

CERTIFICATE OF CONFORMANCE

BRISTOL industries

C OF C
SHIPPER D37B3

630 E. LAMBERT ROAD / BREX, CA 92821 / (714) 990-4121

SOLD TO
INTERTURBINE AVIATION
LOGISTICS, GMBH
2617 N. GREAT SOUTHWEST
PARKWAY, SUITE 200
GRAND PRAIRIE, TX 75050

SHIP TO
INTERTURBINE AVIATION
LOGISTICS GMBH
SUITE 200
2617 N. GREAT SOUTHWEST PKWY
GRAND PRAIRIE, TX 75050

DATE SHIPPED	SHIPMENT NO.	NO. CARTONS	WEIGHT
RECEIVED BY			
INSPECTED BY			
SHIPPED VIA FED EX		COMPLETE	PARTIAL

CUST. NO. 41553	OUR ORDER 062507	DATE ORDERED 01-06-12	CUSTOMER P.O. NO. 1248769	SHIP VIA FED EXP	SALESMAN NO. 28	DATE WANTED	FREIGHT CHARGES	* SHIP POINT *
QTY	QUANTITY ORDER	ITEM NUMBER	DESCRIPTION			QUANTITY PREVIOUSLY SHIPPED (DUE DATE)	QUANTITY SHIPPED	
01	10,000	934910	NSA5472-5K7 BH00521-5 (BH00521-5 NSA5472-5K7) ECCN : EAR99 Schedule B # 731B-16-0000 REV M PO ITEM 001 MFG C OF C REQUIRED CHEMICAL AND PHYSICAL CERTS REQD RAW MATERIAL & PROCESS CERTS REQD LOT D3565 10,000			0	10,000	

We hereby certify the referenced order(s) conform to the requirements of the applicable drawings, standards and specifications. Evidence of compliance is retained on file.

RLK

Rick Kuhns
Q.A. Manager

MANUFACTURED IN U.S.A.



**CERTIFICATE OF CONFORMITY
CHEMICAL & PHYSICAL
TEST DATA**

630 East Lambert Road
P.O. Box 630/Brea, California 92822-0630
Tel: (714) 990-4121 Fax: (714) 529-6726



LOT #: D3565

Assembly / Mechanical Tests

Customer Drawing	NSA5472-5K7	Issue	M	Airbus Approval No.:	100118
Bristol Part No	BH00521-5			Manufacture Date	03/09/12
Performance	NASM25027			Lot Quantity :	22,654

Component Requirements	Material	Bristol Q.C. Number	Heat Treat	Hardness	NDT	Finish	Thread Spec
Nut Lot # C9204	8740 Alloy Steel per AMS 6322	BG 26956 Lab Tested	AMS-H-6875	Required: 39-43 HRC Actual: 41 HRC	MPI per ASTM-E-1444 Sample	Cetyl Alcohol Solvent Based per EN 6117	Cad Plate per AMS-QQ-P-416 Type II Class 3
Conformance	AMS 6322	Material Traceability	Conforms NADCAP	Conforms NADCAP	Conforms NADCAP	Conforms NADCAP	Conforms NADCAP
Source	Material / Mill Certs	Bristol	Bristol	Bristol	Bristol	Bristol	Bristol

Stress Embrittlement Test

Required Load	225	in-lbs
Sample Size	10	PCS
Time	23	Hours

Tensile

Required Min	9000	LBS
Sample No	LBS	Sample No
1	9180	2
		3
		9180



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CHEMICAL & PHYSICAL
TEST DATA**

630 East Lambert Road
P.O. Box 630/Brea, California 92822-0630
Tel: (714) 990-4121 Fax: (714) 529-6726



LOT #: D3565

Component Requirements	Material	Bristol Q C Number	Heat Treat	Hardness	NDT	Finish
Washer Lot # C9212	C1050 per AMS 5085	CS 27223 Lab Tested	AMS-H-6875	Required: 40-45 HRC Actual: 43-44 HRC	MPI per ASTM-E-1444 Sample	Cad Plate per AMS-QQ-P-416 Type II, Class 2
Conformance	AMS 5085	Material Traceability	Conforms NADCAP	Conforms NADCAP	Conforms NADCAP	Conforms NADCAP
Source	Material / Mill Certs	Bristol	Bristol	Bristol	Bristol	Bristol

Comments:

Parts have been produced, sampled, inspected, and tested in accordance with customer purchase order and/or referenced specifications and conform to all requirements unless otherwise specified.

Unless otherwise specified, specifications are to the latest revision. Test methods are in accordance with the latest revisions of NASM-1312 Fastener Test Methods if not specified by the customer. Any deviations to specification or customer purchase order requirements relative to testing have been resolved in writing with customers prior to shipment.

This certification relates only to the item(s) tested and shall not be reproduced except in full. The recording of false, fictitious or fraudulent statements or entries on this certificate may be punishable as a felony under federal law.

Review and Signature by one (1) of the following Authorizes this certification

Karen Day Certification Administrator

Rick Kuhns, Quality Assurance Manager

Angie Figueroa, Certification Administrator

Gus Marquez, Final Inspection Supervisor



**CERTIFICATE OF CONFORMITY
CHEMICAL & PHYSICAL
TEST DATA**

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P.O. Box 630/Brea, California 92822-0630
Tel: (714) 990-4121 Fax: (714) 529-6726

Page 1 of 1



TORQUE EFFECTIVITY TEST

NUT PART #: BH00521-5

BOLT USED: NAS9705

LOT #: D3565

MAX INSTLN. & REMOVAL: 30.0 IN-LBS

MIN BREAKAWAY: 6.5 IN-LBS

SEATING TORQUE: N/A IN-LBS

1st CYCLE: N/A

SAMPLE NO	CYCLE														
	1			7			15								
	I	B	R	I	B	R	I	B	R	I	B	R	I	B	R
1	30.0	30.0	30.0	12.0	12.0	12.0	12.0	12.5	11.5						
2	30.0	28.0	26.0	14.0	14.0	14.0	12.0	12.0	12.0						
3	27.0	24.0	26.0	14.0	14.0	13.0	12.0	12.0	14.0						
4	30.0	27.0	26.0	14.0	14.0	14.0	13.0	13.0	14.0						
5	22.0	20.0	24.0	12.0	14.0	12.0	11.0	13.0	13.0						
6	22.0	20.0	19.0	16.0	14.0	13.0	14.0	13.0	14.0						
7	20.0	18.0	18.0	15.0	14.0	12.0	13.0	12.0	13.0						
8	20.0	17.0	16.0	13.0	14.0	14.0	13.0	13.0	13.0						
9	25.0	23.0	19.0	14.0	13.0	15.0	13.0	12.0	15.0						
10	23.0	21.0	18.0	15.0	16.0	13.0	13.0	15.0	12.0						
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REMARKS: _____



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

Bristol Industries
630 E. Lambert Road
Brea, CA 92822
USA

WORK ORDER
083735

CERTIFICATION

HEAT NO. 10127800
SALES ORDER / RLS 839781 / 1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CERT# 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE
585423	980630	5,005 Lbs	4	00092166	09/06/2011
SPECIFICATION B218740-103690A A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size: 0.368/0.370 Specifications: AMS 6322N, AMS 2301H, MIL-S-6049A AMEND 1 BMS 1107, AMS-S-6049-A					
CERTIFICATION REQUIREMENTS					
Chemical Properties					
C ✓ .39	Si ✓ .25	Mn ✓ .85	P ✓ .009	S ✓ .012	Cu ✓ .10
Ni ✓ .42	Cr ✓ .53	Mo ✓ .26			
Physical Properties					
Grain Size Jominy 1 6 J5=53	Jominy 2 J8=46	Jominy 3 J10=40	Inclusions Macro S2-R1-C2	Cleanliness F&S=0	Mill Source Charter ✓
Country of Origin USA - DFAR Compliant ✓					
Mechanical Properties					
TEST	UNITS				Results ✓
Tensile Strength	KSI				84.5
Decarb (Total)	In				0.00
Yield Strength	KSI				71.9
% Elongation	%				24
% Reduction of Area	%				74.4
Rockwell Hardness B Scale	HRB (s)				87
LAB APPROVED DATE: SEP 26 2011 TECH: Q.C.# B626956 DFAR 252.225.7014 ALT 1					
Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47. REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL. Wire Tech, Inc. metallurgical laboratory is accredited in the following tests: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation. TEST RESULTS RELATE ONLY TO THE ITEMS TESTED "LATEST REVISIONS OF ASTM" DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9) Material is free of mercury, radium, or alpha contamination.					



**CHARTER
STEEL**

A Division of
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
FAX (262) 268-2570

**CHARTER STEEL TEST REPORT
Reverse Has Text And Codes**

Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA-90040
Kind Attn :Cert To Contact

Cust P.O.	6618-6
Customer Part #	8740C1A120-C-R
Charter Sales Order	70019315
Heat #	10127800
Ship Lot #	4078408
Grade	8740 R SK FG AQ 31/64
Process	HRSA
Finish Size	31/64

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10127800												
Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V	
CHEM	.39	.85	.009	.012	.25	.42	.53	.26	.10	.006	.001	
%WT	AL	N	B	TI	NB							
	.026	.0070	.0001	.002	.002							
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	58	57	56	55	53	51	48	46	42	40	38	38
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	36	35	35	34	33	32	32	31	31	30	30	30

JOMINY SAMPLE TYPE ENGLISH = R JOMINY LAB = 0358-01
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00
CHEM. DEVIATION EXT.-GREEN =

Test Results of Rolling Lot# 1038048					
REDUCTION RATIO = 164:1					
Test Results of Processing Lot# 4077591,4078408					
	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	2.0	81.4	84.3	82.9	TENSILE LAB = 0358-02
REDUCTION OF AREA	2	68	68	68	RA LAB = 0358-02
ROCKWELL B	2	84	87	85	RB LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .001
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 88.8

Specifications:

Manufactured per Charter Steel Quality Manual Rev 9,08-01-09
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = AMS6322N/AMS2301K/COP3010M/BS25147:1976 CHEM ONLY Revision = Dated =

Additional Comments:

LAB APPROVED
DATE: 2 6 2011 TECH:
Q.C.# BG26956
DFAR 252.225.7014 ALT 1

Charter Steel
Saukville, WI, USA



This MTR supersedes all previously dated MTRs for this order

Janice Barnard
Manager of Quality Assurance
05/29/2011

Rem: Load1, Fax0, Mail0

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



LAB APPROVED
SEP 26 2011
DATE: _____ TECH: _____
Q.C.# B626956
DFAR 252.225.7014 ALT 1

Gibbs Certificate of Analysis

Gibbs Wire & Steel Company, Inc. 3751 Olive Road, South Bend, Indiana 46628

SCANNED

BRISTOL INDUSTRY
630 E. LAMBERT
BREA

CA 92621 USA

Date Shipped: 12/13/2011

Cust Order #: 585996

Amount Shipped: 550.00

Description: 0.0150" P/M.001 X 0.8300 P/M.003

C1050 Annealed Spring Steel Strip

Edge: # 3

Heat Number: SVW2139259

Mill Coil ID:

Gibbs Coil ID:

Gibbs Number: 24634

To Certify that the material shipped against your above order number is in accordance with

Specification: ASTM A684-10A AMS 5085

C:	0.5300 ✓	Mn:	0.6800 ✓	P:	0.0070 ✓	Sul:	0.0030 ✓
Si:	0.1700 ✓	Cr:	0.0200	Ni:	0.0100	Mo:	0.0100
Co:		Cu:	0.0200	N2:		Fe:	
Ti:	0.0020	Al:	0.0440	Be:		W:	
Zn:		Sn:		Pb:		Cb:	
Ta:		V:					

PRE-HEAT

POST-HEAT

MIN

MAX

MIN

MAX

Tensile Strength:

Yield Strength:

Rockwell Hardness: B 66

Grain:

Elongation % in 2":

B 66 ✓

LAB APPROVED

DEC 20 2011
DATE: TECH: BI-LAB-17

Q.C.# CS27223
DFAR 252.225.7014 ALT 1

Alison Fink

AMERICAN STEEL & ALUMINUM

Gibbs Wire & Steel Company, Inc.
Certification Clerk

Alison Fink

ITEM# 982169

MILL SOURCE: AMERICAN STEEL & ALUMINUM / MELT
SOURCE: DUFERCO

GWS #: 572102

Tel: (574)234-6071; Fax: (574)237-0712

AMERICAN STEEL & ALUMINUM

27 ELM STREET
AUBURN MA 01501
Phone: 508-832-9681 Fax: 508-832-3719

CERTIFIED TEST REPORT
10/21/11

Sold To:
GIBBS WIRE & STEEL CO.
PO BOX 520

SOUTHINGTON CT 06489

Shipped To:
GIBBS WIRE & STEEL CO.
METALS DRIVE

PLANTSVILLE CT 06489

Sales Order #...: 0951597-01
Customer Order #: 024634
Customer Part #: PER ASTM A684-10A AMS5085
Size.....: .015+/-00075 X 6.812+-005 X COIL
Item Description: CR SPH ANN C1080
Heat #.....: SVW2139259

Chemical Analysis

CARBON	MANGANESE	PHOSPHORUS	SULFUR	SILICON	ALUMINUM	BORON
.5300	.6800	.0070	.0030	.1700	.0440	.0000
MOLYBDENUM	CHROMIUM	COPPER	NICKEL	TITANIUM	VANADIUM	COLUMBIUM
.0100	.0200	.0200	.0100	.0020	.0000	.0000

Rockwell B

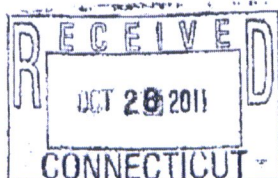
Weight Shipped

4562

THIS IS TO CERTIFY THAT THE FOREGOING IS A TRUE COPY OF THE DATA FURNISHED US
BY THE PRODUCING STEEL MILL NOW ON FILE AT THE OFFICE OF AMERICAN STEEL AND
ALUMINUM LLC

BY

AUTHORIZED AGENT



LAB APPROVED

DEC 2 0 2011 TECH: BI-LAD-17

Q.C.# CS27223
DFAR 252.225.7014 ALT 1

D. L. F. Siddons
Dole F Siddons
Supervisor - Metallurgical Lab



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.KLXaerospace.com

Shipped From: NORDPORTBOGEN 6, D-22848 NORDERSTEDT, GERMANY

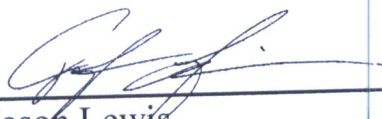
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

FIRM: AJ WALTER AVIATION LTD

PURCHASE ORDER#: CPE1887

QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	Eff Date	EXP DATE
500	EA	NSA5472-5K7		D3565		



Jason Lewis
Senior Director, Global Quality

12/28/15

Inv # 12/28/15