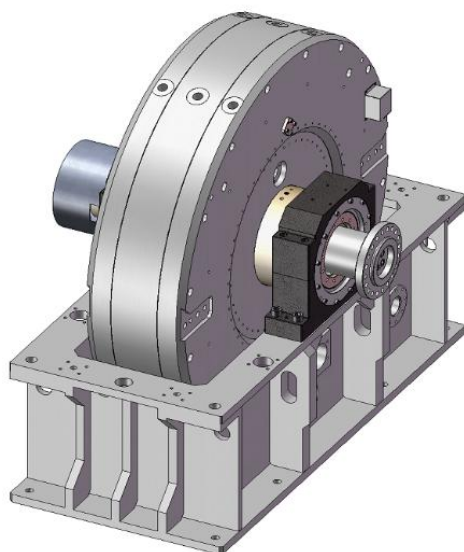


~Advanced Test System and Test Bench Engineering Professional~

Tokyo Plant Co., Ltd.

Product catalog



Dynamometer controller for Eddy Current Dynamometer

 TOKYO PLANT Co., Ltd.
東京プラント株式会社

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■ Overview

Our dynamometer controllers and eddy-current 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 2.2 kW to 1800 kW, the widest range available in Japan.

■ Track Record

Total units delivered: Over 500 Delivery regions:
Japan and more than 10 countries worldwide

■ Main users: OEMs (off-road and automotive), component suppliers (Tier 1 and above), gas companies, engine maintenance shops, the Japan Self-Defense Forces, universities, technical colleges, and research institutions.

■ Major Customers (in no particular order)

Yanmar, Kubota, Mitsubishi Heavy Industries, IHI Shibaura, Hitachi, Kanzaki Kokyukoki, Shinko Engineering, Kawasaki Heavy Industries, CAT, Davies, Osaka Gas, Tokyo Gas, Makita, Honda R&D, SUBARU, Mitsubishi Motors, Aisin Seiki, Komatsu Zenoah, Showa Shell Sekiyu, General Sekiyu, Cosmo Oil, Panasonic, Bridgestone, Exedy, Mitsuboshi Belting, Daido Kogyo, Bando Chemical, Enuma Chain, JFE Technos, ACR, TYK, Ono Sokki, Unitta, The University of Tokyo, Chiba University, Tokyo University of Technology, Kogakuin University, Kyushu Institute of Technology, various other universities and technical colleges, domestic and overseas research institutions, racing teams, the Japan Ground Self-Defense Force, the Japan Maritime Self-Defense Force Technical School, and the U.S. Navy Atsugi Base.

(Total: over 300 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.

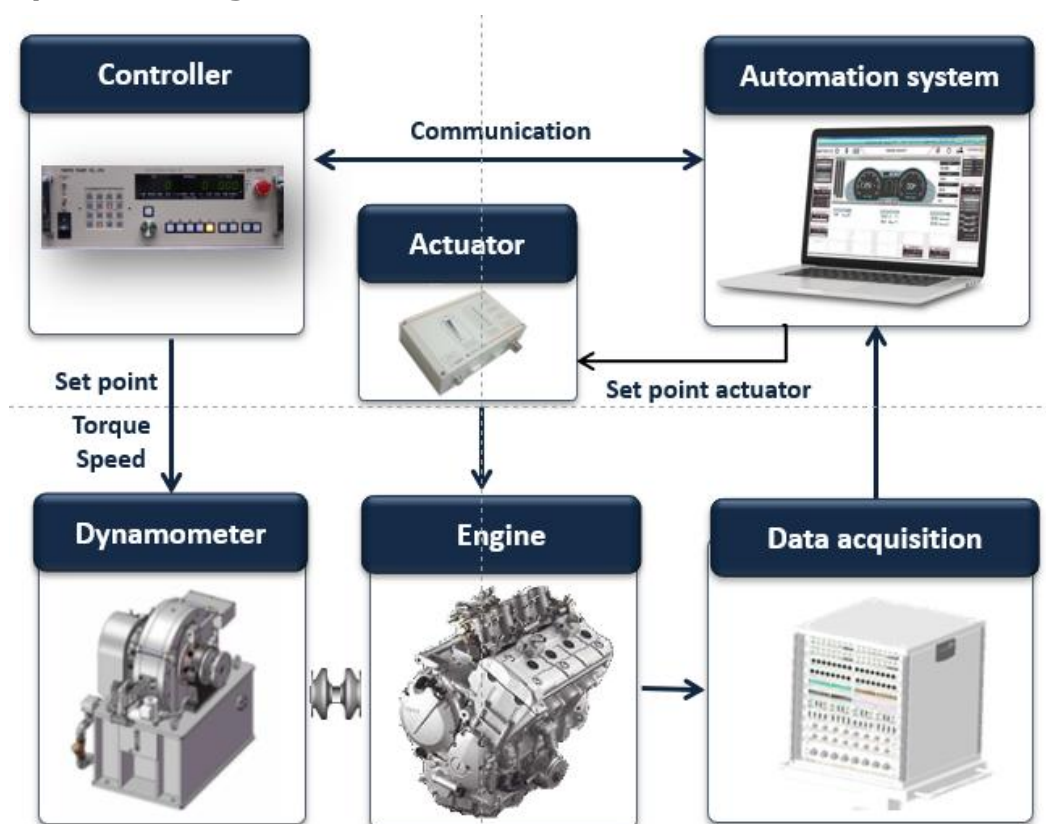
Quality Assurance and Production Line Testing

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.

■ Lineup of Optional Products

○ Dynamometer controller(Automatic type)



○ Outline

This controller is a dedicated unit for eddy-current dynamometer.

It serves as a measurement and feedback-control system for testing with eddy-current dynamometer. The controller includes functions for measuring rotational speed and torque, manual or automatic control of the test specimen's speed and torque, and alarm functions for detecting and handling system abnormalities.

○ Main specifications

Model	DY-1000T
Control mode	Manual Control: Torque and speed are controlled based on the potentiometer settings adjusted manually by the operator. 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. External Control: Automatic operation is performed via an external automation system.
Accuracy	Constant-Speed Control: $\pm 5 \text{ min}^{-1}$ Constant-Torque Control: Within $\pm 0.3\%$ F.S. <i>Note: Depending on the condition of the engine and dynamometer, PID tuning settings, cooling-water pressure, and external disturbances, the actual control accuracy may fall outside the specified range.</i>
Alarm set and monitor	Emergency Stop: Stops control operation when an abnormal condition occurs and the emergency stop button is activated. Overspeed Monitoring: Monitors the upper limit of the dynamometer's maximum rotational speed. Overload Monitoring: Monitors the upper limit of the dynamometer's maximum torque capacity. Cooling-Water Inlet Temperature: Monitors the dynamometer cooling-water temperature (30 °C). Cooling-Water Discharge Temperature: Monitors the dynamometer discharge-water temperature (60 °C). Bearing Temperature: Monitors the dynamometer bearing temperature (80 °C). External Alarm Input: Monitors external connected equipment via contact-signal input.
Input/Output	Analog Voltage Input/Output (DC 0–10 V)
Power supply	Three-phase AC 200 V, 50/60 Hz, 13 A
Main	Main Unit Only: W480 mm×H150 mm×D350 mm (Cabinet-mounted type) With Case: W500 mm × H193 mm × D350 mm
Weight	Main Unit: Approx. 10 kg

■ 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, Temperature-Control Units, etc.

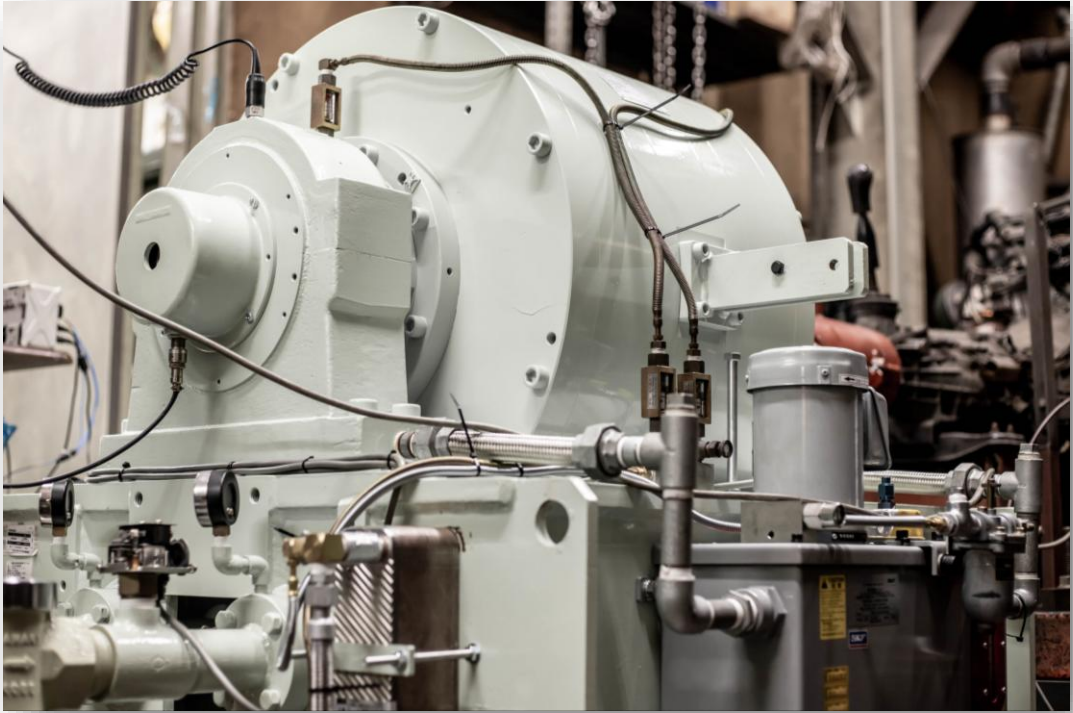


Shafts, Dampers, Custom Adapters, and Safety Covers for Shafts

■ Related products

○ Eddy current dynamometer

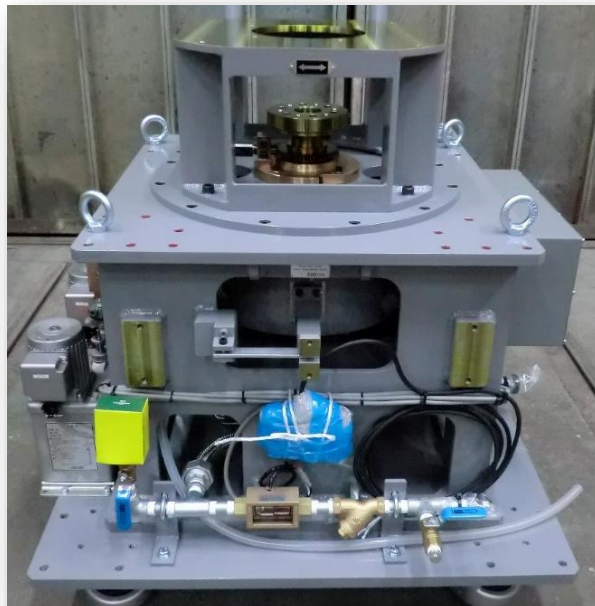
Our company also manufactures and supplies eddy-current dynamometers. We offer a wide product lineup ranging from 2.2 kW to 1000 kW, including models capable of high-torque applications. These dynamometers enable a wide variety of engine load-performance tests with minimal installation space and low overall cost. Our products are used by customers both in Japan and overseas.



For further details, please refer to the product catalog for our eddy-current dynamometers.

○ Solution examples ED-V type

The eddy-current dynamometer can be installed in a vertical orientation, allowing direct connection to the test object. This configuration is ideal for VTOL testing systems.



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

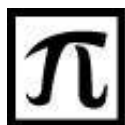
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