JIANGSU LIANGYI CO., LIMITED Manufacturer of Forgings, Rings & Bars	EN 10204 TYPE 3.1

INSPECTION CERTIFICATE

Certificate of Conformity & Mill Test Report — EN 10204:2004 Type 3.1

Nickel Alloy, Corrosion- and Heat-Resistant — Forged Rings, Solution Heat Treated

47.5Ni - 22Cr - 1.5Co - 9.0Mo - 0.60W - 18.5Fe (Alloy X) • Composition similar to UNS N06002

1. ORDER & CERTIFICATE DATA

Certificate No.	LY-MTC-2024-89072
Issue Date	2026-05-25
Purchase Order No.	JJLY890123
Sales Order No.	LY-SO-24-0731

Specification	AMS5754 Rev. P (2024-09)
UNS Designation	Hastelloy X
Heat No.	HX24-0856
Lot No.	LY24-89072

2. PRODUCT IDENTIFICATION

Manufacturer	Jiangsu Liangyi Co., Limited
Customer	[redacted]
Product Description	Hastelloy X — Forged Rings, Solution Heat Treated
Size.	OD 1075 mm × ID 1015 mm × H 68 mm
Quantity	5 pcs
Melting Process	VIM + ESR
Country of Melting	China

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3. CHEMICAL COMPOSITION (wt %) — AMS5754P Table 1, per AMS2283

Element	Spec. Min %	Spec. Max %	Actual % (Heat HX24-0856)
C	0.05	0.15	**0.082**
Mn	—	1.00	**0.54**
Si	—	1.00	**0.43**
P	—	0.040	**0.011**
S	—	0.030	**0.002**
Cr	20.50	23.00	**21.76**
Co	0.50	2.50	**1.48**
Mo	8.00	10.00	**9.08**
W	0.20	1.00	**0.57**
Fe	17.00	20.00	**18.42**
B	—	0.010	**0.004**
Al	—	0.50	**0.17**
Ti	—	0.15	**0.04**
Cu	—	0.50	**0.07**
Ni	Rem.	—	**Bal. 47.34**

Note: *B and Al shall be present but not in excess of the specified maximum. Composition determined per AMS2283; check-analysis limits per AMS2269. All elements conform to specification.*

4. HEAT TREATMENT (AMS5754P 3.3)

Condition: Solution Heat Treated and descaled.
Cycle: Solution treated at 2125 °F (1163 °C), held 90 minutes (≥ 20 min, within ±25 °F of selected temperature), cooled at a rate equivalent to air cool or faster.
Pyrometry: Furnace and instrumentation in accordance with AMS2750. Solution range 2100–2150 °F (1149–1177 °C).

5. MECHANICAL PROPERTIES — HARDNESS (AMS5754P 3.4.1.1.1)

Property	Specification	Method	Result	Verdict
Brinell Hardness — Ring No. 1	≤ 241 HBW	ASTM E10	197 HBW	PASS
Brinell Hardness — Ring No. 2	≤ 241 HBW	ASTM E10	201 HBW	PASS
Brinell Hardness — Ring No. 3	≤ 241 HBW	ASTM E10	195 HBW	PASS

Hardness determined at approximately T/4 of section, per ASTM E10. Requirement: not higher than 241 HBW (or equivalent, see ASTM E140).

6. STRESS-RUPTURE PROPERTIES AT 1500 °F (816 °C) (AMS5754P 3.4.1.2)

Parameter	Specified Requirement	Actual Result	Verdict
Test Temperature	1500 °F ± 3 °F (816 °C ± 2 °C)	1500 °F (816 °C)	PASS
Initial Axial Stress	15.0 ksi (103 MPa) min.	15.0 ksi (103 MPa)	PASS
Time to Rupture	≥ 24 h (no rupture before 24 h)	41.5 h	PASS
Elongation after Rupture	≥ 10 % in 4D	24 % in 4D	PASS
Test Method	ASTM E139	ASTM E139	PASS

Specimen maintained at 1500 °F ±3 °F under continuous load producing an initial axial stress of 15.0 ksi (103 MPa); test continued to rupture without change of load. Elongation measured at room temperature in 4D.

7. VISUAL, DIMENSIONAL & QUALITY (AMS5754P 3.5)

Examination	Requirement (AMS5754P)	Result
Surface / Visual	Sound, free from foreign material & detrimental imperfections (3.5)	Conforms
Dimensional	In accordance with drawing HJP89072	Conforms
Heat-treat Condition	Solution heat treated & descaled (3.2.2)	Conforms

8. DECLARATION OF CONFORMITY

We hereby certify that the material described above was manufactured, tested and inspected in accordance with, and conforms in all respects to, the technical requirements of SAE Aerospace Material Specification AMS5754 Revision P (2024-09), including chemical composition, heat-treat condition, hardness, stress-rupture properties and quality requirements. No exceptions were taken. The results recorded herein are true and correct as determined by tests on the material represented by this certificate.

Melt source / country of melting: VIM + ESR, China. **Sampling & testing:** forgings per AMS2374; conformance statement per AMS5754P 4.4.1.

Inspected / Tested by:	**Certified by (Authorized Inspection Rep.):**
weidong Quality Inspector	Quality Assurance Manager — Company Stamp