



AUTOMOTIVE FASTENING TECHNOLOGY SPOKEN HERE.

Alcoa
Fastening
Systems & Rings



ALCOA FASTENING SYSTEMS & RINGS.

DRIVING AUTOMOTIVE FASTENING TECHNOLOGY FOR MORE THAN 5 DECADES.

At Alcoa Fastening Systems & Rings (AFSR), we understand automotive performance on the road, and on the assembly floor. We've been driving technical innovation in fasteners and installation tooling for more than five decades, delivering some of the world's highest performance fasteners: Huck® structural blind fasteners and 2-piece HuckBolts®, Recoil® threaded inserts, Keysert® solid inserts, Camloc® quick-release fasteners and latches, and a broad range of high-performance installation tools. For a superior selection of standard fasteners as well as engineered fastening solutions for your most pressing automotive assembly applications, you can count on AFSR. When it comes to fastening technology, we speak your language.



FASTENERS FOR A WIDE RANGE OF JOINING CHALLENGES.

Looking to reduce vehicle weight, maximize joint strength, load carrying capability, fatigue strength, and vibration resistance? Focused on reducing costs and corrosion resistance, as well as making installation more efficient? AFSR is leading the way in fastener innovation and tackling some of the toughest joining challenges in automotive assembly. Combining a talented and experienced fastener engineering department with the support of the Alcoa Technical Center, AFSR is ready to work with you in developing effective solutions to your unique joining requirements.



VERTICALLY INTEGRATED FROM DESIGN TO DELIVERY.

Our 400,000 square foot manufacturing facility in Waco, Texas features the most advanced machining and header equipment in the industry. From design to finished product, AFSR is fully vertically integrated. Because we control all aspects of the manufacturing process, you can count on consistent, quality workmanship, and timely deliveries. Everything is in house. No secondary suppliers. No waiting for deliveries. No excuses.

THE STRONGEST AUTOMOTIVE FASTENER LINE EVER ASSEMBLED.

HUCK® STRUCTURAL BLIND RIVETS



MAGNA-LOK®

Huck Magna-Lok® is a versatile, moisture- and vibration-resistant, wide-grip range, hole filling fastener that can be installed with conventional installation tools. It has a unique circle-lock feature, which means a simple visual inspection ensures proper installation. *Sizes: 3/16", 1/4", 3/8", 1/2".*



MAGNA-BULB®

The Huck Magna-Bulb® provides the high shear strength and high pull-out strength needed for thin materials, and oversized or misaligned holes. Its superior blind-side strength and structural integrity is provided by its unique bulbing system and positive, mechanical pin retention. *Sizes: 3/16", 1/4", 5/16".*



HUCKLOK®

The HuckLok® structural blind rivet features a wide grip range and unique double-locking action. This action consistently secures the assembly from both sides, resulting in maximum hold and joint integrity. Its large, blind-side footprint prevents pull-through. *Sizes: 3/16", 1/4".*



AUTO-BULB™

For automated, high-speed assemblies, the Huck Auto-Bulb™ is the ideal solution. Fast, reliable installation is provided with its easy-to-use lead-in point. It works by clamping the joint with a broad, blind-side bulb, making it ideal for use within thin materials, and oversized, misaligned, or slotted holes. *Sizes: 3/16", 1/4".*

HUCK BLIND BOLTS



BOM®

The Huck BOM® (*Blind, Oversized, Mechanically locked*) blind bolt is so strong, one can do the work of up to four conventional fasteners. Its unique push-and-pull installation design makes it ideal for automotive industry use. *Sizes: 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4".*

TWO-PIECE HUCKBOLTS®



HUCK® BOBTAIL®

Engineered to meet the challenges of the automotive assembly application, Huck® BobTail® delivers high performance, vibration resistance, and ultimate reliability in a unique, pintail-less design. *Sizes: 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 12mm, 14mm, 16mm, 20mm.*



MAGNA-GRIP®

When a wide grip range is required and a flush bolt break to the collar is beneficial, Huck Magna-Grip® is the right choice. This strong, two-piece HuckBolt® offers the highest level of vibration resistance, installs reliably, and provides consistently high, uniform installed values. *Sizes: 3/16", 1/4", 5/16", 3/8".*



RECOIL® THREADED INSERTS

Recoil® leads the way in threaded insert systems, offering a broad selection of free-running, screw-locking, and tangless inserts, along with complementary STI taps and installation tooling.



KEYSERT® SOLID INSERTS

Featuring a key-locking action that prevents rotation due to vibration or torsion, Keysert solid inserts are designed to handle the most demanding automotive applications.



CAMLOC® QUICK-RELEASE FASTENERS AND LATCHES

The Camloc® product line includes an extensive range of quick-release fasteners, tension latches and door locks, hinges, and handles. These products provide exceptionally strong and reliable fastening of panels, doors, and hatches which are regularly removed and re-attached. Typical uses for Camloc products include maintenance paneling, access hatches, external components, and a wide range of other applications where quick removal and re-attachment is required.



LIGHTWEIGHT INSTALLATION TOOLING ADDS TO EFFICIENCY.

AFSR offers a complete line of production volume-proven, reliable, high-performance pneumatic and hydraulic installation tools, lightweight and ergonomically designed for productivity. Supporting the hydraulic tooling is our broad selection of Powerig® portable hydraulic power sources, available in a range of reservoir capacities and weights.

HUCK TRU-SET® ASSEMBLY CONTROL SYSTEM

The Huck® Tru-Set® Assembly Control System is designed to check the integrity of every fastener installed. Tru-Set's built-in data processing unit monitors and measures hydraulic pressure to determine accuracy of installation and provides easy onscreen visual confirmation.

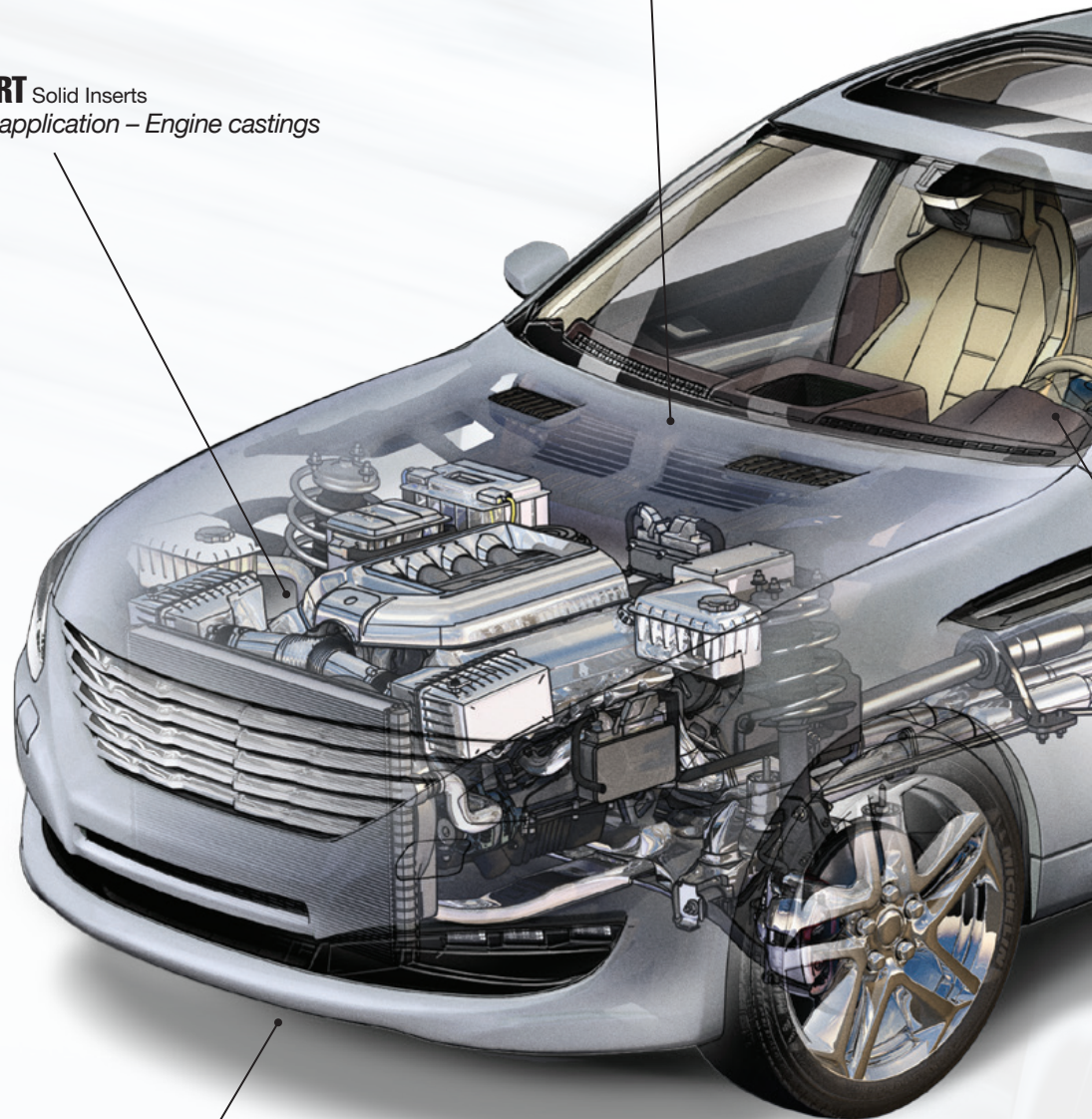
THE MOST RELIABLE, PROVEN ASSEMBLIES START WITH AFSR.



CAMLOC 1/4-Turn Fasteners
Typical application – Fuse box



KEYSERT Solid Inserts
Typical application – Engine castings



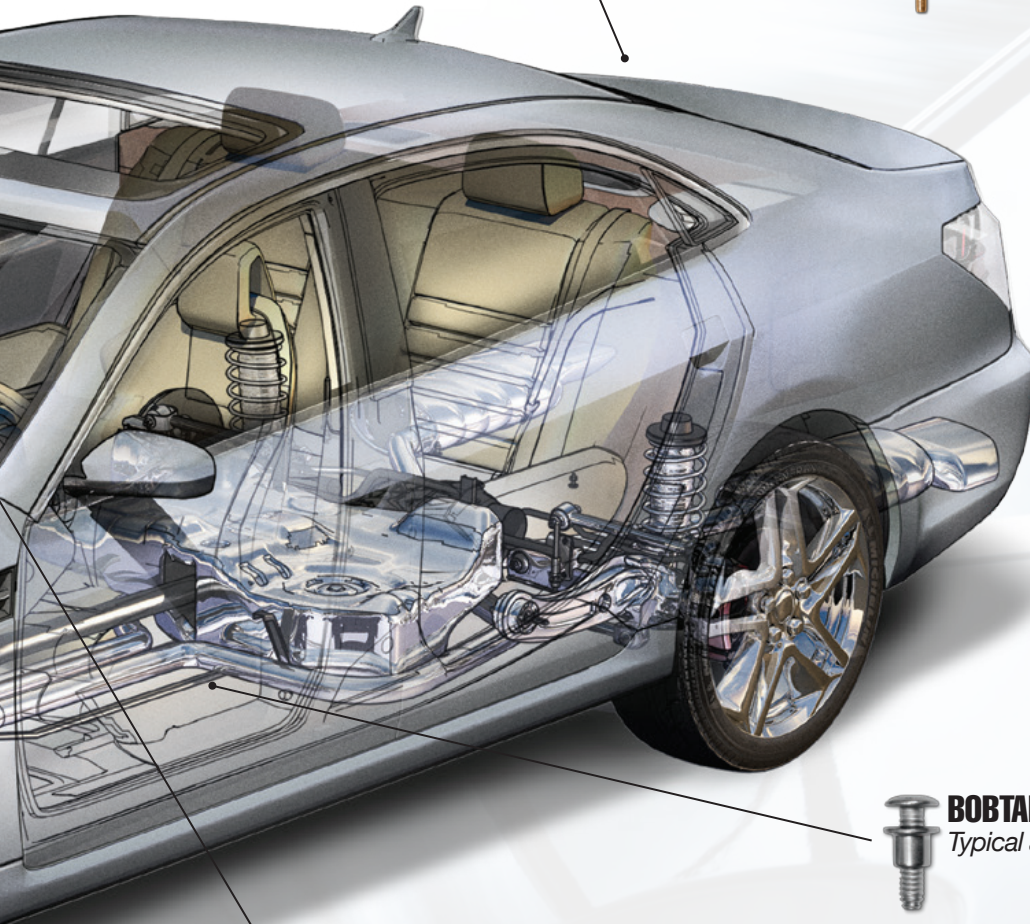
RECOIL Wire Inserts
Typical application – Oil and transmission pans



CAMLOC Latches
Typical application – Trunk



AUTO-BULB Structural Blind Rivets
Typical application – Front and rear bumpers



BOBTAIL
Typical application – Seating structures



HUCKLOK Structural Blind Rivets
Typical application – Steering column

ADVANTAGE: AFSR



LIGHTWEIGHTING

Because Huck fasteners offer higher clamp and tensile strength than conventional fasteners, fewer or smaller diameter Huck fasteners can be used. This helps to reduce equipment weight, without loss of durability. In addition, using HuckBolts allows for the use of lighter weight aluminum instead of steel in the joining process. While welding aluminum has historically been problematic, the strong clamp performance of HuckBolt fasteners provides the joining power to attach aluminum elements to dissimilar materials.

PRODUCTIVITY

Huck fasteners are engineered for quick, easy installation. In fact, you can install a HuckBolt in 2 seconds or less, saving valuable assembly time and optimizing productivity. Huck also helps you save time because checking your work is quick and easy. HuckBolts were designed with a special symbol on the collar, so a quick visual inspection is all it takes to confirm installation.

VIBRATION RESISTANCE

Regular nuts and bolts have gaps between the nut and bolt thread connections, which allow for loosening during transverse vibration. By contrast, the unique direct tension, swaging installation technique used with 2-piece HuckBolts results in full metal-to-metal contact between the swaged collar and the lock grooves of the bolt. This technique eliminates gaps between the collar and bolt, ensuring a vibration-resistant joint.

SUPERIOR ALTERNATIVE TO WELDING

Fastening with vibration-resistant HuckBolts offers five key benefits over welding; safety, simplicity of installation, speed of installation, cost-savings, and higher long-term structural integrity.

MORE THAN A SOURCE OF FASTENERS, A SOURCE FOR FASTENING ANSWERS.

ENGINEERED FASTENING SOLUTIONS.

AFSR is more than just a fastener supplier. We're a resource for complete fastening solutions. Over the decades, we've been able to assemble an unrivaled team of top-tier fastening engineers who know, and appreciate, the nuances of joining technology. In addition, they also understand the automotive manufacturing industry and its specific challenges. And AFSR is fully equipped to work with you throughout the prototyping and quality assurance testing process. In short, when you need a fastening solution, we're here to make it happen.

MANUFACTURING THE WAY IT SHOULD BE: ALL UNDER ONE ROOF.

We're a fully vertically integrated manufacturer from design to finished product. Because we control all aspects of the manufacturing process, you can count on timely, consistently reliable delivery. For example, we heat treat in-house, employing 14 dedicated heat-treating furnaces, able to accommodate 170,000 lbs. of fasteners each day. In addition, our advanced in-house coating processing system allows us to apply a choice of protective finishes to our fasteners.





NEW FASTENING TECHNOLOGY

HUCK 360® - ADVANCED FASTENING SYSTEM

Offering the performance of an engineered lockbolt, Huck 360® is the most advanced nut-and-bolt fastening system available today. A high-strength, vibration-resistant, engineered fastener, Huck 360 can be installed and removed using conventional tools. Additionally, this fastener offers the ability to be retightened and reused, with the torque requirements remaining the same for all installations.

The Huck 360 is proven to provide five times the fatigue life of a standard threaded nut and bolt, and delivers the highest-in-class level of vibration resistance. This hybrid fastener is also designed to withstand high spike loads. Huck 360 fasteners are available in 3/8", 1/2", 5/8", 7/8", 1", 1-1/8", 1-3/8", 10mm, 12mm, 16mm, 20mm, and 36mm sizes.



Huck 360®



Conventional Coating



HuckGuard™ Coating

HUCKGUARD™ - ADVANCED CORROSION PROTECTION

Developed specifically to protect swaged collars and Huck 360 nuts, HuckGuard™ provides a strong, added layer of corrosion resistance. Because of the direct tension swaging process involved during the installation process, a significant shear force on the fastener collars and nuts is created. This force, in turn, can compromise the collar or nut's finish and ultimately its corrosion-resistant properties.

Fasteners treated with HuckGuard provide the additional protection needed to guard against the forces of corrosion proven to successfully protect collars and nuts for up to 500 hours of exposure to salt spray.

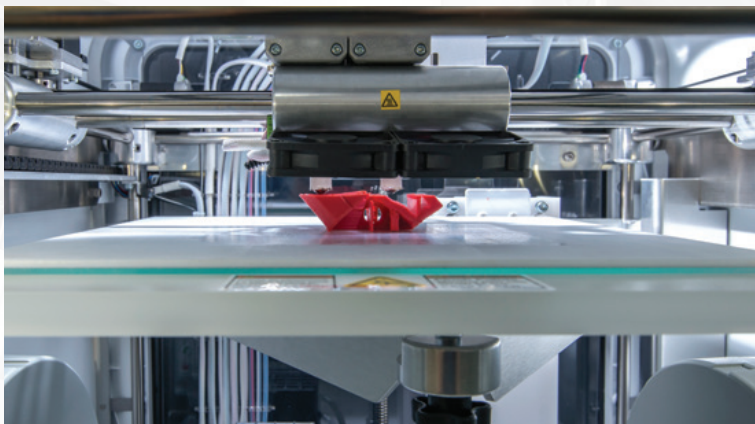
LEADERS IN METALS SCIENCE, RESEARCH, AND FABRICATION

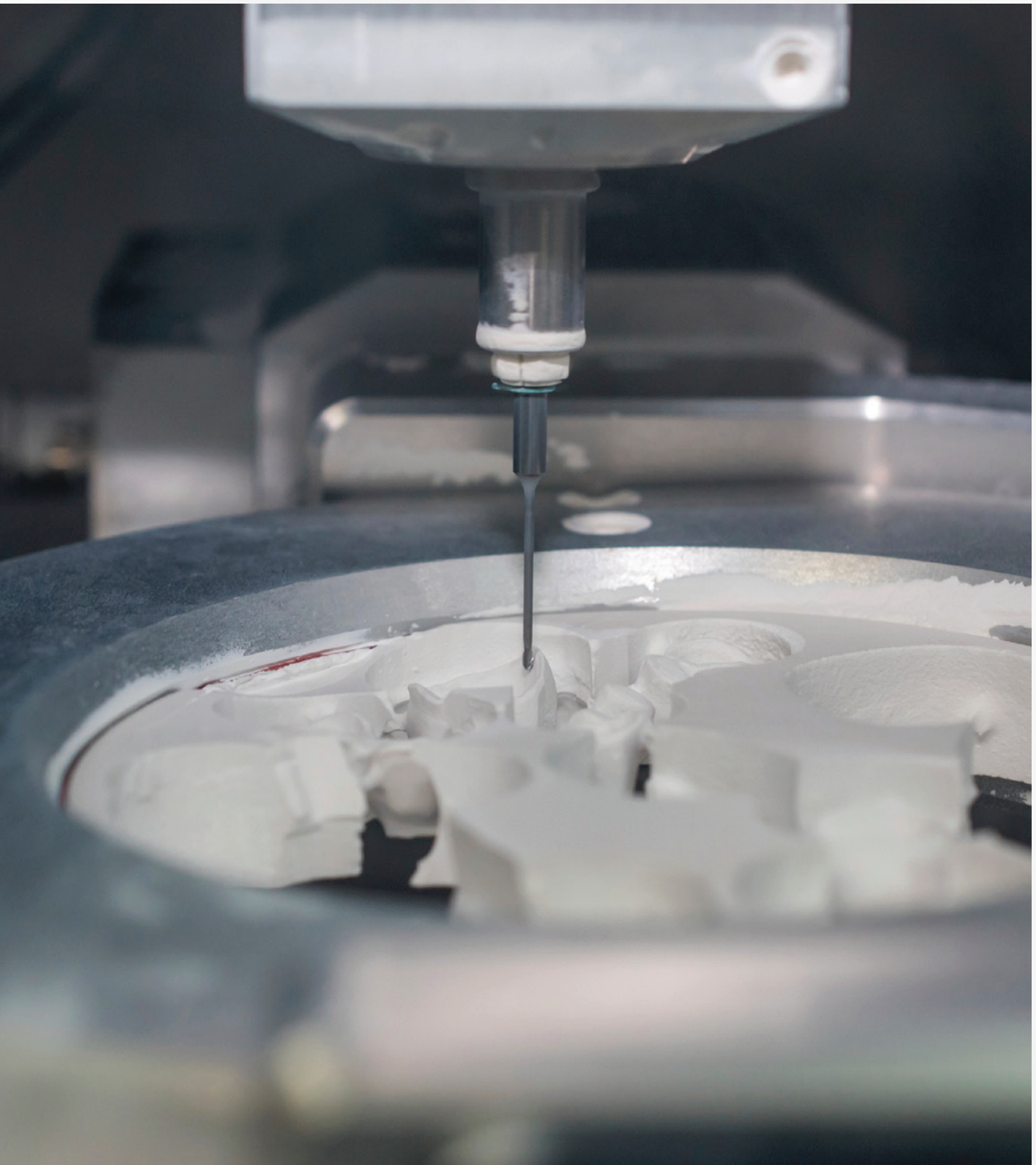
The Alcoa Technical Center (ATC) is the world's largest and most advanced light metals development and testing facility. Located on a 25 acre campus, the ATC is home to more than 500 scientists, engineers, and vital support personnel working in key areas as physical, mechanical, and process metallurgy, thermodynamics, corrosion and electrochemistry, as well as applied metallurgy, 3D printing, and more.

Today, with full 3D printing capabilities, the ATC is capable of handling a wide range of prototyping efforts, and can provide a variety of solutions from concept to completion. ATC's advanced 3D printing capabilities include the use of proprietary aluminum, titanium, and nickel powders specific for 3D printing. These powders are tailored for 3D printed parts that require higher strength, temperature, and other quality and performance characteristics.

COLLABORATION IS A CRITICAL ELEMENT OF SUCCESS

Though the talent found at the ATC is world class, the key to the success of this organization is its ability to work collaboratively with each other and with customers. With the focus on effective collaboration, the ATC is able to best meet the exacting requirements of the customer objective application on a variety of projects. These projects span across a wide variety of industries and require knowledge and expertise in multiple areas of metals science, research, and 3D printing and fabrication.





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