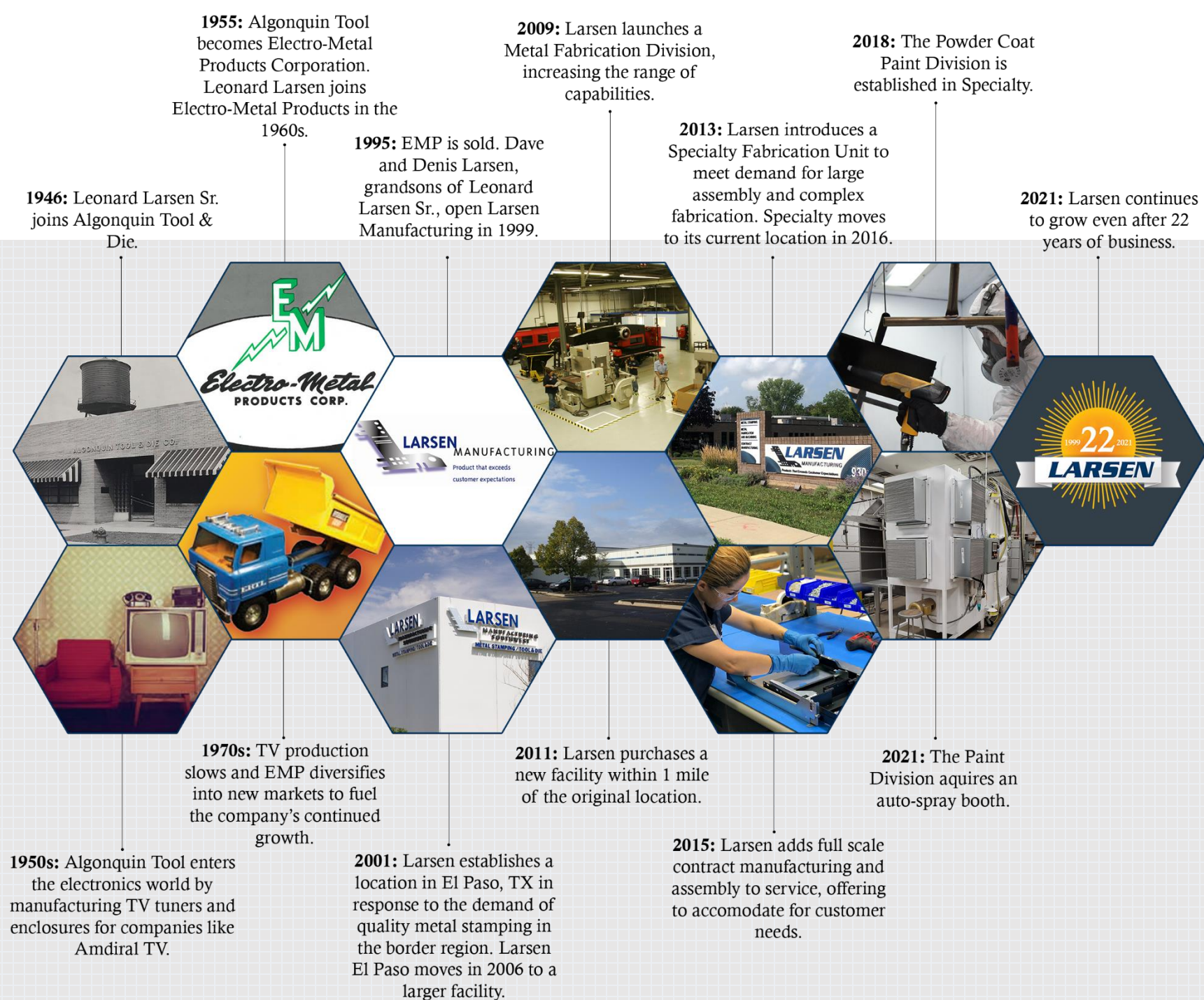
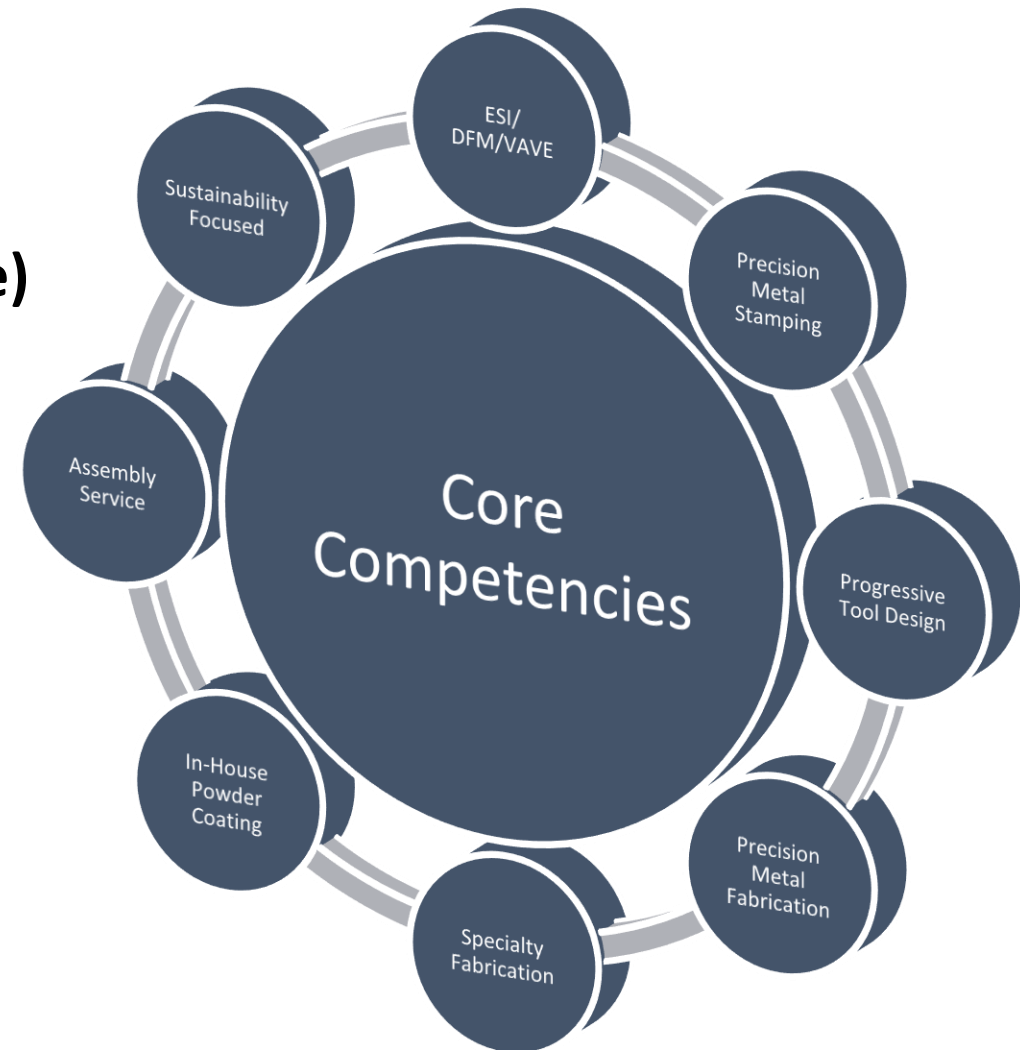


Timeline



CORE COMPETENCIES:

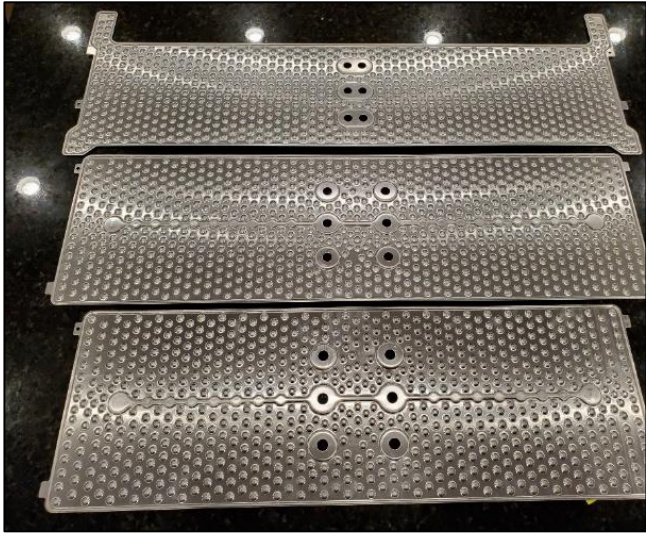
- ESI/ DFM/ VA/VE
- Precision Metal Stamping
- Progressive Tool Design & Manufacturing (**In-House**)
- Precision Metal Fabrication
- Specialty Fabrication (Heavy Duty Weldments)
- In-House Powder Coating
- Assembly Services (Electro-Mechanical Assembly)
- Sustainability Focused



LOCATIONS:

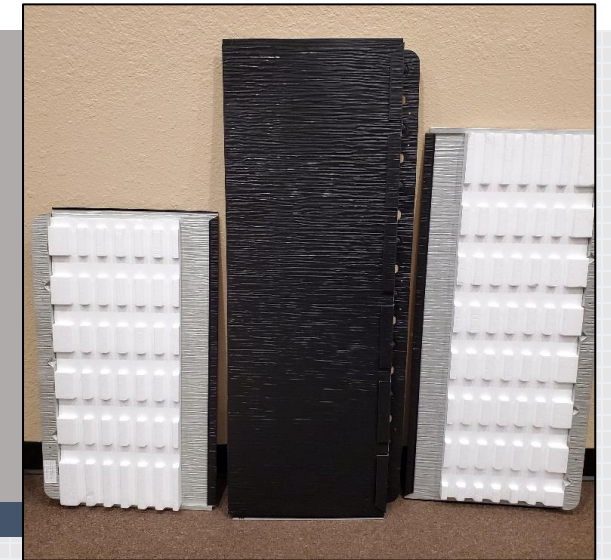


- **Corporate Headquarters:** 120,000 Sq Feet in Mundelein, IL
- **Powder Coating Division:** Eco-Friendly Cleaning and Coating Processes in Mundelein, IL
- **Southwest Manufacturing:** 80,000 + Sq. Feet in El Paso, Tx, expandable by additional 50,000 Sq Feet
- **Lucky Harvest Dongguan**



DIVERSE MARKETS INCLUDE:

- Automotive
- Electronics
- Energy
- Industrial
- Medical
- Appliance
- Entertainment
- Aerospace/
Aviation
- Communications



CLIENT PARTNERSHIPS INCLUDE:

HUGHES



S&C ELECTRIC COMPANY
Excellence Through Innovation

SIEMENS
Healthineers

 **STERIS**

 **Robertshaw**



PRINCE MANUFACTURING

Visteon


Setex



SIGNODE



TESLA



CURTIS
INDUSTRIES

MAHLE



carstens

 **SPECO inc.**

Honeywell

CUSTOMER FOCUS VA/VE:

Early Supplier Involvement (ESI)

- Allows time to optimize design efficiencies early on
- Re-design / Re-work is reduced or even eliminated

Drive cost reduction through Design for Manufacturability (DFM)

- Material Type, Material Reduction & Material Optimization
- Hardware Elimination & Alternative Fastening Options
- Automation to limit Secondary Operations
- Finishing Requirements and Options
- Tooling Cost Optimization
- Critical Dimensioning



VA/VE EXAMPLES:

- **Auto-Spray Booth:** The addition of the robotic guns automates the paint line as much as possible. The booth expansion allows us to take on more “paint only” opportunities. We will still be capable of handling smaller runs via manual sprayers as needed.
- **Tesla Wrinkle Machine:** This new equipment takes the material and wrinkles it through the machine.



QUALITY FOCUSED:

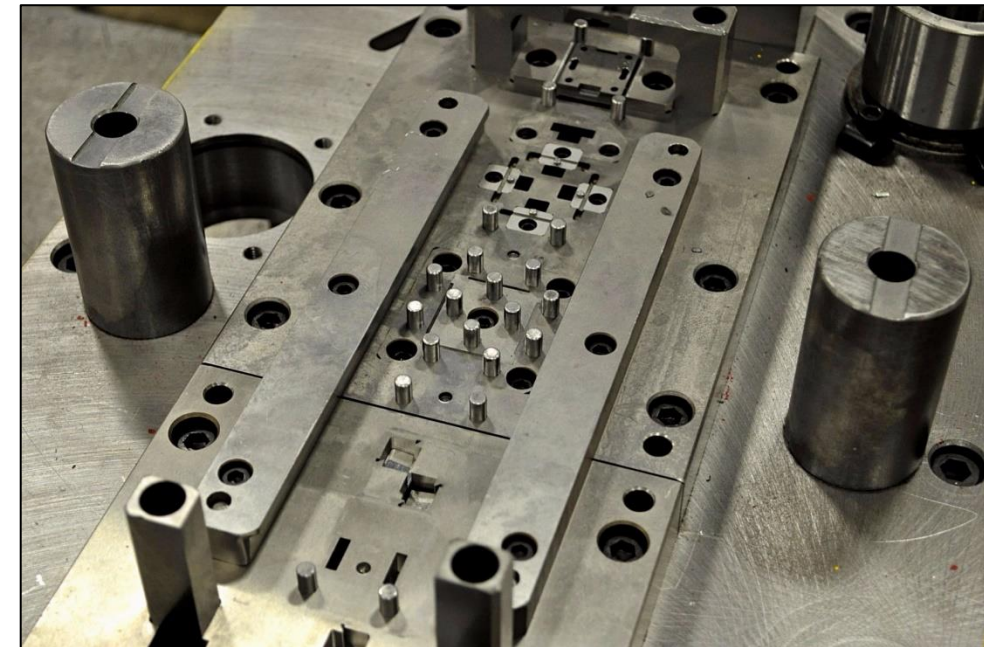
- IATF 16949-2016
- ISO 9001-2015 Certified
- Now doing Virtual Audits and Plant Tours
- Stringent quality processes in place
 - Process control & monitoring at all phases of production
 - Vision and Laser scanner checks all flat blanks
 - All first off parts inspected and green tagged
 - Automotive Industry Action Group (AIAG) PPAP and FAI compliant
 - We deploy Lean, Six Sigma, 8D, and 5S processes



After safety, quality is Larsen's number 1 priority. We know that if we make quality parts on a consistent basis we will never shut down our customer's production lines

IN-HOUSE TOOLING:

- ✓ **Progressive Metal Stamping**
 - Best Feature: Precision and Accuracy
 - Sequential operations on the same press for lowest unit cost
- ✓ **Compound Stamping**
 - Best Feature: Superior accuracy between holes & trim edge
 - Commonly single-hit die with internal & external aspects of a part in one press stroke
- ✓ **Automation Capabilities**
 - In-Die Tapping
 - In-Die Hardware Insertion
 - In-Die Labeling
- ✓ **Drawn parts up to 5 inches in depth**



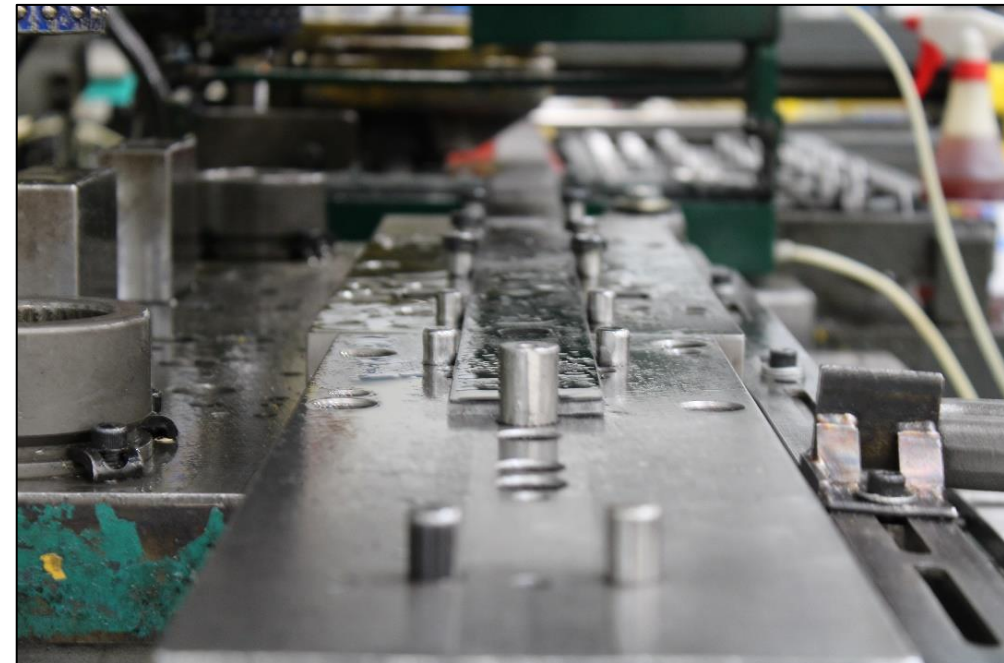
STAMPING EQUIPMENT:

✓ 34 PRESSES

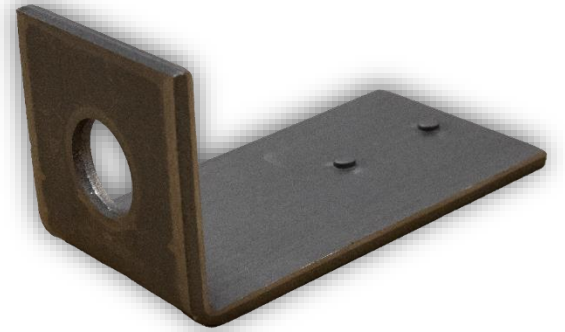
- Ranging from 25 to **600 T**
- 11 Small (25-80 T)
- 11 Medium (80-200 T)
- 8 Large (200-300 T)
- 4 X-Large (500-600 T)
- 48" Servo Feed Capability

✓ Press Bed sizes up to 144" x 72"

- In-Die Component Insertion Capabilities
- Die Transfer Program

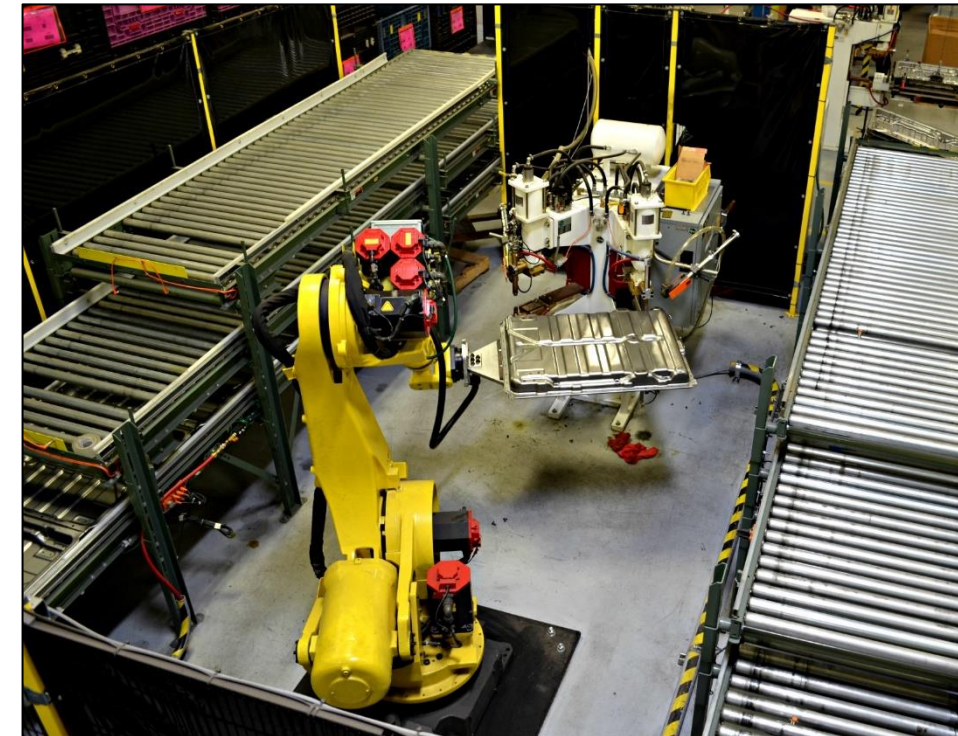
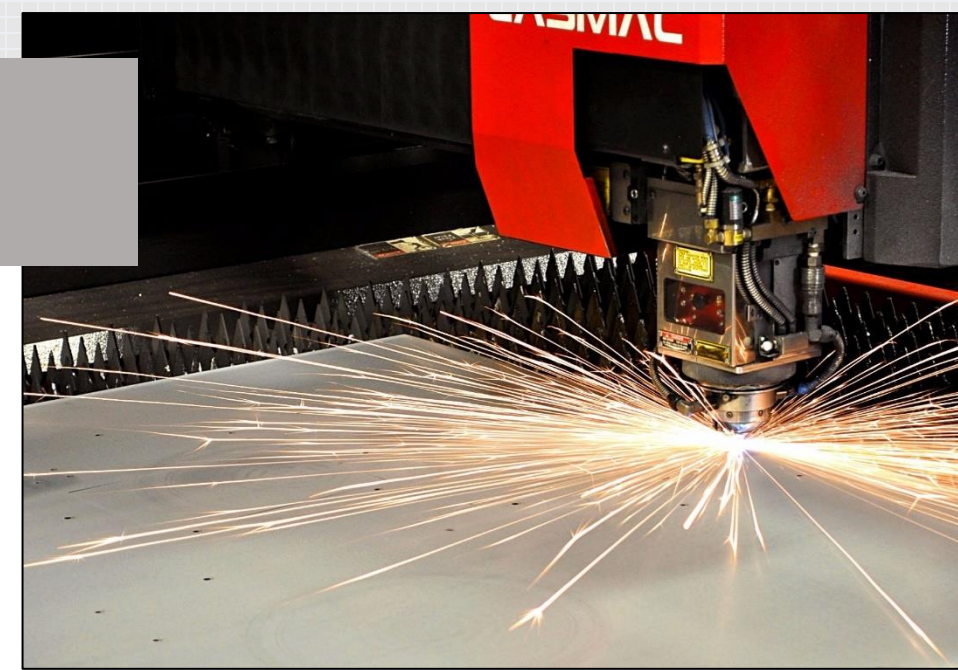


STAMPING EXAMPLES:

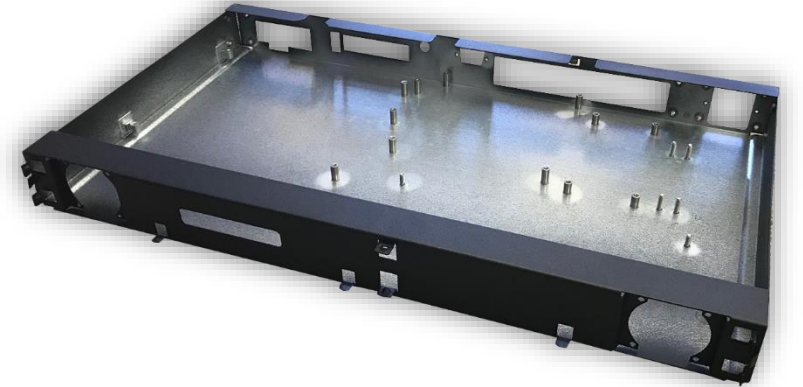
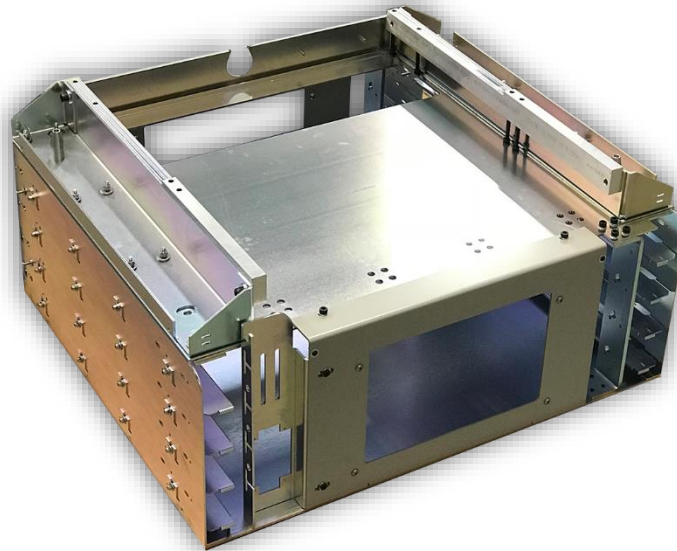


FABRICATION EQUIPMENT:

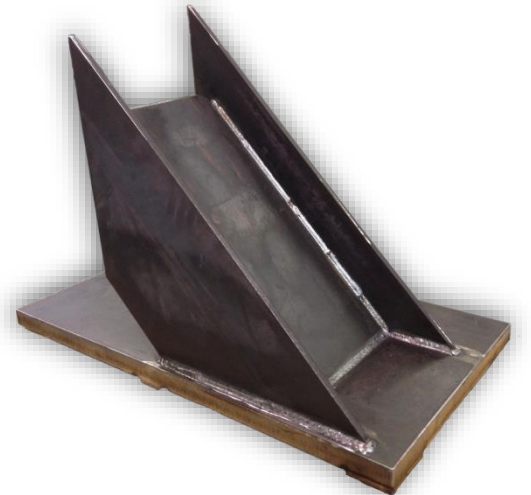
- ✓ **Full Light and Heavy Fabrication Facilities**
 - Single component to Full Assembly
 - All Finishing operations are Supported
- ✓ **State-of-the Art Amada Equipment**
 - 2 - 33-ton High Speed Turret Presses
 - 1 - 4000 Watt CW Laser w/ Nitrogen
 - 1 - 2000 Watt CW Laser w/ Nitrogen
 - 6 - 88 Ton electric/hydraulic Press Brakes
 - 2 - 50 Ton Press Breaks
- ✓ **MIG/TIG Welders, Spot Welders**
- ✓ **CD Stud Welding & Polishing**
- ✓ **Robotic Welding**
- ✓ **Hardware Insertion Equipment**
- ✓ **Prototype cell for quick turns on new parts**
- ✓ **Versatile Assembly Cell Layout**
- ✓ **2021 Capital for Additional Equipment Approved**



LIGHT FABRICATION:



HEAVY FABRICATION:



IN-HOUSE POWDER COATING:

- Our state of the art, custom, continuous Powder Paint line is designed to handle a wide range of part sizes and color requirements
- Our line's system and processes allow us to handle both high volume and high mix jobs



IN-HOUSE POWDER COATING:

- 5 stage wash includes eco-friendly washing and etching (phosphate-free)
- Post wash drying process
- Large powder booth accommodates variety of part sizes
- Downdraft containment system in place for ventilation, eliminates contamination
- Custom order powder in thousands of colors, textures and finishes
- Programmable curing oven in place for custom curing needs, based on part requirements and applications
- Added auto-spray capability in 2021



ASSEMBLY SERVICES:

- Larsen does complete and partial assembly
- We purchase components from customer's approved suppliers if required in their assemblies
- From simple sub-assemblies to large complex parts including electronics
- Mechanical and Electrical assembly
- We establish dynamic cells complete with all tooling, fixturing and testing equipment (i.e. continuity testing)



SUSTAINABILITY FOCUSED:

- Sustainability is key to Larsen's Continuous Improvement
- Supported by all levels of organization
- Efforts include:
- High efficiency lighting
- Installed a high-efficiency HVAC system and made improvements to finishing systems (ovens, booths and air control).
- Zero-VOC paint, resulting in better environmental air quality and a safer working environment
- Filtration and reuse systems that significantly increase the life of our water baths and reduce water usage and wastewater.
- Recycling to reduce solid waste
- Returnable/Reusable packaging for our products.





Thank You For Your Time

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WWW.LARSENMFG.COM

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questions

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