

## Integrated Production of Aircraft Parts in Al-Mg Alloys by Sand-Casting with 5-Axis Machining and Special Processes



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- Capital / 100 million Japan Yen
- No. of Employees / 135

### Major Products

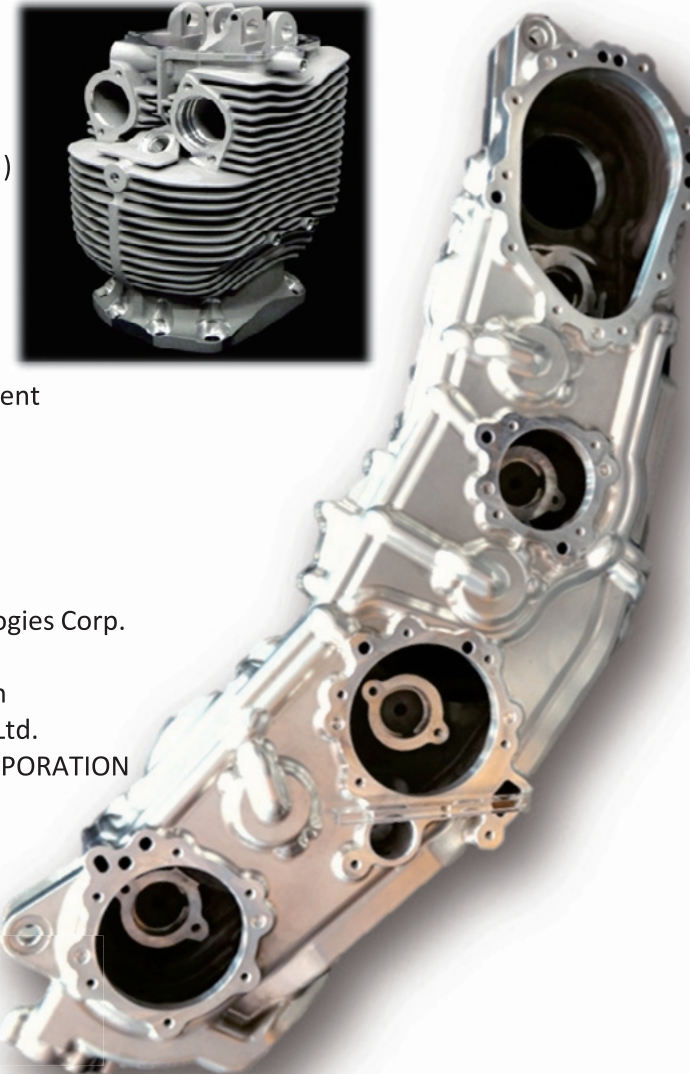
Automobile parts, including prototyping and developing, Industrial Robots, Semi-Conductor Manufacturing Equipment parts, Aero-Engine parts, Medical Equipment parts, and Power-Plant Controller parts

### Major Clients (in alphabetic order)

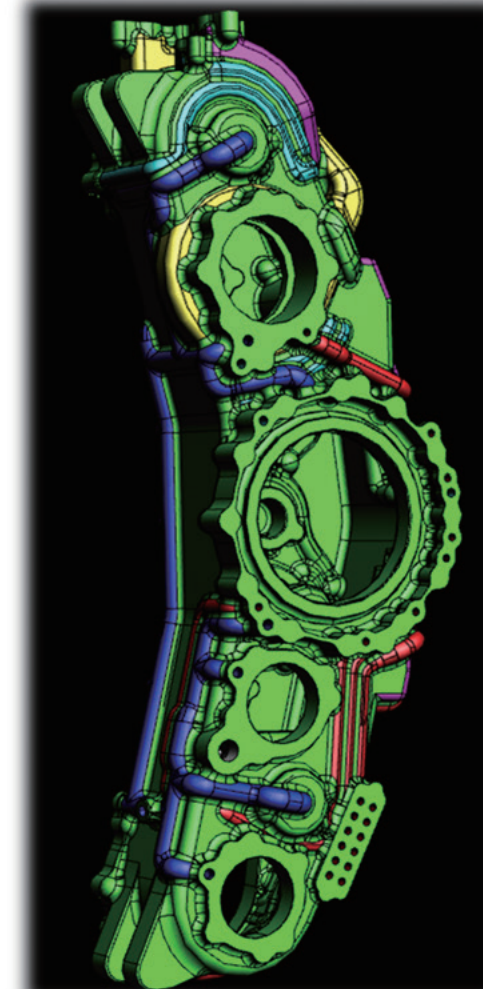
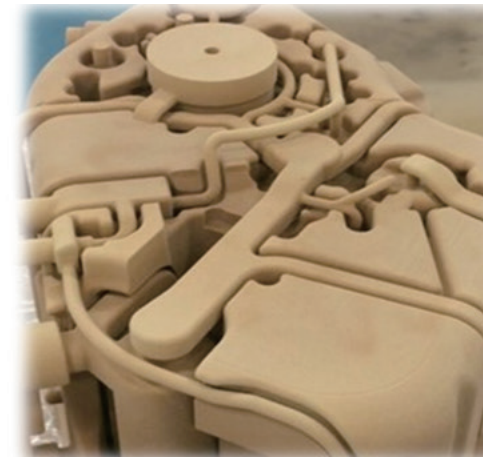
AISIN AW CO., Ltd.	Hitachi High-Technologies Corp.
Honda Motor Co., Ltd.	IHI Corporation
Kawasaki Heavy Industries, Ltd.	Nabtesco Corporation
Nissan Motor Corporation	Tamagawa Seiki Co., Ltd.
Tokyo Electron Ltd.	TOYOTA MOTOR CORPORATION
Yamaha Motor Co., Ltd., etc.	

### Certifications

ISO 9001  
AS 9100  
Nadcap accreditations of NDT(PT,PPE, RT), HT,MTL, WLD



Equipment		Unit	Equipment		Unit
Gas Furnace	300kg/batch	8	5-Axis Machining Centre	YASUDA 500 x 500 mm	3
Gas Furnace only for Mg	100kg/batch	2	5-Axis Machining Centre	MAM 500 x 500 mm	5
Differential-Pressure Casting	1,200 x 1,200	3	5-Axis Machining Centre	Makino 1,000 x 1,000 mm	2
Automatic Molding Casting		1	Horizontal Machining Centre	Makino 630 x 630 mm	3
Self-Hardening Sand Casting		3	Horizontal Machining Centre	Makino 500 x 500 mm	3
Auto-Sand Treatment Device		2	5-Axis Combined Lathe	MAZAKΦ760 x 1,500 mm	3
Heat Treatment Equipment		2	Turning Centre	MORI Φ1,600 x 1,100 mm	1
Pickling Line		1	Digital X-ray Inspection App.	XYLON Φ800 x 1,500 mm	1
De-Gassing Apparatus (GBF)		2	X-ray CT Scanner	XYLON Φ450 x 550 mm	1
3D Printer	3D SYSTEM	1	X-ray CR Inspection Apparatus	GE	1
3D Printer	CMET400 x 800 x 400	1	SF6 Gas Leakage Detector		1
Tensile Tester	INSTRON	1	3D Measuring Machine	Carl Zeiss	3
Emission Spectrophotometer	ARL	1	Optical Noncontact CMM	COMET L3D 2 5M	1
Optical Microscope		1	FPT Equipment	Φ1,000 x 500 mm	1
Hardness measurement unit		2	Pre-Penetrant Etching Line		1



### Core Technology & Expertise

#### Top Quality for Complex-Shaped Casting

TANIDA developed "TKS Casting Process," which controls differential pressures of the two chambers from low to high. This original technology eliminates defects from any complex sand-castings. TANIDA's sand-casting aided by 3D printers realizes limitless flexibility in the designs.

#### Speedy Prototyping and Developing

TANIDA shortens start-up terms for casting by fully utilizing the simulation software for casting analysis. TANIDA cut-machines aluminum and magnesium blocks with the high-speed 5-Axis machining centres.

### Selling Points

**TANIDA is a high-precision processing manufacturer, with expertise in the area of sand-casting.**

- TANIDA's engineers who know Monozukuri, or, who work with craftsmanship, are always prompt to support customers.
- TANIDA is skilled with innovative techniques; the combination of 3D-printed sand-casting and 5-Axis machining.
- TANIDA has been equipped with integrated production system for special processes; casting, welding, heat-treating, material testing, NDT, and surface treatment.

### Prospects

TANIDA makes your one-stop shopping processor of aero-parts from casting to delivery, including machining, surface treatments, inspections, and assembly.

TANIDA performs entrusted destructive and non-destructive inspections, e.g. X-ray tests (digital radiography and computerized tomography), FPT, Tensile Testing.

### Ranges of Work Piece Sizes

- Differential-Pressure Casting Apparatus : 1,200 x 1,200 mm
- 5-Axis Machining Centre : 1,500 x 1,300 x 2,000 mm
- Horizontal Machining Centre : 1,100 x 820 x 1,020 mm
- Turning Centre : Φ1,600 x 1,100 mm
- NC Combined Lathe : Φ760 x 1,524 mm

### Others

#### TANIDA's Management Plans to promote;

- Development of magnesium alloys with high-castability
- Acquiring Nadcap accreditation of special process
- Expansion of entrusted business of destructive and non-destructive inspections

#### Global Extensions

- In 2014, TANIDA has established Altemis Inc. , a joint venture with AvioCast Inc. in Taiwan.
- TANIDA is proactively developing direct business with overseas companies.