

Fort Wayne Metals Research Products Corp

PHN 260.747.4154
FAX 260.747.03989609 Ardmore Avenue
Fort Wayne, IN 46809

fwm.com

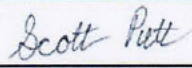


FORT WAYNE METALS

Turning knowledge into solutions.

F-QM-50
rev. November 04, 2018

CERTIFICATION OF COMPLIANCE

Certification: 1168333-1	Manufactured Date: 07/09/2018	Batch: 12622975	 Certified By Scott Putt Inspector
Customer: [REDACTED]	Sales Order: [REDACTED]	Purchase Order: [REDACTED] 1of3	
Customer Part: -	Quantity Shipped: 163.657 kg (980 ea)	Finish: Centerless Ground & Polished	9 July, 2018 Date
Alloy: Ti-6Al-4V ELI	Condition: Annealed		
Size: 4.0 mm x 3000 mm			
Specification: ASTM F136, ISO 5832-3			
The material in this shipment has been certified to comply to the above specification			

RAW MATERIAL CHARACTERISTICS

Heat Number: B6F24			
Batch Description: Round Bar			
Aluminum (Al) (%)	5.9400	Balance	Titanium
Carbon (C) (%)	0.0100	Hydrogen (H) (%)	0.0030
Iron (Fe) (%)	0.1650	Nitrogen (N) (%)	< 0.0100
Oxygen (O) (%)	0.1020	Vanadium (V) (%)	3.9550
RM Country of Origin	USA	RM DFARS Compliant	Compliant
Ultrasonic Tested	Yes		

FINISHED GOOD MATERIAL CHARACTERISTICS

Size Tolerance: Diameter +0.000 / -0.018 mm		Discrete Part Length +50.8 / -50.8 mm	
Batch Description: Eddy Current Tested			
Diameter (mm)	3.997	Discrete Part Length (mm)	2,997.2
Eddy Current Test	Pass		
Size Tolerance: Diameter +0.000 / -0.018 mm		Discrete Part Length +50.8 / -50.8 mm	
Batch Description: Centerless Ground and Polish			
Diameter (mm)	3.997	Discrete Part Length (mm)	2,997.2
Breakload (kg)	1,235	Tensile Strength (Mpa)	965
Elongation (%)	22	4D Elongation (%)	22
Yield Load (kg)	1,057	Yield Strength (Mpa)	827
MetLab Report Number	18-04-54289	Hydrogen (H) (%)	0.0010
Straightness	Pass	Microstructure	A1

Made in the USA from domestic and foreign materials.

FDA registered and ISO 13485 certified - ISO 9001 and AS 9100 certified

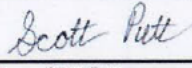
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Finish: Centerless Ground & Polished			9 July, 2018
			Date
Alloy: Ti-6Al-4V ELI	Condition: Annealed		
Size: 4.0 mm x 3000 mm			
Specification: ASTM F136, ISO 5832-3			
The material in this shipment has been certified to comply to the above specification			

TESTING PROPERTIES

Crosshead Speed (mm/min)	1.2446	Secondary Crosshead Speed (mm/min)	25.4000
Gauge Length (mm)	50.8000		

CERTIFICATION NOTES

Material is certified in accordance with DIN EN.10204 certificate type 3.1.

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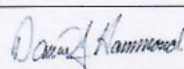


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FQM-50
rev. November 04, 2018

CERTIFICATION OF COMPLIANCE

Certification: 1168344-1	Manufactured Date: 08/03/2018	Batch: 12769348	 Certified By Dan Hammond Inspector 4 August, 2018 Date
Customer: [REDACTED]	Sales Order: [REDACTED]	Purchase Order: [REDACTED]	
Customer Part: -	1 of 3		
Quantity Shipped: 41.368 kg (247 ea)	Finish: Centerless Ground & Polished		
Alloy: Ti-6Al-4V ELI		Condition: Annealed	
Size: 4.0 mm x 3000 mm			
Specification: ASTM F136, ISO 5832-3			
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RAW MATERIAL CHARACTERISTICS

Heat Number: U6E94			
Batch Description: Coil			
Aluminum (Al) (%)	6.0600	Balance	Titanium
Carbon (C) (%)	0.0100	Hydrogen (H) (%)	0.0020
Iron (Fe) (%)	0.1550	Nitrogen (N) (%)	0.0100
Oxygen (O) (%)	0.1175	Vanadium (V) (%)	3.9350
RM Country of Origin	USA	RM DFARS Compliant	Compliant
Ultrasonic Tested	Yes		

FINISHED GOOD MATERIAL CHARACTERISTICS

Size Tolerance: Diameter +0.000 / -0.018 mm		Discrete Part Length +50.8 / -50.8 mm	
Batch Description: Eddy Current Tested			
Diameter (mm)	3.99415	Discrete Part Length (mm)	2,997.20000
Eddy Current Test	Pass		
Size Tolerance: Diameter +0.000 / -0.018 mm		Discrete Part Length +50.8 / -50.8 mm	
Batch Description: Centerless Ground and Polish			
Diameter (mm)	3.99415	Discrete Part Length (mm)	2,997.20000
Breakload (kg)	1,225	Tensile Strength (Mpa)	959
Elongation (%)	29	4D Elongation (%)	29
Yield Load (kg)	1,027	Yield Strength (Mpa)	804
MetLab Report Number	18-04-54289	Hydrogen (H) (%)	0.0010
Straightness	Pass	Microstructure	A1

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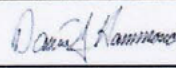
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