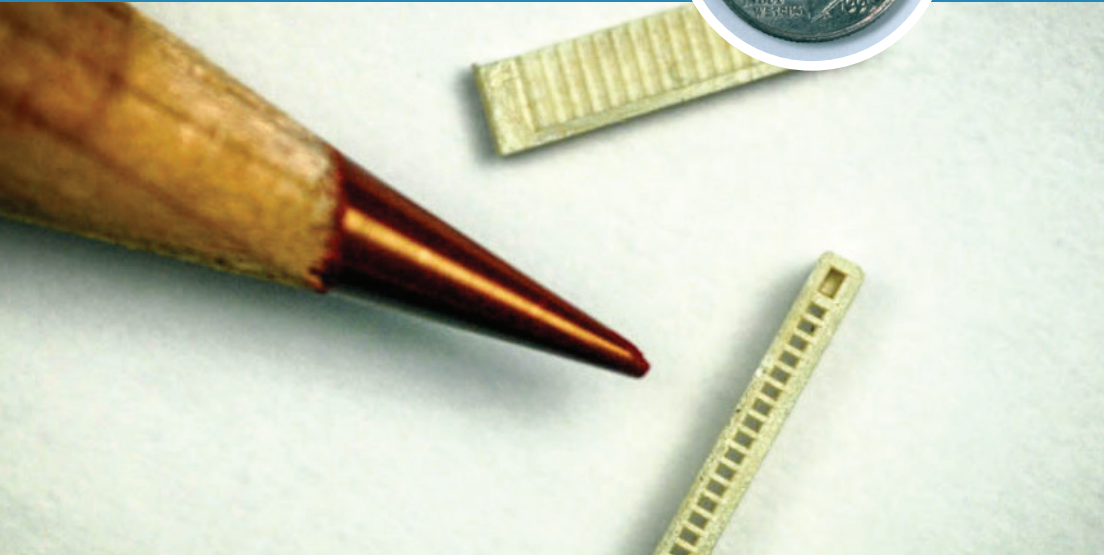


Micro Molding



Micro Molding Expertise

As the demand in the medical, electronic and industrial markets grows for micro/small size shot applications, Teamvantage has the equipment and expertise to manufacture parts and molded components that meet your most demanding tolerances.

Micro parts can be smaller than a pinhead and weigh less than a fraction of a gram. Because of their size, these tiny parts require precise and accurate processes every step of the way—from design and material selection through the injection molding process. Teamvantage has the experience, the technology and the facilities to ensure that we can provide the right solution for your smallest component requirements.

Minimum Size:

- 0.020" x 0.020" x 0.020" (0.5mm x 0.5mm x 0.5mm)
- Possibly smaller based on your application
- Gate diameters as low as 0.002" (0.05mm)
- Core pins of 0.0027" (0.068mm) diameter
- Wall thickness as low as 0.0015" (0.04mm)
- Cavity and Core TIR less than 0.0001" (0.003mm)



Micro Molding

The Process Makes the Difference

When it comes to micro molding, some of the key elements to creating successful parts include:

- Small shot size capabilities
- Quick response – acceleration and deceleration
- High speed
- High injection pressure

That's why Teamvantage prefers the Sodick Plustech V-Line plunger system rather than the conventional reciprocating screw for micro molding. The V-Line plunger system separates the melting of the resin from the injection by using a screw and a plunger.

The V-Line plunger gives you:

- More consistency
- Quicker response
- Ultra high-speed capabilities

The more typical reciprocating screw molding machine uses a screw to melt, transport, and inject the resin. In order to handle all three of these processes with one system, a check ring is required. At the micro-part level, check rings introduce inconsistency in the injection molding process. Once melted resin is moved to the front of the screw and it begins to move forward to inject the resin into the cavity, the check ring must slide in order to shut off. While it is sliding, material is back flowing—which creates inconsistency. This system is just not accurate enough for micro-molded parts.

Conversely, the plunger on the Sodick system is much lighter than a reciprocating screw, which reduces the mass and improves the response. The linear motor driven servo valve provides ultra high speed capabilities. It has a max speed of 1300 mm/sec and max injection pressure of 41,730 psi.

Step response of various systems:

Sodick Linear Motor Drive	2-3 mm/sec
Electric motor with ball screw drive	15-20 mm/sec
Electric motor with pulley & belt	30-40 mm/sec
Conventional Servo Valve	25-30 mm/sec

With Teamvantage you get unparalleled consistency plus superior control and high-speed capabilities. All of these factors result in the delivery of repeatable, ultra-high quality micro molded components.



TEAMVANTAGE

Creative Solutions to Unique Manufacturing Challenges

20697 Fenway Avenue North | Forest Lake, MN 55025

Phone: 651-464-3900 Fax: 651-982-1299

www.teamvantage.com



Quality Certifications:

ISO 13485:2003 Certified

ISO 9001:2008 Certified

AS9100C Certified

ITAR Registered

U/L Recognized

FDA Registered