

We Silence Your Critical Noise Applications

ITT product lines are continually expanding to provide our customers with solutions for commercial, business and civil aviation, as well as military and cargo aircraft applications. Our extensive knowledge and experience within these markets enables us to provide our customers with superior products, services and support.

At ITT, we solve it!

Innovative Products for
Business Jet Applications



Noise Attenuation and Control for Business Aircraft



Capabilities

ITT is your partner for noise and vibration isolation systems, ECS and APU silencers, insulated ducting and main engine acoustic treatment for aircraft interior and exterior noise control. We offer a proven engineering approach and decades of experience in the areas of analysis, design, development, manufacturing, testing, qualification, production and aftermarket support that allow us to develop a solution to meet your critical noise control requirements..

Engineering Design and Analysis

- Acoustic analysis and design
- CAD modeling (Catia V5 and Solidworks)
- Structural and thermal analysis
- Pressure drop and flow analysis
- selection of materials
- Prediction of in-situ attenuation of isolators
- Weight and cost optimization
- Design for ease of installation and removal

Advanced Manufacturing Techniques

- CNC cutting of prepreg patterns
- Porous, acoustic material processing
- Complex shaped composite layup methods
- Honeycomb sandwich structures
- Composite-elastomeric-metal hybrid assemblies
- Autoclave cure of composites
- Advanced sheet-metal assembly
- Welding (fusion and resistance)
- Elastomeric material processing

Testing Capabilities

- Reverberation room (in-process)
- Acoustic insertion loss and transmission loss
- Pressure drop
- Electrical and impedance
- Environmental (DO-160)
- Thermal
- Pneumatic and hydraulic pressure
- Radiologic inspection
- Ultrasonic inspection of composites
- Mechanical properties of materials
- CMM inspection
- Static load and pressure testing
- Performance dynamics testing
- Fatigue life requirements testing
- 4-Pole test method of isolators

AS-9100 and ISO 9001 Certified
EASA Approved
FAA Approved Repair Station

Materials

- Acoustic
- Acousti-Flo®
- Feltmetal
- Perforated metal
- Absorptive foams and fiberglass sound barrier materials

Elastomeric

- Silicone
- Fluorosilicone
- Neoprene
- Nitrile
- Viton
- Buna
- Natural rubber
- Enitemp IV™

Composite

- Epoxy
- Phenolic
- Polyester
- Polyimide
- Graphite
- Bismaleimide

Carrier

- Fiberglass
- Carbon fiber
- Nylon
- Nomex
- Dacron
- Kevlar

Metals

- Superalloys
- Aluminum
- Stainless Steel
- Titanium



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GROWING WITH ITT AEROSPACE PRODUCTS

BUSINESS JET SOLUTIONS



Elastomeric & Wire Rope Technologies

Strut Integrated Isolator

ITT Enidine has developed a unique isolation solution for strut mounted equipment. The Strut Integrated Isolator locates an elastomeric isolator directly into the strut, eliminating the need for a large multi-axis isolator. This solution offers performance, weight, and design flexibility advantages over traditional mounting systems. The Strut Integrated Isolator has metal components that restrain the load in the event of elastomer failure, offering a fail-safe design.

With its inherent performance, weight, and design flexibility advantages, the Strut Integrated Isolator is an excellent choice for all strut mounted equipment.

- Improved Performance
- Weight Savings
- Improved Structural Reliability/Design Flexibility
- Fail-Safe Design
- Vibration and Noise Attenuation



Elastomeric Panel Isolators

ITT Enidine now offers a line of isolators to provide optimized noise/vibration attenuation for a variety of aircraft interior applications. These isolators provide significantly better noise attenuation compared to industry "standard" mounts.

Designed to accommodate a range of mounting configurations and load conditions, ITT Enidine Panel Isolators can be used for sidewall and ceiling panels, as well as for mounting IFE and other equipment.

- Exceptional Noise Attenuation Performance
- Fail Safe Low-Profile Design
- Improved Composite Frame
- Noise Attenuation Performance
- Interchangeable with Existing Isolators
- Multiple Elastomer Stiffnesses
- Available in the Same Envelope Size



Monument Noise Isolators

The ITT Enidine Monument Noise Isolator allows for noise free mounting of various components in multiple configurations and locations. This new isolator boasts a small footprint, adjustable mounting in two directions, a high load range of 25 - 100 lbs. and an included color coded adjustment and mounting tool. Compared to other isolators this fully bonded low frequency elastomer is ideal for securing:

- Monuments
- Dividers
- Furniture
- Cabinets
- Lavatories
- Galleys
- Crew Rests



Noise Control Technologies

Silencers for ECS, APU and Main Engines

ITT has been designing and manufacturing a wide range of noise reduction products for over 40 years. We specialize in products that attenuate noise of Auxiliary Power Units (APU), Environmental Control Systems (ECS) and main engines. ITT Aerospace Controls is uniquely positioned to provide world-class acoustics and aerodynamics engineering to reduce engine and cabin noise improving passenger comfort and reliability. Our proprietary Acousti-Flo® absorptive, wire mesh material and other advanced composite materials reduce noise and support complex shapes and efficient aerodynamic designs.

Design Capabilities

- Acoustic analysis and custom designs
- Rigid and flexible ECS silencers
- Low and high temperature solutions
- Proprietary acoustic treatment materials
- In-house FEA acoustic analysis software
- Noise attenuation techniques
 - ¼ wavelength cavity
 - Folded cavity
 - Impedance matching
 - Helmholtz resonator chamber

Design Features

- High acoustic performance
- High reliability and durability
- High reliability
- Ease of installation and removal
- Low weight
- Low cost



ECS Silencers

ITT ECS silencers and acoustically treated ducts are integrated into aircraft environmental control systems (ECS). These silencers are typically designed to a customer provided noise spectrum and often incorporate unique design features to optimize their acoustic performance. Specifically, the ECS silencers perform the following functions:

- Reduce noise of engine bleed and trim air
- Reduce noise in air distribution system
- Reduce noise in cabin and cockpit
- Reduce noise outside of aircraft



APU Silencers

ITT typically provides an APU noise control kit, normally preferred by a customer, or an individual noise control component. This kit, typically, consists of an APU inlet and exhaust silencer that often includes an adjacent inlet duct, cooling air duct and eductor. Our APU silencers perform the following functions:

- Provide intake air for APU (inlet silencer)
- Provide exhaust path for APU (exhaust silencer)
- Enable aircraft compliance with ICAO noise level requirements
- Reduce noise in cabin
- Improve passenger comfort
- Improve working conditions for ground personnel



Main Engine Noise Control

The main engine noise control products include the exhaust "hush kit", bypass duct acoustic liners and inlet acoustic panels. ITT has the design and manufacturing capabilities to provide the following products to reduce noise of a main engine:

- Inlet acoustic insert (barrel)
- Exhaust acoustic nozzle and plug
- Bypass duct acoustic liners

