Creganna provides a turnkey contract design and manufacturing service for specialty needles to medical device and life science companies. From standard needles to highly specialized custom designs, Creganna is a single source supplier for specialty needles from initial concept to initial release.

Components and assemblies to meet project and procurement schedules are available. Contract design and development is provided from initial concept to market release.

Creganna offers specialist expertise in advanced material science, medical device, micro components, and thin wall applications.

Creganna
Parkmore West, Parkmore
Galway, Ireland
Tel: +353 (0) 91 757 801
Fax: +353 (0) 91 757 850
Email: sales@creganna.com

450 Donald Lynch Boulevard, Marlborough, MA 01752, USA
Tel: 508 658 7145
Fax: 508 624 8550
Email: sales@creganna.com

www.creganna.com
Creganna provides a turnkey contract design and manufacturing service for specialty needles to medical device and biotech companies. From standard needles to sophisticated custom designs, Creganna is a single-source supplier for specialty needles for medical, e.g., diagnostic, and research applications.

Components and assemblies in metal, polymer, and composite materials are available. Contract design and development is provided from initial concept to pilot tooling.

Creganna offers specialist expertise in advanced medical applications, medical designs, and processing and thin wall applications.

www.creganna.com

Creganna
Parkmore West, Galway, Ireland
Tel: +353 (0) 91 757 801 Fax: +353 (0) 91 757 850
Email: sales@creganna.com

450 Donald Lynch Boulevard, Marlborough, MA 01752, USA
Tel: 508 658 7145 Fax: 508 624 8550
Email: sales@creganna.com

www.creganna.com

Contract Design & Manufacturing
Delivering Innovative Medical Technologies

SPECIALTY NEEDLES
Creganna provides a turnkey contract design and manufacturing service for specialty needles to medical device and lifescience companies. From standard needles to highly specialized solutions, Creganna is a single source supplier for specialty needles to needle assemblies, etc.

Components and assemblies to exact project and component material specifications. Contract design and development is provided from initial concept to market release.

Creganna offers specialist expertise in advanced technical talent, medical device design, laser processing and thin wall applications.

www.creganna.com
Specialty Needle Manufacturing Capabilities

Creganna is a leading provider of products, technologies and services to medical device and life science companies. We specialise in custom components, sub-assemblies and contract design for delivery devices, catheter-based systems and specialty needles.

Creganna offer an extensive range of products and process capabilities for metal, polymer and composite tubing. Coupled with innovative technologies and unparalleled expertise in metallurgy and polymer science, Creganna has earned industry recognition as a premier supply partner.

Creganna operates a dedicated facility in Marlborough, MA specializing in the contract design and manufacture of specialty needles. Sophisticated manufacturing processes enable a seamless manufacturing solution for specialty needles from handle to tip.

<table>
<thead>
<tr>
<th>Technical Capabilities</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size range: 7 - 26 Gauge</td>
<td>Manufacturing processes are fully accredited to ISO13485</td>
</tr>
<tr>
<td>Wall Thickness: RW, TW, XTW</td>
<td></td>
</tr>
<tr>
<td>Lengths: Up to 2250 mm</td>
<td></td>
</tr>
<tr>
<td>Custom lengths, sizes &amp; wall thickness a speciality</td>
<td></td>
</tr>
<tr>
<td>Materials: Medical grade stainless steel</td>
<td></td>
</tr>
<tr>
<td>Advanced alloys &amp; exotic metals</td>
<td></td>
</tr>
<tr>
<td>MRI compatible materials</td>
<td></td>
</tr>
<tr>
<td>Polymers</td>
<td></td>
</tr>
<tr>
<td>Braid Reinforced</td>
<td></td>
</tr>
<tr>
<td>Composites</td>
<td></td>
</tr>
<tr>
<td>Needle tubing &amp; wire</td>
<td></td>
</tr>
<tr>
<td>Custom specifications available</td>
<td></td>
</tr>
</tbody>
</table>

Process Capabilities:

- Grinding
- Laser Processing - cutting, welding, marking
- Burr Free cutting
- Laser Welding & MicroWelding
- Micromachining
- Injection & Insert molding
- Coating
- Swaging
- Brazing
- Forming/Bending
- Electropolishing
- Electro Chemical Marking
- Bead/Sand Blasting
- Cleaning
- Testing
- 3-D Rapid Prototyping & SLA
- Laser marking - metals & polymers
- Modelling
- Polymer Overjackets
- Internal Lumen Liners
- Fusion Technology™ - Nitinol to Stainless Steel Tube Welding
Contract Design & Development of Specialty Needles

- Accelerate product development timelines
- Access specialist design expertise
- Optimize product development costs
- Get products to market faster

Creganna provides a contract design and development service for outsourced specialty needle device design. A full range of services are provided from initial contact to market release.

A structured product development process is employed to optimize design outcomes and ensure a clear view of the progress of each design project. All design projects can be supported by volume manufacturing.

**Design Team**
- Project Managers
- Industry experienced design engineers
- Mechanical & Industrial Engineering
- Biomedical Engineering
- Material Scientists (Metals & Polymers)
- QA/Regulatory

**Sample Projects**
- Endoscopic biopsy device
- Bronchial biopsy device
- Breast implant device
- Transseptal crossing catheter

**Product Manufacture**
- Class 100,000 cleanroom
- Dedicated pilot manufacturing lines
- FDA registered contract manufacturer
Advanced Alloy for Specialty Needles

Javelin is a high performance alloy for specialty needle applications that enables better surgical outcomes. The alloy is optimized for longer needles that must navigate long and complex anatomical paths or needles that sample difficult tissue types such as those with a dense mass. Javelin features:

- Excellent shape set resilience
- Greater material hardness
- High column strength
- Superior resistance to damage

Shape Set Resilience

For specialty needles used in conjunction with diagnostic devices such as endoscopes it is imperative that the needle demonstrates maximum straightness and does not adopt a pronounced curvature when exiting the endoscope and accessing a sample site. Any permanent deformation that reduces efficient force transmission can induce drift of the needle tip thereby making accurate needle deployment at the sample site more difficult. Javelin’s superior shape set resilience maintains needle straightness while navigating the endoscope channel and improves accuracy of the overall needle assembly during deployment. Javelin exhibits up to a 95% improvement over standard materials in shape set testing.
Material Hardness/Sharpness
Javelin exhibits up to 35% greater material hardness than conventional 304 SS. Enhanced material hardness maintains needle point sharpness during repeated deployment and facilitates easier sample penetration. Javelin also enables the product designer to develop more advanced needle tip profiles as its increased hardness can produce a sharper needle point.

Column Strength
Javelin exhibits improved column strengths up to 30% higher than standard needle materials. This improves needle pushability and contributes to minimizing needle deflection. Javelin demonstrates kink resistance equivalent to standard materials.

Damage Resistance
On longer needles Javelin exhibits superior damage resistance in use - a key factor in maintaining needle efficacy when multiple passes or repeat sampling is required.

Javelin is a corrosion resistant, biocompatible, non-magnetic alloy.

Specialty Needles - achieve better clinical outcomes with Javelin
- Superior physician control - during testing, users reported an improvement in handling over standard stainless steel
- Accurate navigation to sample site
- Easier biopsy penetration
- Maintain needle efficacy during repeat deployment
Needle Manufacturing Technologies
Creganna offers extensive manufacturing capabilities for standard and customized needle production.

Needle Points
High precision needle tips are manufactured to your specification from standard hypodermic needle points to complex multi-faceted designs. All tips are precision ground for uniform sharpness to maximize efficacy in use. A unique manufacturing process achieves sophisticated point geometries for the most advanced clinical applications.
**Cannula**
Precision manufactured cannula are available in a range of standard and customized styles.

- Chamfered
- Flared
- Skive style
- Square cut
- Tapered
- Necked
- Swaged
- Radiused
- Laser cut
- Ball tip

**Trocars & Stylets**
Tube and wire based trocars and stylets are available in both standard or custom designs.

- Tri-Facet Trocar
- Pencil point
- Conical
- Truncated cone
- Diamond
- Sample Biopsy Stylet
Shaft Marking
Needle shafts can be marked using a number of process approaches - pad printing, laser marking & chemical etching. Mark types include depth markers, text and numeric symbols.

Needle Bending
Needle shafts can be bent or curved in a variety of configurations.

Echogenic Enhancement
Echogenic enhancement is provided for specialty needles used under ultrasound guidance. Echogenic needle profiling is provided via laser and mechanical based processes.
Handles, Hubs & Deployment Systems

Creganna provides a range of manufacturing technologies to produce the handle, hub, luer or connector required for your specialty needle. Standard or customized solutions can be provided. Technologies include:

- Injection molded components
- Insert molding
- Assembly
- Micromachined metal components

Needle Deployment Systems

Luers, hubs & handles – molding & insert molding

Stopcocks, luers & valves – metal & plastic components

Parkmore West,
Galway, Ireland.
Tel: + 353 (0) 91 757 801
Fax: + 353 (0) 91 757 850
Email: sales@creganna.com