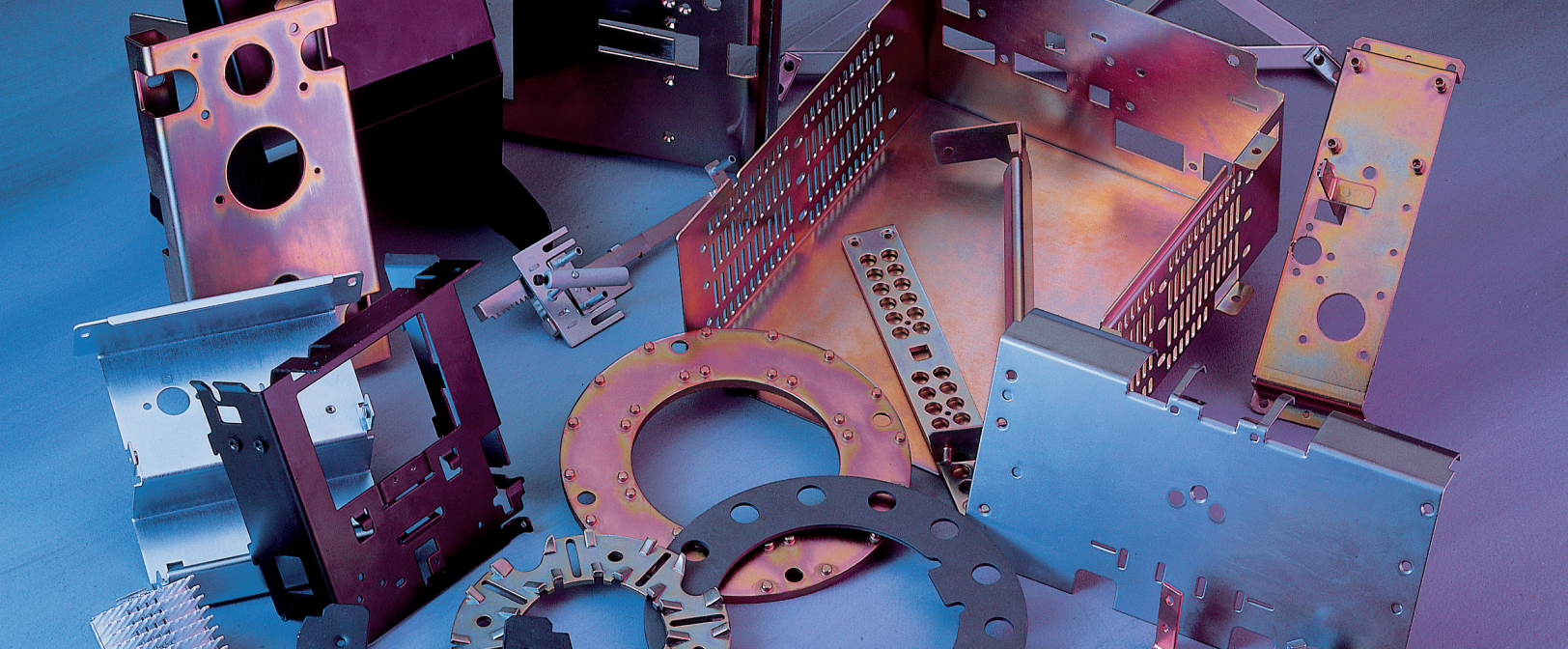




HARVEY VOGEL
MANUFACTURING CO.

Custom Metal Stampings & Assemblies





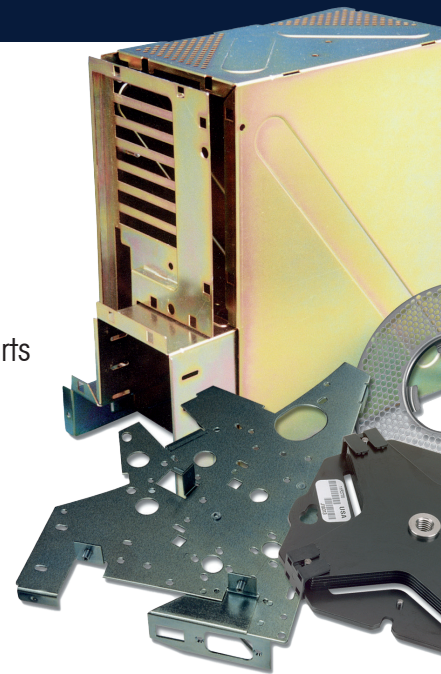
A trusted partner for high-quality precision metal stampings since 1942. Specializing in complex, tight-tolerance, and appearance oriented parts & assemblies.

Our value-added manufacturing approach results in faster production turnaround, reduces your project management time, and provides cost saving opportunities.

With two state-of-the-art facilities of 132,000 and 71,000 square feet, our equipment includes over 200 stamping presses (from 10 to 400 tons), fully integrated laser cutting systems, turret punches, CNC machine centers, in-house tooling technologies, and powder coat capabilities.

The Harvey Vogel Advantage

- Experts in the metal stamping industry
- Over 80 years of manufacturing excellence
- AS9100, ISO 9001 and ISO 14001 Certified
- Specialize in high quality, tight-tolerance, and appearance oriented parts
- Extensive stage tooling inventory for short to medium run stampings
- Complete in-house design, engineering, and tool room capabilities
- Strong quality assurance programs and systems
- Robust value-added secondary and assembly capabilities
- Fully automated powder coat paint line
- World class process design, production work cells, and assembly lines
- State-of-the-art facilities, equipment, and dedicated personnel



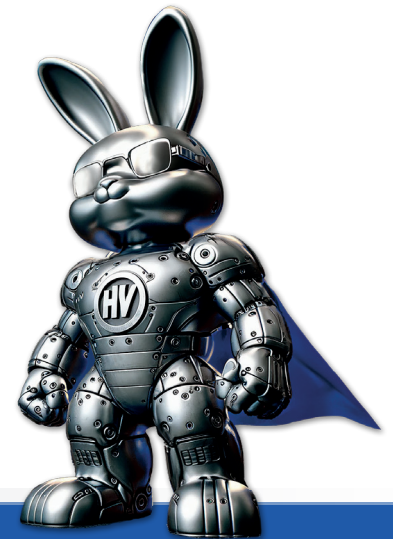
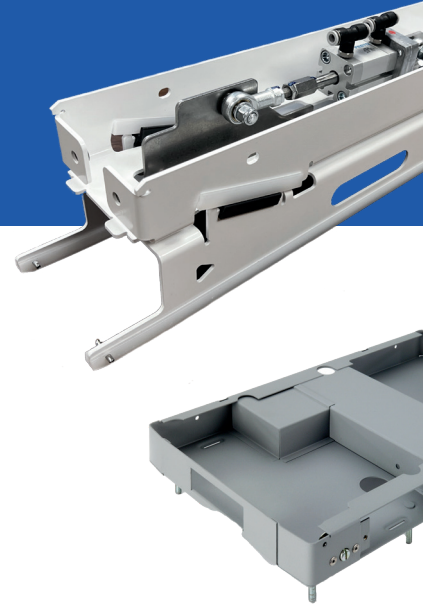
“Your Complete Metal Service Manufacturer”



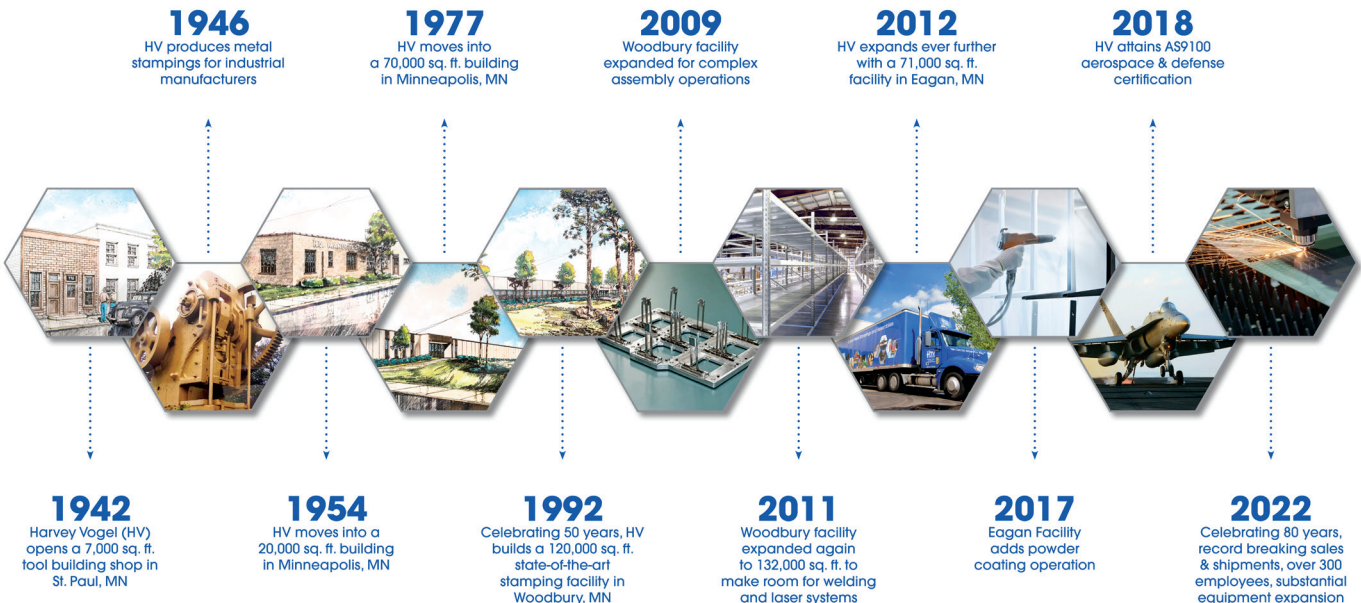
Industries Served

Utilizing the latest technologies and forming techniques, we achieve precise design specifications and tolerance requirements for many industries including:

- ✓ Aerospace
- ✓ Agricultural & Mining
- ✓ Automotive (2nd & 3rd Tier)
- ✓ Banking
- ✓ Computer & Telecom
- ✓ Consumer Goods
- ✓ Contract Manufacturing
- ✓ Data Storage
- ✓ Electronics & Electrical
- ✓ Fitness Equipment
- ✓ Food & Beverage Equipment
- ✓ Gaming & Entertainment
- ✓ Industrial Applications
- ✓ Lawn & Garden
- ✓ Lighting
- ✓ Marine & Watercraft
- ✓ Medical & Healthcare
- ✓ Military & Defense
- ✓ Networking
- ✓ Process Controls
- ✓ Recreational Equipment
- ✓ Renewable Energy
- ✓ Robotics & Automation
- ✓ Small Engine
- ✓ Transportation and others...



Full-Service Manufacturing Results In A More Complete Component



Customer Satisfaction Propels Us Forward

Prototype Through Volume Production



Metal Fabrication

- Production up to 20,000 pieces annually
- Lowest to no tooling investment
- Dedicated prototype work cell
- Value Analysis / Value Engineering Process (VAVE)
- 24/7 Lights out production capability
- Economical for design modifications & product development
- Minimally formed to highly complex components

Fiber Optic Laser Cutting

- ✓ 2 Trumpf L3030 6,000 watt fiber optic lasers with fully automated compact 8-pallet towers
- ✓ 2 Trumpf L3030 4,000 watt CO2 lasers with fully automated linear 8-Pallet Towers systems
- ✓ Capacity includes a range of alloys up to 3/4" thick and lengths up to 120" long by 60" wide

Turret Punching

- ✓ 3 Armada Vipros 255 Turret presses with automated load/unload system

Waterjet Cutting

- ✓ A-1212 WaterJet CNC Cutting System 4' x 4'
- ✓ 7" maximum material thickness

Press Brake Bending & Forming

- ✓ 15 Press brakes ranging from 8' to 12' with micro processor controls and CNC axis back gage



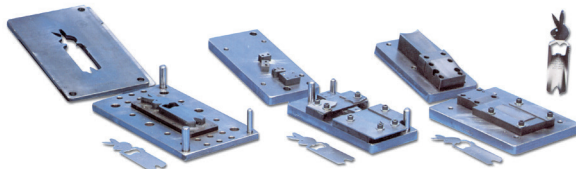
Short to Medium Volume Stamping

- 2,000 to 50,000 pieces annually
- Low tooling cost, lower piece price
- Stage tools are built on-site and maintained for the life of the part
- Typically one tool for each operation
- Available inventory of shared die sets reduce cost
- Shorter tooling lead times & quick turnaround for product to market
- **Our specialty since 1942!**

In-house tool and die service and maintenance

Over 200 stamping presses ranging from 10 to 400 tons

Hydraulic press deep draw stamping up to 6 inches



Example of semi-permanent blank, pierce, and form tooling

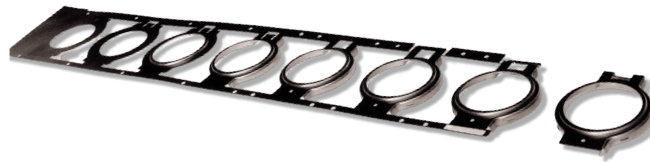


Part volume, cost, and benefit objectives are evaluated to ensure the most effective tooling and production strategies are used to meet your needs.



High-Volume Progressive Stamping

- 50,000+ pieces annually
- Tooling die investment
- Lowest per-piece price
- One tool with consecutive forming operations
- Final part produced with each stroke of the press
- (ROI) over time on high-volume production
- **In-house tool room capabilities improve run-time efficiency**



Example of a strip layout from progressive tooling

Value-Added Capabilities

Our full-service approach results in a faster turnaround, reduces project management time, and provides consistent quality control.

- Assembly & Kitting
- CNC Machining
- Deburring
- Engineering & Tool Design
- Hardware Insertion
- Inventory Management, Bar Coding, Kanban, JIT & 3rd Party Warehousing
- Laser Etching
- Labeling / Custom Packing
- Leveling
- Powder Coat Painting
- Tumbling
- Washing
- Welding: Arc, MIG, TIG, Spot, Robotic

With over 80 years in the metal stamping industry, our trusted supplier and vendor relationships provide dependable performance. Additional services include:

- Anodize
- Double Disk Grinding
- E-Coat
- Heat Treat
- Painting
- Plating
- Shot Blasting
- Silk Screening



Quality Assurance Capabilities

- First article inspection reports
- Receiving inspection data
- In-process / final inspection data
- Calibration database
- Corrective / preventative action
- Traditional CMM
- 3D CMM & reverse engineering
- Optical comparators & vision systems
- PPAP and capability studies

Prototyping

Quick Turn Prototypes

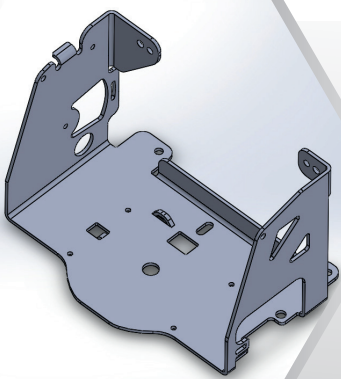
In the process of developing new or improving existing products, your engineering team needs capable partners that are integral to your team. Delivering results in a fast-paced schedule is key to the success of your project. Our experience makes us the ideal partner to become an extension of your team as we can deliver accurate **Prototypes in as little as 24 to 48 hours**.

Supporting Your Engineering

We work closely with your team through the design phase to provide components that meet the most exacting form, fit, and function requirements. Our experience will support a Value Analysis / Value Engineering (VAVE) process that balances performance and cost. The payback to you through this process will be recognized through product launch and production.

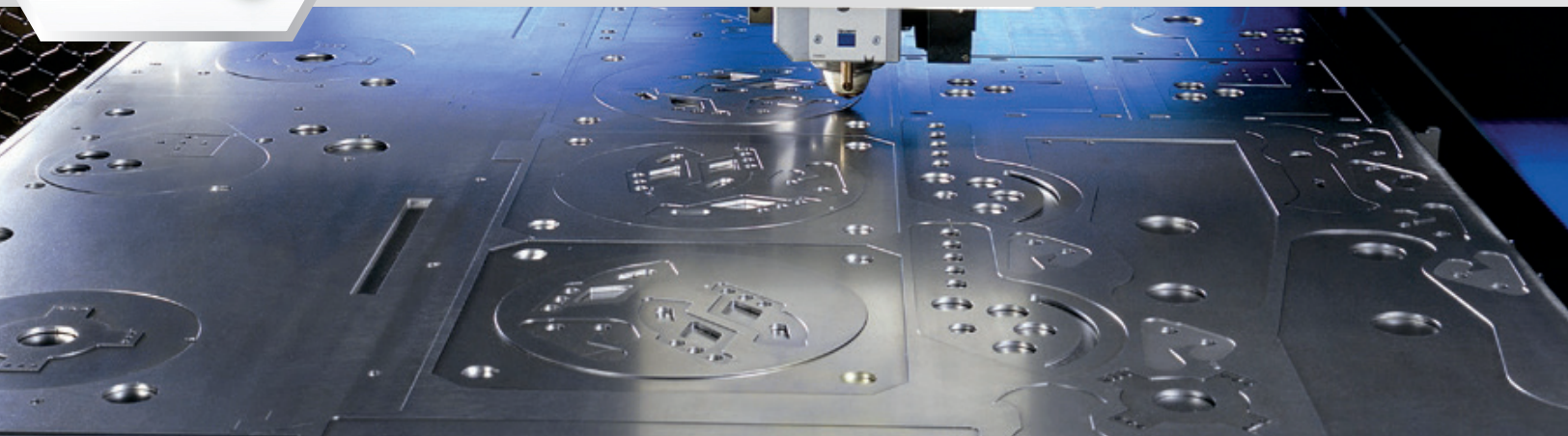
Prototype Capabilities

- Precision Fiber Optic Laser Cutting
- Versatile Waterjet Cutting
- High-Speed Turret Punching
- Accurate Press Brake Forming
- Stage Tool Stamping
- Robust Welding Solutions
- Performance Powder Coating
- Detailed Assembly Service



Rotating Base

A customer needed a redesigned rotating base for an existing product. Initial parts were produced to specification in three days for testing, which revealed design issues. The part was quickly redesigned, and new parts were made just as fast to support further testing and launch. The part measures 10" x 6" x 6".

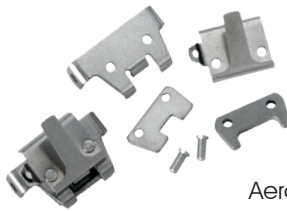
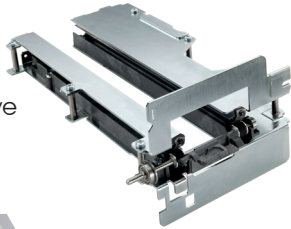


Hardware & Assembly

From a Few Components to Hundreds

Our precision assembly capabilities transform complex metal stampings into high-quality sub-modules for seamless integration into OEM products. Our hardware and assembly capabilities extend to a wide range of materials, including metal, plastic, rubber, and wiring.

ATM Stuffer Drive



Aerospace Latch

Military Chassis



Automated Teller Machine (ATM)

This precision assembly features 77 metal stampings, 34 purchased components, and hundreds of hardware pieces from over 20 vendors. The complex metal parts are stamped and assembled into a sub-module at our facilities, saving the customer money and streamlining their production.

Core services provided:

- Metal Stamping
- Fabrication
- Welding, Painting & Plating
- Purchased Components
 - Plastic
 - Slides
 - Locks
 - Custom Packaging
- Final Assembly

Performance Powder Coating

Fully Integrated Manufacturing Saves Time & Money

Powder Coating Overview:

- Product size up to 12" wide by 48" high and long
- Precision masking & plugging
- Difficult angles and complex parts
- Quality assurance programs
- Color variety & color matching
- Various finishes (matte, glossy, textured)



Parts & Projects Like Yours

World Class Manufacturing

Harvey Vogel Manufacturing is recognized as a highly diverse supplier of top quality metal stampings, fabrications, and assemblies from start-up applications to fortune 500 companies.

With over 200 presses, up to 400 tons, we can accommodate any metal stamping need from short and long run to simple and complex parts and assemblies. Our innovative production designed work cells with conveyors and assembly lines produce parts more efficiently, at the lowest cost.



Automotive Service Equipment

- Operations to manufacture are blank, form, heat treat, shot blast, plate and plastisol handle
- Tight-tolerance parts with heat treat



ATM Cash Dispenser

- 31 total pieces of hardware
- 9 different types are inserted post plate
- Very tight-tolerances



After Market Recreational Equipment

- Fishing boat anchor
- Waterjet cut, form, plate
- 3/8" and 1/2" aluminum



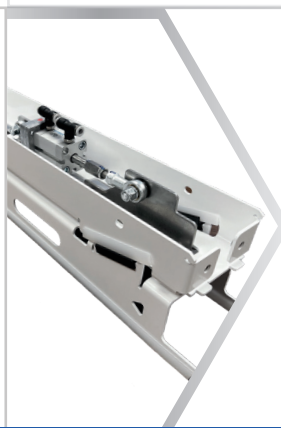
Computer Assembly

- 5-piece assembly
- Precise tolerances
- Leveling to .005 across length of part
- Metallurgical testing performed
- Coordination of many outside suppliers and processes



Lottery Chassis

- 7-piece assembly, mild steel with spot welds
- Design input for cost reduction
- Stage tool incorporated to minimize labor costs
- Weight reduction by use of tooled features
- Custom packaging to eliminate cost and waste



Robotic Arm Assembly

- 4-stamped parts
- Various hardware components and actuator
- In-house powder coat finish
- Full assembly

Engineering, Tool Design, Tool Making

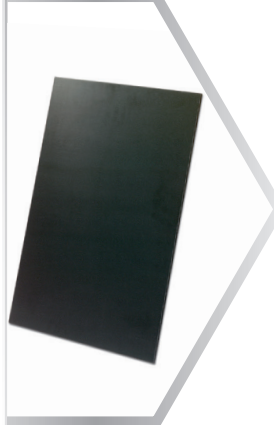
In-House Engineering and Tooling Capabilities Add Value

- Product design evaluation, including CAD/CAM modeling
- Prototyping services to validate fit, functionality, and manufacturing effectiveness
- Material selection and analysis for optimal performance
- Custom tool and fixture design for specialized manufacturing needs
- Quality control and assurance planning to meet high standards
- Reverse engineering services to replicate or improve existing designs



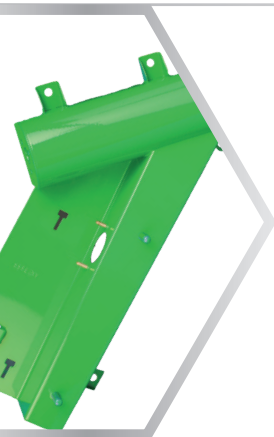
Medical Equipment

- Medical cart for capturing patient information
- Very tight-tolerances
- Aesthetic requirements & paint
- In-house powder coat finish



Food Service Equipment

- 18" x 20" plate used for keeping food warm in the fast food industry
- Plate is aluminum leveled to 0.20 flat across length
- Plate has a highly cosmetic black anodized surface



Agriculture Industry

- Multi-part assembly
- TIG weld
- Complex forms
- Aesthetic requirements & paint specifications
- In-house powder coat finish



Automation Industry

- Complex metal stamping used in the infrastructure of a robotic pick and pull system
- Engineering support for maximum production efficiency



2nd and 3rd Tier Automotive

- Shifter assembly for military vehicle
- Parts manufactured using stage tools
- 100% cost reduction through process improvements



Motorcycle Sport Bike Component

- Complex forms
- High aesthetic part requirements
- Manufactured using stage tooling
- Anodize finish

Facilities & Equipment

Two State-of-the-Art Facilities / 203,000+ Square Feet / 250+ Employees

Utilizing hundreds of metal manufacturing machines to produce stampings and fabrications from one millimeter to 36" x 96" while maintaining the closest, most exacting tolerances.

COMPLETE TOOL ROOM FACILITIES: 10+ Experienced Toolmakers – Dedicated CNC Machining Centers (3 Axis with 20 Tool Changer) – **5 Wire EDM Machines** – Complete Programming Center – 1 Conventional EDM Machine – Vertical and Horizontal Milling Machines with Digital Readouts – 4 Tool Room Lathes – 5 Surface Grinders – Drill Presses – 150-Ton Hydraulic Arbor Press – 3-Ton Bridge Crane – Blanchard Grinder.

PUNCH PRESS DEPARTMENT: Over 200 Presses, Capacity Ranging From 10 to 400 Tons, Equipped with Quick Change Set Up, Air Ejection, Pneumatic Cushions, Coil Reels and Straightening Feeders, Including:

- 1 – **Brown & Boggs 400 Ton Straight Side Press.** Bed Size 48" x 96", Speed 30 To 60 SPM Fully Integrated Die Change and Feed Line System, Maximum Coil ¼" x 32" x 12,000 lbs.
- 1 – **Bliss 300-Ton Straight Side Press.** Bed Size 54" x 96", Speed 30 to 120 SPM Fully Integrated Die Change and Feed Line System, Maximum Coil ¼" x 32" x 8,000 lbs.
- 1 – **Bliss 150-Ton Straight Side Press.** Bed Size 36" x 60", Speed 50 to 120 SPM Fully Integrated Die Change and Feed Line Systems, Maximum Coil 3/16" x 18" x 5,000 lbs.
- 1 – **Multi Press 150 Ton Hydraulic Press; 1 - Greenard 75-Ton Hydraulic Press.** For Draws up to 6 inches.

FABRICATING AND PROTOTYPES: 4 Lasers: (2 Trumpf L3030 6,000 Watt Fiber Laser with Dedicated 8-Pallet Tower System, 2 Trumpf L3030 4,000 Watt Lasers with 8-Pallet Tower System, 3 Turrets (3 Amada Vipros 255 Turret Presses with Automated Load/Unload) – 15 Press Brakes (3) 8', (6) 10' and (6) 12' with Micro Processor Controls Plus 5 with CNC Axis Back Gage. 1 WARDJet, A-1212 Waterjet Cutter

SECONDARY OPERATIONS DEPARTMENT: Drill Presses and Tapping Machines for Drilling, Reaming, Tapping, Countersinking and Counterboring Holes **WELDING:** 4 Spot Welders – **TIG/MIG Welding – 600 Amp High Speed Fanuc 5 Axis Robotic Weld Cell (30" x 40" Capacity)** – Arc Welding – Component Assemblies **LEVELING:** 5 Straightener/Leveling Machines – 2 Hammerle TRM 50/750 Precision Flat Metal Roll Leveling Machine **MACHINING:** 12 Haas CNC Machining Centers (Including New VF4 and DM-2) **ETCHING:** Keyence 3-Axis Hybrid Laser Marker MD-X2520

DEBURRING DEPARTMENT: 4 Vibrating Units – Belt Sanders – Grinders – 4 Timesaver Sanders with Automatic Parts Washer/Rust Inhibitors – FT-32 Flo Thru Tumbling Machine – Straightliner – Surface Finishing Machine w/ Fiber/Wire/Abrasive Capabilities – Parts Washer.

INSPECTION DEPARTMENT: Coordinate Measuring Machines Keyence VL-700 3D Optical CMM and Hexagon Global S Green. 2 1/2 D Planar InspecoVision System. Keyence Image Dimension Measurement System. Coordinate Inspection Machine (CIM) with Hewlett Packard HP85 Computer – Micrometers – Indicators – Hite Indicator – Height Gauges – Gauge Blocks – Surface Plates – Optical Comparator – Rockwell – Hardness Tester – Go-NoGo Gauges – Optical Profile Projector (20X), Virtek Laser / QC Scanning System – 4 Camera 100% Inspect Vision System for Assembly or Inspection.

POWDER COATING: 470 FT Automated Line - 5-Step Cleaning Process - Environmental Room & Touch Up Batch Booth

ASSEMBLY DEPARTMENT: 16 Automatic Hardware Insertion Machines – 4 Riveting and Staking Machines - D4 Atlantic Barcode, Label Machines – 3 Aro Drilling Machines – 1 Procnier Drilling Machine – Numerous Machines/Facilities Automated for Project Specific.

MATERIALS WAREHOUSE: 71,000 Square Foot Warehouse. Over 1,500 Different Types and Gauges of Materials Certified to Physical and Chemical Properties. Isolated and Secured Storage Area for Special Materials – 3 Shears, Capacity 12 Feet, ¼" Thick.

CUSTOMER MANAGED INVENTORY WAREHOUSE: Customer Part Stock System for Just In Time and KanBan Delivery to Customer Dock or Warehouse.

SHIPPING: 12 Ship Docks – Air – Parcel Post – Truck – YRC – UPS – Fed Ex – 5 Counting Scales (Small Parts Plus 5,000 lb. Scale) – Complete Inventory of Packaging Materials – 3 Delivery Trucks (including 1 Semi-Trailer) – Bar Coding – Auto-Bagger.



“Your Complete Metal Service Manufacturer”



Manufacturing Capabilities

Over 80 years of manufacturing excellence. Multiple facilities totaling 203,000+ sq. ft., and fully equipped with cutting-edge technology to deliver precision and quality.

Prototyping	Rapid turnaround with dedicated prototyping work cells
Stage Tool Stamping	2,000 to 50,000 pieces annually, tooling inventory since 1942
Progressive Stamping	50,000+ pieces annually with capacity up to 400 tons
Metal Fabrication	Laser cutting, turret punching, waterjet cutting, press brake forming
Tool & Die Service	In-house repairs & maintenance, custom machining & wire EDM
Engineering	Value Analysis / Value Engineering (VA-VE)

Production Equipment Overview

- Over 200 stamping presses (10 to 400 tons)
- 2 Fiber optic lasers (6,00 watt)
- 2 CNC laser cutting systems (4,000 watt)
- 3 CNC laser automation systems (24 x 7)
- 3 CNC turret punch presses
- 1 WARDJet waterjet cutter
- 4 Hydraulic presses for draws up to 6”
- 15 CNC controlled press brakes, 5 axis
- 12 CNC machine centers
- 5 Wire EDM machines
- Multiple MIG/TIG/Arch/Spot welders
- Stock reels and feed line equipment
- 5 Happerlee/Kohler leveling systems
- 5-Stage automated powder coat line

Value-Added Services:

- Assembly & Kitting
- CNC Machining
- Deburring
- Hardware Insertion
- Inventory Management, Bar Coding, Kanban, JIT & 3rd Party Warehousing
- Laser Etching
- Labeling / Custom Packing
- Leveling
- Powder Coat Painting
- Tumbling
- Washing
- Welding: Arc, MIG, TIG, Spot, and Robotic

Quality Metal Stampings and Fabrications from Prototype through Volume Production



AS9100
AEROSPACE
& DEFENSE



ISO 9001
QUALITY
MANAGEMENT



ISO 14001
ENVIRONMENTAL
MANAGEMENT

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**A trusted partner for high-quality precision
metal stampings & assemblies since 1942**

AS9100 Aerospace & Defense Certification
ISO 9001 Quality Management Certification
ISO 14001 Environmental Management Certification



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