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PTI Tech Advances Tungsten Metal Injection Molding into Production for Critical U.S. Defense Applications

PTI Tech, a U.S.-based leader in advanced manufacturing, announced today that multiple defense programs leveraging tungsten components manufactured through Metal Injection Molding (MIM) have transitioned into full production. These successes showcase PTI Tech's ability to deliver complex, high-density tungsten solutions for the most demanding defense applications.

Tungsten, with a density approaching 18.5 g/cm^3 , remains unmatched in applications requiring maximum mass in constrained volumes, superior wear resistance, and thermal stability. PTI Tech's proprietary MIM processes enable the production of precision tungsten parts with geometries and tolerances not achievable through conventional pressing, machining, or casting.

Through rigorous development and validation, PTI Tech has now launched tungsten MIM components into production for defense applications including:

- **Energetic Devices:** Tungsten setback pins and arming components requiring high density, mechanical strength, and repeatable tolerances.
- **Ammunition Systems:** Polymer-tungsten hybrid components and inserts that optimize weight distribution and survivability in advanced projectile designs.



- **Counterweights & Balancing Systems:** High-density tungsten masses for guided munitions, unmanned systems, and aerospace platforms where compact and precise balance is mission-critical.

“Metal Injection Molding of tungsten combines near-net-shape design freedom with the performance of a refractory metal,” said Michael Wiseman, Business Development Manager at PTI Tech. “The transition of multiple tungsten projects into production demonstrates not only material capability but also the robustness of our process control for defense customers who require absolute reliability.”

Guy Mariella, Chief Technology Officer at PTI Tech, added: “With record-breaking pricing of APT and increasing concerns about tungsten supply chain scarcity, PTI’s investment in advanced MIM technology is more important than ever. By developing scalable, U.S.-based solutions for tungsten processing, we are ensuring that our defense partners have secure access to this critical material without compromising performance or availability.”

PTI Tech’s end-to-end control—from in-house tooling to powder feedstock selection, sintering, and secondary machining—ensures consistent density, dimensional stability, and mechanical properties across high production volumes. By keeping every step of the manufacturing process domestic, PTI Tech strengthens U.S. supply chain resilience while delivering components aligned with Department of Defense requirements.

About PTI Tech

PTI Tech is a U.S.-based advanced manufacturing company specializing in injection molding of plastics and metals, additive manufacturing, and in-house tooling. Serving defense, aerospace, medical, and industrial markets, PTI Tech combines INNOVATION, ENGINEERING, TECHNOLOGY, and VISION to deliver mission-critical solutions that are 100% American made.

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