 <b>DHV VALVE GROUP</b>	<b>MATERIAL TEST REPORT</b> <b>TEST CERTIFICATE</b>			REPORT NO.	M19032938
				DATE	Mar/29/2019
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CUSTOMER	CUSTOMER P.O.		DHV CONTROL NO.	ITEM NO.	LINE NO./CODE
ALTEK Industrial	ST4169		SO1804023	23	NA
FIGURE NUMBER	SIZE	CLASS	END TYPE	QTY.	TAG NO.
B5603F1X-GO-DIB-1-EDS	6"FB	600LB	Raised Face Flanged End	50 PCS	NA
VALVE TYPE	VALVE DESCRIPTION		OPERATE OP	SERIAL NUMBER	
TRUNNION BALL VALVE	Three-Piece Body, A350 LF2 Body, C.S.+ENP Trim, DEVLON+VITON-GLT-AED Seat Insert		Gear Operator	18042872-18042921	
DESIGN STANDARD	QSL		FIRE SAFE	I.A.W. N.A.C.E.	
API 6D-2014	<input checked="" type="checkbox"/> QSL 1 <input type="checkbox"/> QSL 2 <input type="checkbox"/> QSL 3 <input type="checkbox"/> QSL 4	<input checked="" type="checkbox"/> API 6FA, 4RD.Ed <input type="checkbox"/> API 607, 7TH.Ed	<input checked="" type="checkbox"/> NACE MR-0175-2015 <input type="checkbox"/> NACE MR-0103-2015		

**SEALING SURFACE AND BASE MATERIAL**

NAME OF PART	BODY	ADAPTER	BALL	SEAT ASSEMBLY	STEM
BASE MATERIAL	A350 LF2	A350 LF2	A350 LF2	A350 LF2	A29 4140
FACE MATERIAL	NA	NA	ENP	ENP+DEVLON+VITON-GLT-AED	ENP
NAME OF PART	BOLT/STUDS	NUTS	SPRING	GASKET	O-RING SEAL
BASE MATERIAL	A320 L7M	A194 7M	B637-UNS N07750	S.S.+GRAPHITE	VITON-GLT+HNBR
FACE MATERIAL	NA	NA	NA	NA	NA

**PRESSURE TEST REPORT**


Have been tested good according to API 6D, CSA Z245.15-17 and the purchase order requirements


	SHELL (HYDROSTATIC)	SEAT(BI-DIRECTIONAL) CLOSURE TESTING					OPTIONAL SEAT TESTING	
		STANDARD		OPTIONAL		STANDARD		
		H.P. CLOSURE (HYDROSTATIC) <input checked="" type="checkbox"/> REQUIRED <input type="checkbox"/> OPTIONAL		L.P. CLOSURE (AIR) <input checked="" type="checkbox"/> REQUIRED <input type="checkbox"/> OPTIONAL		<input checked="" type="checkbox"/> DBB	<input checked="" type="checkbox"/> DIB-1	<input type="checkbox"/> DIB-2
		UP STREAM	DOWN STREAM	UP STREAM	DOWN STREAM	FROM BOTH VALVE ENDS	CAVITY TO BOTH DPE SEATS	CAVIT TO ONE DPE SEAT
PRESSURE ( PSIG)	2225	1650	1650	80	80	1650	1650	NA
DURATION (Minutes)	5	5	5	5	5	5	5	NA
RESULT	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	

**OTHER INSPECTION**

	DIMENSION	MARKING	PAINTING	PACKAGE	FUNCTIONAL	VISUAL	OTHER
RESULT	GOOD	GOOD	GOOD	GOOD	GOOD	ASTM A961-GOOD	NA

We hereby certify that valves listed above were manufactured, tested and inspected in accordance with the applicable valve standards and other requirements designated in the purchase order. The information contained in this report is true and correct to the best of our knowledge.

WITNESSED BY:  **DHV Industries, Inc.**  
 3451 Pegasus Drive  
 Bakersfield, CA 93308. U.S.A

QUALITY ASSURANCE MANAGER:   
**Terry Gonsman**  
 Quality Assurance Manager

This certificate is in compliance with EN 10204 3.1.



DHV VALVE GROUP

# MATERIAL TEST REPORT VALVE TRACEABILITY

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CUSTOMER	CUSTOMER P.O.	VALVE TYPE	SIZE/CLASS	FIGURE NUMBER
ALTEK Industrial	ST4169	TRUNNION BALL VALVE	6"FB 600LB	B5603F1X-GO-DIB-1-EDS

**CRATE NO.:** 13-37 **QUANTITIES:** 50 PCS

SERIAL NO.	MATERIAL AND HEAT NUMBER						REMARKS
	BODY	ADAPTER		BALL	STEM	SEAT	
	A350 LF2	A350 LF2	A350 LF2	A350 LF2	A29 4140	A350 LF2	
18042872	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042873	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042874	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042875	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042876	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042877	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042878	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042879	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042880	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042881	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042882	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042883	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042884	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042885	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042886	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042887	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042888	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042889	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042890	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042891	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042892	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042893	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042894	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042895	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042896	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042897	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042898	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042899	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042900	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042901	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042902	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042903	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042904	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042905	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042906	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042907	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042908	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042909	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042910	18070151	18060129	18060129	ZC182237	HH1808	18E20394	
18042911	18070151	18060129	18060129	ZC182237	HH1808	18E20394	





DHV VALVE GROUP

# MATERIAL TEST REPORT MILL CERTIFICATE

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CUSTOMER	CUSTOMER P.O.	VALVE TYPE	SIZE/CLASS	FIGURE NUMBER
ALTEK Industrial	ST4169	TRUNNION BALL VALVE	6"FB 600LB	B5603F1X-GO-DIB-1-EDS

MATERIAL	ASTM A350 LF2	MATERIAL ORIGIN	P.R.C.
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### HEAT TREATMENT

HEAT TREATMENT	TEMP. °C	TIME @ TEMP. °C (HR)	FURNACE	COOLING PROCESS	REMARK
Quench	930	1h/25mm, ≥2h	Elec	Water cooling to room temp.	
Temper	620	1h/25mm, ≥1h	Gas or Elec	Air cooling to room temp.	

### CHEMICAL AND MECHANICAL TEST REPORT

Have been tested good according to the material specification and purchase order requirements

STD	CHEMICAL COMPOSITION % (≤)													
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb	Bal.	Cr+Mo	CE
	0.230	0.60-1.35	0.035	0.025	0.15-0.30	0.400	0.400	0.300	0.120	0.080	0.020	1.000	0.320	0.430
HEAT NO.	MECHANICAL PROPERTIES (≥)													
	T.S. MPa	Y.S. MPa	EL. (%)	R.A. (%)	HARD (HB)	IMPACT TEST (-46°C) J, 10*10mm longitudinal direction								
	485-655	250	22	30	140-197	SINGLE MIN ≥27J								
18070151	0.180	0.990	0.011	0.009	0.250	0.096	0.038	0.086	0.012	0.001	0.005	0.233	0.098	0.374
	513	335	35	78	159	151	158	164						
18060129	0.190	0.930	0.011	0.008	0.230	0.087	0.035	0.110	0.004	0.001	0.001	0.237	0.114	0.376
	528	345	36	78	165	139	152	148						
ZC182237	0.210	0.920	0.012	0.004	0.210	0.040	0.030	0.040	0.018	0.003	0.015	0.131	0.058	0.380
	550	288	34	47	178	62	55	67						
18E20394	0.185	0.975	0.016	0.005	0.239	0.163	0.051	0.005	0.010	0.002	0.002	0.231	0.015	0.365
	528	351	34	70	176	102	121	115						

We hereby certify that the material was manufactured, sampled, tested and inspected in accordance with the applicable material specifications and other requirements designated in the purchase order. The information contained in this report is true and correct to the best of our knowledge.

WITNESSED BY: *DHV Industries, Inc.*  
**3451 Pegasus Drive**  
**Bakersfield, CA 93308, U.S.A**

QUALITY ASSURANCE MANAGER: *Terry Gonsman*  
**Terry Gonsman**  
**Quality Assurance Manager**

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DHV VALVE GROUP

# MATERIAL TEST REPORT MILL CERTIFICATE

REPORT NO.	M19032938
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CUSTOMER	CUSTOMER P.O.	VALVE TYPE	SIZE/CLASS	FIGURE NUMBER
ALTEK Industrial	ST4169	TRUNNION BALL VALVE	6"FB 600LB	B5603F1X-GO-DIB-1-EDS

MATERIAL	ASTM A29 4140	MATERIAL ORIGIN	P.R.C.
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### HEAT TREATMENT

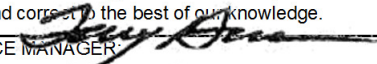
HEAT TREATMENT	TEMP. °C	TIME @ TEMP. °C (HR)	FURNACE	COOLING PROCESS	REMARK
Quench	930	1h/25mm, ≥2h	Elec	Water cooling to room temp.	
Temper	620	1h/25mm, ≥1h	Gas or Elec	Air cooling to room temp.	

### CHEMICAL AND MECHANICAL TEST REPORT

Have been tested good according to the material specification and purchase order requirements

STD	CHEMICAL COMPOSITION % (≤)																		
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb	AL	N	Other					
	0.38-0.43	0.75-1.00	0.035	0.040	0.15-0.35	0.350	0.250	0.80-1.10	0.15-0.25	-	-	-	-	-					
HEAT NO.	MECHANICAL PROPERTIES (≥)						IMPACT TEST (-46°C) J, 10*10mm longitudinal direction												
	T.S. MPa	Y.S. MPa	EL. (%)	R.A. (%)	HARD (HB)	SINGLE MIN ≥27 J													
HH1808	690	550	18	45	182-237	0.400	0.840	0.008	0.008	0.240	0.060	0.010	0.980	0.190	-	-	-	-	-
	746	559	23	54	220														

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**3451 Pegasus Drive**  
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 Quality Assurance Manager

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