



PRECISE
COMPONENTS & TOOL DESIGN



MEDICAL GRADE MANUFACTURING

PRECISION MANUFACTURING FOR MEDICAL DEVICES.

Tight-tolerance components for medical devices.



ISO 13485:2016 CERTIFIED
ISO 9001:2015 CERTIFIED



MADE IN USA



CLIFTON, NJ





COMPANY OVERVIEW

YOUR TRUSTED MANUFACTURING PARTNER

OUR MISSION

To deliver **uncompromising precision** and exceptional quality in medical device manufacturing, empowering our partners to improve patient outcomes worldwide.



25 YEARS OF EXCELLENCE

Family-owned enterprise with over 25 years of deep orthopedic product development experience, led by Julie Benedikt, a Certified ISO 13485 Lead Auditor, and supported by a team of experienced CNC machinists, certified tool makers, and dedicated technical support staff.



UNWAVERING QUALITY

Fully ISO 13485:2016 & ISO 9001:2015 certified quality management system. Every component is manufactured with rigorous traceability and inspection protocols.



SCALABLE INFRASTRUCTURE

Operating from a 13,695 sq. ft. air-conditioned, state-of-the-art facility in Clifton, NJ, equipped with advanced CNC and EDM technology.

CORE CAPABILITIES

ADVANCED MACHINING FOR SURGICAL-GRADE COMPONENTS



CNC MILLING

Complex 3, 4, and 5-axis milling for intricate orthopedic implants, bone plates, and surgical instrument housings.

Okuma Genos M560V full 5-axis
Bridgeport Conquest 480V full 4-axis
Tolerances to ± 0.0004 "



CNC TURNING

High-precision turning for cylindrical components, bone screws, rods, and powered surgical tool drive shafts.

Dual Spindle live tooling turning centers
HAAS DS30 SSY 5-axis with live tooling
Micro parts down to 3mm diameter



WIRE EDM

Ultra-precise cutting for complex geometries, splines, and delicate features in hardened medical-grade alloys.

Two Mitsubishi Electric MV1200S units
Zero cutting force on delicate parts
Exceptional surface finish capabilities



SINKER EDM

Specialized electrical discharge machining for blind cavities, sharp internal corners, and complex 3D shapes.

Machining hardened tool steels and exotics
Custom EDM tooling and fixtures
Burr-free processing for critical components

END-TO-END MANUFACTURING

SECONDARY PROCESSES & FINISHING



LASER MARKING

Permanent, high-contrast UDI and part marking using **Trumpf Vectomark** and **Epilog Laser Fusion M2** workstations.



MIRROR POLISHING

Specialized mirror finishing for orthopedic implant components (hips, knees) ensuring optimal biocompatibility and wear resistance.



PRECISION GRINDING

Equipped with 3 surface grinders, including two **Mitsui units with 3-axis auto feed**, plus dedicated polishing stations.



IN-HOUSE HEAT TREATING

Controlled thermal processing to achieve exact hardness and material property specifications without supply chain delays.



SAND BLASTING

Surface texturing and preparation of medical components for enhanced osseointegration or aesthetic finishing.



TIG & MIG WELDING

Precision welding services for complex surgical instrument assemblies and multi-component fixtures.

MEDICAL SPECIALIZATION

ENGINEERED FOR LIFE-CRITICAL APPLICATIONS

WHAT WE MAKE

✓ **Surgical Instruments**

Bone saws, drills, reamers, and complex multi-component surgical tools.

✓ **Orthopedic Implants**

Hip, knee, and spine hardware machined from Titanium and Cobalt Chrome.

✓ **Spherical Components**

Perfected spherical machining in Stainless Steel, CoCr, and PEEK for joint replacements.

✓ **Micro Parts**

Ultra-small components down to 5mm screws with ± 0.002 " tolerances for testing and implants.

SPECIALIZED EXPERTISE

✓ **Surgical Instrument Assembly**

Full mechanical assembly of surgical instruments to customer specifications in a controlled environment.

✓ **Porous Titanium & Foam Polyurethane**

Machining of porous titanium with custom 1.5 micron pore size specimens for osseointegration.

✓ **Plastic Test Specimens**

Machining of UHMWPE, PEEK, and Delrin dog-bones for mechanical testing.

✓ **Diagnostic Equipment**

Precision housings and structural components for endoscopy and robotic navigation systems.

MATERIAL EXPERTISE

BIOCOMPATIBLE & EXOTIC MATERIALS MASTERY

CORE MEDICAL METALS

✓	Titanium	Grade 2, 5, 23
✓	Stainless Steel	304, 316, 17-4
✓	Cobalt Chrome	CoCr
✓	Aluminum	6061, 7075
✓	Inconel	High Temp
✓	Carbon Steel	High Strength

SPECIALTY ALLOYS

✓	Tantalum	Radiopaque
✓	Tungsten	High Density
✓	Molybdenum	Refractory
✓	Brass & Copper	Conductive
✓	Hardened Steels	Tooling
✓	Iron	Magnetic

MEDICAL POLYMERS

✓	PEEK	Implantable
✓	ULTEM	Autoclavable
✓	UHMWPE	Joint Liners
✓	Teflon (PTFE)	Low Friction
✓	Delrin (Acetal)	Structural
✓	Zircar Ceramic	Insulating



QUALITY ASSURANCE & COMPLIANCE

UNCOMPROMISING QUALITY AT EVERY STEP.



ISO 13485:2016

MEDICAL DEVICE CERTIFIED

ISO 9001:2015

QUALITY MANAGEMENT SYSTEMS



Controlled Environment

Fully environmentally controlled inspection room ensuring absolute dimensional stability during measurement of critical medical components.



ADVANCED INSPECTION EQUIPMENT



Automated CMMs

Two fully automated Coordinate Measuring Machines capable of inspecting directly to blueprints and/or solid CAD models.



Optical Comparators

Mitutoyo Optical Comparator for precise non-contact measurement of complex profiles and micro-features.



RIGOROUS QUALITY PROCESSES



Full Material Traceability

Complete documentation and revision control systems ensuring 100% traceability from raw stock to finished medical part.



Validated Production

Documented validation of all processes prior to production, supported by comprehensive operator training and work instructions.



First Article Inspection

Rigorous FAI protocols (AS9102 compliant) to verify that all engineering, design, and specification requirements are met.

INFRASTRUCTURE

STATE-OF-THE-ART EQUIPMENT ROSTER



13,695 Sq Ft Air-Conditioned Facility | Clifton, NJ | Environmentally Controlled Inspection Room

CNC MACHINING & EDM

7 CNC Milling Centers

Including Okuma Genos M560V full 5-axis, Bridgeport Conquest 480V full 4-axis, and Mitsui Seiki VS3A.

5 CNC Turning Centers

Including HAAS DS30 SSY Dual Spindle live tooling turning center, HAAS SL-30, and SL-10.

2 Wire EDMs

Mitsubishi Electric MV1200S advanced wire EDM systems for complex geometries.

1 Sinker EDM

Specialized electrical discharge machining for blind cavities and intricate 3D features.

FINISHING, QUALITY & DESIGN

3 Surface Grinders

Including 2 Mitsui grinders with 3-axis auto feed, plus 2 dedicated polishing stations.

2 Programmable CMMs

Mitutoyo Crysta-Apex automated Coordinate Measuring Machines for precise validation.

2 Laser Workstations

Trumpf Vectormark and Epilog Laser Mark systems for permanent UDI engraving.

10 CAD Design Stations

Networked design and programming seats supporting complex DFM and CAM workflows.



EXTENDED CAPABILITIES

BEYOND MACHINING — FULL-SPECTRUM MEDICAL MANUFACTURING.



MEDICAL-GRADE 3D PRINTING

- › MJF, SLA, and DLP technologies for rapid iteration.
- › Ideal for prototyping, surgical guides, and anatomical fit-checks.
- › Biocompatible resins and advanced polymers.



INJECTION MOLDING


- › Validated high-volume production for medical device components.
- › Processing of Class VI medical-grade materials.
- › Insert molding and overmolding for complex assemblies.




VACUUM CASTING


- › Low-volume production of medical-grade parts without hard tooling.
- › Silicone, polyurethane, and elastomeric materials.
- › Perfect for soft-touch grips, seals, and wearable enclosures.

KEY DIFFERENTIATORS

 Tight Tolerances ($\pm 0.0004''$) across CNC & additive processes

 Scalable from rapid prototypes to low/mid-volume production

 Cleanroom-Compatible Finishes for sterilization readiness

 Zero China Dependency: Manufacturing across U.S., Europe & India

THE PRECISE EDGE

WHY LEADING MEDICAL OEMS CHOOSE US.

REQUIREMENT	TRADITIONAL VENDORS	THE PRECISE EDGE
Quality Systems	<p>✘ Basic ISO 9001 or uncertified</p>	<p>✔ ISO 13485:2016 Certified Dedicated medical device quality management</p>
Precision & Tolerances	<p>✘ Standard commercial tolerances ($\pm 0.005"$)</p>	<p>✔ Ultra-Precision ($\pm 0.0004"$) Critical for surgical instruments and implants</p>
Material Traceability	<p>✘ Partial or manual tracking</p>	<p>✔ 100% Lot Control & Traceability From raw stock to finished component</p>
Supply Chain Risk	<p>✘ Heavy reliance on single regions</p>	<p>✔ Zero China Dependency Manufacturing across U.S., Europe & India</p>
Production Scale	<p>✘ Rigid volume requirements</p>	<p>✔ Seamless Scalability From rapid prototypes to mid-volume production</p>

PRECISION PARTS PORTFOLIO



MATERIALS

Stainless Steel
304, 316, 17-4PH

Titanium
Grade 2, 5, 23

Cobalt Chrome
CoCr Alloy

PEEK
Implant Grade

UHMWPE
Joint Liners

Delrin
Acetal Polymer

Aluminum
6061, 7075

Inconel
High Temp Alloy



CONTACT US

LET'S ENGINEER YOUR NEXT BREAKTHROUGH.

Partner with Precise Components & Tool Design for precision medical manufacturing.



HEADQUARTERS

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