



LARSEN

MANUFACTURING

PRODUCT THAT EXCEEDS CUSTOMER EXPECTATIONS

Welcome to 2020 Larsen Manufacturing

www.larsenmfg.com



Corporate Headquarters



Southwest Manufacturing

Larsen Overview

Core Competencies Include:

- Precision Metal Stamping
- Precision Metal Fabrication
- Contract Manufacturing
- Prototype and Short Run Production
- In House Powder Coating
- Specialty Fabrication
- Full Box Build & Assembly
- Custom CNC Capabilities
- WAND Depaneling Systems

Larsen provides turnkey metal manufacturing solutions from design, through prototype, part production and assembly

Larsen Mission Statement

Our Mission:

- To provide the best value for our customers in the Metal Stamping, Metal Fabrication, Powder Coating and Contract Manufacturing arenas

How do we do this?

- Producing highest quality parts
- Maintaining exceptional service and delivery standards
- Understanding our customer's needs for complimentary services
- Flawless Execution

North American Locations



Corporate Headquarters

80,000 Sq. ft – Mundelein, IL
50,000 Sq. ft – Mundelein, IL
32,000 Sq. ft – Libertyville, IL



Southwest Manufacturing

80,000 + Sq. Feet in El Paso, TX
Expandable by additional 50,000 Sq. ft.

Asian Locations



Global Markets Served

- Automotive
- Consumer Electronics
- Appliance
- Entertainment
- Computer Products
- Industrial Products
- Communications Equipment
- Medical Equipment
- Energy Equipment

Client Partnerships Include:



SIGNODE INDUSTRIAL GROUP



Delphi
Technologies

NAVISTAR®



Larsen Quality Certifications

- Larsen Manufacturing holds the following ISO and ISO/IATF Certifications:
 - ISO 9001:2015, All Locations
 - ISO/IATF16949:2016 in El Paso, TX
 - ISO/IATF16949:2016 in Mundelein, IL



Larsen Quality

- *Upgraded to ISO 9001:2015 - IATF 16949:2016*
- *Stringent quality processes in place*
 - Process control & monitoring at all phases of production
 - Layered Process Audits
 - In Process and Final Audits
 - APQP, FAI, PPAP, Risk Assessment, and Lessons Learned

Quality Objective's and KPI's include:

- *Quality (COPQ and PPMs)*
- *On Time Delivery*
- *Continuous Improvement*



Larsen Stamping

- 34 Presses
 - Ranging from 25 – 600 Ton
 - Bed sizes up to 72" x 144"
 - 48 inch servo feed capability
 - In die component insertion capability
- Larsen Manufacturing excels with our full service die transfer program



Examples of Stampings

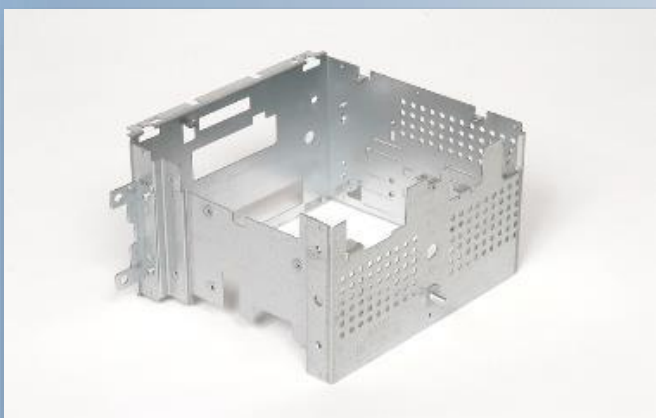
Climate Control



Transmission Filters



Automotive Interiors



Tuner Shields



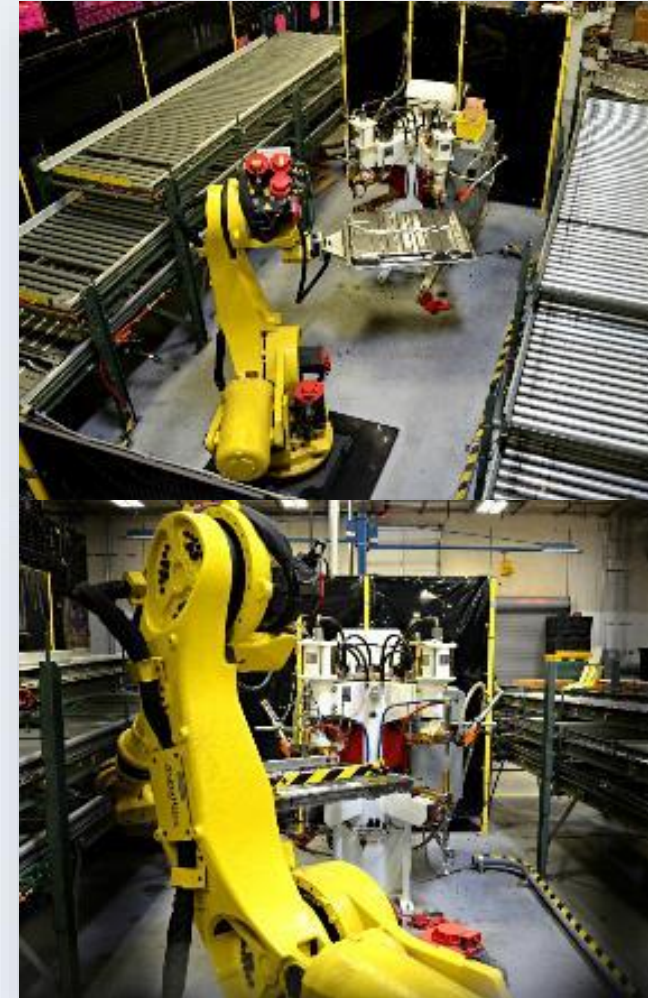
Tooling Expertise

- Progressive dies
- Compound dies
- Transfer/Stage tooling
- Automation capabilities
 - In-die tapping
 - In-die hardware insertion
- Tool design & Manufacturing
- Complex, Large dies
- Drawn parts up to 5 inches in depth



Robotic Welding

- Fanuc Robot R-2000iA/165F
- Dual headed welder – welds two different types of hardware : M6 Stud and M6 Cap
- Hardware full automated loading
- Welds 26 pieces of hardware (11 Cap, 15 Studs) in 2 minutes 35 seconds – Full Cycle time
- Three tiers of gravity feed conveyors inbound and outbound – this allows us to run during break and lunch times for increased efficiency



Robotic Welding Video – El Paso



Larsen Sheet Metal Fabrication

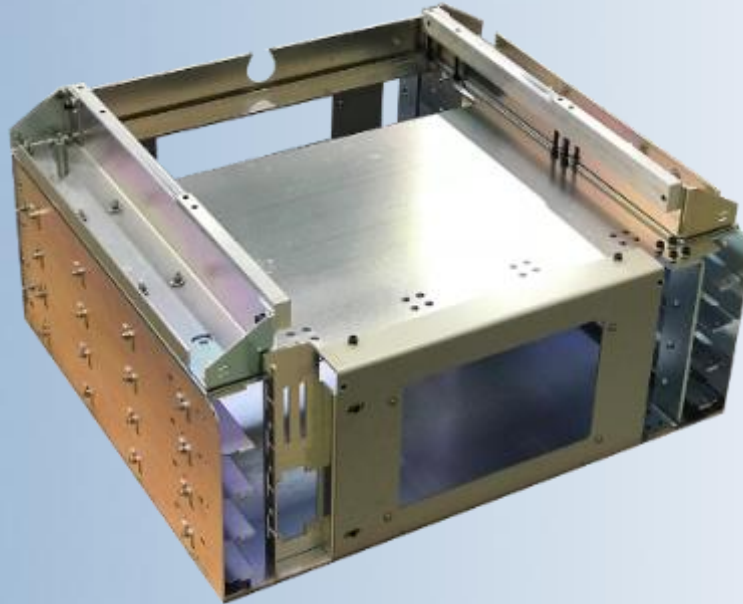
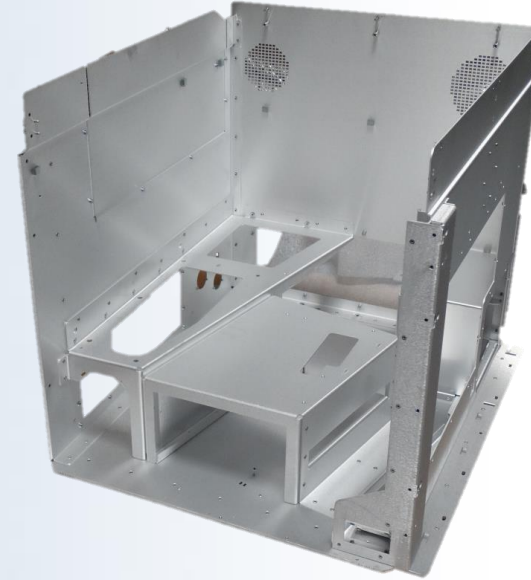
- State of the art Amada equipment
 - 2 – 33 ton high speed turret presses
 - 2,000 watt Laser & 4,000 watt Laser cutting machines with nitrogen generation
 - 8 – Hydraulic press brakes
 - Hardware insertion equipment
 - Fabrivation laser inspection table
 - Sheffield Cordax coordinate measuring machine



Larsen Sheet Metal Fabrication

- Larsen Manufacturing is an industry leader in Precision Metal Fabrication offering the perfect blend between technology and experience.
- From large assembled enclosures or frames, to small fabricated parts or brackets, Larsen Manufacturing can meet your metal fabrication requirements
- Over 75,000 sq. foot facility space
- Process single component parts to full complex assemblies
- Capabilities
 - Cut, punch, form, weld, hardware insertion, machine, grind, polish, full assembly
 - All finishing operations supported
 - MIG, TIG, spot welding
 - Prototype cell for quick 'new part' turnaround
 - Versatile assembly cell layout

Metal Fabrication Examples



Finishes

- Now in house Powder Coating
- Wet Paint
- E-Coat
- Plating
- Anodizing
- Heat Treat



Powder Coating Line

- Opened for Business - 2018
- State of the art, customized continuous powder coating line
- Designed to handle small and large parts



Powder Coating Line

- 5 stage wash including alkaline washing
- ECO-Friendly (no iron phosphates used) that produces excellent coating finishes
- Post wash drying process
- Large powder booth to accommodate large parts



Powder Coating Line

- Using only virgin powder
 - No regrind assures better finish consistency & quality of finish
- Downdraft containment system in place for powder booth ventilation – reduces contaminants
- Quick turn color change – any color
- Programmable curing oven for custom curing needs based on part requirements and applications



Larsen Contract Manufacturing

- Let Larsen build your complete part or assembly
- We establish dynamic cells complete with all tooling, fixturing and testing equipment (i.e. continuity testing)
- From simple sub assemblies to large complex parts including electronics
- Mechanical and electrical assembly



Larsen Contract Manufacturing

- Work instructions, training and diligence allow us to achieve good repeatability in our process
- Well managed facility and designated program managers working to cater to your needs



WAND Depaneling



- Medium to high volume approach for Panelized PCB separation
- Utilizes precision dies for accurate, consistent, and high volume repeatability
- Touch screen display for easy operator and user interface
- Tab held PCB designs
- Tabs can be separated damage free in 13 seconds
- Rapid die changeover system allows for down time less than 5 minutes between die changes



ESI / DFM

ESI (Early Supplier Involvement)

- Larsen gets involved early to minimize costs
- Our engineers think progressively to maximize efficiency and quality of the development of a product or part

DFM (Design for Manufacturability)

- At Larsen, we design for manufacturability, taking into account :
 - Tolerancing
 - Form, Fit, Function
 - Through-put
 - Automation
 - Post Processing
 - Consistency / Repeatability
 - End Application

Sustainability

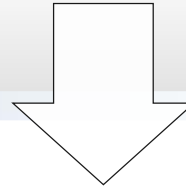


Larsen is in the process of implementing a formal environmental policy that will be supported at all levels of the company.

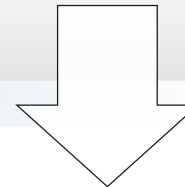
- High Efficiency lighting throughout
- Installed a high-efficiency HVAC system and made improvements to finishing systems (ovens, booths, air control)
- Zero-VOC paint, resulting in a better environmental air quality and a safer working environment for employees
- Filtration and reuse systems that significantly increase the life of our water baths and reduce water usage and waste water.
- Recycling to reduce solid waste
- Returnable/Reusable packaging for our products

LARSEN MANUFACTURING

Provide Quality Service & Product That
Exceeds Customer's Expectations



To Be Your Valued Global Supplier
By Supporting Your Company's Vision



To Provide Expertise And Optimize
Cost Savings With Early Supplier
Involvement



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*We Thank You For Taking The Time to View The
Presentation and Larsen is
Looking Forward in Taking the First Step in Building a
Strong
Long-Term Business Partnership
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