



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

CHUN YU WORKS & CO., LTD.
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MECHANICAL

Valid To: April 30, 2024

Certificate Number: 0877.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following fastener tests:

<u>Test:</u>	<u>Test Method:</u>
Depth of Decarburization (Hardness and Microscopic Method)	ASTM F2328, F2328M; ISO 898-1; JIS B1051
Discontinuities (Thread Laps included)	ISO 6157-1, 6157-2, 6157-3; JIS B1041, B1042
Hardness: Rockwell: HRC HRBW, HR30N, HR30TW Brinell: HBW2.5/187.5 Vickers: HV1, HV5, HV10, HV30	ASTM E18, F606/F606M; ISO 898-1, 898-2; JIS B1051, Z2245; SAE J429 ASTM E10 ASTM E92; SAE J78; JIS Z2244-1
Micro-Hardness: Vickers: HV0.2, HV0.3, HV0.5	ASTM E384; SAE J78; JIS Z2244-1
Magnetic Particle Inspection (Bench, Fluorescent)	ASTM E709
Metallographic Evaluation Microetch	ASTM E3, E407
Chemical composition -Optical Emission Spectrometry Carbon & Low Alloy Steel (Al, C, Cr, Cu, Mn, Mo, Ni, P, S, Si, Ti, V)	ASTM E415

<u>Test:</u>	<u>Test Method:</u>
Plating and Coating Thickness	
Optical	ASTM B487
X-Ray (Zn/Fe, Ni/Fe)	ASTM B568; JIS B1044; ISO 4042
Magnetic	ASTM B499
Proof – External Thread Fasteners	ASTM F606/F606M; ISO 898-1; JIS B1051; SAE J429
Proof – Internal Thread Fasteners (Excluding Cone Proof)	ASTM A563/A563M, F606/F606M; ISO 898-2; SAE J995
Retemper Hardness (HRBW, HBW)	ASTM A194/A194M
Rotational Capacity (Zinc Plated Product)	ASTM A325 (<i>Inactive 2014</i>) ⁴ , A325M (<i>Inactive 2014</i>) ⁴ , F3125/F3125M
Salt Spray	ASTM B117; ISO 9227
Tensile	
Axial & Wedge (Full Size)	ASTM A370, E8/E8M, F606/F606M; ISO 898-1; JIS B1051; SAE J429
Yield Strength	ASTM A370, F606/F606M; ISO 898-1; JIS B1051
Elongation	ASTM A370, F606/F606M; ISO 898-1; JIS B1051, Z2241
Reduction of Area	ASTM A370, E8/E8M, F606/F606M; ISO 898-1; JIS B1051
Stud Welding-Bend	AWS D1.1/D1.1M (Sec. 9.6.7.1)
Stud Welding-Tension	AWS D1.1/D1.1M (Sec. 9.6.7.3)
Torque-Tension	ASTM F1852 (<i>Inactive 2014</i>) ⁴ , F2280 (<i>Inactive 2014</i>) ⁴ , F3125/F3125M; JIS B1186; JSSII 09; GB/T 3632
Hydrogen Embrittlement	ISO 15330; JIS B1045

I. Dimensional Testing¹

Parameter	Range	CMC ² (±)	Technique / Method
Angle ³	0° to 360°	0.6°	2D Profile / Chapter 49 of CY-G4-02-04
External Threads ³ – Functional Diameter	M3 to M30 (#4 to 1 1/4) in M6 to M12	N/A 0.005 mm	Thread ring gage / ISO 1502, ASME B 1.2 Thread tri-roller gage / ISO 1502, ASME B 1.2
Head Height ³	Up to 20 mm	0.02 mm	Dial indicator / JIS B1071
Internal Threads ³ – Functional Diameter	M3 to M33 (#8 to 1 1/4) in	N/A	Thread plug gage / ISO 1502, ASME B 1.2
Linear ³ – 1D 1D 2D	Up to 150 mm Up to 300 mm Up to 25 mm (25 to 50) mm X axial: Up to 200 mm Y axial: Up to 100 mm	0.03 mm 0.10 mm 0.003 mm 0.01 mm 0.005 mm 0.004 mm	Caliper / JIS B1071 Caliper / JIS B1071 Micrometer / JIS B1071 Micrometer / JIS B1071 2D Optical profiler / Chapter 49 of CY-G4-02-04
Radii ³	Up to 2 in	0.01 mm	2D Profile / Chapter 49 of CY-G4-02-04

Parameter	Range	CMC ² (±)	Technique / Method
Recesses ³	Socket: M3 to M22; (1/4 to 5/8) in 6-Lobes: T8 to T60 Square: No. 0 to No. 3	N/A	Plug gages /ASME B18.3, B18.6.3; ISO 4762, 23429; JIS B1016
Recesses Depth ³	Socket: M3 to M22; (1/4 to 5/8) in 6-Lobes: T6 to T60 Square: No. 0 to No. 3	0.015 mm 0.016 mm 0.015 mm 0.016 mm	Recess depth gauge / ASME B18.3, B18.6.3; ISO 4762

¹ Commercial dimensional testing services are sometimes available for this laboratory.

² Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine measurements of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific measurement performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific measurement.

³ This test is not equivalent to that of a calibration.

⁴ This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.



Accredited Laboratory

A2LA has accredited

CHUN YU WORKS & CO., LTD.

Kaohsiung, Taiwan

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 23rd day of March 2022.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0877.01
Valid to April 30, 2024

For the types of tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.