

# From Imagination to Realization



# MGS – Your End-to-End Solution



Access our global precision plastics expertise for smarter strategies, advanced manufacturing technologies and application-specific solutions.

## Technolution<sup>tn</sup>

- Fast-growing consultancy and development company with a specialized focus on Pharma and MedTech.
- 20 years in business.
- 85 consultants.
- Successfully completed more than 250 projects with over 98% client satisfaction.
- Acts as your extended R&D department, interacting with all areas of expertise needed for a full development.



- Doubled in size since 2021 acquisition.
- Expands MGS' global tooling capacity.
- ESI/DFM simulation services supporting Product Development.
- “Fast-track” concept for soft tooling and pilot molds.
- MouldBox<sup>®</sup> and MouldCat<sup>®</sup> enable online process monitoring and preventive mold maintenance.
- Fully documented set-up and validated transfer for high-volume molding.



- Headquartered in Germantown, Wisconsin, USA.
- More than 40 years of excellence in Tooling, Automation and Manufacturing Technologies.
- 1,200 global employees across 12 manufacturing sites.
- Partner to leading healthcare companies in Pharma, Diagnostics and MedTech.

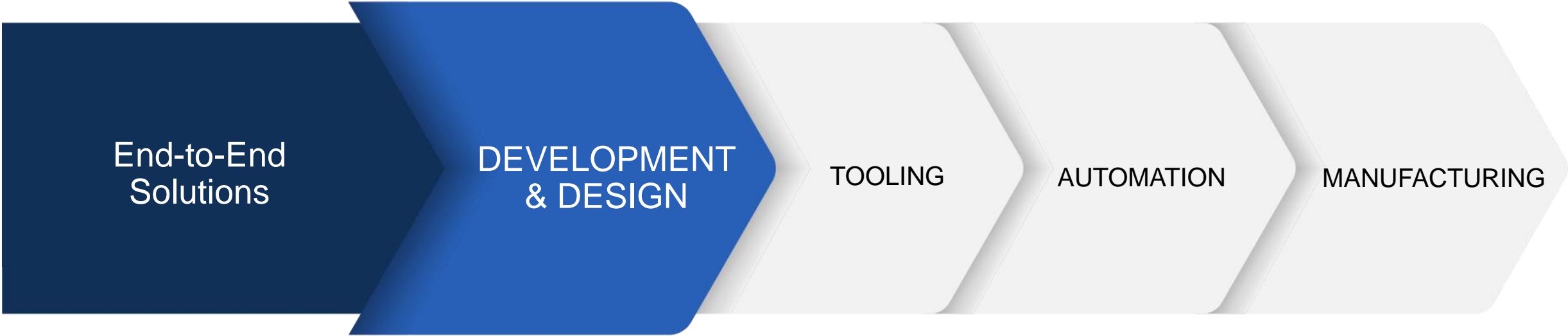
# OUR FOOTPRINT



Manufacturing Services (M)

Engineering Services (E)

# A COMPLETE VALUE CHAIN SOLUTION



Deep expertise in R&D, regulatory requirements, quality and project management.

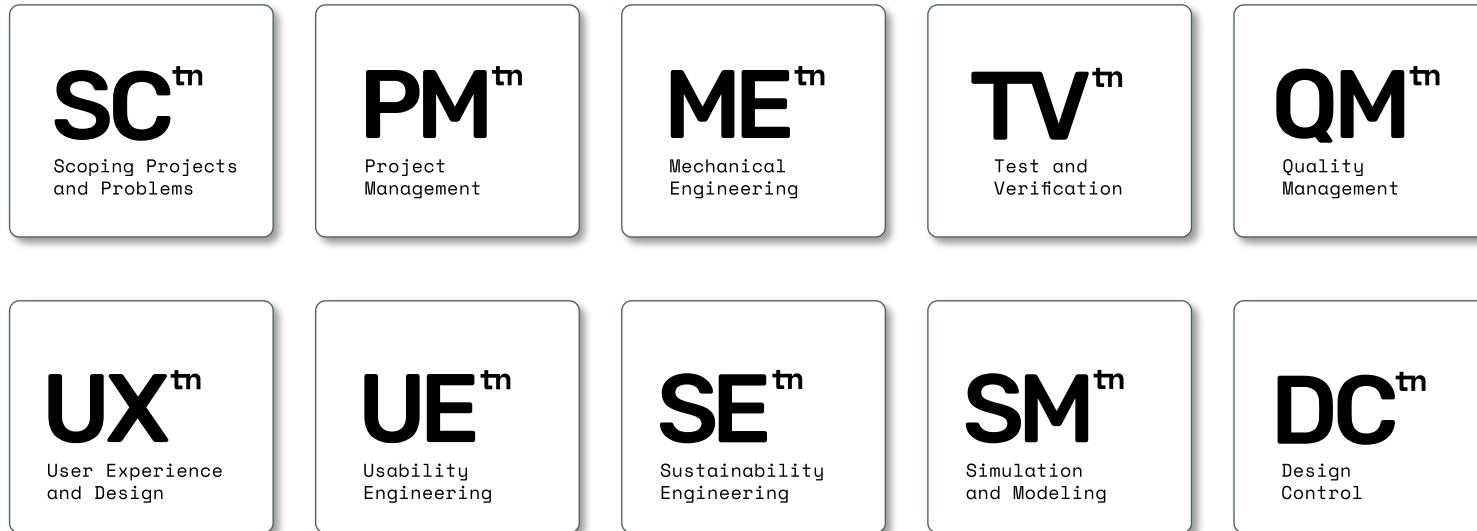
All areas of competencies needed for handling a full project.

Partners with you from ideation through final MDR / FDA approval.

Supports a seamless integration with tooling and high-volume manufacturing.

# DESIGN & DEVELOPMENT – by Technolution

An extended R&D department allowing you to go with one area of competence, a few for a specific task or a full end-to-end solution



# DESIGN & DEVELOPMENT – by Technolution



Experienced in a wide range of products. Focused on Pharma, Diagnostic and MedTech leaders.

## PHARMA EXPERIENCE

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### NEEDLE BASED DRUG DELIVERY SYSTEMS

- Autoinjectors & Platforms
- Vial syringes & PFS
- Bolus injection devices
- Wearable injectors
- Insulin pen injectors
- Rescue pen injectors
- Large volume injection systems
- High viscosity delivery systems
- Electromechanical injection systems
- IV injection systems

### OPHTHALMIC, DERMAL & MUCOUS MEMBRANE DRUG DELIVERY

- Dermal & Transdermal drug delivery systems
- Rectal Drug delivery devices
- Inhalation devices
- Ophthalmic drug delivery

## DIAGNOSTIC AND MEDTECH EXPERIENCE

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### DEVICES FOR CLINICAL USE

- Ultrasonic scanners
- Clinical biomarker & virus testing devices
- Lab equipment
- Blood gas analyzers

### INTENSIVE CARE

- Intratracheal sealing devices
- PET scanner support systems
- ECG systems
- Endoscopes

### CRONIC CARE

- Ostomy care
- Continence products
- Wound care products
- EEG monitoring implants
- Hearing Aids

# A COMPLETE VALUE CHAIN SOLUTION



We build high-precision, high-volume tools with high-cavitation and extremely tight tolerances. Our global tooling experts design and build solutions that preserve product integrity and quality.



**GERMANTOWN, WI, USA**  
80,000ft.<sup>2</sup> (7,432m<sup>2</sup>) of dedicated tooling space. Top 10 largest tool shop in North America.

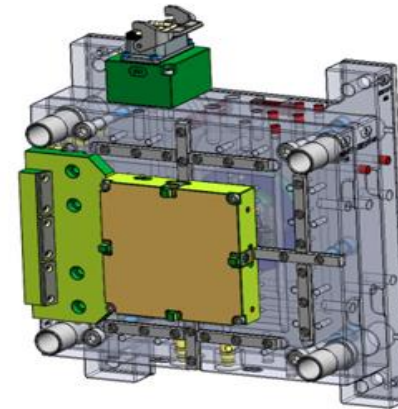
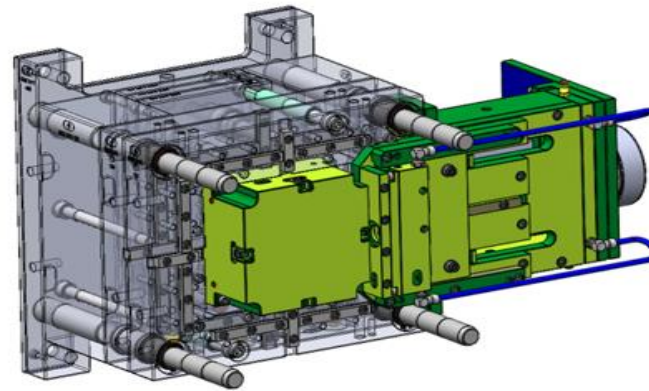
**ANDERSTORP, SWEDEN**  
52,000ft.<sup>2</sup> (4,830m<sup>2</sup>) mfg. space. Best-in-class European tool room with vast high-cavitation experience.

**ROSKILDE, DENMARK**  
32,000ft.<sup>2</sup> (2,972m<sup>2</sup>) Fast-Track Tooling Hub with dedicated Prototype & Test Center, ISO-7 and ISO-8 cleanrooms, and medical device expertise.

**DORTMUND, GERMANY**  
5,400ft.<sup>2</sup> (501m<sup>2</sup>) facility with a focus on SLM Contour-conformal Cooling & Laser Texturing.

# TOOLING – Fast Track Tooling

Speed up your time to market with our Fast Track Tooling Concept and cut down your product- and process validation times. Obtain valuable learnings for your production tooling.



## YOUR TANGIBLE ADVANTAGES

- Saves your time and money
- Speeds up part development and verification phase
- Reduces manufacturing time of pilot moulds
- Cuts cost in part development phase
- Get the real learnings to be transferred to your production molds

## OUR STANDARDISED APPROACH

- In-house Fast Track standard designs and mold bases
- Various standardized components and hotrunners 1, 2 and 4 cavity designs
- Easy application of complex tooling concepts
- Servo, two stage, unscrewing, split molds, stripper – almost everything is possible

## FAST AND COST EFFECTIVE

- 8 weeks from design to falling parts
- Rent or buy options
- Use stacks for production molds
- Validation in our test centers
- Top-notch metrology equipment and in house tooling
- We guarantee fast results and minimum correction loops

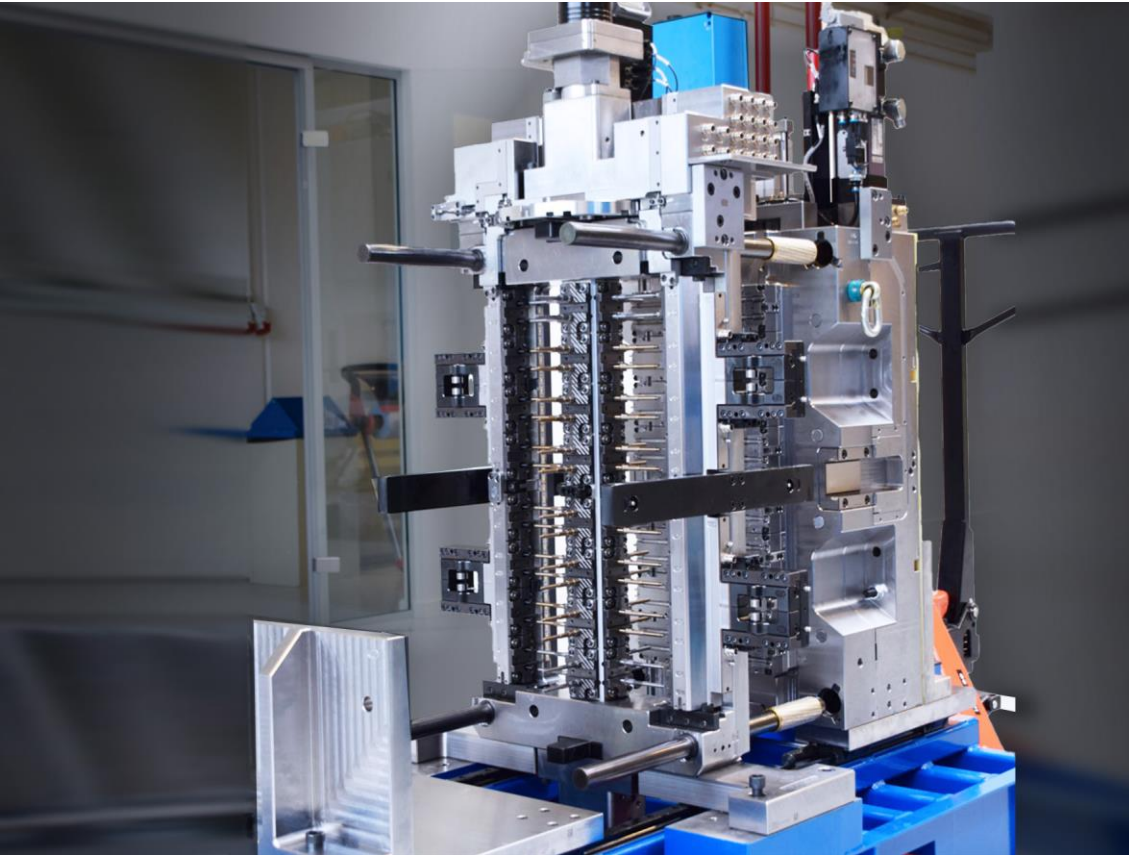
## MITIGATE PROJECT RISK

- Avoid surprises regarding shrinkage and product tolerances.
- Optimize part geometry for production prior to production tooling
- Use Fast Track tools for small series production, tests and pipeline filling
- Use our clean room facilities for your validation processes



# GLOBAL TOOLING – High-Precision Injection Molds

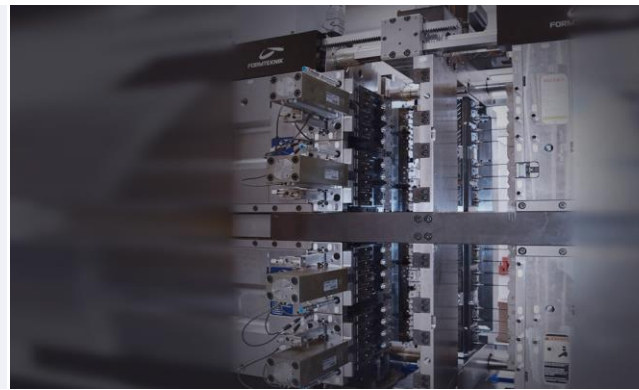
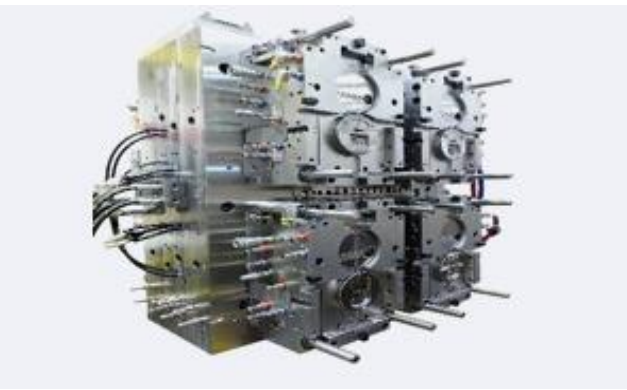
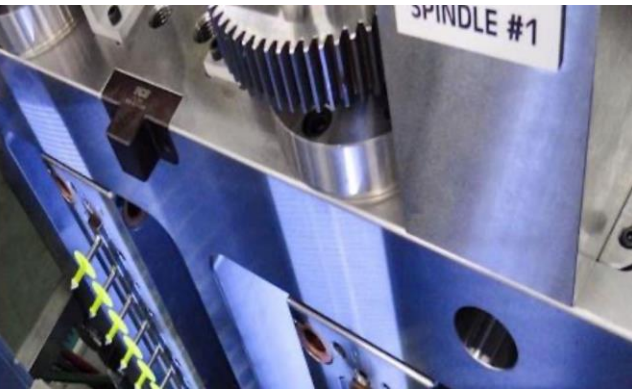
With roots as toolmakers, we design, build and manage hundreds of injection molds per year. We partner to help global innovators ensure reliable, repeatable success.



- Full design and manufacturing of high-cavitation precision injection molds.
- Extensive DFM and simulation capabilities – dedicated team.
- Modular pilot fast track tooling for early product launch.
- Additive manufacturing capabilities.
- Laser texturing experience.
- High-volume, high-quality Medical molds.
- In-house tool repair shops for tool transfer validations and ongoing upkeep.

# TOOLING – Mold Technologies

Vast scope of knowledge and expertise from our experienced toolmakers means you get the best resources and better results.



## MULTI-COMPONENT

- Part consolidation. Features multiple materials (up to four molded components) within same production cell.
- Can introduce inserts through robotic placement during molding process.
- Results in reduction of downstream assembly and multiple manufacturing cells.

## STACK MOLDS

- For high-volume production.
- Multiple parting lines and faces to maximize the use of single machine tonnage.
- Can produce 2-4 times the volume of single face molds while utilizing one.

## HIGH SPEED + CAVITATION

- High-volume production.
- Up to 228 cavities.
- Sub 3-second cycles.

## AUTO UNSCREWING

- Allows for the production of molded-in threads.
- System actuation offerings are Servo, hydraulic or mechanical.

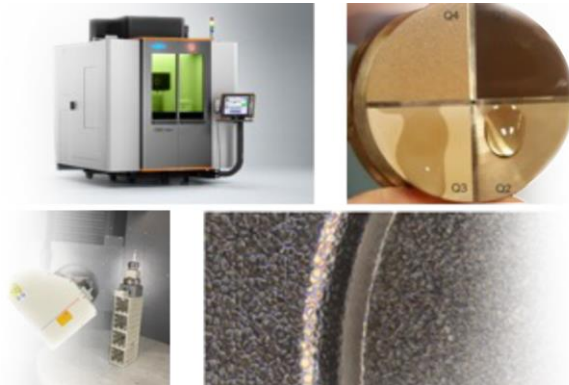
# TOOLING – Mold Technologies

Vast scope of knowledge and expertise from our experienced toolmakers means you get the best resources and better results.



## CONFORMAL COOLING

- Latest 3D metal printing technology.
- Geometrically optimized cooling channels.
- Increased part quality and process windows.
- Reduced cycle time.
- Simulated, designed and manufactured in house.



## LASER TEXTURING

- 5-axis laser texturing of mold inserts.
- Reduction of demolding forces.
- Draft angle reduction.
- Friction reduction on plastic parts.
- Reduction of media adhesion on plastic parts.



## SERVO-DRIVEN MOULD MOVEMENTS

- Any kind of mold motion can be realized with our servo technology.
- Clean, no oil or oiled air.
- Controllable, torque, speed, profiles, ramps.
- Fast, simultaneous movements.
- Integrated servo-/hotrunner control systems.



## PREDICTIVE AND PREVENTATIVE MAINTENANCE

- Online mold data monitoring and analysis via MouldBox.
- Mold documentation and spare parts management with MouldCat.
- Mold tracking.
- Configurable alarms with push notifications.
- Structure-borne sound analysis.

# TEST CENTERS – Transitioning to Production



Within our dedicated testing & sampling facilities, we offer a broad range of testing and validation support, as well as the custom development of turnkey manufacturing cells.

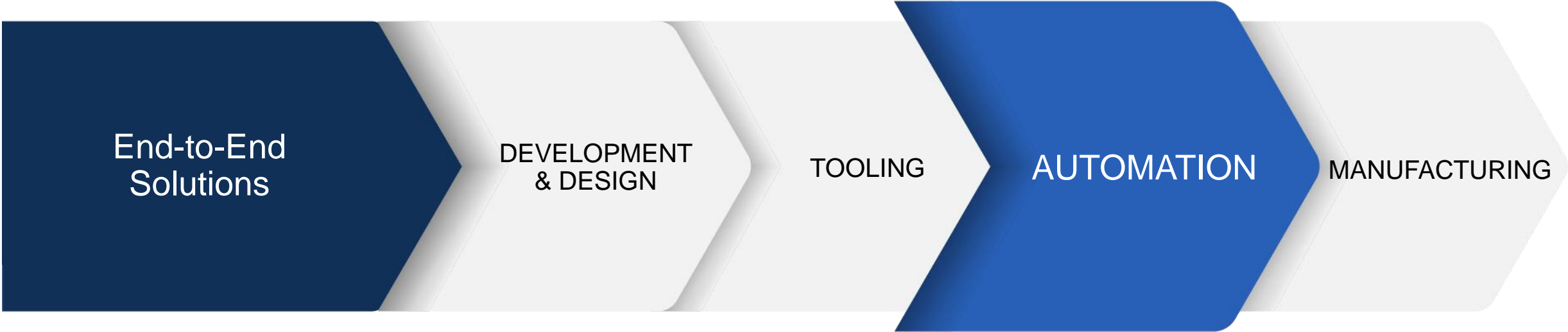
- DOE & validation of production molds.
- Integration & testing of turnkey manufacturing cells.
- Part qualification.
- Material evaluation.
- Customer access to dedicated cells for program launches.
- Scientific development for molding.
- In-house metrology.
- CT Scanning.
- FoT, FAT, PQ, OQ.
- Automation development.



# A COMPLETE VALUE CHAIN SOLUTION



We deliver custom automation and manufacturing systems that optimize performance and maximize productivity at customer locations and MGS' global facilities.



Scalable Automation Solutions.

Multishot Manufacturing Technologies.

Complete In-House Capability.

Quality Assurance Integration.

# AUTOMATION – Services & Capabilities



## SCALABLE AUTOMATION SOLUTIONS

- End-of-Arm Tooling.
- Proof of Concept.
- Rotary Index.
- Linear Index.
- Continuous Motion.
- Press-Side – Up/Down Stream.

## MULTISHOT MANUFACTURING TECHNOLOGIES

- Injection Units.
- Rotary Platens.
- Rotary Stack System.
- Specialty Molding Workcells.

## COMPLETE IN-HOUSE CAPABILITY

- Mechanical & Electrical Engineering.
- Tooling & Machining.
- Panel Wiring.
- Machine Assembly.
- Software Development.
- Validation FAT/SAT/IQ/OQ/PQ.
- Project Management.

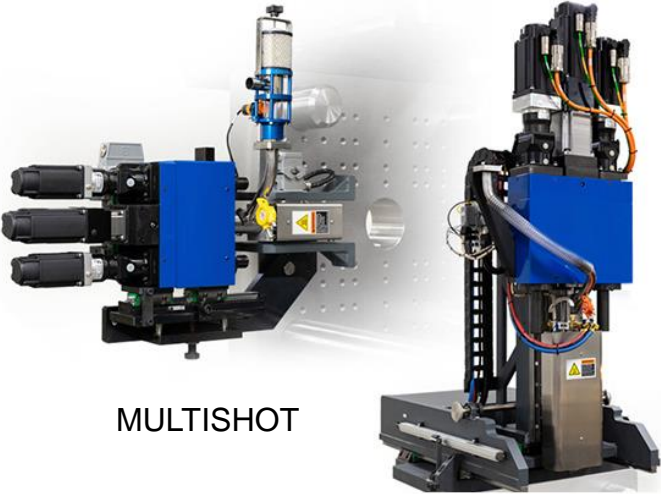
## QUALITY ASSURANCE INTEGRATION

- Weight & Color Verification.
- Automated Vision.
- Precision Measurement.
- Cosmetic Inspection.
- Leak Testing.
- Electrical Testing.

# CAPABILITIES – Automation Technology



END OF ARM TOOLING (EOAT)



MULTISHOT

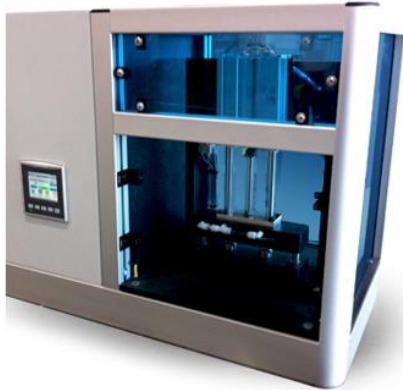


CONTINUOUS MOTION

INDEXING ROTARY & LINEAR



PRESS SIDE

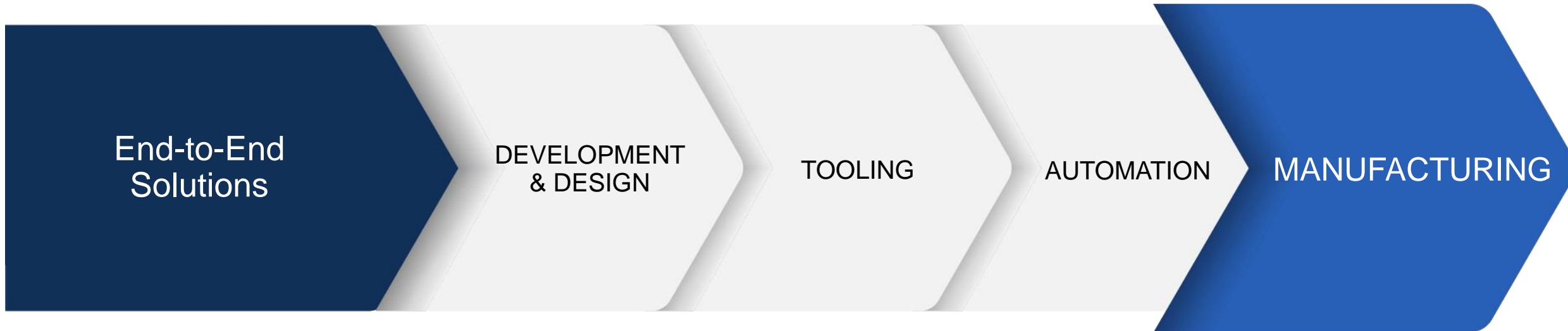


PROOF OF CONCEPT

# MANUFACTURING – Precision Plastics Expertise



MGS partners with global Pharma, Diagnostic and MedTech Innovators to turn their greatest challenges into groundbreaking products.



**Germantown, WI, USA:**  
300,000ft.<sup>2</sup> (27,870m<sup>2</sup>)  
with ISO-8 cleanroom  
manufacturing space.

**Richfield, WI,  
USA:** 165,000ft.<sup>2</sup>  
(15,329m<sup>2</sup>) with  
ISO-8 cleanroom  
manufacturing.

**Juarez, Mexico:**  
125,000ft.<sup>2</sup> (11,612m<sup>2</sup>)  
with ISO-8 cleanroom  
and C-TPAT certified.

**Leixlip, Ireland:**  
190,000ft.<sup>2</sup> (17,651m<sup>2</sup>)  
manufacturing space with ISO-7  
and ISO-8 cleanrooms.

**Cartago, Costa Rica:**  
100,000ft.<sup>2</sup> (9,290m<sup>2</sup>) with  
ISO-8 cleanroom  
manufacturing in Jan. 2025.

**Total cleanroom manufacturing capacity over 250,000ft.<sup>2</sup> (81,752m<sup>2</sup>)**



# MANUFACTURING – Delivering Critical, Complex Parts Globally

World-class product design, tooling, and automation expertise culminates in the delivery of the highly critical, high-precision components leading Healthcare Innovators need to succeed.

## QUALITY:

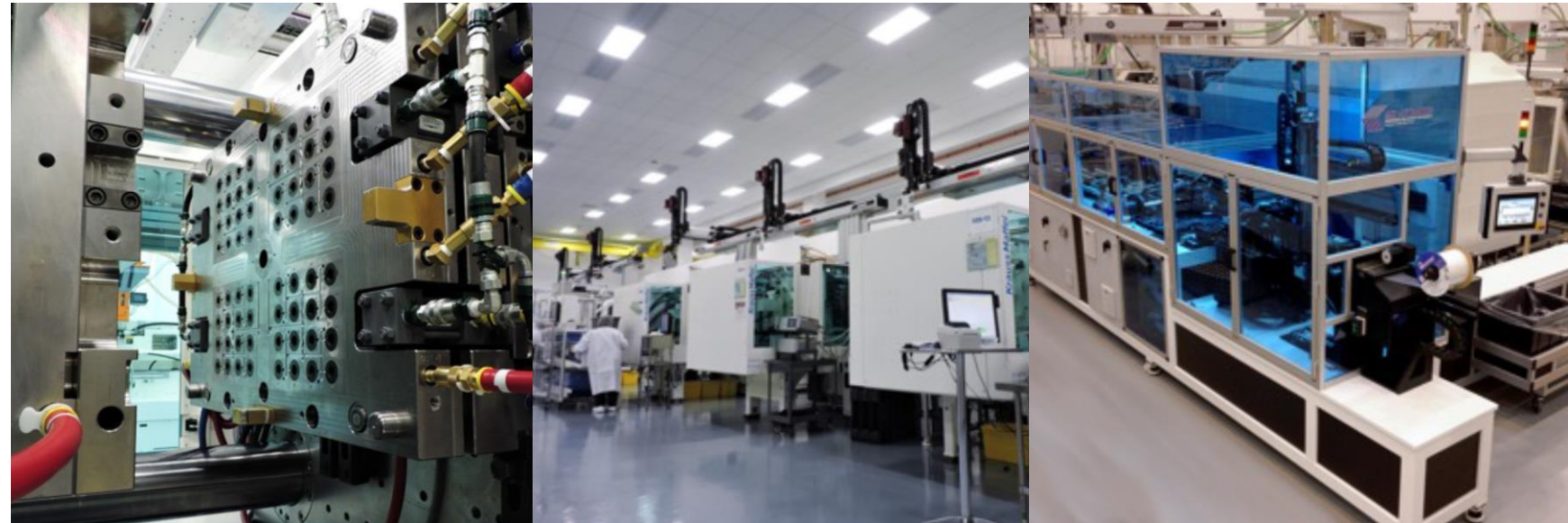
- ISO 13485-certified and FDA-registered, on-site Quality Labs.

## PRECISION MOLDING:

- 350+ injection molding machines globally (28-800T).

## ASSEMBLY:

- Dedicated, custom-designed customer workcells.



# MANUFACTURING – Value-Added Assembly

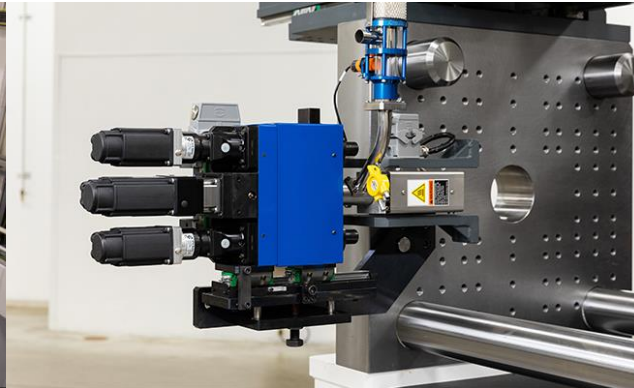
Our automated, semi-automated, manual, and cleanroom assembly capabilities enable our customers to go from ideation to delivery quickly and seamlessly.

- Laser Welding.
- Ultrasonic Welding.
- Heat Staking.
- Pad Printing.
- Packaging.



# MANUFACTURING – Precision Manufacturing

Global precision manufacturing capabilities deliver excellence to our customers from six manufacturing facilities strategically located closer to you.



## INJECTION MOLDING

- High-precision, high-speed, high-volume solutions.
- Engineered-grade resins.
- Tight tolerances.
- FDA-approved.
- Insert.
- Thin wall.
- Decoupled.

## MULTISHOT MOLDING

- Two, three and four-shot solutions.
- Utilizes MGS' state-of-the-art injection unit and rotary system solutions.

## CLEANROOM MANUFACTURING

- State-of-the-art ISO-7 and ISO-8 cleanrooms.
- ISO 13485-certified.
- CT scanning.
- Validation capabilities.

## AUTOMATED WORK CELLS

- Bespoke automated systems.
- Designed and built for part processing, assembly, inspection and packaging.
- Modular press-side automation for integrated molding cells.

# PARTNERING YOUR WAY – Our Customer-Centric Approach



Count on MGS to accelerate your success. We move with agility to identify the right process and manufacturing environment for your program. No matter your location.



## THROUGH THE WALL

Extension of your  
day-to-day operation.

## STRATEGIC LOCATION

Within close proximity  
to your business.

## PURPOSE-BUILT CLEANROOM FOR MANUFACTURING

Integration with an existing  
MGS facility.

## STRATEGIC PURCHASE

Willing to buy your existing facility  
& take over operations.

“MGS’ strength is their willingness to have ready capacity. It’s a Field of Dreams mentality.”

–*Global U.S.-based medical and diagnostic device manufacturer.*

# THE MGS ADVANTAGE



We offer a unique opportunity to consolidate your Pharma, Diagnostics and MedTech supply chain. Partner with us for a seamless, vertically integrated solution from initial design ideation to final product delivery.

MAXIMIZE SPEED-TO-MARKET	Work with a single supply chain partner to ensure seamless transition from product design to tooling to high-volume manufacturing to delivery.
MITIGATE RISK	Benefit from our vertical integration from innovative product development through advanced engineering, tooling, automation, manufacturing and delivery.
REDUCE COSTS	Partner with a team to consolidate your supply base or outsource an internal molding operation.
ENSURE HIGH QUALITY	Develop smarter strategies to ensure consistent, repeatable part quality.
DRIVE EFFICIENCY CLOSE TO YOU	Access global Pharma, Diagnostic and MedTech expertise with solutions in North America and Europe.

# MGS JUAREZ OVERVIEW



- Key geographical position to access North American markets
- Employees: 300+
- 60 Injection Molding Machines, 50 – 1400T
- 125,000 sq. ft. of manufacturing space
- ISO Class 8 Cleanroom
- C-TPAT Certified
- UL Certified
- Single shot & multi-shot molding
- Value-added operations



# MANUFACTURING – Value-Added Assembly

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# MGS JUAREZ OVERVIEW



- 60 Injection Molding Machines, 50 – 1400T
  - Open Capacity ~47%

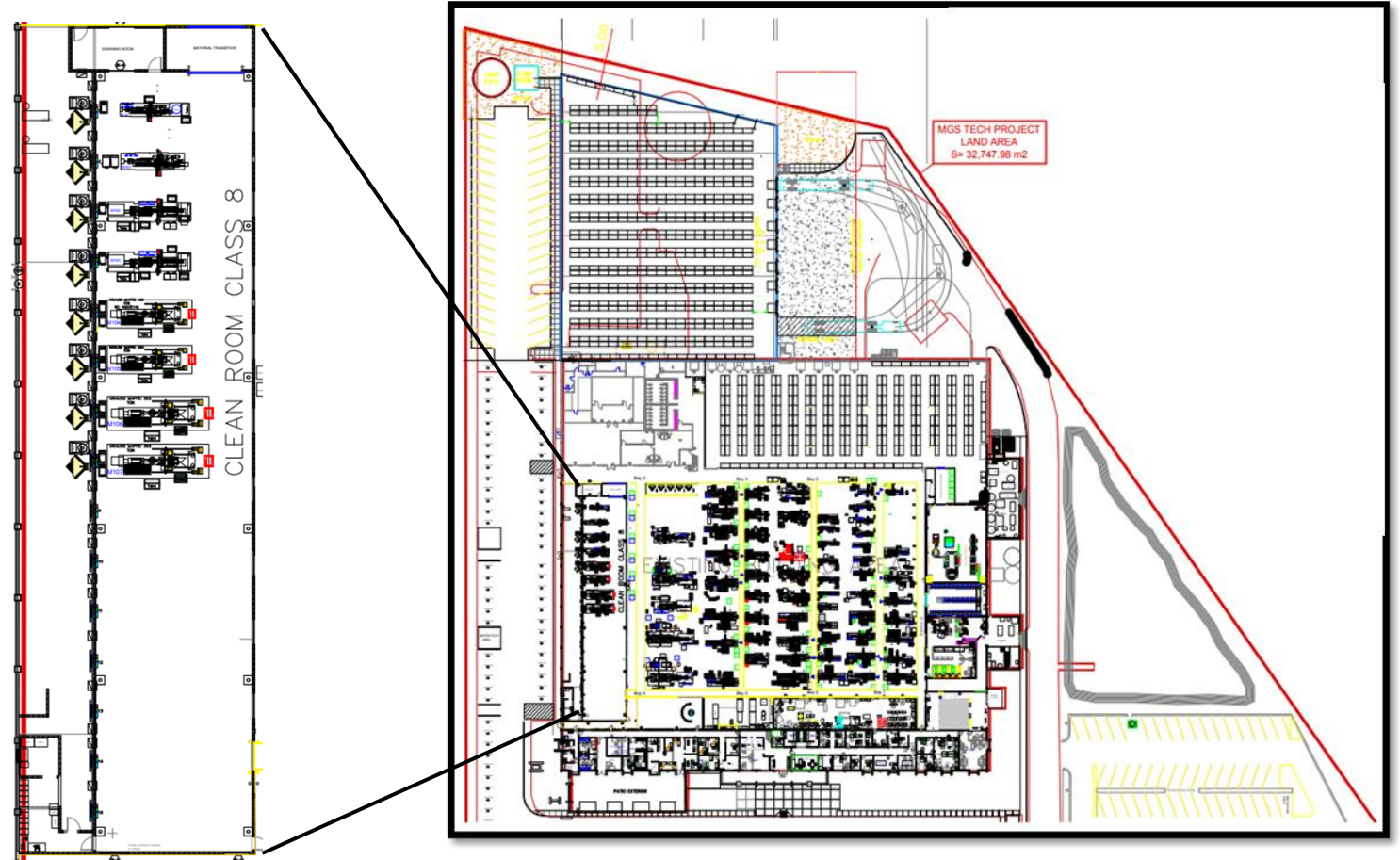
	Number of Machines	Available Hours *	Total Hours Used	Utilization %
Small < 200 Ton	27	19,440	8,533	44%
Medium 200 Ton – 450 Ton	22	15,840	4,780	30%
Large > 450 Ton	11	7,920	3,426	43%
<b>Total</b>	<b>60</b>	<b>43,200</b>	<b>16,739</b>	<b>38.75%</b>

\* Available Hours Calculated Based on 365 Days, 24/7



# MGS JUAREZ - CLEANROOM

## CLEANROOM ISO CLASS 8



# MGS JUAREZ – MANAGEMENT OPERATING SYSTEM



# MGS JUAREZ OVERVIEW – QUALITY LAB



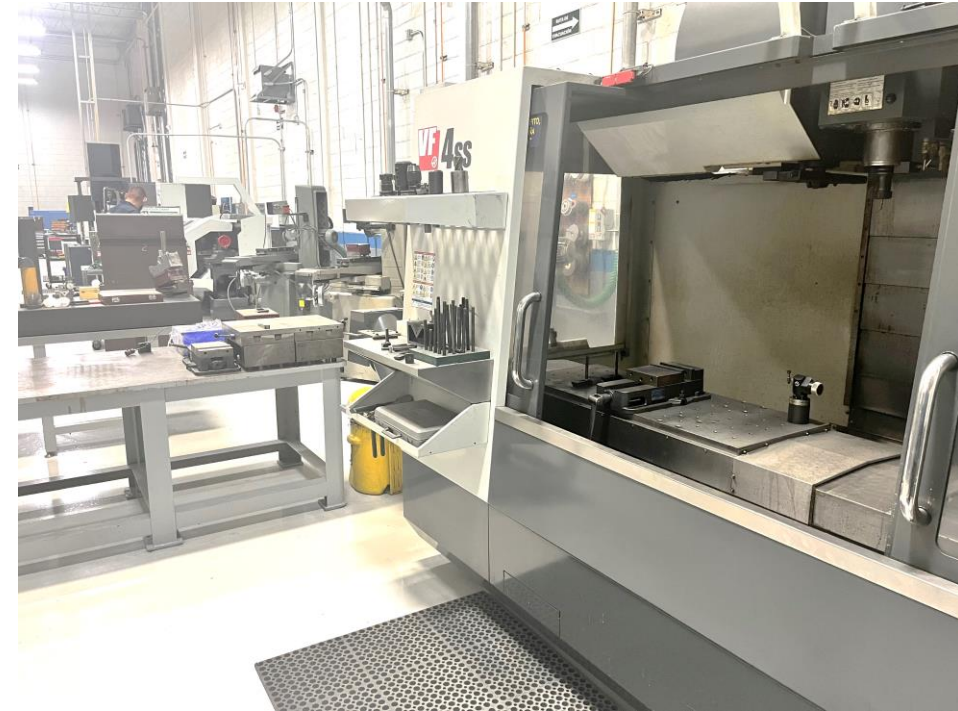
- SPC, Statistics, Calibration & Document Control Software
- 2 CMM
- 1 OGP Vision System
- 1 Keyence Optical Comparator
- Force Tests / Oven / Calipers
- Spectrophotometer



# MGS JUAREZ OVERVIEW – TOOL ROOM

Out State-of-the-art equipment includes:

- CNC Machining Center
- CNC Lathe
- TIG & Laser Welder
- EDM
- Grinders, Mills
- Wire EDM
- Ultrasonic Cleaner
- Dry Ice Blaster

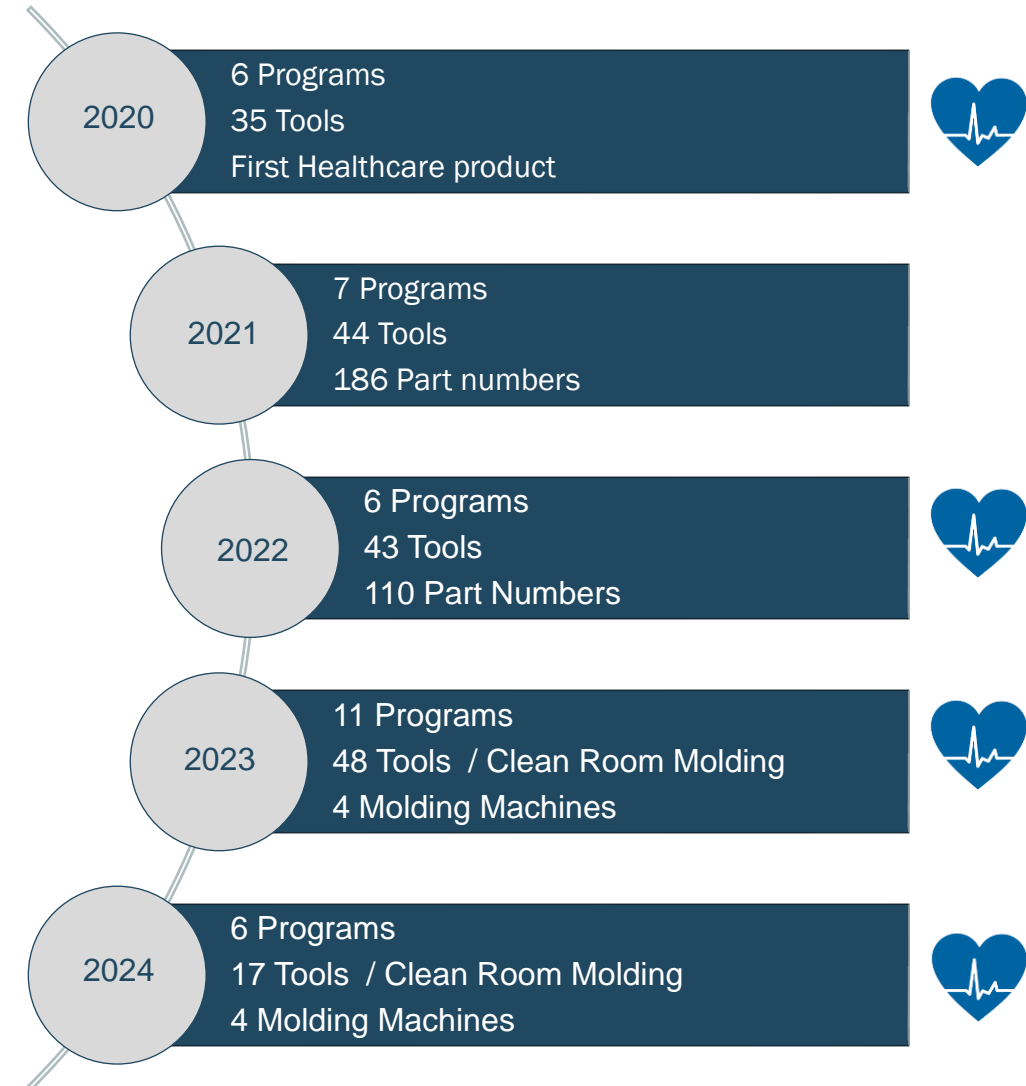


# MGS JUAREZ OVERVIEW – TRANSFER PROGRAMS



MGS has transferred over 547 tools for 43 programs since 2018. Currently shipping to 5 Healthcare customers worldwide.

Your Healthcare Manufacturing Partner – Pharma, Diagnostic, MedTech



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# QUESTIONS?



## CONTACT FOR MORE INFORMATION

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