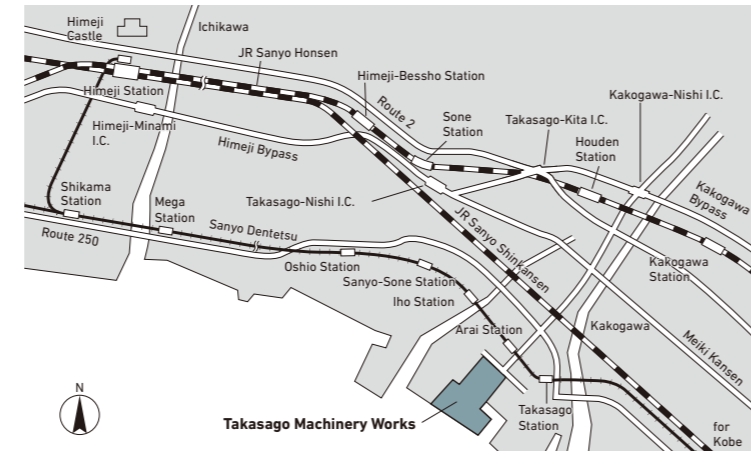




TAKASAGO MACHINERY WORKS



Access

Takasago Machinery Works

2-1-1 Shinhama, Arai-cho, Takasago-shi, Hyogo 676-8686, Japan Phone: +81-79-445-6125

■ From the Airport

From the Airport to Kobe Sannomiya

<From Kansai International Airport>
It takes 65 minutes by limousine bus bound for Kobe Sannomiya

<From (Osaka) Itami Airport>
It takes 40 minutes by limousine bus bound for Kobe Sannomiya

<From Kobe Airport>
Take the Port Liner from Kobe Airport Station to Sannomiya Station (about 18 minutes).
From Kobe Sannomiya to the nearest station

Sannomiya Station (JR) → Akashi Station (JR) → Sanyo Akashi Station (Sanyo Electric Railway) → Get off at Takasago Station or Arai Station (Sanyo Electric Railway) (About 50 minutes in total)

■ By Train

<By Sanyo Electric Railway and taxi>
Get off at Takasago Station and take a taxi for about 5 minutes to reach the front gate.
<By Sanyo Electric Railway and on foot>
Get off at Arai Station and walk for about 5 minutes to reach the front gate.

<By JR and taxi>
Get off at Himeji Station (Shinkansen side) and take a taxi for about 30 minutes to reach the front gate.
Get off at Kakogawa Station and take a taxi for about 20 minutes to reach the front gate.

■ By Car

From Kakogawa Bypass Kakogawa Nishi Interchange; it takes about 20 minutes to reach the front gate.



Brief History

- 1962 Shin Mitsubishi Heavy Industries' Kobe Shipyard & Machinery Works started operations for exclusive turbine production.
- 1963 Produced the plant's first gas turbine.
- 1964 The Works was split off from Kobe Shipyard & Machinery Works to become the Takasago Machinery Works.
- 1969 Manufactured the works' first set of nuclear turbines.
- 1984 Built a gas turbine combined cycle power plant in the Higashi Niigata Thermal Power Plant of Tohoku Electric Power Co., Inc.
- 1986 Developed the 1,250°C class gas turbine (MF-111).
- 1992 Launched verification test of 1,350°C class M701F.
- 1997 Built a gas turbine combined cycle power plant for verification testing. Began demonstrating the operation of a 1,500°C class gas turbine (M501G).
- 1999 Launched full load verification test of the world's first steam cooled gas turbine (M501H).
- 2001 Mitsubishi Power Systems America, Inc. ("MPSA") was established in the United States.
- 2004 Began commercial operation of the 300 MW M701F BFG firing combined cycle plant at the Kimitsu Cooperative Thermal Power Plant.
- 2005 Mitsubishi Heavy Industries Dongfang Gas Turbine (Guangzhou) Co., Ltd. was established in China.
- 2007 Achieved commercial operation of the M701DA air blown integrated coal gasification combined cycle plant at the Nakoso Thermal Power Plant. Began commercial operation of the M701G2 gas turbine combined cycle power plant at the Kawasaki Thermal Power Plant of Tokyo Electric Power Co., Inc.

- 2008 Established the Technical Skill Education Center at the Takasago Machinery Works.
- 2009 Developed a turbine inlet temperature 1,600°C class J-series gas turbine and progressed to commercialization. Shipped its 500th gas turbine.
- 2011 MPSA built the Savannah Machinery Works, a U.S. facility that manufactures gas turbines, turbine components, and services and repairs gas and steam turbines. EGAT Diamond Service Co., Ltd. built a gas turbine high temperature parts repair plant in Thailand.
- 2014 Mitsubishi Hitachi Power Systems, Ltd., a joint venture company formed by Mitsubishi Heavy Industries and Hitachi integrating thermal power generation systems and other related businesses, established. Mitsubishi Hitachi Power Systems' Takasago Works was formed as a result.
- 2020 Commissioned and started commercial operations of T-Point 2 combined cycle power plant validation facility. Launched validation of M501JAC gas turbine with turbine inlet temperature of 1,650°C. Renamed Mitsubishi Power, Ltd. Mitsubishi Power's Takasago Works was formed as a result.
- 2021 Mitsubishi Power's Takasago Works was integrated into Mitsubishi Heavy Industries' Takasago Machinery Works.

Mitsubishi Power is a power solutions brand of Mitsubishi Heavy Industries.

Mitsubishi Heavy Industries, Ltd.

power.mhi.com



TAKASEI-EBO, (3.0)23-6

TAKASAGO SINCE 1962

Takasago Machinery Works aims for decarbonized society through advanced technology

Takasago Machinery Works was originally set up in 1962 to serve as a turbine manufacturing plant for large capacity power plants and machinery. Today, Takasago Machinery Works manufactures a variety of solutions, including high performance gas turbines, steam turbines, and other related products. Its J-Series gas turbine is the most heat efficient gas turbine available on the market. These and other products have contributed to the advancement of both industry and daily life around the world. In addition, Takasago Machinery Works has started aiming to help achieve a decarbonized society through hydrogen and ammonia gas turbines development in recent years.

Area

1,056,014 m²(Site) 367,162 m²(Building)

International Certifications

- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System

Annual Production Capacity

Gas Turbine
36 units

Steam Turbine
3 to 6 units

TAKASAGO MACHINERY WORKS

Main Products



M501 JAC Gas Turbine Rotor



Nuclear Power Steam Turbine



Gas Turbine Power Generation Equipment



Nuclear Power Turbine Generation Equipment



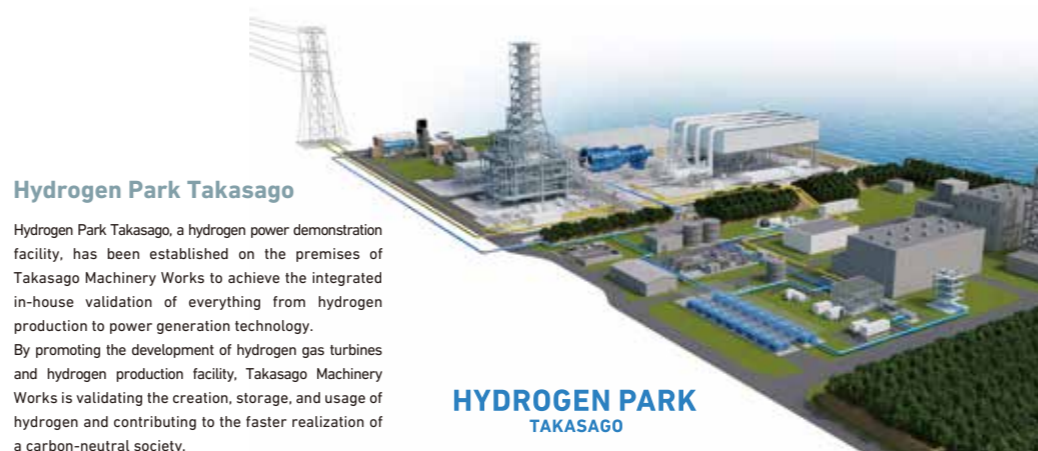
Gas Turbine Combined Cycle (GTCC) Power Plant



Nuclear Power Plant



- 1 Main Office
- 2 Office No.2
- 3 Office No.3
- 4 Office No.4
- 5 Office No.5 (Design & Service Building)
- 6 Control System Design and Manufacturing Center
- 7 Technical Skill Education Center
- 8 Small Blade Forging Shop
- 9 Large Blade Forging Shop
- 10 No.1 Blade Shop (Compressor Blade)
- 11 No.2 Blade Shop (Gas Turbine Blade)
- 12 No.3 Blade Shop (Gas Turbine Blade)
- 13 No.4 Blade Shop (Gas Turbine Blade)
- 14 No.5 Blade Shop (Gas Turbine Blade)
- 15 No.6 Blade Shop (Gas Turbine Blade)
- 16 No.7 Blade Shop (Gas Turbine Blade)
- 17 Piping Shop
- 18 Combustor Shop (Fuel Nozzle & Basket)
- 19 Welding Shop
- 20 Heat Exchangers Machining Shop
- 21 Large Machining Shop
- 22 Assembly Shop
- 23 Turbine Rotor Shop
- 24 Combustor shop (Transition Piece)
- 25 Hot Parts Repair Shop
- 26 Gas Turbine Assembly Shop
- 27 Steam Turbine Load Testing Facility
- 28 Gas Turbine Component Testing Facility
- 29 Combined Cycle Power Plant for Validation (T-Point 2)
- 30 Hydrogen Park Takasago
- 31 Dedicated Wharf
- 32 Pump Production Shop
- 33 Research & Innovation Center



Hydrogen Park Takasago

Hydrogen Park Takasago, a hydrogen power demonstration facility, has been established on the premises of Takasago Machinery Works to achieve the integrated in-house validation of everything from hydrogen production to power generation technology. By promoting the development of hydrogen gas turbines and hydrogen production facility, Takasago Machinery Works is validating the creation, storage, and usage of hydrogen and contributing to the faster realization of a carbon-neutral society.

**HYDROGEN PARK
TAKASAGO**

Combined Cycle Power Plant for Validation

The Mitsubishi Power protocol for long-term product validation was pioneered in the original T-Point at Takasago Machinery Works in 1997. The game-changing process has greatly improved gas turbine performance and reliability, ultimately helping ensure customer satisfaction. However, in recent years, there has been rising demand for cleaner and more efficient power generation facilities. To address these emergent needs, Mitsubishi Power constructed T-Point 2, a new validation facility on the site of the previous T-Point. T-Point 2 – with its gas turbine with an inlet temperature of 1,650°C – will contribute to the stable supply of power while promoting energy decarbonization.



Strengths of Takasago Machinery Works

Mitsubishi Power's Takasago Machinery Works conducts R&D, design, manufacturing, and validation of power solutions and technologies. Our production systems aim to ensure high quality and reliability and are driven by the latest technological advancements. Our products incorporate state-of-the-art technology, are manufactured with materials of the highest quality, and are validated via the world's largest turbine testing facility. In addition, TOMONI HUB (Analytics and Performance Center) goes beyond traditional remote monitoring to provide global fleet-wide centralized resources for advanced operation and maintenance support, paving the way for the smarter and ultimately more autonomous power plants of the future.

