



Minlon® Makes It Big, and Less Costly, in Engine Head Covers

Description

Minlon® mineral-reinforced nylon resin has replaced magnesium for cylinder head covers on BMW's latest generation of 2.0- to 2.8-liter in-line six-cylinder engines. Measuring more than 2 ft. long, with extensive ribbing to reduce vibration transmission and provide structural stability, the part is one of the largest, most complex injection molded components of its kind. Its approximate external dimensions are 70 cm long by 30 cm wide (27.6 by 11.8 in.).

Benefits

Cost savings. Total production costs, including assembly, are approximately one-third lower than those of the magnesium cover. The savings result from the elimination of surface treatment required protect the magnesium cover against corrosion, the integration of cable clamps and fasteners in the cover design and increased tool life. Low noise. Through careful design, noise and vibration propagation were minimized. The engine with the cover of Minlon® matches the low noise level achieved with the magnesium cover. Technical support. DuPont engineers provided solid technical support to BMW and Bosch in optimizing the part design, tooling and processing conditions.

Materials Used

Minlon® meets needs for high strength, stiffness and dimensional stability at temperatures ranging from -40 to +140°C. This formulation consists of nylon 66 polymer with 24% glass fiber and 16% mineral reinforcement.



