



Best-In-Class



Windshield Wiper Motor Components Aristo-Cast Inc., Almont, Michigan

Metal: AZ91E magnesium.

Casting Process: Investment casting with rapid prototyping.

Weight: 3.67 lbs. (1.66 kg) with motor; 0.91 lb.(0.44 kg) without motor.

Dimensions: 4 x 6.5 in. (10.16 x 16.51 cm).

Application: Powers windshield wipers.

Customer: Trico Products.

- ◆ By using magnesium for the six main motor components, a 75% space savings was achieved, noise levels were lowered, and a 25% overall weight savings was achieved.
- ◆ Conversion to casting increased life expectancy of the component and reduced the product development cycle by a year.
- ◆ The final method of manufacture is planned to be thixomolding, but the investment cast prototypes had to duplicate as close as possible all of the characteristics of a production casting. As certain parts reached design completion, semi-production wax injection dies were constructed to more closely replicate the final thixomolded design concept.
- ◆ Due to the motor design, the casting wall thickness was as thin as 0.040 in. (0.101 cm) in order to maximize the weight reduction.
- ◆ The rapid prototyping of various concepts allowed the design for manufacture to run concurrently with the prototyping phase of the project.