TICO TITANIUM, INC Certification of Tests

30150 S Wixom Rd • Wixom • MI • 48393-3340 • 248-446-0400 • 800-521-4392 • Fax 248-446-1995
519 Todd Dr • Oak Ridge North • TX • 77385-7332 • 281-355-6555 • 888-676-7575 • Fax 281-355-6676

TO: HIMAC
HI-TECH MANUFACTURING LLC
4637 N 25TH AVENUE
SCHILLER PARK, IL 60176

DATE: 11/3/2008
CUSTOMER PO: 22104
TICO SO: 348596

HEAT NUMBER: W21T

SPECIFICATION: ASTM B-265-06/ASME SB-265-A06 **** GR. 2 ****
ASTM F-67-06/EN 10204:2004 TYPE 3.1

DESCRIPTION: ROLL-FORMED CYLINDER 9.50" OD X 39.375" 4 PCS

COMMENTS:

CHEMISTRY %:

Fe	IRON	0.118
O	OXYGEN	0.152
N	NITROGEN	0.003
C	CARBON	0.01

RESIDUAL ELEMENTS (EACH) LESS THAN 0.10
RESIDUAL ELEMENTS (TOTAL) LESS THAN 0.40

FINAL PRODUCT HYDROGEN: .0033
TITANIUM REMAINDER

TENSILE DATA:	TEST 1	TEST 2	TEST 3	TEST 4
TENSILE PSI:	69000		70000	
YIELD 0.2% OFFSET:	45900		51000	
ELONGATION % IN	32		27	
RA %:	73		76	

PRODUCT ANNEALED: YES

PHYSICAL/MECHANICAL TEST DATA:

HYDROSTATIC:	ULTRASONIC:	GUIDED BEND:
FLATTENING:	PNEUMATIC:	
FLARE:	EDDY CURRENT:	

MATERIAL FREE FROM MERCURY CONTAMINATION
MATERIAL CONFORMS TO ALL TECHNICAL AND WORKMANSHIP REQUIREMENTS OF SPECIFICATIONS

Carie Westfal

Carie Westfal, Certification Clerk

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TO: HIMAC
HI-TECH MANUFACTURING LLC
4637 N 25TH AVENUE
SCHILLER PARK, IL 60176

DATE: 2/24/2009
CUSTOMER PO: 23663
TICO SO: 359187

HEAT NUMBER: W99M

SPECIFICATION: ASTM B-265-06/ASME SB-265-A06 **** GR. 2 ****
EN 10204:2004 TYPE 3.1

DESCRIPTION: ROLLED -FORMED CYLINDER 9.63" OD X 39.38" 16 PCS

COMMENTS:

CHEMISTRY %:

Fe	IRON	0.126
O	OXYGEN	0.164
N	NITROGEN	0.002
C	CARBON	0.011

RESIDUAL ELEMENTS (EACH) LESS THAN 0.10
RESIDUAL ELEMENTS (TOTAL) LESS THAN 0.40

FINAL PRODUCT HYDROGEN: .0037
TITANIUM REMAINDER

TENSILE DATA:	TEST 1	TEST 2	TEST 3	TEST 4
TENSILE PSI:	77000		73900	
YIELD 0.2% OFFSET:	51800		55500	
ELONGATION % IN	32		27	
RA %:	65		77	

PRODUCT ANNEALED: YES

PHYSICAL/MECHANICAL TEST DATA:

HYDROSTATIC:	ULTRASONIC:	GUIDED BEND:
FLATTENING:	PNEUMATIC:	
FLARE:	EDDY CURRENT:	

MATERIAL FREE FROM MERCURY CONTAMINATION
MATERIAL CONFORMS TO ALL TECHNICAL AND WORKMANSHIP REQUIREMENTS OF SPECIFICATIONS

Carie Westfal

Carie Westfal, Certification Clerk