



84 Spring Lane, Farmington, CT 06032-3159
860-747-6333 Fax 860-747-6739
www.mottcorp.com

[Porous Cup Filters Soot from Aerospace Engine](#)

Application: An Aerospace manufacturer needed to filter 'black soot material' which was bleeding off of the turbofan engine and causing failure of the Servo Air Pressure Regulator/Torque Motor (SAPRTM).

Primary Objectives of Application:

- Protect Servo Air Pressure Regulator and Torque Motor from failure-causing contaminant.
- Non-shedding material
- Materials compatible with high temperature environment
- Withstand vibrations and G-forces associated with private jet flight
- Sufficient filter area - flow rates are not affected
- Sufficient dirt loading capacity - minimal maintenance required

Secondary Objectives of Application:

- Easy retrofit in existing equipment
- Unlimited shelf life
- Packaged for ease of stocking and dispensing

Mott Product/Solution: Mott engineered a filter design using a media grade 60 sintered metal porous cup of Inconel® 600. The design, consisting of a porous cup welded to a modified 304SS AN bulkhead union, included post weld annealing, 100% leak testing, and individual bagging and tagging.

Inconel 600 was chosen because it allowed the filter to be easily retrofitted into the aircraft engine's Eight Stage Bleed Air Ducting System (ESBADS) by simply replacing an existing AN Tube Union. With another filter material, expensive changes to the bleed air ducting, the bleed air duct boss, the crushable seal and/or the 1/4" tubing that makes the ESBADS, as well as the extra time required to make those changes, would have been costly. In addition, the approved filter would not adversely affect the downstream valve's performance and would required little or no maintenance.



Competition Faced:

- Other Media -
 - Porous Ceramic (joint problem)
 - Porous Plastics (temperature problem)
 - Screen (possible vibration problem)

Mott Product Features & Benefits:

Features

Benefits

Controlled Porosity	-Many Grades Available to Meet Filtration Needs -Consistent Repeatable Filtration
Sintered Porous Metal Inconel 600	-Capable of Withstanding High Temperature (1100°F in oxidizing environment) -Unlimited Shelf Life
Metallic Integrity	-Shatter Proof, Non-Shedding, Nothing Will Break Off and Affect Downstream Equipment -Capable of Withstanding Vibrations and G- Forces Associated with Flight
Cup Shape	-Extended Area in a Smaller Foot Print Yielding Lower Pressure Drop and Higher Dirt Loading Capacity
High Level of Quality Control	-100% Leak Tested
Over 50 Years Experience	-Proven Track Record for Personalized Design Solutions -Customized Packaging Solutions

Mott Advantage:

Distinct advantages of porous metal products include uniform and high-precision porosity, strength and durability, resistance to corrosion, tolerance of high temperatures and pressures, and cleanability.

Mott Corporation has been dedicated to the development, application and refinement of porous metal media since 1959. The Company's design teams are continually engineering porous metal components, sub-assemblies and finished products for applications in a wide variety of industries, including energy, food and beverage, medical, biopharmaceutical, chemical, petrochemical, instrumentation, environmental, and semiconductor.

For additional questions or information, please feel free to visit our website (<http://www.mottcorp.com>) or send us an email to Quest@mottcorp.com.