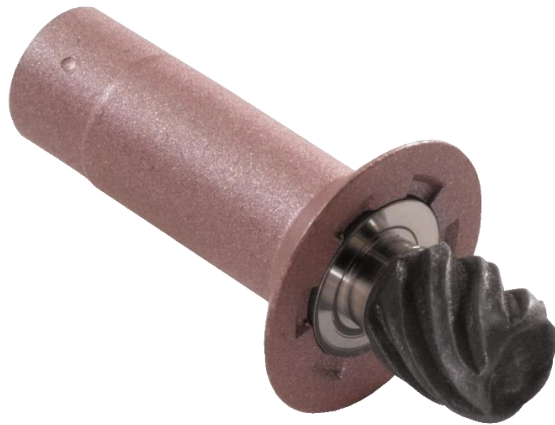




**HOWMET  
AEROSPACE**

# Blind Bolts



The Accu-Lok™ Blind Fastening System, which consists of Accu-Lok I, Accu-Lok II and Accu-Lok IIa, is designed specifically for use in composite structures where access is limited to one side of the structure. It combines high joint preload with a large diameter footprint on the blind side. The large footprint enables distribution of the joint preload over a larger area, thus virtually eliminating the possibility of delaminating the composite structure.

The Accu-Lok family includes the Accu-Lok II and Accu-Lok IIa, which are available with the Dryv-Cap™ non-threaded installation system. The Dryv-Cap is essentially a disposable driver, which positively engages the driving recess in the fastener and is captivated to each fastener. The Dryv-Cap eliminates the wear associated with conventional drivers. The interface between the Dryv-Cap and the installation tool is a standard hex. Only two installation nosepieces are required for installation of all fastener sizes. The Dryv-Cap positively engages the fastener and installation tooling, avoiding rotation of the fastener during installation. This eliminates marring of the parent material surface.

The Accu-Lok family of blind fasteners is easily installed using common, widely available tooling. All of the necessary tools are specified in the detail catalogs and individual customer drawings. Arconic offers a wide selection of both hand and power installation tools.

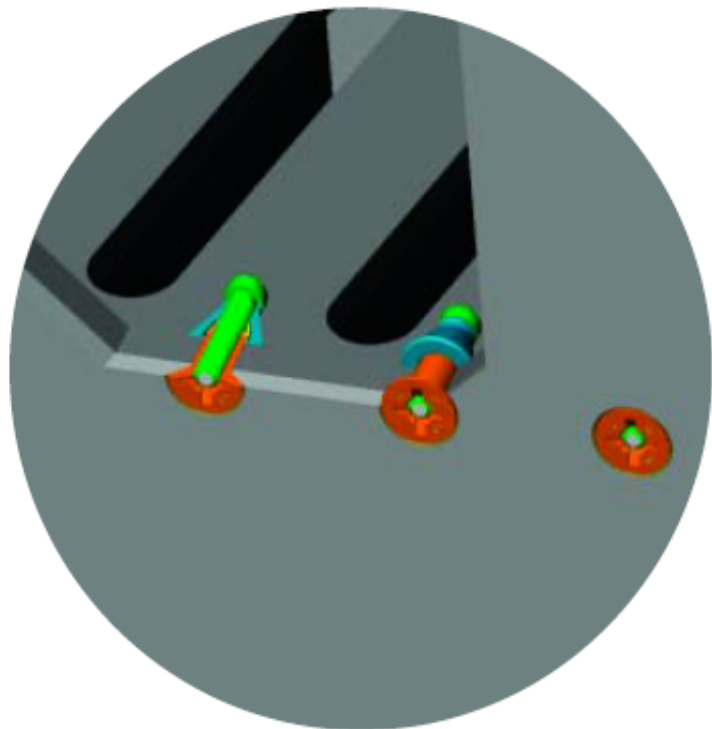


The Accu-Lok Fastening System is designed to be galvanically compatible with carbon fiber reinforced composite structures. The main nut body is most commonly made from 6Al-4V Titanium. Alternate materials are available upon request. The sleeve component is made from 300 series Corrosion Resistant Steel. Each assembly also contains a

insert. Various finishes are available for these fasteners.

Both unified and metric products are available. Accu-Lok fasteners are covered by "NAS" standards.

Typical Accu-Lok applications include fixed and rotary-wing, commercial and military aircraft.



The **Visu-Lok®** system is a blind fastener that provides high shear, tensile, fatigue, and self-locking capabilities. Unlike conventional nut and bolt combinations, the Visu-Lok blind bolt can be completely installed, and fully verified, from one side of the structure. When installed, the Visu-Lok forms a solid, blind side head, with minimum preload levels guaranteed. Manufactured in 1/16" increments, Visu-Loks have an operational grip range of .062".

The Visu-Lok family includes the **Visu-Lok II**, which utilizes a disposable drive nut. This drive nut allows for the use of only two installation nosepieces for installation of all fastener sizes.

A tapered version of the Visu-Lok is ideally suited for extreme or severe fatigue applications. It combines one-sided installation with the

advantages of tapered, interference fit. The tapered Visu-Lok also offers the highest possible fatigue life and uniform high preload values, as well as positive self-locking characteristics. Since it distributes the overall load more evenly, fewer fasteners may be required. Tapered Visu-Loks are also used for aircraft modifications or repairs.

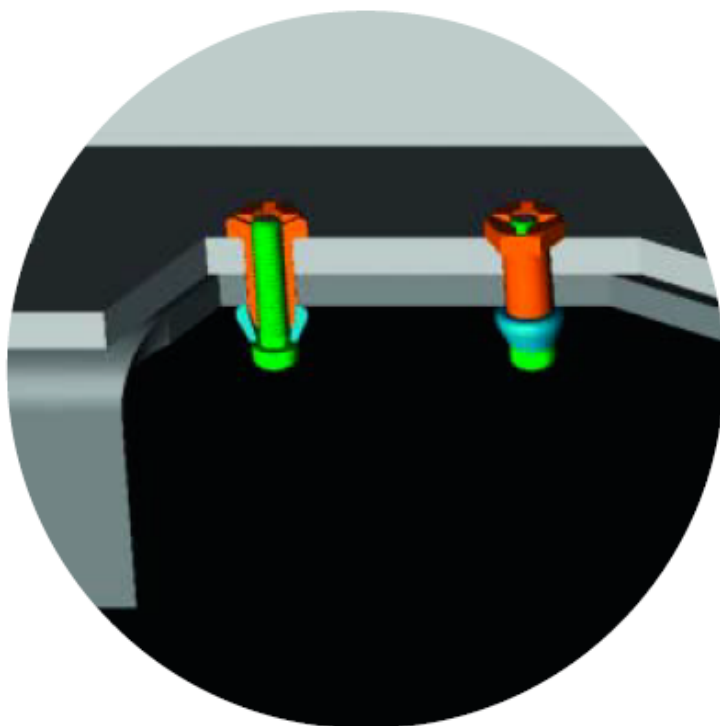
The Visu-Lok system uses common installation **tools** at standard air pressure levels. We offer a wide selection of both hand and power installation tools.

Visu-Lok fasteners are available in a wide range of **materials**, including Aluminum, Alloy Steel, H-11, Corrosion Resistant Steels, Inconel Nickel-Chromium Alloy, and Titanium. Visu-Loks are produced in flush and protruding head styles for shear and tension applications. Various finishes are available.

Other **variations** of the Visu-Loks are oversize and close-tolerance (interference fit) configurations.

Both unified and metric products are available. Visu-Lok blind fasteners are covered by "NAS" standards.

Typical Visu-Lok **applications** include fixed and rotary-wing, commercial and military aircraft.



The EM (electrical-mechanical) Stud® is a blind fastening system designed for grounding terminal purposes and lightweight structural attachments. The fastener is placed into a pre-drilled, loose tolerance hole from one side of the work. Standard "pull-tools" are used to exert an axial load until the stem separates. Once installed, the grounding stud is immediately ready for the attachment of one or more grounding straps. The grounding stud makes full contact with – and expands – the cylindrical hole surface to achieve a positive electrical contact and firm mechanical attachment. Compared with the traditional method of providing grounding terminals for electrical equipment, this system offers a significantly lower total installed cost due to the ease of installation and reduction in the number of components.

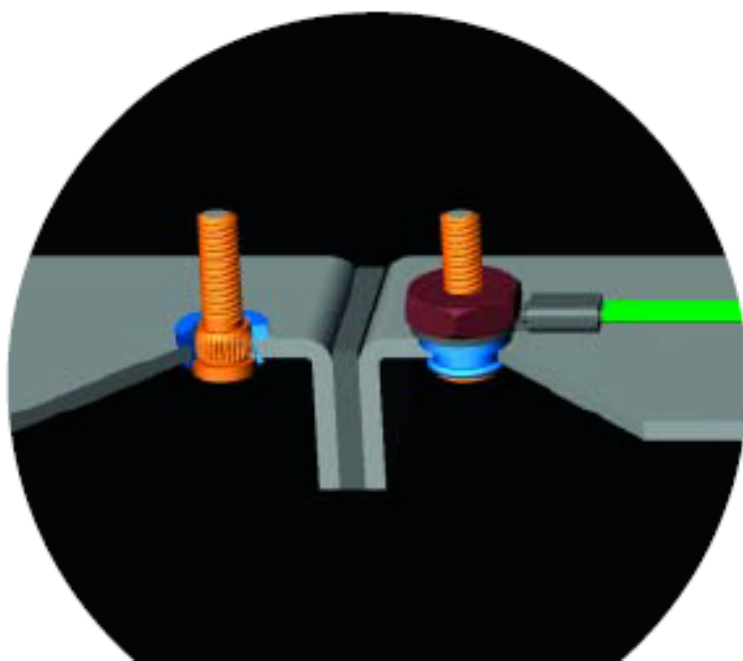
A variation of the EM Stud includes a double-ended configuration featuring a threaded shank on both sides of the work surface. It has all of the advantages of the standard EM Stud with the additional benefit of being able to provide a grounding terminal on both sides of the structure, eliminating up to 50% of the weight, fastener cost, and labor. Oversize replacements are also available.

Installation of the EM Stud is simple, convenient, and fast. Rivet type pull-tools that seat the stud and expand the sleeve are available from our tool division.



EM Studs are available in several material combinations. Typical stud materials are Alloy Steel and A286 Corrosion Resistant Steel. Sleeve materials include Aluminum and 300 series Corrosion Resistant Steel.

Both unified and metric products are available. EM Studs are covered by various customer standards. Typical EM Stud applications include wire bundle attachment and terminal grounding.



We are a total solutions provider for fasteners and installation tools to the aerospace, industrial and automotive markets. Our tool division has over fifty years of experience in providing answers for all of our customers' assembly needs. Tools are available for installation of our complete line of blind fasteners.

We offer Design & Engineering Services, Tool Lease Programs, Tool Rental Programs, Service and Maintenance Programs, and Calibration Services.

For installing one part or thousands, we have the right tool for any application.





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