



INDO-MIM[®]
COMPLEXITY SIMPLIFIED

MEDICAL DEVICE GROUP



ABOUT US



85+

Material Options

24

**MPIF
Awards**

6000+

**MIM Parts
Variety**

650+

**Customers
Globally**



150M+

**Parts Shipped
Annually**



3000+

Employees



\$200M+

Annual Revenue

METAL INJECTION MOLDING PLANTS



Over 8,90,000 sq. ft. of MIM manufacturing in multiple locations in 2 countries



**Manufacturing Plant – 1
Hoskote, Bengaluru**



**MIM Manufacturing Plant – 2
Doddaballapur, Bengaluru**



**MIM Manufacturing Plant – 3
INDO-MIM Inc., USA**

INTEGRATED VALUE CHAIN



One-Stop Solution Provider

MIM

**METAL INJECTION
MOLDING**

Largest installed
capacity



CIM

**CERAMIC INJECTION
MOLDING**

ISO 9001 and
ISO 14001 Certified



IC

**INVESTMENT
CASTING**

Temperature and
Humidity controlled



PMG

**PRECISION
MACHINING**

Aerospace, Oil & Gas,
Medical



**SURFACE
TREATMENT**

**SPECIAL
PROCESSES**

AS9100 & NADCAP
Approved



MBJ

**METAL BINDER JET
3D PRINTING**

New Addition to
INDO-MIM



GLOBAL PRESENCE



CERTIFICATIONS



 <p>CERTIFICATE</p> <p>INDO-MIM Private Limited</p> <p>AS 9100:2016</p> <p>AEROSPACE</p>	 <p>CERTIFICATE</p> <p>INDO-MIM PVT. LTD.</p> <p>IATF 16949:2016</p> <p>AUTOMOBILE</p>	 <p>CERTIFICATE</p> <p>INDO-MIM PVT. LTD.</p> <p>ISO 13485:2016</p> <p>MEDICAL</p>	 <p>CERTIFICATE</p> <p>INDO-MIM PRIVATE LIMITED</p> <p>ISO 14001:2015</p> <p>ENVIRONMENT</p>	 <p>CERTIFICATE</p> <p>INDO-MIM PVT. LTD.</p> <p>ISO 9001:2015</p> <p>QMS</p>	 <p>CERTIFICATE</p> <p>ISO CLASS 8</p> <p>CLEAN ROOM</p>	 <p>CERTIFICATE</p> <p>INDO-MIM PRIVATE LIMITED</p> <p>OHSAS 18001:2007</p> <p>HEALTH & SAFETY</p>	 <p>GC-MARK CERTIFICATE</p> <p>INDO-MIM PRIVATE LIMITED</p> <p>GC-MARK</p> <p>ENERGY EFFICIENT</p>
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PRODUCT PORTFOLIO



AUTOMOTIVE

Turbochargers, sensors,
pumps, seating, door
mechanism, nozzle,
etc.



CONSUMER

Fashion accessory,
Mountaineering, Lock
parts, Home appliances,
Personal care etc.



DEFENSE

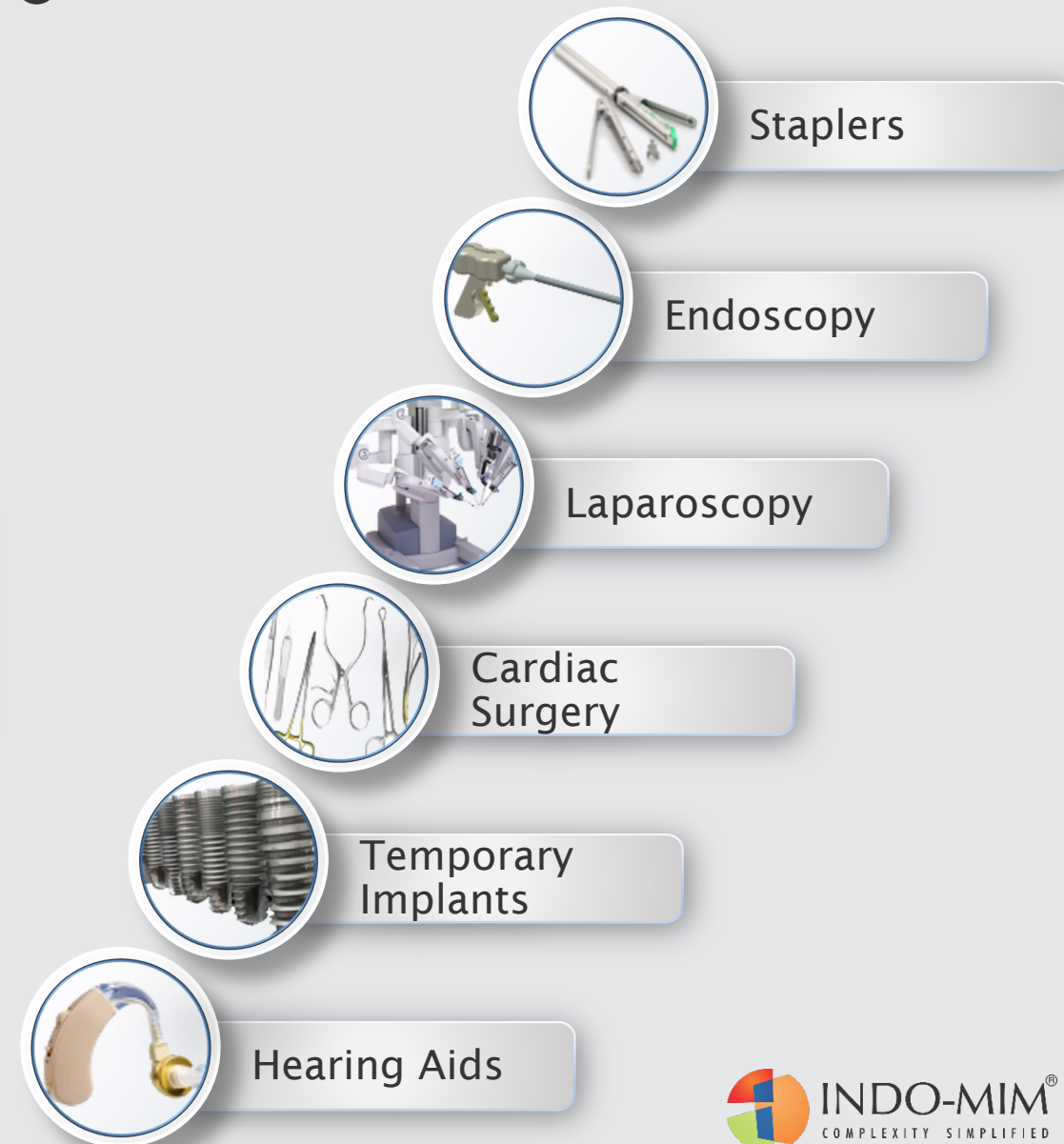
Firearm parts, sights



AERO & MEDICAL

Surgical parts,
Staplers, Implants,
Brackets

MARKET DRIVERS - MEDICAL



WHY INDO-MIM



- Customized materials (85 variants)
- Titanium, Cobalt Chrome, Nickel free alloys

Material

- Parts for Top Medical OEMs
- Six Sigma approach

Expertise

- Complimenting technologies
- Integrated machining
- Vacuum packaging
- Clean Room Facility

One-Stop Solution

Value Addition

- Laser welding
- Plastic over molding
- Insert Molding
- Silicone Over Molding
- Assembly of MIM & NON-MIM

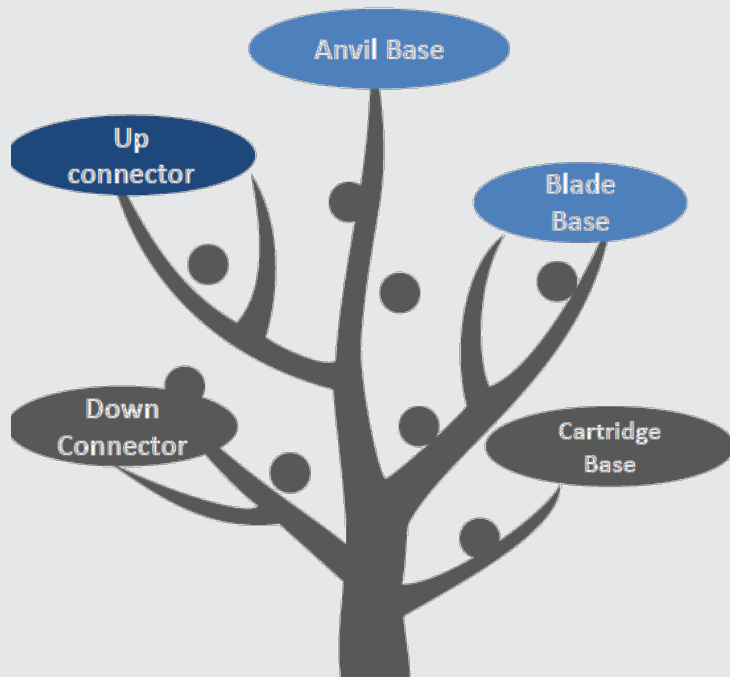
VARIETIES OF ENDOSCOPIC JAWS



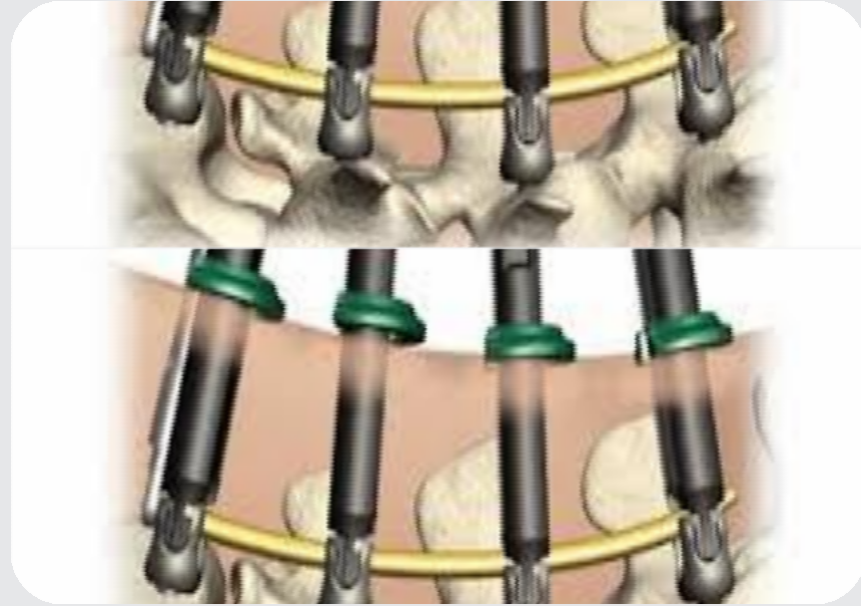
Application:

Endoscopic jaws for vessel sealing applications during the endoscopic surgery.

PARTS OF STAPLER

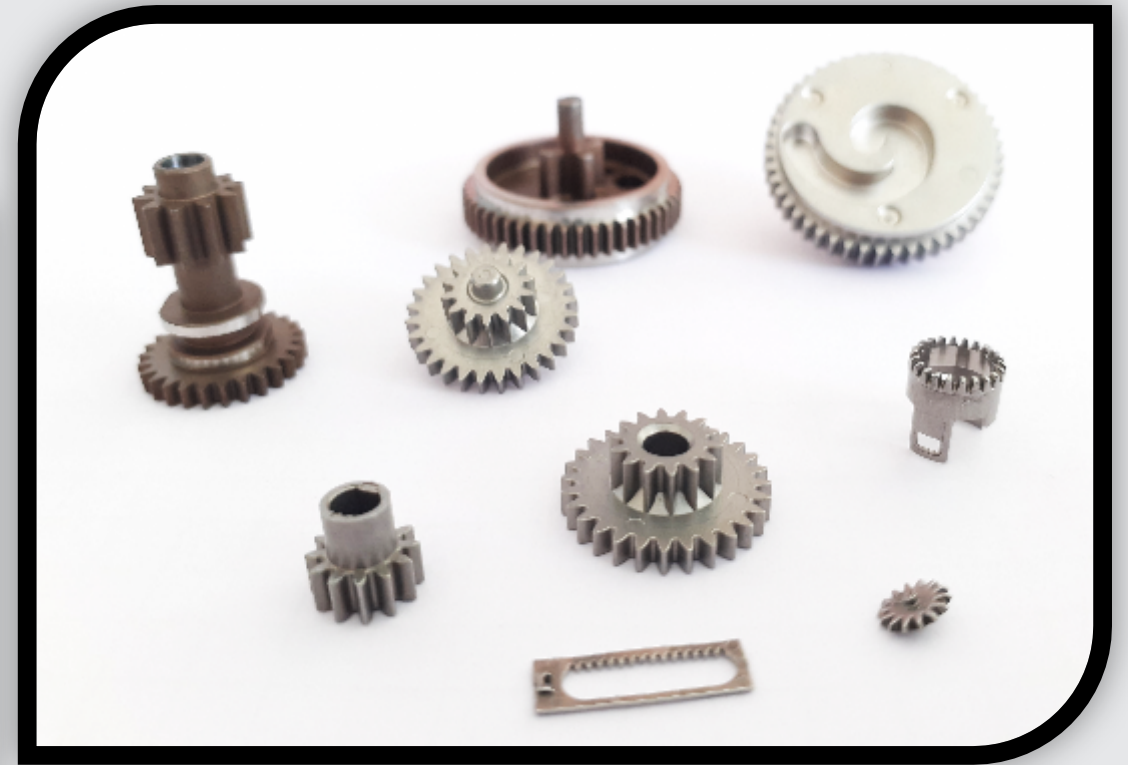


TRAUMATIC SPINE SURGERY EQUIPMENTS



Application:

MANTIS blades and Slim Ring for Minimally Access Nin Traumatic Spine Surgery



CASE STUDY – VESSEL SEALING



APPLICATION - VESSEL SEALING DURING ENDOSCOPIC SURGERY



PRODUCT DESCRIPTION

- Material: MIM 17-4PH (SS)
- Weight: 0.3gm
- Segment: Medical
- Annual Requirement: 200K



- Part consistency is an inherent capability of MIM, resulting in best fit parts.
- High volume easily achievable.

- Improper alignment of matching jaws during assembly due to inconsistency in the machining process
- Challenging to meet high volume conventional process

SOLUTION

CUSTOMER PAIN POINTS

CASE STUDY – CARDIAC SURGERY



APPLICATION - CARDIAC SURGERY



Part of arm, that holds vacuum cup during open heart surgery

PRODUCT DESCRIPTION

- Material: MIM SS316
- Weight: 38gm
- Segment: Medical
- Annual Requirement: 40K



- We suggested coring option to customer for non functional area it results in part weight reduction and cost.
- SS316 material will withstand 96hr salt spray test and it is having good corrosion resistance property

SOLUTION

- Material wastage was more in machining process.
- Machining process will consume more time compare to MIM.

CUSTOMER PAIN POINTS

CASE STUDY – SURGICAL STAPLER



APPLICATION - SURGICAL STAPLER

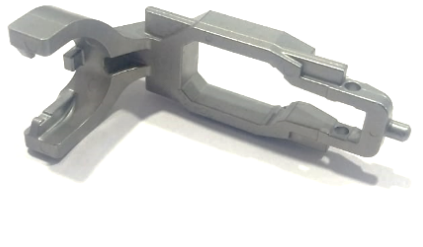


- Net shape achieved from the tool.
- MIM technology is good for high volume and Material wastage can be avoided
- MIM is cost-effective than machining process.

SOLUTION

PRODUCT DESCRIPTION

- Material: MIM SS17-4PH
- Weight: 17gm
- Segment: Medical
- Annual Requirement: 30K



- Complex profile- Multiple operation is required to produce through conventional process
- High volume
- Material wastage will be more in machining.

CUSTOMER PAIN POINTS

CASE STUDY – RECEIVER SHIELD



APPLICATION – HEARING AID



PRODUCT DESCRIPTION

- Material: MIM 17-4PH (SS)
- Weight: 0.9g
- Segment: Medical
- Annual Requirement: 120K



- Near net shape and complex features achieved through MIM.
- High volume easily achievable.

- 0.3mm wall thickness for the length of 11.4mm is challenging through conventional process.
- High volume component

SOLUTION

CUSTOMER PAIN POINTS

CASE STUDY – OPEN HEART SURGERY



APPLICATION – OPEN HEART SURGERY

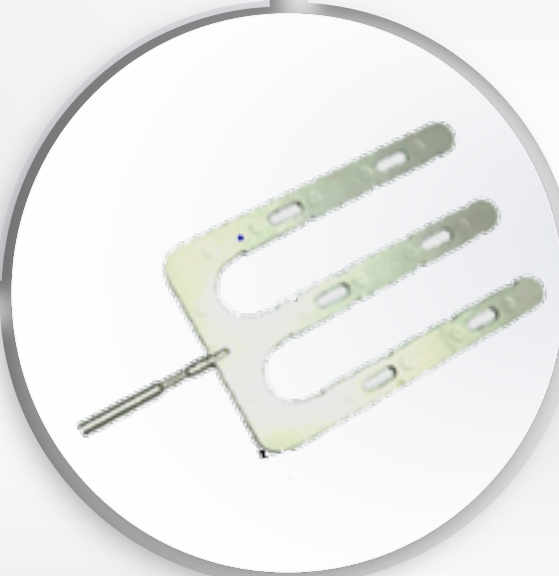


- MIM integrated positioner arm and grip as a single component.
- Sharp edges eliminated by providing radius/chamfer directly in the tool.

SOLUTION

PRODUCT DESCRIPTION

- Material: MIM 316 (SS)
- Weight: 23g
- Segment: Medical
- Annual Requirement: 12K



- Positioning arm and grip, produced separately and welded.
- Secondary operation required to remove sharp edges.

CUSTOMER PAIN POINTS

CASE STUDY – LASER EYE SHIELD



APPLICATION – LASER EYE SHIELD



- MIM SS part can be easily formed and completely blocks laser light.
- Better strength compared to plastic.

SOLUTION

PRODUCT DESCRIPTION

- Material: MIM 316L (SS)
- Weight: 14gm
- Segment: Medical
- Annual Requirement: 6K



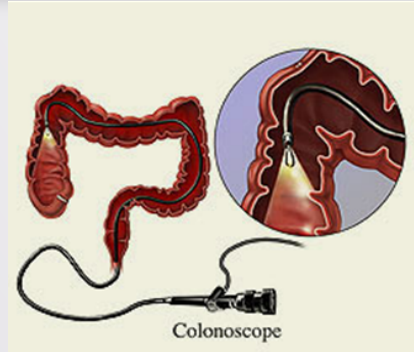
- Conventionally plastic moulded due to shape complexity, though plastic component is not ideal to block laser light.
- Higher material wastage and difficult to achieve convex shape profile through machining metal.

CUSTOMER PAIN POINTS

CASE STUDY – COLONOSCOPY SURGERY



APPLICATION – COLONOSCOPY SURGERY



- MIM is capable of producing complex tiny parts in high volumes without compromising quality.
- No post MIM machining required for the profile.

SOLUTION

PRODUCT DESCRIPTION

- Material: MIM 17-4 PH (SS)
- Weight: 0.06gm
- Segment: Medical
- Annual Requirement: 1440K



- Tiny part with complex end profile, difficult to manufacture through any of the conventional processes.

CUSTOMER PAIN POINTS

CASE STUDY – ORTHOPAEDIC SURGERY POWER TOOL



APPLICATION – ORTHODRIVE SURGICAL DRILL



- Net shape from the MIM process with better finish.
- Shorter lead time compared to Investment casting

SOLUTION

PRODUCT DESCRIPTION

- Material: MIM 17-4 PH (SS)
- Weight: 60g
- Segment: Medical
- Annual Requirement: 12K



- Conventional process of investment casting results in poor surface finish and lower dimensional accuracy.
- Part breakage.

CUSTOMER PAIN POINTS

CASE STUDY – Versaport Knife



APPLICATION – LAPAROSCOPY

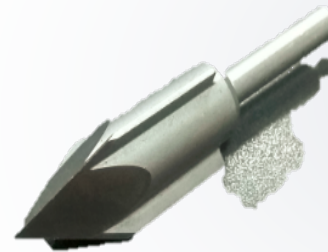


To create incision during Laparoscopy

PRODUCT DESCRIPTION

- Material: MIM 17-4 PH (SS)
- Weight: 23.45g
- Segment: Medical
- Annual Requirement: 70K

- Near net shape with high volume is achieved through MIM technology.



- Difficult to achieve sharp tip with high volume in conventional process

SOLUTION

CUSTOMER PAIN POINTS

CASE STUDY – SOUND TUBE



APPLICATION - WIRELESS HEARING AIDS



PRODUCT DESCRIPTION

- Material: MIM 17-4PH
- Weight: 3.5gm
- Segment: Medical
- Annual Requirement: 100K



- Tooling mechanism designed to form curved hole in mold
- All dimensions achieved without machining

- Existing plastic part not ideal for sound transfer
- Manufacturing limitations to achieve design in metal

SOLUTION

CUSTOMER PAIN POINTS

CASE STUDY – HEARING AID



APPLICATION - WIRELESS HEARING AIDS



- Material wastage can be reduced in MIM technology.
- Indo-MIM is equipped with plastic over molding setup to deliver the complete assembly to customer. Hence reducing the delivery time and cost to customer

SOLUTION

PRODUCT DESCRIPTION

- Material: MIM 17-4PH
- Weight: 3.5gm
- Segment: Medical
- Annual Requirement: 100K



- Titanium is expensive material and material wastage in machining results in high part cost.
- Plastic over molding done at different location, result in more transportation cost and time consuming.

CUSTOMER PAIN POINTS

CASE STUDY – SURGICAL BLADE



APPLICATION - SURGICAL BLADE



PRODUCT DESCRIPTION

- Material: MIM SS420
- Weight: 1.1gm
- Segment: Medical
- Annual Requirement: 70K



- Tooling & process designed to meet specifications.
- Complex geometry with knife edge and high hardness
- Critical functional requirement

SOLUTION

- Blade cutting edge required ground profile
- Obtained through SPM

CUSTOMER PAIN POINTS

CASE STUDY – CARTRIDGE BLADE



APPLICATION - SURGICAL STAPLER



PRODUCT DESCRIPTION

- Material: MIM SS17-4PH
- Weight: 1.1gm
- Segment: Medical
- Annual Requirement: 70K



- Customized staging ceramic fixture used to avoid distortion
- High strength achieved through modified material

- Difficult to consistently maintain low corner wall thickness
- High strength requirement

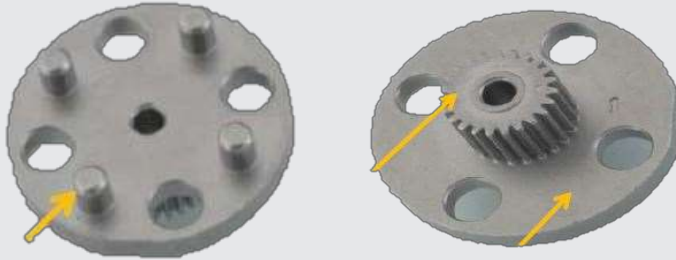
SOLUTION

CUSTOMER PAIN POINTS

CASE STUDIES



MIM Solar Disc Gear used in Stepper Motor



Conventional Process:

- 4 ground pins
- Blank plate
- Gear

MIM:

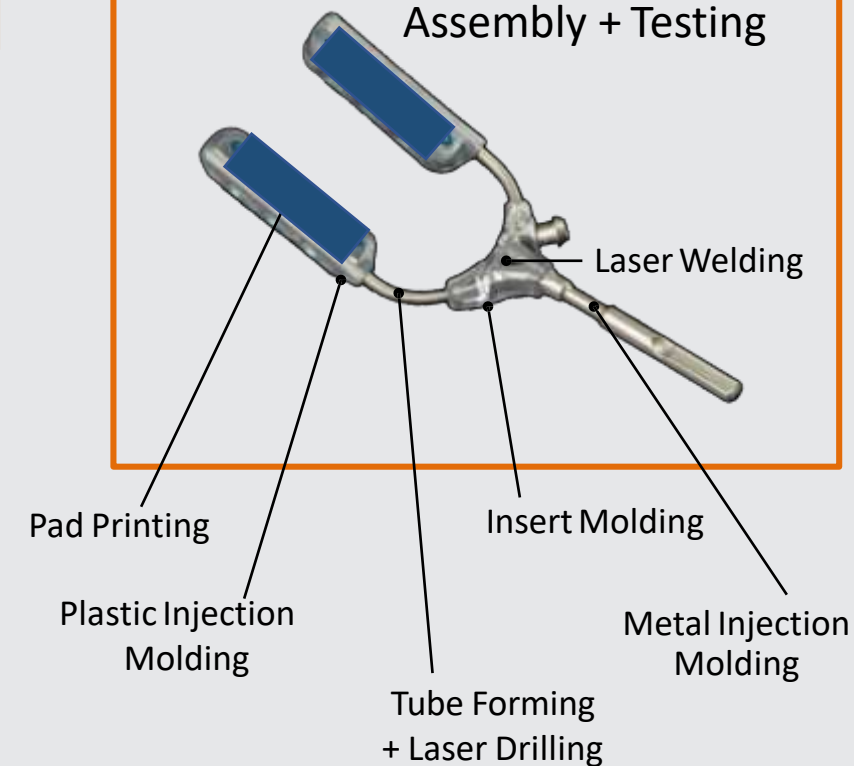
- Single integrated part
- 30% higher load bearing capacity
- 40% cost reduction

Bone Drills & Reamers



- Single use, custom designed, high volume
- Improved biocompatibility using 17-4 PH
- Lower in cost compared to other standard drill bits

Assembly + Testing



MORE THAN 3000 HEARTS – ONE TARGET

Creating Value :

In-depth technical competence

International presence

Application and Industry Expertise

Long-term Relationships

THANK YOU

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