



QUALITY PRIDE NIPPON CHUZO



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Our Challenge Continues beyond Centuries



We are a casting company founded in 1920 by Soichiro Asano, the founding father of Keihin Industrial Zone. Initially, our main focus was on producing cast components for ships, but during the war, we are designated as a military manufacturing facility. As such, we have overcome many challenges and difficulties to become what we are today. Over the years, we have supplied a wide range of cast components for the key industries of shipbuilding and steel as well as for various industrial machinery fields, and are proud to have contributed in some way to our nation's economic growth through our work. In the late 1960s, we began producing cast components for the construction industry, and a great number of NIPPON CHUZO products can now be found in bridges, buildings and other structures. Our products have been used in Tokyo Skytree, Haneda Airport, Tokyo Monorail, and many more major projects across Japan.

More recently, we have been also focusing on the development of high-performance metal materials, such as our proprietary low thermal expansion materials and high strength materials.

As the company marks the centenary anniversary in 2020, which coincide with the Tokyo Olympics, we renew our commitment to flexibly and speedily serving domestic and international needs through improved technological skills and quality, thereby further benefiting the society. We will mark our 100th anniversary in 2020—the same year as the Tokyo Olympic Games. Moving forward, we will endeavor to improve our unique technologies and product quality further while flexibly and promptly responding to all of society's needs both within Japan and beyond as we strive to be of use to people everywhere.

President
Masaru Washio



Three Key Advantages, Now and in the Future



NIPPON CHUZO has three key advantages – Product Development Capability for innovative products, Technical Capability for customer satisfaction and Teamwork for keeping up consistent high-quality & good services. Based on our three key advantages, we continue to provide high-value-added products.

01

Product Development Capability

We have enough R&D center consists of specialists with expertise, a huge variety of know-how and the latest facilities to produce new technologies and unique materials.



02

Technical Capability

We are always improving our technical standards for our customers' demands. Our organization with flexibility enables us to do so under collaboration between Engineering department and Production department based on an integrated production system.



03

Teamwork

Teamwork among each organization is necessary for us to work like a well-oiled machine. In addition to internal collaboration work among each organization of R&D, Engineering and Production, we are promoting external collaboration with JFE group companies through joint studies.



Technical Research Laboratory drives “QUALITY PRIDE”

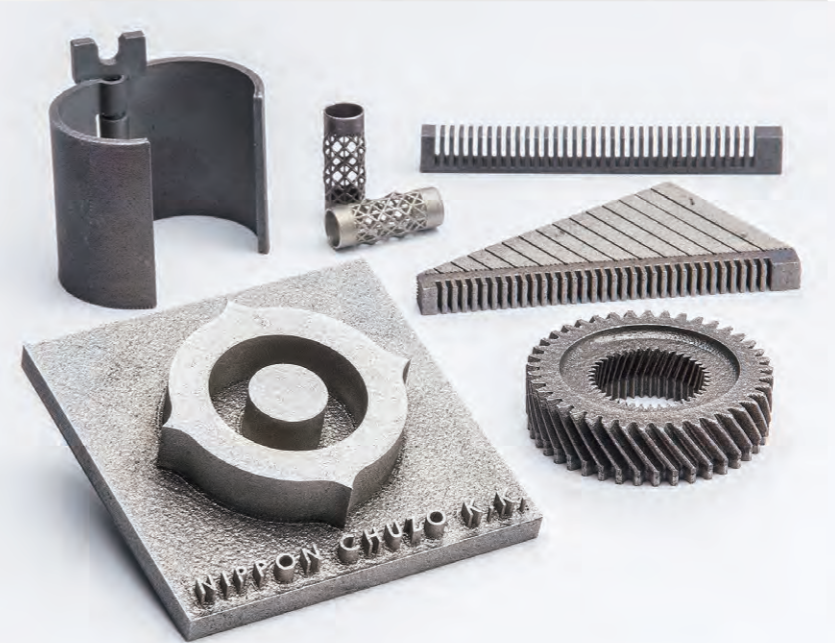
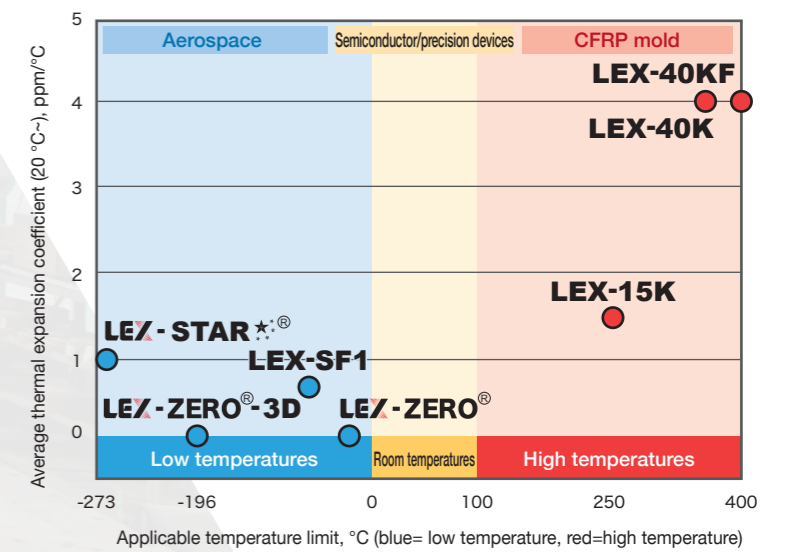
Technical Research Laboratory drives “QUALITY PRIDE”. We have LEX® series of low CTE* metals spotlighted in the market. We completed optimization of 3D additive manufacturing with LEX-ZERO®, an ultimate zero expansion metal. We are accelerating R&D activities addressing analysis of complicated internal structure, lightweight solution and shortening development cycle.

*CTE: Coefficient of Thermal Expansion



3D printer

LEX® product structure by temperature



Example 3D laminate-molded products

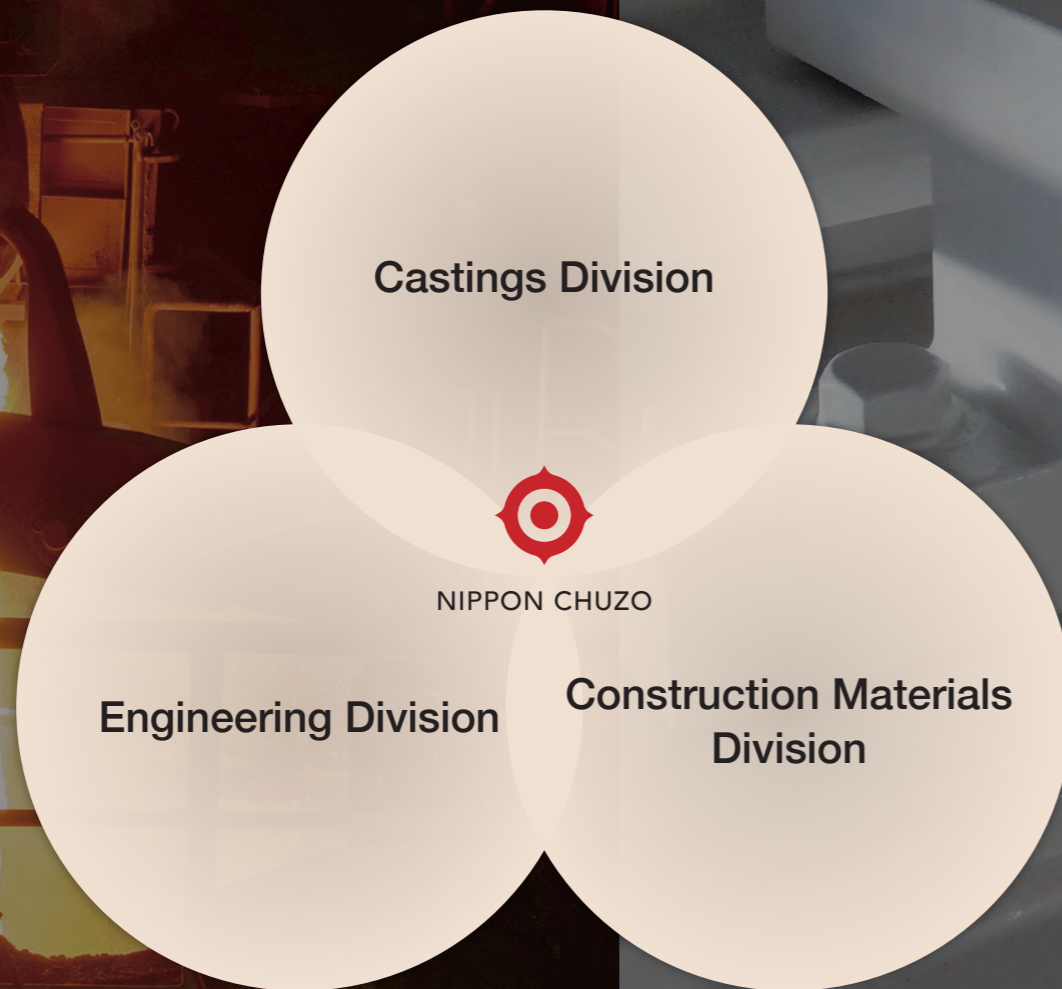


Electron probe microanalyzer



X-ray fluorescence spectrometer

We make the foundation for prosperity



NIPPON CHUZO operations are broadly divided into three domains: the Castings Division supplies a wide variety of casting products, the Engineering Division designs and manufactures bridge bearings and expansion joints, while the Construction Materials Division designs and manufactures joining brackets for construction applications and also supplies fixed pedestal materials.

Through the combination of these three operational domains, NIPPON CHUZO plays an important role in helping to create the foundations for lasting economic prosperity in terms of industrial activity, transport and logistics, and urban amenity.



Castings Division

Fusion of modern technology and expert's know-how

The castings business has been the core of NIPPON CHUZO since its foundation in 1920. Our casting products, a fusion of modern technology and expert's know-how, support various industrial fields with the built-in quality and performance.

Supply of casting products made of various materials to various industrial fields

The Castings Division supports the foundation of Japan's industry and economy, supplying from a few kilos to tens of tons of various casting products to various industrial fields.

Cast steel product examples

Construction machinery

Ultra large hydraulic excavator components



We produce shoes, tumblers, and idlers of ultra large hydraulic excavators and trailing arms of dump trucks, which are used in mines where iron ore, coal, copper are mined.

Thermal power plant related products

Turbine housings



NIPPON CHUZO supplies housings for steam turbines used at thermal power plants and elsewhere, including a great many large steel castings for power plants.

Industrial machinery/machine tools

Mighty Bar (MB)

Mighty Bar is a cast iron horizontal continuous casting bar used to make a wide variety of parts and components for machine tools, industrial machinery, hydraulic and pneumatic machines, spinning and weaving machines, electrical equipment, transportation machinery and metal molds.



Cast iron product examples

Iron-making/electric furnace related products

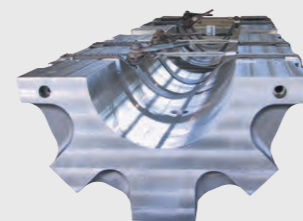
Direct casting molds



NIPPON CHUZO can produce high-quality and durable molds for steel manufacturing by directly casting molten iron with a stable grade. To date, we have produced products with a maximum individual weight of 100 tons (one of the largest in Japan).

Iron-making related products

UOE dies



We also supply many cast iron products which support the steel industry, such as molding dies to produce large pipes.

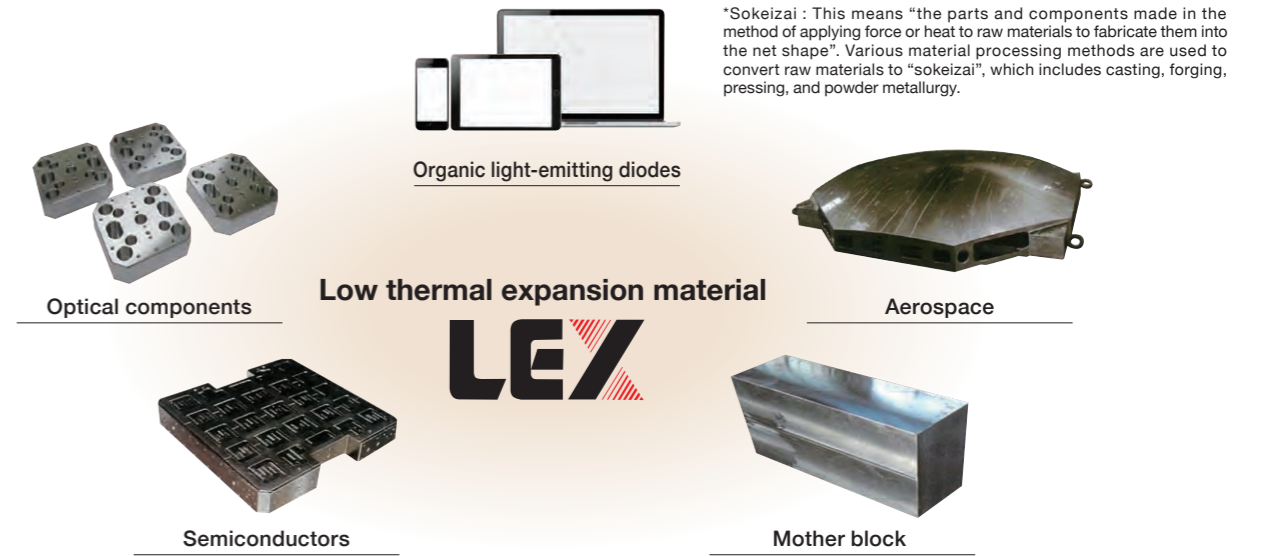
LEX® series support state-of-the-art technologies

- Covering Industries from Semiconductor to Aerospace -

Obtained patents

The 30th Formed and Fabricated Materials Industry Technology Award
Won the "Materials Process Technology Center President Award"
Sponsored by the Materials Process Technology Center, Incorporated Foundation

LEX® series are unique low CTE metal with moderate machining property. LEX is widely used as "Sokeizai"*. You can select suitable metals from diverse product lineup from CTE range such as LEX ZERO® of ultimate zero expansion to LEX 55 with half CTE of iron. As application, LEX® is used for Semiconductor Lithography Systems, Wafer Polishers & Lapping Machines and Molds for communication parabolic antennas and radars in aerospace.



*Sokeizai : This means "the parts and components made in the method of applying force or heat to raw materials to fabricate them into the net shape". Various material processing methods are used to convert raw materials to "sokeizai", which includes casting, forging, pressing, and powder metallurgy.

Cooperation with overseas manufacturers

NIPPON CHUZO is focusing on cooperation with overseas manufacturers. It is not only handling OEM products from China and Korea but also conducting technology exchange, technical instruction, and product inspection, utilizing its own casting technology and extensive experience.

[Foreign companies which supplies OEM products to NIPPON CHUZO: 31 companies]



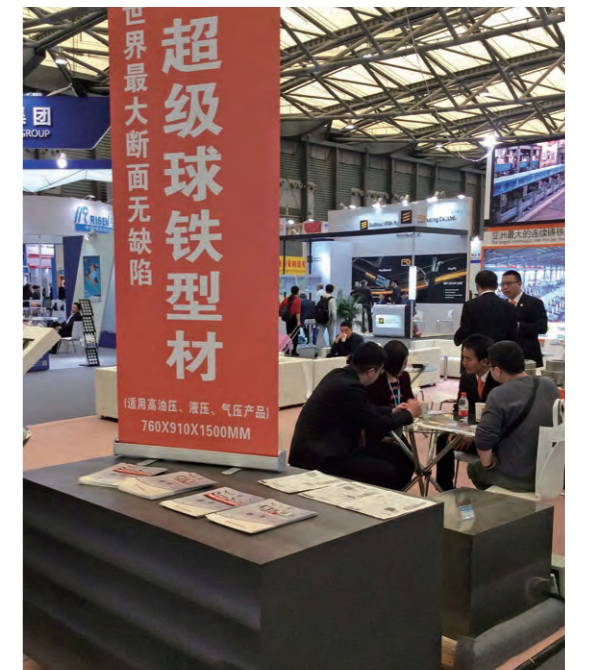
On-the-spot inspection and guidance (Wuxi, China)



The ceremony for the contract agreement of casting technical collaboration with Dalian Heavy Industries Co. Ltd.



Pre-shipment inspection of steel slag ladles (CITIC Heavy Industries Co. Ltd.)



Display at an international exhibition (Shanghai, China)

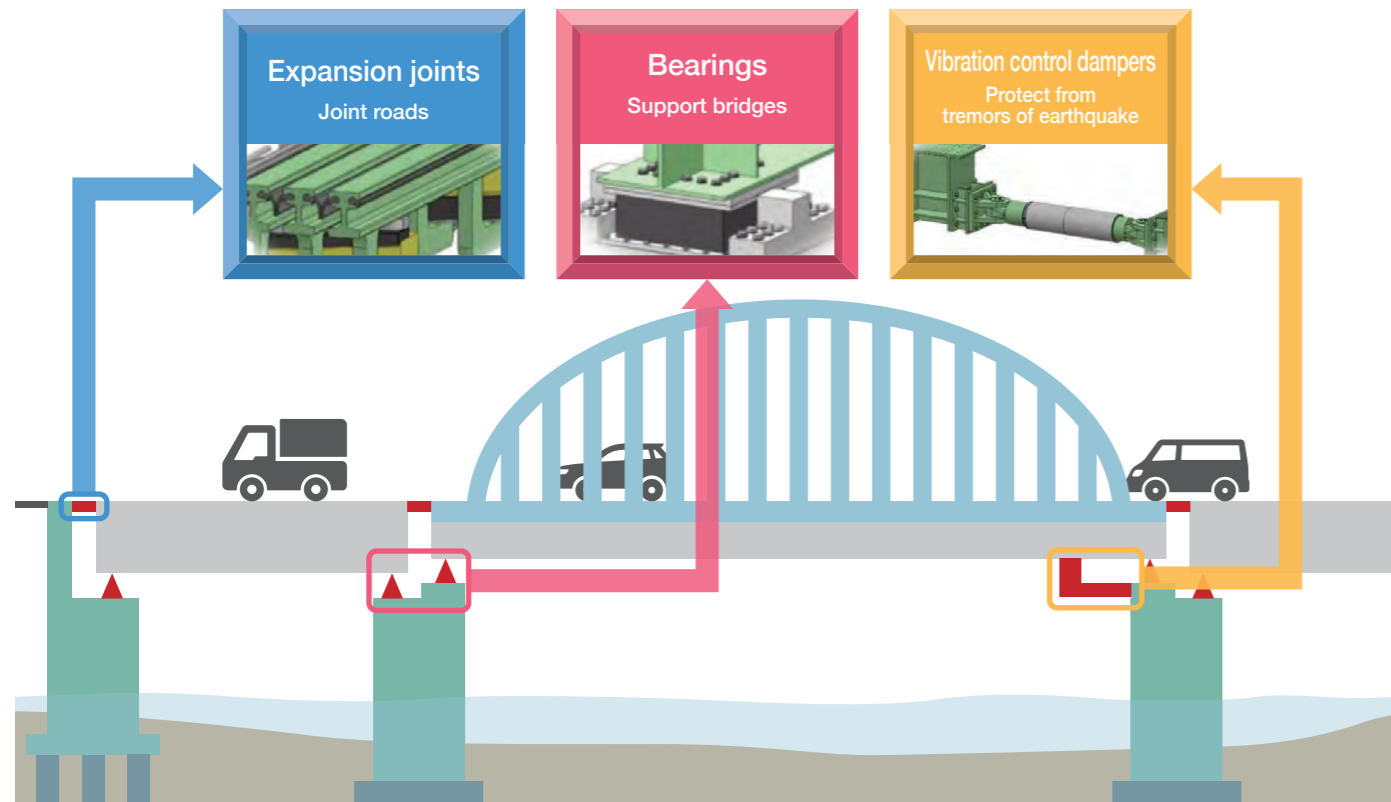
* For detailed information about the products, please visit our website (<http://www.nipponchuzo.co.jp/en/>)

Underlying strength of engineering to support social infrastructure

Engineering Division has established an integrated system from design to production based on an extensive knowledge of materials. It has produced many products meeting the demand of the times, which plays a key role for the infrastructure development and ensure safe and smooth transportation of people and goods.

NIPPON CHUZO's technological capabilities to support road bridges / railway bridges / any kinds of "bridges"

Engineering Division is coping mainly with accessories for bridges such as bearings, expansion joints, and dampers. These accessories have been used in many bridges in Japan and overseas. They are useful for not only new bridges but also life extension, maintenance, and management of many social infrastructure assets which were intensively developed in Japan's high economic growth period and are aging currently.



NIPPON CHUZO's commitment to quality standards

Playing a key role for social infrastructure development, Engineering Division ensure high quality standards of various components for bridges.



Road bridges / Railway bridges

Based on our technology accumulated for many years, Engineering Division contribute to the safe passage of vehicles and pedestrians, determining how the bearing can transmit horizontal/vertical loads to the base structure and how reliably the expansion joint can absorb displacement of the upper structure in accordance with the size, structure, and surrounding environment of the bridge.



Seismic reinforcements

Japan has experienced great earthquakes such as the Southern Hyogo Prefecture Earthquake, Off the Pacific Coast of Tohoku Earthquake, and Kumamoto earthquake. Engineering Division will continuously support social infrastructure against such great earthquakes and other natural disasters by using our latest technology.

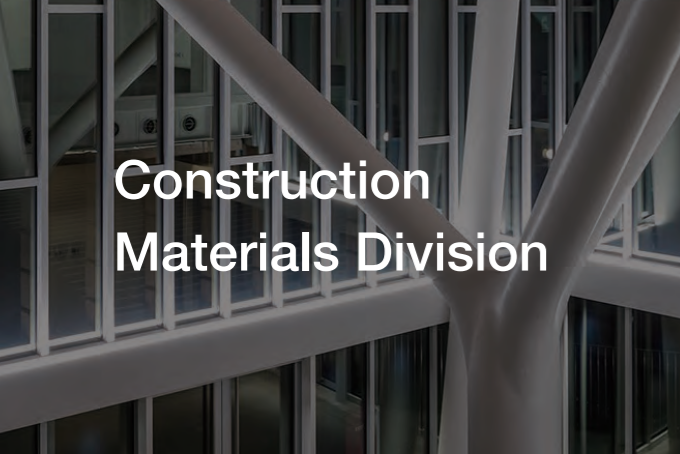


Overseas project

Engineering Division also contributed to the construction of overseas social infrastructures based on design / manufacturing technology developed and accomplished in Japan.



* For detailed information about the products, please visit our website (<http://www.nipponchuzo.co.jp/en/>)



Construction Materials Division

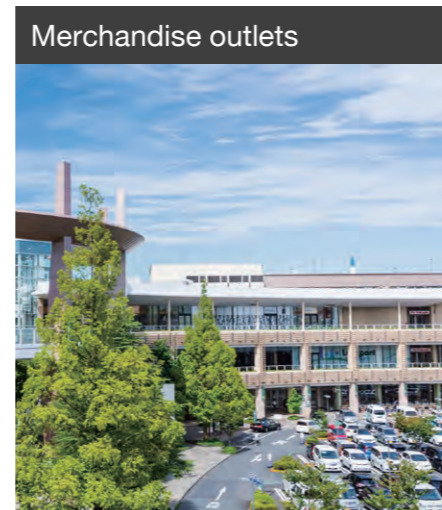
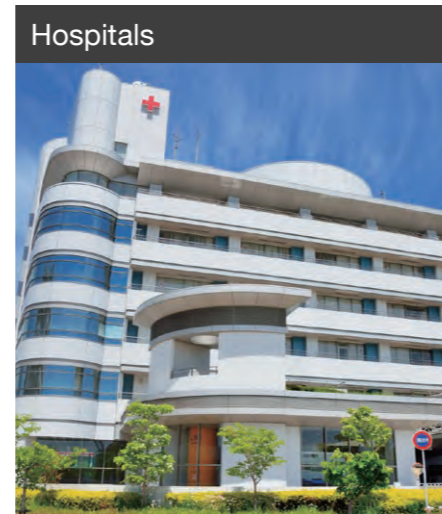
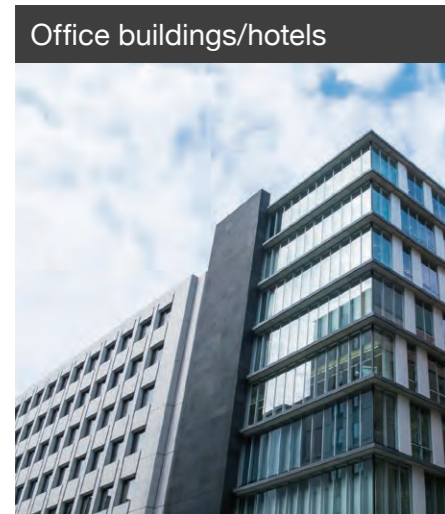
Providing strength and beauty to large scale building structures

Our advanced designing/casting technology is effectively used in the products and construction methods, which provide strength and beauty to large-scale building structures called landmarks and help to enhance urban functions.

“NC Base P (NIPPON CHUZO base plate)” realizes tough/flexible and disaster-resistant construction

Japan is an earthquake country. To realize building structures we can live in with security, we developed “NC Base P”. “NC Base P” is used in the most important part, a column base, which connects the building structure to the foundation. “NC Base P” is featured by great seismic energy absorbing capability (certified by the Minister of Land, Infrastructure, Transport and Tourism, and obtained the rating for the construction method). The builders certified by NIPPON CHUZO perform fixing of anchor bolts, which is the core of the quality, to further ensure quality assurance of the building structures. The NC Base system has been utilized in a diverse range of buildings, supporting people’s lives throughout Japan.

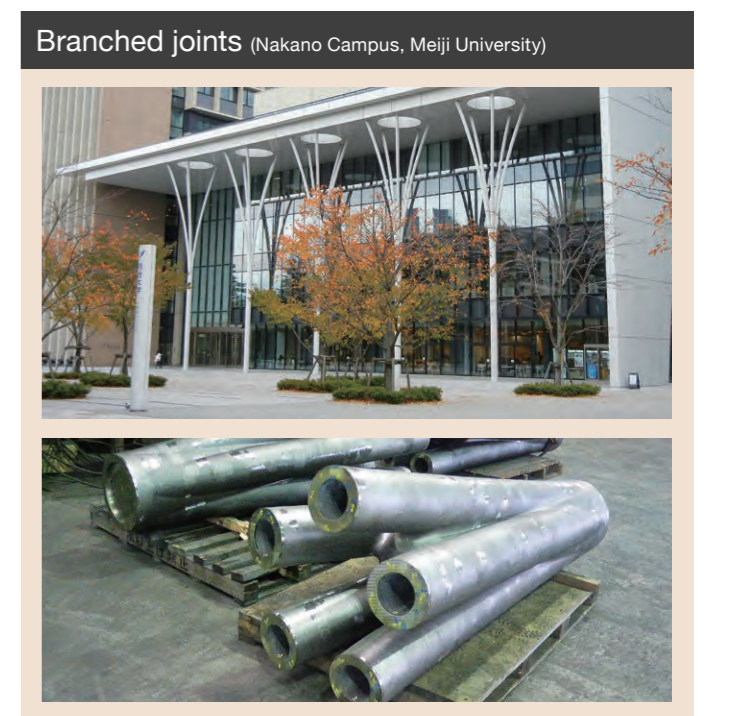
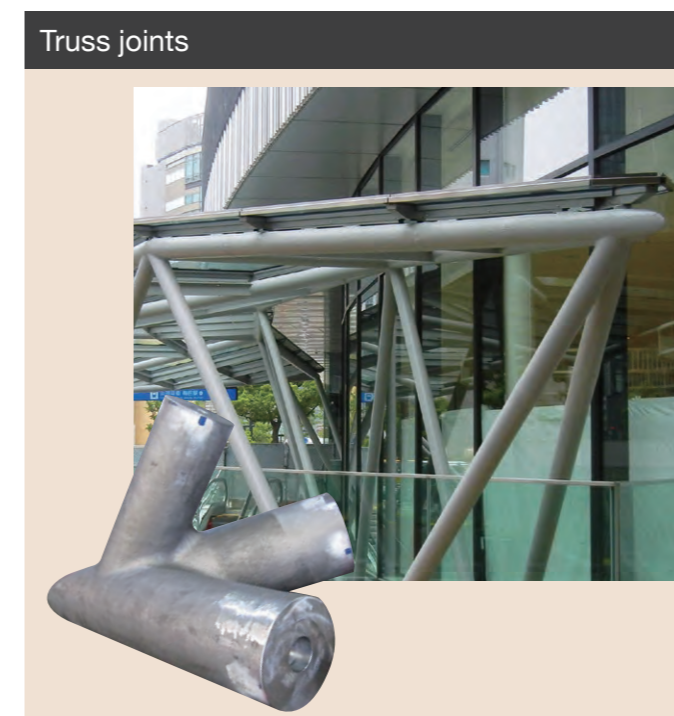
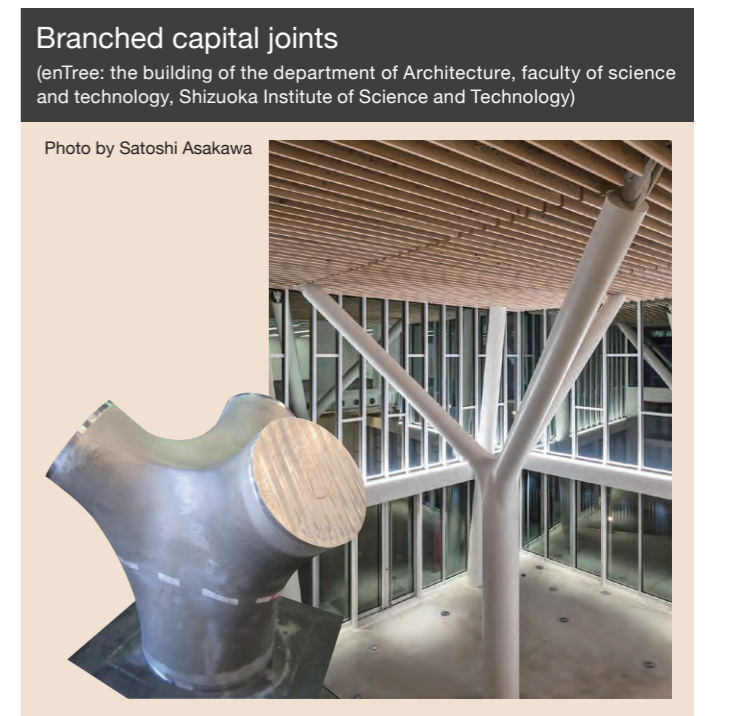
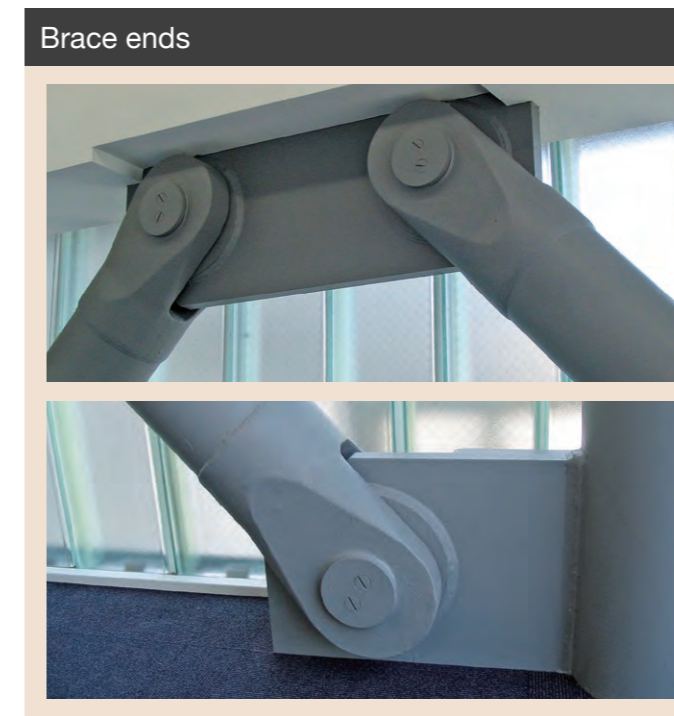
■ Main fields “NC Base P” is used for



Developing the joints with integrated functionality and aesthetic design

In the field of architecture and landscape, we provide mainly joint hardware for building structures. Our division not only meets the performance required for building structures but also proposes the products with integrated functionality and aesthetic design to maintain/improve the urban landscape. Designing technology to realize the requirements and casting technology to embody it faithfully. By integrating both of them we make it possible to produce products of any weight/shape and apply them at any part. Thus we continuously meet the needs with an increase in height and size of building structures.

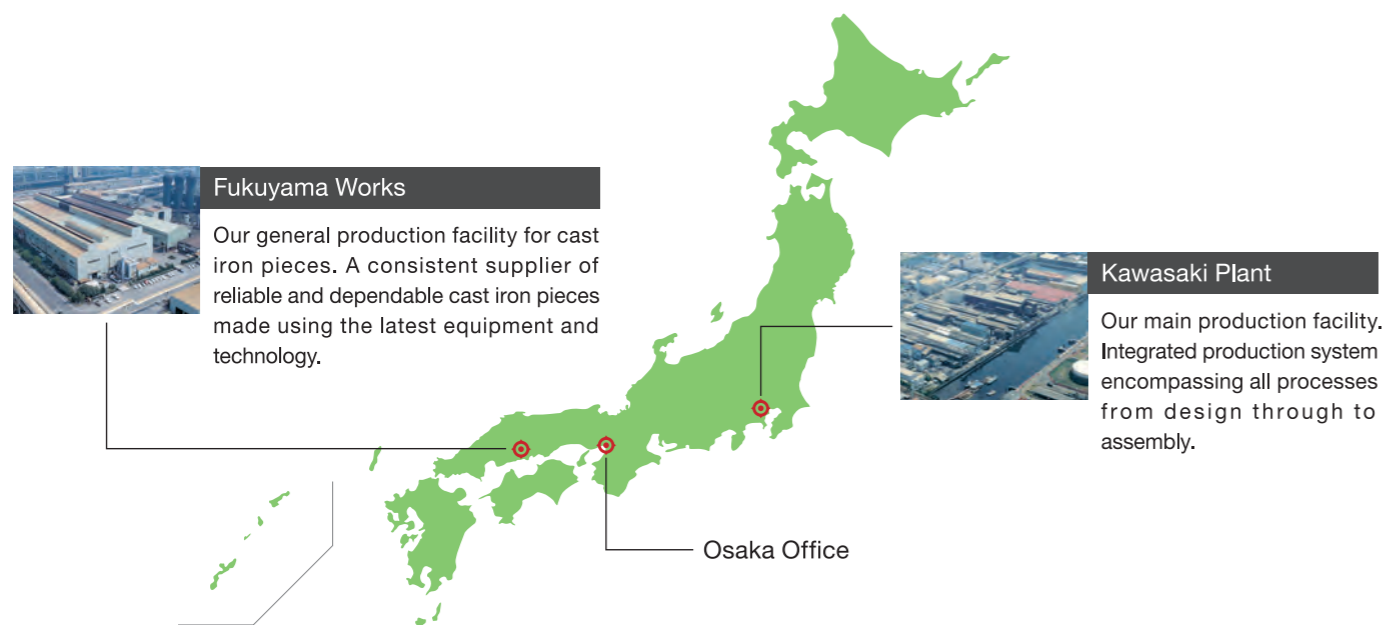
■ Representative accomplishments



* For detailed information about the products, please visit our website (<http://www.nipponchuzo.co.jp/en/>)

Corporate Information

Production facilities



Main equipment

Kawasaki Plant

■Melting facility		■Research / inspection equipment	
Electric furnace EII type 25T 6000kVA	1	3D printer EOS M290	1
Molten metal holding furnace (HSR) EII type 25T 4000kVA	1	Vacuum high frequency induction furnace 10kg	1
High frequency induction furnace 1 power unit 3 furnaces 4T×2, 8T 2850kVA	3	Formastor	1
Ladle heating vacuum degassing equipment (LAVD) 8T 2000kVA	1	C/S analysis device	1
Atmosphere adjustment casting equipment (CAC) 40 m3 capacity	1	O-N analysis device	1
■Molding equipment		X-ray fluorescence spectrometer	1
Sand molding equipment Continuous mixer 30T/H, and others	1	Laser thermal expansion meter	1
Sand recovery and reuse processing equipment Rotary reclaimer	2	Electron microscope (EPMA)	1
■Heat treatment equipment		500J Semi-automatic Charpy impact testing device (automatic setting function)	1
Heat treatment furnace City gas combustion type	6	Rapid biaxial testing machine (vertical load 2MN, horizontal load 1MN)	1
■Machine tool equipment		Magnetic, ultrasonic detector	14
Solid lathe, horizontal boring machine, and others 6.5MTL, MAF, 3MTL×2, BF×2	6	Solidification analysis system	1
Woodworking machine tool, layout machine, and others Woodworking machine ×9, layout machine ×5	14		
Assembly line for bearing and expansion	1		

Fukuyama Works

■Melting equipment		■Machine tool equipment	
Low frequency induction furnace 8T 2650kVA, 15T 3500kVA	2	Horizontal boring machine, cutting machine, etc.	6
Molten metal holding furnace 20T 350kVA	1	■Other equipment	
■Casting equipment		Material testing machine	3
Horizontal continuous casting equipment	2	High performance emission spectrometer	1
■Molding equipment			
Sand molding equipment Continuous mixer 30T/H, and others	1		
Sand recovery and reuse processing equipment Rotary reclaimer, and others	1		
■Heat treatment equipment			
Heat treatment furnace C gas combustion type	1		

About us

Trading name	NIPPON CHUZO K.K.	
Head office	2-1 Shiraishicho, Kawasaki-ku, Kawasaki City, Kanagawa Pref. 210-9567 Tel: 044-322-3751 Fax: 044-344-4022	
Offices	Osaka Office	3rd Floor, Sankyo honmachi Building, 1-10-24 Utsubohonmachi, Nishi-ku, Osaka City, Osaka Pref. 550-0004 Tel: 06-6445-3326 Fax: 06-6445-3327
Plants	Kawasaki Plant	2-1 Shiraishicho, Kawasaki-ku, Kawasaki City, Kanagawa Pref. 210-9567 Tel: 044-322-3751 Fax: 044-344-4022
	Fukuyama Works	JFE Steel West Japan Works, Fukuyama precinct 1 Kokancho, Fukuyama City, Hiroshima Pref. 721-0931 Tel: 084-941-2716 Fax: 084-941-9976
President	Masaru Washio	
Founded	September 1 1920	
Capitalization	¥2,627,973,000	
Shares	Listed on the TSE Standard Market	
Main business activities	<ul style="list-style-type: none"> • Supplying large castings, special castings, cast iron, new casting technologies and formed and fabricated materials, particularly for casting machinery • Engineering services in relation to bearings and expansion joints • Construction materials for NC base plates, buildings and structures and Landscaping products 	

Affiliates Datto Co., Ltd. (Design, manufacture and supply of construction materials for roads and bridges)

ISO 9001:2015 Quality Management System accreditation

Accreditations ISO9001:2015 JIS Q9001:2015

Scope/products

- Design and Development, and Production of Carbon Steel Castings for Parts of Construction Machine and Others, Alloy Steel Castings and Forgings for Parts of Semiconductor and Liquid Crystal Production Equipment and Others, Alloy Castings and Alloy Iron Castings for Plant-Related Parts and Others and Three-Dimensional Additive Manufacturing Products.
- Production of Gray Iron Castings, Spheroidal Graphite Iron Castings, Spheroidal Graphite Iron Castings with Heavy thickness (Super-Ductile) and Horizontal Continuous Iron Bars (Mighty Bar) for Industrial Machinery and Mold parts of Steelmaking and Others.
- Design and Development, Production and Installation of Bridge-bearings, Expansion Joints of Bridges
- Design and Development, Production and Installation of Base Plate (NC Base) and Steel Castings for Structure
- Sales of all products above

Class NK registration 99-154