



A Clean Sweep

From infancy and throughout our life, milk plays a pivotal role in our diets. To prevent bacteria from contaminating milk, dairy farmers are tasked with not only keeping their facilities and equipment clean, but also the cows themselves.

This can become rather arduous when you consider the average dairy farmer has a herd of 115 cows. To meet the constant demand for milk while ensuring a healthy product for consumers across the country, farmers are constantly looking for ways to improve the process of milking while keeping the cows clean.

The owner of several dairy farms in Wisconsin was looking to develop a new device to clean cow teats, because while there is currently a device like this on the market, it was not doing the job effectively and was frequently breaking down. This farmer met with Eagle Design and they agreed upon an approach to start from scratch to design and build their own cleaning head device.

Eagle Design is known to quickly turn ideas into reality using 3D printing, and so they did this time. The Stereolithography process of 3D printing allows multiple design variants to be built at the same time, reducing product development time. Eagle Design chose Somos® NeXt, a tough, thermoplastic-like material, for making the prototype because it is flexible and durable enough to hold up to repeated testing.

Before the final design, nine versions were tested. With the housing and gears made of Somos® NeXt, each version was brought to the milking parlor and field tested. The results achieved with this printed prototype were amazing; the cleaning head device cleaned over 10,000 cows — an incredible testament to the durability of the prototype.

With the final design approved, the contract for manufacturing this new device was awarded to Eagle Design in Zeeland, Michigan. “We would have never received this contract without prototyping and proving the head design. DSM’s Somos® NeXt material is an amazing product and is the only one that I know of that would withstand the milking parlor conditions,” says Don Portenga, Sales Engineer at Eagle Design.

Eagle Design also built a version of the device out of Somos® WaterShed XC 11122 — a transparent material — and polished it clear so the customer could promote his new product to other dairy farmers and show the internal working mechanism. This product is now being shown at dairy conferences all over the United States. The additional interest generated at the shows has created a demand that will now take this product global.

By pairing the right material with the right technology, your next project can go from prototype to full production in a matter of weeks instead of months.

