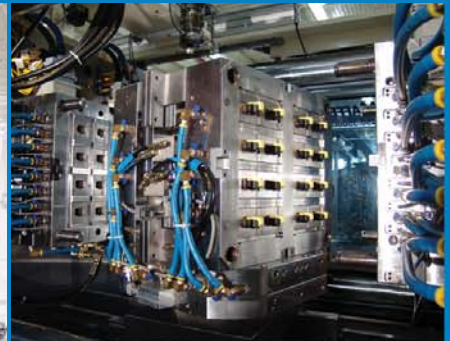
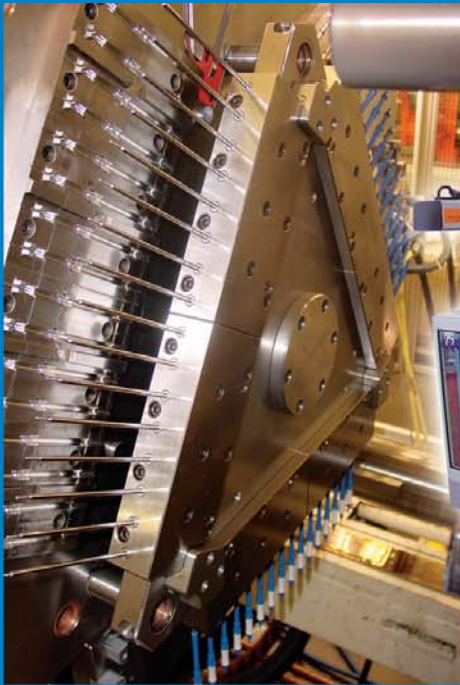




MGS MFG. GROUP

ENGINEERING FOR OPTIMUM PERFORMANCE



Part Design - Moldmaking - Rotary Platens

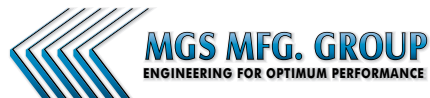
Molding - Portable Injection Units



Our solutions cut cycle times, increase productivity, improve quality, and reduce costs.

We provide *multishot* technologies, engineering, mold building, and manufacturing solutions.

These Multishot Technologies are designed and built by the



W188 N11707 Maple Rd. Germantown, WI 53022 USA Phone: (262) 255-5790 Fax: (262) 255-7206
Email: contact@mgstech.com Web: mgstech.com multishot.com

When you choose

MULTISHOT

ELIMINATE SECONDARY OPERATIONS

By design, multishot technology can eliminate downstream assembly by achieving the task during the molding process. O-rings, gaskets, caps, straps, inserts, handles, grips, logos, text, masking areas for metal plating, and hinges can be molded into the part.

These improvements can assist in the reduction or elimination of assembly equipment, labor, non-conforming parts, and part failure in the field.

IN MOLD ASSEMBLY

Using mechanical design techniques, moving parts can be achieved with multishot injection molding! The valve shown at right has a polypropylene petcock (red) molded into a static polycarbonate housing (white). The petcock can rotate inside the housing 360 degrees by incorporating the use of a mechanical bond (bonded together by design and the use of dissimilar materials). The third shot material (blue) uses chemical bonding (bonded by the natural characteristics of similar materials) creating a soft rubber seal. This valve leaves the mold fully assembled exactly as shown because all three materials are introduced during the same molding cycle!

The battery latch shown demonstrates a multishot part with a movable component. The internal black module of this part is 0.7cm in diameter and rotates 180 degrees inside the gray housing, acting as a locking mechanism that can be fastened and unfastened in order to secure and remove the battery housing.



Multishot Injected Molded Valve
U.S. Patent 6,371,444 B1



Battery Latch
(Front & Back Views)



Multishot Grip Cap
Patents pending

SOFT TOUCH

Ergonomics has proven to be a deciding factor in today's consumer market. Multishot applications such as grips, handles, text, and color separations fuel customer desirability.

COST EFFECTIVE SOLUTIONS

Imagine your program requiring less press time, manpower, storage, and injection molds. MGS customers realize these cost savings every day.

MOLDED GRAPHICS

Logos, text, and graphic elements can be molded right into part geometry, eliminating costly labels and stickers that wear, fade, and fall off.

When you choose



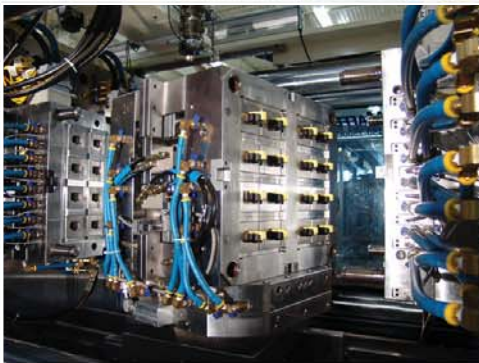
MGS MFG. GROUP

ENGINEERING FOR OPTIMUM PERFORMANCE



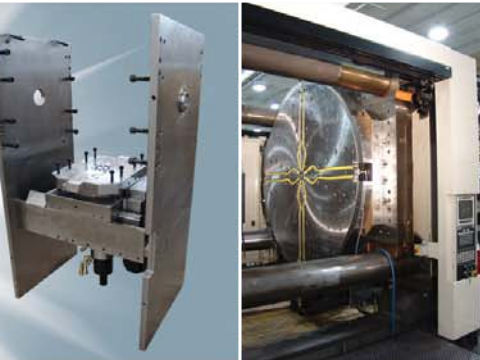
MGS Moldmaking

We have been manufacturing multishot molds since the 1980's. Up-front product engineering facilitates effective mold design and automated manufacturing efficiencies. Early involvement from our design and engineering teams provides you with molds which are easier to maintain, have an extended production life, and provide cost-effective solutions for your company.



MGS Molding

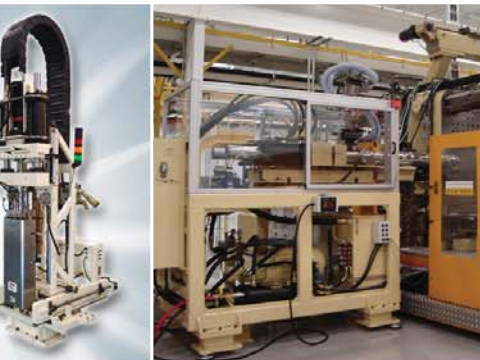
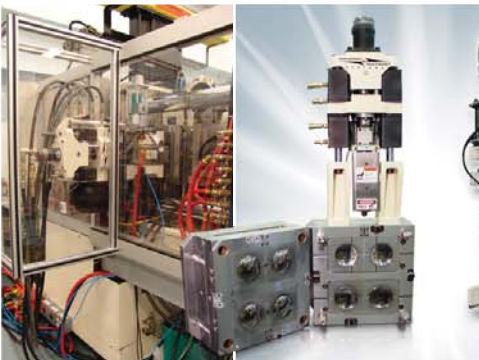
We handle high technology molding. TecStar, our custom molding company, has presses that range from 28-880 tons, over 50 multishot systems, and over 200,000 square feet of production space. With multiple manufacturing facilities, we have the capabilities and capacities your programs require.



MGS Rotary Platens

Designed for a fast-paced market, we build platens with quality and performance in mind. Sizes range from 400mm to 2200mm and style options include: Standard Flush Mounted, Euro Style Water Jacket, and Servo Driver Electrical. Bolt hole patterns, knock out patterns, platen style, rotation, and other options can be customized to fit your needs.

Rotary Platen Assembly U.S. Patent # 6,402,504 B1 (other patents pending)



MGS Injection Units

Our portable injection units configure to existing molding presses making them multishot capable. These units are capable of shot sizes ranging from .16 to over 2,000 grams. Our vertical units save valuable floor space and mount right on the press or mold, while our horizontal units are placed press side to accommodate larger shot sizes or ceiling restrictions. We also offer custom-built portable injection units to accommodate special production needs.

Multishot Injection Molding Arrangement U.S. Patent 6,994,810 B2 (other patents pending)

SERVICES AVAILABLE

Moldmaking

Engineering & Design
High Speed / High
Precision Machining
Automated Mold
Building Cells

Part / Product Design
Mold Design
Prototype Molds
Pre-Production Molds
Die Cast Molds
Contract Machining
Multi-Cavity / High Cavitation

Injection Molds, Multishot (Multi-Material)
Thermo-Forming & Compression Dies / Molds
Fixtures
- Degating
- Inspection
End-of-Arm Tooling

Development/Qualification

Diverse Metrology Capabilities
Mold Testing &
Process Development
Mold Optimization

Manufacturing Development
Mold / Part Qualification
Manufacturing System Qualification
Sampling Services
Process / Window Studies
Material Evaluations
Scientific Molding Principles

APQP (Applied Product Quality Planning)
Customer Specific Submission Formats
Gauge Design and Build
First Article Inspection (FAI)
IQ/OQ/PQ
PPAP

Manufacturing

ISO Class 8 Clean Room
Molding & Assembly
Continuous Extrusion
Shuttle Blow Molding
Value-Added Secondary Operations
& Flexible Assembly Automation

Plastic Injection Molding
- Conventional
- Multishot (Multi-Material)
ISO Class 8 Clean Room
Molding and Assembly
Secondary Operations
Insert Molding
Transfer Programs

Semi to Fully Automatic Assembly Systems
Continuous Extrusion Shuttle Blow Molding
- In Line Automated Leak Testing
- In Line Automated CNC Machining
- Closure Tooling and Molding
Automation Systems

Equipment

Universal Multishot Systems
- Portable Injection Units
- Rotary Platens
- Vacuum Units
- Hot Runner Controllers

UMS Portable Injection Units
- Hydraulic and Servo Options
- Mold Mounted Options
- Press Mounted Options
- Horizontal Options
UMS Rotary Platens
- Hydraulic and Servo Options
- Size Options

UMS Vacuum Units
UMS Hot Runner Controllers
- 5, 15, 20, or 30 Zones



INDUSTRIES SERVED

Medical & Healthcare
Packaging / Closures / Containers
Automotive
Telecommunication
Electrical
Computer
Housewares

Consumer / Disposable
Construction
Industrial
Water Treatment / Irrigation
Appliance
Cosmetic
Aeronautic / Aerospace

We are an engineering company delivering performance solutions for moldmaking, development/qualification, manufacturing, and equipment for the plastics industry.