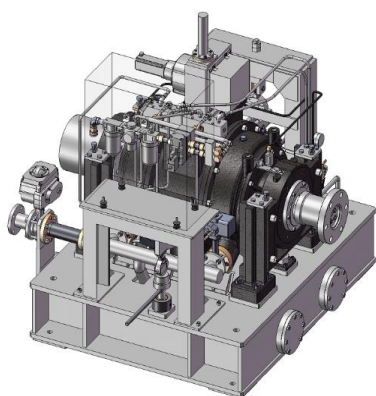


~Advanced Test System and Test Bench Engineering Professional~

Tokyo Plant Co., Ltd.

Product catalog



Dynamometer controller for Hydraulic Dynamometer

 TOKYO PLANT Co., Ltd.
東京プラント株式会社

Last update 2026/08/13

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■ Overview

Our dynamometer controllers and hydraulic dynamometers offer high precision and exceptional durability, and are widely adopted by customers both in Japan and overseas.



■ Product Lineup

We offer a comprehensive product lineup ranging from 10 kW to 20,000 kW, the widest range available in Japan.

■ Track Record History: Over 50 years (the first unit was delivered in 1964, supplied to Komatsu and Hino Motors)

■ Total units delivered: More than 2,000
(No.1 market share in Japan)

■ Delivery regions: Japan and over 40 countries worldwide

■ Major Customers (in no particular order)

Yanmar, IHI, Niigata Power Systems, Komatsu, IPA, Daihatsu Infinares, Mitsubishi Heavy Industries, Hitachi, Ebara, Kubota, Shinko Engineering, Kanzaki Kokyukoki, Tokiwa Works, Komatsu Construction Equipment Sales, Tominaga Bussan, Mitsubishi Heavy Industries Engine & Turbocharger Sales, Mitsubishi Fuso Truck and Bus, Mitsui Zosen Machinery & Systems, Okinawa Machinery Service, Otsuka Diesel, Osaka Gas, Akasaka Diesels, Kyowa Kogyo, Toyo Internal Combustion, Daito Works, Maruma Technica, Isuzu Marine Manufacturing, Tokai Transportation Machinery, Nissan Motor, Yamaha Motor, NGK Spark Plug, Mitsuboshi Belting, Ishibashi Works, Nakada Engine, Ogura Clutch, Japan Hydro, Various universities and technical colleges, domestic and overseas research institutions, the Japan Ground Self-Defense Force, the Japan Maritime Self-Defense Force Technical School, and the U.S. Navy Atsugi Base.

(Total: over 500 organizations)

■ Main application of the products

Engine Performance Testing

Evaluation of output, torque, efficiency, and overall performance characteristics of various engines.

Durability and Endurance Testing

Long-duration operation to assess wear, reliability, and lifecycle performance.

Emission and Environmental Testing

Measurement and analysis of exhaust emissions under controlled load conditions.

Research and Development

Use in OEM and academic R&D facilities for prototype evaluation, calibration, and advanced engineering studies.

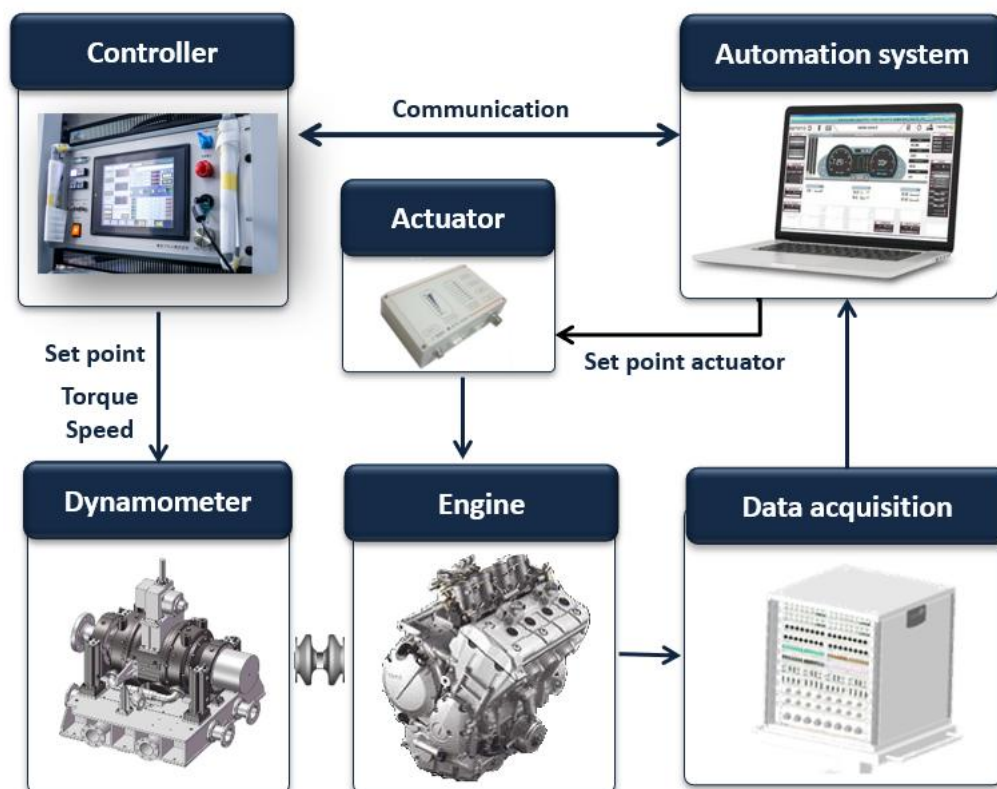
Quality Assurance and Production Line Testing

Verification of engine performance during manufacturing and final inspection.

Maintenance and Overhaul Facilities

Performance checks and diagnostics for large engines after overhaul or repair.

■ Typical system configuration



We are able to propose the optimal dynamometer, measurement system, and auxiliary equipment tailored to each customer's needs. If required, we can also support the selection of automation systems, data-acquisition sensors, test bench layout, shafts, and dampers. Please feel free to contact our Sales Department with your requirements. We will provide the most suitable proposal that aligns with your budget and technical expectations.

■ Products lineup

○Dynamometer controller(Automatic type)



This controller is a dedicated controller for hydraulic dynamometers. It is a measurement and feedback-control system that performs testing of the specimen using a hydraulic dynamometer. It is equipped with rotation-speed and torque measurement functions, control functions for manual or automatic control of the unit under test's rotation speed and torque, and alarm functions that detect and handle system abnormalities.

○Main specifications

Model	HDYC-1000
Control mode	Manual Control —The load-valve opening of the water dynamometer is adjusted according to the encoder dial setting operated manually, thereby regulating the engine torque and speed. Constant-Speed Control —Feedback control is executed to maintain the specified rotational speed. Constant-Torque Control —Feedback control is executed to maintain the specified torque. Marine-Characteristic Control —Load is calculated from the torque coefficient proportional to the square of the rotational speed, and cubic-characteristic control is performed. External Control —Programmed operation and measurement are performed from an external upper-level control system.
Accuracy	Depending on the condition of the engine and dynamometer, the PID tuning settings, and the influence of cooling-water pressure, the control accuracy may not fall within the specified range.
Alarm set and monitor	Emergency Stop —When an abnormal condition occurs, pressing the emergency button stops the control operation. Overspeed Protection —Monitors the upper limit of the dynamometer's maximum rotational speed. Overload Protection —Monitors the upper limit of the dynamometer's maximum torque. Cooling-Water Inlet Temperature Monitoring —Monitors the cooling-water temperature of the dynamometer (35 °C). Discharge-Water Temperature Monitoring —Monitors the discharge-water temperature of the dynamometer (60 °C). Bearing Temperature Monitoring —Monitors the bearing temperature of the dynamometer (80 °C). External Alarm Input —Monitors externally connected equipment via contact-signal input.
Input/Output	Analog voltage input/output (0–10 V), analog current output (4–20 mA), and Form-A contact.
Power supply	Three-phase AC 200 V, 50/60 Hz, 15 A
Main	Main Unit: W480 × H249 × D430 mm When Stored in Rack: W520 × H543 × D600 mm
Weight	Approximately 50 kg including the main unit, storage rack, and power panel

■ Products lineup

○Dynamometer controller(Manual control type)



This controller is a measurement and manual-control system designed for testing specimens using a hydraulic dynamometer. It is equipped with rotation-speed and torque measurement functions, manual control functions for regulating the unit under test's speed and torque, and alarm functions that detect and process system abnormalities. The system allows for easy and intuitive operation.

○Main specifications

Model	TP-1000A
Control mode	Manual Load Control By pressing the operation buttons, the load-control motor drives the load valve to open or close, thereby increasing or decreasing the absorbed torque.
Accuracy	Speed Measurement Display —Complies with the specifications of the display manufacturer. Torque Display Accuracy —Complies with the specifications of the display manufacturer. Note: Depending on the condition of the engine and dynamometer, as well as the influence of cooling-water pressure, the measurement accuracy may not fall within the specified range.
Alarm set and monitor	Dynamometer Oil Lubrication —The oil flow rate is monitored by a flow indicator. Alarm Response Procedure When an alarm occurs, return the engine to idle and keep pressing the load-decrease button to reduce the load to its lower limit.
Input/Output	Analog voltage input/output (0–10 V) and contact-signal input
Power supply	Three-phase AC 200 V, 50/60 Hz, 15 A
Main	Main Unit: W480 × H249 × D430 mm When Stored in Rack: W520 × H543 × D600 mm
Weight	Main Unit: approximately 20 kg (approximately 50 kg when including the storage rack and power panel)

■ Paid Optional Products

○Automation system MORPHEE



MOPRHEE main screen (Reference)

Product Overview

This system provides essential functions for test benches, including data acquisition, programmed operation, and test-sequence configuration. In addition to these core capabilities, it implements a comprehensive set of advanced features such as automation, integration with ECU calibration workflows, and real-time model execution on the test bench.

These functions enhance the reliability of testing on the bench and contribute to reducing workload in bench testing, vehicle testing, and calibration processes.

MORPHEE is developed and distributed by ENORISE.

○Sensor terminal box (MIO)



Product Overview

In engine and drivetrain bench testing, highly robust and scalable I/O modules are essential.

The sensor relay box allows flexible configuration of modules and signal types—such as temperature, pressure, analog, digital, and contact signals—based on the customer's specific requirements.

○Product Overview

We provide various utilities required for test benches according to customer requirements.

To reduce engine torsional vibration, we also perform optimal selection of shafts and dampers.



Engine Mounts and Mobile Universal Base



Shafts, Dampers, Custom Adapters, and Safety Covers for Shafts

■ Related products

○ Tanaka's Hydraulic dynamometer

The Tanaka-type Hydraulic dynamometer is recognized worldwide as a leading dynamometer and has been featured in numerous technical publications, including the Automotive Engineering Handbook.

It is highly regarded for its durability, precision, rapid response, and low inertia, and is used by many customers both in Japan and overseas.

Our product lineup covers a wide output range from 88 kW to 20,000 kW, including models designed for low-speed, high-speed, and high-torque applications.



For further details, please refer to the product catalog for our hydraulic dynamometers.

○ Potable type hydraulic dynamometer

Our company is the only manufacturer in Japan that develops, designs, produces, and sells portable water-type dynamometers. We offer a product lineup ranging from 10 kW to 370 kW. Thanks to their high portability and low operating cost, these dynamometers enable efficient engine load-performance testing and are highly regarded by customers.

They have been adopted by many users both in Japan and overseas.



For further details, please refer to the product catalog for our portable hydraulic dynamometers.

Inquiry Process

Please feel free to contact our sales representatives by phone, email, or through our website.

○Frequently Asked Inquiries

Planning

Please share your plans for test cell and test bench commissioning, equipment upgrades, or modifications.

Quotation

Please provide information on the intended use of the dynamometer, test contents, engine specifications, measurement items, test patterns, and schedule.

Repair inspection

Please provide the model and serial number of the product you are using, as well as your preferred date and time for the requested service.

Technical questions

If you have any questions regarding the product's structure or operating principles, please let us know. We will connect you with our technical specialists.

Products Handling

If you have any questions regarding product operation or usage, please let us know. We will connect you with the product specialist.

Other inquiries

If you have any requests, comments, or questions, please let us know. We will connect you with the appropriate product specialist.

Any information you provide during inquiries or discussions will be handled with strict confidentiality. We take full responsibility for ensuring that all such information is securely managed within our company.



Contact Information

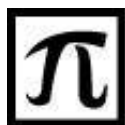
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