



China Array Plastics LLC

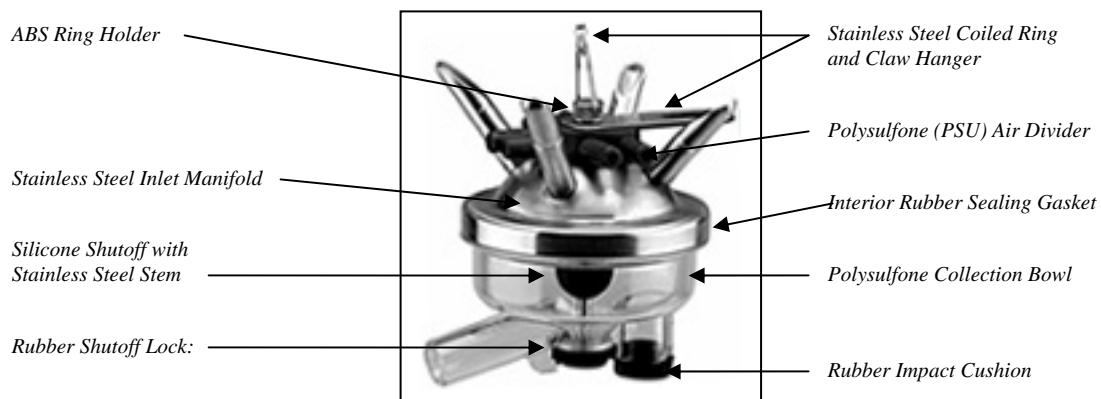
Injection Molders of High Performance Thermoplastics

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Accessories

Application: Milk Collection Manifold for Commercial Dairy Farms



FDA Approved

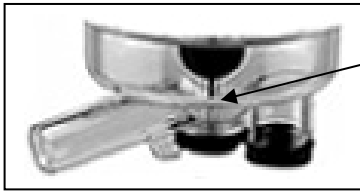
The Milk Manifold shown above demonstrates China Array's diverse capabilities for molding, post molding, accessories, outsourcing and assembly. Plastic components were produced in house; stainless steel parts were contract manufactured at a factory with which China Array has had a 16 year history. Silicone and rubber molds were built by China Array's tool maker and molded locally in Wuhan. The Polysulfone bowl is machined in house to precise tolerances to create a water tight and vacuum tight seal between the bowl and shutoff. Assembly of the 11 interlocking components is done by China Array.

Manufacturing in China Since 1980

<http://www.chinaarray.com>

Post Molding Operations

Creating a Water Tight and Vacuum Tight Seal between Plastic and Silicone



A water tight and vacuum tight seal between the shutoff and the manifold is required to stop milk flow in the event of an unexpected drop off.

During milking the Milk Manifold is under constant vacuum (12” to 15” hg.). In the event of an unexpected drop off during milking, a shutoff valve drops down to seal off the manifold’s outlet tube to prevent debris from being sucked into the milk line, a crucial function of the manifold.

The shutoff is made from a hard, high shore silicone to resist milk fat and CIP chemicals, and to insure dimensional stability (i.e. the shutoff cannot come out-of-round or it will not seal properly). Creating a seal between this hard silicone and the plastic body requires extremely tight tolerances.

Machining plastic is different from machining steel. The inherent elasticity of plastics causes it to “give” as the machine tool engages the plastic and to “spring back” when the tool is withdrawn. Detailed knowledge of a particular plastic’s elasticity characteristics is required to properly machine the plastic and for building of the jigs and fixtures for the job. This is especially true when machining a geometrically complex part as opposed to a flat slab or net shape. Lubrication of the plastic part, which again is different than for steel, is also critical during machining.

Quality control of the various parts (silicone shutoff, stainless steel stem and plastic body) and of the final finished good (each of which is tested under vacuum) insures that the shutoff seals correctly the first time and for years to come.