



ETG MEDICAL MANUFACTURING SECTOR



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ETG ARE YOUR MEDICAL SUPPLY CHAIN PARTNER

When it comes to producing complex components from challenging materials, very few industry sectors meet the stringent regulatory demands of the medical industry.

Encompassing everything from reconstructive devices, implants, arthroscopy, orthobiologicals, hip, knee and joint replacements through to surgical instruments, diagnostic apparatus, cardiovascular devices, diabetes devices, dental instruments and technologies and much more, the medical manufacturing industry continues to grow at a pace.

With an ever-increasing population that is living longer than ever before, the need for prosthetics, implants and other aids continues to increase. Furthermore, with technology evolving at pace, there is no longer a 'one size fits all' approach to implants, the materials used and the respective procedures. The industry now utilises innovative techniques and methodologies to manufacture for this exponentially evolving industry, and with bespoke manufacture contributing to extended waiting times for many procedures – it is here that ETG is helping to cut the queue with its industry-leading machine tools and bespoke solutions.





CHIRON

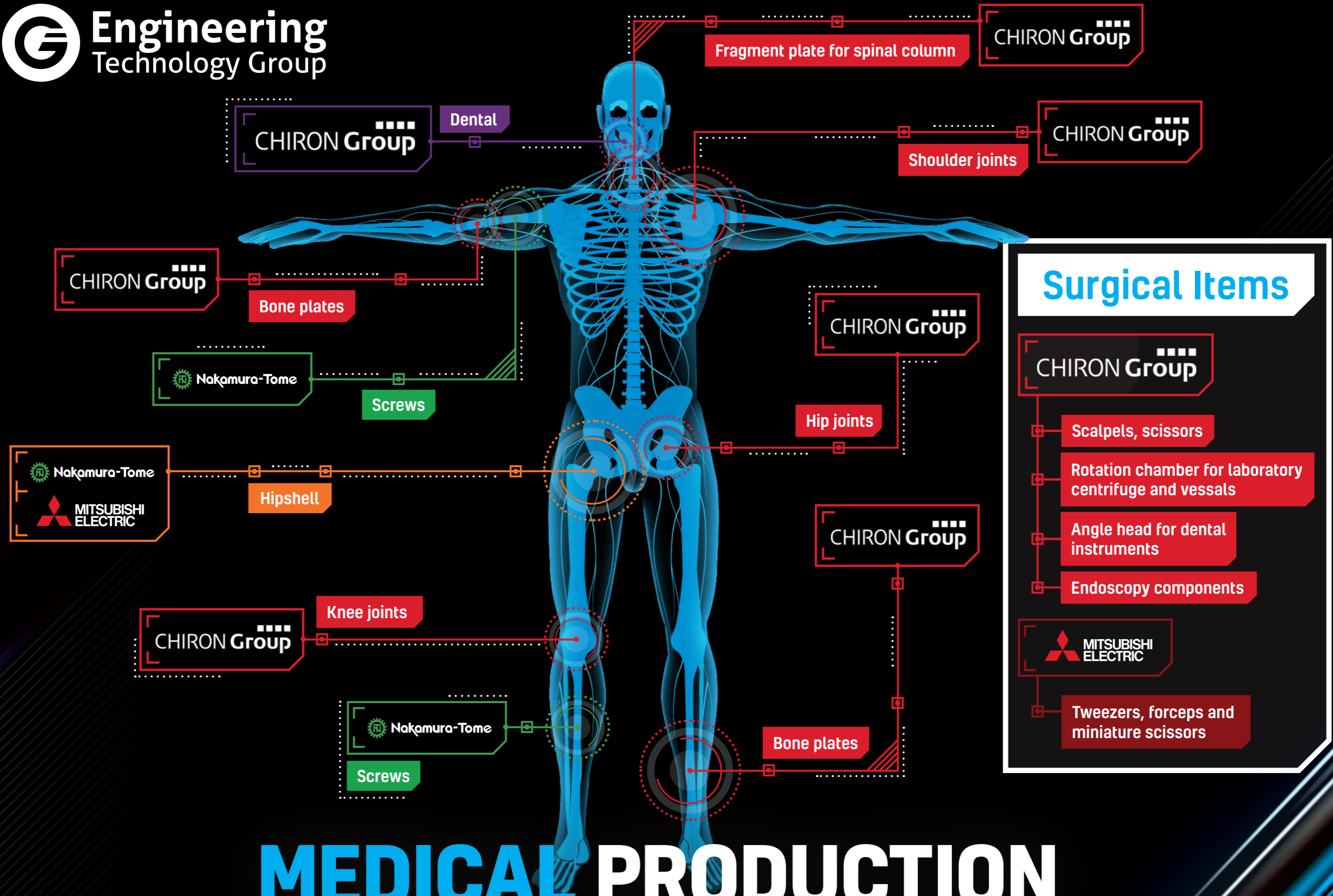
The epitome of productive high-quality machining can be recognised in the CHIRON Group solutions that are offered by ETG. If you are looking to meet tolerances of just a few microns with impeccable surface finishes, the CHIRON range offers this with high-performance levels within a compact work envelope. When it comes to medical devices, CHIRON considers 'each component as a masterpiece'. Whether producing complex medical instruments, devices, bone plates, prostheses or implants – CHIRON's precision machining centres and engineered solutions are depended upon by medical manufacturing leaders worldwide. When requirements demand shortened production times and exceptional surface quality, as well as a reduction of dedicated resources and machinery footprint; the skilled team of specialists develop the optimal process with accuracy and efficiency.

CHIRON also has a Medical & Precision Technology Centre in Tuttlingen, Germany – and this is your centre for medical precision. It is where you can receive a precise analysis of your requirements, for an exact procedure, step-by-step, with every benefit from test machining operations, clamping equipment and tool tests, and material behaviour tests. The result is that your ideal machining solution, perfect to the last detail is defined so that you can start production quickly and safely. The CHIRON Medical & Precision Technology Centre not only specialises in high-precision machining but also serves as a constant resource for medical manufacturing expertise. Through process development, refinement and continuous in-house collaboration with medical technology leaders; experienced CHIRON engineers and technicians provide each customer with an unrivalled solution to meet their production requirements.

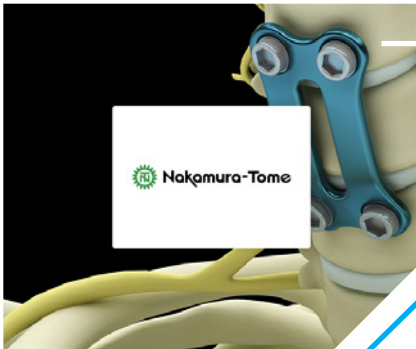
From a machine perspective, the CHIRON FZ08, DZ08 and the 12 Series of machines are perfect for dental technology. The required precision for instruments and hand tools (such as drills) can only be achieved by incorporating the finest details into the manufacturing process. With six-sided complete machining from bar, CHIRON and ETG provide customers with the ultimate production platform, flexibly engineered to incorporate your highly-sophisticated designs.

In the field of implantology, 5-axis dental components can be machined completely and quickly from round blanks, or abutments from the bar – fully automated depending on your individual needs. Whether titanium or CoCr alloys, green, white, or hard ceramic; CHIRON can provide a proven, reliable solution to meet your production goals.

The machines are quick to set up, easy to operate, very stable, highly dynamic and low maintenance. Having a modular design, makes it possible to configure each basic machine to an individual solution that is perfectly tailored to your manufacturing needs. Available with single or double spindles for 5-axis simultaneous machining, the CHIRON line-up is perfect as a mill/turn centre for multi-functional machining.



MEDICAL PRODUCTION



NAKAMURA TOME

As a world leader in the field of multi-tasking mill/turning machines for the medical industry, Nakamura-Tome CNC mill/turn centres are applied worldwide in this safety-critical industry. Nakamura turning centres are widely used in the medical device technology industry as the solution of choice for producing small prosthetic components, hip shells and bone screws where a robust machining platform is essential for delivering unparalleled surface finishes and precision levels.



MITSUBISHI EDM

In recent years, more and more large medical companies and their suppliers have shifted part production from conventional machining to EDM. Compared to other machining processes, EDM offers a variety of advantages when cutting complex medical components including surgical tools and implants. Just a few areas where EDM consistently outperforms conventional machining are surface cleanliness, tight tolerances, small part production (below 10mm), sharp inside corners, no burrs, no deformation and the facility to produce small holes or openings. All of these attributes make the Mitsubishi EDM range of machines perfect for any manufacturer of medical devices and implants.

The ability to produce sharp inside corners on components such as bone saw guides are where wire EDM scores highly in the medical field. In many instances, surgical tools require a clean surface, and accurate table angles with small radii in corners – it is here where the Mitsubishi EDM prevails over other machining technologies. From a cost-saving perspective, medical implants like spinal implants, trauma implants, micro-implants and dental implants are often made from expensive alloys. The wire EDM process cuts only the shape desired out of a block of material, saving the rest of the material for other parts. Furthermore, commonly used titanium alloys can be flammable if milled or ground. The wire EDM process, which occurs fully submerged under water, prevents this fire hazard altogether and can result in significant cost savings. Of course, the application of Mitsubishi EDM machines throughout the medical industry is well recognised.



OPS INGERSOLL

When it comes to high-speed precision machining, there are very few brands that can achieve the levels of quality available from OPS Ingersoll. The EDM and HSM solutions from OPS Ingersoll set the standard that others follow.

For multiple cavity machining with graphite and copper. The Eagle series of EDM machines that incorporates the Competition, Precision and Gantry ranges can take your EDM machining to a new level. The EDM die sinkers have been successful for years and the latest fine-finishing generator demonstrates an excellent price-performance ratio that is now available to a larger group of customers. The quality, speed and precision have made this line of EDM solutions the first choice in the medical and dentistry sector.

For high-speed machining, the Eagle V5 and V9 machining centres have taken the medical and dental industries by storm. Epitomised as the 'go-to' machines for highly dynamic precision milling, the Eagle Series of 3 and 5-axis machining centres offer high-speed spindles from 18,000 to 42,000rpm, robust machine construction and features such as precision spindle compensation, position and geometric compensation and automatic temperature drift control that all combine to provide 5-axis simultaneous machining with a precision of less than 10µm. This speed, precision and absolute certainty when it comes to quality is why the OPS Ingersoll brand is the choice of the medical manufacturing industry. With an endless range of automation options, unprecedented precision levels, quality and subsequent surface finishes with productivity levels that lead this class of 'high-end' machine tools, OPS Ingersoll is a household name among medical and dental OEM manufacturers and their respective supply chains.



Making Engineers Champions...

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