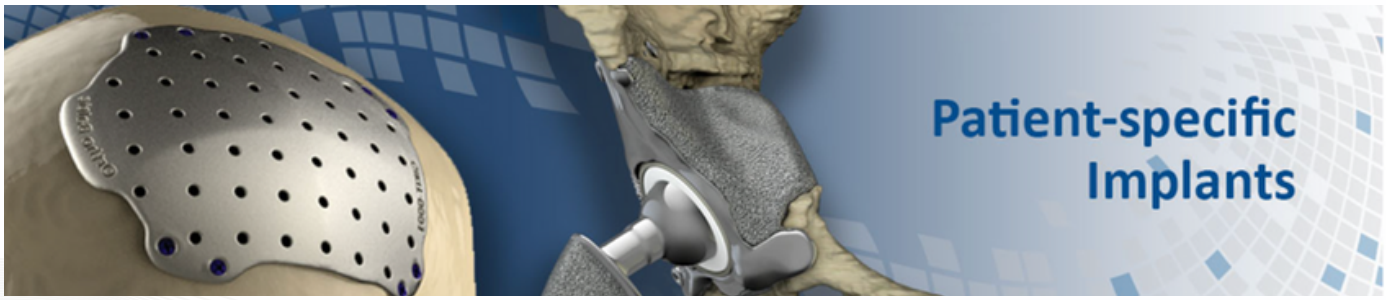
PATIENT-SPECIFIC IMPLANTS (PSI)

The Perfect Fit for Complex Clinical Needs



Overview

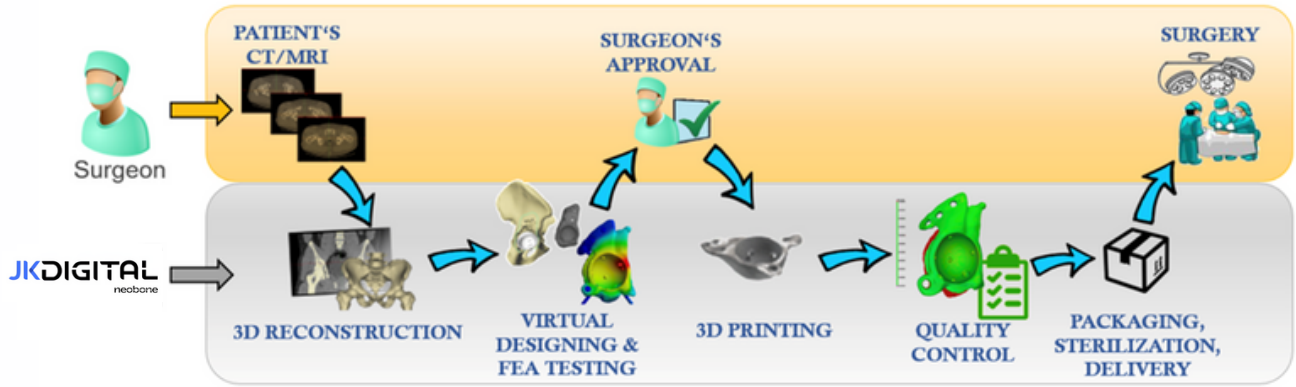
Patient-Specific Implants (PSIs) are custom-designed medical implants created to precisely match an individual patient's anatomical structure. These implants are critical in cases involving complex trauma, oncological resection, congenital deformities, and revision surgeries.

With advancements in additive metal manufacturing (3D printing), PSIs have become more accessible and are revolutionizing orthopaedic, neurosurgical, and maxillofacial procedures by offering superior outcomes and personalized treatment options.

Why Choose PSI?

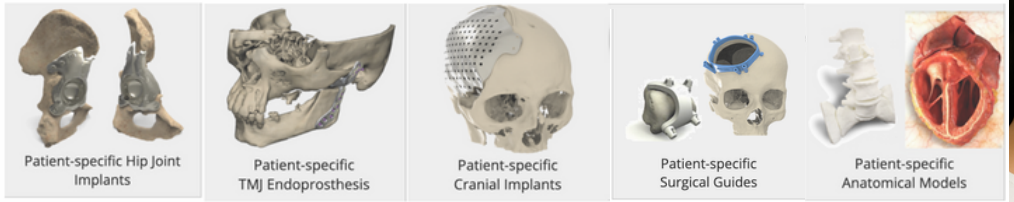
- Enhanced Clinical Outcomes: Improved mobility, quality of life, and overall functionality
- Patient-Centered Design: Tailored to fit each patient's unique anatomy
- Minimally Invasive Procedures: Reduced surgical time and lower post-op complications
- Accelerated Recovery: Faster healing and reduced rehabilitation time
- Cost Efficiency: Fewer complications and revisions, leading to long-term savings
- Extended Implant Longevity: Custom designs contribute to superior durability and performance

Process Chain – PSI



Applications

- Joint Reconstruction (Hip, Knee, Shoulder)
- Spinal Implants
- Craniofacial and Maxillofacial Reconstruction
- Oncological Bone Resection
- Complex Trauma Cases
- Revision Surgeries



Explore the power of personalization. Choose PSI.

Technology Behind PSI

- 3D Metal Printing (Additive Manufacturing):
  - Enables production of intricate, one-piece structures
  - Allows formation of trabecular surfaces for optimal osseointegration
  - Utilizes biocompatible medical-grade titanium and other alloys
- Advanced Design Software:
  - Converts DICOM imaging to precise 3D STL files
  - Integrates anatomical and functional design considerations

Case in Point The first 3D-printed titanium PSI hip joint was successfully implanted in Australia in 2006. Since then, thousands of patients globally have benefitted from customized implant solutions, leading to faster recovery and improved surgical outcomes.

The Future of Implants is Personal

With increasing surgical complexity and rising patient expectations, PSI offers a future-proof solution for modern healthcare.

Who We Are : -

JK Digital & Advance Systems Private Limited, a wholly owned subsidiary of Jay Kay Enterprises. We are an innovation-driven company at the forefront of advanced manufacturing, with a strong focus on metal additive manufacturing for the medical sector.

Our core specialization lies in the design and production of:

- Patient-Specific Implants (PSIs)
- Standard Medical Implants
- High-precision contract manufacturing services for OEMs

We work exclusively with certified medical-grade materials, such as Titanium Grade 23 (Ti6Al4V ELI) and SS316L, delivering exceptional quality and biocompatibility in every component.

End-to-End In-House Capabilities:

JK Digital is uniquely positioned with a comprehensive in-house setup, including:

- Advanced CAD/CAM & medical implant design platforms
- Additive manufacturing with metal 3D printing
- Post-processing, ultrasonic cleaning, and sterilization
- Certified Class 10 cleanroom facility
- ISO 13485:2016 compliance

Our infrastructure allows us to provide rapid turnaround, customized solutions, and exceptional quality control—making us a reliable partner for both routine and complex implant manufacturing projects

Explore the power of personalization. Choose PSI.

"Delivering World-Class Medical Technology from India to the World"

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