Portable Test Bed
Product Catalog

TOKYO PLANT Co., Ltd.
東京プラント株式会社

■ General

Portable testbed has been commercialized due to lots of customers request that they want to install engine test benches with as low cost as possible. It has been introduced to many customers from manufacturers research, development, and experiment groups to academic purposes.

■ Characteristics

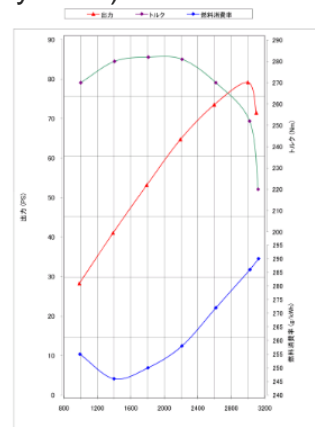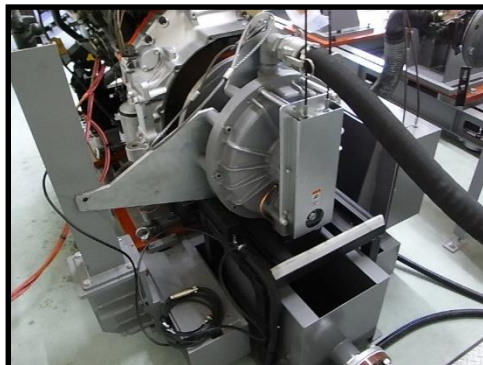| Benefits	• Very simplified test can be realized with a test piece and a dynamometer mounted on combined portable water tank and stand. • T-slot bedplate is not needed due to portable structure. (Possible to install on T-slot bedplate.) • Cooling water may not be necessary dependent on the output of a test piece because cooling water is supplied to a test piece and dynamometer from the underwater pump in the portable water tank stand. • We have a wide range of test piece stand, shaft coupling and dynamometer. • Multiple test pieces can be test because dynamometers of different outputs can be mounted. • It also can be installed outside.
Easy operation	• Manual push buttons, automatic speed and torque control. • Speed and torque can be controlled by programmed operation from automation system. • Speed and torque employs digital indicator as standard. • Outputs analog voltages of speed and torque. • Connector is employed to prevent cable disconnection. • Alarm signal generates when overspeed and overtorque. Relay contact can be set.

■ Applications

○ Targets
- Small marine engine
- Agricultural machine engine
- Construction vehicle engine
- Small generator
- Small turbine
- Pump
- Truck engine
- Passenger car engine
- Motorcycle engine
- Motor

○ Tests
- Durability performance test
- Partial load performance test
- Full-open performance test
- Component evaluation test
- other performance tests (steady state)...

■ System Configuration

Dyno controller

Actuator

Automation system

Portable driving bench
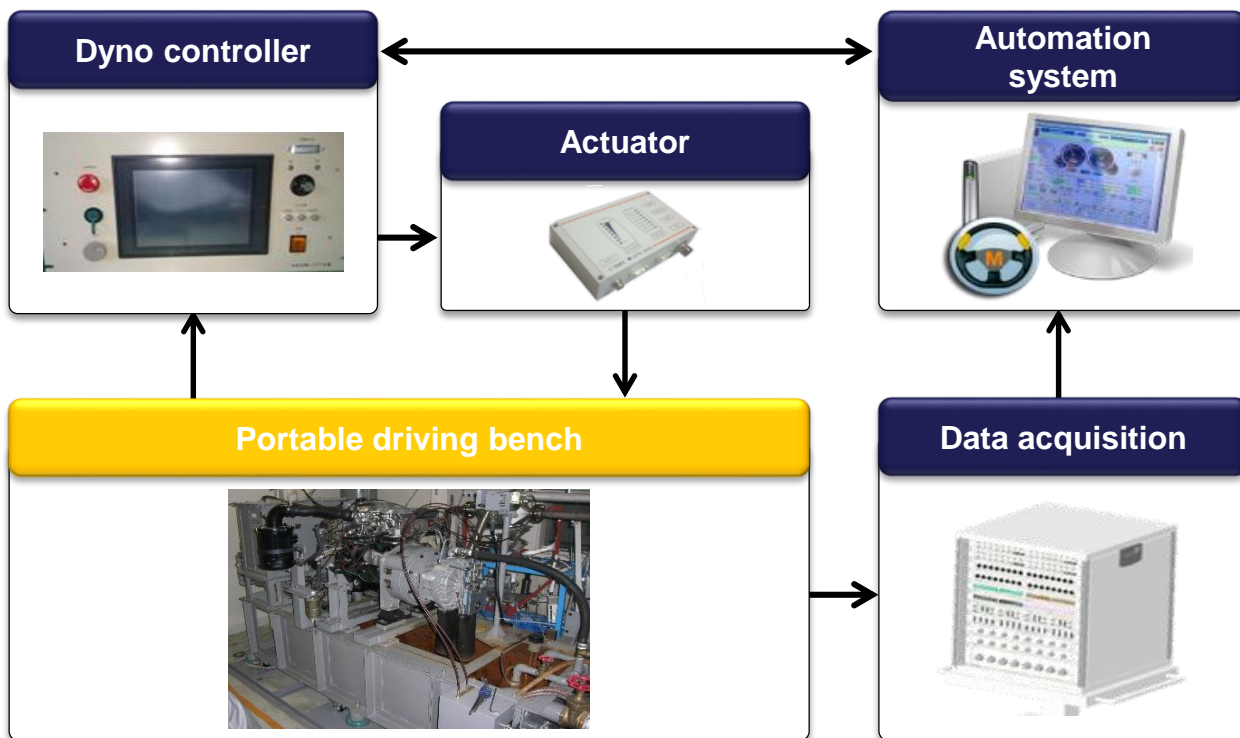
Data acquisition

We can offer the most suitable testbed engineering to customers. Please contact us for further details about automation system, data acquisition sensors, testbed layout and shaft couplings. We can offer the suitable proposal for your budget and request.
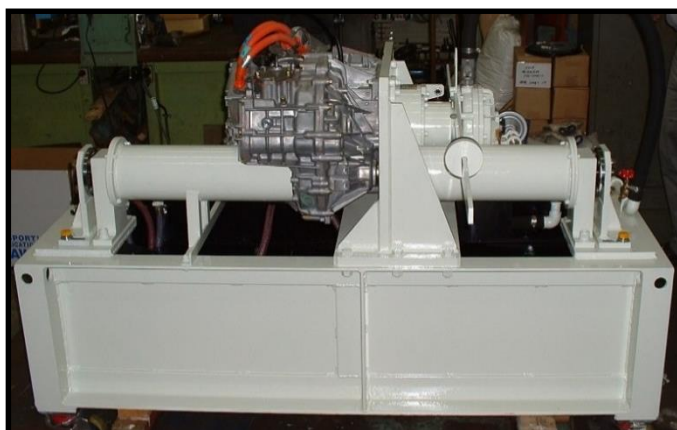
■ Product specification
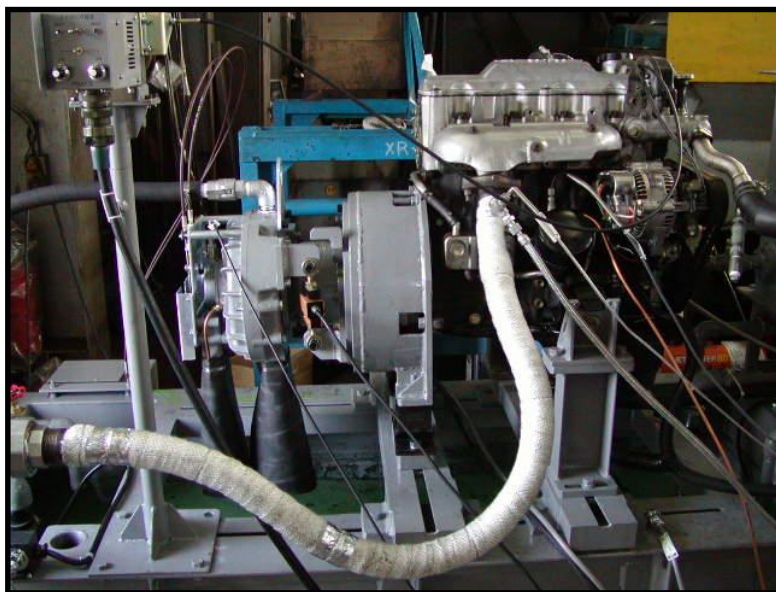
Component	Content
Dynamometer	Select from portable hydraulic dynamometers or eddy current dynamometers.
Control system	Select from manual or automatic control.
Test piece mount	Determined according to customer's request.
Abnormal stop items	Determined according to customer's request.
Torque measurement accuracy	According to the specification of dynamometer and torquemeter.
Speed measurement accuracy	According to the specification of dynamometer and speed detector.
Volume of water tank	According to the specification of dynamometer and test piece.
Outside dimension	According to dynamometer, test piece and the volume of water tank.
Shaft coupling	According to test piece and test content.
Power requirement	Dynamometer: 3-phase, AC200V
Operating environment	Indoor or outside
Utilities	Shaft coupling, damper, muffler, starter battery, underwater pump, electromagnetic valve and etc.
Control system	Automation, data acquisition sensors, throttle controller system
Standard Accessories	Flow meter for dynamometer cooling water, temp sensors for cooling water inlet and outlet

Sample: Portable stand with water tank   Sample: Portable testbed
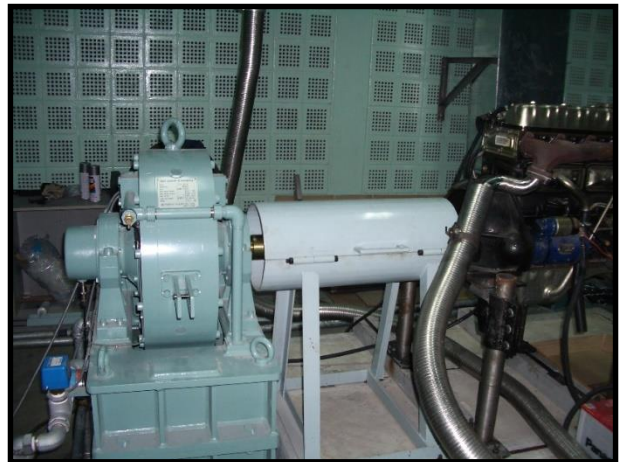
■ Related Products

We are the only company that develops, designs, sells and manufactures portable hydraulic dynamometers in Japan, Our portable hydraulic dynamometers receive high recognition and are adopted in domestic and overseas due to high portability, low cost and engine load performance test.

We have the widest range from 10kW to 500 kW. Please see the portable hydraulic dynamometer catalog for more details.
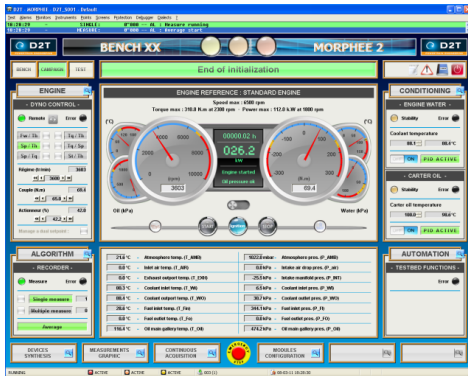
○ Eddy Current Dynamometer

Our eddy current dynamometers are excellent in high accuracy and durability and adopted to many customers in domestic and internationally.

We have the widest range from 2.2kW to 750kW. Please see the eddy current dynamometer catalog for more details.

■ Related Products

○ Automation System MORPHEE

MORPHEE Main screen (reference)

MORPHEE is implemented with basic functions of test bench data acquisition, programmed operation and test sequence setting, as well as integrating automation and ECU calibration, and real-time model execution in test bench.

And it improves reliability of test in test bench and contributes to bench test, actual vehicle test and decreasing man-hour of calibration process. MORPHEE is developed and sold by FEV.

○ Data acquisition system (MIO module)

High robustness and high expandable I/O modules are expected in engine and drivetrain bench tests. Out data acquisition system can combine modules and I/O signal types (temp., pressure, analog, digital and contact) according to customers' needs.

○ Shaft coupling and damper

Connected with test piece and dynamometer to reduce torsional vibration.

We also select the most suitable shaft couplings.

■ Flow of Inquiry

Please do not hesitate to contact our sales by phone, email or web.

○ FAQ

| **Planning** | Please tell us your planning about launching test cell or test bed and updating facilities. |

| **Request for Quotation** | Please tell us about application of dyno, test contents, engine specification, measurement items, test patterns and etc. |

| **Request for Services** | Please tell us product model and manufacturing number. |

| **Technical Questions** | Please tell us if you are concerned about our product structure and principle. Our sales will contact you. |

| **Questions about Product** | Please tell us if you are concerned about our product usage. Our sales will contact you. |

| **Others** | Please tell us if you have requests, opinions and concerns. Our sales will contact you. |

We are responsible for handling customer information and inquiry contents as confidential.

【**Contact**】
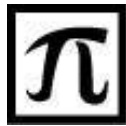**Sales Group, Tokyo Plant Co., Ltd.**
515-5 Miyazawa-cho, Akishima-city, Tokyo 196-0024
TEL: +81-(0)42-546-6500   FAX: +81-(0)42-546-6600
URL: www.tokyo-plant.co.jp
E-mail: sales@tokyo-plant.co.jp

Since 1948