



8000 SERIES SPACE FRAME
 Entered by: Bemis Manufacturing Company

Molder

Bemis Manufacturing Company
 300 Mill Street, Sheboygon Falls, WI 53085

Designer

Henry Dreyfuss Associates
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Moldmaker

Triangle Tool Corporation
 8609 West Port Avenue, Milwaukee, WI 53024

Original Equipment Manufacturer (OEM)

John Deere
 Waterloo, IA

Entry Description

The hood assembly space frame is a sixty-five pound structural part manufactured on the largest horizontal co-injection machine in the world (6600 Tons US). The material is a 30% glass filled PBT. The part has nearly twenty square feet of surface area.

Why is this Part Innovative?

The space frame is believed to be the largest single shot PBT part produced in the world. Its design not only serves as the structural on which the three beauty panels are mounted, but also contains the air management features required to keep the engine operating temperature within acceptable range. It also incorporates electrical wire management for lighting and other components. Although heavy by some plastic standards, it's lightweight compared to alternatives, allows for assisted single person lifting of the hood assembly. This feature was a first for the customer and a requirement of the new design.

As one of the largest all-injection molded assemblies ever produced provided numerous obstacles. Perhaps the most difficult was the necessity to allow for different degrees of thermal expansion among the components. The resultant design accommodates these differences rather uniquely. As the space frame expands it moves forward carrying the beauty panels with it. As it moves forward the panels expand backward towards a slight gap between the hood and the cab enclosure. In that the space frame also serves as the heat shield between the engine and the outside panels it is anticipated that this expansion function will occur thousands of times over the product life cycle.