



***¡BIENVENIDOS !***

***Welcome!***



# Company Profile

We are a company dedicated to the casting and injection of aluminum for the manufacture of parts used in the automotive industry of the highest quality.

Japanese company with the Hiroshima Japan parent plant with more than 80 years of technological innovation used in each of the processes

Perfecting and innovating day by day to deliver products of the highest standards for our customers.



# Company Profile

**Company name:**

HAL ALUMINUM MEXICO, S. A. DE C. V.

**Established:**

June 1<sup>st</sup> 2010

**Capital :**

98 million USD

**Process :**

Aluminum High Pressure Die-casting,  
Aluminum Machining, Assembly

**Certifications:**

IATF16949:2016 / ISO14001 / CTPAT



# HISTORY



**1921**

Tashima Kurazo Shoten founded in Yokogawa-cho, Hiroshima City.



**1953**

Formal incorporation of company under the name of 'Hiroshima Aluminum Industry Co., Ltd.'



**2010**

HAL ALUMINUM MEXICO S.A. DE C.V. established



**2015**

Factory # 2 of HAL ALUMINUM MEXICO S.A. DE C.V. start activiades

# Hiroshima Aluminum Overseas Plants

China production base

HIROSHIMA ALUMINUM  
INDUSTRY(NANTONG)CO.,LTD.

North America production base

HAL ALUMINUM MEXICO,  
S.A DE C.V

Southeast Asia production base

HAL VIETNAM CO.,LTD

Headquarters

Hirohishima Aluminum  
Industry co ltd

Southeast Asia production base

HAL ALUMINUM (THAILAND) CO.,LTD

Overseas plant production concept

- Headquarter decides the business distribution, Support in investment, human resources and technology
- Provide know-how of production in Japan  
Produce Die-mold / Equipment in Japan  
⇒ Deliver to overseas plant  
Support for Ramp-up

# HAL Mex Location



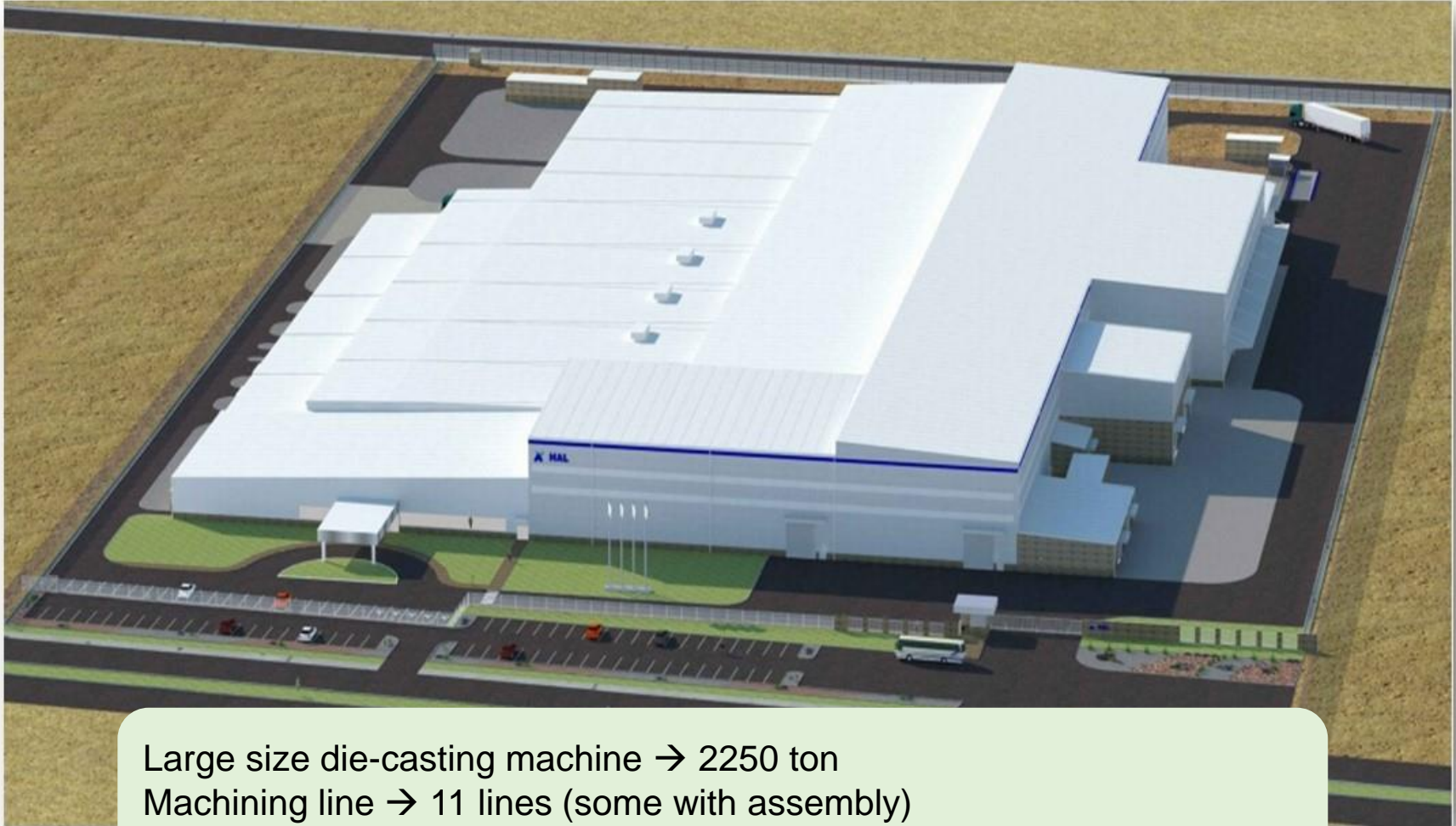
**Industrial Park  
Puerto Interior  
Silao, Guanajuato**

# HAL Mexico Plant 1

Large size die-casting machine → 1650 - 2250 Ton  
Middle size die-casting machine → 650 – 850 Ton  
Machining line / 23 lines (some with assembly)  
Land area / 79,700m<sup>2</sup>



# HAL Mexico Plant 2

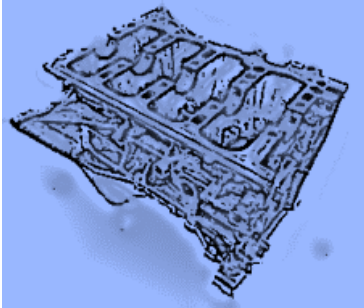


Large size die-casting machine → 2250 ton  
Machining line → 11 lines (some with assembly)  
Land area / 68,670 m<sup>2</sup>

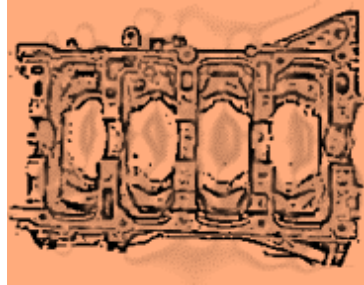


# Our Main Products

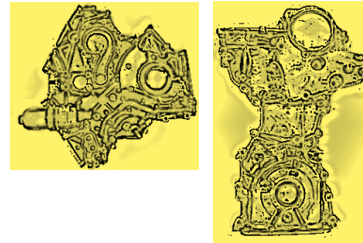
Cylinder block



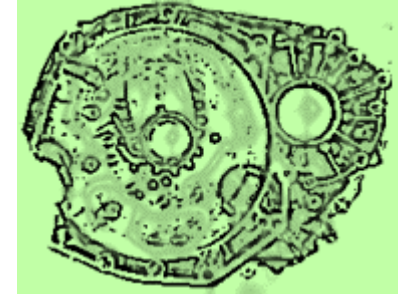
Lower block



Engine Cover



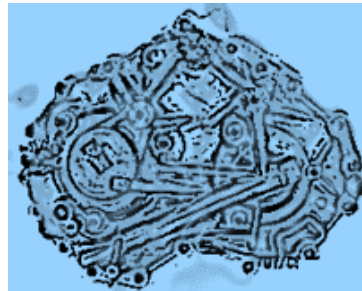
Converter Bell Housing



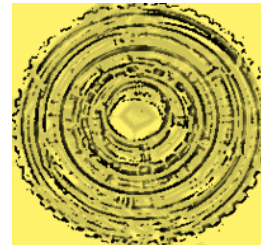
Gearbox Housing



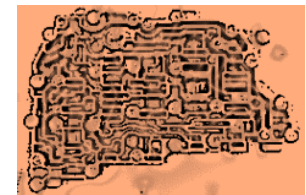
Side Cover



Disc Carrier



Valve body



# High Pressure Al Die Casting

## Important Advantages:

- Faster Process (Short Cycle Times)
- Produce high volumes
- Smooth Surfaces
- Dimensional Accuracy
- Wall thickness control
- Well suited to Automation
- Part Cost is much less than Low Pressure

# Capabilities HAL Mexico

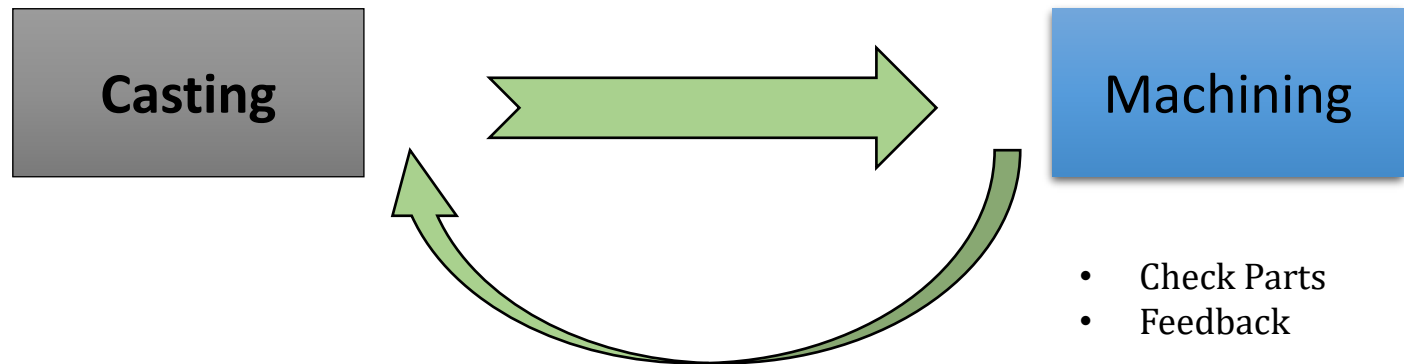
Die Casting Machines:	High Pressure from 650 ton to 2250 ton
Machining Lines:	Vertical and Horizontal up to 5 axis fully automated and semi-automated Air Leak Test and Dunk Test / Assembly
Part Size :	From 3 Kg up to 20 Kg
Alloy :	ADC12 and A380
Die Maintenance :	EDM, Lathe, Milling, Contact Machine.
Quality:	CMM, X-Ray, Spectrometer, Cleanliness, High Magnification Microscope, Tensile Test, Diameter Gauges, Thread Gauges.
Ingot Suppliers:	5 different (4 Mexico, 1 USA). Validating 2 more in USA. (Inventory Target 14 – 21 DOH)

# Capabilities HAL Mexico

## Quality Assurance:

- Machining
- Leak Test
- X-Ray
- Color Check

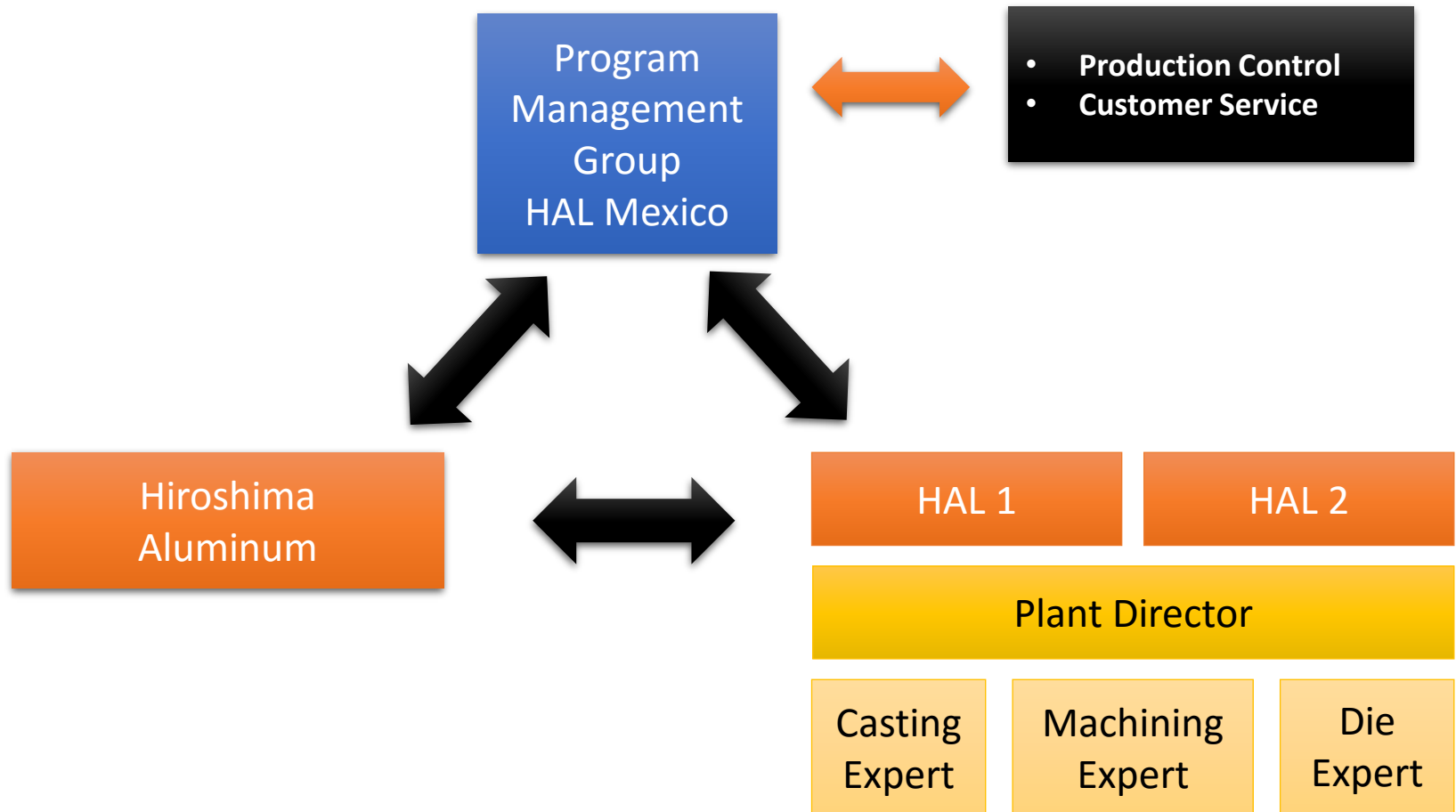
1. Run Validation Feedback  
Start of Production
2. Daily Quality Feedback  
Daily Production Report
3. Sample Batch Feedback  
Continuous Improvement



- Technical Team in Mexico and Japan
- Production Team
- Inspection Team

# Capabilities HAL Mexico

## Project Management:



# Capabilities Hiroshima

Portal Hiroshima: <http://www.hai.co.jp/en/>

R&D Center: Engine Bench Test, Noise Vibration and Harshness Analysis System, Continuous Flow Testing Machine, Fatigue Testing Machine (30kN, 5kN), Universal Testing Machine (250kN), Salt Spray, Oil Mist testing Machine, Complex Environment Test, Environment Endurance Test, Thermal Shock testing Machine, Scanning Electron Microscope +Energy Dispersive X-ray Analyzer, Metal Inherent gas Analyzer, CT Scanner, High Magnification Microscope, Optical Metal Microscope

From Design to Final Products:

Process Design

Die Design

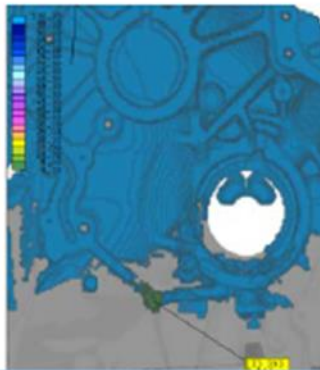
Die Manufacturing

New Technology Development

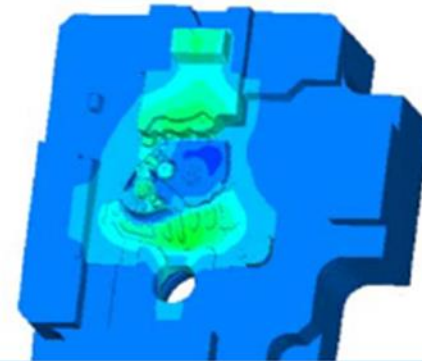
# Die Design and Build



3D-CAD	NX	9 units
	CATIA	3 units
	CADmeister	12 units
2D-CAD	Solid MX	39 units
CAE	ADSTEFAN	11 units
	ADVENTURE cluster	4 units
Total		78 units



Improve the casting quality through simulation

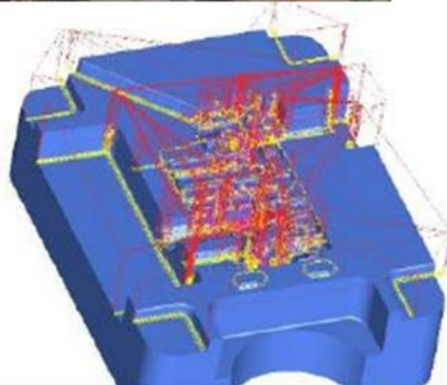


Prolong durability through mold deformation analysis

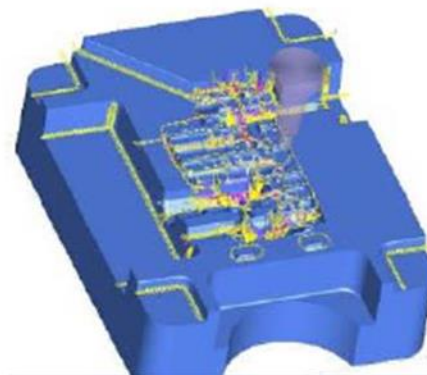
# Die Design and Build



3D-CAD/CAM	CADmeister	29 units
	SPACE-E	1 unit
	CimaTron	2 units
3D-CAM	WORK-NC	10 units
NC simulation	VERICUT	5 units
Total		47 units



Reduce machining time  
by high speed machining



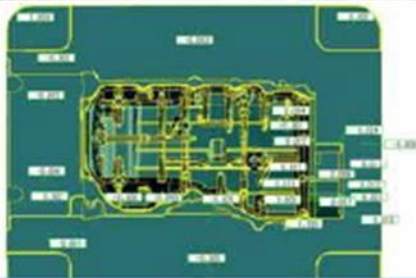
Improve the die quality  
through NC simulation



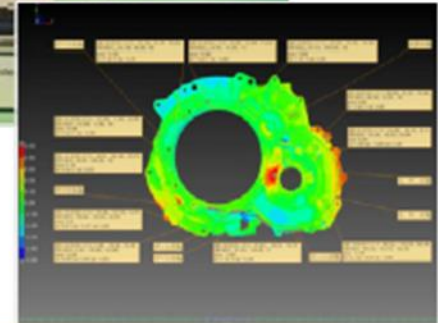
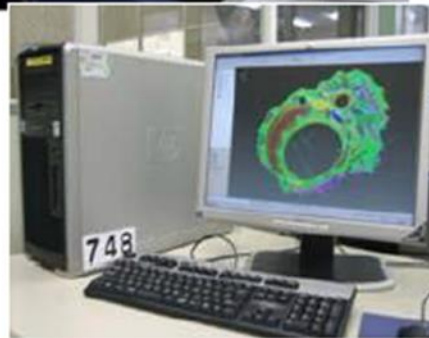
# Die Design and Build



CMM	11 units
Contactless measurement	3 units
Total	14 units



Improve the die quality based on 3D model



Inspecting trial products by Contact/Contactless measurement shorten length of inspection time

# Die Design and Build

	Maker	Ut(e)
Vibration testing machines w/ thermo-chamber	IMV Emic	3
Temp & Humidity Chamber	Espec	4
Bench test for FR engines	Meiden	1
Motoring test for FF engines with no load	Schorch	1
Thermal shock test	Hitachi	1
Air Flow test	Mazda hutech	1
Oil Mist Entrapment test for Head Covers	GM system	1
Optical / Metal Microscope	Keyence	3
SEM (Scanning Electron Microscope)	Edex	1
Hardness tester for Vickers, Brinell & Rockwell	various	4
Positive / Negative Pressure Cycle test	inhouse	3
LLC heating/cooling test	inhouse	1
Repeated pressurization test	Inhouse	1

Vibration test



Bench test



Air flow test



Oil Mist Entrapment



# HAL ALUMINUM MEXICO

## Virtual Visit



# Melting Furnace



# Casting



# Machining and Assembly



# Machining and Assembly

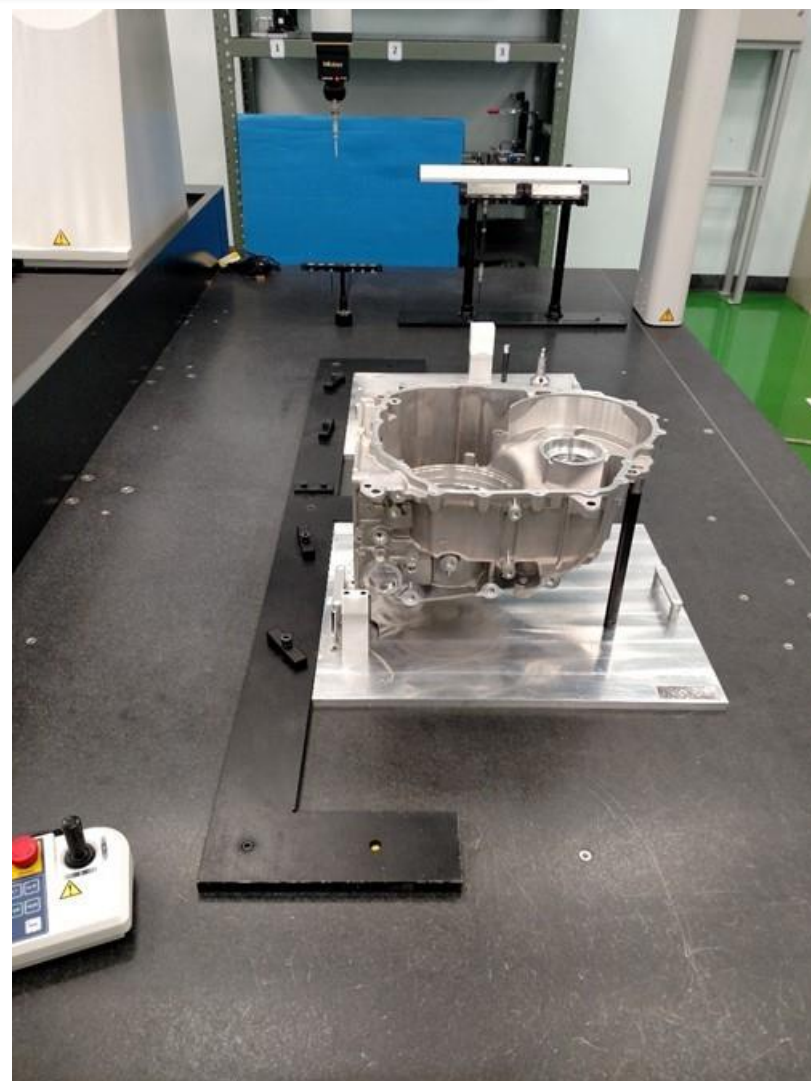




# X Ray Lab



# Metrology Lab



# Thank you

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