



# **GREENE GROUP INDUSTRIES**



**Manufacturing Precision Products  
from Design to Production**

## CAPABILITIES & TECHNOLOGIES

### METAL STAMPING

- Progressive Die, Deep Draw, Short Run
- Wide Range of Punch Presses - 10 ton OBI to 250 ton Straight Side
- In House Tool Makers - Both Design and Build

### PIM (Powder Injection Molding), BOTH MIM AND CIM

- 57,000 sq ft Dedicated PIM Facility
- In House Tooling Department and Mold Makers for Both Production Maintenance and New Mold Design and Build
- Extensive Material Capabilities, Including Low Alloy Steels, Stainless Steels, Tool Steels, Ceramics and Magnetic Metal Alloys

### PRECISION CNC MACHINING

- 4 and 5 Axis CNC Milling
- CNC Lathes/Turning
- 13 Axis Swiss Style Mill Turns
- Wire and Sinker EDM

### QUICK TURN PROTOTYPING

- DFM Support Across Our Portfolio of Technologies
- Software Portfolio Includes Solidworks, ESPRIT, Surfcam, Mastercam, Cimatron, MoldEx3D Moldflow Analysis

### SECONDARY OPERATIONS AND FINISHING

- Complete Plating and Finishing – from Zinc Phosphate to Electroless Nickel and Gold Plating
- Electropolishing and Laser Etching
- Heat Treatment
- Welding – Laser Welding, Seam, Spot, MIG, TIG and ARC
- Automated Production and Assembly

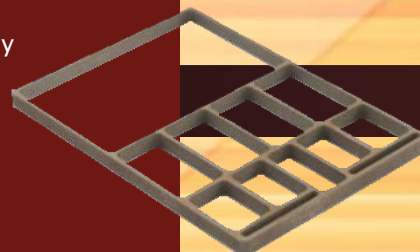
### QUALITY SYSTEMS

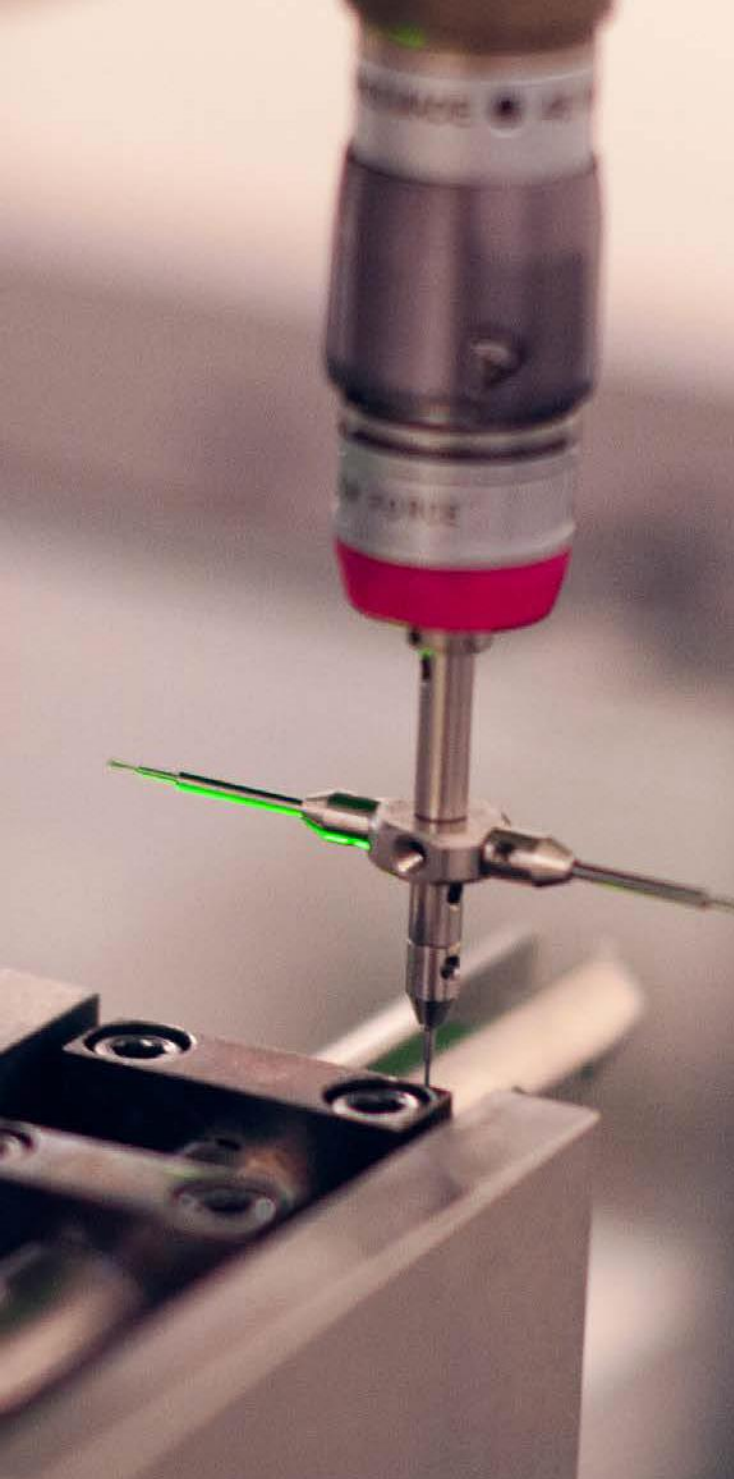
- ISO 9001:2008
- ISO 13485:2003
- Statistical Process Control (SPC)
- CMM Vision and Touch Probe Technology
- Metallograph and In-House Laboratory for Materials Testing



**Established 1904**

The Greene Group has operated in Warren, Pennsylvania, since its founding in 1904 by G.G. Greene, Sr. When leadership passed to Glenn Greene, Jr., Greene Group expanded into commercial and defense-related products.





# YOUR SINGLE SOURCE FOR PRECISION COMPONENTS



With a 100-year history of providing high quality precision metal products, the Greene Group is a recognized industry leader in a wide range of metal forming technologies. The Group's capabilities include: METAL STAMPING, CNC MACHINING, POWDER INJECTION MOLDING (MIM AND CIM), WIRE EDM, AUTOMATED ASSEMBLY and VARIOUS SECONDARY AND FINISHING processes.

The Greene Group's dedicated prototyping department can provide you with quick turn services and design for manufacture support. From there, our team can recommend the most cost-effective manufacturing approach through the product's life cycle. Our combination of industry knowledge, experience and capabilities allow us to provide our customers with the ideal manufacturing process for each product, application and volume.



## West Coast Expansion

The 1970's brought an expansion led by Craig A. Greene, which included several new manufacturing divisions and a facility on the West Coast. In 1997, Alexis (Greene) Willingham formed Southwest Greene International, Inc., located in Oceanside, CA.



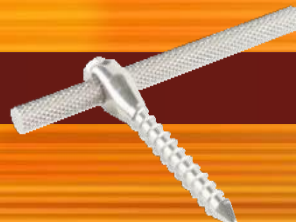
## Britt Joins Greene Group

In 2004, the Greene Group acquired Britt Manufacturing in Port Huron, Michigan, adding important metal and ceramic injection molding capabilities.



## Today

Our Oceanside location serves as the Greene Group's corporate headquarters. As industry leaders, we remain committed to continuing the longstanding tradition of quality, reliability and dependability to our customers.





# Medical & Dental Applications



## LEADING-EDGE SOLUTIONS WITH METAL AND CERAMIC INJECTION MOLDING (MIM/CIM)

Greene Group's wide range of manufacturing techniques offers special advantages in the areas of medical, surgical, dental and pharmaceutical devices and instruments. Specifically, Metal Injection Molding (MIM) and Ceramic Injection Molding (CIM) are particularly well-suited to the manufacture of these products.

MIM/CIM delivers the necessary strength and durability at a cost far below that of costly machining and die-casting, and with a level of precision and consistency that medical applications demand.

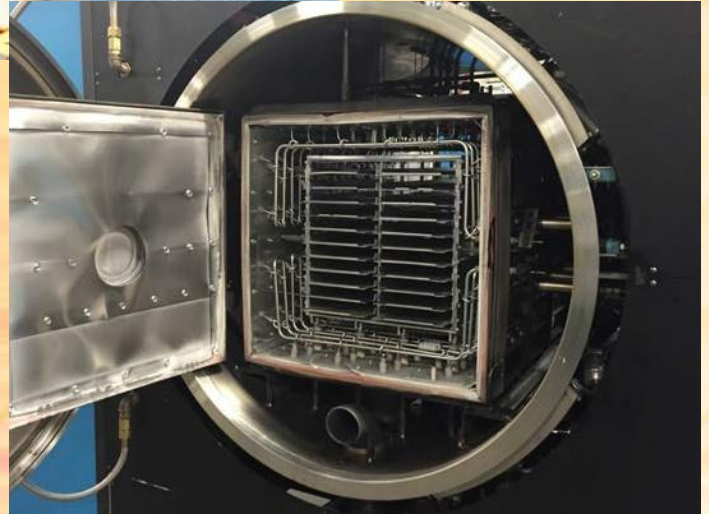
Virtually any design, regardless of complexity, can be produced in a wide range of available metal alloys, including stainless steel, alloy steels, soft magnetic materials and custom alloys.

Greene Group's team of technology experts will be happy to assess your requirements and recommend the most appropriate manufacturing technique for your specific needs.

## APPLICATION AREAS

- Surgical Instruments
- Biopsy Needles
- Pedicle Screws
- Orthodontics
- Minimally Invasive Surgical Equipment
- Test Equipment Parts
- Pacemaker Components
- Needle Drivers





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# Electronics & Communications Applications ◇◇◇◇◇◇◇◇◇◇

## PRECISION METAL PRODUCTS

The Greene Group of companies maintains manufacturing space specifically dedicated to the production of precision electronic components in a clean environment.

In response to the requirements of the electronics industry for very small and intricate metal stampings, The Greene Group has implemented the latest manufacturing technology utilizing a variety of specialty metal alloys with thickness of .004" and less.

## TECHNOLOGY AT YOUR SERVICE

The Greene Group employs the latest CNC, Wire EDM and Metal Injection Molding equipment to provide a precise, consistent finish on every part. High-speed precision punch presses ensure smooth, burr-free stamping, even on the smallest, most intricate designs. State-of-the-art tool and die-making facilities can accommodate the most demanding tooling requirements, making Greene Group the ideal "one-stop" supplier for precision metal parts.



## APPLICATION AREAS

- Semiconductor Packages
- Lead Frames
- Seal Rings
- Heat Sinks
- LEDs
- Electronic Housings
- Computer Chassis
- Connectors
- Optical Components
- Telecommunications



# Commercial & Industrial Applications



## METAL FORMING SPECIALISTS FOR A RANGE OF INDUSTRIES

The Greene Group of companies is a major supplier to leading industrial manufacturers across the country, providing metal parts manufacturing and fabrication services for a wide range of products. Manufacturers nationwide rely on the Greene Group's reputation for the highest product quality and conformance to specifications.

## FROM DESIGN CONCEPTS TO HIGH-VOLUME PRODUCTION

Our various metal forming and production processes allow us to produce prototype and short-run jobs and to make the transition to high-volume production. Greene Group's straight-edged and OBI presses range in size from 10 to 800 ton, with multiplied equipment from 27 to 150 ton. The Manufacturing Staff works closely with Engineering and Quality Assurance personnel to produce the highest quality and most consistent stampings – even on highly intricate designs.

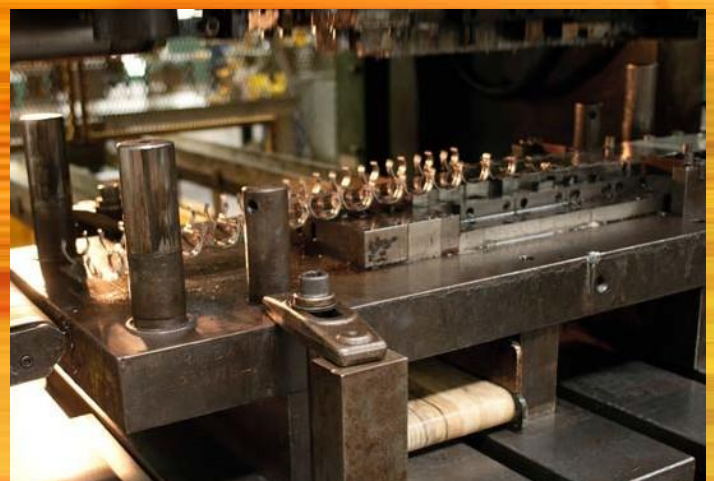
## TOOL & DIE CAPABILITIES

The Greene Group's die shops are among the best-equipped in the United States, and are staffed with some of the most knowledgeable and experienced toolmakers in the metal fabrication industry. Progressive dies which maintain precise stampings of over 100 major and minor dimensions are among the Greene Group's state-of-the-art die-making capabilities.



## APPLICATION AREAS

- |                        |                             |
|------------------------|-----------------------------|
| • Hardware/Housewares  | • Automotive Equipment      |
| • Audio Equipment      | • Lighting Components       |
| • Appliance Components | • Sporting Goods            |
| • Ceiling Fans         | • Nozzles, Spraying Systems |
| • Building Supplies    | • Vertical Blinds           |
| • Tools                | • Mechanical Springs        |
| • Locksets             |                             |





# Defense & Aerospace Applications

## MANUFACTURING WITH QUALITY AS OUR TOP PRIORITY

The Greene Group is a leading supplier of metal parts to the U.S. Government, and to major defense and aerospace manufacturers throughout the country. Our company-wide focus on quality control, combined with strict adherence to all product specifications, have resulted in many long-standing contracts, underscoring a total commitment to on-time delivery and complete customer satisfaction.

Production operations feature fully integrated Statistical Process Control (SPC) for the highest levels of quality and consistency.



## APPLICATION AREAS

- Helicopter Rotor Straps
- Cartridge Links
- Gas Mask Components
- Aircraft Fiberoptic
- Penetrators and Flechettes
- Pistol Magazines
- Firearm Components
- Magazine Springs
- Military Hardware
- Canteens, Buckles, Can Openers



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Greene Group Industries rapidly develops complex machined components and assemblies with the highest possible quality. They take on our most challenging parts right from the prototyping stages, support all development efforts and carry them through to production seamlessly. They support our development efforts as if they are part of the internal team and their level of

Greene Group Industries has been essential to product success and bringing the highest possible quality devices to the customer. They take on real challenges and work to solve them not only with highly precise machined parts but with a range of processes and

— Sr. Design Engineer, Large Medical Device OEM

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Greene Group Industries has been a 5-star partner for us. After working with Greene Group Industries through several projects over 6 years, I have found them to be incredibly responsive, and they have provided us with unparalleled quality on some of the most challenging MIM components.

Greene Group Industries has consistently developed novel ways to design their tooling to meet our demanding specifications on the latest surgical technology.

— Sr. Manufacturing Engineer,  
Large Medical Device OEM

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# LOCATIONS

## GREENE GROUP INDUSTRIES CORPORATE HEADQUARTERS

4055 B Calle Platino  
Oceanside, California 92056

760.639.4960

fax 760.639.4966

[engineering-ca@greengroup.com](mailto:engineering-ca@greengroup.com)



## ADDITIONAL MANUFACTURING FACILITIES

2600 20th Street  
Port Huron, Michigan 48060

810.982.9720

fax 810.982.2383

[engineering-mi@greengroup.com](mailto:engineering-mi@greengroup.com)







## **OUR MISSION**

**We are a customer focused organization that provides the highest value precision components and services in a dynamic and innovative environment of continuous improvement.**



**GREENE GROUP**  
**INDUSTRIES**

**[GREENEGROUP.COM](http://GREENEGROUP.COM)**