE NUMBERS

BODY: YD-A0398-1, YD-A0398-2
BONNET: YD-A0398-1, YD-A0398-2

QUALITY CONTROL MANAGER:  02 DEC 2003 QA/QC Department	CUSTOMER'S INSPECTOR:
--	------------------------------



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0398-1

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 1 OF 2

Cliente/Cliet.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 2

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H + TEMPERED 630°C

MODO DE FUSION:

INDUCTION MELTING

TYPE OF MELTING:

DENOMINACION DE LA PIEZA:
CASTING DENOMINATION:

Globe Body

2" - 1500 Lbs

Heat No.:

40916

Globe Bonnet

2" - 1500 Lbs

Heat No.:

40916

CALIDAD DE ACERO:
STEEL QUALITY:

ASTM A 217 WC9

CONDICIONES DE ENTREGA:
TERMS OF DELIVERY:

NACE MR 01-75:00

NÁLISIS QUIMICO - CHEMICAL ANALYSIS

COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V	Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.05- 0.18	0.60	0.40- 0.70	0.04	0.045	2.0- 2.75	0.50	0.90- 1.20	0.50	0.10		
40916	0.18	0.65	0.36	0.017	0.018	2.62	0.99	0.014	0.015	0.014	2	

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	Resiliencia Impact Test (ISO Prob) J; T °C
Solicitado Requirements	Lo = 4D	12.5	275	485 - 655	20	35	232	
40916	Lo = 4D	12.5	356	580	21	48	157	

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

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.

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SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

Inspector / Work Inspector
18 OCT 2003

QA/QC Department



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0398-2

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 2 OF 2

Cliente/Cliet.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 1

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H + TEMPERED 630°C

MODO DE FUSION:

INDUCTION MELTING

TYPE OF MELTING:

DENOMINACION DE LA PIEZA:
CASTING DENOMINATION:

Globe Disc

2" - 1500 Lbs

Heat No.:

3257

CALIDAD DE ACERO:
STEEL QUALITY:

ASTM A 182 F22

CONDICIONES DE ENTREGA:
TERMS OF DELIVERY:

NACE MR 01-75:00

ANÁLISIS QUÍMICO - CHEMICAL ANALYSIS

COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V	Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.05- 0.15	0.50	0.30- 0.60	0.04	0.04	2.0- 2.5	0.87- 1.13					
3257	0.082	0.32	0.45	0.019	0.021	2.23	0.98				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	Resiliencia . Impact Test (ISO Prob) J; T °C
Solicitado Requirements	Lo = 4D	12.5	205	415	20	35	232	
3257	Lo = 4D	12.5	235	465	26	39	152	
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				OK		

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Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.

We hereby certify that the material described above, has been
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VALVES MANUFACTURER

Inspector / Work Inspector
18 OCT 2003

QA/QC Department



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER



CERTIFICATE Acc. To EN 10204 – 3.1.B.

CERTIF No.: SVR – 2917-12

REV.: 2

DATE: 2/12/2003

CLIENT: VALVES ENTREPRISE ORDER No.: P-200343 ITEM: 12 SERIAL No.: V 421
LURGI P.O.: 4558641-000/1.69666/136 LURGI ITEM NO: 00110 QUANTITY: 3
FIGURE NO.: J41Y1500LB-2" DESCRIPTION: 2" - 1500 Lbs. ENDS: FLANGE ()
GLOBE VALVE BUTT WELD (X)

DESIGN AND TEST ACCORDING TO:

API 600	X	API 598	X	BS 6755 Part. 1 rate B	DIN 3230 – 3	MSS - SP 82	NACE MR 0175
OTHERS: ANSI/ASME B 16.34; B 16.5; B 16.10							

TYPE OF TEST	SHELL & PACKING 100%	SEAT (WATER)100%HP	BACKSEAT (WATER) 100% HP	SEAT (AIR) LP
DURATION (Sec)	60	60	60	60
RESSURE (Kg/cm ²)	393	287	287	4 - 7
RESULT	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

SPECIALTY VALVES RESEARCH, S.A. certify that all valves described above are in compliance with purchase order and specification requirements. This test report represents the actual attributes of the valves furnished and the test results are in compliance with the applicable specification and purchase order requirements.

TEST REPORT EN 10204 – 3.1.B. / 2.2

BODY & BONNET	ASTM A 217 WC6		
WEDGE	ASTM A 182 F11 + Stellite Overlay		
BODY RING	A 182 F304 + Stellite Overlay		
STEM	A 182 F304		
PACKING	GRAPHITE		
GASKET	SPW 304 + Graphite		
BOLTING	A 193 B16 / A 194 4		

SPECIALTY VALVES RESEARCH, S.A. certifies that the above items are in full compliance with the listed material specifications and all purchase order requirements.

DIMENSIONAL EXAMINATION: ACCEPTABLE	VISUAL EXAMINATION: MSS SP 55 ACCEPTABLE	MARKING: MSS SP 25 ACCEPTABLE
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FOUNDRY MILL CERTIFICATE NUMBERS

BODY: YD-A0399-1, YD-A0399-2, YD-A0400-1, YD-A0400-2, YD-A0401-1, YD-A0401-2
BONNET: YD-A0399-1, YD-A0399-2, YD-A0400-1, YD-A0400-2, YD-A0401-1, YD-A0401-2

QUALITY CONTROL MANAGER:

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

02 DEC 2003

QA/QC Department

CUSTOMER'S INSPECTOR:

 SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	MATERIAL CERTIFICATES CERTIFICADO DE INSPECCION s/ INSPECTION CERTIFICATE Acc. To EN 10204 / 3.1.B.	Nº/Nr.: YD-A0399-1 FECHA: DATE: 18/10/2003 PAG.: DE SHEET 1 OF 2
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Cliente/Cliet.: VALVES ENTREPRISE Las Mercedes No. 23 - 6º Edificio Abra No.1 48930 LAS ARENAS -BIZKAIA-	Pedido Nº Purchase Order: P-200343	Cantidad: Quantity: 2
	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:
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CONDICION CONDITION T.T.	NORMALIZED 980 °C x 3 H + TEMPERED 630°C	MODO DE FUSION: INDUCTION MELTING TYPE OF MELTING:
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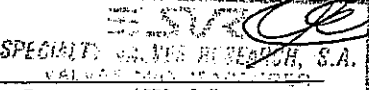
DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Globe Body Globe Bonnet	2" - 1500 Lbs 2" - 1500 Lbs	Heat No.: Heat No.:	30913 30913
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CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 217 WC6	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00
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ANÁLISIS 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)	0.05- 0.20	0.50- 0.80	0.60	0.04	0.045	1.0- 1.5	0.50	0.45- 0.65	0.50	0.10		
30913	0.18	0.63	0.29	0.019	0.023	1.32	0.5	0.015	0.014	0.002	2	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370									Resiliencia Impact Test (ISO Proh) J; T °C
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		
Solicitado Requirements	Lo = 4D	12.5	275	485 - 655	20	35	232		
30913	Lo = 4D	12.5	320	530	27	44	155		
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				OK			

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
 Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.
 We hereby certify that the material described above, has been
 tested and complies to the material requirements of the purchase order.

 SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER
Inspector / Work Inspector 18 OCT 2003
QA/QC Department

 SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	MATERIAL CERTIFICATES CERTIFICADO DE INSPECCION s/ INSPECTION CERTIFICATE Acc. To EN 10204 / 3.1.B.	Nº/Nr.: YD-A0399-2 FECHA: DATE: 18/10/2003 PAG.: DE SHEET 2 OF 2
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Cliente/Cient.: VALVES ENTREPRISE Las Mercedes No. 23 - 6º Edificio Abra No.1 48930 LAS ARENAS -BIZKAIA-	Pedido Nº Purchase Order: P-200343	Cantidad: Quantity: 1
	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:
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CONDICION CONDITION T.T.	NORMALIZED 980 °C x 3 H + TEMPERED 630°C	MODO DE FUSION: INDUCTION MELTING TYPE OF MELTING:
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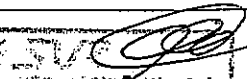
DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Globe Disc	2" - 1500 Lbs	Heat No.: 2654
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CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 182 F11	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00
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NÁLISIS 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)	0.05- 0.15	0.30- 0.60	0.50- 1.00	0.03	0.03	1.0- 1.5	0.44- 0.65						
2654	0.082	0.32	0.45	0.019	0.021	2.23	0.98					1	

PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370									Resiliencia Impact Test (ISO Prob) J; T °C
COLADA HEAT No.	Probeta Test Sample	Dímetro (mm) Diameter Ø	L. Elástico Yield Point N/mm²	Resistencia Tensile Str. N/mm²	Alargamiento Elongation %	Estricción Red. of Area %	Dureza Hardness HB		
Solicitado Requirements	Lo = 4D	12.5	205	415	20	35	232		
2654	Lo = 4D	12.5	235	455	26	52	154		
Insp. Visual y C. Dimensional Visual Insp. And Dimens check		Ensayo Magnaflux Magnaflux test		Insp. Por Gammagrafia Gammaographic Inspection		Ensayo de Presión Pressure Test		Insp. Por Ultrasonidos Ultrasonic Test	
S/ MSS-SP-55		Satisfactory				OK			

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
 Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.
 We hereby certify that the material described above, has been
 and complies to the material requirements of the purchase order.

 SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER Inspector / Work Inspector 18 OCT 2003 QA/QC Department

 SPECIALTY VALVES RESEARCH, S.A. VALVES MANUFACTURER	MATERIAL CERTIFICATES CERTIFICADO DE INSPECCION s/ INSPECTION CERTIFICATE Acc. To EN 10204 / 3.1.B.	Nº/Nr.: YD-A0400-1 FECHA: DATE: 18/10/2003 PAG.: DE SHEET 1 OF 2
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Cliente/Cliet.: VALVES ENTREPRISE Las Mercedes No. 23 - 6º Edificio Abra No.1 48930 LAS ARENAS -BIZKAIA-	<table style="width: 100%;"> <tr> <td style="width: 50%;"> Pedido Nº Purchase Order: P-200343 </td> <td style="width: 50%;"> Cantidad: Quantity: 2 </td> </tr> <tr> <td colspan="2" style="text-align: center;"> Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp:  </td> </tr> </table>	Pedido Nº Purchase Order: P-200343	Cantidad: Quantity: 2	Anagrama del Fabricante / sello del Inspector: Manufacturer's Logo / Inspector stamp: 	
Pedido Nº Purchase Order: P-200343	Cantidad: Quantity: 2				
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:
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CONDICION CONDITION T.T.	NORMALIZED 980 °C x 3 H + TEMPERED 630°C	MODO DE FUSION: INDUCTION MELTING TYPE OF MELTING:
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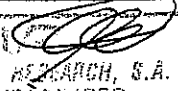
DENOMINACION DE LA PIEZA: CASTING DENOMINATION:	Globe Body Globe Bonnet	2" - 1500 Lbs 2" - 1500 Lbs	Heat No.: Heat No.:	30913 30913
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CALIDAD DE ACERO: STEEL QUALITY:	ASTM A 217 WC6	CONDICIONES DE ENTREGA: TERMS OF DELIVERY:	NACE MR 01-75:00
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NÁLISIS 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)	0.05- 0.20	0.50- 0.80	0.60	0.04	0.045	1.0- 1.5	0.50	0.45- 0.65	0.50	0.10		
30913	0.18	0.63	0.29	0.019	0.023	1.32	0.5	0.015	0.014	0.002	2	

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	Resiliencia Impact Test (ISO Prob) J; T °C
Solicitado Requirements	Lo = 4D	12.5	275	485 - 655	20	35	232	
30913	Lo = 4D	12.5	320	530	27	44	155	
Insp. Visual y C. Dimensional Visual Insp. And Dimens check		Ensayo Magnaflux Magnaflux test		Insp. Por Gammagrafia Gammaographic Inspection		Ensayo de Presión Pressure Test		Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55		Satisfactory				OK		

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.
 We hereby certify that the material described above, has been tested and complies to the material requirements of the purchase order.


SPECIALTY VALVES RESEARCH, S.A.
 VALVES MANUFACTURER
 Inspector / Work Inspector
 18 OCT 2003
 QA/QC Department



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0400-2

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 2 OF 2

Cliente/Cliant.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 1

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H + TEMPERED 630°C

MODO DE FUSION:

INDUCTION MELTING

TYPE OF MELTING:

DENOMINACION DE LA PIEZA:
CASTING DENOMINATION:

Globe Disc

2" - 1500 Lbs

Heat No.:

2654

CALIDAD DE ACERO:
STEEL QUALITY:

ASTM A 182 F11

CONDICIONES DE ENTREGA:
TERMS OF DELIVERY:

NACE MR 01-75:00

ANÁLISIS QUÍMICO - CHEMICAL ANALYSIS

COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.05- 0.15	0.30- 0.60	0.50- 1.00	0.03	0.03	1.0- 1.5	0.44- 0.65						
2654	0.082	0.32	0.45	0.019	0.021	2.23	0.98					1	

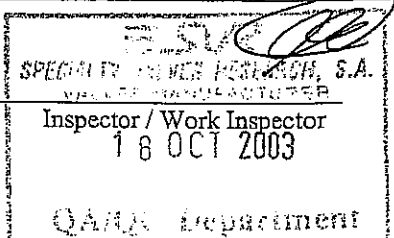
PROPIEDADES MECANICAS / MECHANICAL PROPERTIES Acc. To ASTM A 370

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	Resiliencia Impact Test (ISO Prob) J; T °C
Solicitado Requirements	Lo = 4D	12.5	205	415	20	35	232	
2654	Lo = 4D	12.5	235	455	26	52	154	
Insp. Visual y C. Dimensional Visual Insp. And Dimens check		Ensayo Magnaflux Magnaflux test		Insp. Por Gammagrafia Gammaographic Inspection		Ensayo de Presión Pressure Test		Insp. Por Ultrasonidos Ultrasonic Test
S/ MSS-SP-55		Satisfactory				OK		

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.

We hereby certify that the material described above, has been

and complies to the material requirements of the purchase order.





SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0401-1

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 1 OF 2

Cliente/Client.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 2

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H + TEMPERED 630°C

MODO DE FUSION:

INDUCTION MELTING

TYPE OF MELTING:

DENOMINACION DE LA PIEZA:
CASTING DENOMINATION:

Globe Body

2" - 1500 Lbs

Heat No.:

30913

Globe Bonnet

2" - 1500 Lbs

Heat No.:

30913

CALIDAD DE ACERO:
STEEL QUALITY:

ASTM A 217 WC6

CONDICIONES DE ENTREGA:
TERMS OF DELIVERY:

NACE MR 01-75:00

ANÁLISIS QUÍMICO - CHEMICAL ANALYSIS

COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V	Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.05- 0.20	0.50- 0.80	0.60	0.04	0.045	1.0- 1.5	0.50	0.45- 0.65	0.50	0.10		
30913	0.18	0.63	0.29	0.019	0.023	1.32	0.5	0.015	0.014	0.002	2	

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	Resiliencia Impact Test (ISO Prob) J; T °C
Solicitado Requirements	Lo = 4D	12.5	275	485 - 655	20	35	232	
30913	Lo = 4D	12.5	320	530	27	44	155	
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				OK		

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.

We hereby certify that the material described above, has been
and complies to the material requirements of the purchase order.

SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

Inspector Work Inspector

QA/QC DOCUMENT



SPECIALTY VALVES RESEARCH, S.A.
VALVES MANUFACTURER

MATERIAL CERTIFICATES
CERTIFICADO DE INSPECCION s/
INSPECTION CERTIFICATE Acc. To
EN 10204 / 3.1.B.

Nº/Nr.: YD-A0401-2

FECHA:
DATE: 18/10/2003

PAG.: DE
SHEET 2 OF 2

Cliente/Cient.:

VALVES ENTREPRISE
Las Mercedes No. 23 - 6º
Edificio Abra No.1
48930 LAS ARENAS -BIZKAIA-

Pedido Nº
Purchase Order: P-200343

Cantidad:
Quantity: 1

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:

CONDICION
CONDITION T.T.

NORMALIZED 980 °C x 3 H + TEMPERED 630°C

MODO DE FUSION:

INDUCTION MELTING

TYPE OF MELTING:

DENOMINACION DE LA PIEZA:
CASTING DENOMINATION:

Globe Disc

2" - 1500 Lbs

Heat No.:

2654

CALIDAD DE ACERO:
STEEL QUALITY:

ASTM A 182 F11

CONDICIONES DE ENTREGA:
TERMS OF DELIVERY:

NACE MR 01-75:00

ANÁLISIS QUÍMICO - CHEMICAL ANALYSIS

COLADA HEAT No.	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V		Nº de Piezas Ner. Pieces	Peso kgs. Weight
Solicitado Requirements (max)	0.05- 0.15	0.30- 0.60	0.50- 1.00	0.03	0.03	1.0- 1.5	0.44- 0.65						
2654	0.082	0.32	0.45	0.019	0.021	2.23	0.98					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	Resiliencia Impact Test (ISO Prob) J; T °C
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2654	Lo = 4D	12.5	235	455	26	52	154	

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		OK	

CERTIFICAMOS QUE EL MATERIAL DESCRIPTO AQUI HA SIDO ENSAYADO
Y CUMPLE CON LOS REQUISITOS SOLICITADOS POR EL CLIENTE.

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SPECIALTY VALVES RESEARCH, S.A.

Inspector / Work Inspector
18 OCT 2003

QA/QC Department