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CherryLOCK Rivet CR2538-5-03

NAS1739M5-3, CR2538-05-03

CR2538-5-03 is a high-strength CherryLOCK blind rivet featuring a 100° flush countersunk head and bulbed tail, designed for single-sided installation. It delivers enhanced resistance to vibration, fatigue, and shear, and is widely used in aerospace structural assemblies.

Basic Parameters

- Shank Diameter: 5/32 in (0.156")
- Grip Range (Marking "-03"): 0.126 – 0.187 in (3.18 – 4.75 mm)
- Overall Length (L): 0.375 in (-0, +0.030 in tolerance)
- Head Diameter (D): 0.173 in (+0.003 / -0.001 in)
- Head Height (A): 0.286 in (+/-0.004 in)
- Head Style: 100° flush countersunk, bulbed tail
- Hole Size: 0.176 – 0.180 in (#16 drill)
- Max Head Countersink Depth: ≤ 0.54 in.

Standards & Materials

- Compliance: NAS1740 / NAS1738 / MIL-SPEC
- Body Material: Aluminum alloy 7050-T73 (typical) or equivalent
- Mandrel Material: Stainless steel A286 (industry-standard).

Mechanical Performance

- Shear Strength: approx. 8,200–9,400 PSI (typical for 5/32" bulbed)
- Tensile Strength: approx. 6,000–6,200 PSI
- Operating Temperature Range: -54 °C to +120 °C
- Anodizing: MIL-A-8625, Class 1, Type II.

Installation Requirements

- Recommended Hole Size: 0.176–0.180 in (must not exceed)
- Countersink Depth Required: approx. 0.030 in minimum for flush seating
- Required Tools: Pneumatic-Hydraulic riveters with H681-05 pulling head (e.g., Cherry G700, G784, G689, G695B)
- Air Pressure: minimum 85 psi, nominal 90 psi
- Installation Time: ≤ 1.2 seconds per rivet
- Mandrel Flushness Post-Installation: collar and tail flush within ± 0.005 in
- Audible “Click”: confirms proper stem shear
- No lubrication allowed** (can cause setup failure)
- Handle composites with care** to avoid delamination.

Usage Guidelines

- Suitable Grip Thickness: 0.126–0.187 in
- For thinner stacks (≤ 0.125 in): use CR2538-5-02
- For thicker stacks (≥ 0.188 in): use CR2538-5-04
- Material Compatibility: aluminum, steel, titanium, composites.

Part Number Breakdown

- CR – CherryLOCK series (ring-lock, bulbed tail)
- 25 – bulbed-ring body type
- 38 – 100° flush countersunk head
- -5 – nominal 5/32 in diameter
- -03– grip range 0.126–0.187 in.

Inspection Criteria

- Head and mandrel flushness must meet NAS1400/NAS1740 standards; slight collar “flash” allowed (max collar protrusion approx. 0.020 in).
- Grip marking (“-03”) visible on stem for quick verification
- Hole and countersink dimensions are critical—oversize reduces bulbed tail retention, undersize may prevent full setup.

Note: This technical information is based on the official documentation provided by Cherry Aerospace and is intended solely for reference in product selection and specification.