



**Johnson Matthey**  
Inspiring science, enhancing life



# Johnson Matthey Medical Components

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Michael Grassie

# Safety Review

- Emergency Exits?
- Process Safety and Ergonomics



# Agenda

	Johnson Matthey Introduction	
<b>02</b>	Medical Components Overview	
<b>03</b>	Site-Level Capabilities	

# Johnson Matthey

## Inspiring Science, Enhancing Life

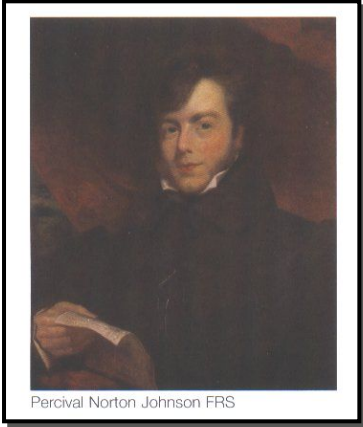
As a global leader in sustainable technologies, we apply our cutting edge science when working with customers to create solutions that make a real difference to the world around us.

- Established in 1817, assaying precious metal; FTSE 100 company since 2002
- Operations in over 30 countries, with ~14,000 employees worldwide, and revenue of £3.5bn





# JM History



**1817** - Percival Norton Johnson established as gold assayer in London's Hatton Garden

**1851** - George Matthey joins to form Johnson Matthey

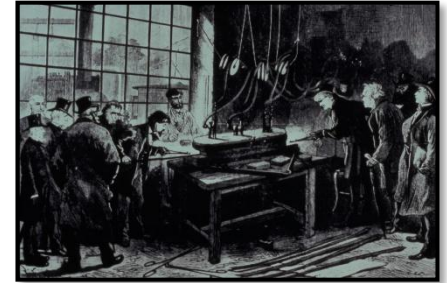
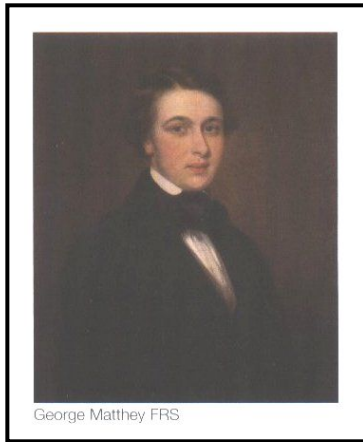
**1852** - Appointed Official Assayer to the Bank of England and Official Meters and Refiners a few years later

**1927** - Established subsidiary in the United States

**1992** - Established Medical Components in San Diego

**2001** - Established Medical Components in San Jose

**2017** - 200 Year Anniversary



# Our Vision: a Cleaner and Healthier World Today and for Future Generations

## 5<sup>th</sup> New Sector – Battery Material Technologies



**Clean Air**

JM catalysts stop around 20 million tonnes of pollutants in their tracks every year.



**Efficient Natural Resources**

JM is the world’s largest secondary platinum group metal (PGM) refiner, with > 125 tonnes refined each year.



**Health**

JM develops active pharmaceutical ingredients (APIs) for many important, life-changing drugs.



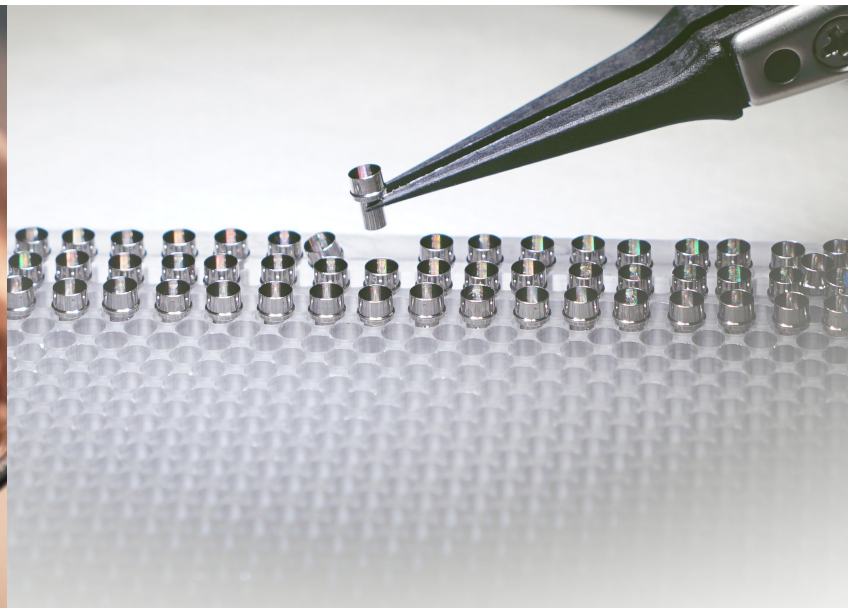
**New Markets**

JM is committed to tackling new challenges to build a cleaner and healthier future for the generations to come.

# Medical Device Components-- OUR VISION (Video)

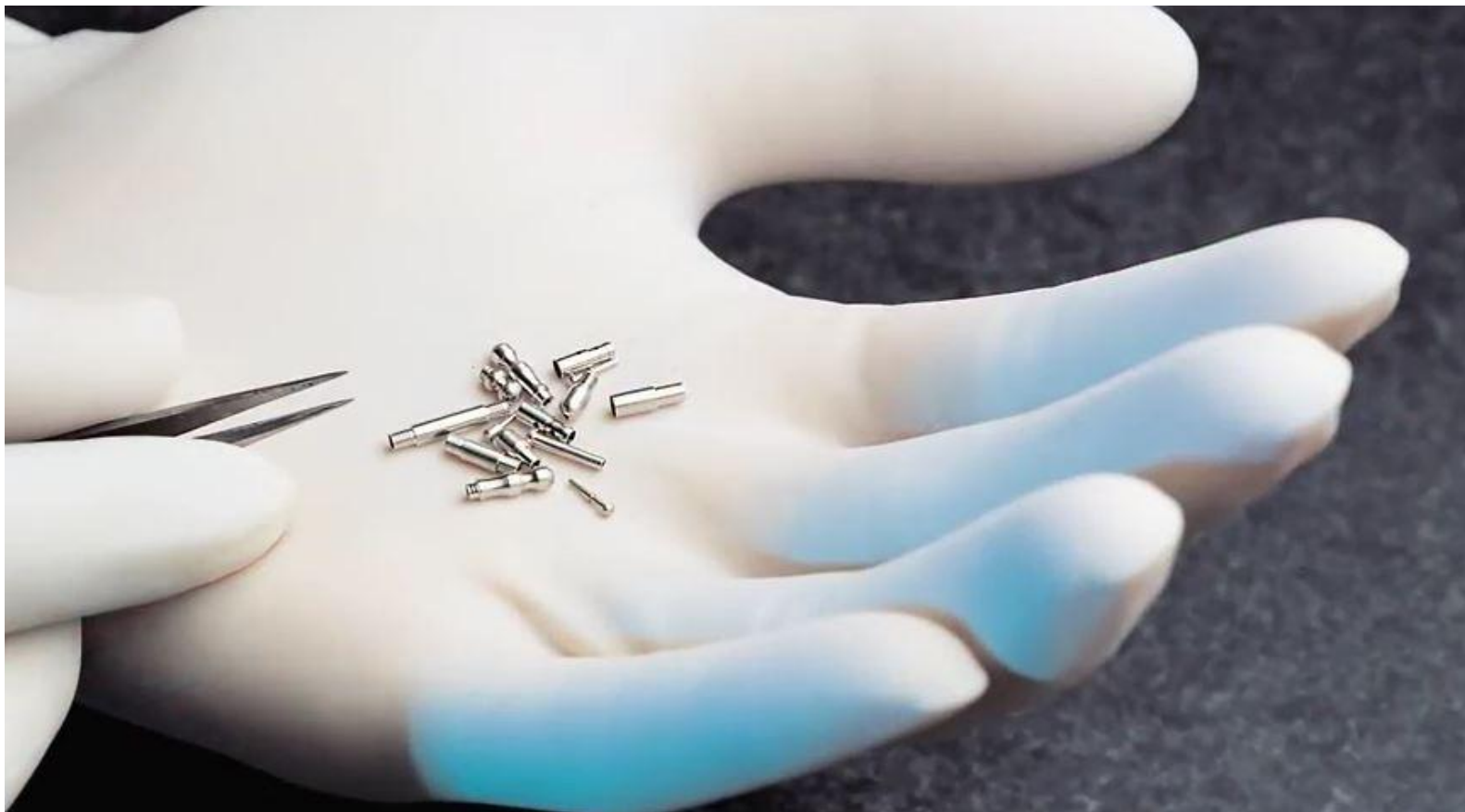
Leveraging advanced material science and manufacturing expertise to supply custom components for next-generation medical devices.

- Manufacturing and inspection processes optimized for micromachined medical components.
- Serving more than 800 medical device companies worldwide.





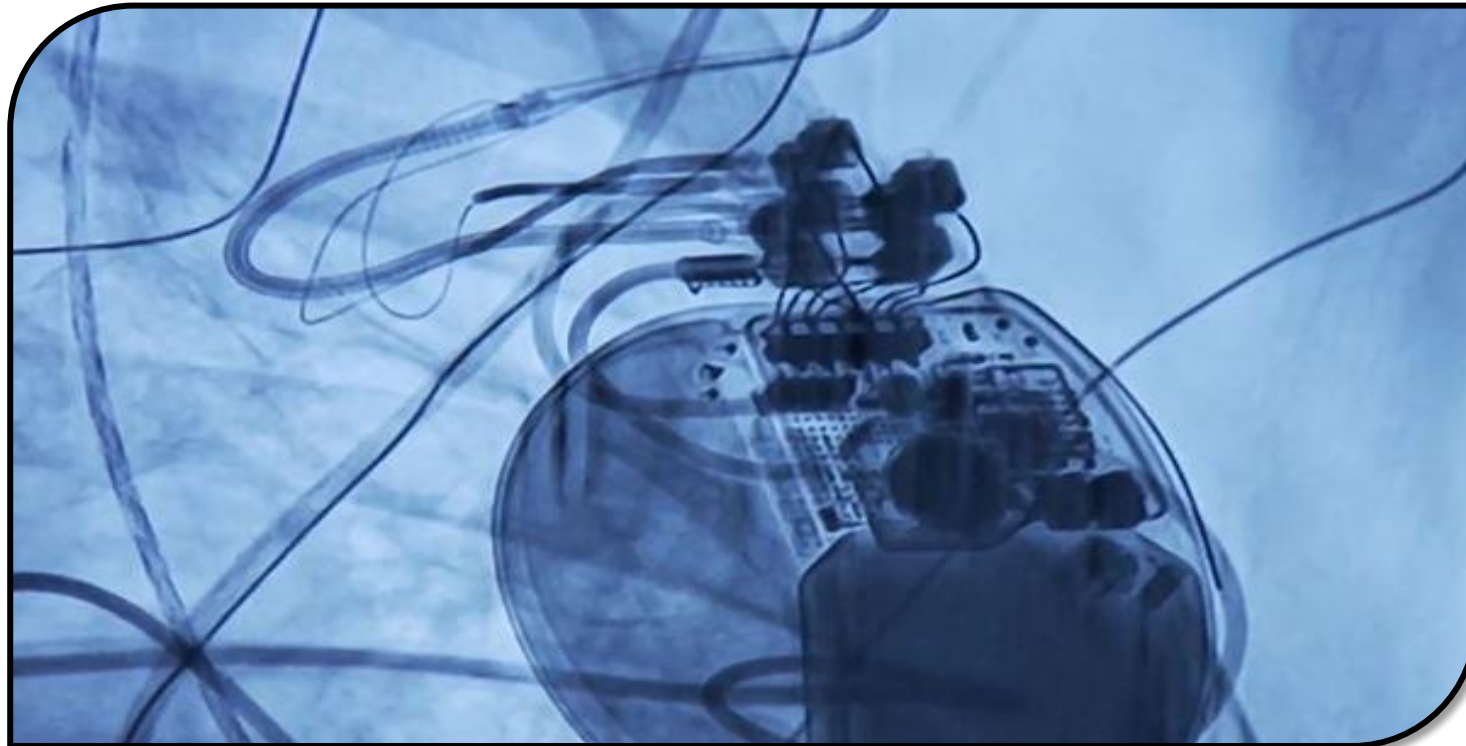
# San Diego Medical Components





# Our Customer

- What you contribute every day at Johnson Matthey changes lives
  - See Brandon's story...



# U.S. Based Manufacturing Facilities

## Medical Device Components

From melt to manufacture, Johnson Matthey maintains complete control over the process to provide our customers with the highest quality product.

- All locations are ISO 9001 & 14001 certified, and all have been manufacturing medical components for over 20 years.



West Whiteland, PA



San Diego, CA



San Jose, CA

# San Diego, CA

## Medical Component Micromachining

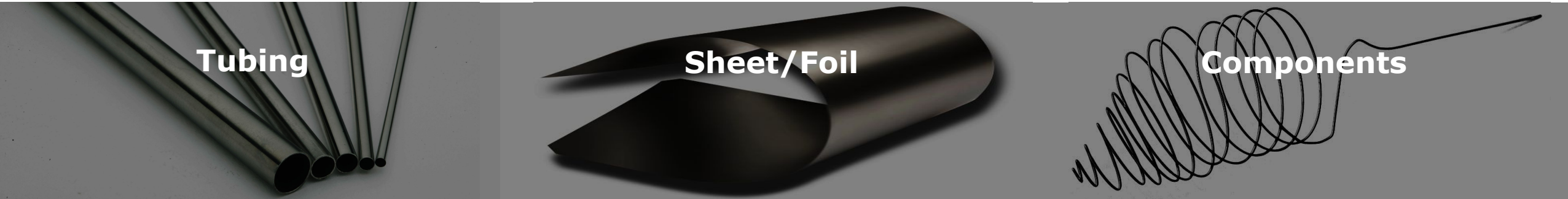
Emphasis on Manufacturing Excellence across:

- Swiss Screw Machining
- EDM (Wire, Sink, Fine Hole)
- Laser Cutting (Femtosecond, Fiber)
- Cut Tubing: Marker Bands / Electrode Rings
  - Online stock list; custom dimensions in 4 weeks
- Marking Options: slit bands, Pt buttons/beads/spheres
- Coatings: Powder & TiN Sputter Deposition



# San Jose, CA

## Nitinol Shape Memory Materials



- ASTM Standards F2004, F2005, F2063, F2083, F2516 & F2633
- Active A(f) temperatures from 0°C, to over 95°C

### Secondary Processes

- Shape Set Annealing
- Centerless Grinding
- Chemical Etching
- Wire EDM & Laser Cutting

### Premium ID Nitinol Tube

- Smooth and uniform ID surface, with minimum defects
- Surface roughness  $R_a < 0.4 \mu\text{m}$
- Tailored ID surface conditions – oxide and oxide free



# San Diego, CA

## Medical Component Micromachining



### Markets Served

- Intervention Cardiology
- Orthopaedic Tools
- Electro Physiology
- Structural Heart
- Neuro Stimulation
- CRDM

### Products

- Wire, Tube, Sheet
- Mirco-machined Parts
  - Screw Machine
  - EDM
  - Laser
- Cut Tube
- Powder & Sputter Coatings

<https://www.youtube.com/watch?v=GzTiNrhO-Rw>

JM

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