



## VALVE TEST CERTIFICATE / CERTIFICATE OF CONFORMANCE

EF

Certificate No. : 120195-8

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### VALVE INFORMATION

<b>S.O.#/P.O.#</b>	12853 / P388895	<b>S.O. ITEM #</b>	8, 15 ✓
<b>VALVE TYPE</b>	TRUNNION BALL VALVE	<b>MODEL NUMBER</b>	EB10F063TA01S3VG31
<b>SIZE</b>	10"	<b>SERIAL NUMBER</b>	E 12019508-1 TO 03
<b>CLASS</b>	600	<b>QUANTITY</b>	3

### VALVE DETAIL

<b>BODY/ADAPTER</b>	ASTM A105N	<b>BALL</b>	ASTM A182 F316
<b>STEM</b>	ASTM A182 F316	<b>SUPPORT PLATE</b>	ASTM A105N+ENP
<b>SEAT INSERT</b>	MOLON	<b>SEAT</b>	ASTM A182 F316
<b>SEALS</b>	GRAPHITE	<b>O-RINGS</b>	VITON B
<b>BOLTS</b>	A193 B7M	<b>NUTS</b>	A194 2HM

### VALVE DESIGN CODE

<b>DESIGN CODE:</b>	<u>ASME B16.34</u>	YES	<b>DESIGN CODE:</b>	<u>ASME B16.5</u>	YES
	<u>API 6D / ISO 14313</u>	YES		<u>API 607 Rev 5</u>	YES
	<u>ASME B16.10</u>	YES		<u>CSA Z662 Region 3</u>	YES
	<u>API 608</u>	YES			
	<u>CSA Z245.15</u>	YES		<u>NACE MR0175/ISO 15156</u>	YES

### VALVE TEST RESULTS

TEST PREFORMED	CODE	HYDRO SHELL	HYDRO SEAT	AIR SEAT	BACK SEAT	
<b>PRESSURE- PSI/ MPA /BAR</b>		MPA/PSI	MPA/PSI	MPA/PSI	MPA/PSI	-
<b>TEST PRESSURE</b>	API 6D	15.6/2250	11.4/1650	0.55/80	-	-
<b>DURATION (MINUTES MIN.)</b>	API 6D	5	5	5	-	-
<b>TEST RESULTS</b>		PASS	PASS	PASS	-	-
<b>DIMENSIONAL CHECK</b>	B16.10	PASS	-	-	-	-
<b>VISUAL</b>	MSS-SP-55	PASS	-	-	-	-

We certify all valves indicated in this certificate are manufactured, inspected and tested in accordance with standards noted.



DATE: July 24, 2015

Zengkang Zhu



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### TRACEABILITY SHEET

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	SERIAL NO.	BODY HEAT #	ADAPTER HEAT #	BALL HEAT #	STEM HEAT #	Support Plate HEAT#	BOLTING HEAT#	NUT HEAT#
1	E12019508-01	K1732	K1732	FR6856L	A1501L	K3317	J21307082	F2040575
2	E12019508-02	K1732	K1732	FR6856L	A1501L	K3317	J21307082	F2040575
3	E12019508-03	K1732	K1732	FR6856L	A1501L	K3317	J21307082	F2040575
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DATE: 24/Jul/15



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# MATERIAL TEST REPORT - EN10204 3.1

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## CHEMICAL ANALYSIS

Component	Material	Heat-No.	C (%)	Mn (%)	Si (%)	Cr (%)	Ni (%)	Mo (%)	P (%)	S (%)	Cu (%)	V (%)	Nb (%)	Residual Elements	Carbon Equivalent
	A105N REV 11	Requirements	≤0.35	0.60-1.05	0.10-0.35	≤0.30	≤0.40	≤0.12	≤0.035	≤0.040	≤0.40	≤0.08	—	≤1.00	≤0.48
BODY	A105N	K1732	0.180	0.900	0.260	0.020	0.010	<0.01	0.008	0.006	0.010	<0.01	—	0.04	0.34
ADAPTER	A105N	K1732	0.180	0.900	0.260	0.020	0.010	<0.01	0.008	0.006	0.010	<0.01	—	0.04	0.34
SUPPORT PLATE	A105N	K3317	0.200	0.870	0.230	0.040	0.050	<0.01	0.022	0.016	0.130	<0.01	—	0.22	0.37
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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Component	Material	Heat-No.	C (%)	Mn (%)	Si (%)	Cr (%)	Ni (%)	Mo (%)	P (%)	S (%)	Cu (%)	V (%)	N (%)	Residual Elements	CE
	A182 F316 REV 11a	Requirements	≤0.08	≤2.00	≤1.00	16.0-18.0	10.0-14.0	2.0-3.0	≤0.045	≤0.030	—	—	N ≤ 0.1	—	—
BALL	F316	FR6856L	0.025	1.072	0.397	16.400	10.060	2.039	0.039	0.002	—	—	0.045	—	—
STEM	F316	A1501L	0.017	1.070	0.350	16.370	10.030	2.030	0.039	0.003	—	—	0.040	—	—

Component	Material	Heat-No.	C (%)	Mn (%)	Si (%)	Cr (%)	Ni (%)	Mo (%)	P (%)	S (%)	Cu (%)	V (%)	Nb (%)	Residual Elements	Carbon Equivalent
STUDS	A193 B7M REV 11	Requirements	.37-.49	.65-1.10	0.15-.035	0.75-1.20	—	0.15-0.25	≤0.035	≤0.040	—	—	—	—	—
NUTS	A194 2HM REV 10a	Requirements	>0.4	≤1.00	≤0.40	—	—	—	≤0.040	≤0.050	—	—	—	—	—
STUDS	B7M	J21307082	0.400	0.780	0.210	0.925	—	0.156	0.013	0.006	—	—	—	—	—
NUTS	2HM	F2040575	0.440	0.570	0.220	—	—	—	0.021	0.012	—	—	—	—	—

We certify all materials are manufactured inspected and tested in accordance with material specification.



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July 24, 2015



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**MATERIAL TEST REPORT - EN10204 3.1**

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**MECHANICAL PROPERTIES**

Component	Material	Heat-No.	Yield strength ksi (MPa)	Tensile strength ksi (MPa)	Elongation (%)	Reduction of area (%)	Impact Value (J) @ -46 deg C	Hardness BHN
BODY	A105N REV 11	Requirements	≥36 (≥260)	≥70 (≥486)	≥22	≥30	—	≤187
	A105N	K1732	368	531	34	77	—	152
ADAPTER	A105N	K1732	368	531	34	77	—	152
	A105N	K3317	385	535	33	77	—	149
BALL	A182 F316 REV 11a	Requirements	≥30(≥205)	≥75(≥516)	≥30	≥60	—	≤234
	F316	FR6856L	226	555	39	69	—	175
STEM	F316	A1501L	296	598	64	76	—	152
STUDS	A193 B7M REV 11	Requirements	≥80 (≥550)	≥100 (≥690)	≥18	≥50	—	≤235
	A194 2HM REV 10a	Requirements	—	—	—	—	—	159-236
STUDS	B7M	J21307082	634	744	26	63	—	223
NUTS	2HM	F2040575	—	—	—	—	—	220

**HEAT TREATMENT STATUS (IF APPLICABLE)**

A105N: Normalized to 920 °C, 2 hours minimum, cooling in air.  
(NACE MR 01-75 / ISO 15156)

F316: Solution Treatment 1040 °C, 2 hours minimum, cooling in water.

B7M: Quenched to 870 °C, 1 hours minimum, cooling in oil, tempered to 680 °C, 1.5 hours minimum, cooling in air.

2HM: Quenched to 830 °C, 1 hours minimum, cooling in oil, tempered to 680 °C, 1.5 hours minimum, cooling in air.

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