World's Leading Supplier of Aircraft V-Retainer Coupling Joints and Ducting Components
Voss V-Band Couplings are available in an extensive variety of cross-sections with numerous latch styles, including T-bolt; quick-release T-bolt; and slotted, forged-trunnion designs. Designed for aircraft bleed air and environmental ducting. Available in all stainless steels and many superalloys, including 15-3-3-3 titanium for maximum strength at minimum weight.

Voss sheet metal flanges meet the specifications of all major aircraft manufacturers. These flanges are interchangeable and can be used with, or in place of, sheet metal flanges produced by others to similar specifications. Voss flanges are designed for joint sealing without the need for gaskets and are available in nickel alloy 625 and 718 materials, as well as each catalysts for today's lighter and more efficient commercial aircraft.

Voss bleed air couplings and machined flanges meet both commercial military requirements and the AS1895 standard. Used with metal seals, bleed air rigid couplings and machined flanges are used in high-pressure and high-temperature aircraft ducting applications, such as jet engine bleed air systems. Voss bleed air couplings and flanges are available in the entire range of sizes for both standard and low profile designs.

Voss T-bolt clamps are available in stainless steels, aluminum, titanium and other materials. Built rugged for lasting service. Available in unlimited diameters with several bolt sizes and any latch style, including standard T-bolt, quick-release saddle latch and over-center handles. Special purpose band clamps can be supplied with flared liners to protect the contact surface, as well as polymer or elastomer extrusions. Available to OEM, MIL/MS and NSN/FSN Ordnance specifications.
...Also Provides a Variety of Specialized Aerospace Components

**Bulge-Formed Products:**

Voss bulge-forming hydraulic presses can maintain uniform wall thickness up to 0.250 inch thick with tolerances of +/- 0.001 inch, depending upon material. Bulge-formed components can be produced up to 24 long and 24 inches in diameter. Intricate parts as small as 1/4 inch diameter and 0.008 inch material thickness can also be bulge formed.

**Roll-Formed Rings:**

Voss has been producing roll-formed shapes for many years, specializing in roll-formed rings ranging in diameters from 2 inches through 12 feet. Custom rings and straight shapes are made from all aerospace alloys, including stainless steel, nickel alloys, and titanium from 0.020 to 0.125 inch thicknesses. Voss designs, builds and maintains all tooling to ensure product quality and reliability.

**Metal Tie-Down Strap Assemblies:**

Voss offers the widest selection of plain or return-loop metal tie-down straps to hold regular or irregularly shaped objects. Many mounting arrangements can be accommodated. (Available in all Voss latch styles.)

**Support Clamps and Brackets:**

A wide variety of standard and custom ducting support, bulkhead mounting and locating clamps, as well as rectangular and perfect circle clamps are available from Voss Aerospace.
Three Segment Rigid Coupling Prevents Valve Distortion:

The two-segment rigid coupling used to mount AlliedSignal Start Valve Flow Bodies on Boeing aircraft were distorting the rounded flanges causing binding of the butterfly plate inside. The problem magnified when the coupling nut was tightened beyond the recommended installation torque. Testing by Voss Aerospace showed that a three-segment rigid coupling would cause substantially less distortion of the round flanges. The Voss design will prevent ovalization of the flanges even when the nut is over tightened. This unique design will continue to function even if the flanges are at the maximum allowable tolerances. This results in a coupling that performs to its fullest capabilities without causing malfunction or damage to the AlliedSignal Valve.

Torpedo Reservoir:

The unique Mk-50 Torpedo applications employs several of Voss Aerospace’s specialized manufacturing processes, such as hydraulic bulge forming, CNC machining, automatic seam welding, and Mil-Spec painting. Special sound insulation and heater strips are also installed at Voss. Product prototype testing and production item inspection are also conducted on-site in the Voss environmental test laboratory.

V-band Coupling for Titan Engine Fuel Line Connections:

Aerojet Tech Systems was using another vendor’s T-Bolt V-band couplings on the critical fuel management system of their rocket engines powering the Titan IV launch vehicle. V-band couplings were used for quick assembly and component replacement. The engine components are subject to extreme vibration and, as a result, the previous cantilevered T-Bolt began rotational vibration causing the band to fail, resulting in engine loss. Aerojet presented Voss Aerospace with the challenge of developing a new and improved design. The Voss V-band coupling incorporates a low profile, socket screw latch, and is riveted rather than spot welded (which were also subject to breaking), and undergoes 100% quality inspection. Eight different Voss nickel alloy 718 V-band couplings are now used in the Aerojet engine fuel system.

Titanium Couplings and Flanges for Aircraft Pneumatic Ducting Systems:

In the early 1980s, Voss began work to develop a coupling that would be lighter than the stainless steel couplings then used. During the following years, Voss developed and tested several titanium and hybrid titanium/nickel alloy prototypes. However, when Airbus began working on their large, new A380, efficiency and weight savings became critical. Working with Airbus engineers, Voss designed and endurance tested a totally new 15-3-3-3 titanium V-band coupling to give maximum strength at minimum weight. This resulted in a 30 to 40% weight savings over conventional coupling designs.
Voss Aerospace's vertically-integrated manufacturing system helps ensure the high-quality and on-time delivery our customers deserve. Voss engineers can design and develop products to meet your specific requirements. Voss is able to fully manage your project by implementing program management throughout every phase of the project. Through the extensive use of lean manufacturing, Voss has established flexible product cells that can accommodate production runs from a few pieces to tens of thousands of parts. Voss has expertise in forming, machining, and welding a wide variety of materials such as Stainless Steel, Titanium, Aluminum, and Super Alloys. Accredited to ISO 9001:2000 and AS9100B, as well as CFR 14, part 21.303/45.15 and many other quality programs. Voss is able to ensure customer satisfaction and continuous improvement in all phases of our operation. Our in-house materials and product testing laboratory is capable of both destructive and nondestructive testing. Many of these capabilities are also available for subcontract!

▶ Contact Voss today and discover how we can exceed your requirements!

▶ Sheet Metal Fabrication:
  • Stamping to 300 tons
  • Coining to 600 tons
  • Deep Drawing
  • Hydraulic Bulge Forming
    ▶ Diameter up to 24 in.
    ▶ Length up to 24 in.
  • Shearing
  • Press Brake
  • Roll Forming
  • Riveting
  • Welding (NADCAP Accredited)
    ▶ Resistance: (Spot & Beam)
    AMS-W-6858, AWS D17.2
    G.E. P87F4, BAC5977, etc.
    ▶ Fusion (Hand, Seam & Orbital)
    [GMAW and GTAW]:
    AMS-STD-1595
    MIL-STD-2219, AWS D17.1

▶ Machining Facilities:
  • CNC Machining
    ▶ CNC Vertical Machining Centers
    ▶ CNC Turning Centers
  • Automatic Screw Machines
  • Turret Lathes
  • Milling Machines
  • Automatic Drill Presses
  • Wire EDM
  • Cold Heading

▶ Metal Finishing:
  • Passivation to ASTM-A-380, AS2700 (NADCAP Accredited)
  • Garnet Blasting
  • Vibratory Finishing
  • Painting (NADCAP Accredited)
  • Dry Film Lubricating (NADCAP Accredited)

▶ Complete Tool Room Facilities:
  • In-house Design, Mfg. and Maint. of Tooling
  • Stamping & Deep Draw Dies
  • Roll Form Tooling
  • Welding, Machining & Assembly Fixturing

▶ Design, Research and Development:
  • Computer-Aided Design
    ▶ Autodesk Inventor (3D Modeling)
    ▶ Finite Element Analysis
    ▶ AutoCAD Mechanical Desktop
    ▶ AutoCAD
  • Performance Testing
    ▶ Flexure, Pressure Cycling and Temperature Testing
    (-60°F to 1500°F)

▶ Extensive Materials Testing Lab:
  • Material Testing
    ▶ Hardness
    ▶ Stress Rupture
    ▶ Fatigue
    ▶ Tensile
    ▶ Micro Hardness
  • Fluorescent Penetrant Inspection (NADCAP Accredited)
  • Metallography
  • Macro Etch Examination

▶ Quality Assurance:
  • Inspection/Quality Control
    Meeting Aerospace, Defense, Automotive and Industrial Quality System Specifications
  • Coordinate Measuring Machine (CMM) Inspection
  • Continuous Improvement Programs
    TS16949:2002 Compliant

Materials:
Voss manufactures products in a variety of high-performance alloys and other metals, including the following:

▶ Stainless Steel:
  300 & 400 Series; 15-5PH; 17-4PH; 17-7PH; A286; Nitronic 40
▶ Nickel Alloys:
  625; 718; Hastelloy X; C-276; Haynes 25, 188 & 230; Rene; Waspaloy
▶ Titanium:
  Commercially pure types; 6AL-4V; 8-2-4-2; 8-6-2; 15-3-3-3; Beta 21S
▶ Other:
  Aluminums; Brass; Copper; Low-carbon steels (including Galvinnized)
Voss Industries, Inc., founded in 1957, produces high-quality, competitively priced clamping and coupling devices for a broad spectrum of OEM and aftermarket applications. These products include a wide variety of light- to heavy-duty T-bolt band clamps, V-retainer couplings, brackets, metal hold-down straps and a variety of weldments and fabrications. Customers include manufacturers of diesel engines, heavy-duty trucks, off-road equipment, turbochargers, air conditioners, filtration devices, tanks and pressure vessels, diaphragm and centrifugal pumps, to name just a few.

Specializes in the design and manufacture of high-performance clamping and coupling components and fabricated subassemblies for the aviation and aerospace markets. Principle product lines include: V-retainer couplings, rigid couplings, sheet metal and machined flanges, clamps and attachments for commercial and military aircraft pneumatic ducting systems, jet engine bleed-air connections, accessory attachments and missile components, as well as retention bands for satellite and Space Shuttle booster rocket assemblies. Extensive R&D, testing and prototyping projects are also performed.

Designs and manufactures specialized, high-quality clamp and coupling products as well as custom fabrications for many "hi-tech" industries. Voss Technologies uses innovative design capabilities and special processes developed for aerospace applications and applies them to product development and production for applications in other industries, such as: telecommunications (navigation and positioning receivers), medical (imaging equipment), instrumentation (optical measuring, multi-positioning supports) and defense (tanks, power units, torpedoes, missiles).