Advanced Test System and Test Bed Engineering Professional

Company Profile

TOKYO PLANT Co., Ltd.
東京プラント株式会社

Update 2017/10/17

Address

We support your "Manufacturing" with testing tool.

We have been operating mainly mechanical and control design and also R&D, design, manufacturing and sales of test systems for engine and drive train such as dynamometer, testing equipment and control measurement system for 70 years since 1948.

Nowadays development race for prime mover such as environment load reduction technology, hybrid technology, electric motor and next-generation energy is going on in the transportation and industrial fields. More and more requests for advanced test system are increasing from many customers. We have established the system that can consistently provide virtual test system for engine and drive train from development to manufacturing, actual machine test and the test system necessary for production line. Thank you very much for being our customers.

We will engage in the customers' "Manufacturing" deeper and continue to propose and contribute wider to efficient development and experiment and cost reduction.
Thank you very much for being our customers.

Tokyo Plant Co., Ltd.
Kiyohiro Tanaka,
Managing Director and CEO

Founded on September 27th, 1948

Representative:
Kiyohiro Tanaka, Managing Director and CEO

Headquarters:
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

Major correspondent financial institution:
Sumitomo Mitsui Banking Corporation, Akishima branch
The Bank of Tokyo-Mitsubishi UFJ, Tachikawa branch
The Tama Shinkin Bank, Akishima branch
The Ome Shinkin Bank, Akishima branch
Japan Finance Corporation, Tachikawa branch

Overview

Customers' Business Fields

- Automobile
- Airplane
- Vessel
- Heavy machinery (construction)
- Farm machines
- Generator
- Industrial machine
- Material, electronic

R&D Experimental evaluation

Quality assurance Inspection

Production, Manufacturing

Our Customers

○ Automotive, two-wheel
- TOYOTA
- NISSAN
- HONDA
- SUBARU
- ISUZU
- HINO
- SUZUKI
- YAMAHA
- Toyota Industries
- Denso
- Aishin Seiki

○ Components
- Mitsuboshi Belting
- Bando Chemical
- Enuma Chain

○ Industrial
- Komatsu
- Kubota
- Yanmar
- IHI
- Niigata Power Systems
- Daihatsu Diesel
- Mitsubishi Heavy Industries
- Kawasaki Heavy Industries
- Hitachi
- Kawasaki Heavy Industries
- Kanzaki Kokyukoki
- Osaka Gas
- Mitsui Zosen Machinery & Service

○ Racing teams

○ Universities, Colleges of technology

○ JGSDF

○ Research Institutions

○ Overseas
- Asia
- USA
- Europe
- Middle East
- Russia

* More than 40 countries

Total of 500 companies

Business contents

Test bed Engineering

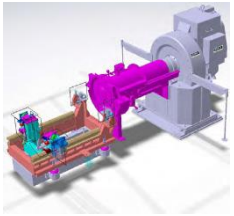
○ Test bed
- Dynamometer
- Testing devices
- Automation
- Drive shaft and etc.

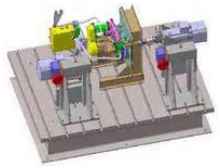
○ Test cell solution
- Integration of the whole testing facility
- Construction
- Ancillary facility

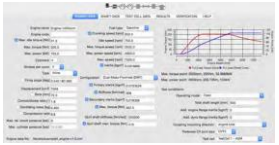
Engine Testing service

○ Engine testing service

* collaboration with partners







Our Solution and Products

Providing wide test systems from development to production

We can seamlessly deal with utilities and engineering services necessary for test bench such as development of prime mover, drivetrain and vehicle, test system and test cell for experiment and mass-production line with partners

Planning and Consultancy


- Support from planning phase
- Consulting testing system

Test bed and Dynamometer

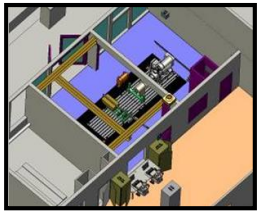

- Very compact to large prime movers
- Off-road market share top class in Japan

Solution and Products

Special ordered testing devices


- Constant speed friction tester
- Components for testing and custom testing device

Engineering

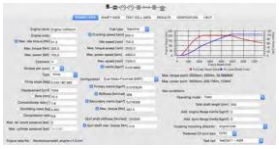
- Design and construction work
- Ancillary facility

Our Solution and Products

Providing wide test systems from development to production

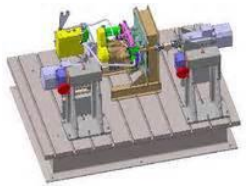
We support customers' wide needs for X-in-the-loops from Hard-in-the-loops to Engine-in-the-loops with advanced test systems and engine testing service.

Drive shaft for testing



- Must-item in test bed
- Selection and simulation analysis (partially chargeable)

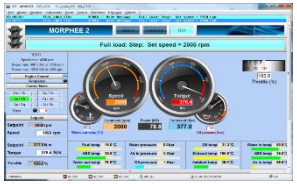
Engine testing service



- Engine performance testing service by business collaboration with alliance partners.

Solution and Products

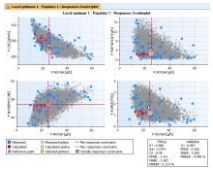
Automation system



- The world top automation system MORPHEE
- Testing from HIL to test bed

* MORPHEE is a product of a German company FEV.

Advanced test system



- Model-based calibration system
- HIL system (constructed with MORPHEE)
- Reproduct driving condition by importing street data

Major Product - Dynamometer

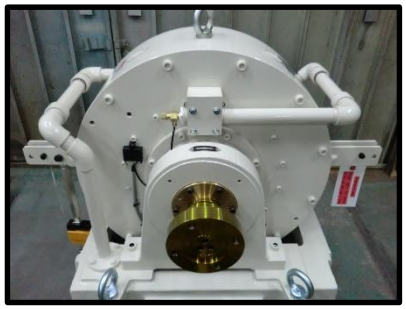
Aspects of the product

Reached 3,000 units of cumulative sales number. Has the highest reliabilities. We are the only established manufacturer that can manage output range of 2.2 to 20,000 kW, high torque, and high speed spec. We have a wide range of products that can evaluate any kind of engine (automobile, construction machine, farm machine, vessel engine, E-motor...) and drivetrain.

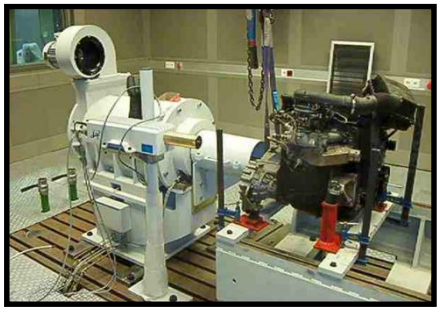
Major use

- ✓ Durability performance test of engine and drivetrain
- ✓ Steady test of engine and drivetrain
- ✓ Transient test of engine and drivetrain
- ✓ Components for testing

Tanaka's hydraulic dynamometer
- **For large diesel engine**
- **Durability test and steady state performance test**



Eddie Current Dynamometer
- **For off-road engine**
- **Durability test, steady state performance test and NRTC test...**
- **For off-road engine production line**



AC Dynamometer
- **For automobile engine**
- **Durability test, steady state performance test and transient performance test...**

Friction dynamometer
- **For truck and off-road**
- **Axle performance test...**

Major Product - Special ordered testing devices

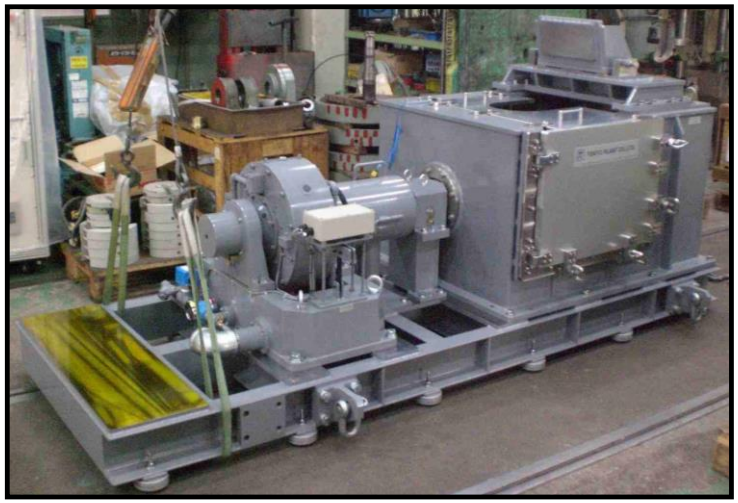
Our Solution

We design and manufacture according to customers‘ request of special order. Our long-accumulated know-how enables to design and manufacture a wide range of testing devices.

Cases of special ordered testing devices manufacturing

- Constant speed type friction tester (JIS-D4411, D4311 prototype model)
- Bevel gear performance evaluation testing device
- Gear box performance evaluation testing device
- Belt performance evaluation testing device
- Chain performance evaluation testing device
- Chassis dyno for 2-wheel and 4-wheel
- and more custom testing devices

HP-S type constant speed friction testing machine



Outboard engine test bed

Major Product - Automation System

Feature of MORPHEE

MORPHEE is a integrated platform that has functions such as test bench automation, ECU calibration and simulation. It works as automation system for engine testing, drivetrain testing, test on chassis dynamometer, ECU calibration, HILS test system and battery testing and can reduce time of customer's development and experiment, man-hour and cost.

MORPHEE is made with open system concept; it implements many drivers and corresponds with many applications on market. It is a reliable and highly sophisticated automation system that sold more than 2600 sets in the world and used by more than 10,000 users.

MORPHEE is developed and sold by FEV from Germany.

Our Solution

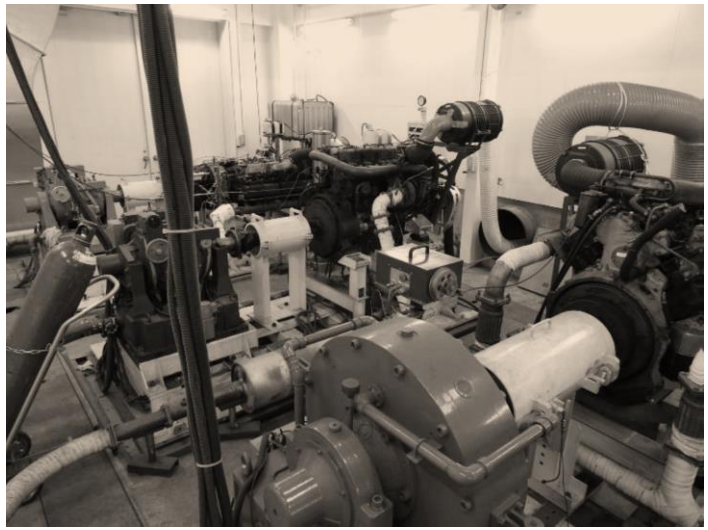
We develop and commercialize applications based on automation system MORPHEE. It is acknowledged and introduced globally, and they can be used in any kind of situations of model-based development such as HIL, calibration, EIL, test bed.

Engine Performance Testing Service

Contents of engine testing services

We offer engine performance testing service by business collaboration with alliance partners. As a test system supplier, we build optimum test bed including engine testing service items discussion and test requirement definition based on customer needs with business partners.

Major testing contents
- Durability performance evaluation test
- Engine components evaluation
- DPF durability performance test
- ...



Major facilities
- Permanently installed

5 x Eddy current dynamometer, 220 to 300 kW

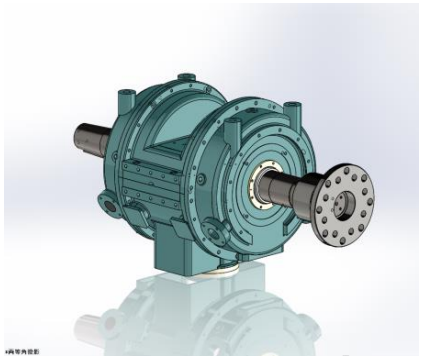
- Test systems range

Eddy current dynamometer, 2.2 to 750kW
Automation system (HIL system) * including plant and control model.
Other measurement systems according to customers' request (to be discussed separately)
* Test systems other that permanently installed are non-free.

Our Production Capability

Design, Production, Repair Shop

Consistent production system
We consistently operate from R&D to manufacturing by ourselves.
Manufacturing flow: Design → Arranging materials → Casting (wood pattern) → Processed by outsourcing → Assembly → Delivery inspection



○ Head factory (Design, Production, Repair Shop)
Location: Tokyo
Target product: below 500 kW
Crane: 1 x 5t
Test bench: 2 (for delivery dynamometers)

○ Affiliate factory (Production, Repair Shop)
Location: Shizuoka prefecture
Target product: over 500 kW
Crane: 2 x 15 t and 1 x 5 t
Test bench: 1 (for delivery dynamometers)

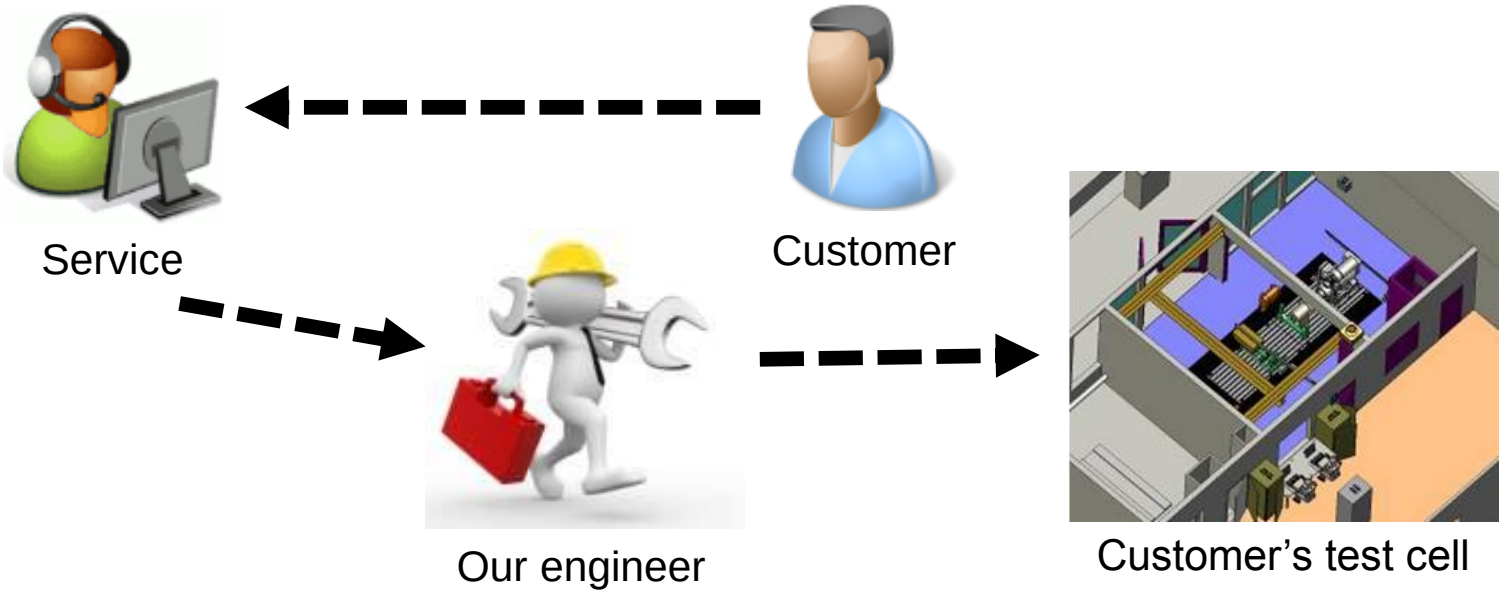
■ After-sales service

Our engineers can visit domestic and overseas responding customers request.

- Additional charge applies.

Inquiry samples:

- Come to visit inspection.
- Conduct user manual training because a person-in-charge is changed.
- Product is broken due to excess load.



History

■ 1948: Establishment
Manufactured a soil testing machine first time ever in Japan with the extraordinary technical capability of the founder Seichi Tanaka, supported by laboratory students from the University of Tokyo. Additionally, manufactured and sold constant speed friction testing machine (prototype model of JIS standard as JIS-D4411) collaborated with Agency of Industrial Science and Technology.

■ 1950s: Launching business
Developed NS continuous variable transmission. Manufactured fuel injection pump tester equipped with NS continuous variable transmission. In conjunction with that, developed and started selling clamp type oil level meter and index handle... Thanks to the proposal by the Ministry of Education regarding industry promotion measure of industrial high school, internal combustion engine experimental device that is combination of Tanaka type hydraulic dyno and EC dyno were delivered to wide range of end users.

■ 1960s: Expansion of business
Awarded Tokyo Govenor's Prize at Tokyo Invention Expo in 1969 and awarded Medal with Purple Ribbon by Kakuei Tanaka, prime minister at that time for developing a hydraulic dynamometer of direct control method by returned water. Continuously developed high speed type hydraulic dyno, portable type hydraulic dyno and EC dyno. Got more patents and utility models for more great products. Especially Tanaka's hydraulic dynamometer received high reputation not only domestic but also in international markets, and its cumulative delivery number exceeded 1,300 units.

■ 1970s: Expansion of product range
Developed dyno-related products (chassis dyno, portable type engine test bench, and automatic control measuring device by software) and delivered to manufacturers' production line and experiment research institutes for engines, motor transmissions, and belt chains.

■ 1980s: 2nd generation
President Seishi Tanaka retired due to health reasons. Seifu Tanaka, sales manager of board, became President.
Transfer the headquarters to Excel Heights, 4-16-9 Etsunan-cho, Musashino-city, Tokyo.

■ 1990s: New factory, new building
Established the head office factory at 515-5 Miyazawa-cho, Akishima-city, Tokyo.

History

■ 2000s: 3rd generation, Expanding to abroad

Jan 2009:	President Seifu Tanaka retired due to health reasons, and became chairman.
	Kiyohiro Tanaka, board member became the third president.
	Expanded the business with collaboration with 30 domestic companies and 11 countries.
	Expanded the business to overseas.
	Collaborate with companies from 11 countries (distributors, agencies and alliances)
	Expanded the business with collaboration with 30 domestic companies
	tart selling high-end testing tools
Aug 2009:	Business collaboration with TYK Corporation for DPF performance evaluation testing service.
Apr 2010:	Established the trading business department due to diversification of business.
	Shifted to business departments with self-support accounting systems.
Jan 2011:	Made sales agency agreement with D2T (in Japan, Thailand, Malaysia...)
	Started selling D2T products: automation system MORPHEE...
May 2013:	Our business scheme regarding power train engineering was recognized by Ministry of Economy, Trade and Industry, and adopted to "advanced technology facility investment promotion business cost subsidy 2012", one of the highest receiving amount.
Dec 2013:	Divided, transfer and sold the trading business department.
May 2014:	Established a subsidiary, D2T JAPAN (JV with D2T)
	Started fully selling automation system, simulation tool, AC dynamometer...
April 2015:	Tokyo pref. business inovation planning is recognized by the Governor of Tokyo.
Feb 2016:	Business collaboration with Austrian TECTOS and started selling driveshafts for test bed.
Jun 2016:	Closes D2T Japan due to taking over D2T by German FEV.
Sep 2016:	Business collaboration with FET Powercraft for engine testing service.
Jun 2017:	Concludes a sales agency agreement with FEV JAPAN.

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Since 1948