

Precision Extrusion

Thermoplastic

& Silicone

Multi-lumen Tubing

Coextrusion

Balloon Tubing

Transition Tubing

Silicone Fabrication

Molding

Dip Casting

Sheeting

Films

Secondary Operations

Assembly

Packaging

Complete manufacturing and support services for your medical device.

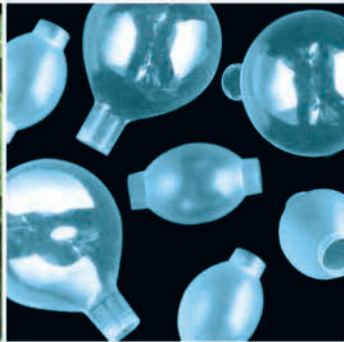


Capabilities to support your success



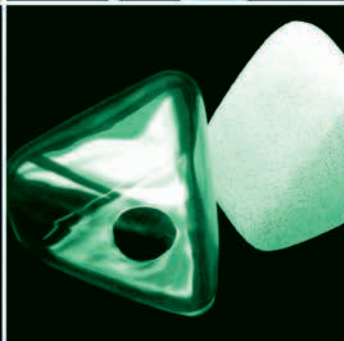
Silicone Extrusion

- Single lumen, multi-lumen, and profile extrusions
- Coextrusion of silicone and non-silicones
- Unlimited shapes; round, elliptical, star shaped, crescent, etc.
- Transition tubing for drains or rotating profiles for kink resistance and strain relief
- OD from 0.008" to 1.5" (0.20mm to 38mm)
- Wall thickness as thin as 0.003" (0.075mm)
- Tolerances as tight as +/- 0.001" (0.025mm)



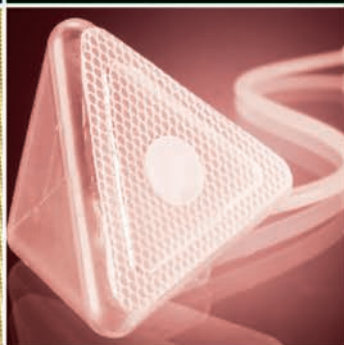
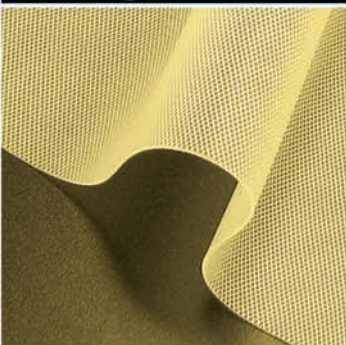
Comprehensive Silicone Molding

- Complex geometries, thin walls and tight tolerances
- Long-term implant, medical grade, and USP Class VI and ISO tested materials
- Experienced tool design and process validation
- Liquid injection molding, transfer molding, compression molding, micro-molding
- Over-molding and insert molding for high bond strength and efficiency
- Prototype to high volume automation



Silicone Dip Casting, Dip Molding, Encapsulation and Coating

- Producing hollow parts or coatings by dipping in silicone dispersion
- Complex components and deep undercuts
- No parting lines or flash
- Textured, smooth, or optically clear surface
- Wall thickness as thin as 0.002" (0.05mm)
- Wall tolerances as tight as +/-0.002" (0.05mm)



Silicone Sheeting and Films

- Proprietary calendaring and knife coating processes
- Vulcanized or un-vulcanized (for bonding applications)
- Reinforced or non-reinforced
- Thickness from 0.0005" to 0.125" (0.013mm to 3.18mm)
- Optically clear, pigmented, or radiopaque
- Smooth or embossed
- Full range of durometers as well as gels and adhesives



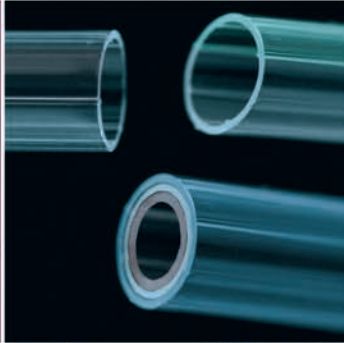
Secondary Operations, Complete Assembly and Packaging

- Slitting, drilling, cutting, punching, skiving, trimming, tipping
- Printing, coating
- Bonding and assembly of silicone and non-silicone components
- Annealing/post curing
- Clean room packaging and labeling

Vesta's expertise in custom manufacturing solutions supports your success at every stage:

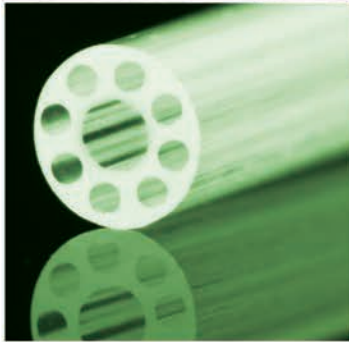
- Engineering support to meet your design challenges
- Proven quality management process to meet your standards
- Continuous improvement for manufacturing efficiency

In every department, in all we do, we are caring for the life of your product.



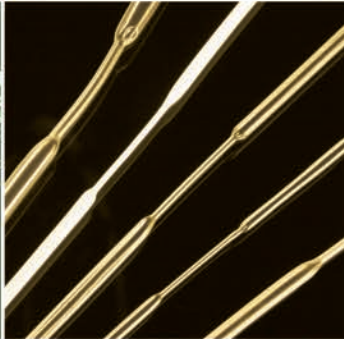
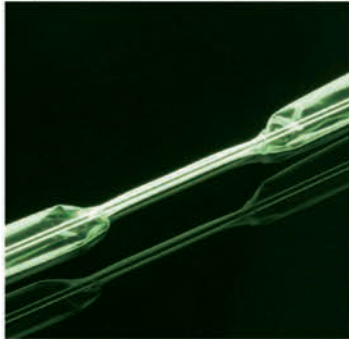
ExtruMed™ Precision Thermoplastic Extrusion

- Single lumen, multi-lumen, and beading
- Single layer, multi-layer, or striped
- Unlimited shapes; round, elliptical, star shaped, crescent, etc.
- Bump or tapered tubing
- Expertise in a full range of thermoplastic materials
- Outer diameters ranging from 0.005" to 0.300" (0.13mm to 7.6mm)
- Wall thickness from 0.005" (0.13mm)
- Tolerances as tight as +/- 0.00025" (0.0063mm)



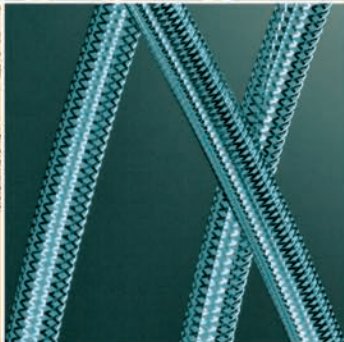
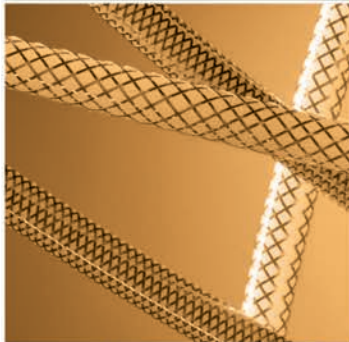
Lead Tubing

- Polyurethane and silicone lead tubing
- Precision control of dimensions, cosmetics, and mechanical properties
- Single lumen, multi-lumen and twisted lumen
- Experience processing commercial and proprietary polymers
- Wall tolerances as tight as +/- 0.0005" (0.013mm)



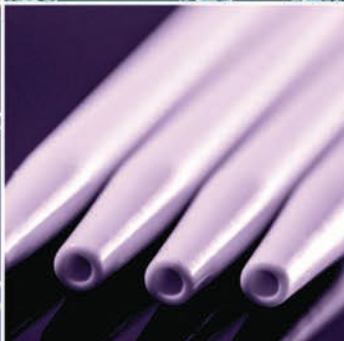
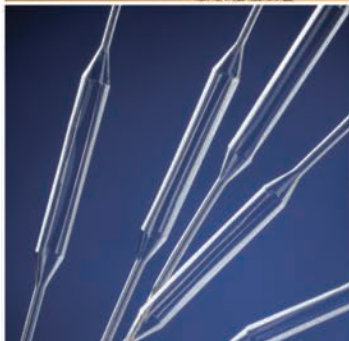
Heat Shrink Tubing

- Standard and custom polyolefin heat shrink tubing
- Ultra thin walls provide ease of removal and low profiles for sheathing
- High expansion ratios up to 10:1 provide high compression force
- Low recovery temperatures of 250F to 400F (121C to 204C)
- Expanded ID 0.01" to 0.30" (0.25mm to 7.62mm)
- Expanded wall thickness as thin as 0.0003" (0.0076mm)



Braided Tubing

- High pressure resistance, kink resistance, and stiffness
- 0.030" to 0.200" (0.762 to 5.08mm) ODs
- Round or flat wire, or fiber reinforcement from 0.001" to 0.010" (0.0254mm to 0.254mm)
- 25-125 picks per inch
- Variable or constant pick pattern
- Continuous layer processing



Balloon Tubing

- Tight dimensional tolerance +/- 0.0005" (+/- 0.012mm)
- Repeatable mechanical properties
- High concentricity >90% and tight cosmetic control
- Fatigue, burst and collapse testing

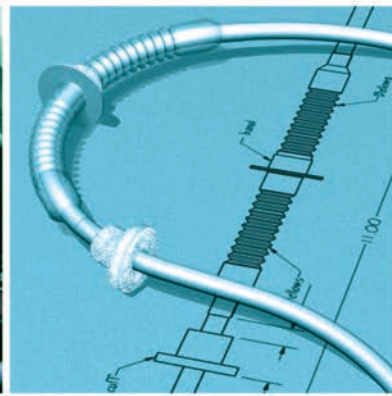
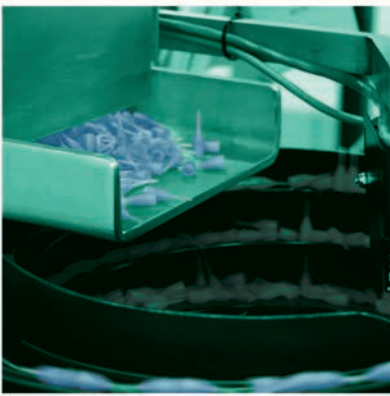
Secondary Operations

- Tipping, tapering, rounding, flaring
- Printing



Quality

- Certified ISO 13485-2003 facilities
- Validated processes
- Continuous improvement culture
- Lean and Six Sigma Methodology



Engineering

- Material selection and design assistance
- Quick response prototyping
- Tooling and fixture design
- Automation



Service

- Personal service
- Problem solving focus
- Disciplined project management
- Lean manufacturing principles
- Supply chain solutions

About Vesta

Vesta offers contract manufacturing services across three manufacturing platforms; Silicone, Thermoplastic, and SiMatrix Specialty. Dedicated to the medical device industry for over four decades, Vesta's superior service, engineering expertise, manufacturing experience, and commitment to quality are sought by customers worldwide. Our combined team works together to care for the life of your products. To find out more about Vesta's complete solutions visit us at www.vestainc.com or e-mail sales@vestainc.com



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