

QuarterTurn

RESOURCES INC.



P.O. Box 1455
Ponca City, OK 74602
Office: (580) 765-0183
Fax: (580) 765-0182

QTR WO: Q29940-7
F-580-026, R7

CERTIFICATE OF CONFORMANCE

Customer: ARS Global PO#: 4

Description: 3" 600# WE (XH) Fig 59 Delta Ball Valve, L/O

Quantity: 23-50 of 50 S/N(s): R17518-0004-0001, 0003, 0004, 0005,
0006, 0008, 0009, 0010, 0011, 0012,
0013, 0014, 0015, 0016, 0017, 0018,
0019, 0020, 0021, 0022, 0023, 0024,
0025, 0026, 0027, 0028, 0029, 0030

THE EQUIPMENT LISTED ABOVE CONFORMS TO THE FOLLOWING:

API-6D (X) NACE MR-0175; (X) Fire-Safe per (X)
Part 1 & 2 API 6FA

We certify that the material listed above has been manufactured and tested in accordance with API 6D, Valvitalia standards, and customer purchase order requirements. Material listed has successfully passed all mandatory test and meets supplemental requirements as noted above.

Michael Carson
Quality Assurance Manager

Date: 3/4/22

Body

Body: R17518-0004-0015, 0016, 0018, 0019, 0020, 0021, 0022, 0023, 0024, 0025, 0026, 0027

Test set



IMS S.p.A.

IMMAGINE ASSOCIATI

IMS S.p.A. - Sede via Alessandro Polini, 450 - 20862 Arcore (MB) - www.ims.it
 C.F. 00485910012 - Reg. Imp. Monza e Brianza - P.I. IT 02387540962 - REA: MB 264817
 Cap. Soc. € 40.700.000,00 i.v. - Direzione e coordinamento: JACQUET METAL SERVICE S.A.

Cert Number 1204255
 Test Reference 1902917

13/03/2018

VALVITALIA SPA
 PIAZZA SIGMUND FREUD 1
 20154 MILANO (MI)

Issued from
 IMS SpA
 Filiale di Arcore
 Via Alessandro Polini, 450
 20862 Arcore (MB)

Sold To: VALVITALIA SPA, PIAZZA SIGMUND FREUD 1, 20154 MILANO (MI)
 Ship To: RB SRL, VIA VITALBA 10, 23801 CALOLZIOCORTE (LC)

Customer 1008334/32 Your Order P170007607 (23/11/2017)
 Our Order 913471-6-1 Packing List 864789-1 (01/02/2018)

Product Information

Round bar ASTM A350LF2 Normalized
 230mm x 260mm Fixed length it 36, 37
 V000040307

Heat
 246534

Pcs
 42

KGS
 3.605

Shipped Heats 246534, 433026, 439398

Chemical Composition

C.E.: 0,4118

D.I.: 0

C	Mn	Si	P	S	Cr	Ni	Mo
0,178	1,19	0,23	0,011	0,002	0,09	0,08	0,01
Cu	Al	Sn	Ti	V	Nb	Ca	Co
0,14	0,022	0,009	0,0025	0,004	0,005	0,0008	0,009
B	As	Sb	CE				
0,0001	0,006	0,001	0,412				

Physical Tests

Rm (N/mm ²) (L)	Re (N/mm ²) (L)	A (%) (L)	Z (%) (L)
518 N/ Sq mm	359 N/ Sq mm	33,8 %	72 %
HB			
155			

Heat Treatment

Heat Trmt	Temp	Time	Cool Mthd	Impc	UM	Temp	D	Rslt 1	Rslt 2	Rslt 3
				KCV	J	-50 C	L	160,0	141,0	158,0

Impact Tests

Grano austenitico/Austenitic grain: 7
 Controllo ultrasuoni/Ultrasonic test: 100% ok
 R/R=5
 Norma di riferimento/Reference standard: ASTM A350LF2
 Tipo di certificato del produttore / Type of Mill certificate: EN 10204 - 3.1



13 MAR 2018

We declare that the above described product complies with the order requirements.
 This IMS certificate is a true copy of the producer's original one kept in our archives.
 Branch quality control: Daniele Rampinelli

13/03/2018 01.57 3

Body

Body: R17518-0004-0001, 0003, 0004, 0005, 0006, 0008, 0009, 0010, 0011, 0012, 0013, 0014, 0017

**IMS S.p.A.**

acciaio e ferro

IMS S.p.A. - Sede: via Alessandro Polini, 450 - 20862 Arcore (MB) - www.ims.it
 C.F. 00485910012 - Reg. Imp. Monza e Brianza - P.I. IT 02387540962 - REA, MB 264817
 Cap. Soc. € 40.700.000,00 i.v. - Direzione e coordinamento: JACQUET METAL SERVICE S.A.

Test set

Cert Number 1204253
Test Reference 1845729

13/03/2018

VALVITALIA SPA
 PIAZZA SIGMUND FREUD 1
 20154 MILANO (MI)

Issued from
 IMS SpA
 Filiale di Arcore
 Via Alessandro Polini, 450
 20862 Arcore (MB)

Sold To: VALVITALIA SPA, PIAZZA SIGMUND FREUD 1, 20154 MILANO (MI)
Ship To: RB SRL, VIA VITALBA 10, 23801 CALOLZIOCORTE (LC)

Customer 1008334/32 **Your Order** P170007607 (23/11/2017)
Our Order 913471-6-1 **Packing List** 864789-1 (01/02/2018)

Product Information

Heat
 433026

Pcs
 14

KGS
 1.200

Round bar ASTM A350LF2 Normalized
 230mm x 280mm Fixed length it 36, 37
 V000040307

Shipped Heats 246534,433026,439398

Chemical Composition

C.E.: 0.3847

D.I.: 0

C	Mn	Si	P	S	Cr	Ni	Mo
0,172	1,03	0,27	0,011	0,002	0,11	0,07	0,02
Cu	Al	Sn	Ti	V	Nb	B	Pb
0,14	0,023	0,013	0,0021	0,005	0,004	0,0001	0,0001

Physical Tests

Rm (N/mm ²) (L)	Re (N/mm ²) (L)	A (%) (L)	Z (%) (L)
510 N/ Sq mm	344 N/ Sq mm	29,4 %	66 %
HB			
152-156			

Heat Treatment

Heat Trmt	Temp	Time	Cool Mthd

Impact Tests

Impc	UM	Temp	D	Rslt 1	Rslt 2	Rslt 3
KCV	J	-50 C	L	66,0	80,0	123,0

Microinclusion**ASTM E45**

A	B	C	D
F	G	F	G
0,5	0,5	0,0	0,0

Controllo antimescolanza/Antimix control: 100%
 Controllo superficiale/Surface control: 100%
 Grano austenitico/Austenitic grain: 7
 Controllo ultrasuoni/Ultrasonic test: EN 10308 class 4
 Rapporto di riduzione/Reduction ratio: 7.00
 Norma di riferimento/Reference standard: ASTM A350/A105
 NACE MR 0175, ASME SA350
 Tipo di certificato del produttore / Type of Mill certificate: EN 10204 - 3.1



13 MAR 2018

We declare that the above described product complies with the order requirements.
 This IMS certificate is a true copy of the producer's original one kept in our archives.
 Branch quality control: Daniele Rampinelli

13/03/2018 01.57 1

Body - bell

Body: R17518-0004-0028, 0029, 0030

 VALFORGE via Provinciale 41/43 23813 CORTENOVA -LC- Tel. 0341/90.15.79 Fax. 0341/98.38.64 e-mail: info@valforge.it C.F. P.iva e R.I. Lecco 02967770138 R.E.A. 303308				M7506 CERTIFICATO DI COLLAUDO EN 10204/3.1 ed. 2005 TEST CERTIFICATE EN 10204/3.1 ed. 2005				N° 14.1192.1 Pag. 1 of 1	
CLIENTE/ CUSTOMER VALVITALIA S.p.A.				ORDINE/ P.O. P140005464					
DATA/ P.O. DATE 13/11/2014				COMMESSA V.F. / V.F. Job 14.1192					

item	COLATA Heat	ACCIAIERIA Steel maker	NORMA MATERIALE Material grade	DESCRIZIONE Description	DISEGNO Drawing	QUANTITA' Quantity
1	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØSF 129 Øi 76 Sc 103 mm	54SF031000	3 Pcs.
2	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØE 93 Øi 50 H 40 mm	5NAS021000	2 Pcs.
3	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØSF 129 Øi 76 Sc 103	54SF031000	3 Pcs.
4	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØE 124 Øi 76 H 40 mm	5NAS031000	6 Pcs.
6	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØE 124 Øi 76 H 40 mm	5NAS031000	6 Pcs.
12	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØE 136 H 46 mm	5NFP031N00	3 Pcs.
13	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØSF 95 Øi 51 Sc 72 mm	5NSF021000	1 Pc.
14	801032	ABS SISA	ASTM A350 LF2 cl.1 ed.13	FORGED PIECE to obtain ØE 136 H 59 mm	5NFP036N00	3 Pcs.

ANALISI CHIMICA / Chemical analysis															
COLATA HEAT	C %	Mn %	Si %	P %	S %	Ni %	Cr %	Mo %	Cu %	Al %	V %	Nb %	Ti %	Sn %	As %
801032	0,1770	1,1100	0,2000	0,0090	0,0050	0,0900	0,1200	0,0200	0,1800	0,0330	0,0050	0,0020	0,0020	0,0120	0,0080
	N	O	H	Sb	W	Ca	Pb	Co	B	Zr	Ta				C.E.
	ppm	ppm	ppm	%	%	%	%	%	%	%	%				%
	68,00		1,10	0,0010		0,0022	0,0020	0,0090	0,0001						0,409

PROVA DI TRAZIONE/ Tensile test acc. to ASTM A370 ed. 14 Method ASTM E8/E8M-13a								DUREZZA/ Hardness		
TEST n°	DIREZ. Direction	DIAM. Ø	TEMP. Temp. °C	SNERVAMENTO Yield strength Rp 0.20% >275 Mpa	ROTTURA Tensile strength >485 Mpa	ALLUNG. Elongation A% >22	CONTRAZIONE Reduction area Z% >30	Method: ASTM E10-14 Hardness Type: HBW 187,5/2,5		
								Request	Obtained	
1192T1a	Trans. ¼T	12,50	20°	306,7	501,2	30,2	72,3	<190 HB	144	147 143

PROVA DI RESILIENZA/ Impact Test acc. to ASTM A370 ed. 14 Method ASTM E23-12c									
TEST n°	POSIZIONE Position	DIMENSIONI Size	TIPO PROVINO Specimen Type	TEMP. Temp. °C	SINGOLO Single J >22	MEDIA Average J >28	FRATTURA Shear area	ESPANSIONE LAT. Lateral Expansion	
1192T1b	Trans. ¼T	10x10x55	Charpy V	-46°	108	101 86	98,33	-	

CONTROLLI NDT/ NDT examination			
☐ CONTROLLO UT (UT examination)	☐ CONTROLLO PT (PT examination)	☐ CONTROLLO MT (MT examination)	☒ CONTROLLO VD (VD examination)
Result:	Result:	Result:	Result: Conform
Report nr.:	Report nr.:	Report nr.:	Report nr.: --

NOTE/Note	
-Steel Fully Killed and vacuum degassed	-Reduction Ratio > 4:1
-Steelmaking process by electric furnace	-No welding with filler metal has been performed
-Material supplied free from radioactive contamination	-According to ANSI /NACE MR 0175/ISO15156 ed. 2009
-Products conform with the prescription of order	-Products manufactured in accordance with Valvitalia MDS 0D4 Rev. 3

TRATTAMENTO TERMICO/ Heat treatment						
1 Normalizzato / Normalized	H.T.	Heating rate °C/Hour	Holding time Hours	Holding temp. °C	Cooling media	Water temperature
2 Solubilizzato/ Solution treat and quench						Start End
3 Bonificato/ Quenched and tempered	1	<100°	3hrs	920°	Air	
4 Normalizzato e rinvenuto/ Normalized and tempered						

VALFORGE S.R.L. Réparto Qualità / Quality Dept.	VALFORGE S.R.L. Resp. Qualità / Quality Manager	ISPETTORI inspectors	
			
22/12/2014			

38700

Closures
Closures: R17518-0004-0001, 0003, 0004, 0005, 0006, 0008, 0009, 0010, 0011, 0012, 0013, 0014, 0015, 0016, 0017, 0018, 0019, 0020, 0021, 0022, 0023, 0024, 0025, 0026, 0027, 0028, 0029, 0030



IMS S.p.A.

Test set

IMS S.p.A. - Sede: via Alessandro Polini, 450 - 20862 Arcore (MB) - www.ims.it
C.F. 00485910012 - Reg. Imp. Monza e Brianza - P.I. IT 02387540962 - REA: MB 264817
Cap. Soc. € 40.700.000,00 i.v. - Direzione e coordinamento: JACQUET METAL SERVICE S.A.

Cert Number 1204256
Test Reference 1735367

13/03/2018

VALVITALIA SPA
PIAZZA SIGMUND FREUD 1
20154 MILANO (MI)

Issued from
IMS SpA
Filiale di Arcore
Via Alessandro Polini, 450
20862 Arcore (MB)

Sold To: VALVITALIA SPA, PIAZZA SIGMUND FREUD 1, 20154 MILANO (MI)
Ship To: RB SRL, VIA VITALBA 10, 23801 CALOLZIOCORTE (LC)

Customer 1008334/32 Your Order Reference P170007607 (23/11/2017)
Our Order 913471-5-1 Packing List 864789-1 (01/02/2018)

Round bar ASTM A350LF2 Normalized
200mm x 125mm Fixed length it 32
V000189453

Product Information

Heat
PS334510

Lot
201429841

Pcs
30

KGS
940

Shipped Heats PS334510

Chemical Composition

C.E.: 0.4275

D.I.: 0

C	Mn	Si	P	S	Cr	Ni	Mo
0,18	1,18	0,23	0,012	0,006	0,13	0,11	0,01
Cu	Al	Sn	V	Nb	H		
0,22	0,033	0,011	0,004	0,003	0,0002		

Physical Tests

Rm (N/mm ²) (L)	Re (N/mm ²) (L)	A (%) (L)	Z (%) (L)
521 N/ Sq mm	347 N/ Sq mm	44 %	62 %
HB (L)			
154.0			

Heat Treatment

Impact Tests

Heat Trmt	Temp	Time	Cool Mthd	Impc	UM	Temp	D	Rslt 1	Rslt 2	Rslt 3
				KCV	J	-46 C	L	41,0	44,0	46,0

Grano austenitico/Austenitic grain: 7
Controllo ultrasuoni/Ultrasonic test: EN 10308 class 2
Norma di riferimento/Reference standard: ASTM A350
Tipo di certificato/Type of certificate: EN 10204 - 3.1



13 MAR 2018

We declare that the above described product complies with the order requirements.
This IMS certificate is a true copy of the producer's original one kept in our archives.
Branch quality control: Daniele Rampinelli

13/03/2018 02.03 1

Stem: R17518-0004-0001, 0003, 0004, 0005, 0006, 0008, 0009, 0010, 0011, 0012, 0013, 0014, 0015, 0016, 0017, 0018, 0019, 0020, 0021, 0022, 0023, 0024, 0025, 0026, 0027, 0028, 0029, 0030



IMS S.p.A. - Sede: via Alessandro Polini, 450 - 20862 Arcore (MB) - www.ims.it
C.F. 00485910012 - Reg. Imp. Monza e Brianza - P.I. IT 02387540962 - REA: MB 264817
Cap. Soc. € 40.700.000,00 i.v. - Direzione e coordinamento: JACQUET METAL SERVICE S.A.

Cert Number 1203507
Test Reference 1894669

27/02/2018

RASTELLI CLAUDIO S.N.C.
OFFICINA MECCANICA
VIA S.GIORGIO 96
27019 VILLANTERIO (PV)

Issued from
IMS SpA
Filiale di Arcore
Via Alessandro Polini, 450
20862 Arcore (MB)

Sold To: RASTELLI CLAUDIO S.N.C., OFFICINA MECCANICA, VIA S.GIORGIO 96, 27019 VILLANTERIO (PV)
Ship To: RASTELLI CLAUDIO S.N.C., VIA S. GIORGIO 96, 27019 VILLANTERIO (PV)

Customer 1004496/1 Your Order MAIL (22/12/2017)
Our Order 918554-5-1 Packing List 861213-1 (10/01/2018)

Reference

Round bar 42CrMo4 Hardened and tempered
45mm Mill length

Heat
246054

Pcs
3

KGS
229

Shipped Heats 246054

Chemical Composition

C	Mn	Si	P	S	Cr	Ni	Mo
0,411	0,88	0,2	0,011	0,02	1,16	0,17	0,17
Cu	Al	N	Sn	Ti	V	Nb	Ca
0,22	0,015	73 ppm	0,011	0,0025	0,007	0,006	0,0004
Co	B	As	Sb				
0,01	0,0001	0,006	0,001				

Physical Tests

Rm (N/mm ²) (L)	Re (N/mm ²) (L)	A (%) (L)	Z (%) (L)
976 N/ Sq mm	819 N/ Sq mm	14,4 %	53 %

Jominy/Hardness Rockwell C

1,5mm	3,0mm	5,0mm	7,0mm	9,0mm	11,0mm	13,0mm	15,0mm
58,5	58	57,5	56,8	56	55,1	53,1	51,4
20,0mm	25,0mm	30,0mm	35,0mm	40,0mm	45,0mm	50,0mm	
49,5	47,7	45,6	43,9	41,9	40,7	40,2	

Heat Treatment

Heat Trmt	Temp	Time	Cool Mthd	Impc	UM	Temp	D	Rslt 1	Rslt 2	Rslt 3
				KCV	J	-46 C	L	33,0	39,0	36,0
				KCV	J	20 C	L	68,0	60,0	64,0

Microinclusion

ASTM E45

A	B	C	D
F	G	F	G
2,0	1,5	1,0	0,5

Controllo antimescolanza/Antimix control: 100% ok

Controllo superficiale/Surface control: 100% ok

Grano austenitico/Austenitic grain: 7 EN/ISO 643

Controllo ultrasuoni/Ultrasonic test: 100% ok

R/R=36

Acciaio degasato sottovuoto/Vacuum degassed steel

Norma di riferimento/Reference standard: EN 10083-3

Tipo di certificato del produttore / Type of Mill certificate: EN 10204 - 3.1

conforme a/According to: AISI 4140



28 FEB 2018

We declare that the above described product complies with the order requirements.
This IMS certificate is a true copy of the producer's original one kept in our archives.
Branch quality control: Daniele Rampinelli

27/02/2018 05.23 1

Top Cover

Top Cover: R17518-0004-0001, 0003, 0004, 0005, 0006, 0008, 0009, 0010, 0011, 0012, 0013, 0014, 0015, 0016, 0017, 0018, 0019, 0020, 0021, 0022, 0023, 0024, 0025, 0026, 0027, 0028, 0029, 0030

Test set



IMS S.p.A.
acciai speciali

IMS S.p.A. - Sede: via Alessandro Polini, 450 - 20862 Arcore (MB) - www.ims.it
C.F. 00485910012 - Reg. Imp. Monza e Brianza - P.I. IT 02387540962 - REA: MB 264817
Cap. Soc. € 40.700.000,00 i.v. - Direzione e coordinamento: JACQUET METAL SERVICE S.A.

Cert Number 1201621
Test Reference 1888449

26/01/2018

LUSE OFF. MECC. DI CAVANNA SERGIO
VIA EMILIA INT. 61/F
27050 REDAVALLE (PV)

Issued from
IMS SpA
Filiale di Arcore
Via Alessandro Polini, 450
20862 Arcore (MB)

Sold To: LUSE OFF. MECC. DI CAVANNA SERGIO, VIA EMILIA INT. 61/F, 27050 REDAVALLE (PV)
Ship To: LUSE OFF. MECC. DI CAVANNA SERGIO, VIA EMILIA INT. 61/F, 27050 REDAVALLE (PV)

Customer 1001500/1
Our Order 918993-2-1

Your Order 2 (08/01/2018)
Packing List 863323-1 (23/01/2018)

Reference**Product Information**

Heat
242834

Pcs
1

KGS
356

Round bar ASTM A350LF2 Normalized
95mm Mill length

Shipped Heats 242834

Chemical Composition

C.E.: 0.4069

D.I.: 0

C	Mn	Si	P	S	Cr	Ni	Mo
0,17	1,11	0,24	0,011	0,001	0,13	0,11	0,03
Cu	Al	Sn	Ti	V	Nb	Ca	Co
0,17	0,039	0,007	0,0038	0,006	0,005	0,0011	0,009
Pb	B	As	Sb				
0,001	0,0001	0,004	0,001				

Physical Tests

Rm (N/mm ²) (L)	Re (N/mm ²) (L)	A (%) (L)	Z (%) (L)
500 N/ Sq mm	347 N/ Sq mm	33,4 %	67 %
HB			
148-149			

Heat Treatment

Heat Trmt	Temp	Time	Cool Mthd	Impc	UM	Temp	D	Rslt 1	Rslt 2	Rslt 3
				KCV	J	-50 C	L	102,0	124,0	80,0

Impact Tests**Microinclusion****ASTM E45**

A	B	C	D
F	G	F	G
1,0	1,0	1,0	0,5
0,0	0,0	0,0	1,0
1,0	1,0	1,0	1,0

Controllo antimescolanza/Antimix control: 100% ok

Controllo superficiale/Surface control: 100% ok

Grano austenitico/Austenitic grain: 8 ASTM E112

Controllo ultrasuoni/Ultrasonic test: 100% ok EN 10308 Class 4/INNSER TPX154 Class1/SEP 1920 Class C

R/R=8

Acciaio degasato sottovuoto/Vacuum degassed steel

Norma di riferimento/Reference standard: ASTM A350LF2 Class 1/A105N; NACE MR0175; ASME SA350; PED 2014/68/EU

Tipo di certificato del produttore / Type of Mill certificate: EN 10204 - 3.1

Material is supplied free from radioactive contamination



05 MAR 2018

We declare that the above described product complies with the order requirements.
This IMS certificate is a true copy of the producer's original one kept in our archives.
Branch quality control: Daniele Rampinelli