

CUSTOM MOLDED RUBBER & PLASTICS

Proven Solution for Air Ducts

Ritus is a reliable component manufacturer that offers OEMs and other assembly manufacturers a tested, engineered solution for air ducts. Ritus uses proven designs as well as high-quality compounds to solve performance issues. If your air induction system is experiencing difficulties due to extreme vacuum and excessively high temperatures produced by turbocharged or supercharged systems - **consider working with Ritus.**

Construction is Critical

Air ducts require thicker walls and may include ribbing to prevent collapse from the forces of vacuum. The addition of bellows or spectrum of curvature sizing across the part further complicates its design.

OEMs should only trust an experienced manufacturer who understands the nuances required to create a tool and molding process that successfully unloads the part from the mechanism without compromising the product's integrity.



Material Compound Impacts Desired Results

Air ducts operate in stressful environments with extreme heat, vacuum, engine oil and blow-by gases. Inappropriate materials for AIS ducts can cause premature heat aging of the material, resulting in cracks or slits in the part. Weaker materials are susceptible to rips or tears that occur from constant flexing or engine roll.

No matter the production volume, from hundreds of pieces to a hundred-thousand, Ritus will recommend the best compound recipe for efficient vulcanization while meeting the demands of your project.

Common materials we use include PVC nitrile, low-swell EPDM, neoprene, NBR, epichlorohydrin (ECO), and Vamac®. Hardness ranges between 60A to 85A.



- Thermoset rubber
- Plastic injection molding
- Overmolding
- Ultrasonic welding
- Assembly
- Tooling
- Component testing

Founded 1963 Milwaukee, Wisconsin

Ritus specializes in the design and manufacture of custom molded products, including wiring grommets, ducts and hoses, seals, custom-molded rubber parts and custom-molded plastics.

Ritus mainly serves customers in the automotive, industrial, marine, small engine and power sports/recreational vehicle markets.



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Submit a quote:

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ritus.com

Air Duct Engineering

Common Air Duct Materials

Material	Max Temp	Min Temp	Oil Swell	Ultimate Elongation	Tear Resistance	Ozone Resistance	Cost
LS EPDM	170 ° C	-50° C	Fair	600%	Good	Excellent	Low
Nitrile (BUNA-N)	125 ° C	-40° C	Very Good	500%	Good	Poor	Low
FKM (Viton)	250 ° C	-25° C	Excellent	300%	Good	Excellent	High
ECO (Hydrin)	125 ° C	-40° C	Very Good	400%	Excellent	Very Good	Mid
Silicone	300 ° C	-100° C	Good	600%	Poor	Excellent	Mid
Vamac (AEM)	175 ° C	-40° C	Excellent	250%	Good	Excellent	Mid

Vamac® is a High-Temp Solution

To meet today's turbocharger and supercharger demands, Ritus recommends using DuPont™ Vamac AEM acrylic rubber for air duct components. Vamac is used as a replacement for silicone rubber (VMQ) and polyacrylic (ACM). Vamac is extremely useful for producing components that can withstand higher under-hood temperatures that are a byproduct of using turbochargers. Vamac elastomer is specified for turbocharger hoses for continuous temperatures as high as 175°C, peaking as high as 190°C.

Key Properties of Ritus Vamac® Compounds

- Temperature range: -40 °C to +175 °C (and up to +190 °C for 76AE-1585-A)
- Good resistance to automotive fluids
- Outstanding ozone/weather resistance
- Very good performance in compressive set and compressive stress relaxation (CSR) rating
- Good flex fatigue resistance
- Vibration-damping consistency
- Non-halogen, and low-smoke emissions
- Excellent resistance to blow-by and exhaust gas acid condensates

Vamac® Compounds Used by Ritus

Compound	Duro	High temp	Low temp	Oil Swell	Ozone resistance	Ultimate Elongation	Dynamic Properties	OEM SPEC
50AE-1070-A	50	175°C	-25°C	Excellent	Excellent	450%	Very good	
75AE-1060-A	75	175°C	-40°C	Good	Excellent	250%	Good	Chrysler MS-BZ-160
76AE-1585-A	75	190°C	-40°C	Good	Excellent	250%	Good	
77AE-1555-A	75	175°C	-25°C	Excellent	Excellent	250%	Very good	GM GMW14720 Type D
85AE-1060-C	85	175°C	-30°C	Good	Excellent	300%	Excellent	
70AE-1550-A	70	175°C	-40°C	Good	Excellent	275%	Good	Chrysler MS-BZ-148
70AE-1955-A	70	175°C	-40°C	Good	Excellent	500%	Good	Chrysler MS-BZ-148

Note: Information shown above can be used for reference, But Ritus recommends testing each compound to specific defined criteria to verify exact properties

Heat and Chemical Resistant as well as Sound Dampening

Vamac® is recommended for use in applications exposed to excessive heat and corrosive chemicals. Its elastomeric qualities dampen sound making it ideal for automotive powertrains. DuPont Vamac ethylene acrylic elastomer drives longevity with air management systems because of its ability to withstand chemical exposure and heat without breaking down and causing leakage.

Ritus uses Vamac because its performance has been outstanding in demanding automotive applications

Ritus designs and manufactures air ducts using tested compounds designed to perform under strict requirements. We've provided components for applications including automotive, commercial, agricultural, heavy-duty and off-highway equipment engines. Ritus excels in manufacturing parts used in any combustible diesel or gasoline engine that uses a turbocharger. All Ritus air ducts are manufactured to withstand the extremes found in today's air induction systems.