

Stainless-Steel Ground Lug Clamp Component for Industry Leading Solar Racking System



Product Description

DSB Technologies manufactures the stainless-steel Ground Lug Clamp for use within a Ground Lug Clamp assembly. The component secures module-level power electronic devices (MLPE) or ground wires to aluminum rails in solar racking systems. During installation, the part's teeth cut through the anodized coating on the aluminum rail to create an electrical connection to ground. This small component ensures a consistent and durable bond that remains effective under years of outdoor exposure.

Part Characteristics

Specification	Details
Application	Used in MLPE & Ground Lug Clamp to attach MLPE devices or ground wires to aluminum rails
Molded Weight	18 g
Material	309L Stainless Steel (non-standard MPIF 35 grade)
Hardness	67 HRB typical
Density	7.35 g/cc
Annual Volume	1,200,000 pieces
Sourcing Date	June 2025
Secondary Operations	Tap, thread check, wash, passivation

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DSB's Solution

Production of the Ground Lug Clamp was transitioned to DSB Technologies in mid-2025 to take advantage of DSB's stainless-steel expertise and automated high-volume production.

The component is manufactured using powder metallurgy (PM), which permits DSB to form a green part that is very close to the final geometry. This minimizes machining and material loss while maintaining tight dimensional control. After molding and sintering, the part is tapped and thread-checked on automated equipment; it is subsequently washed to remove cutting fluid and then passivated. Passivation is an important step for the removal of surface iron and the establishment of a thin, protective oxide layer that strengthens corrosion resistance.

The production process is integrated for repeatability, which is a must for a component produced at a rate exceeding one million pieces per year.

Why Powder Metallurgy

Powder metallurgy yielded the best balance of precision, throughput, and cost for this application. The ability to form small stainless-steel components to net or near-net shape with minimal machining is very advantageous at high production volumes. Powder metallurgy also produces a uniform and dense structure that supports mechanical strength and electrical function.

DSB's production lines comprise high-speed tapping and automated inspection systems that keep secondary operations in step with press output. The combination of near-net-shape forming and automated finishing made powder metallurgy the clear choice for the Ground Lug Clamp.

Market Application

The Ground Lug Clamp is part of a broader family of mounting solutions for solar installations. In service, the component provides the electrical grounding interface between the aluminum rail and the system's wiring or attached device. Its 309L stainless-steel construction resists corrosion and maintains electrical contact after years of weather exposure and different environmental conditions.

Your Partner in Production

At an annual production rate of more than one million pieces, The Ground Lug Clamp illustrates how DSB Technologies combines powder-metal processing with automated finishing and inspection to support high-volume stainless-steel applications. The component's dependability and consistency reflect DSB's focus on stable and scalable production for high-volume stainless-steel components across energy and industrial markets.

To learn more about how DSB Technologies applies powder metallurgy to elaborate stainless-steel components, contact our team today.