



CERTIFICATE of TEST

Plan Date	Trace No.
09/30/2008	AZ627
Cert. Date	Mfg. Lot
06/25/2010	
SPS Technologies Highland Avenue Jenkintown, Pennsylvania 19046	
Telephone	CAGE
215-572-3000	56878

CERTIFICATION

The products identified on this certificate have been manufactured, tested and inspected in accordance with, and unless otherwise noted below, conform in all respects to the applicable drawings, specifications and/or standards. Complete reports of physical and chemical tests are on file for on-site examination. This certification relates only to the items tested and must not be reproduced except in full.

PREVENT FRAUD!

Any alteration of this certificate, or any unauthorized rework or modification of the identified products, voids all manufacturer's warranties and may lead to civil damages and/or criminal penalties.

Customer Name and Address		Customer Purchase Order		Dated	Shipper No.	
M & M AEROSPACE HARDWARE INC. 9835 NW 14TH ST. MIAMI, FL 33172		OEA192		12/05/2007	921227008	
		Part No.	Rev.	Insp. Lot Qty	Ship Qty	
		HL84-6	16	117300	47800	
		Type Part	Marking	Shop Order	Release	
		COLLAR		0131403	240	
Procurement Spec.	Rev.	Part Description				
HI-SHEAR 345	N	10-32 UNJF-3B COLLAR				
Material Spec.	Rev.	Type Material	Steel Date	Material Supplier	Mill Heat No.	
QQ-A-225/6	6A	ALUM 2024T	AJ289Z	E.M. JORGENSEN	10017535	
Non-Destructive Spec.	Rev.	PLATING SPEC.	Rev.			
ASTM E1417 SAMPLE	05E1	MIL-A-8625 TY II CL 2	F			
SURFACE SPEC.						
CETYL ALCOHOL						
Other Specs.						
COLOR: BLUE						
Material Conditioning						
Solution Treated and Age Hardened						

% CHEMICAL COMPOSITION OF METAL, BASED ON MILL REPORT OF RAW MATERIAL

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FINISH PART TENSILE

SAMPLE: 27

MINIMUM
1600

U/M
LBS

POUNDS
LOCATION

2100
THREADS

2159
THREADS

1963
THREADS

2203
THREADS

2036
THREADS

POUNDS
LOCATION

2182
THREADS

2243
THREADS

2265
THREADS

2198
THREADS

2146
THREADS

POUNDS
LOCATION

2193
THREADS

1948
THREADS

2175
THREADS

2186
THREADS

2225
THREADS

Isabelle A. Clark

Isabelle A. Clark
Quality Assurance Representative



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		Type Part	Marking	Shop Order	Release
		COLLAR		0131403	240
Procurement Spec.	Rev.	Part Description			
HI-SHEAR 345	N	10-32 UNJF-3B COLLAR			

POUNDS LOCATION	2091 THREADS	2154 THREADS	2103 THREADS	2205 THREADS	2196 THREADS
POUNDS LOCATION	2201 THREADS	2110 THREADS	2094 THREADS	2153 THREADS	2132 THREADS
POUNDS LOCATION	2196 THREADS	2088 THREADS			
=====					
MICRO	SAMPLE: 5				

ETCHANT KELLERS REAGENT
MAGNIFICATION 100X-200X
SPECIMEN NUMBER AZ627
MATERIAL LOCATION LONGITUDE CROSS SECTION
REFERENCE STANDARD HI-SHEAR 345

METALLURGICAL RESULTS SATISFACTORY

=====

ALLOY VERIFICATION HAS BEEN PERFORMED

DATE MANUFACTURED 05/01/2009

=====

PRELOAD

PRELOAD
MINIMUM
700 LBS

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MIAMI, FL 33172		HL84-6	16	117300
		Type Part	Marking	Shop Order
		COLLAR		0131403
Procurement Spec.		Part Description		Release
HI-SHEAR 345	Rev. N	10-32 UNJF-3B COLLAR		240

POUNDS	1045	905	1010	1110	1290
POUNDS	905	1160	1210	1062	1115
POUNDS	1195	1310	890	1300	1190
POUNDS	1270	1295	990	1290	1135
POUNDS	890	1055	985	960	870
POUNDS	1070	1165			

===== SAMPLE: 10

LOG # D-846
SALT SPRAY # 6980

TORQUE OFF

===== SAMPLE: 27

	MINIMUM 25	MAXIMUM 35 LBS			
POUNDS	31.94	29.26	29.72	29.8	32.14
POUNDS	28.5	31.72	30.1	30.84	29.8
POUNDS	29.78	31.1	26.3	32.32	32.2
POUNDS	33.34	31.94	30.56	30.32	31.28
POUNDS	27.96	29.7	30.24	29.88	29.22
POUNDS	30.66	31.34			

LOCKING TORQUE

===== SAMPLE: 27

CYCLE ## 1ST
MAX ILB 12.0
MIN ILB 2.0

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		COLLAR		0131403	240	
Procurement Spec.	Rev.	Part Description				
HI-SHEAR 345	N	10-32 UNJF-3B COLLAR				

1ST CYC MAX	11.26	7.98	8.72	6.76	8.04
1ST CYC MIN	9.78	6.7	7.48	6.08	6.56
1ST CYC MAX	8.6	8.8	6.28	9.54	7.2
1ST CYC MIN	6.94	6.86	4.56	7.16	6.56
1ST CYC MAX	8.18	5.3	7.96	6.3	4.52
1ST CYC MIN	7.04	4.94	6.28	4.84	3.58
1ST CYC MAX	5.74	7.1	8.76	6.38	6.92
1ST CYC MIN	4.64	6.1	7.86	5.08	5.64
1ST CYC MAX	8.36	8.78	8.14	9.96	10.08
1ST CYC MIN	7.16	7.26	7.24	8.38	8.54
1ST CYC MAX	5.96	5.86			
1ST CYC MIN	5.52	4.58			

PLATING (SALT SPRAY)

SAMPLE: 5

EXPOSURE HOURS
CHAMBER TEMP F

RESULTS ARE SATISFACTORY

THREADS PER AS8879 REV D

THE CONDITIONS AND TESTS REQUIRED FOR TSO APPROVAL OF THIS ARTICLE ARE MINIMUM PERFORMANCE STANDARDS. IT IS THE RESPONSIBILITY OF THOSE INSTALLING THIS ARTICLE EITHER ON OR WITHIN A SPECIFIC TYPE OR CLASS OF AIRCRAFT TO DETERMINE THAT THE AIRCRAFT INSTALLATION CONDITIONS ARE WITHIN TSO STANDARDS. TSO ARTICLES MUST HAVE SEPARATE APPROVAL FOR INSTALLATION IN AN AIRCRAFT. THE ARTICLE MAY BE INSTALLED ONLY IF PERFORMED UNDER 14 CFR PART 43 OR THE APPLICABLE AIRWORTHINESS REQUIREMENTS.

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		Type Part		Marking		Shop Order	
		COLLAR				0131403	
Procurement Spec.		Rev.		Part Description		Release	
HI-SHEAR 345		N		10-32 UNJF-3B COLLAR		240	

IF APPLICABLE, MATERIAL IS DFARS 252.225.7014, ALT 1 COMPLIANT

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ALL GOODS SHIPPED AT BUYER'S RISK.
NO MATERIAL ACCEPTED FOR RETURN WITH-
OUT OUR PERMISSION.

DESTINATION CONTRARY TO U.S. AND INTERNATIONAL LAW IS PROHIBITED. THE PURCHASER AGREES TO COMPLY WITH APPLICABLE
LAW AND REGULATIONS OF THE UNITED STATES, OTHER RELEVANT JURISDICTIONS, AND PERTINENT INTERNATIONAL ORGANIZATIONS
PERTAINING TO THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS. ANY VIOLATIONS OF THIS CLAUSE AS
DETERMINED SOLELY BY SPS TECHNOLOGIES, SHALL BE DEEMED A MATERIAL BREACH OF THIS AGREEMENT.

CERTIFICATION

PREVENT FRAUD

Any alteration or misuse of this certificate, or any unauthorized rework
or modification of the identified products voids all manufacturer's
warranties, and may lead to civil damages and/or criminal penalties. To
prevent fraud, check for the original embossed seal on the certification.

CUSTOMER NBR 01-0001-00427568-0001

M & M AEROSPACE HARDWARE INC.
9835 NW 14TH ST.
MIAMI, FL 33172

B/E AEROSPACE CONSUMABLES
MANAGEMENT (MIAMI)
P O BOX 025263
MIAMI, FL 33102-5263

SPS TECHNOLOGIES
HIGHLAND AVE.
JENKINTOWN, PA 19046

PUBLISHED 06/25/10

ORDER NBR 921227-008

ORDER DATE 12/05/07

PAGE 1

P/S # 921227008

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CUSTOMER P.O.		TERMS		SHIP FROM		SCHEDULE DATE	
OEA192		S 1/2% 10, NET 30		AI		12/15/10	
CARRIER CD/DESC		CARRIER NBR		FREIGHT		REG	
TRK ANY TRUCKING FIRM				COLLECT		2751	
PRODUCT CODE		DESCRIPTION		ALTERNATE CODE		QUANTITY	
005.0131403		HL84-6		HL84-6		52	
				UNIT PRICE		ACT QTY	
				0102		12/05/07	

TSO-C148 APPROVED FOR JK
SHELF LOCATION 004E6
UNDER 150# SHIP FEDEX GROUND ACCT
#0331-0149-0 MARK COLLECT
OVER 150 LBS SHIP FED EX NATIONAL LTL
ACCT #081757
CHEMICAL AND PHYSICAL CERTS
SHIP VARIANCE +/- 10%
ITEM CODE: C560
TOTAL QUANTITY 250000
JURY GUTIERREZ/FGH

A2627

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CERTIFICATION OF CONFORMANCE		QUALITY ASSURANCE		DATE	
THE PRODUCTS IDENTIFIED ON THIS CERTIFICATE HAVE BEEN MANUFACTURED, TESTED AND INSPECTED IN ACCORDANCE WITH, AND UNLESS OTHERWISE NOTED BELOW, CONFORM IN ALL RESPECTS TO THE APPLICABLE DRAWINGS, SPECIFICATIONS AND/OR STANDARDS. COMPLETE REPORTS OF PHYSICAL AND CHEMICAL TESTS ARE ON FILE FOR ON-SITE EXAMINATION. SINGLE- ELEMENT GAUGING HAS BEEN PERFORMED WHERE REQUIRED.					
		BILL OF LADING		FREIGHT CHARGE	
		TYPE CODE			
		CARRIER			
		COLL.			
		PREPD			
		BOXES			
		WEIGHT			
FREIGHT RECORD					
LOT TRACE NO.					
QUANTITY					
LOT NO.					

PACKING LIST

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CUSTOMER NBR 01-0001-00427568-0001

M & M AEROSPACE HARDWARE INC.
9835 NW 14TH ST.
MIAMI, FL 33172

B/E AEROSPACE CONSUMABLES
MANAGEMENT (MIAMI)
P O BOX 025263
MIAMI, FL 3310

33102-5263

SPS TECHNOLOGIES
HIGHLAND AVE.
JENKINTOWN, PA 19034
DATE SHIPPED:

PUBLISHED 06/25/10

ORDER DATE 12/05/07

PAGE

800227008 # S/d

205

CUSTOMER P.O.		TERMS		SHIP FROM	SCHEDULE DATE
OEA192	S 1/2% 10, NET 30			AI	12/15/10
		CARRIER NBR		FREIGHT	
TRK ANY TRUCKING FIRM		COL	COLLECT		
ITEM	PRODUCT CODE	DESCRIPTION		ALTERNATE CODE	
05 0131403		HL84-6		HL84-6	
		PO #	OEA192		
		REG	2751	52	12/05/07
		TERR		0102	
		CREP			
		REQ DATE			
		QUANTITY	50000	UNIT PRICE	
		ACQTY			

005 0131403

HL84-6

REV: 16

TSO-C148 APPROVED FOR JK

SHELF LOCATION 004E6

UNDER 150# SHIP FEDEX GROUND ACCT

#0331-0149-0 MARK COLLECT

OVER 150 LBS SHIP FED EX NATIONAL LTL

ACCT #081757

CHEMICAL AND PHYSICAL CERTS.

CHIP VARIANCE +/- 10%

ITEM CODE: C560

ITEM CODE: C360
TOTAL QUANTITY 250000[illegible]

A2627

[illegible]

3003 REV. 6/05

PACKING LIST