Custom Stainless Steel Sprockets: Engineering Specifications & Tolerances

Precision CNC-Machined Simplex, Duplex & Triplex Roller Chain Sprockets for International Machinery OEMs

Passaro International supplies custom-engineered austenitic stainless steel roller chain sprockets through an audited, ISO-certified CNC machining network in South India. Manufactured to strict ANSI B29.1 and ISO 606 (DIN 8187) tooth geometries, our components are built for corrosive washdown, food-grade, marine, and pharmaceutical drive systems.

1. METALLURGICAL SPECIFICATIONS (ASTM A240 / A276)

All bar, forging, and plate stock is sourced from certified mills with full heat-number traceability to ensure corrosion resistance and mechanical integrity.

Property / Element	AISI 304 (UNS S30400)	AISI 316L (UNS S31603)
Chromium (Cr)	18.0% – 20.0%	16.0% – 18.0%
Nickel (Ni)	8.0% – 10.5%	10.0% – 14.0%
Molybdenum (Mo)	Not Specified	2.0% – 3.0% (Chloride & Pitting Resistance)
Carbon (C) Max	0.08%	0.03% (Eliminates Carbide Precipitation in Welds)
Tensile Strength (Min)	515 MPa	485 MPa
Yield Strength 0.2% (Min)	205 MPa	170 MPa
Primary Applications	General food processing, packaging, beverage bottling, commercial washdown conveyors	Marine drives, pharmaceutical CIP systems, acidic/saline chemical processing

2. DIMENSIONAL & PITCH COVERAGE

Parameter	ANSI B29.1 (Inch Series)	ISO 606 / DIN 8187 (Metric Series)
Chain Pitch Range	#25 (1/4") through #160 (2")	05B (8 mm) through 32B (50.8 mm)
Strand Configurations	Simplex (Single), Duplex (Double), Triplex (Triple), Quadruplex	Simplex (06B-1), Duplex (06B-2), Triplex (06B-3), Multi-strand
Hub Styles	Type A (Plate), Type B (One-Side Hub), Type C (Both-Sides Hub), Taper-Lock	Type A (Flat Plate), Type B (Single Hub), Type C (Double Hub), Split/Weld-On
Tooth Count & OD	8T to 150T+; Outer Diameter up to 1,200 mm	8T to 150T+; Outer Diameter up to 1,200 mm

3. MACHINING TOLERANCES & SURFACE FINISHING

Feature / Dimension	Standard CNC Tolerance	Precision Ground / Custom Spec
Finished Bore Diameter	ISO H7 / H8	ISO H6 or Custom Interference/Clearance Fit
Keyway Width & Depth	DIN 6885-1 (JS9 / P9) or ANSI B17.1	Custom Parallel, Taper, or Splined Bores
Pitch Circle Runout (Radial)	≤ 0.08 mm (up to 250 mm PCD)	≤ 0.03 mm (High-Speed Servo Drives)
Axial Face Runout (Wobble)	≤ 0.08 mm	≤ 0.03 mm
Surface Finish & Treatment	Turned / Milled Ra 1.6 – 3.2 µm; Nitric/Citric Passivation	Electropolished Ra ≤ 0.8 µm (Sanitary FDA / NSF 51)

4. QUALITY ASSURANCE, IP SECURITY & EXPORT COMPLIANCE

- **Material & Dimensional Verification:** Every batch undergoes PMI (Positive Material Identification) alloy testing and CMM (Coordinate Measuring Machine) tooth-profile inspection prior to release.
- **Traceability & Certification:** Supplied with EN 10204 Type 3.1 Material Test Reports (MTRs), Certificate of Origin, and optional third-party pre-shipment inspection (SGS, TÜV, or Bureau Veritas).
- **Intellectual Property Protection:** Bilateral Non-Disclosure Agreements (NDAs) executed prior to sharing customer 2D drawings (PDF/DWG) or 3D CAD models (STEP/IGES).
- **Export Logistics:** VCI anti-corrosion export packaging with seaworthy fumigated wooden crates; shipped FOB Chennai Port or CIF/DDP worldwide.

> **RFQ SUBMISSION & ENGINEERING CONSULTATION**
> Send your 2D drawings, STEP models, target annual volumes, and material grade requirements for a formal DFM review and export quotation. Prototype runs start at 25–50 pieces per part number.

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