



Company Profile

2024



Who we are

CALEFFI MODENA build complex components, made by structural steels, light aluminum and titanium alloys, performing mechanical milling and turning operations with continuous 5-axis numerical control machines, managed by CAM systems.





Who we are

CALEFFI MODENA, through the Design Service, establishes a technical partnership with the customer, to solve production design and industrialization problems, guaranteed by the destructive and non-destructive tests and controls function, to minimize production lead time and to accelerate production time-to-market of prototypes and small series.



Who we are

Due to its technical know-how and a highly tested subcontracting network, CALEFFI MODENA is able to act as prime contractor to produce special items, whose production cycle includes heat treatments, chemical and surface treatments, castings, 3D printing, and includes a possibility of assembly or pre-assembly services.

CALEFFI MODENA is able to offer reverse engineering services for spare parts from existing components, even if not in perfect condition, or in the absence of original drawings.

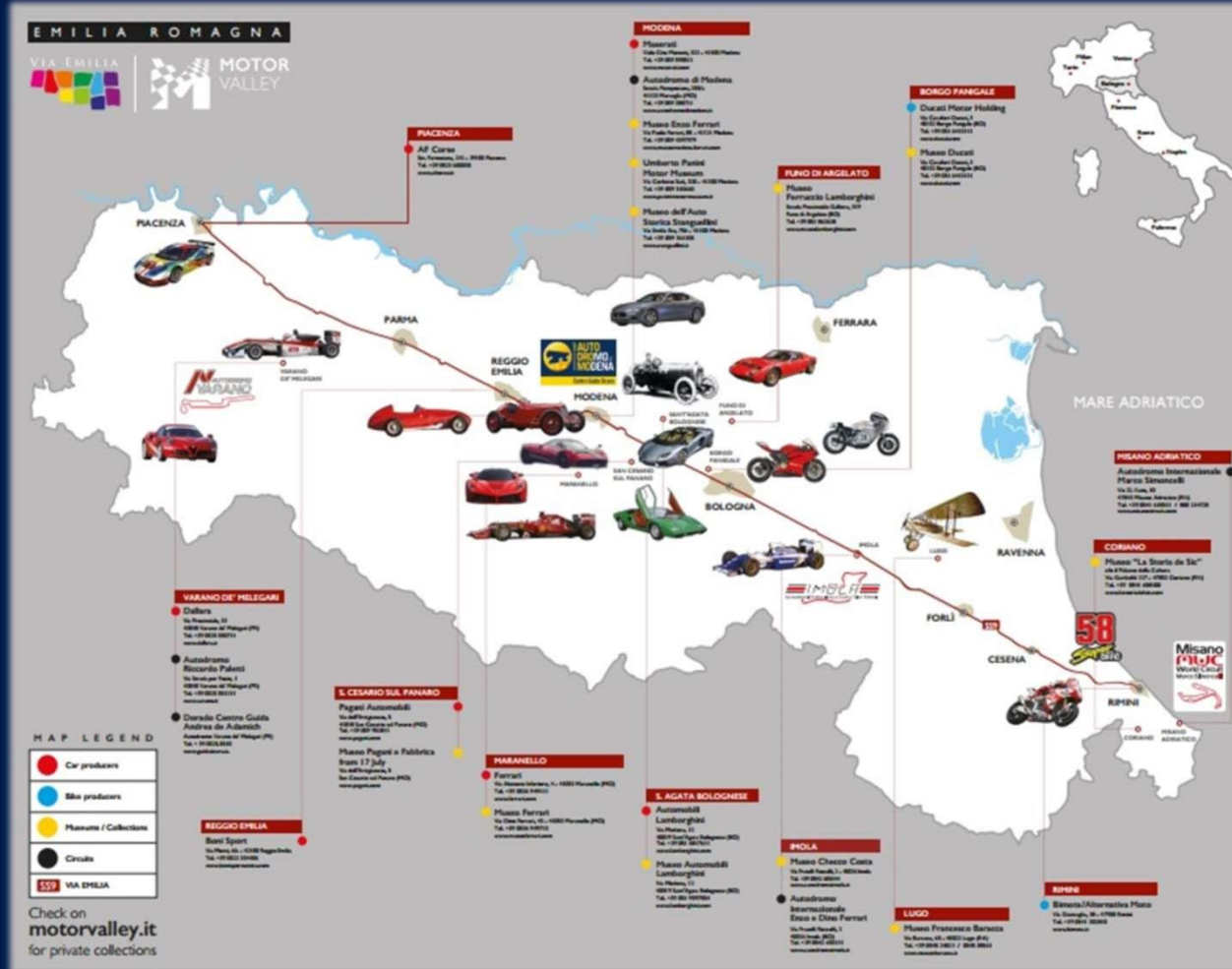


Where



Our production unit is located in Modena (Italy), in the hearth of Italian Motor Valley

Where





Where

Operation facility

37X53 = 2.500 square meters

Photovoltaic panels
on the roof





Workshop

Air conditioning
(ceiling cooling
and underfloor heating)



Workshop





Machine List

Il parco macchine consiste di:

13 - 5 axis CNC with dimensions of 800mm on x/y/z

3 – Vertical CNC with dimensions up to 1.020 x / 560 y / 600 z

5 – Lathe, 4 of them with y axis, and chuck diameter of 250mm with x lenght up to 1.000mm, with bar loader

Manual machines

Machine shop



| No. | BRAND | MODEL | TRAVEL AXIS (MM) | TECHNICAL SPECIFICATIONS |
|-----|---------|-----------------|---|--|
| 1 | DMGMORI | DMU50 + PH150/8 | Travel on X axis 650 mm Travel on Y axis 520 mm Travel on Z axis 475 mm | CNC HEIDENHAIN TNC 640i with continuous 5 axes positioning with linear motor on X axis and angle of working up to 108° Automatic handling pallet Erowa PH150/8 3D Heidenhain Touching probe TS649 Electric spindle speed: 18.000 round/min Drive power 28KW Rapid traverse on x, y, z axis: speed=42 m/min Tool Magazine n°120 tools with double rapid clamping pinch Blum Laser brake tool control |
| 1 | DMGMORI | DMU75 Monoblock | Travel on X axis 750 mm Travel on Y axis 650 mm Travel on Z axis 560 mm | CNC HEIDENHAIN TNC 640 with continuous 5 axes positioning 3D Heidenhain Touching probe TS649 Electric spindle speed: 18.000 round/min Drive power 35KW Rapid traverse on x, y, z axis: speed=40 m/min Tool Magazine n°60 tools with double rapid clamping pinch Blum Laser brake tool control |
| 1 | GF | HEM500 | Travel on X axis 500 mm Travel on Y axis 450 mm Travel on Z axis 400 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning -65 /+110 A axis WorkPal System 3R Dynafix Renishaw Touching probe 40,01-Mini Electric spindle speed: 20.000 round/min Drive power 20KW Rapid traverse on x, y, z axis: speed=30 m/min Tool Magazine n°60 tools with double rapid clamping pinch Blum Laser brake tool control |

Machine shop



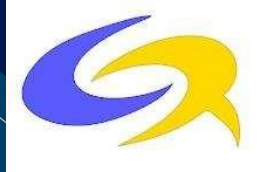
| No. | BRAND | MODEL | TRAVEL AXIS (MM) | TECHNICAL SPECIFICATIONS |
|-----|---------|-----------------|---|--|
| 5 | DMGMORI | DMU50EVO Linear | Travel on X axis 500 mm Travel on Y axis 450 mm Travel on Z axis 400 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning with linear motor on X axis and angle of working up to 108° 3D Heidenhain Touching probe TS641 Electric spindle speed: 18.000 round/min Drive power 28KW Rapid traverse on x axis: speed=80 m/min ac=10 m/s ² Rapid traverse on y and z axis: speed=50 m/min ac=10 m/s ² Tool Magazine n°60 tools with double rapid clamping pinch Blum Laser brake tool control |
| 1 | DMGMORI | DMU80P Duoblock | Travel on X axis 800 mm Travel on Y axis 800 mm Travel on Z axis 800 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning 3D Heidenhain Touching probe TS641 Electric spindle speed: 18.000 round/min Drive power 28KW NC-controlled swivel milling head 0-190 degrees NC-controlled rotary table Ø900 x 700 Rapid traverse on x, y, z axis: speed=60 m/min ac=10 m/s ² Tool Magazine n°120 tools with double rapid clamping pinch Coolant through the spindle core with 40Bar pressure Blum Laser brake tool control |
| 1 | DMGMORI | DMC65 Monoblock | Travel on X axis 650 mm Travel on Y axis 650 mm Travel on Z axis 560 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning 3D Heidenhain Touching probe TS649 Electric spindle speed: 18.000 round/min Drive power 28KW Rapid traverse on x axis: speed=80 m/min ac=10 m/s ² Rapid traverse on y and z axis: speed=50 m/min ac=10 m/s ² Tool Magazine n°90 tools with double rapid clamping pinch 3 handling pallets 500x500 mm Blum Laser brake tool control |

Machine shop



| No. | BRAND | MODEL | TRAVEL AXIS (MM) | TECHNICAL SPECIFICATIONS |
|-----|-------|--------|---|---|
| 1 | GF | HEM700 | Travel on X axis 700 mm Travel on Y axis 450 mm Travel on Z axis 400 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning -65 /+110 A axis WorkPal System 3R Dynafix Renishaw Touching probe 40,01-Mini Electric spindle speed: 20.000 round/min Drive power 20KW Rapid traverse on x, y, z axis: speed=30 m/min Tool Magazine n°120 tools with double rapid clamping pinch Blum Laser brake tool control |
| 1 | GF | HEM800 | Travel on X axis 800 mm Travel on Y axis 700 mm Travel on Z axis 550 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning -65 /+110 A axis WorkPal System 3R Dynafix Renishaw Touching probe 40,01-Mini Electric spindle speed: 20.000 round/min Drive power 20KW Rapid traverse on x, y, z axis: speed=30 m/min Tool Magazine n°120 tools with double rapid clamping pinch Blum Laser brake tool control |

Machine shop



| No. | BRAND | MODEL | TRAVEL AXIS (MM) | TECHNICAL SPECIFICATIONS |
|-----|---------------|--------------|--|--|
| 1 | DMGMORI | DMU80T | Travel on X axis 880 mm Travel on Y axis 630 mm Travel on Z axis 630 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning Tool clamping head traverse CN 103° with digital moving system and upper CN table; 3D Heidenhain Touching probe TS640 Electric spindle speed: 18.000 round/min Drive power 28KW Rapid traverse: speed=30 m/min ac=8 m/s2 Tool Magazine n°60 tools |
| 2 | DMGMORI | DMU70EVO | Travel on X axis 750 mm Travel on Y axis 600 mm Travel on Z axis 520 mm | CNC HEIDENHAIN TNC 530i with continuous 5 axes positioning 3D Heidenhain Touching probe TS641 Coolant through the spindle core with 40Bar pressure Electric spindle speed: 18.000 round/min Drive power 28KW Rapid traverse: speed=50 m/min ac=8 m/s2 |
| 1 | GF | VCE1000PRO | Travel on X axis 1020 mm Travel on Y axis 560 mm Travel on Z axis 600 mm | Vertical milling Machine Center CNC HEIDENHAIN TNC 620 with 3 axes Renishaw Touching probe 40,01-Mini Electric spindle speed: 16.000 round/min Drive power 14,75KW Rapid traverse on x, y, z axis: speed=40 m/min Tool Magazine n°40 tools with double rapid clamping pinch Blum Laser brake tool control |
| 1 | DMGMORI | DMC835V | Travel on X axis 835 mm Travel on Y axis 510 mm Travel on Z axis 510 mm | Vertical milling Machine Center CNC HEIDENHAIN TNC 530i 3D Heidenhain Touching probe TS641 Electric spindle speed: 14.000 round/min Drive power 19KW Rapid traverse: speed=30 m/min |
| 1 | SIP GENEVOISE | HYDROPTIC 6A | Travel on X axis 1000 mm Travel on Y axis 750mm Travel on Z axis 900 mm | Vertical jig borer with Acurite monitor display |

Machine shop



N°2

MAZAK QUICK TURN 200MY

| 500 mm Bed (Universal) | | Valori |
|------------------------|--------------------------------|----------|
| CAPACITY | Chuck size main spindle | 8 " |
| | Maximum swing | 695 mm |
| | Maximum machining diameter | 380 mm |
| | Bar work capacity main spindle | 65 mm |
| FEED AXES | Rapid traverse (X axis) | 30 m/min |
| | Rapid traverse (Y axis) | 21 m/min |
| | Rapid traverse (Z Axis) | 33 m/min |
| | Travel (X axis) | 234 mm |
| | Travel (Y axis) | 100 mm |
| | Travel (Z axis) | 625 mm |
| BAR LOADER | LNS Sprint S3 | 3m. |

N°2

MAZAK QUICK TURN 100MY

| 300 mm Bed (Universal) | | Values |
|------------------------|--------------------------------|----------|
| CAPACITY | Chuck size main spindle | 6 " |
| | Chuck size secondary spindle | 5 " |
| | Maximum swing | 550 mm |
| | Maximum machining diameter | 280 mm |
| | Bar work capacity main spindle | 52 mm |
| FEED AXES | Rapid traverse (X axis) | 33 m/min |
| | Rapid traverse (Y axis) | 21 m/min |
| | Rapid traverse (Z Axis) | 33 m/min |
| | Rapid traverse (W axis) | 30 m/min |
| | Travel (X axis) | 187 mm |
| | Travel (Y axis) | 100 mm |
| | Travel (Z axis) | 510 mm |
| | Travel (W axis) | 460 mm |
| BAR LOADER | LNS Sprint 542 | 3m. |



Top machines



MILLING MACHINES



DMU75 Monoblock



DMU50 + PH150/8



GF Mikron HPM450



DMC65 Monoblock

QUALITY CONTROL MACHINES



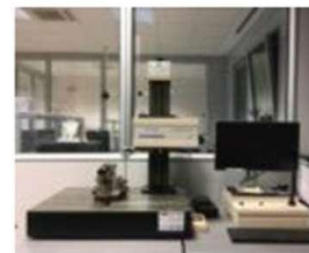
3D Scanner



LA440 Moto



EDGE SCANARM HD



FORM TALYSURF S4C



LH60CG



Inspection room

| No. | BRAND | MODEL | TRAVEL AXIS (MM) | TECHNICAL SPECIFICATIONS |
|-----|-------------------|-------------------|---|---|
| 1 | HEXAGON METROLOGY | GLOBAL | Travel on X axis 900 mm Travel on Y axis 1200 mm Travel on Z axis 800 mm | 3D measuring machine with continuous scanning probe Indexing Renishaw head PH10MQ with touching probe SP600M-xe Software: PC-DMIS for Windows + Curve e Surface Precision 2,7+ L/250 µm |
| 1 | HEXAGON METROLOGY | SCIROCCO | Travel on X axis 1500 mm Travel on Y axis 1000 mm Travel on Z axis 450 mm | 3D measuring machine with continuous point-to-point probe Precision 4÷4,5 L/1000 µm |
| 1 | HEXAGON METROLOGY | ABSOLUTE ARM 8525 | Arm 2.5m | 3D contact/non-contact portable measurement system 7 axis with RS5 Laser Line Probe Accuracy- ±28µm (±0,001in) Scan Rate- Speed 100Hz 7,520 points/line =752,000 points/sec Software PolyWorks Inspector |
| 1 | FARO | EDGE SCANARM HD | Arm 1.8m | 3D contact/non-contact portable measurement system CAM2 Edge 7 axis with Laser Line Probe HD Accuracy- ±25µm (±0,001in) Scan rate- 280 frames/second, 280fps x 2,000 points/line = 560,000 points/sec Software PolyWorks Inspector |
| 1 | TAYLOR-HOBSON | FORM TALYSURF S4C | Max Travel 120 mm Vertical range measure 1 mm | 3D Profile and roughness tester with inductive transducer; manual and automatic measure Resolution 0.016 x 0.25 µm Software: "Ultra" Surface Finish NT; DynaCADD98; Profile+ |



Team

The Caleffi Modena team is made up of an affiliated team and makes use of specialist external collaborations, and the collaboration of the parent company Qmech





Team

- **11 machine tool operators**
- **1 finishing worker**
- **2 quality control staff**
- **3 people in the technical office**
- **1 sales**
- **1 back-office**





Certifications and Skills

The Caleffi quality system is

- ISO 9001: 2015
- EN 9100:2018 from 2024

In the technical and production office there are 6 CAD - CAM stations equipped with hyperMILL® 5 Axis software



Reference





Projects

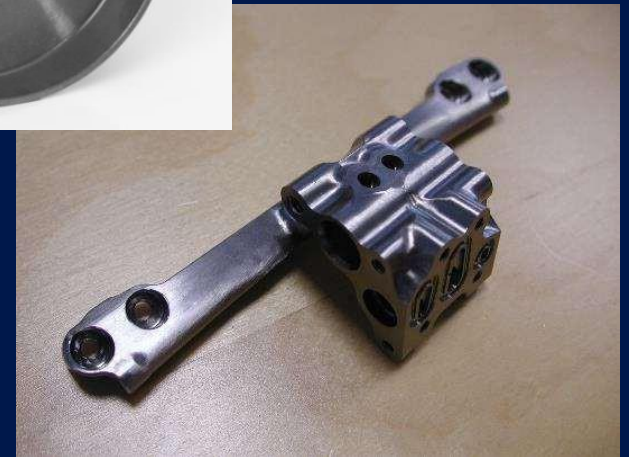
Engine blocks and cylinders





Projects

Hydraulics





Projects

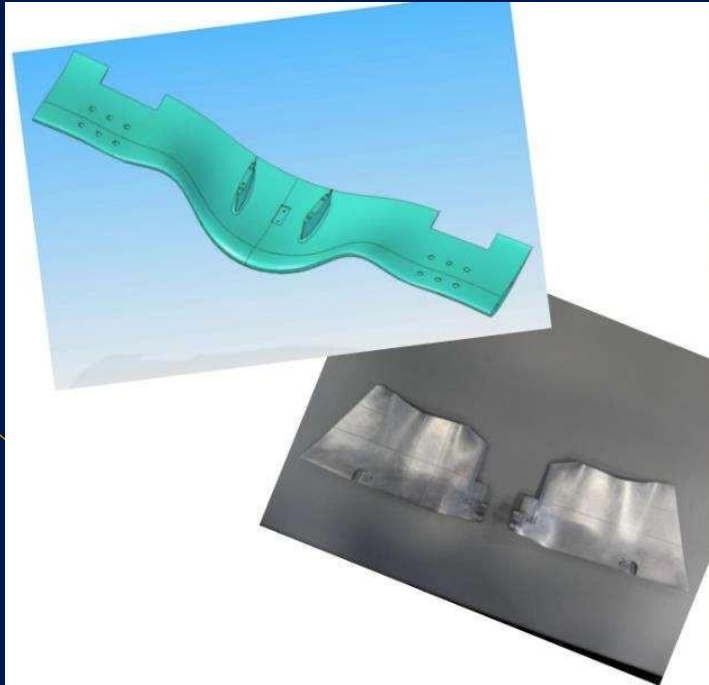
Complex components





Projects

Motorsport – wind tunnel and car components





Projects

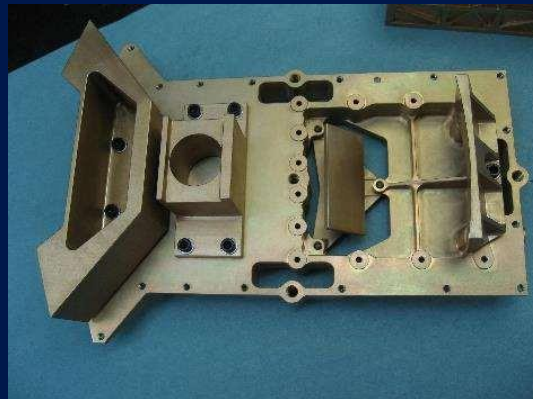
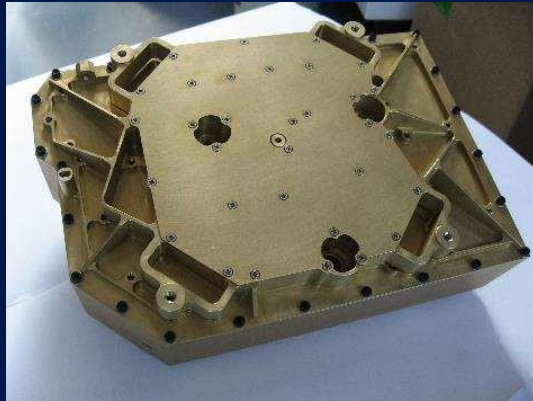
Braking systems





Projects

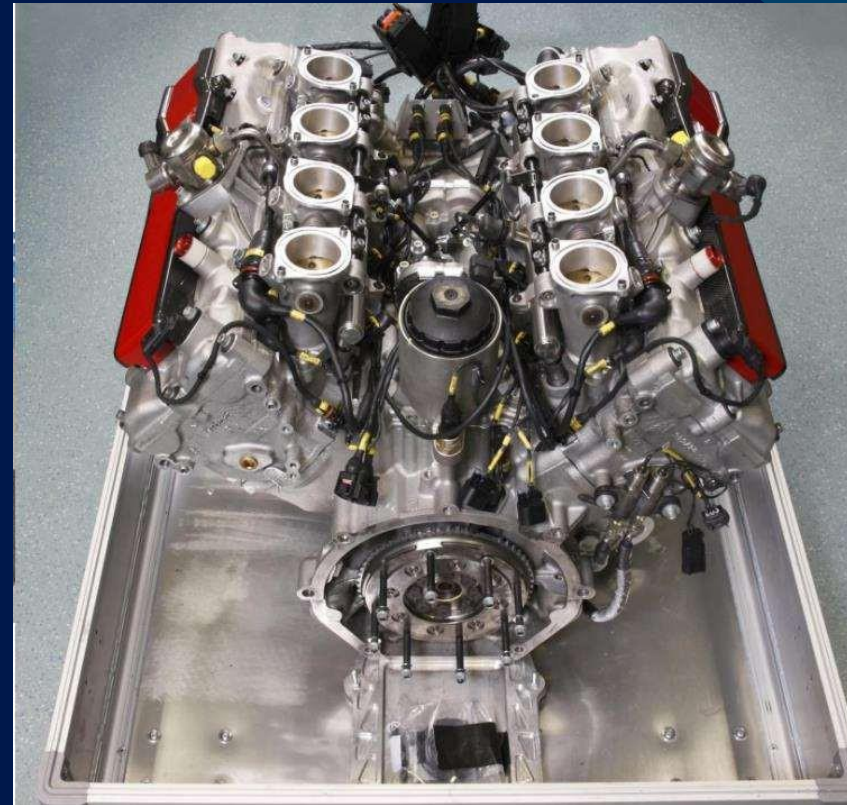
Aerospace





Projects

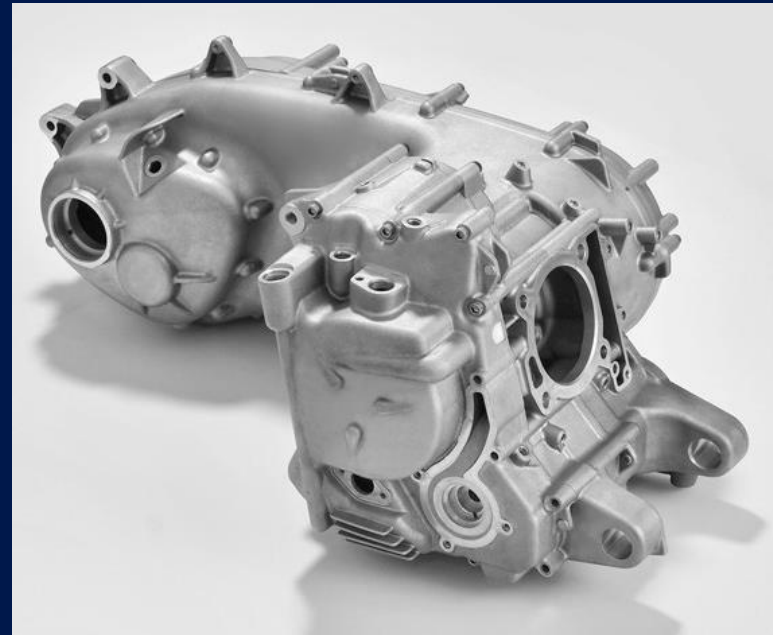
Reverse engineering





Projects

Casting and additive manufacturing components machining



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