Thermal-Acoustical Protective Shielding

DANA VICTOR REINZ®
Sealing Products

Shielding Systems Performing Multiple Tasks.

Increasing demands are being placed on shielding systems: higher temperatures, durability, multi-functionality, and improved noise, vibration, and harshness (NVH) properties. These are key considerations in the design and manufacturing of Dana's thermal-acoustical protective shielding (TAPS).

Thermal-Acoustical Protective Shielding (TAPS)

Manufacturing Innovation. *Dana's TAPS facilities utilize hydraulic presses to complete a forming manufacturing process coupled with a transfer system that conveys the part in progress to each station until a final part emerges. This fully automated forming process is advantageous, allowing the product to be produced with fully hemmed edges, providing NVH, durability, and safety benefits.*

Multi-Function Engine Technology

TAPS is a highly functional engine component composed of various layers, each with a specific job to perform. These shields protect from extreme temperatures, suppress noise, and lower overall mass with the use of thinner materials, leading to improved fuel economy.

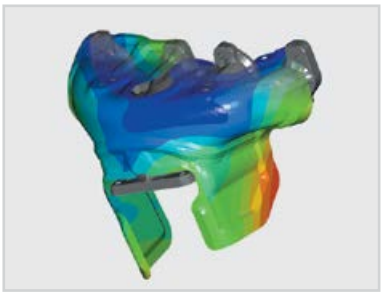
Product Features and Benefits

- Three-layer construction
- Insulating/damping center layer
  - Exceptional thermal performance
  - NVH improvements reduce surface noise
- Fully hemmed edges
  - Eliminate sharp edges, increasing worker safety
  - Maintain insulation for life of the shield
  - Eliminate vibrations associated with unhemmed edges
- Low-mass designs
  - High damping factor allows thinner metal selection

Optional Features and Benefits

- Isolator mounts
  - Reduce/Contain high-frequency injector noise
  - Further improve shield durability
  - Thermally de-couple shields from heat source
- Five-layer shields
  - Increase thermal performance
  - Improve acoustic barrier properties

Defense Against the Heat
Dana TAPS offers the protection you need for tough under-the-hood environments.



Modal Analysis
Simulation predicts natural frequencies and mode shapes prior to cutting any tools and analyzes benefits of structural changes.

Prototyping: Equal to the Final Product
In-house craftsmanship capability provides rapid prototypes.

Intelligent Manufacturing Procedures
Highly automated production lines minimize lead time and cost.

- Integrated components
  - Exhaust manifold gasket
  - Hot air collection tubes
  - Additional brackets, clips, mounts, and fastening elements

Before a part ever goes to production, Dana places high value up front through the design and analytical services it provides. All major Computer-Aided Design (CAD) platforms are supported in the design of the TAPS. Forming analysis is completed first to determine the manufacturability of the part before any tooling is fabricated.

Modal analysis is then simulated to predict the stiffness of the shield and show natural frequencies. Thermal modeling can be performed to show the impact TAPS will have on temperatures of sensitive underhood components.

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Application Policy
Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.