

CAST Co., Ltd.



PROFILE

www.kkcast.co.jp

English version

Shirakawa Factory



Description of Business

We manufacture and sell castings. Castings of FC (flaky graphite cast iron), FCD (spherical graphite cast iron), and alloy cast iron are manufactured semi-automatically and manually with a furan organic self-hardening cast molding process. The weight of handling is 50 to 4,000 kg, and the possible monthly production is max 200 castings per one type. We mainly manufacture robot related castings, and we also manufacture castings for a plastic injection molder, a plastic machine tool, a machine for civil engineering and construction, etc.

Greetings from Representative Director

Our company, CAST, was founded in Fukagawa, Tokyo in 1889. Since then, we have been favored by many customers as a casting company. On March of 1994, the entire factory was moved from Koto-ku, Tokyo to Shirakawa-shi, Fukushima.

In the Shirakawa factory, a work environment is realized in which the image of the conventional casting factory was entirely renovated so as to ensure 100% cleanliness and become a casting industry for the future. In order to meet our users' needs, we have cutting-edge facilities, and a system that can respond to a mass production of casting by manual molding.

In the casting industry, it is said that handing down the technique and skill is difficult. However, many young employees have been brought up well, and we are confident that we can be useful as a casting factory of a new age by combining our technique that we cultivated for many years with Information Technology.

I wish you further prosperity.

Representative Director of CAST Co., Ltd.

Hideyuki Sakai

Management Policies

AIM TO BE BEST

1. We steadily supply the best casting that meets our customers' needs at present and in the future.
2. We closely contact and contribute to the community.
3. We thoroughly perform environmental improvements inside and outside of the factory.
4. We aim at a healthy and culturally comfortable life.

Company Overview

| | |
|-------------------------|--|
| Name of Company | CAST Co., Ltd. |
| Representative Director | Hideyuki Sakai |
| Foundation | March 1889 |
| URL | http://www.kkcast.co.jp/ |
| Headquarters | 3-1-14 Sengoku, Koto-ku, Tokyo 135-0015 |
| Shirakawa factory | 2 Sasakubo, Higashikaminodejima, Shirakawa-shi, Fukushima 961-0302 |
| Phone number | TEL 0248-34-3971 FAX 0248-34-3973 |
| Factory site | Total area: 42,846 m ² Factory building: 3,960 m ² Office and others: 401 m ² |
| Capital | 35,000,000 yen |
| Number of employees | 60 employees |
| Description of business | Manufacturing and sales of normal cast iron, ductile cast iron, special cast iron, super high tensile strength cast iron, etc. |

History

| 西暦 | 年月 | 項目 |
|------|-----------|---|
| 1889 | March | The Sakai foundry was founded in Ofunaguramae-machi (currently Koto-ku, Tokyo). |
| 1923 | April | The Sakai heat-resistant metal foundry was established in Fukagawa Umibe-machi (currently Koto-ku, Tokyo). |
| 1942 | January | The company was reorganized to a joint-stock company, and became the Sakai Heat-resistant Metal Foundry. |
| 1961 | April | The company started sales of ductile cast iron. |
| 1971 | January | The Sakai Foundry Casting group (SFC) was organized and permitted due to the first foundry structure improvement projects (Ministry of International Trade and Industry). |
| 1975 | June | A high silicon cast iron HISILON 14 was completed. The company was approved by Tokyo small and medium-sized business product and upscale furtherance operations |
| 1976 | February | The super high tensile strength cast iron BD90 (90 to 110 kgf/mm ²) was developed and put on the market. |
| 1985 | September | An X-ray fluorescence spectrometer and an Amsler universal thermal expansion meter were introduced, and a quality assurance system (establishment of a quality assurance system group) was established. |
| 1990 | September | The present president was appointed due to the death of the ex-president. |
| 1993 | November | CI was introduced from the Sakai Heat Resistant Metal Foundry, and the name of the company was changed to CAST Co., Ltd. |
| 1994 | March | The Shirakawa factory (a structure improvement model factory) was completed. All facilities and analytical equipment were newly installed. |
| 1995 | October | The company was awarded "Forges and Foundries of Excellent Industrial Environment." |
| 2001 | August | The company entered the field of semiconductor implementation machines. |
| 2002 | June | The company entered the robotics field. |
| 2004 | March | The company was awarded a letter of appreciation from the Minister of Labor and Emigration of Republic of Indonesia due to the continuing operation of accepting trainees from Indonesia for over 10 years. |
| 2007 | March | "Intellectual Property Management Report" was created and disclosed based on the instruction from the Ministry of Economy, Trade and Industry. |
| | June | The company was selected and published in "3000 active small and medium-sized manufacturers in 2007." |
| | | The company was entrusted with "Strategic Foundational Technology Improvement Support Operation of 2007." |
| 2009 | February | The company was selected to be "1,400 Employment Creation Companies." |
| | June | A small emission spectrophotometric analyzer, a black lead rounding rate measurement system, and a digital ultrasonic flaw detector were introduced. |
| 2012 | July | A restoration maintenance subsidy of group facilities, etc. for small and medium-sized businesses in Fukushima was approved. |
| | September | "SHIRAKAWA SOKEIZAI VALLEY" is composed of 11 companies dealing with metal in radius 20km distance. By using techniques such as casting, forging, die casting and more to create materials, and locally processing them including heat treatment, we will provide a stable feed of products for Japan and all over the world. |
| | December | "CAST" was exhibited at the "AUTOMECHANIKA SHANGHAI 2012." |
| 2013 | December | "SHIRAKAWA SOKEIZAI VALLEY" was exhibited at the "AUTOMECHANIKA SHANGHAI 2013." |
| 2014 | May | "THE LEADING JAPAN FOUNDRIES" is a cutting-edge group to expand the global activities the purpose of which is aimed at the world market, to expand the sales network aggressively in that. This group "THE LEADING JAPAN FOUNDRIES" participated in "METAL CHINA2014." |
| | December | "SHIRAKAWA SOKEIZAI VALLEY" was exhibited at the "METALEX 2014." |
| 2015 | June | "THE LEADING JAPAN FOUNDRIES" was exhibited at the "GIFA 2015" in 28 companies. |

Shirakawa Factory – List of Main Equipment

A manual self-hardening process is considered to be one of the most difficult processes to simplify. However, the simplification is performed by standardizing while improving the productivity.

| Category | Name of Equipment | Model, Capacity, and Number |
|----------------|---|---|
| Molding | Long arm mixer | 20t / 30 t / hr 1 unit |
| | High speed mixer | 5t / hr 1 unit |
| | Eco-mixer | 5t / hr 1 unit |
| | Vibration table | 3.5t / hr 1 unit |
| | Veneer automatic supply machine | 1 unit |
| | Reverse extractor | 3.5t / 1 unit |
| | Casting inverter | 1.3t / 2 units |
| | Dash painting machine | 4 sets |
| | Core inverter | 2 units |
| | Paint drying furnace | 1 set |
| Melting | High frequency induced electric furnace | 1400kW 500Hz 2T 2 units |
| Sand treatment | Shake out machine with a hood | 10t / hr 1 unit |
| | Sand treatment machine | 10t / hr 1 set |
| Finishing | Crane type shot blast | 5t 1 unit |
| | Batch type shot blast | 0.5t 1 unit |
| Carrier | Semiautomatic molding cover line | 1 set |
| | Crane | 10t×2 units, 5t×3 units, 2.8t×7 units, Others |
| | Running truck | 15t×1 truck, 10t×2 trucks, 7.5t(B)X 10 trucks, Others |
| Environment | Dust collector | 600m³/min 1 set |
| | | 400m³/min 1 set |
| | | 200m³/min 1 set |
| | Ring hood and ladle hood | 1 set |
| | Central cleaner | 1 set |
| Inspection | Emission spectrometry analyzer (AMETEK) | SPECTRO MAXx-BT |
| | Molten metal component controller (NISSAB) | CE meter NSP-3601 |
| | Molten metal component controller | CE meter KR526 |
| | Immersing thermometer (NISSAB) | NSP-203R |
| | Metal microscope (OLYMPUS) | PME-3 (x50・100・200・400) |
| | Black lead rounding rate measurement system (OLYMPUS) | analySIS FIVE |
| | Tensile tester (SHIMADZU) | UEH-50 (Metallic material universal tester) |
| | Brinell hardness tester (Maekawa Testing Machine MFG) | (φ10 3,000kg load) |
| | King Brinell hardness tester (Fuji Testing Machine) | (φ10 3,000kg load) |
| | Shore hardness tester (TAKES Group and Imai Seiki) | (Hs10 to 80) |
| | Ultrasonic flaw detector (Ryoden Shonan Electronics) | UI-25 (Digital ultrasonic flow detector) |
| Warehouse | Automated warehouse | 147P 640 m² |
| | Tent warehouse | 495 m² |
| | Tent warehouse | 290 m² |
| | External warehouse | 166 m² |

Automated Warehouse



Molding



Reverse



Electric Furnace



Pouring



Inspection



Sand Treatment



(1) Robot Related Products

(i) Frame for a surface implementation machine

Printed circuit boards are inserted in household electric appliances such as a cell phone and a personal computer and auto industry products. Using a surface implementation machine, electronic parts such as IC's are loaded on the printed circuit boards. We manufacture a large amount of the frame that becomes a skeleton of such surface implementation machine. This casting has a complicated shape and is generally thin.



Material: FC200
Weight: 800 kg
Production volume:
100 to 150 castings / month



(ii) Main body for a robot

A robot is active in all assembly steps of automobile parts (handling, spot welding, etc.). We manufacture a large amount of castings that are used in the arms, the main body, etc. of a robot. This casting has many cores, is generally thin, but the thickness partially varies. Therefore, a high level of technique is required.



Material: FCD450
Weight: 230 kg
Production volume:
100 to 200 castings / month



(2) Civil Engineering and Construction Related Products

(i) A vibro compactor is a machine that presses and hardens (rolling compaction) rolling compaction soil, sands, asphalt, etc. It is used in construction of a walk way and a water pipe in which the area of the work is narrow. We manufacture a large amount of castings of most important rolling compaction parts. A high smoothness is necessary for the surface of this casting where it directly makes a contact with the ground, and a toughness is required because it is always vibrating.



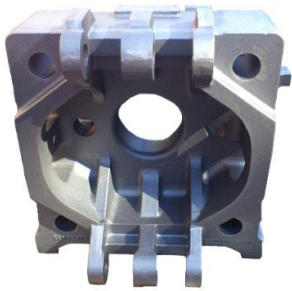
Material: FCD450
Weight: 90 kg
Production volume:
150 to 200 castings / month



(3)Molding Machine Product

(i) Plate for a plastic injection molding machine

A machine for molding a plastic product from granular plastic is the plastic injection molding machine. The casting is used in the mold closing part. We receive orders of castings of the plate and the sliding part mainly made of FCD450 to 600.

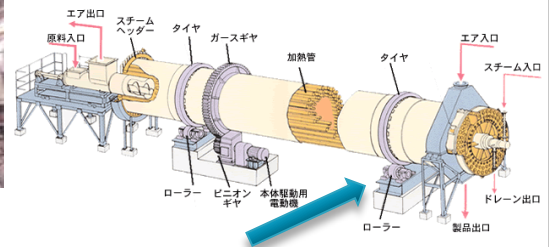


Material: FCD500
Weight: 3,700 kg
Production volume: 10 to 20 castings / month

(4)General Industrial Machine Product

(i) Roller for a steam tube dryer

A steam tube dryer is a machine that places resins and food raw materials in a large tube and dries them with an indirect heat while rotating the tube. A super heavy tube (about 1,000t) is rotated by supporting the tube with 4 rollers. We manufacture the roller that supports the large tube. The thickness of the roller becomes a maximum of 380 mm, and a uniform high hardness (HB260 to 300) is required.

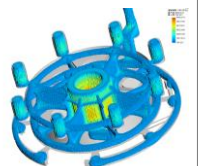


Material: Bainite based FCD
Weight: 3,000 kg
Production volume: 10 castings / year

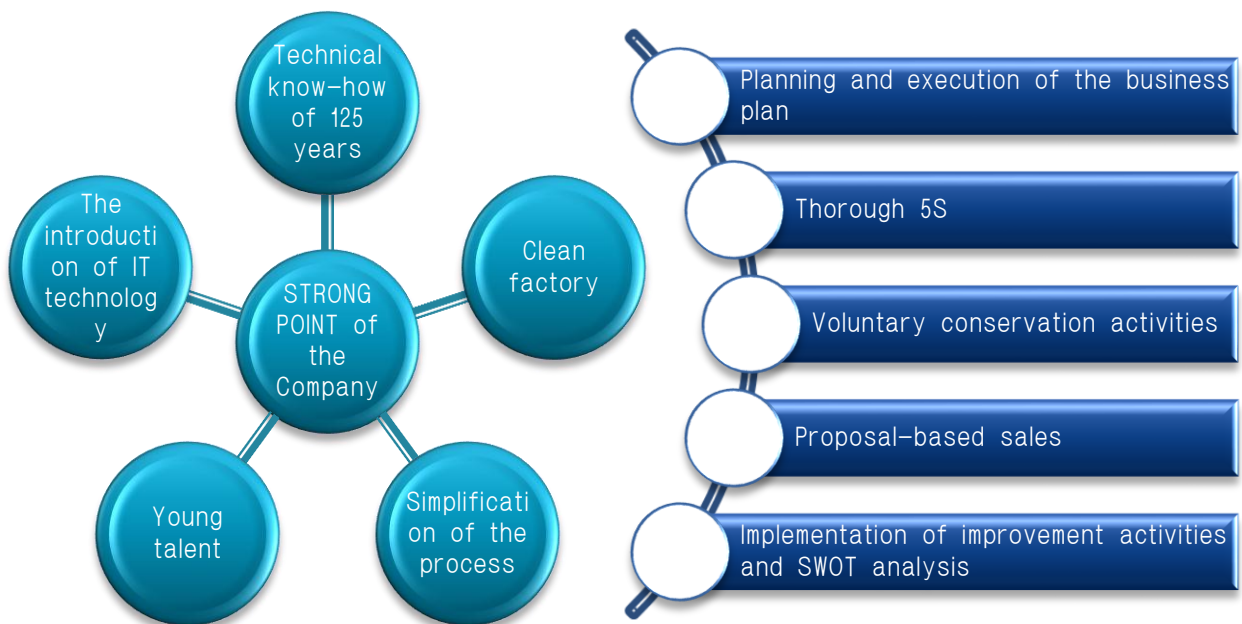
Strength of Business

A technique that has been accumulated for a long time (125years)

A tacit knowledge (craftsmanship) is being replaced by an explicit knowledge. In the Tokyo factory, we received many orders of a single casting, and designing the casting method was an important factor to be successful in one try. The design of the casting method by hand calculation using "Modulus" exceeded 4000 pages, and it was stored by paper. However, all of the designs of the casting method written in paper were computerized and put in a database by introducing a technique of database software "Cast Navi" produced by Japan Casting Association, and it became possible to search the data for a design of a casting method, a casting history, a defect, etc. any time.



In 2010, a part in the casting that had been a black box has been visually made clear by introducing a metal flow and solidification simulation software. We propose to our user the design of casting at an early stage of development using the simulation software.



Safety Education



We hold a safety patrol and a safety meeting monthly mainly by the safety committee. Not only the employees, but also all of temporary workers and trainees from Indonesia are participating.

We patrol the factory, and create reports on dangerous areas, etc. The chairman introduces examples and reports a current status of improvement measures, and we continue this as a common recognition.

Personnel that CAST Recruits



CAST supports young people. We encourage young employees to participate in a casting college where we make a system in which people can acquire various techniques and study chemical explication such as “what is casting?” and promote personnel who become a core of CAST to acquire a certification of casting engineer.

We look for active people who can participate in “making a thing” positively regardless of educational background, experience, and gender.

Shirakawa Factory

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| Transportation | Distance |
|-----------------------|---|
| Tohoku Shinkansen | Tokyo to Shinshirakawa (1 hr 23 min) (outbound), Hachinohe to Shinshirakawa (about 3 hr) (in-bound) |
| Driving (from Tokyo) | About 24 km from Shirakawa Interchange of Tohoku Expressway |
| Driving (from Sendai) | About 18 km from Yabuki Interchange of Tohoku Expressway |



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