

medicoil

Micro-Precision Coil and Formed Wire Products for the Medical Device Industry



medicoil

Precision Metal Components For Medical Devices

- Specialized, complex parts and sub-assemblies
- Extreme diameter and length capabilities
- All implantable and surgical grade materials

Medicoil is a specialized manufacturer of micro-precision coiled and formed wire products for the medical device industry. Components and sub-assemblies are produced according to the most exacting customer specifications. Unique, challenging applications are our specialty.

More than three generations of industry experience and a desire to creatively develop the optimal solution for difficult applications has earned Medicoil preferred-supplier status among some of the world's leading medical device companies.

Our consistently reliable, quality components are used in critical lifesaving products the world over.

Medicoil fosters a "can do" culture. If you've heard "it can't be done," we will usually find a way and develop a highly controlled process that delivers a solution other spring manufacturers cannot. Decades of industry expertise, coupled with significant investment in leading state-of-the-art technology, new modern facilities and significant capacity, today makes Medicoil a valuable resource.



Medicoil engineering uses the most up to date CAD and modeling programs to collaborate with customers in early development of components and assemblies for medical devices.



Fully staffed research and development function aids in the development of processes and capabilities. Early involvement in customer applications helps Medicoil develop the right processes from prototype to full production and automation.

Difficult Applications

- **Advanced engineering resources**
- **Technically astute at developing micro-precision coiling and wire forming solutions**

Leading medical device companies rely on Medicoil's experienced team of research and development engineers to collaborate in the early stages of product development.

Drawing upon our knowledge of specialized materials and advanced production techniques, our capable technical staff can assist you in development and design of your most challenging projects from concept through production. We go beyond our core competencies, offering design and production versatility others may lack the experience or technical capability to provide. Often times, we'll recommend a common sense, cost-saving process that can result in a more effective product you can confidently bring to market.

Technology Investment

- **State-of-the-art capabilities and value-added services all under one roof**

Medicoil continuously invests in the latest, cutting-edge technical equipment offering robust support capabilities. Custom built, state-of-the-art CNC coiling, laser welding, highly precise forming, helix grinding and winding machines are uniquely designed to maximize productivity and meet strict quality assurance requirements. We also offer in-house machining and secondary sub-assembly operations.

Rapid Prototyping / Quick Turn Capability

- **Responsive R&D department and fully equipped in-house tooling**

Medicoil is prepared to respond with quick turn, rapid prototype technology allowing you to test components, designs, and features under real conditions giving you the confidence and safety required to launch new products quickly. We employ disciplined quality procedures to supply you with micro-precision prototypes that aren't just approximate, but identical to the finished product.

We thrive on unique challenges. In-house tooling design and dedicated production equipment is utilized to identify the optimum, most reliable and cost-effective process from prototype to production. By being involved in the early stages, we can enhance manufacturing efficiencies using any type of material desired while reducing lead times and assuring highest quality.



R & D department working on the development of multifilar coils in a variety of shapes and sizes, as well as multiple pitch and variable diameter configurations.



Multispindle CNC machining center for producing precision micro-components for sub-assemblies.



Manual laser welders assist in process development and rapid prototyping as part of our R&D activity.



A fully equipped tool room supports the needs for production tooling and gaging. This in-house capability enhances our response time in prototypes and production.

Core Capabilities

Medicoil offers an ever expanding range of wire forming and winding capabilities that have been under continuous development and refinement since 1972. Our knowledge, experience, specialized equipment and automation capabilities allow a great deal of flexibility.

COILING AND WINDING

- MICRO COILING OF WIRE SIZES .0008" (.02 mm) AND UP
- SINGLE AND MULTIFILAR COILS TO 120" (300 cm) AND LONGER
- ROUND, FLAT, RIBBON, AND CUSTOM PROFILE WIRES
- CUSTOM MACHINES WIND VARIOUS GEOMETRIES AND FILAR COUNTS
- VARIABLE PITCH, DIAMETER, AND TENSION ON CLOSE WOUND COILS
- MULTI-LAYERED COILS

COILED PRODUCTS

- DEFIBRILLATOR COILS
- CATHETER COILS
- DRIVE AND TORQUE CABLES
- COILS SERVING AS MARKER BANDS
- MECHANICAL SPRINGS

PACING HELIXES

- TIP FACETING — SINGLE AND MULTI UTILIZING CNC GRINDING AND EDM
- LASER WELDING
- ENHANCED HELIX PRODUCTION THROUGH AUTOMATION
- AUTOMATED INSPECTION PROCESSES TO ENSURE 100% COMPLIANCE

WIRE FORMS

- CNC EQUIPMENT COMBINES COILING AND COMPLEX FORMING
- EXAMPLES INCLUDE CARDIAC VALVE REINFORCEMENTS, SENSING AND RF COILS, TUNNELING RODS, SURGICAL STAPLES, AND MORE

ANCILLARY PROCESSES

- SWISS SCREW MACHINING
- CNC CENTERLESS AND PROFILE GRINDING
- LASER AND PLASMA WELDING
- MICRO ABRASIVE BLASTING
- SUB ASSEMBLY
- INNOVATIVE PRODUCT CLEANING AND PACKAGING

MATERIALS

- PRECIOUS METALS — GOLD, PLATINUM
- ALL MEDICAL GRADE STAINLESS STEEL ALLOYS
- EXOTICS INCLUDING MP35N, NIOBIUM AND TITANIUM ALLOYS
- CORED, COATED, AND PLATED WIRES
- RADIOPAQUES INCLUDING TUNGSTEN & TANTALUM

PRECISION AND QUALITY

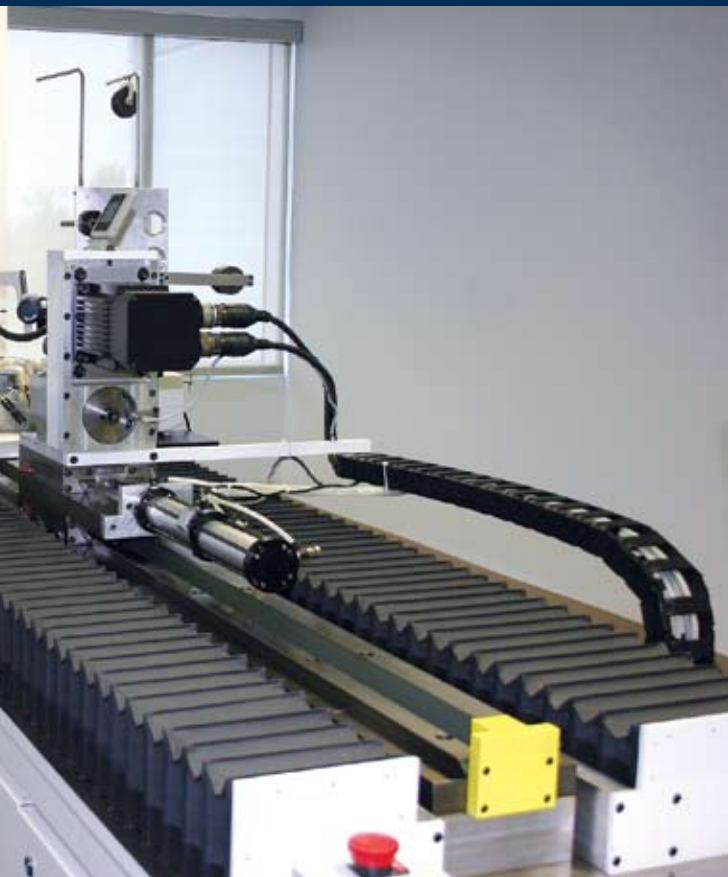
- TIGHT TOLERANCES ON DIAMETER, PITCH, LENGTH
- CRITICAL INSPECTION OF RAW MATERIAL QUALITY
- AUTOMATED 100% INSPECTION OF CRUCIAL DIMENSIONS
- STATISTICAL METHODS MAINTAIN PROCESS CONTROL
- ADVANCED PRODUCT QUALITY PLANNING ON ALL NEW PARTS
- PROCESS FAILURE MODE AND EFFECTS ANALYSIS ENSURES CONSISTENT MANUFACTURE AND SUPPLY



Winding of long coils of varying lengths, diameters, and configurations.



Pacing helixes and implantable fasteners are a Medicoil specialty. Au



ns on semi-custom machines.



Wire EDM capability for wire cutting of precision components and for producing highly accurate tooling.



Centerless grinding capability for tapering of coils and wires.



Automated processes are combined with precision finishing of tips.



High-volume production areas utilize work cells and machine banks for efficient manufacture.



Automated laser welding for production volumes.

Production Facility

Medicoil's clean, modern production facility includes a total area of 55,000 square feet. HEPA filtering systems, environmental monitoring of temperature, humidity, cleanliness of work areas, and strict in-process controls systems provide the proper environment for our highly trained work force to produce consistent precision products.

Testing and Final Inspection

Medicoil uses state-of-the-art inspection and measuring equipment. All devices are calibrated. Strict internal practice and adherence to customer requirements determine the appropriate levels of verification.

Tensile testing is used to verify wire or weld strength and determine properties of elongation and break-point. Other testing procedures such as flexibility and dimensional accuracy are also employed.

Automated, computer controlled equipment, testing and inspection with high powered microscopes, and sophisticated process controls assure dependable, safe products for the most specialized applications.

Traceability & Validation

In-process control guarantees consistency and minimum variation with complete documentation and traceability. Documentation including manufacturing lots, production records, process parameters, product control records, raw material samples, test reports, and certifications are maintained.

Application documentation and process validation are performed according to customer requirements and to our own stringent internal standards.

Quality Assurance

Medicoil is ISO:9001-2000 certified and prepared to comply with all government regulations and standards. We strive to exceed customer expectations with all employees actively contributing to our process for continuous improvement. From inspection of raw materials, to manufacturing excellence, in-process and final inspection, quality is assured.



In-house capability for testing of wire and components. Here tensile testing can be performed to verify wire tensile or weld strength.

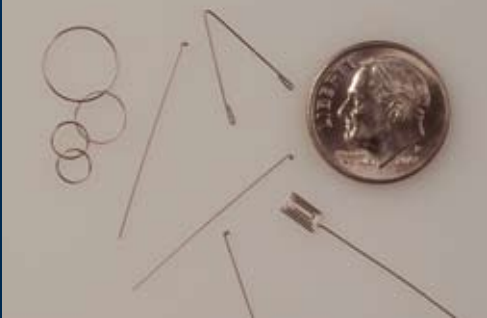
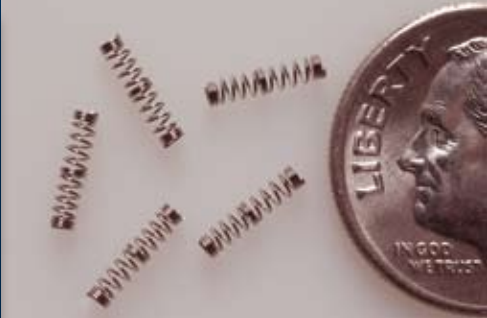


Inspection and finishing requires precise and delicate handling of components.



Optical measurement systems assist in accurate and fast verification.

Medicoil Products





Cleaning and Packaging

Many methods including aqueous and solvent ultrasonic cleaning are utilized. Your sensitive precision medical components are delivered in contamination-free, specialized protective packaging according to your custom specifications to preserve product quality.

Your Partner for the Future

Medicoil will continue to focus on new automation processes that reduce costs, ensure quality, and provide continual advancements in automated assembly, welding, finishing, cleaning, packaging, inspection, and testing. With a drive towards more value-added processes, advancements are based on our continued commitment to the development of superior micro-precision technologies.



Medicoil's professional staff is standing by to respond to your needs.



Our skilled workforce is trained extensively on processes that produce consistent, precision products going into critical medical device applications. Cross-training is a high priority for keeping production timely and consistent.



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