CASTEC

CUSTOM MADE

CORE PINS AND INSERTS

Corporate Profile

HIGH-PRECISION SUPPORTS YOU BETTER

We aim to do business on the world stage.

Our technology and services go beyond national borders.

Greetings.
Since its founding in 1937, Castec has undergone a multitude of transitions and this year marks its 84th year.
As a company, we specialize in the manufacturing of core pins, inserts, and other key components in die casting molds. I believe this is thanks to the support we have enjoyed from our customers and the times we have lived through, and I would like to express my gratitude for this.
The environment that now surrounds automobiles and the direction they are taking are showing a degree of changes that we have not seen before, but I think that the goal of every automobile is to reduce energy consumption and the burden on the environment. Die casting is a major technology in terms of supporting this.
We hope to continue contributing to all of our customers in the field of die casting, and to always be an essential partner.

Raiichiro Iijima, President / CEO

Company Profile

Main Plant ,
Plant No.2 , Plant No.3

Trading Name	Castec Inc.
Established	April 1937
Capital	JPY 30 million
Location	349-1148 2-717-6 Toyonodai, Kazo City, Saitama Prefecture, Japan (In Toyonodai Techtown) Tel: +81-480-72-2035 Fax: +81-480-72-6123
Area	29,000 m^2
Participating Organizations	Japan Die Casting Association,North American Die Casting Association
Employees	190 (gender ratio: 2:1 m/f)
Directors	Chair of the Board of Directors: Raijiro Iijima Representative Director: Raiichiro Iijima Senior Managing Director: Shigeru Iijima
Business	Manufacture and sale of die casting mold components
Overseas Bases	CASTEC CORPORATION (USA) 7640 Moller Road, Indianapolis, IN. 46268 U.S.A. Tel: +1-317-872-3882 Fax: +1-317-872-3887

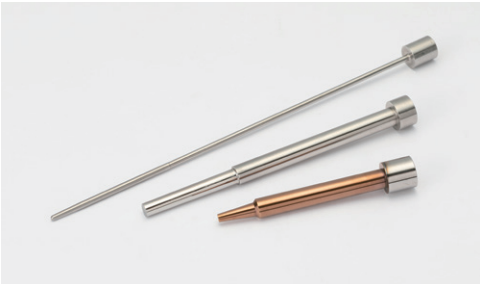
Correspondent Financial Institutions	The Joyo Bank, Ltd., Sumitomo Mitsui Banking Corporation, Saitama Resona Bank, Limited
International Standards	ISO-9002 certification acquired on May 27, 2000　(Migrado a ISO-9001／2003) ISO-14001 certification acquired on June 13, 2006
Manufacturing Facilities	3D CAD/CAM (CAM-TOOL, NX, CATIA V5, Creo, FFCAM, VISI), Auto CAD, 3D metal additive manufacturing device (3D printer), NC lathe, standard lathe, gun drill, internal diameter honing machine, centerless grinder, surface grinder, NC electric discharge machine, NC wire-cutting machine, 5-axis machining center, NC milling machine, heat treatment furnace, gas soft nitriding furnace, etc.
Inspection Equipment	3D measuring instrumentation, image measuring instrumentation, projector, digital microscope, Micro-Vickers hardness tester, Rockwell hardness tester, surface roughness measuring instrumentation, etc.
Data Processing Environments	IGES, STEP, Parasolid, CATPart, Prt, DXF, DWG

SERVICE 01

Core Pins (Core Pins for Die Casting) / Cooling Holes

Core pins

From small pins for wristwatches to large pins for use in transmissions, meter-long pins, Castec manufactures pins by leveraging the comprehensive knowledge of its experts.
Castec is able to adeptly machine steel, whose dimensions change when subjected to heat, and ensure dimensional accuracy for a range of surface treatments.



Completely straight precision stop holes down to 1.5 mm in diameter

Castec has the technology to machine completely straight fine holes up to 280mm in depth at ϕ1.5mm and up to 440mm in depth at ϕ2 mm (up to 600mm at ϕ3, up to 700mm at ϕ4, and 750mm at ϕ5) in lathed metal.
As we have the technology to manufacture holes with wall thickness as thin as 0.7mm and to apply coating to inner holes, we are able to offer a wide range of shapes. As well as stop holes we can also deal with requirements for through holes, eccentric holes, and holes in angular shapes.

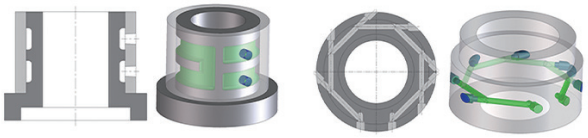
SERVICE 02

Sprue core/Bush

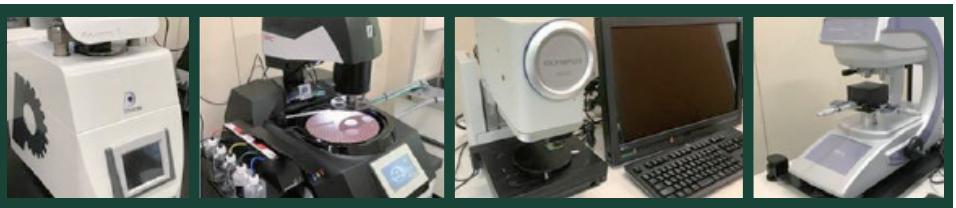
Castec's Plant No.1 boasts a dedicated production line for machining sprues.
This sprue production line has the capacity to manufacture 50 sprue core/bush sets per month.

Dedicated machining lines for fully made-to-order manufacturing

Manufacturable range: ϕ300 x L300
(Please feel free to inquire about larger size)
We can also create a variety of cooling structures and runners.
(Guaranteed with a pressure leak test at 0.6MPa)



Technical Service



Castec's Technology Services Department has the equipment and facilites to analyze the cause of problems such as galling, fracturing, and cracking in core pins, inserts and spools, and to make suggestions for remedies.
By borrowing products that are no longer in use from our customers and providing solutions from a range of perspectives, we can extend the lifespan of products and thus help to improve customers' productivity.

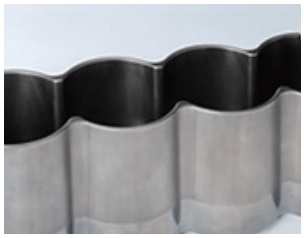
SERVICE 03

Inserts

Castec products boast a high level of quality based on know-how accumulated over many years of experience and delivering results. Our inserts leverage this high level of quality to meet customers' needs.

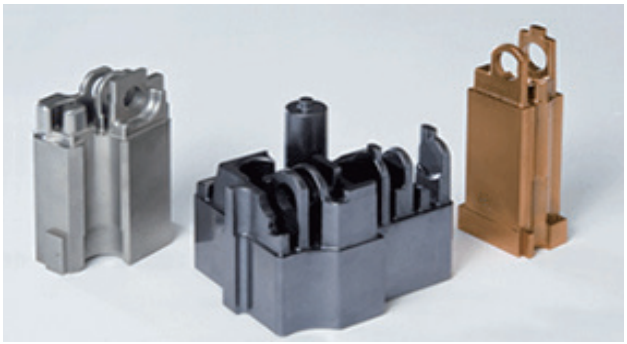
Castec's Plant No.2 is dedicated to manufacturing inserts.

We have 5-axis machining tools that give us the capability to manufacture more than 100 inserts with a range of shapes and sizes every month.



Water Jackets

Bore Pins

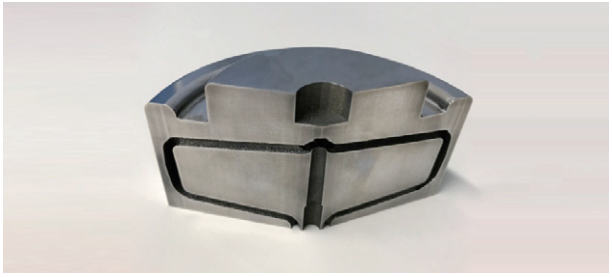


Valve Body Inserts

SERVICE 04

Additive Manufacturing

Materials available with Additive Manufacturing
Maraging steels (MAS-1)
H13 series high thermal conductivity material (HTC)
Sizes available: 300 × 300 × 360 (max.)



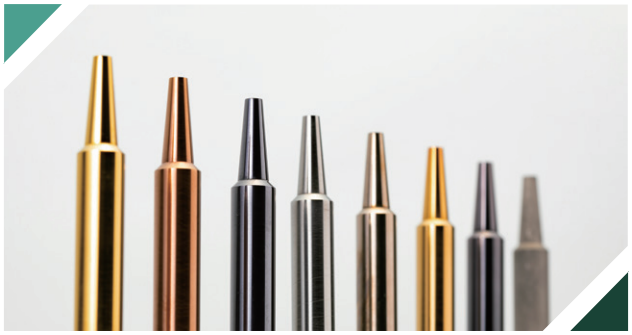
Fabrication of any cooling structure

"Castec can create cooling holes using a 3D printer, meaning cooling holes can be incorporated in places not available with normal machining.
Place pinpoint cooling points where you want more cooling.
This increases productivity by extending the life of the stamped pin and insert, reducing the number of maintenance steps, improving the quality of cast products, and reducing the time required for one shot.
Our in-house integrated production system from 3D printing to machining achieves low cost and short delivery time.
Depending on the shape of the product, we also propose a hybrid construction method in which the base is made by normal machining and only the necessary parts are 3D printed.
The positioning of cooling holes on the base and the molding part, which is a problem of hybrid construction, can be expressed with geometric tolerances to enable the molding with an accuracy of ϕ 0.1.
Material is compatible with maraging steel (MS-1) and H13 series high thermal conductivity material (HTC).

SERVICE 05

Coatings

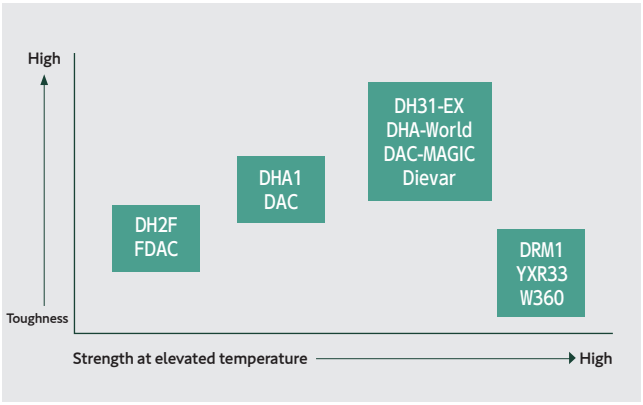
We offer a wide range of surface treatments, including PCVD and PVD.
Castec' s advanced coating technology gets the most out of materials.



■ Main Coating (Surface Treatment) Types

	Designation	Color	Treatment method	Chemistry	Treatment temperature	Heat resistance temperature	Surface hardness (HV)	Coating thickness (μ)	Characteristics									
									Wear resistance	Heat resistance	Seize resistance	Erosion resistance	Corrosion resistance	Adhesion	Mold releasability	Fatigue resistance	Oil film retention capability	Deformation
1	Cascoat	Gold	PCVD	TiN	550	600	2000~2400	2~4	✔			✔		✔				
2	TiAlSiCNO	Violet	PCVD	TiAlSiCNO	550	900	2200~3000	2~5	✔	✔	✔	✔		✔	✔	✔		
3	CrN	Colorless	PVD	CrN	350	700	1750	2~5	✔	✔			✔		✔			
4	TiN	Gold	PVD	TiN	350	600	2300	2~5	✔									
5	TiAlN	Violet	PVD	TiAlN	500	800	3300	2~5	✔	✔								
6	LUMENA	Violet grey	PVD	TiAlN	450~500	900	3400	6~10	✔	✔	✔	✔				✔		
7	LUMENA DUPLEX	Violet grey	PVD	Nitriding compound+ TiAlN	450~500	900	3400	6~10	✔	✔	✔	✔		✔		✔		
8	ALCRONA	Light grey	PVD	AlCrN	450~500	1100	3200	2~5	✔✔	✔	✔		✔					
9	ALCRONA DUPLEX	Light grey	PVD	Nitriding compound+ AlCrN	450~500	1100	3200	2~5	✔✔	✔	✔		✔	✔				
10	ALCRONA MODIFY DUPLEX	Light grey	PVD	Nitriding compound+ AlCrN	450~500	1100	3200	6~10	✔✔	✔	✔	✔	✔	✔				
11	FORMERA	Light grey	PVD	CrAlN	450~500	900	2800	6~10	✔✔	✔	✔	✔				✔		
12	FORMERA DUPLEX	Light grey	PVD	Nitriding compound+ CrAlN	450~500	900	2800	6~10	✔✔	✔	✔	✔		✔		✔		
13	TD	Colorless	Carbide coating	VC	1000	500	3200	10	✔		✔		✔	✔		✔		✔
14	Gas nitride	Grey	Gas nitrocarburizing	Nitriding compound	550	500	800~1200	–										
15	New Kanuc	Black	Nightriding	Nitriding compound	530	530	900	–	✔							✔	✔	

In addition to the above, we deal with a wide range of surface treatments and composite treatments. Please feel free to inquire.



SERVICE 06

Materials

Castec adapts to diversification in die casting technologies.
Our broad range of materials ensures that we are able to offer the optimum product.

AISI	JIS equivalent	Hitachi	Daido	Others	Characteristics
H13	SKD61	DAC	DHA1	Orvar 2M	Standard hot working steel.
–	SKD61 prehardened steel	FDAC	DH2F	–	SKD61 with added sulfur. As this steel is pre-tempered at HRC 40, heat treatment is not required.
–	Matrix high speed steel	YXR33	DRM1	W360	Superior high temperature strength and crack resistance, as well as resistance to heat checking. Toughness is inferior to that of SKD61.
–	Maraging steel	YAG	MAS1C	–	Due to age hardening, toughness is extremely high.
–	Tungsten steel	–	–	MV17 AN1150 FHR96	Thermal conductivity is about 3 times higher than that of SKD61. Due to a high melting point, heat resistance is high and hardness does not decrease significantly at high temperatures. Also, due to low thermal expansion, occurrences of heat checking are reduced. High cost.
–	High thermal conductivity steel	–	DHA-Thermo	–	Thermal conductivity is about 1.8 times higher than that of SKD61. High temperature strength, heat checking resistance and softening resistance are superior.
–	SKD61 improved steel	DAC-MAGIC	DH31-EX DHA-World	Dievar	Compared with SKD61, heat crack resistance, toughness, and crack expansion resistance are superior. Characteristics differ depending on the material manufacturers.

We also deal with a wide range of materials other than the above. Please feel free to inquire.

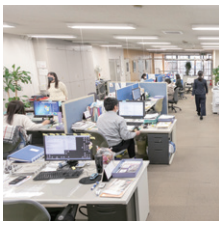
From Order to Delivery

Flow

Castec manufactures and delivers high-quality products on the basis of thorough management.
From small core pins to large inserts, we offer fully made-to-order manufacturing.

STEP
1 Orders

Send us your drawings or CAD data by e-mail, fax, courier, or any other means. Please let us know if you are trying to resolve galling or any other such problems, and we will propose a solution.



STEP
2 Quotations

Once we have analyzed the details of a drawing and ensured that the end product will meet the customer' s requirements, we swiftly commence manufacturing.

STEP
3 Production

We undertake precision machining using cutting-edge facilities and technology that we have developed over the course of many years. In-process inspections are essential for preventing defective products from proceeding to the next process,
and we monitor the progress of our customers' products using a system developed in-house.

3D Metal Additive Manufacturing Device (3D Printer)

STEP
4 Quality Control & Inspection

We implement a complete and comprehensive inspection covering all aspects of the product. CNC 3D measuring instrumentation enables comparison with the customer's original 3D data and the product for verification purposes.

STEP
5 Delivery

Finished products are delivered along with measurement data to customers around the world by express courier.

STEP
6 Our Promise To Our Customers

At Castec, we promise customers that we will increase quality and productivity in their manufacturing of die cast products.

Together with all stakeholders

Sustainable

SUSTAINABLE DEVELOPMENT GOALS

Provision of environmentally friendly products

■ ISO14001

On the basis of the ISO14001 certification we acquired in 2006, we work to preserve and improve local communities and the environment by building a mechanism for continuous improvement of our environmental burden management system.

ISO 14001 BUREAU VERITAS Certification

Main Plant ,
Plant No.2 , Plant No.3

■ Use of eco-friendly packaging materials

Promote energy conservation and waste reduction

■ Installation of solar power

Solar panels have been installed on the premises of the head office and the second factory.
50.40kw at the head office and 334.80kw at the second factory to generate electricity from natural energy

■ Waste reduction Recycling activities

Creating a comfortable work environment

■ Establishment of a nursery school

The website for the Beech tree company-led nursery that opened 2019 is now up and running.
In addition to Castec, the nursery will work to help build an environment that makes working easier for our partner companies.

■ Promotion of automation through in-house systems

■ Online sales activities

Musical Initiatives

As part of our contribution to society, in 2005 and 2017 we invited a string quartet from Finland to give concerts that were free to attend, as well as inviting a violin and accordion duo to do the same in 2008.

Forest-building Club

in 2010

in 2018

Since 2010, Castec's Forest-building Club has participated in a 100-year project with central, prefectural, and municipal government in Japan to create forests on the reinforced embankments of the Tone River. We have planted 750 trees of more than 18 varieties, including jolcham oak and bamboo-leaf oak. Currently, we are still engaged in forest maintenance activities ranging from grass mowing to thinning of 1,000 trees over 8,000 m2 of land.

Company History

1937 Estabilished "Japan Special Casting Manufacturing" in Yokohama,Kanagawa

1943 Merged 3 companies and changed company name to "Fuji Light Metal" relocated to Kazo(formerly Otone),Saitama

1961 Began Diecasting

1983 Began Corepin sales

1990 Changed company name to "CASTEC INC." relocated to Kazo, Saitama

1997 Estabilished CASTEC CORPORATION as a first oversea sales office in Indiana, U.S.A.

1999 Increased Capital Stock to 30 million yen

2000 Obtained ISO-9002 (2003 transferred to ISO-9001)

2005 Ended diecasting and started as a specialized die mold parts manufacturer

2006 Obtained ISO-14001

2008 Established second plant in Kazo,Saitama

2011 Established first overseas production plant in Indianapolis, relocated sales office next to the production plant

2015 Established third plant in Kazo,Saitama

2018 Opened on-site childcare facility for employees