

Corporate Profile



Realize your dreams

At IHI Group, we design and build progressive engineering solutions for people and planet.

Our heritage is built upon a shared culture of striving for the highest standards in every facet of our business. This approach commits all relationships to our management philosophy of contributing to the development of society through technology.

We work alongside customers, stakeholders and fellow employees to deliver outcomes that positively affect the world and its inhabitants. This powers our relationships to greater outcomes, and also makes good commercial sense. At our core, we are people who apply forward thinking to find lasting solutions to the toughest problems.

IHI Group. Realize your dreams.

Index

Corporate Message/Index	2-3	Business Index	18-31
Historical Highlights	4-5	Domestic Network and Main Works	32-33
Management message	6-7	Main Group Affiliates and Works in Japan	34-35
Business Areas/Shared Group Functions	8-9	Global Network and Works of Overseas Affiliates	36-37
CSR Activities	10-11	Company Profile/Net Sales	38
For realization of Group Management Policies 2019	12-13	Websites	39
Topics	14-15	Our Offices Around the World	40
Creating the future with Technology & Intelligence Integration	16-17		

Historical Highlights

IHI helped pioneer Japan's heavy industry. We started out by accumulating shipbuilding technology that we applied to industrial machinery, plant manufacturing and construction. Now we are a key provider of massive elements of industrial and social infrastructure.

Our products underscore our management philosophy of contributing to the development of society through technology.



1853

Ishikawajima Manufacturing Shipyard established to protect to invasion of western countries, after a fleet under U.S. Commodore Matthew Perry arrived

The Mito clan set up this facility on instructions from Japan's feudal government.



1866

Completed the Chiyodamaru, Japan's first steam-powered warship

This vessel employed the first naval steam engine manufactured in Japan.



1876

Established Ishikawajima Hirano Shipyard

Tomiji Hirano set up the nation's first private sector shipyard.

Eiichi Shibusawa was heavily involved in funding the company when it was starting up, helping to organize its operations.



1907

Established Harima Dock Co., Ltd.

Seitaro Karahata, the head of Aioi village (now Aioi City) in Hyogo Prefecture, established that firm.



1911

Completed steel structures for Tokyo Central Station (now Tokyo Station)

The company broke away from the convention of erecting a scaffold, winning accolades among architects by using two movable cranes instead.



1945

Produced the Ne20, Japan's first jet engine

The engine powered the successfully maiden flight of Japan's first jet.



1959

Established Ishikawajima do Brasil Estaleiros in Brazil

This was the first Japanese-owned shipyard overseas and heralded the overseas expansion of Japanese companies.



1960

Established Ishikawajima-Harima Heavy Industries Co., Ltd.

This was the fruit of a merger between onshore machinery leader Ishikawajima Heavy Industries Co., Ltd., and Harima Shipbuilding & Engineering Co., Ltd., a top player in its sector.



1978

Built the world's first barge-mounted pulp manufacturing plant specifically for Brazil


IHI built this 230-meter facility, mounted it on a barge, and towed it to Brazil.



1997

Constructed large shield tunneling machine for Tokyo Bay Aqualine

With a diameter exceeding 14 meters, this machine dug a 2,853-meter tunnel under Tokyo Bay.



2002

Delivered Japan's first tower boiler

We delivered this 600MW boiler to the Isogo Thermal Power Station. The second boiler that we delivered to that facility, in 2009, attained the world's highest steam condition.

(Photo provided by J-Power (EPDC))



2007

Company name changed from Ishikawajima-Harima Heavy Industries Co., Ltd., to IHI Corporation

Group seeks to become an advanced global brand.



2011

Participating in a project for an advanced GENx jet engine

We have a roughly 15% share in the international program for this jet engine, which offers significantly improved fuel economy.



2013

Epsilon Launch Vehicle

This solid, next generation propellant launch vehicle delivers high performance and low cost.

(photo courtesy of JAXA)



2015

Reached total production of 50 million turbochargers for vehicles

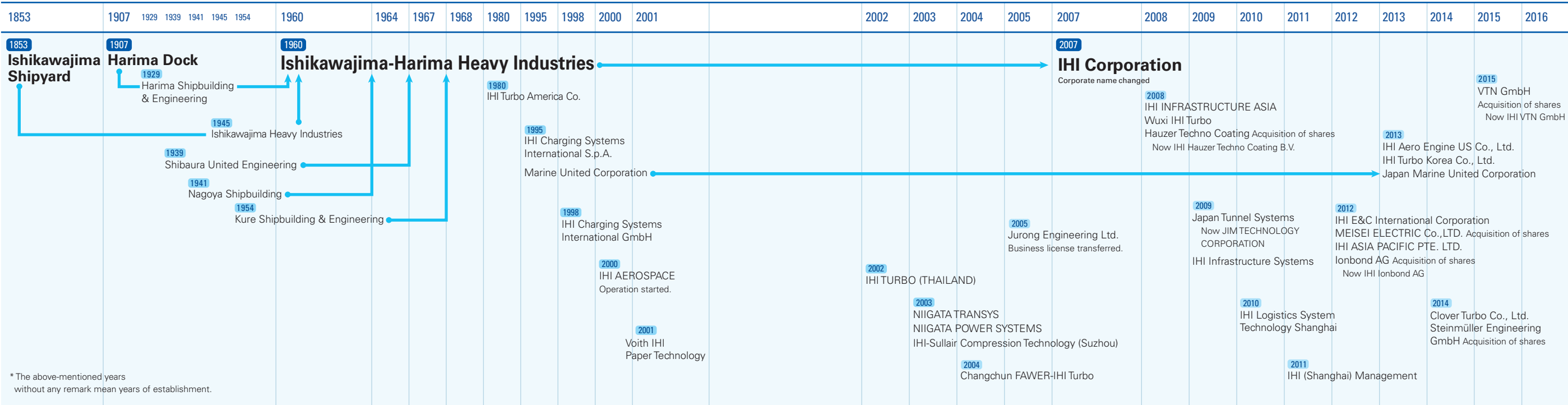
The IHI Group's total production of turbochargers reached 50 million units. We will expand production and sales activities worldwide while meeting various needs based on our highly reliable development and production technologies.



2016

Osman Gazi Bridge, Turkey's longest suspension bridge, opens to provide a crossing over Izmit Bay

Crossing western Turkey's Izmit Bay from south to north, the 1,550-meter structure is the world's fourth-longest suspension bridge.



Management message

Transforming Our Businesses to Contribute to Social Sustainability

It is a pleasure to overview the activities of the IHI Group, which I am honored to lead.



President and Chief Executive Officer
Tsugio Mitsuoka

IHI was established as the Ishikawajima Shipyard in 1853. We have since evolved into a comprehensive heavy industry manufacturer that can contribute to social progress by relentlessly pursuing technological excellence and by cultivating advanced engineering capabilities.

A Changing Social Environment

The social environment is changing faster than we envisioned. While rapid innovations in the Internet of Things, information and communication technology, artificial intelligence, and other digital technologies are transforming the industrial structure and work practices, social issues including global warming have been increasing. We are thus pushing ahead with efforts to materialize social sustainability by safeguarding the environment while pursuing social progress to tackle these challenges.

Becoming an Enterprise that can Contribute to Social Sustainability

Under such circumstances, the IHI Group formulated Group Management Policies 2019. This new management plan defined our approach to contributing to social sustainability from long-term perspectives by tackling social and customer issues and creating new value. Launched in fiscal 2019, this three-year initiative aims to materialize that objective by flexibly and suitably reorganizing our businesses while becoming an enterprise that can produce new value for society and our customers.

Three Business Transformation Initiatives

We are accelerating changes in three respects while reinforcing our management foundations by cultivating human resources as change drivers, pursuing safety and quality, and boosting risk management.

Accelerate aftermarket business development with customers from lifecycle perspectives

- We will involve ourselves closely in customer operations from overall lifecycle perspectives to reinforce the technological capabilities and expertise amassed in supplying hardware while accelerating the development of aftermarket businesses to help resolve customer challenges.

Create a lean and flexible operational structure

- We will optimally allocate people, funds, and other management resources to growth and priority areas and build a management structure that remains robust amid change.

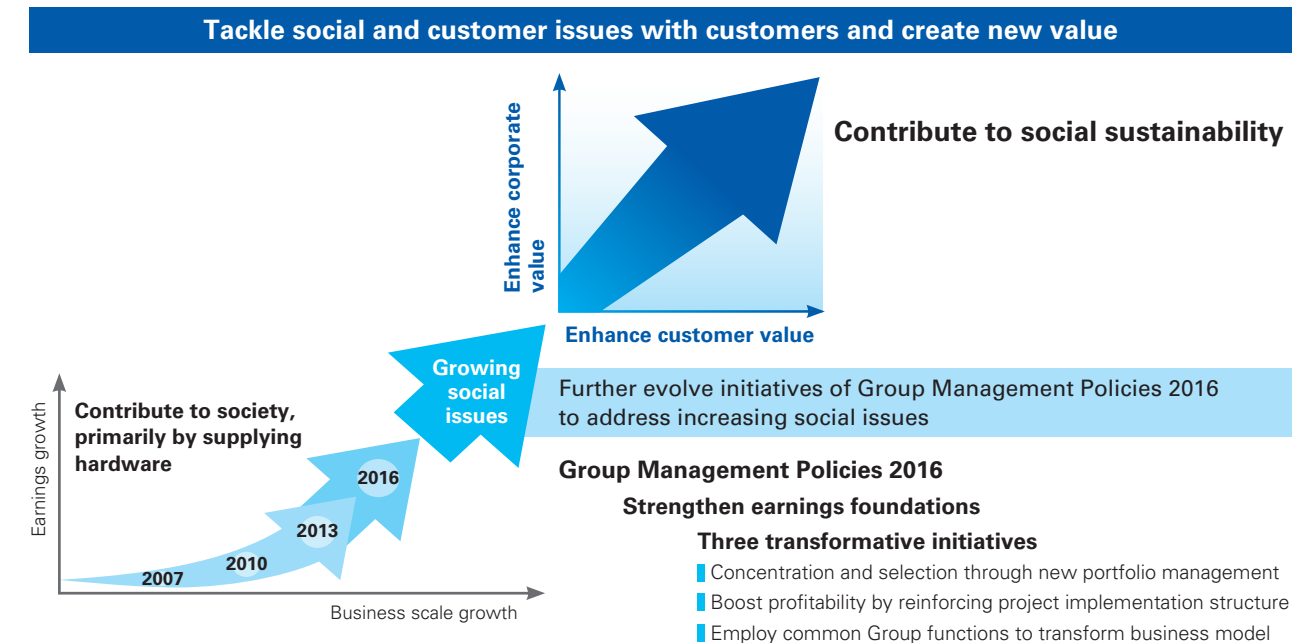
Transform our business model to create value

- We will help materialize social sustainability by accelerating efforts to transform our business model to produce new value in the years ahead.

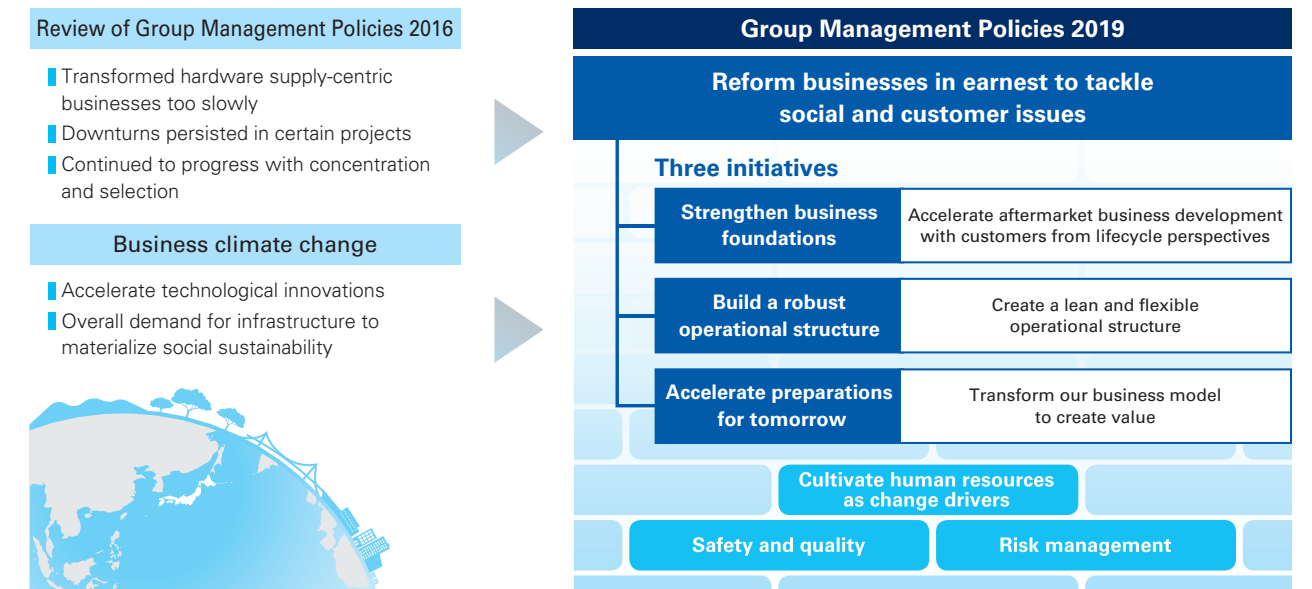
IHI launched Group Management Policies 2019 in fiscal 2019.

Under this initiative, the IHI Group defined its approach to contributing to social sustainability from long-term perspectives in light of a changing social environment. To materialize that objective, it set about tackling social and customer issues, reorganizing businesses, and transforming itself during the three years of the plan into an enterprise that creates new value.

Long-Term Approach Under Group Management Policies 2019



Initiatives Under Three Years of Group Management Policies 2019



Business Areas

IHI has four business areas, namely Resources, Energy & Environment Business Area; Social Infrastructure & Offshore Facilities Business Area; Industrial Systems & General-Purpose Machinery Business Area; and Aero Engine, Space & Defense Business Area. Its three shared Group functions are corporate business development & solution, intelligent information management, and global marketing & sales.

Resources, Energy & Environment Business Area

Contribute to carbon-free and recycling societies by providing optimal integrated solutions for each region and customer



- Power systems
- Boilers
- Nuclear energy
- Plants
- Asian base EPC

Large-scale tower type boiler
(Photo is provided by J-POWER (EPDC))

Social Infrastructure & Offshore Facilities Business Area

Contribute globally and across life cycles to materialize safe and secure social infrastructures, centered on bridges and tunnels




- Bridges and watergates
- Shield systems
- Concrete construction materials
- Transport systems
- Urban development

Osman Gazi Bridge across Izmit Bay

We will properly identify diversifying customer value and strengthen collaboration on shared Group functions while both business operation divisions and the shared Group functions co-create values to accelerate a transformation of our business model and create customer value.

Industrial Systems & General-Purpose Machinery Business Area

Contribute to industrial infrastructure progress by thoroughly optimizing operational lifecycles with customers



- Turbochargers for vehicles
- Parking
- Transport machinery
- Rotating machinery
- Heat treatment and surface engineering
- Logistics and machinery
- Agricultural machinery and small power systems

Turbochargers for vehicles

Aero Engine, Space & Defense Business Area

Leverage advanced technology to open new vistas for air transportation, defense systems, and space utilization, and help materialize social comfort and safety



Position ourselves as a key global aerospace industry player, drawing on unique technologies and manufacturing capabilities based on a robust quality assurance system

- Aircraft engines
- Rocket systems and space exploration
- Defense equipment and systems

GENx turbofan engine

Shared Group Functions

Corporate Business Development & Solution

Corporate business development & solution which is cross-department function resolves groupwide business issues and creates businesses in response to diversifying customer values and changes in the social environment.

Intelligent Information Management

The shared function "intelligent information management" takes the lead in driving IHI's digital transformations with business areas and strategic business units, using the Internet of Things, artificial intelligence, machine learning, and other advanced information and communication technologies.

Global Marketing & Sales

Through integrating management of domestic and overseas sites, and promoting digital transformation efforts, we will accelerate reform of business models with the aim of dynamic global expansion of the IHI Group and enhancement of the customer value we provide.

CSR Activities

Meeting the expectations of society is an important corporate social responsibility for the Group. We will materialize social sustainability by endeavoring to satisfy all stakeholders, from customers, business partners, shareholders, and colleagues to communities everywhere to enhance our value as an entity.

CSR Structure

We established a CSR Committee in FY2013 to discuss and promote CSR-related matters, including basic Group policies and measures. The president chairs this committee, with the director in charge of CSR serving as vice chair. Committee members include directors and division heads.

CSR in Business Activities

The IHI Group helps materialize Sustainable Development Goals by providing products and services that foster economic development and environmental protection, contributing to social sustainability.

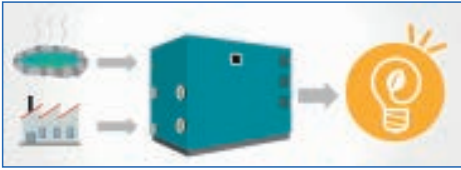


Environmental Activities

Part of the IHI Group's mission is to reduce the ecological impact of its operations and protect the environment. Based on our action guidelines for environmental activities, we formulate plans every three years and undertake initiatives in line with our management policies.

Reduce environmental burdens through business activities

The Group offers a wide range of products and services that help resolve such environmental issues as climate change and resource recycling. We use exhibitions and our website to publicize ways in which our products and services help resolve environmental issues.



Example of binary power generation

Factoring Biodiversity into Business Site Administration

About 71% of the Aioi Works is covered by vegetation that is home to a lot of flora and fauna, including rare species. We therefore ensure that the facility is sustainable plant by enabling people and nature to co-exist. In FY 2018, we adopted a construction method that uses materials derived from nature to prevent damage from landslides. Employees helped plant native species at the site that help safeguard from disasters and contribute to greenery. In recognition of these efforts, we received the sixth certification from the Association for Business innovation in harmony with Nature and Community.



Planting activities at Aioi Works

Community Service

The IHI Group provides value to society by making employees aware that they are part of society and by extending CSR beyond its operations. We undertake various community service initiatives based on three priority themes.

Harmonizing with communities

- Holding events to engage with residents
- Conducting factory and construction site tours
- Introducing products and technologies
- Providing support in disaster-affected areas
- Supporting cultural and arts events

Cultivating tomorrow's leaders

- Holding workplace experiential gatherings
- Accepting interns
- Holding manufacturing and science classes
- Supporting university scholarships
- Assisting research projects at universities and other institutions

Environmental protection

- Tree planning and thinning activities
- Environmental beautification activities
- Biodiversity initiatives
- Supporting cleanup activities by local governments and other entities

Supporting Wheelchair Basketball

The IHI Group has been an official sponsor of the Japan Wheelchair Basketball Federation since 2015. We have held wheelchair basketball events for local residents at business sites around the nation, including exhibition match and games for people to experience playing basketball in wheelchairs. We also provide facilities for practice and training camps. We will draw on our headquarters location in Tokyo, host of the 2020 Olympics and Paralympics, to contribute to the success of tournaments and the popularity of wheelchair basketball.



Wheelchair basketball experience gathering at Soma Works

► **CSR Information** <http://www.ihi.co.jp/csr/english/>

For realization of Group Management Policies 2019

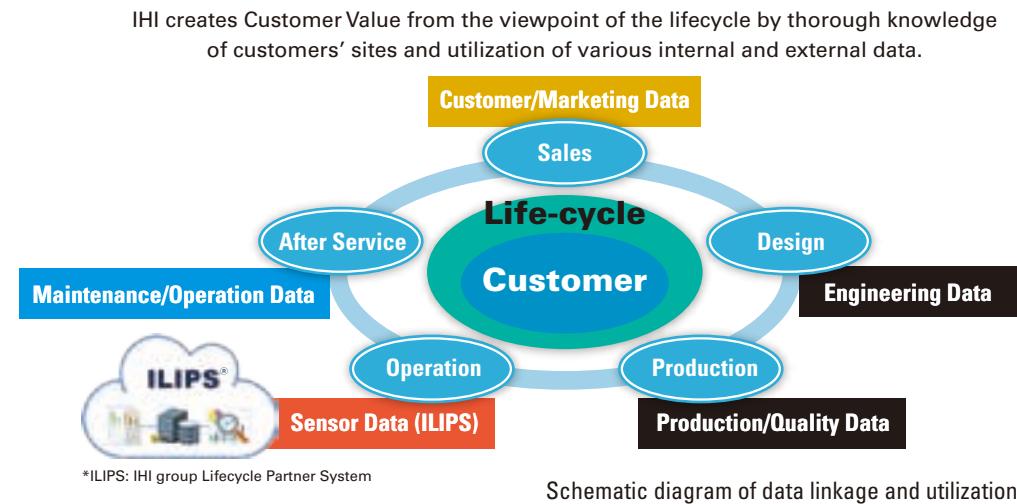
—Strategies to create new value—

We aim to evolve into IHI group that directly tackles problems of society and customers. To realize the aim, in parallel with formulation of “Group Management Policies 2019” and business strategies in business areas, we formulated “Group IoT/ICT Strategy 2019” and “Group Technology Strategy 2019”.

Group IoT/ICT Strategy 2019

We set, on the main concept of “Group IoT/ICT Strategy 2019”, to aim at “the creation of Customer Value and solution of social problems that only IHI can realize with the digital technology”. Specifically, to realize the concept, we will promote digital transformation (hereinafter, DX) in business areas and prepare platforms for supporting DX. Along with the maximum use of IoT/ICT, we will attempt to use the data accumulated through longtime business of IHI group and the data to be acquired from now on with AI/data analysis. Through these measures, we will tackle “problems of customers and society” such as manpower reduction, maximization of efficiency and optimization of operations from the point of view of the lifecycle.

We have declared “four changes”: “the change of business models”, “the change of manufacturing”, “the change of business operations”, and “the change of links”. And together with customers, we will attempt to do what only IHI can such as suggestion of new value, advanced manufacturing, and optimization of business processes. To realize the attempt, adding to various platforms, people capable to promote DX in addition to having a thorough knowledge of both customers’ sites and our products and service are required, therefore we have tried to train IoT/ICT-talented people. By further promoting these attempts, we will make an effort to create Customer Value and to resolve social problems through “people” and “the digital technology”.

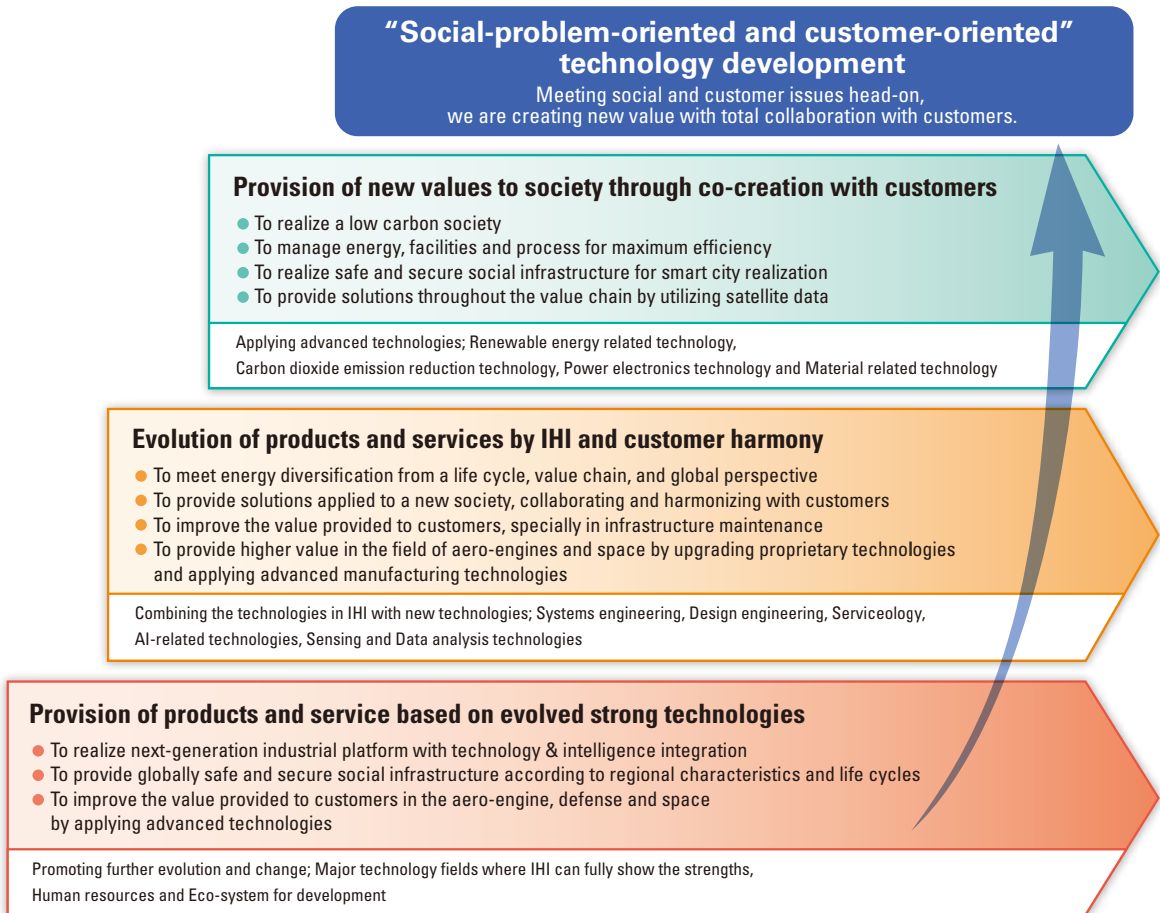


Group Technology Strategy 2019

The main concept of “Group Technology Strategy 2019” is to break away from a conventional technology-oriented R&D and to transform into social-problem-oriented and customer-oriented technology development. We have slogans of “Struggle for society & customers challenge” and “Beautiful harmony by open innovation”. We create a new value through technology development in order to satisfy customers in many ways including quality through their longtime use of IHI products and service.

IHI group solves social problems through following plans of technology development.

- (1) Provision of products and service based on evolved strong technologies
The major technology fields where IHI can fully show the strengths are high-speed rotating machineries, combustion/thermal/fluid management, simulation technology, marriage of sensing and machinery data, materials engineering, and production technologies represented by welding. As for these technical fields, we will pursuit further evolution and provide products and service that customers truly need.
- (2) Evolution of products and services by IHI and customer harmony
Harmonizing with customers, we evolve products and service more valuable for customers. Moreover, we provide solutions applied to a new society like a new mobility society. We realize customers’ needs combining the technologies in IHI with new technologies such as systems engineering, design engineering, and serviceology in addition to AI-related technologies, sensing, and data analysis technologies in the open form.
- (3) Provision of new values to society through co-creation with customers
In recent years, society takes a growing interest in safe and secure energy, particularly in production, smart use and various kinds of reuse. The electrification of vehicles and the automation of driving are global mega trends. Moreover, the shortage of manpower in various areas has become a serious problem. To overcome these problems and provide new values in societies and customers, we conduct the energy-related technology developments to achieve CO₂-free society, and the technology developments related to the electrification and the automation. Furthermore, we will steadily provide new values to society through installing and validating new technologies in infrastructure system to promote for regional creation and vitalization.



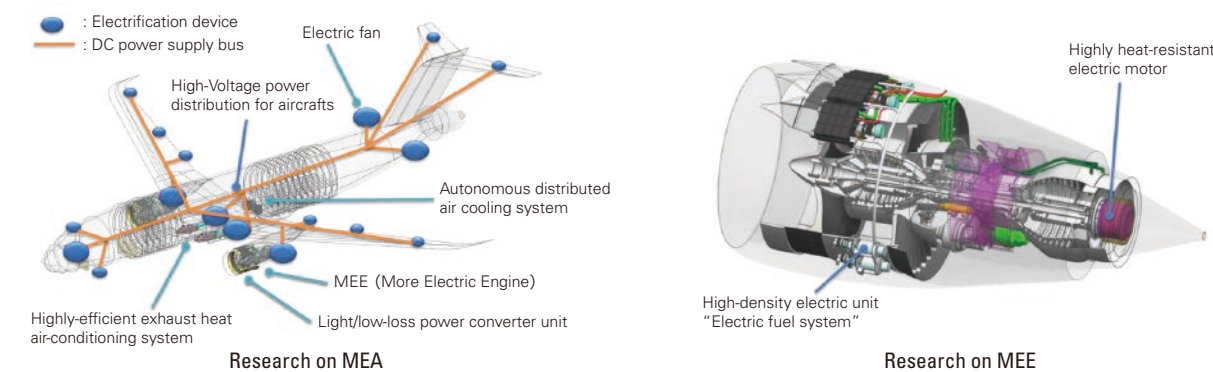
Outline of Group Technology Strategy 2019

CO₂ reduction in the field of aircrafts — efforts towards electrification of aircrafts

As the reduction of CO₂ emission from aircrafts becomes a globally important environmental challenge, More Electric Architecture for Aircraft and Propulsion (MEAAP) attracts attention. The electrification of aircrafts eliminates the need for complicated hydraulic systems, pneumatic systems, and I mechanisms for energy supply. Consequently, the electrification of aircrafts enables not only the energy optimization but also the improvement of flexibility in design and maintainability, and making it possible to reduce aircraft mass.

On the other hand, to realize the electrification (engine-

embedded generator) of aircrafts, there are technologically difficult challenges: one is the installation of large capacity generators in engines; another is the heat-resistance of generator against exhaust heat of engine. To resolve these challenges, IHI has been developing the engine-embedded electric machine, autonomous distributed air cooling system, electric fuel system, and other devices and systems. Each development is in an advanced state of trial manufacture or evaluation test, and attains high reputations from aircraft manufacturers and aircraft parts manufacturers.



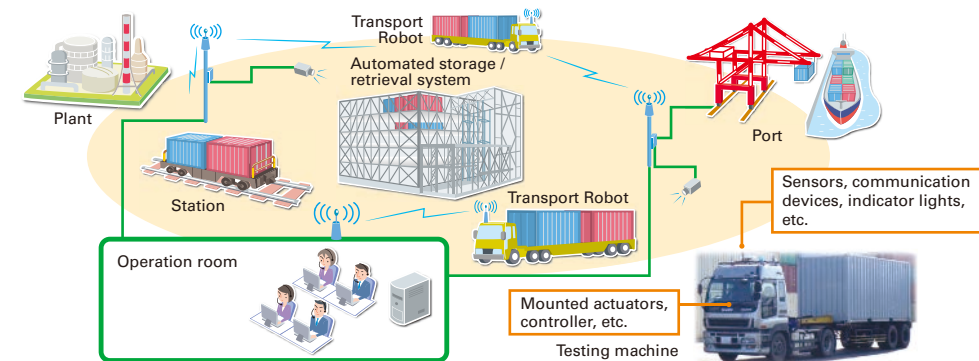
Efforts towards laborsaving and automation in on-site transportation of heavy objects

Various industrial facilities perform frequent on-site transportation with vehicles. The example is transportation between production facilities and warehouses in plant sites or between unloading places and temporary depots in distribution centers. However, the recent shortage of drivers causes a concern that distribution system will become unsustainable.

Although there are various automation solutions for indoor distribution systems, there are few effective solutions for outdoor distribution systems. Accordingly, IHI has focused on outdoor on-site transportation of heavy objects. We have developed technologies of robots and unmanned vehicles in the fields of defense and disaster countermeasures, and have acquired actual traveling data through NEDO-

supported projects. By utilizing these experiences, we have promoted development, practical implementation, and commercialization of transportation system automated by installing actuators, sensors, control/communication devices, and other devices in on-site vehicles including trailers.

IHI, a heavy industrial manufacturer, has the strength in integration of distribution system for large/heavy objects. We are aiming at contributing to improvement in laborsaving and efficiency not only on outdoor transportation of heavy objects but also on overall on-site distribution through integration of our automated transportation system under development into conventional distribution systems.



IoT platform common to IHI group

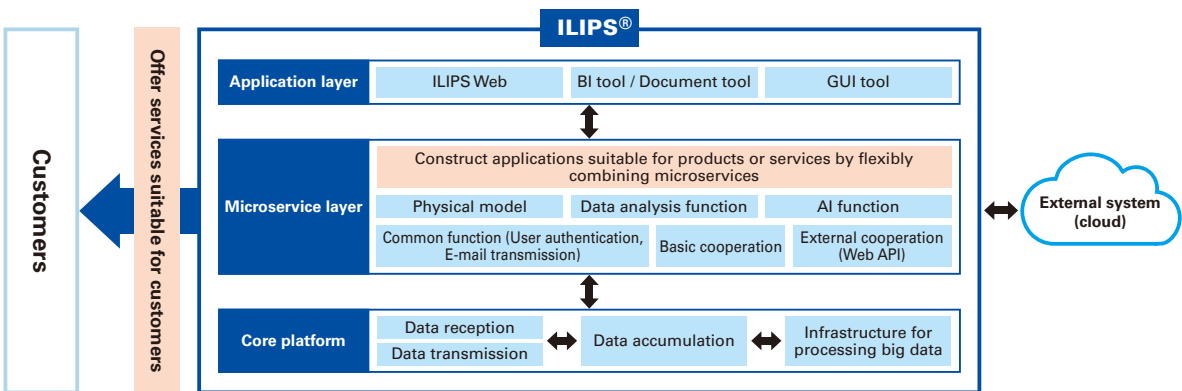
IHI group is attempting to create Customer Value through analyzing and utilizing operation data from products and factory equipment delivered to customers. It is ILIPS (IHI group Lifecycle Partner System), IoT platform common to IHI group, that supports the attempt.

Analyzing operation data accumulated in ILIPS makes it possible to select more valuable information including information for detecting a fault in the earlier stage and for optimizing operation of equipment. Utilizing the high-value-added information, we create and offer new values such as support for effective operation of equipment and suggestion for new business.

We keep on attempting to improve ILIPS for speedier offer of valuable services suitable for customers.

1. We meet the various demands of customers by combining AI and data analysis function installed in ILIPS depending on the purposes.
2. We promote establishment of ecosystem and active use of data through smooth cooperation with customers' or external system data platforms.
3. We continually maintain strict cybersecurity and high availability and reliability to enable customers to use ILIPS with security.

* Over 1,000 devices and facilities connect with ILIPS (as of April 2019)

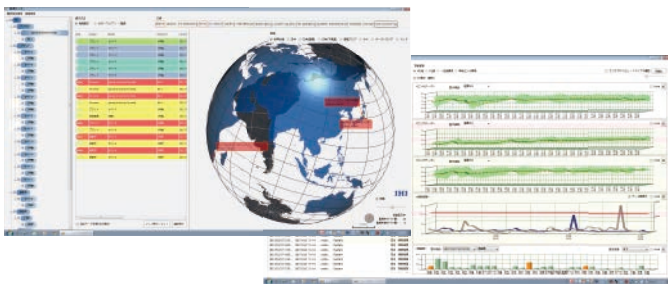


Data analysis technology for creating Customer Value

IHI offers new values to customers by accumulating and analyzing operation data of IHI products delivered to customers all over the world. We have two major strengths: One is the original data analysis technology based on findings developed through design, manufacture, R&D, maintenance and service of our products. Another is the know-how to effectively apply the technology to actual products. Accordingly, we apply the technology to various IHI products.

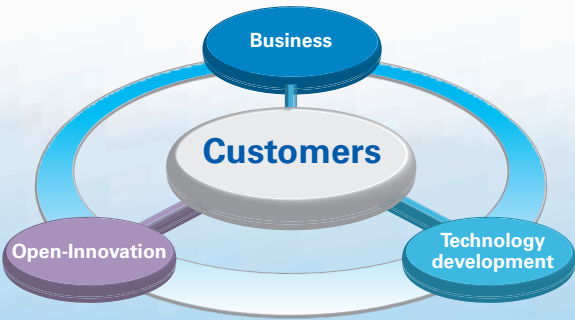
We have developed the technology for promptly detecting

failure symptoms with high accuracy even if operating environment changes. In the field of failure prediction, change of operating environment like seasonal variation generally causes deterioration of detection accuracy. We also have developed the technology for utilizing experts' know-how for maintenance by using text information like maintenance records as learning data for AI and machine learning. Adding to these two technologies, we have developed various data analysis technologies to result in creation of Customer Value.



We are monitoring the health diagnostics of IHI products on a 24-hour basis by accumulating operation data of IHI products all over the world and by analyzing the data through the failure diagnosis/failure prediction algorithm specially developed by IHI.

Creating the future with Technology & Intelligence Integration



Struggle for society & customers challenge

Challenging new potential technologies and evolving fundamental & advanced technologies, we create more valuable technologies for customers and contribute to sustainable social development.

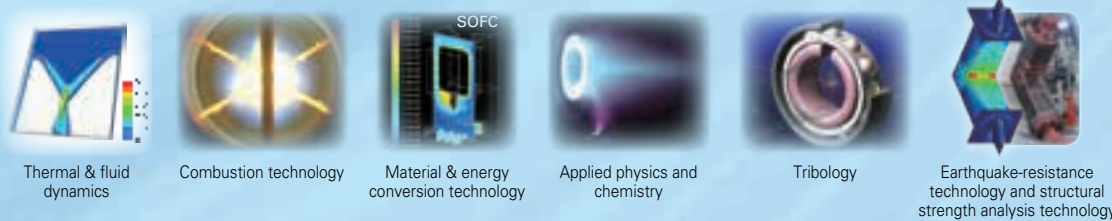
Advanced system development technology



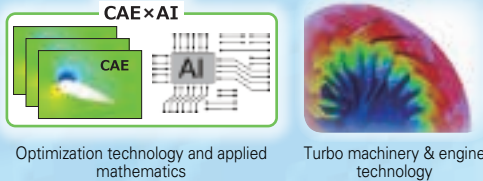
Fundamental and advanced technologies for manufacturing



Fundamental technology for verifying principle and supporting basic design

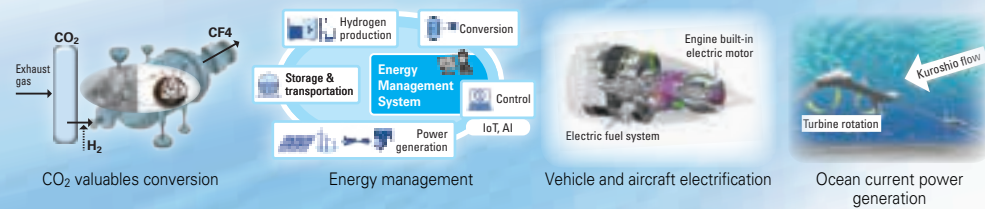


Evolution of fundamental and advanced technologies

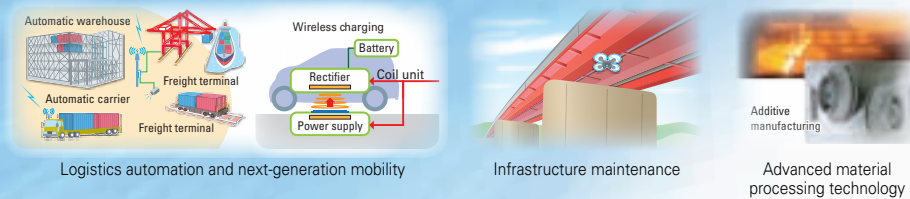


Product, Service, System development for contribution to sustainable social development

To realize a low carbon society



To realize safe and secure social infrastructure and next-generation industrial platform by advanced technology



Evolution of products and services by IHI and customer harmony

Applying advanced technologies, we are promoting open innovation where we solve social and customers' issues collaborating and harmonizing with customers. Through co-creation in three creative time and spaces below, and the collaboration with four global technology hubs in Boston, London, Singapore, and Shanghai, we accelerate the social issue- and customer-oriented technology development.



IHI Tsunagu Lab (IHI innovation hub)

IHI innovation hub was opened in October, 2014 as an IHI's hub of open innovation. To realize customers' dream we are co-creating with customers via technology matching.



IHI Group Yokohama Labs

This laboratory was opened in new experimental building in Yokohama district in May, 2019. It includes four areas: "Co-creation area", "Garage", "Open space" and "Project booth". They offer creative time and space to accelerate co-creation with customers.



IHI Launch Pad

Hub for collaboration with startups, where diversity and value chain are attracted, was opened in December, 2019 at Silicon Valley in US.



Business Index

Resources, Energy & Environment Business Area

■ Boilers	19
■ Nuclear energy	

■ Gas turbines, Gas engines & Diesel engines	20
■ Propulsion systems	
■ Grid scale energy storage system	

■ LNG receiving terminal / storage tank	21
■ Processing & Pharmaceutical plants	
■ Equipment for plants	

Social Infrastructure & Offshore Facilities Business Area

■ Bridges, Water gates & Steel structures	22
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■ Shield tunneling machines & Concrete construction materials	23
■ Transportation systems	

■ Urban development	24
■ Security	

Industrial Systems & General-Purpose Machinery Business Area

■ Parking systems	25
■ Materials handling system	

■ Turbochargers	26
■ Rotating machinery	

■ Logistics systems	27
■ Factory solutions	

■ Heat treatment and surface engineering	28
■ Iron, Steel and Coke-making equipment	

■ Pulp & Paper machinery	29
■ Agricultural machinery, Life associated equipment, and Packaged boilers	

Aero Engine, Space & Defense Business Area

■ Aircraft engines	30
--------------------	----

■ Rocket systems & Space exploration	31
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Resources, Energy & Environment Business Area

Boilers

IHI has supplied the world with highly efficient and reliable coal-fired boilers that draw on its advanced technologies. With boilers based on our Clean Coal Technology, we contribute to the effective and economical use of valuable energy resources. We will continue to provide models employing coal and other fuels to customers around the world. We are augmenting flue gas treatment systems by pushing ahead with development to rapidly commercialize oxy-fuel combustion technology and CO₂ chemical absorption technology that lowers carbon dioxide emissions. We are also working on gasification and pre-dry technologies for lignite, a low-grade coal.

Main Products

- Boilers
- Flue gas treatment systems



Large-scale tower type boiler
Photo is provided by J-POWER (EPDC)



Boiler for IPP and PPS

Nuclear energy

IHI supplies such key components as reactor pressure vessels, primary containment vessels, and piping systems. We develop and construct nuclear fuel cycle systems as well as supply components for conventional boiling water reactors (BWRs) and advanced boiling-water reactors (ABWRs). We also supply equipment for pressurized-water reactors (PWRs). Moving forward, we plan to engage in decontamination and decommissioning of nuclear power facilities.

Main Products

- Components for nuclear power plants
- Facilities for nuclear fuel cycle related equipment
- Pressure vessels



Reactor containment vessel



Reactor pressure vessel for BWR nuclear power plant



Vitrification facility for high-level radioactive waste

Gas turbines, Gas engines & Diesel engines

IHI provides a wide variety of power generating products, including gas turbines, diesel engines and gas engines with simple cycle, co-generation and combined cycle power systems. We also provide remote monitoring, maintenance and other services throughout product lifecycles. We are minimizing NOx and CO₂ emissions by adopting high-efficiency, low emission technologies.

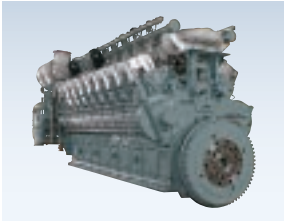
We supply gas turbines for high-speed ships and other marine vessels. We also supply a wide range of diesel engines, from large engines of medium and low speeds to small and midsize models of low, medium, and high speeds.

Main Products

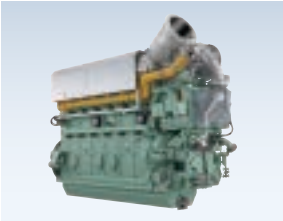
- Simple/combined cycle power generation systems
- Co-generation power systems
- Co-generation systems
- Diesel engines (marine, land)
- Gas engines
- Gas turbines



LM6000 Gas turbine power plant



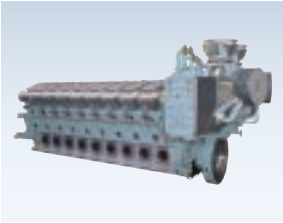
Gas engine "18V28AGS"



Dual-fuel engine "28AHX-DF"



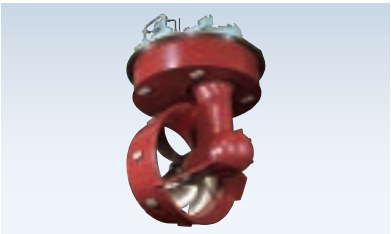
DU-WIN GD 9X82 diesel engine



DU-S.E.M.T. PIELSTICK 18PC2.6BV diesel engine

Propulsion systems

Our Z-PELLER® is the most propulsion system in the global tugboat market, and has earned an outstanding customer reputation for its high quality and durability. The diverse other applications for this system include fireboats, oil skimmer boats, and other disaster prevention vessels, as well as floating cranes, dredgers, drill rigs, and support vessels.



Azimuth Thruster (Z-PELLER®)

Main Products

- Azimuth Thruster (Z-PELLER®)

Grid scale energy storage system

IHI provides turnkey solutions for grid scale energy storage system, centered on its ESWare suite of advanced control systems.

- (1) Analysis: Evaluating project profitability before project deployment and optimizing system configuration
- (2) Control: Managing systems in real time in line with customer requests and optimization directives
- (3) Optimization: Formulating operational strategies to optimize profitability based on past operational results and weather, load, and other forecasts



Grid scale energy storage system

Applications

- Peak shifting and shaving
- Renewable integration
- Frequency regulation
- Backup power sources



ESWare™ -ES/analyzer

LNG receiving terminal / storage tank

IHI is Japan's leading provider of LNG receiving terminals and storage tanks. We are also active overseas, with a strong track record in India, Qatar, Mexico, Taiwan, the United States, and China. Particularly for LNG storage tank construction, we are able to handle all types of tanks including Double-walled metal tank, Pre-stressed concrete (PC) full containment tank and in-ground membrane tanks, with leading global market shares for such facilities.



LNG receiving terminal
(Semptra's Cameron LNG receiving terminal in Louisiana, USA)
Photo used with the permission of Semptra LNG
©All rights reserved by Semptra LNG



World's largest capacity LNG underground tank (Membrane)
Photo courtesy of Tokyo Gas Co., Ltd.



In-ground LNG storage tank

Main Products

- LNG receiving terminal
- Above ground LNG storage tank
- In-ground LNG storage tank
- Underground LNG storage tank

Processing & Pharmaceutical plants

In such diverse areas as natural liquefaction plants and oil refining, petrochemicals, LPG, and other process plants, and pharmaceuticals plants, we have a strong track record in Japan and internationally in integrating everything from construction engineering to equipment procurement, construction, and startups.



Natural Gas Liquefaction plants



LPG plant



Pharmaceutical plant

Main Products

- Oil & Gas plants
- Chemical plants
- Natural Gas Liquefaction plants
- Pharmaceutical / Fine Chemical plants

Equipment for plants

We provide a wide line-up of plant equipment, including heating furnaces, cooling towers, chemical plant reactors, and wastewater treatment facilities.



Pressure vessels



Roller mills



Cooling towers



Wastewater treatment facility

Main Products

- Vertical pulverizing super-hybrid mills
- HTS reactors
- Furnaces
- EO reactors
- Air-cooled heat exchangers
- Wastewater treatment facilities
- Chemical plant equipment

Social Infrastructure & Offshore Facilities Business Area

Bridges, Water gates & Steel structures

IHI has constructed numerous major bridges worldwide. Included are the Seto Ohashi Bridges and the Akashi Strait Bridge in Japan, the Second Bosphorus Bridge and the Golden Horn Bridge in Turkey, the Carquinez Bridge in the United States, and the Binh Bridge and the Nhat Tan Bridge in Vietnam. We are Japan's top manufacturer of water gates for rivers and dams. Our capabilities extend from manufacturing and installation to inspection and maintenance. We contribute to water usage and flood control projects in Japan and overseas, particularly in Southeast Asia. We deliver large steel structures incorporating machinery and put a focus on the increase of hybrid structures, including caissons and pontoons that combine the strengths of steel and concrete.

We have integrated steel structures, mechanical, sensor, control, and other technologies to develop active mass dampers and seismic isolation floor systems. These systems serve important disaster prevention roles in high-rise buildings and computer centers.



Osman Gazi Bridge across Izmit Bay



Cable-stayed bridge "Nhat Tan Bridge"



Arch bridge "Tsukiji Ohashi"



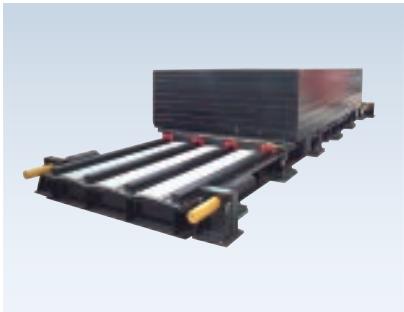
River gate



Dam gate



Hybrid caissons



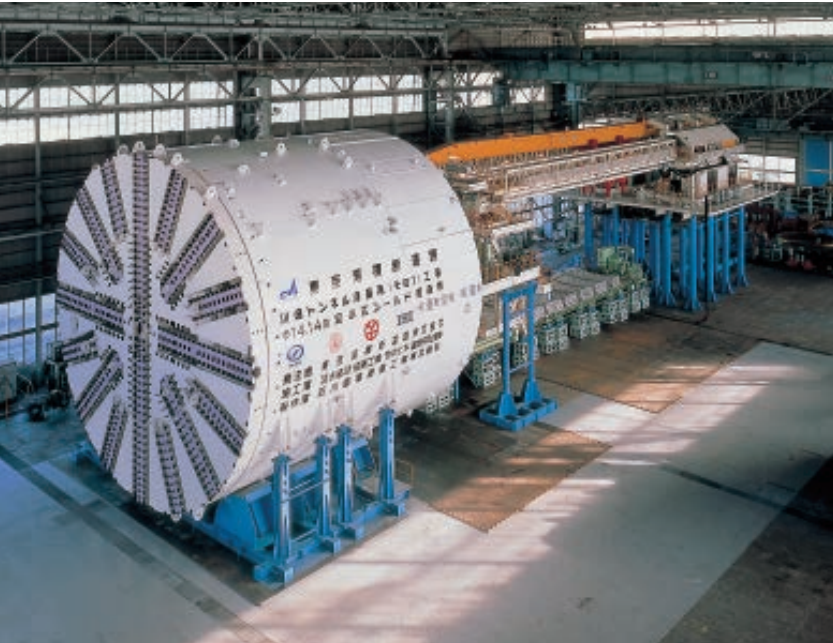
Active mass dampers

Main Products

- Bridges
- Water gate equipment for rivers
- Water gate equipment for dams
- Floating breakwater
- Floating platforms
- Immersed tunnels
- Hybrid caissons
- Composite slabs
- Sound-absorbing panels
- Temporary assembling bridges
- Mass damper systems
- Seismic isolation floor systems

Shield tunneling machines & Concrete construction materials

IHI developed the world's largest shield and rotating shield tunneling machines, which have greatly improved construction efficiency. IHI is the world's leading supplier of automatic segment assembling systems while also providing various types of segments.



Large-diameter shield tunneling machine

Main Products

- Shield tunneling machines
- Segment
- Automatic segment assembling systems



Special section (double-o tube) shield tunneling machine



IKK Composite Segment

Transportation systems

IHI contributes to traffic safety, which is essential for daily life, in various ways. Furthermore, we supply various railway systems, including ultra-low floor streetcars, which are human- and environment-friendly and essential for building new towns, diesel cars to ensure local traffic, and maintenance vehicles to keep railway systems running.



200 series New Tram train system for the Osaka Municipal Transportation Bureau's High Speed Electrical Division

Main Products

- Transportation systems
- Rolling stock
- Snowplows
- Maintenance vehicles



Sanriku Railway Riasu Line



NR303 rotary snowplow

Industrial Systems & General-Purpose Machinery Business Area

Urban development

We optimize the potential of our real estate holdings by redeveloping company offices and housing nationwide. We engage in leasing and sales, particularly in metropolitan Tokyo. A good example of this approach is in Toyosu, known for former shipbuilding yards, where we are undertaking a massive urban redevelopment project. We also prioritize using idle land, as part of which we operate Japan's biggest mega solar generating business, in Kagoshima, thereby contributing to environmental and social sustainability.



Rental office buildings "TOYOSU FORESIA™", "TOYOSU FRONT™"



Joint housing business with major developer



Kagoshima Megasolar

Main Products

- Real estate leasing and sales

Parking systems

Since installing Japan's first tower parking system in 1962, IHI has drawn on its experience, reliability, and proprietary technology to perfect these products. We look to introducing parking systems with smaller environmental footprints as well as other new types of parking system. We will continue to provide optimal parking solutions in the years ahead.

Main Products

- Parking systems



Tower parking system (pallet type)



Tower parking system (pallet-less type)



Super square parking system



Multi-storey parking system



Ramp parking system

Materials handling system

IHI has remained a technology leader in this field for a century. We accommodate needs ranging from under one metric ton to thousands of metric tons. Our offerings include bulk handling systems, such as port unloaders. Through standardization, we have increased economy with jib and overhead travelling cranes for various industries. We leverage advanced technologies in manufacturing through maintenance and modifications. We are a top supplier of jib climbing cranes for skyscraper and dam construction.

Main Products

- Unloaders
- Coal unloading and transportation facilities
- Overhead traveling crane
- Jib cranes
- Jib climbing cranes
- Hoists



Continuous ship unloader



Jib crane



Jib climbing cranes

Security

At IHI, we are releasing various products that apply mechatronics and sensor technologies. Our 3D Laser Radar level crossing obstacle detection system, has been installed at more than 2,000 level crossings worldwide. IHI continues exploring future sensor business fields. We also supply large X-ray visual inspection systems for cargo containers, for which IHI is the domestic market leader. We have a wealth of delivery experience, including medium and small size inspection equipment for port and airport customs inspections.

Main Products

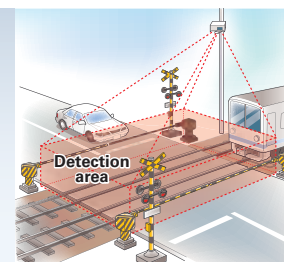
- 3D laser radar systems
- X-ray inspection systems
- Monitoring equipment
- Oil leak monitors
- Noise reduction systems
- Disaster prevention equipment
- Weather observation system



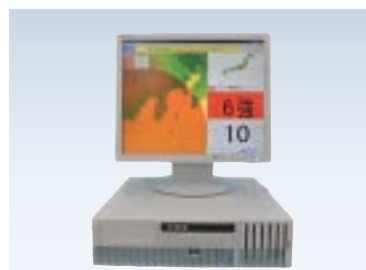
3D laser radar



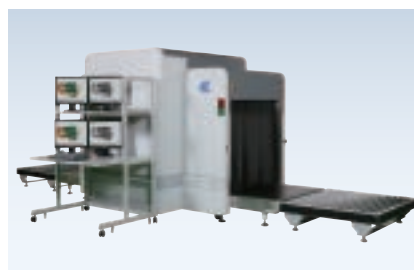
X-ray inspection systems



Oil leak detectors



Earthquake early warning receiving equipment QCAST® S704-FCP1



(Photo: DX100100DN)



Left: Monitor amplifier
Right: Oil sensor

Turbochargers

IHI supplies a wide range of turbochargers from large ones for land and marine power generators to small ones for automobile engines, and has already produced more than 75 million turbochargers for vehicles. We have development, production, and sales bases also in the U.S., Europe, Thailand, China, and Korea and are growing our business worldwide.



Turbochargers for vehicles



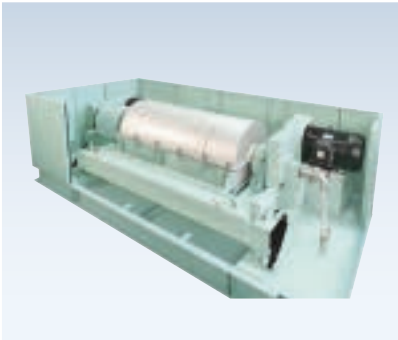
Turbochargers for marine vessels

Main Products

- Turbochargers

Rotating machinery

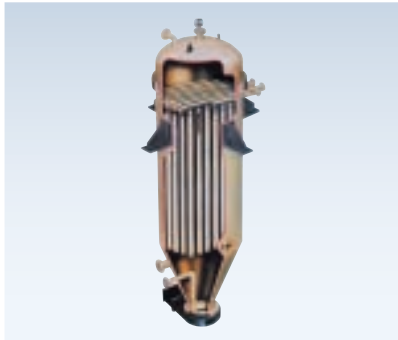
IHI provides an array of compact and packaged machinery for plant utilities. Our offerings include separators, filters, dewatering equipment, and air compressors. We draw on many years of expertise from custom-manufacturing compressors, and our liquefied natural gas BOG plant compressors dominate the market. Our organic rankine cycle power generator can produce electricity from water with temperatures ranging from 70°C to 95°C, helping customers to conserve and create energy.



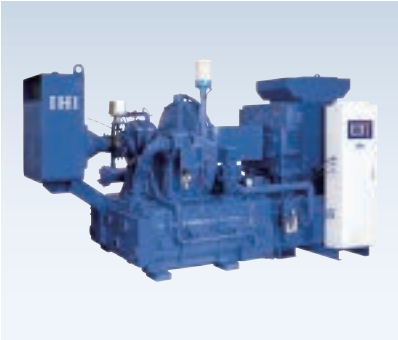
Screw Decanter Centrifuge



IHI-Leaf Filter



IHI-FUNDABAC Filter



Centrifugal air compressor



Process reciprocating compressor



Organic rankine cycle power generator

Main Products

- Separators
- Filters
- Compressors
- Organic rankine cycle power generator
- Gear

Logistics systems

The rapid development of e-commerce markets has led to serious labor shortages in the logistics industry, driving demand for advanced automated logistics operations. We maintain an array of automatic storage system capable of storing frozen and chilled goods up to -60°C, hazardous goods, and other variety of goods. We also provide storage and transportation equipment operating in clean rooms and AI depalletizing systems. We provide customized logistics solutions that draw on our expertise which will best suit on user's needs.



Frozen AS/RS (Automated Storage & Retrieval System)



LGF (Laser Guided Forklift)



AI depalletize system

Main Products

- Automated material handling systems in clean room
- Storage systems
- Transportation systems
- Sorting / picking systems

Factory solutions

In addition to providing the world's highest level of industrial machines such as automated panel transport equipment, rubber and film forming machines, slitters, etc., we are contributing to the improvement of productivity through proposals for automation of entire factories by linking these facilities.



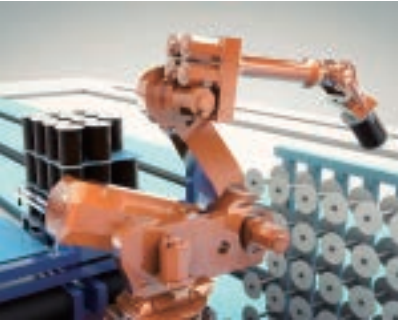
High speed transfer feeder (X-Feeder)



New servo driven carriage transfer system



Precision calender for plastic



Creel auto-loading system



Aluminum/Copper foil slitter for lib

Main Products

- High-speed transfer feeder (X-Feeder, V-Feeder)
- Hybrid regenerative cushion system
- Retrofit
- Rubber and film calender machines
- Creel auto-loading system
- Slitter

Heat treatment and Surface engineering

Heat treatment processes and equipment are used in many industries. IHI supplies an array of equipment to meet user needs. Our heat treatment equipment offerings include vacuum furnaces, vacuum carburizing furnaces, vacuum vapor degreasers, hot presses, sintering furnaces and new materials manufacturing facilities. In addition to supplying equipment, IHI itself maintains a heat treatment processing business.

We also provide advanced coating solutions featuring a broad range of hard, low friction, wear resistant or corrosion resistant coatings based on PVD, PACVD and CVD technologies for aerospace, medical, automotive, decorative and tooling applications, and MScCoating®, an innovative technology that uses an electrode discharge process.



Vacuum furnace



Vacuum carburizing furnace



PVD / PACVD coating equipment



Hot presses



CVD coating equipment



Job coating service

Main Products

- Advanced material manufacturing equipment
- Vacuum thermal treatment equipment
- Thin film and surface treatment equipment
- MScCoating®
- Heat treatment and coating services

Iron, Steel and Coke-making equipment

PWJHI offers state-of-the-art technologies for the primary stage of integrated steelmaking (mainly blast furnaces and coke oven plants), ranging from engineering to a full spectrum of EPC (Engineering, Procurement and Construction). Since 1941, IHI has built and refined over 90 blast furnace plants in and outside of Japan. Backed by a wide range of experience of Paul Wurth Group (Luxembourg), a number of our coke oven plants have been adopted by Japanese customers.



Blast furnace (© NIPPON STEEL & SUMITOMO METAL CORPORATION)

Main Products

- Industrial furnaces

Pulp & Paper machinery

IHI is Japan's premier maker of pulp and paper manufacturing machinery, supplying papermakers with the largest and fastest paper-making and paper-coating machines. We have an unmatched record overseas as well as in Japan.



Paper machine

Agricultural machinery, Life associated equipment, and Packaged boilers

IHI supports agriculture with machinery for cultivating, fertilizing, seeding, harvesting, and other tasks. Our lawn maintenance machines, grass cutters, and campus greening equipment help maintain landscapes and lawns at an array of sports facilities. They include golf courses, soccer, baseball, and athletic fields, and racecourses. Our equipment is also utilized heavily at schools, parks, riverbanks, and homes.

Our products serve in hospitals, clinics, nursing homes, hotels, restaurants, airports, train stations, and factories. We manufacture ozone deodorizers and disinfectors, accommodating rising demand for deodorization, sanitization, dust removal, and cleaning applications. In addition, we are accommodating diverse customer needs by supplying compact packaged boilers that deliver heat and steam to factories and other facilities.



Combination baler



Lawn maintenance machines



Ozone air disinfectant



Round baler



Ozone endoscope disinfectant

Main Products

- Agricultural machines
- Lawn maintenance machines
- Ozone deodorizers / ozone disinfectors
- High-temperature heating system
- Packaged boilers

Aero Engine, Space & Defense Business Area

Aircraft engines

IHI is Japan's leading maker of jet engines, with a market share of between 60% and 70%. We are the primary contractor and manufacturer for aircraft engines used by the Ministry of Defense. We collaborate in international projects to develop and supply large and small engines for all types of civilian aircraft. We have leveraged our experience and manufacturing technologies to provide maintenance for all types of engines. We are considered Asia's core maintenance center. To meet the growing demand for eco-friendly engines and fulfill our corporate responsibility, we are developing next-generation engines that draw on our advanced technologies.

Main Products

- Turbofan engines
- Turboshift engines
- Turbojet engines
- Turboprop engines
- Jet engine maintenance
- Jet engine test cells
- Jet engine parts



PW1100G-JM turbofan engine



GEnx turbofan engine



GE90 turbofan engine



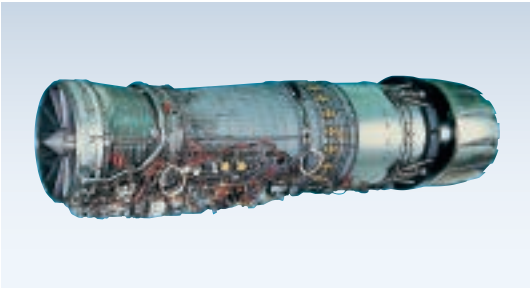
V2500 turbofan engine



CF34 turbofan engine



Aero Engine Maintenance



F110 turbofan engine



F7-10 turbofan engine



F3 turbofan engine



T700 turboshaft engine

Rocket systems & Space exploration

IHI has participated in Japan's space development effort from the outset. We have applied our cryogenic-pump and turbomachinery and other technologies to develop and manufacture the turbopumps and gas-jet systems crucial to successful rocket launches. Our involvement in Japan's space program expanded significantly in 2000, when we acquired Nissan Motor's Aerospace Division, a pioneer in solid-fuel rocket development in Japan. We play an important role in developing and constructing the Exposed Facilities of the KIBO Japanese Experiment Module, which is a part of the International Space Station program. We support experiments in space by supplying experimental systems needed for cooperative international projects.

Main Products

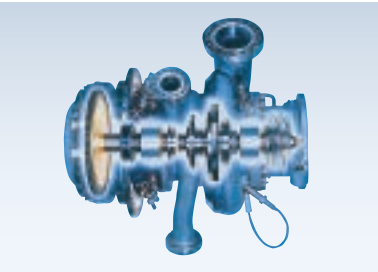
- Rocket
- Rocket propulsion systems
- Rocket control systems
- Satellite propulsion systems
- Satellite control systems
- Equipment for utilization of space environment
- Space station-related equipment
- Ground test facilities
- Ground support facilities



H-IIA Launch Vehicle (© JAXA)



Epsilon Launch Vehicle (© JAXA)



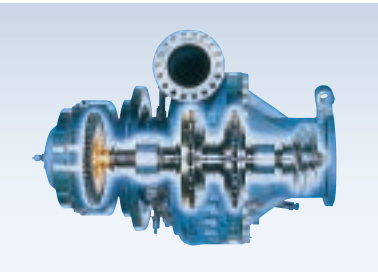
Liquid oxygen turbopump for the H-IIA rocket LE-7A engine



HTV propulsion system and exposed palette (HTV: H-II Transfer Vehicle) (© JAXA/NASA)



JEM Small Satellite Orbital Deployer (J-SSOD) (© JAXA/NASA)



Liquid hydrogen turbopump for the H-IIA rocket LE-7A engine



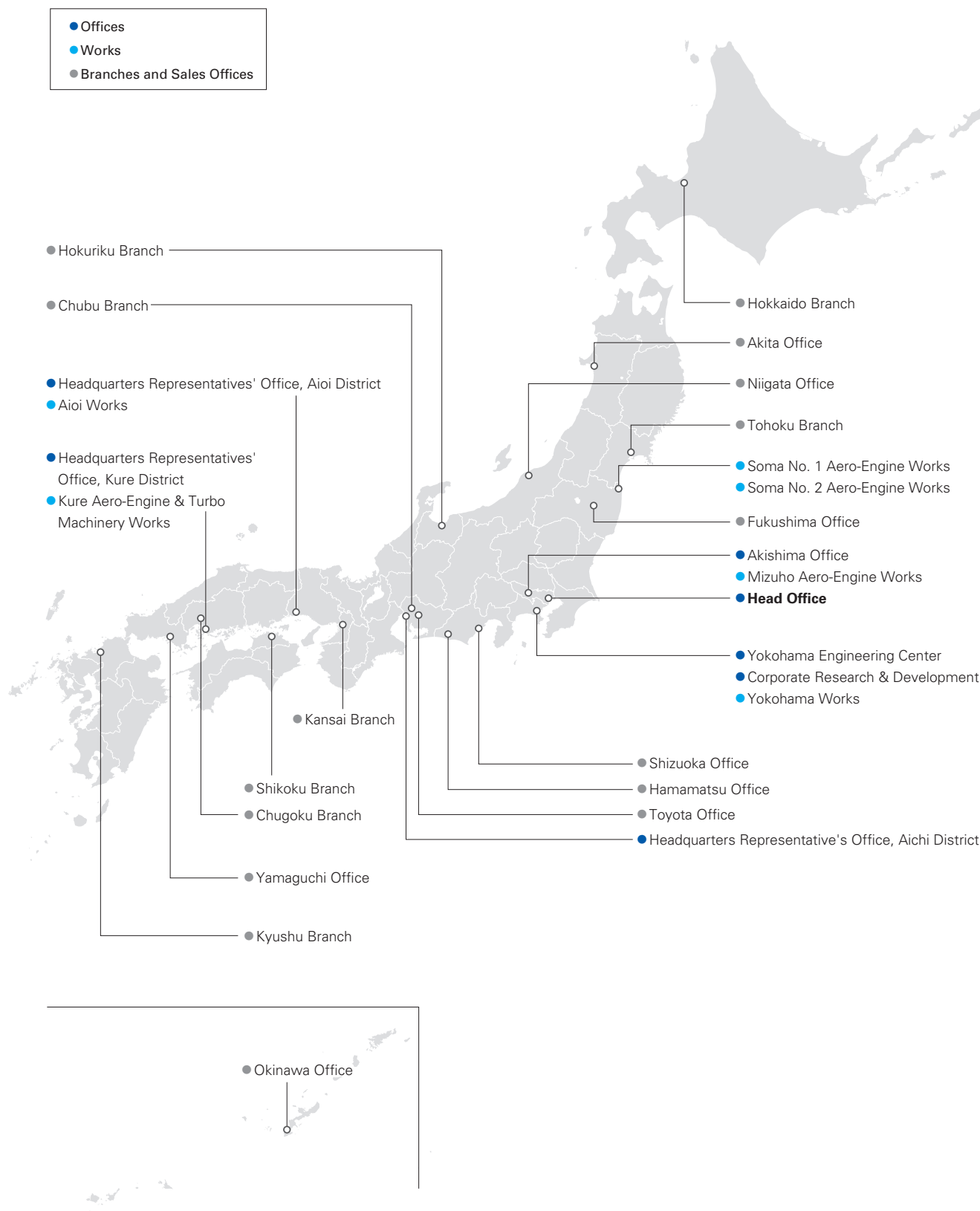
22N thruster



500N apogee engine
Liquid propellant apogee engine, etc.

Domestic Network and Main Works

As of March 31, 2019



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Corporate Research & Development

1, Shin-Nakahara-cho, Isogo-ku, Yokohama-shi, Kanagawa 235-8501
TEL: +81-45-759-2213



Soma No. 1 Aero-Engine Works

Site Area	181,673 m ²
Products & Services	Parts of jet engines, gas turbines and space development equipment
Certificates	JIS Q 9100 & JIS Q 9001 (ISO 9001) JIS Q 14001 (ISO 14001) JIS Q 27001 (ISO/IEC 27001) Nadcap Pratt & Whitney LCS



Soma No. 2 Aero-Engine Works

Site Area	192,629 m ²
Products & Services	Parts of jet engines, gas turbines and space development equipment
Certificates	JIS Q 9100 & JIS Q 9001 (ISO 9001) JIS Q 14001 (ISO 14001) JIS Q 27001 (ISO/IEC 27001) Nadcap Pratt & Whitney LCS



Mizuho Aero-Engine Works

Site Area	200,464 m ²
Products & Services	Assembly and overhauling of jet engines, gas turbines, space development equipment and defense systems
Certificates	JIS Q 9100 & JIS Q 9001 (ISO 9001) FAA Repair Station JCAB Repair Station EASA Maintenance Organization CAAC Maintenance Organization ISO 14001, JIS Q 27001: 2014 (ISO/IEC 27001: 2013), Nadcap



Yokohama Works

Site Area	226,671 m ²
Products & Services	Reactor pressure vessels, containment vessels, heat exchangers, piping for nuclear power plants and nuclear radwaste management field, decontamination field, large pressure vessels, steel structures, shield machines and other industrial machinery
Certificates	ASME (N, NPT, NA, NS, U, U2, S) ISO 9001, ISO 14001



Aioi Works

Site Area	245,323 m ²
Products & Services	Boilers, LNG tanks, pressure vessels for chemical plants, prefabricated piping systems and casting products for machinery
Certificates	ISO 9001 ISO 14001 ASME (S, U, U2) Approval of Manufacturer



Kure Aero-Engine & Turbo Machinery Works

Site Area	47,797 m ²
Products & Services	Parts of gas turbine power plants, jet engines and gas turbines
Certificates	JIS Q 9100 & JIS Q 9001 (ISO 9001) JIS Q 14001 (ISO 14001) JIS Q 27001 (ISO/IEC 27001) Nadcap

Main Group Affiliates and Works in Japan

Resources, Energy & Environment Business Area

Aomori Plant Co., Ltd.

Remodeling and maintenance in reprocessing facility etc.

IHI Plant Services Corporation

Services related to the engineering, procurement, construction, commissioning, and maintenance of Thermal Power Plants, Renewable energy, Storage Facilities, Oil & Gas Plants, Chemical Plants, Pharmaceutical Plants, Nuclear Power Plants, Industrial Machinery and other types of equipment and facilities

IHI Power Systems Co., Ltd.

Manufacture, sale and other services for diesel engines for marine, power generation and rail-traction use, gas engines, dual fuel engines, gas turbines, and "Z-PELLER®"propulsion units



Main Works [Ohta Plant](#)

Site Area 151,562 m²

Products & Services Diesel engines, gas engines, dual fuel engines, Azimuth propeller (Z-PELLER®)

Certificates ISO 9001, ISO 14001, NK, LR

Japan Jurong Engineering Co., Ltd.

Plant engineering service (JEL Group's sales liaison in Japan), engineer dispatching/recruiting service

Kanamachi Purification Plant Energy Service Co., Ltd.

Power and steam supply to Tokyo Metropolitan Government Bureau of Waterworks

Kotobuki Iron Works Co., Ltd.

Manufacturing of boiler and diesel engines parts



Site Area 19,000 m²

Products & Services Manufacturing of power and chemical plant components, turbine casing and diesel engine parts, etc.

Certificates ISO 9001:2015 (JIS Q 9001:2015)

NICO Precision Co., Inc.

Manufacture and sale of Fuel Injection equipment for diesel, gas, dual fuel engines (for vessel, power plant)

Social Infrastructure & Offshore Facilities Business Area

Chiba Warehouse Co., Ltd.

Warehousing, real estate rental, and peripheral businesses

IHI CONSTRUCTION MATERIALS Co.,Ltd.

Manufacturing and installation of pre-cast concrete materials

IHI Construction Service Co., Ltd.

Engineering, maintenance and repair of bridge, gates and steel structures, pre-stressed concrete product manufacture and construction work design, execution, etc.

IHI Infrastructure Systems CO., LTD.

Design, fabrication, construction, diagnosis, repair, and conservation of bridges, floodgates, and other steel structures, and manufacture, sale, and installation construction of disaster prevention devices



Main Works [Sakai Works](#)

Site Area 170,145 m²

Products & Services Design, fabrication, construction, assessment, repair and maintenance of bridges, gates and other steel structures

Certificates ISO 9001 (JIS Q 9001), ISO 14001 (JIS Q 14001), and OHSAS 18001

JIM TECHNOLOGY CORPORATION

Design and sale of tunnel boring machines and equipment

Livecon Engineering Co., Ltd.

Patent management and supervision for construction materials

Niigata Transys CO., LTD.

Manufacturing and sale of rolling stock, industrial vehicles, snowplows, etc., and design, manufacture, and construction of automated guideway transit



Main Works [Niigata Works](#)

Site Area 98,512 m²

Products & Services Rolling stock, automated people movers, light-rail vehicles, maintenance cars and snow plows

Certificates ISO 9001 (JIS Q 9001)

San-Etsu Co., Ltd.

Maintenance and repair of track maintenance machines, snowplows and construction equipment, and engines, etc.

Industrial Systems & General-Purpose Machinery Business Area

CENTRAL CONVEYOR COMPANY, LTD.

Engineering, manufacturing and selling of logistic equipment and industrial machines

Clover Turbo Co., Ltd.

Repair, design, manufacture, sales and service of after-market turbochargers

IHI Agri-Tech Corporation

Engineering and manufacturing of agricultural machinery



Main Works [Matsumoto Works](#)

Site Area 102,216 m²

Products & Services Grass management machines

Certificates ISO 9001 (JIS Q 9001), ISO 14001 (JIS Q 14001)



Main Works [Chitose Works](#)

Site Area 86,100 m²

Products & Services Implements, such as hay and grass harvesting equipment

Certificates ISO 9001 (JIS Q 9001)

IHI Fuso Engineering Co., Ltd.

Development, design, manufacturing, installation services for parking systems

IHI Ionbond Japan Co., Ltd.

Coating services

IHI Logistics & Machinery Corporation

Sales, design, fabrication, purchasing, construction, installation, modification, repairs of material handling systems, FA systems and industrial machinery, as well as the servicing and maintenance of devices and parts



Main Works [Motomiya Works](#)

Site Area 34,000 m²

Products & Services Logistics equipment, industrial machinery (glass manufacturing equipment, press machine, calender, paper machine)

Certificates ISO9001: 2015/JISQ9001: 2015

IHI Machinery and Furnace Co., Ltd.

Engineering, manufacture, sales, and maintenance support of vacuum heat treatment furnaces and hot presses, and other heat treatment equipment



Main Works [Kakamigahara Works](#)

Site Area 16,084 m²

Products & Services Vacuum furnace, vacuum carburizing furnace, hot presses

Certificates ISO 9001

IHI PACKAGED BOILER CO., LTD.

Provides wide series of general purpose boilers, related equipment and maintenance services

IHI Rotating Machinery Engineering Co., Ltd.

Manufacturing and maintenance services for compressors and other rotating machinery



Main Works [Tatsuno Works](#)

Site Area 89,053 m²

Products & Services Compressors, marine turbochargers, hydraulic motors

Certificates ISO 9001, ISO 14001, DNVGL LR, ABS, BV, KR, CCS, JG, NK, RS, ISO 45001

IHI Technical Training Institution

Construction machinery and cranes operator training

IHI Transport Machinery Co., Ltd.

Plan, development, design, manufacture, sales, lease, installation, maintenance, remodeling, management services of parking systems and materials handling system



Main Works [Numazu Works](#)

Site Area 125,075 m²

Products & Services Tower parking system (pallet type/rotary type), super square parking system, multi-storey parking system

Certificates ISO 9001: 2015

IHI Turbo Co., Ltd.

Manufacture and sale of turbochargers for vehicles



Main Works [Kiso Works](#)

Site Area 65,318.82 m²

Products & Services Automotive turbochargers

Certificates IATF 16949: 2016, ISO 14001: 2015, NK, JG

Nishi-Nihon Sekkei Engineering Co., Ltd.

Design, drawing etc. of steel structures, such as transport machinery

Paul Wurth IHI Co., Ltd.

Sales, design, provision, installation and after-sales service of iron & coke-making plant and machineries (blast furnace, coke oven, coke dry quenching system, electric furnace, etc.)

Voith IHI Paper Technology Co., Ltd.

Design, manufacture, sale, installation, and maintenance and repair of paper manufacturing plants

Aero Engine, Space & Defense Business Area

IHI Aero Manufacturing Co., Ltd.

Manufacture of aircraft jet engine fan blades, compressor blades and vanes



Site Area 12,727 m²

Products & Services Manufacture of aircraft jet engine fan blades, compressor blades and vanes

Certificates JIS Q 9100, ISO 14001, Nadcap

IHI AEROSPACE CO., LTD.

Design, manufacture and sales of space equipment and defense machinery, and manufacture and sales of aircraft engine parts



Main Works [Tomioka Plant](#)

Site Area 490,490 m²

Products & Services Rocket and other space related products, defense related products and aircraft engine parts

Certificates JIS Q 9100 & JIS Q 9001 (ISO 9001), ISO 14001 (JIS Q 14001), JIS Q 27001 (ISO/IEC27001), OHSAS 18001

IHI AEROSPACE ENGINEERING CO., LTD.

Design, research, and experiment subcontracting for space development equipment

IHI CASTINGS CO., LTD.

Manufacture and sale of precision castings



Main Works [Soma Plant](#)

Site Area 15,281 m²

Products & Services Precision casting for Aero engine & IGT

Certificates JIS Q 9100 & JIS Q 9001, JIS Q 14001 (ISO 14001), Nadcap

IHI Jet Service Co., Ltd.

Gas turbine power plant & maintenance, engineering support (aero engine, space development), production support, sales of aero engine parts, ocean monitoring service (ioms)

IHI MASTER METAL Co., Ltd.

Manufacture and sale of precision casting materials and special alloys and other products



Site Area 12,557 m²

Products & Services Steel and non-ferrous alloy melting stocks

Certificates JIS Q 9100 & ISO 9001, JIS Q 14001 (ISO 14001), ISO/IEC17025, Nadcap

INC Engineering Co., Ltd.

Consulting and engineering, manufacturing of sound and vibration control equipment, aircraft engine and aerospace test facilities

Others

IHI Business Support Corporation

Real estate management, insurance agent business and data processing services and more

IHI Inspection & Instrumentation Co., Ltd.

Inspections and measurements of plants and components. Chemical and environmental analysis. Development, engineering, design, manufacture, and installation of control and monitoring systems including various types of testing equipment and automotive environmental inspection and measurement equipment

IHI Scube Co., Ltd.

Development, maintenance and support of computers and network systems related to information and communication, engineering, manufacturing, and others. Management service of computer systems operation maintenance

IHI TRADING, INC.

Sales of equipment and machinery, turbochargers, parking equipment, concrete products, alcoholic beverages, and other products

MEISEI ELECTRIC CO., LTD.

Manufacture and sale of devices and equipment for telecommunications, electrons, electrical measuring, and information processing, etc., construction design, contracting, and other incidental services, etc.

MEISEI MANAGEMENT SERVICE CO., LTD.

Temporary staffing services, land and property cleaning, maintenance and security services, etc.

Seiban Development Co., Ltd.

Management of golf courses

Takashima Giken Co., LTD.

Design, manufacture, sale, installation, repair, and maintenance of various types of non-destructive inspection equipment

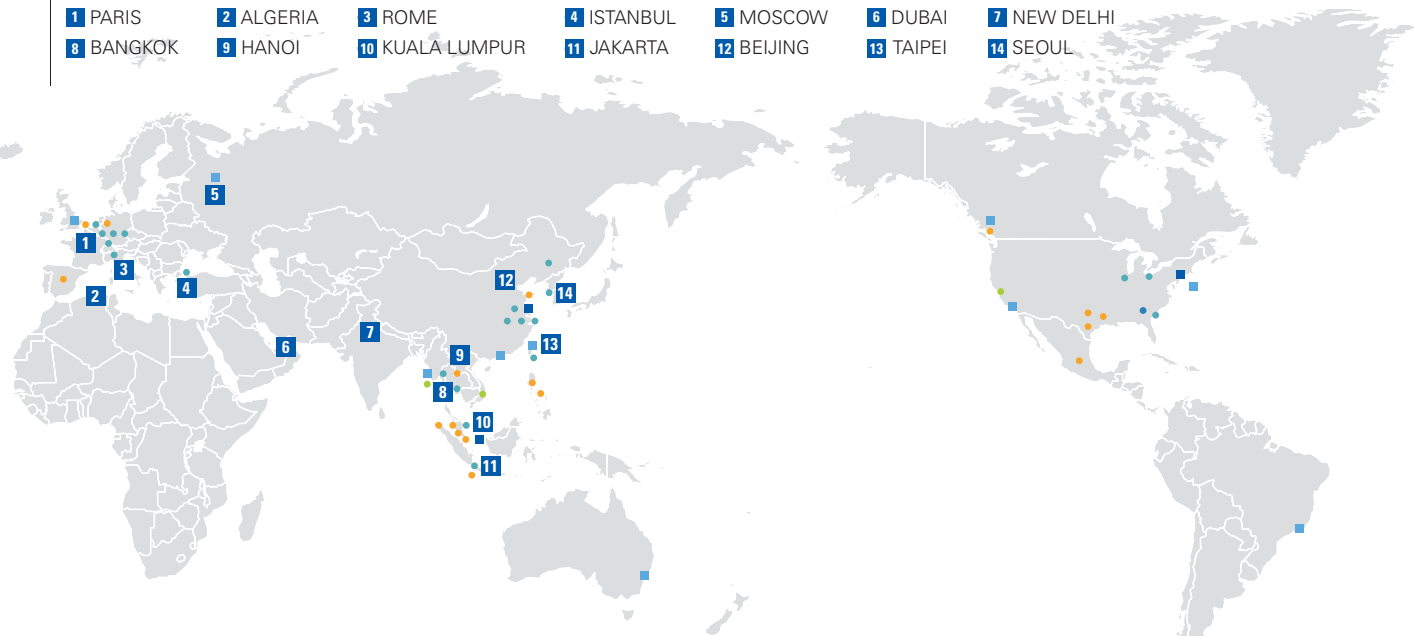
Toyosu Energy Service Co., Ltd.

Supply business operations; electric power, steam, hot water, and air conditioning

Global Network and Works of Overseas Affiliates As of March 31, 2019

Overseas Representative Offices

- 1 PARIS
- 2 ALGERIA
- 3 ROME
- 4 ISTANBUL
- 5 MOSCOW
- 6 DUBAI
- 7 NEW DELHI
- 8 BANGKOK
- 9 HANOI
- 10 KUALA LUMPUR
- 11 JAKARTA
- 12 BEIJING
- 13 TAIPEI
- 14 SEOUL



EUROPE, MIDDLE EAST

- Regional companies
- U.K./ IHI Europe Ltd.
- RUSSIA/ ALPHA Automotive Technologies LLC
- Resources, Energy & Environment Business Area
- SPAIN/ Felguera-I.H.I., S.A.
- NETHERLANDS/ Niigata Power Systems (Europe) B.V.
- GERMANY/ Steinmüller Engineering GmbH
- Industrial Systems & General-Purpose Machinery Business Area
- NETHERLANDS/ IHI Hauzer Techno Coating B.V.
- SWITZERLAND/ IHI Ionbond AG
- GERMANY/ IHI VTN GmbH
- GERMANY/ IHI Charging Systems International GmbH
- GERMANY/ IHI Charging Systems International Germany GmbH
- ITALY/ IHI Charging Systems International S.p.A.
- TURKEY/ IHI DALGAKIRAN MAKİNA SANAYİ VE TİCARET A.Ş.

ASIA

- Regional headquarters
- SINGAPORE/ IHI ASIA PACIFIC PTE. LTD.
- Regional companies
- MYANMAR/ IHI ASIA PACIFIC PTE. LTD. Yangon Branch
- TAIWAN/ IHI Taiwan Corporation
- Resources, Energy & Environment Business Area
- SINGAPORE/ Jurong Engineering Limited
- SINGAPORE/ Niigata Power Systems (Singapore) Pte. Ltd.
- THAILAND/ IHI Power System (Thailand) Co., Ltd.
- MALAYSIA/ IHI POWER SYSTEM MALAYSIA SDN.BHD.
- MALAYSIA/ IHI SOLID BIOMASS MALAYSIA SDN.BHD.
- MALAYSIA/ ISHI POWER SDN.BHD.
- INDONESIA/ PT. Cilegon Fabricators
- INDONESIA/ PT. IHI Gasification Indonesia
- PHILIPPINES/ IHI PHILIPPINES, INC.
- PHILIPPINES/ Niigata Power Systems Philippines, Inc.
- Social Infrastructure & Offshore Facilities Business Areas
- VIETNAM/ IHI INFRASTRUCTURE ASIA CO., LTD.
- MYANMAR/ I&H Engineering Co., Ltd.
- Industrial Systems & General-Purpose Machinery Business Area
- THAILAND/ IHI ASIA PACIFIC (Thailand) Co., Ltd.
- THAILAND/ IHI TURBO (THAILAND) CO., LTD.
- MALAYSIA/ IHI Transport Engineering Malaysia Sdn. Bhd.
- INDONESIA/ PT. IHI Transport Machinery Indonesia
- TAIWAN/ IHI System Technology Taiwan Co., Ltd.
- KOREA/ IHI Turbo Korea Co., Ltd.

CHINA

- Regional headquarters
- CHINA/ IHI (Shanghai) Management Co., Ltd.
- Regional companies
- CHINA/ IHI (HK) Ltd.
- Resources, Energy & Environment Business Area
- CHINA/ Niigata Power Systems (Shanghai) Co., Ltd.
- Industrial Systems & General-Purpose Machinery Business Area
- CHINA/ IHI-Sullair Compression Technology (Suzhou) Co., Ltd.
- CHINA/ Changchun FAWER-IHI Turbo Co., Ltd.
- CHINA/ WUXI IHI TURBO CO., LTD.
- CHINA/ SHANGHAI STAR MODERN AGRICULTURE EQUIPMENT CO., LTD.
- CHINA/ Jiangsu IHI Fengdong Vacuum Technology Co., Ltd.



- IHI Charging Systems International Germany GmbH (GERMANY)
- Site Area
- 20,000 m²
- Products & Services
- Automotive turbochargers
- Certificates
- ISO/TS 16949
- ISO 14001
- IATF 16949
- ISO 50001



- IHI Charging Systems International S.p.A. (ITALY)
- Site Area
- 18,900 m²
- Products & Services
- Automotive turbochargers
- Certificates
- ISO/TS 16949, ISO14001
- IATF 16949



- PT. Cilegon Fabricators (INDONESIA)
- Site Area
- 250,000 m²
- Products & Services
- Boilers, steel structures, container cranes, piping and pressure vessels, HRSG
- Certificates
- ISO 9001: 2015, ASME (S, U, PP, R), OHSAS 18001



- IHI INFRASTRUCTURE ASIA CO., LTD. (VIETNAM)
- Site Area
- 140,000 m²
- Products & Services
- Manufacturing, installation, repair and maintenance of steel structures, concrete products and industrial equipment
- Certificates
- ISO 9001



- IHI TURBO (THAILAND) CO., LTD. (THAILAND)
- Site Area
- 53,353 m²
- Products & Services
- Automotive turbochargers
- Certificates
- ISO/TS 16949, ISO 14001, OHSAS 18001

PACIFIC

- Regional companies
- AUSTRALIA/ IHI ENGINEERING AUSTRALIA PTY. LTD.

AMERICAS

- Regional headquarters
- U.S.A./ IHI INC.
- Regional companies
- U.S.A./ IHI Power Generation Corp.
- U.S.A./ IHI Power Services Corp.
- CANADA/ IHI (CANADA) LTD.
- BRAZIL/ IHI do Brasil Representações Ltda.
- Resources, Energy & Environment Business Area
- U.S.A./ IHI Southwest Technologies, Inc.
- U.S.A./ IHI E&C International Corporation
- U.S.A./ NitroCision, LLC
- CANADA/ IHI Canada Projects Inc.
- MEXICO/ Contratistas IHI E&C México, S.A. de C.V.
- Social Infrastructure & Offshore Facilities Business Areas
- U.S.A./ IHI California Inc.
- Industrial Systems & General-Purpose Machinery Business Area
- U.S.A./ IHI Turbo America Co.
- U.S.A./ IHI Press Technology America, Inc.
- U.S.A./ New Metal Engineering, LLC
- Aero Engine, Space & Defense Business Area
- U.S.A./ IHI-ICR, LLC.



- Changchun FAWER-IHI Turbo Co., Ltd. (CHINA)
- Site Area
- 43,000 m²
- Products & Services
- Automotive turbochargers
- Certificates
- IATF 16949, ISO 14001, OHSAS 18001



- WUXI IHI TURBO CO., LTD. (CHINA)
- Site Area
- 16,000 m²
- Products & Services
- Automotive turbochargers
- Certificates
- ISO/TS 16949, ISO 14001, OHSAS 18001



- IHI Turbo America Co. (U.S.A.)
- Site Area
- 64,750 m²
- Products & Services
- Automotive turbochargers and superchargers
- Certificates
- ISO/TS 16949
- IATF 16949



- IHI-ICR, LLC (U.S.A.)
- Site Area
- 3,825 m²
- Products & Services
- Repair of jet engine parts and accessories
- Certificates
- FAA Repair Station

Company Profile (as of March 31, 2019)

Year of establishment	1853
Capital	107,165 million yen
Number of employees (on consolidated basis)	29,286
Works	6
Branches in Japan	8
Overseas representative offices	14
Affiliated companies in Japan	69
● Subsidiary companies in Japan	50
● Affiliated companies in Japan	19
Overseas affiliates	148
● Overseas affiliated companies	123
● Associated companies overseas	25

Websites

See our websites for other details.

IHI website

<https://www.ihi.co.jp/en/>

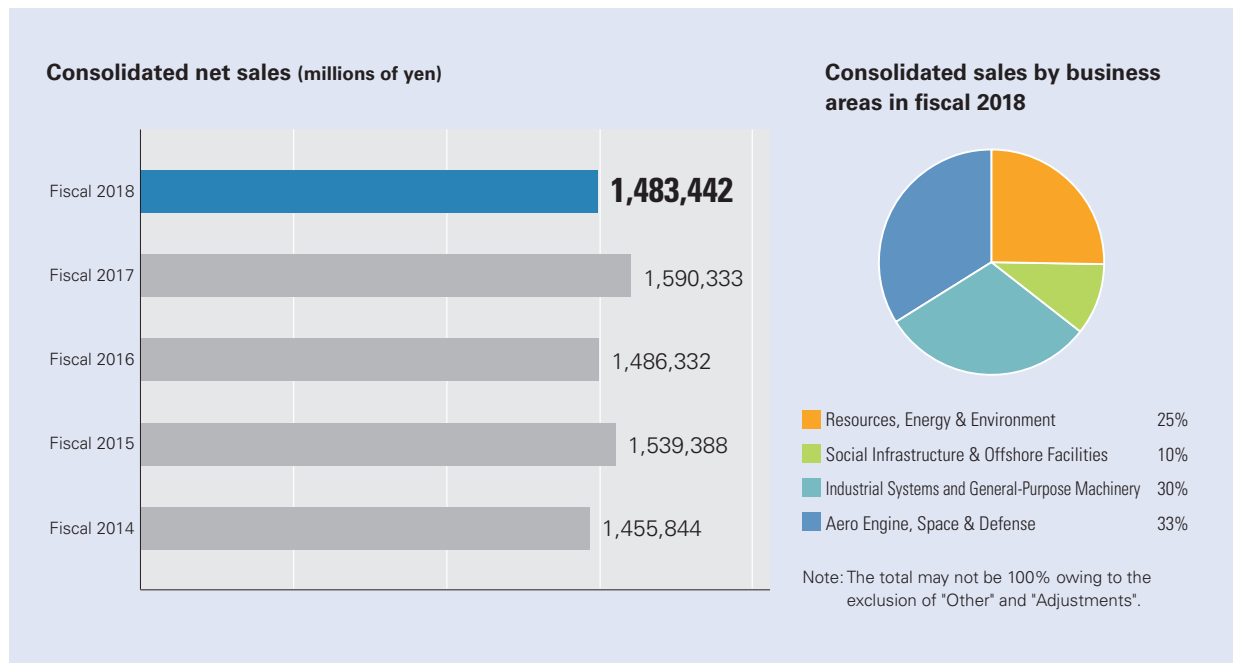


Investor relations information <https://www.ihi.co.jp/en/ir/>

CSR information <https://www.ihi.co.jp/csr/english/index.html>

Technology information <https://www.ihi.co.jp/en/technology/>

Net Sales



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