

CHAPTER 7

SPECIFIC EQUIPMENTS

- 7.4: INNER TANK SAFETY DEVICES

7.4.1: Pression/Depression Safety valve

ANDERSON GREENWOOD 9390C06ALTA

Items Z 72036 and Z 72037

CUSTOMER: **TYCO VALVES CONTROLS**

CUST. P.O. #: **FP53038862**

CUST. WITNESS: _____

DATE WITNESSED: _____

ANDERSON, GREENWOOD & CO.

FUNCTIONAL TEST REPORT

PILOT OPERATED VALVES (1)

AGCO S/N: **U928970000.002**

DATE: **7-19-05**

VALVE TYPE: **9390CO6ACTA**

GAUGE NO.: **MS-01 MS-09**

SERIAL NO.	TAG NO.	PILOT					MAIN VALVE					FINAL ASSEMBLY			
		NAME PLATE SET	CRACKING PRESSURE	ACTUAL SET (2) (3)	SPECIFIED RESEAT	ACTUAL RESEAT (2) (3)	SEAT SEALING PRESSURE	DOVE PRESSURE @ ACTUAL SET	ASSY & TEST (5)	INLET HYDRO (6)	ASSY (5)	LEAK TEST (4) (7)	BP TEST (7)	VACUUM SET (WEIGHT LOADED)	TEST (5)
1) 05-22750	783-02	2.90	2.78	2.95	2.68	2.70	—	.30	A.M.	NA	92	.82	NA	1"	NA
2) 05-22751	783-02	2.90	2.78	2.95	2.68	2.70	—	.30	A.M.	NA	92	.82	NA	1"	NA
3) 05-22752	783-02	2.90	2.78	2.95	2.68	2.70	—	.30	A.M.	NA	92	.82	NA	1"	NA
4) 05-22753	783-02	2.90	2.78	2.95	2.68	2.70	—	.30	A.M.	NA	92	.82	NA	1"	NA
5)															
6)															
7)															

TRACEABILITY REQUIREMENTS - HEAT/CODE NUMBERS FOR TRACEABLE COMPONENTS

	BODY	CAP	INLET FLG.	OUT. FLG.	NOZZLE	P. Body	X-RAY NO.	X-RAY NO.
1)	610F	418591	574412		04446C	C059		
2)	631F	574412	574412		04446C	C059		
3)	610F	418591	574412		04146C	C059		
4)	631F	574412	574412		04146C	C059		
5)								
6)								
7)								

INSPECTED BY

(1) REFER TO FUNCTIONAL TEST DOCUMENT FOR PROCEDURE AND TOLERANCES.

(2) SET OR RESEAT PRESSURE IS WHERE DOME PRESSURE DECREASES OR INCREASES TO CAUSE MAIN VALVE TO OPEN OR CLOSE.

(3) COLD DIFFERENTIAL SET FOR STEAM VALVES SET ON AIR.

(4) CHECKED AT 30% AND 90% OF SET.

(5) INITIAL OF TECHNICIAN PERFORMING OPERATION.

(6) ASME, CUSTOMER (CUST) OR N/A (SEE FORM 404 FOR TEST REPORT).

(7) SPECIFY TEST PRESSURE.

UNITS OF MEASURE				TEST MEDIUM			
UNITS	PRES.	VAC.	ITEM	AIR	H ₂ O	STEAM	
PSIG	✓		PILOT	✓			
"WC			MAIN VLV	✓			

JUL 20 2005

ha certified by / DATE

ANN
RECUA**CASTCO** **CAST ALUMINUM CORPORATION**

ENGINEERED CASTINGS

887 WHITNEY STREET • SAN LEANDRO, CA 94577
(510) 562-5711 • FAX (510) 562-7686**HEAT CERTIFICATION**CUSTOMER: **Anderson Greenwood**Purchase Order No.: **Z15096**Quantity: **10**Part No.: **08-0220-002**Description: **6x8 Body**Material: **A 356**Specifications: **T 6**Serial No.: **610 F**

Annealed

Stress Relieved

Tempering Temp:

Solution:

Age:

Hardness Test

Time at Heat:

Quench H2O:

Log:

We certify that temperature and test results were obtained with standard approved methods and that heat treatment described above is true and correct.

Signed:

Date:

STORK
Materials Technology

Stork Materials Testing & Inspection

Material Testing and Non-Destructive Testing

Contact: Billy Menicou
Castco Cast Aluminum Corp.
Castco Cast Aluminum Corp.
667 Whitney Street

San Leandro, CA 94577

15062 Bolsa Chica
Huntington Beach, CA 92649
USA

Telephone : (714) 892-1861
Telefax : (714) 892-8159
Website : www.storkamtl.com

Date: 12/22/2004 P.O. No.: 2425 W/O No.: CAS070-12-21-53492-1

TEST CERTIFICATE

P/N	06-0220-001 (B10F)
Customer Name:	Anderson Greenwood

FULL TENSILE					
Specification:	ASME SB-26-01, 356-T6				
Test Method:	ASTM B 557-02a				
Sample No.	Diameter	Area	Yield Strength At 0.2% Offset (psi)	Ultimate Tensile Strength (psi)	% Elongation in 2" (4D)
1	.499	.1956	30,600	40,000	7.5
Requirements:			20,000 Min.	30,000 Min.	3% Min.

Note: Test results determined from cast specimen

ASME SB 26-01 356				
Element		Result %	Min %	Max %
Si	=	6.61	6.50	7.50
Fe	=	0.11	0.00	0.60
Cu	<	0.01	0.00	0.25
Mn	<	0.01	0.00	0.35
Mg	=	0.24	0.20	0.45
Zn	<	0.01	0.00	0.35
Ti	=	0.14	0.00	0.25
OE	<	0.05	0.00	0.05
OT	<	0.15	0.00	0.15
Al	=	Balance	Balance	Balance

Chemical Analysis Performed by Optical Emission per SOP 2.02, Revision 1

INSPECTED BY
MATERIAL CONFORMS TO SPECIFICATION

DEC 20 2004

EN 10204 3.1 E



NOT AND
MATERIALS TESTING
FABRICATOR TESTING



CHEMICAL
ANALYSIS
FABRICATOR TESTING

Respectfully submitted

[Signature]
Lynn Ho
Senior Quality Administrator

The information contained in this certification represents only the material submitted and is certified only for the quantities tested. Reproduction except in full is reserved pending written approval. All testing was performed in a mercury-free environment. AZLA accreditation No. 0093-01 and 0093-02. Stork Materials Testing and Inspection is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group



FROM : CASTCO

PHONE NO. : 5105627686

Mar. 08 2005 11:07AM P1

ATTN ANIKA



CASTCO
CAST ALUMINUM CORPORATION
ENGINEERED CASTINGS
687 WHITNEY STREET • SAN LEANDRO, CA 94577
(510) 562-5711 • FAX (510) 562-7686

HEAT CERTIFICATION

CUSTOMER: Anderson Greenwood
Purchase Order No.: Z18628
Quantity: 10
Part No.: 06-0220-001
Description: 6x8 Body
Material: A 356
Specifications: T 6
Serial No.: 631 F

Annealed _____
Stress Relieved _____ **Time at Heat:** _____
Tempering Temp: _____ **Quench H2O:** 150°F
Solution: 8 HRS @ 1000°F
Age: 2 3/4 HRS @ 310°F
Hardness Test: 72-78 BHN **Log:** 3/1/05

We certify that temperature and test results were obtained with standard approved methods and that heat treatment described above is true and correct.

Signed: _____

Date: _____

Bobby Shure
3/7/05

INSPECTED BY

MAR 11 2005

G. L. Miller

STORK
Materials Technology

Stork Materials Testing & Inspection

Material Testing and Non-Destructive Testing

Contact: Billy Menicou
Castco Cast Aluminum Corp.
Castco Cast Aluminum Corp.
667 Whitney Street

San Leandro, CA 94577

15062 Bolsa Chica
Huntington Beach, CA 92649
USA

Telephone : (714) 892-1961
Telefax : (714) 892-8159
Website : www.storksmti.com

Date: 3/7/2005

P.O. No.: 2648

W/O No.:

CAS070-03-03-69679-2

TEST CERTIFICATE

Part No.: 06-0220-001 (631F)

ASME SB 26-01 356

Element		Result %	Min %	Max %
Si	=	6.58	6.50	7.50
Fe	=	0.14	0.00	0.60
Cu	=	0.02	0.00	0.25
Mn	=	0.01	0.00	0.35
Mg	=	0.24	0.20	0.45
Zn	=	0.01	0.00	0.35
Ti	=	0.14	0.00	0.25
OE	<	0.05	0.00	0.05
OT	<	0.15	0.00	0.15
Al	=	Balance	Balance	Balance

Chemical Analysis Performed by Optical Emission per SOP 2.02, Revision 1

FULL TENSILE

Specification: ASME SB 26 (01) 358-T8					
Test Method: ASTM B 557-02a					
Sample No.	Diameter	Area	Yield Strength At 0.2% Offset (psi)	Ultimate Tensile Strength (psi)	% Elongation in 2" (4D)
2	.4995	.1980	23,700	33,500	5.5
Requirements:			20,000 MIN	30,000 MIN	3% MIN

Note: Test results determined from cast specimen

MATERIAL CONFORMS TO SPECIFICATION

INSPECTED BY

MAR 11 2005

Respectfully submitted

Kelly Nguyen
Kelly Nguyen
Senior Quality Administrator



NDT AND
MATERIALS TESTING
FASTENER TESTING



CHEMICAL
MECHANICAL
FASTENERS

The information contained in this certification represents only the material submitted and is certified only for the quantities tested. Reproduction except in full is reserved pending written approval. All testing was performed in a mercury-free environment. A2LA accreditation No. 0083-01 and 0083-02. Stork Materials Testing and Inspection is an operating unit of Stork materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group

[illegible]

Herbert P. Young

Number of Letters Received During Year

Item Description
1400 IN UK X 48.000 IN W X 144.000 IN LN CAT D 126849 (N) A/T 6061-
T4 FLAT SHEET MILL, FINISH ((P/N 063241-4)) PER AMS-QQ-A-
250/11 & EXCEPT MARKING AMS4026 REV K & EXCEPT
MARKING ASTM1209 REV B4 & EXCEPT MARKING ASME-SB-
209 REV A39 DIMENSIONAL TOLERANCES
F ANS39.2 REV 2003 ((MARKED))
INTERLEAVED SKID NOT: 4500 LB QUAN TOL +/-10
% CQR DL26849 REV 26 CUST REQ 04-08-
OR *** W/E 04-08-14 ***

Notes for CQR: D176849.26

COR: 0126049.26 --Specification Limits

Temp	Dir	Long	Transv.	UTS	TYS	ELAD
T ₆₂				KSI	KSI	PCT
			Max			
			Min	30.0	16.0	16
				UTS	TYS	ELAD
				KSI	KSI	PCT
			Max			
			Min	42.0	38.0	10

Chemical Composition		
	SI	FE CU
		GRN
	Max	.8
	Min	.40
		.15
		.15

Alloy 6061

Other	Other
Each	Total
.05	.15
	REPAIR

BAUG 16 2004

2004

[Handwritten signature]

91.23066008

283449
Ship Date
2004-08-12
F.O. No./Govt Contract No.
223025
B.L. No.
57322
c95064

Invoice No. 54651 Alcoa No. Item DS-80410-1 Page 1

C&B-ELIHART IND

Item Description

1400 IN TK X 48,000 IN W X 144,000 IN LN CAT D 12
FINISH ((P/N 063241-4)) . PER
44 SHEET MARKING AMS4025 REV K & EXCEPT
250/11 & EXCEPT MARKING AMS4025 REV K & EXCEPT
MARKING ASTM2409 REV B4 & EXCEPT MARKING AMS4025
REV B99 DIMENSIONAL TOLERANCES
F ANS1395.2 REV 2003 ((MARKED))
INTERLEAVED SKID NOT: 4500 LB QUAN TOL +/-10
% CQR DL25649 REV 26
OR *** W/E 04-08-14 ***
CUST REQ 04-08-

AGCO/Crosby
Part No.

03-0665-008

CERTIFICATION

SOLD TO: Interiors Waco
DATE: 9-24-88
CUSTOMER P.O.: 388
CUSTOMER PN: _____
ATTN: DA
QUANTITY: 4 pcs
BY: BMC/etw
THYSSEN CRIPPER & DRASS SALES INC.

IFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

Ship From:

Page 2

I hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described herein, including any specifications herein, a part of the description and has samples representative of the material and the composition tests and heat treatment inspection results shown on the face of this sheet.

PK

Kevin P. Young

Kevin P. Young

Director of Manufacturing Davenport Works

Kevin P. Young

Quality Assurance Manager

283449
Ship Date
2004-08-12

223025
B.L. No.
57323

Invoice No.
54651

Alcoa No. Item
DS-80410-1

P.O. No./Govt Contract No.

CUSTOMER

C96064

CEB-ELKHART IND

Lot: 574412 -Mechanical, Physical, Metallography, Quantometer Results

Taper Dir	Long Transv.	No. 9	Test	UTS				TYS				ELAD			
				KSI				KSI				PCT			
				Max	39	27.9	22.4	Max	39	27.9	22.4	Max	39	27.9	22.4
Taper Dir	Long Transv.	No. 9	Test	UTS				TYS				ELAD			
				KSI				KSI				PCT			
				Max	48.1	42.7	15.5	Max	48.1	42.7	15.5	Max	48.1	42.7	15.5
Cast Number	Chemical	SI	PE	CU	Mn	NO	CR	Zn	TI						
645R942	Actuals	.67	.5	.27	.03	1.0	.20	.00	.02						

INTEGRIS METALS
7111 WALL ST.
CLEVELAND OHIO 44125
Customer *Integris Metals*
Your Order No. *11925*
Our Invoice No. *102557596*

INSPECTED BY
AUG 16 2004

AUG 16 2004

IN REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

Covered by this certificate has been inspected with, and has been found to meet, the
 and therein, including any specifications forming a part of the description and that samples
 met the composition limits and had the mechanical properties shown on the face of this sheet.

265238 110006
 Ship Date B.L. No.
 2004-04-20 50244
 P.O. No./Govt Contract No. Customer
 C78201 C2B-ELKHART IND

Page

Alcoa No. Item

Invoice No. 35695

DS-77265-1

Kenton P. Young

Kenton P. Young

Quality Assurance Manager

Director of Manufacturing Davenport Works

Lot: 418591 - Mechanical, Physical, Metallurgy, Quantometer Results (cont.)

Temp	Dir	No.	UTS	KSI	TYS	ELAD
T62	Long Transv.	9	Max	47.9	43.3	15.2
			Min	47.8	42.8	12.1
Cast Number	Chemical	SI	FE	CU	MN	MG CR ZN TI
536R056	Actuals	.68	.5	.27	.01	0.9 .20 .00 .02

INTEGRIS METALS
 7111 WALL ST.
 CLEVELAND, OHIO 44126

Customer *Integris Metals*

Your Order No. *11925*

Our Invoice No. *102-537590*

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS
Ship from: RIVERDALE, IA.

၁၃၁၃

were hereby certify that the material covered by the affidavit has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Kenton P. Young

Mark J. Vrabec
Director of Manufacturing Development Works

Harta 1 Vreblec

Director of Manufacturing Development Works

C78201

C&B-ELKHART IND

265238 110006

Ship Date

2004-04-20 50244

P.O. No./Govt Contract No.

P.O. No./Govt Contract No. _____ Customer _____

C&B-ELKHART IND

Item Description

1.1900 IN TK X 48.000 IN W X 144.000 IN LN CAT D 126849 (N) A/T 6061-
T4 FLAT SHEET MILL, FINISH ((P/N 063241-4)). PER AMS-QQ-A-
250/11 & EXCEPT MARKING AMS4026 REV K & EXCEPT
MARKING ASTMB209 REV 02A & EXCEPT MARKING ASME-SB-
209 REV A99 DIMENSIONAL TOLERANCES
F ANSH35.2 REV 2003 ((MARKED))
INTERLEAVED SKID WGT: 4500 LB QUAN TOL +/-10
CQR DL26849 REV 25 CUST REQ 04-04-
*** W/B 04-04-24 ***
17

INSPECTED BY

JUN 30 2005

Chas. H. Smith

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Ser1
1	742593	418591	3909	31	PC	

Notes for CQR: D126849.25

COR: D126849.25 -Specification Limits

Tmpr T4	Dir Long Transv.	Max		Min		TYS		EL4D	
		UTS	KSI	UTS	KSI	KSI	PCT	KSI	PCT
Tmpr T62	Dir								
	Long Transv.								

Chemical Composition

Alloy 6061

Lot: 418591 -Mechanical, Physical, Metallurgy, Quantometer Results

Temp _r T ₄	Dir Long	No. Test	UTS		TVS		EL4D	
			KSI	Max	KSI	Max	PCT	Max
		9	37.7	Max	27.5		22.1	
			37.2	Min	27.2		20.5	

APR 22 2004

AGCO : Crosby
Part No.
03.0665.008

CERTIFICATION

SOLD TO: Integrus Metals

DATE: 9-24-04

CUSTOMER P.O.: 388405

CUSTOMER P.N.: _____

ATTN: Q34

QUANTITY: 8 pcs

BY: Blair Grottel

THYSSEN COPPER & BRASS SALES INC.



**LABORATORY REPORT OF
CHEMICAL ANALYSIS AND
MECHANICAL TESTS**

P.O. BOX 210 • 3320 PARKWAY DRIVE • TEMPLE, TEXAS 76603-0210
(254) 773-9088 • (800) 999-9088 • FAX (254) 773-1133

Customer: **ANDERSON GREENWOOD CROSBY**

Description: CF8M ss RT & RB per ASTM A351-00 <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 5px auto; width: fit-content;"> AGCO/Crosby Part No. </div>	<table style="width:100%;"> <tr> <td style="width:50%;">Date: 02-04-05</td> <td style="width:50%;">CCI No. 64756</td> </tr> <tr> <td colspan="2">Customer Order No: Z18632</td> </tr> <tr> <td></td> <td style="text-align: right;">ITEM #1</td> </tr> </table>	Date: 02-04-05	CCI No. 64756	Customer Order No: Z18632			ITEM #1
Date: 02-04-05	CCI No. 64756						
Customer Order No: Z18632							
	ITEM #1						
2 OF 2 PCS. 8.60 x 5.96 x .36 P/N# 05.0091.263							

CHEMICAL ANALYSIS												
Heat No	C	Mn	Si	P	S	Ni	Cr	Mo	Cu	Fe		BHN
D-4146-C	.03	1.08	.73	.030	.018	9.4	19.0	2.0			BAL	

MECHANICAL TESTS				
Heat No	Tensile Strength (PSI)	Yld Strength (PSI)	Elong % in 2	R.A. %
D-4146	77,600	39,500	56%	

We hereby certify that the foregoing data is a true copy of the data resulting from tests performed in our laboratory or of the data furnished us by the laboratory performing the tests.

CENTRIFUGAL CASTINGS, INC.

INSPECTED BY

MAR 07 2005

[Signature]

By *[Signature]*
Authorized Agent

CLEANING REPORT

DATE 7-19-05 W. O. NO. U92897000.002 CUSTOMER THE VALVE CONTROLS INSPECTOR [Signature]
 LEVEL OF CLEAN OS-9035-029 REV E CUST. P. O. NO. FP53038862

PART NO.	SERIAL NO.	NO. OF FIBERS	BLACK LIGHT INSPECTION	EVALUATION OF RINSE EFFLUENT PARTICLE SIZE				EVALUATION OF RINSE EFFLUENT RESIDUE CONT.		RESIDUE WEIGHT
								DRY WEIGHT OF FILTER PRIOR TO MILLIPORING	WEIGHT OF DRY FILTER & RESIDUE	
9390006ALTA	05-22750	0	OK	NA	NA	NA	NA	NA	NA	NA
↑	0522751	0	OK	NA	NA	NA	NA	NA	NA	NA
↓	0522752	0	OK	NA	NA	NA	NA	NA	NA	NA
9390006ALTA	05 22753	0	OK	NA	NA	NA	NA	NA	NA	NA

PART NO.	SERIAL NO.	VISUAL INSPECTION	WIPE TEST	WATERBREAK TEST	NON VOLATILE RESIDUE TEST			PH TEST	REMARKS
					BOTTLE WT.	TEST WT.	TOTAL NVR		
9390006ALTA	05-22750	OK	OK	OK	NA	NA	NA	NA	N
↑	05-22751	OK	OK	OK	NA	NA	NA	NA	O
↓	05-22752	OK	OK	OK	NA	NA	NA	NA	N
9390006ALTA	05-22753	OK	OK	OK	NA	NA	NA	NA	E