



PRECISION MACHINED PRODUCTS FOR THE GLOBAL MARKET.



## TSM Corporate Presentation 2023

# Manufacturing Locations



## TSM Auburn Hills (HQ)

- Located in Auburn Hills, Michigan
- Founded in 1978
- 150,000 sq. ft. Facility



## TSM Ramos

- Located in Ramos Arizpe, Mexico
- Founded in 2010, acquired Sep 2018
- 76,000 sq. ft. Facility



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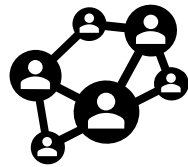
# About Us...

- TSM Corporation is a full-service Tier I manufacturer of precision machined assemblies to the automotive, military, and marine markets
- Year founded: 1978
- Headquarters: Auburn Hills, Michigan
- Manufacturing Locations:
  - Auburn Hills, Michigan, 150,000 Sq Ft
  - Ramos Arizpe, Mexico, 76,000 Sq Ft.



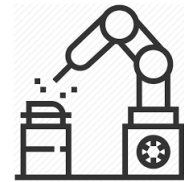
## Product Development

- Gray Box Design Solutions
- DFM
- DFA
- Prototypes
- 3D printing capability



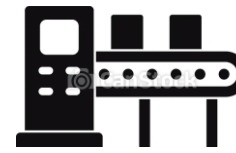
## Global Supply Chain Management

- Aluminum High Pressure Die Casting
- Aluminum Low Pressure Casting
- Ductile Iron Casting
- Grey Iron Casting
- Steel Forging
- Aluminum Forging
- Aluminum Extrusion
- Consigned Materials



## Machining

- 3-5 axis
- HMC/VMC
- Flexible
- Dial index
- Automation
- Pressure Washing



## Component Assembly

- Seals
- Sensors
- Bushings
- Gaskets
- Other



## Inspection & Testing

- CMM
- Leak
- Flow
- Priming
- Torque
- PLEX



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# Products

## Complex Assemblies

Engine Cover, Oil Pan, Oil Filter Adaptor, Intake Manifold, Water Inlet, Turbo Pipe, Oil Pump, etc.



## Tow Hooks

Front & Rear Tow Hook, Tow Eye, Bed Tie Down Assembly



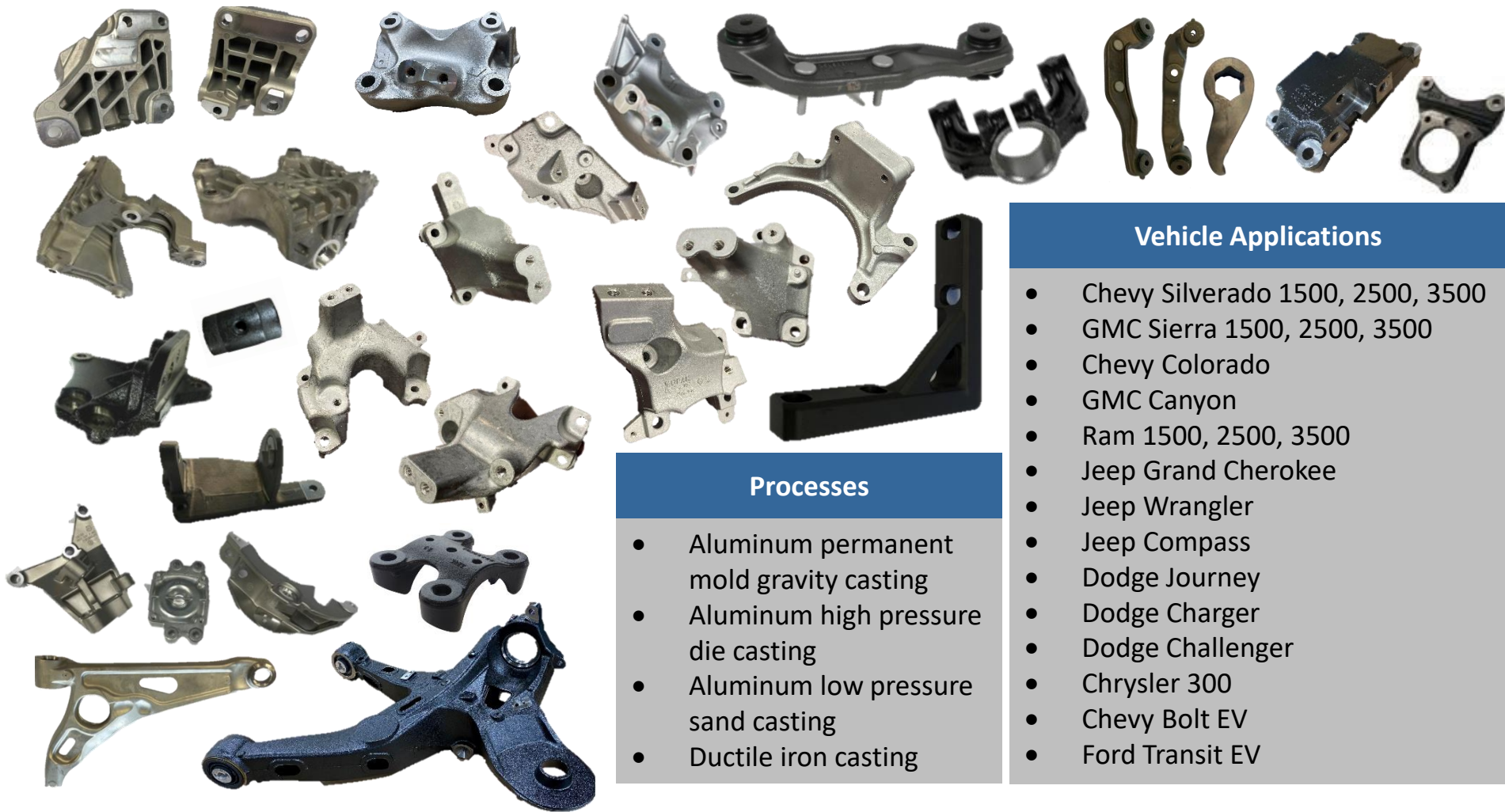
## Brackets

Mount Brkt, Diff Carrier Brkt, Caliper Brkt, Control Arm, Trailing Arm, Anchor Plates, Corner Brace, Yoke





## Mount Bracket Experts (Currently supply over 5 million units / year)



### Vehicle Applications

- Chevy Silverado 1500, 2500, 3500
- GMC Sierra 1500, 2500, 3500
- Chevy Colorado
- GMC Canyon
- Ram 1500, 2500, 3500
- Jeep Grand Cherokee
- Jeep Wrangler
- Jeep Compass
- Dodge Journey
- Dodge Charger
- Dodge Challenger
- Chrysler 300
- Chevy Bolt EV
- Ford Transit EV

### Processes

- Aluminum permanent mold gravity casting
- Aluminum high pressure die casting
- Aluminum low pressure sand casting
- Ductile iron casting

# Manufacturing Capabilities

## MACHINING

VMC's - YCM NV156,  
HAAS, MORI, Brother  
Speedio R650 X1

HMC's - Makino  
a71's, Makino a51's,  
Doosan NHP 4000's,  
Doosan NHP 5000's

Large & Small Dial  
Index machines,  
Hitachi-Seiki Vertical  
Lathe, Mazak 5 axis



## WASHING

Mid Pressure high  
flow linear washing

High pressure high  
flow rotary washer



## QUALITY

CMM, Dimensional  
LAB, Cleanliness

Pressure decay and  
mass flow automatic  
leak testers

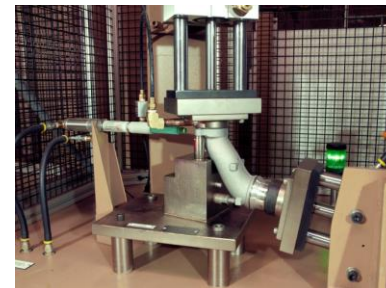
In line variable gaging



## TESTING & ASSEMBLY

Component Assembly  
Torque Control  
Load cell control

Pressure Decay and  
mass flow automatic  
leak testers



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# Certifications & PLEX



- IATF 16949:2016 Certification
- TSM engages all employees and business partners in ensuring quality and integrity throughout our processes



- ISO 14001:2015 Certification
- TSM is committed to promoting health and safety by consciously minimizing our impact on the environment



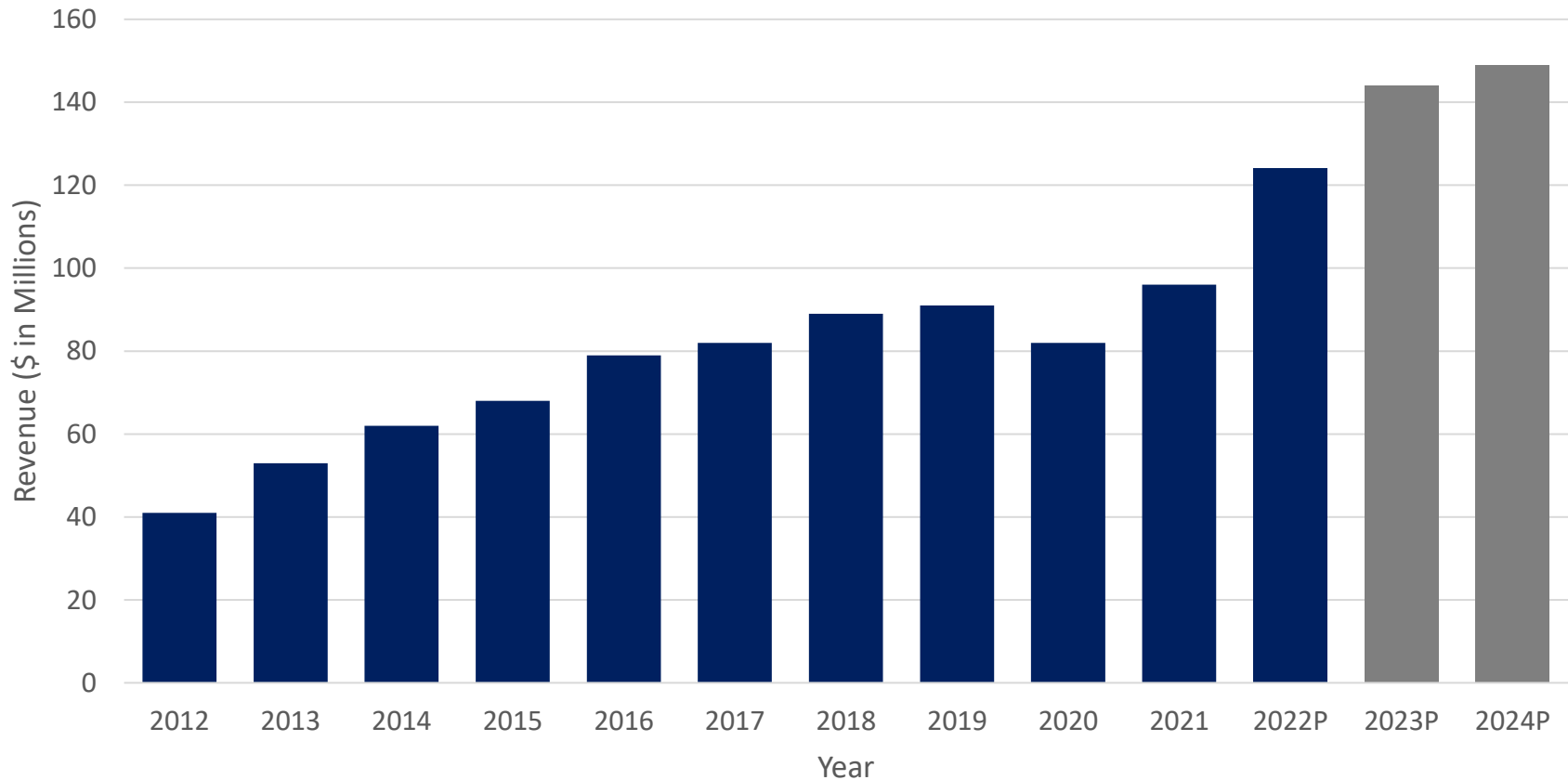
- TSM implemented Plex ERP System to be track manufacturing operations, inventories, quality, etc.
- Full visibility on parts throughout entire supply chain



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# Production Revenue

## TSM Revenue Growth (2012-2024)



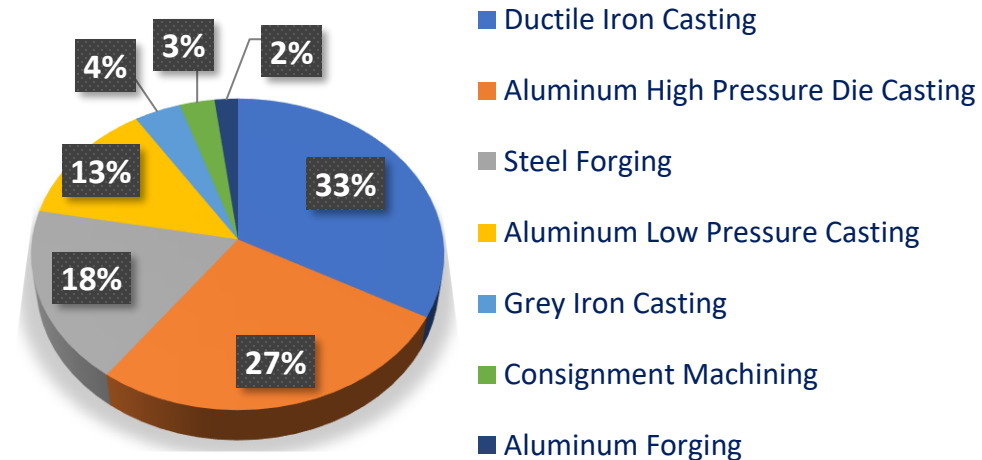
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# Diversification

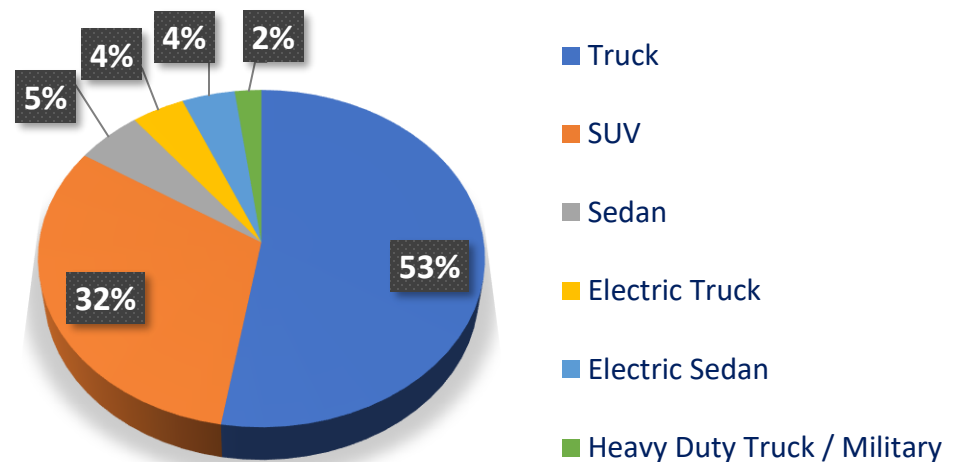
## Flexible Material Solutions

- TSM's global supply chain network offers a unique competitive advantage as we are able to supply a variety of different materials and processes



## Market Diversification

- TSM has made strong efforts to diversify our target markets
- Majority of TSM's business is with what are deemed as "low-risk" platforms



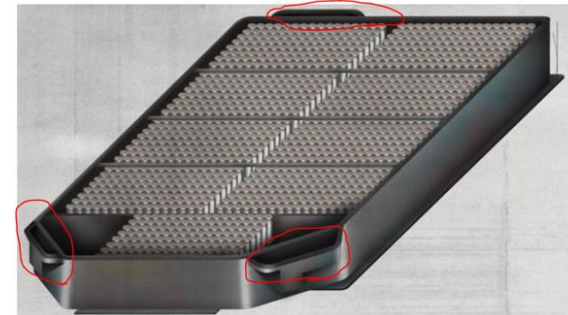
# Focused on an Electric Future



TSM has been awarded new business on a variety of new electric vehicles, expanding its footprint in the growing EV market.

## EV Products of Interest

- Control Arms
- Semi Trailing Arms
- Tow Hooks
- Bed Tie Downs
- Leaf Spring Brackets, Spacers, Anchor Plates
- Brake Caliper Brackets
- Links
- Knuckles
- Gearbox Covers / Housings
- Motor Covers / Housings
- Hub Flange
- Support Brackets
- Battery Connector Pouches



# TSM Ramos

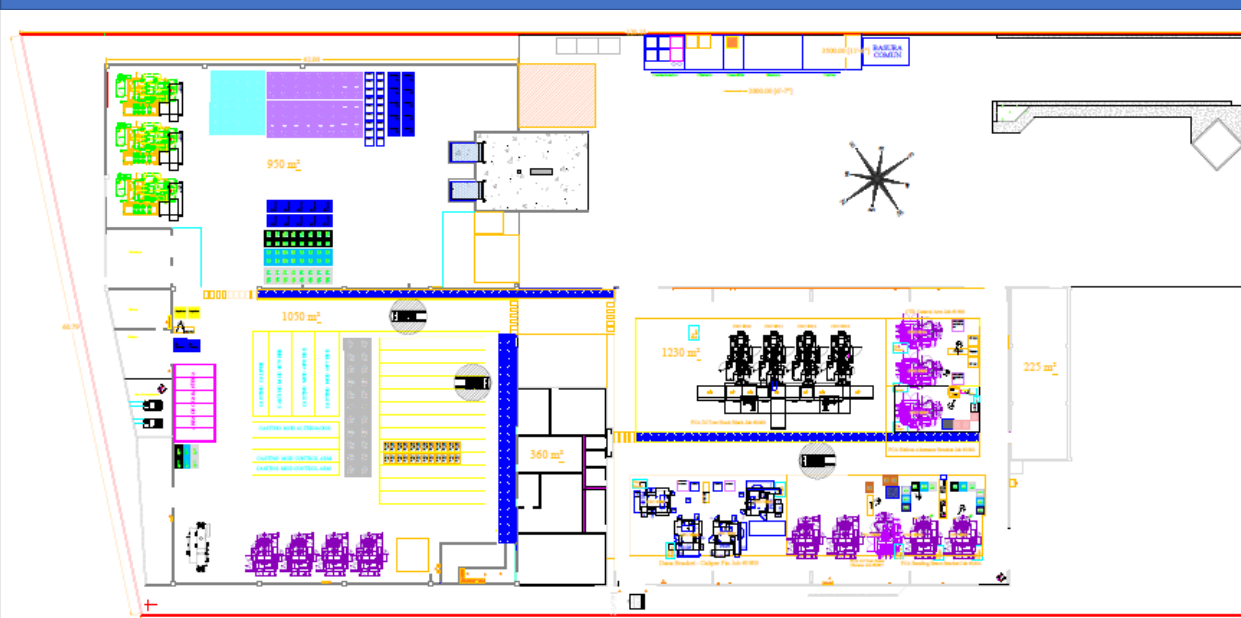
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# TSM Ramos Layout



## MACHINING:

20 CNC Horizontal Machining Center  
4 CNC VMC Makino PS95/PS105

## WASHING:

Mid Pressure high flow linear washing  
High pressure high flow rotary washer

## QUALITY:

CMM, Dimensional LAB  
Cleanliness  
In line variable gaging

## TESTING & ASSEMBLY:

Pressure decay and mass flow automatic leak testers  
Component Assembly





# TSM Ramos – Quality & Safety

	Global 2018	Global 2019	Global 2020	Global 2021	Global 2022
Parts shipped	153,888	300,074	583,452	1,011,080	1,177,137
Overall Scrap Rate	< 1%	< 1%	< 0.5%	< 0.6 %	0.35 %
PPM	6.49	0	5.62	63	0.85

## Safety OSHA Index

**May 31, 2023**

396 days without accidents

78 days without incidents





# Contact Information

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