



~Advanced Test System and Test Bench Engineering Professional~

Tokyo Plant Co., Ltd.



Introduction Eddy current dynamometer

Our eddy current dynamometers offer high accuracy and exceptional durability, and are widely adopted by customers both in Japan and overseas.



» **Product Lineup**

We offer one of the widest product lineups in Japan, covering capacities from 2.2 kW to 1,800 kW.

» **Track Record**

Total units delivered: Over 1,000
Delivery regions:
Japan and more than 10 overseas countries

» **Major Customers (in no particular order)**

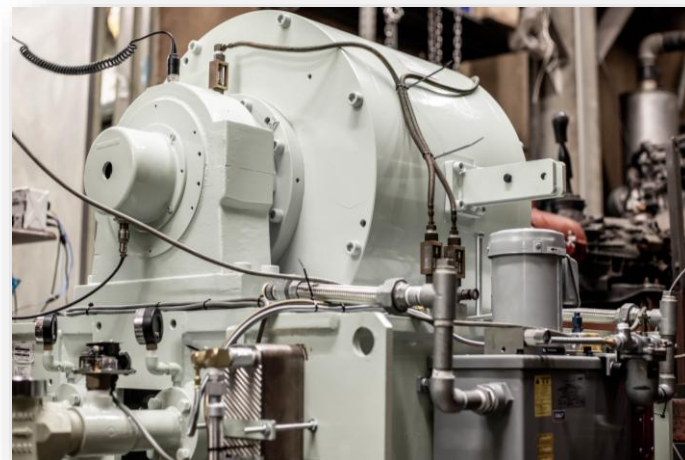
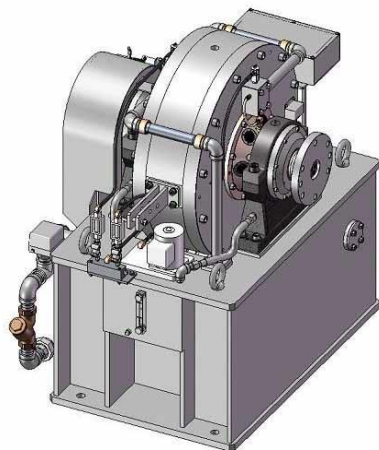
Yanmar, Kubota, Mitsubishi Heavy Industries, IHI Shibaura, Hitachi, Kanzaki Kokyukoki, Shinko Engineering, Kawasaki Heavy Industries, CAT, Davies, Osaka Gas, Tokyo Gas, Makita, Honda R&D, SUBARU, Mitsubishi Motors, Aisin Seiki, Komatsu Zenoah, Showa Shell Sekiyu, General Sekiyu, Cosmo Oil, Panasonic, 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 international 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, among others.

(Over 300 companies in total)

» Output range : 2.2 kW – 1,000 kW

We are the market leader among Japanese agricultural machinery manufacturers, with over 1,000 units delivered domestically and internationally.

Our extensive product lineup enables us to meet diverse customer application requirements.



» Product Lineup For details, please refer to the product catalog.

Model	Rotational direction	Main Specifications	Units under test
ED type	One-direction	2.2 ~ 1,000kW / middle speed range	Automobiles, trucks, construction machinery, agricultural machinery, and marine vessels
ED-HT type	One-direction	220 ~ 750kW / Middle speed range	Agricultural machinery, generators, marine vessels, and more
EDH type	One-direction	220 ~ 800kW / High speed range	Racing engine
EDV type Vertical type	One-direction	2.2 ~ 1,000kW / Middle speed range	VTOAL General-purpose engine

Custom specifications are also available.

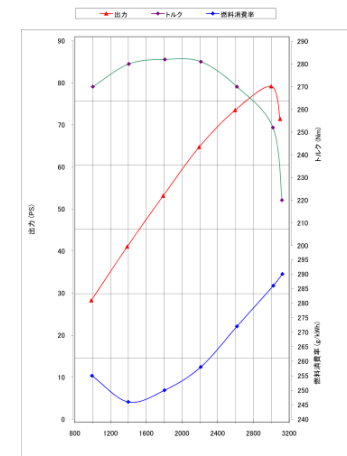
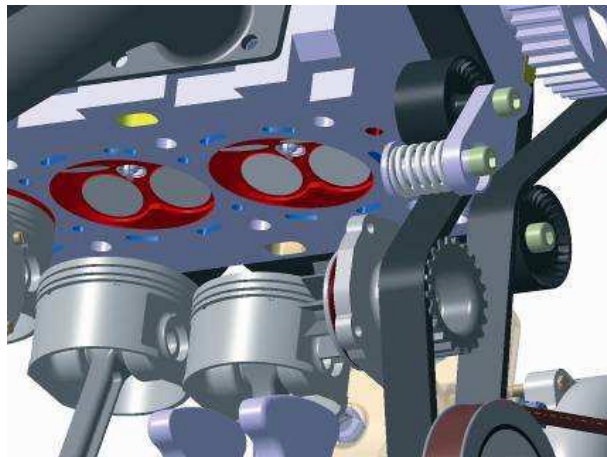
» Target Applications

Diesel engines, hydrogen engines, generators, gas turbines, construction machinery, agricultural machinery, propeller shafts, etc.

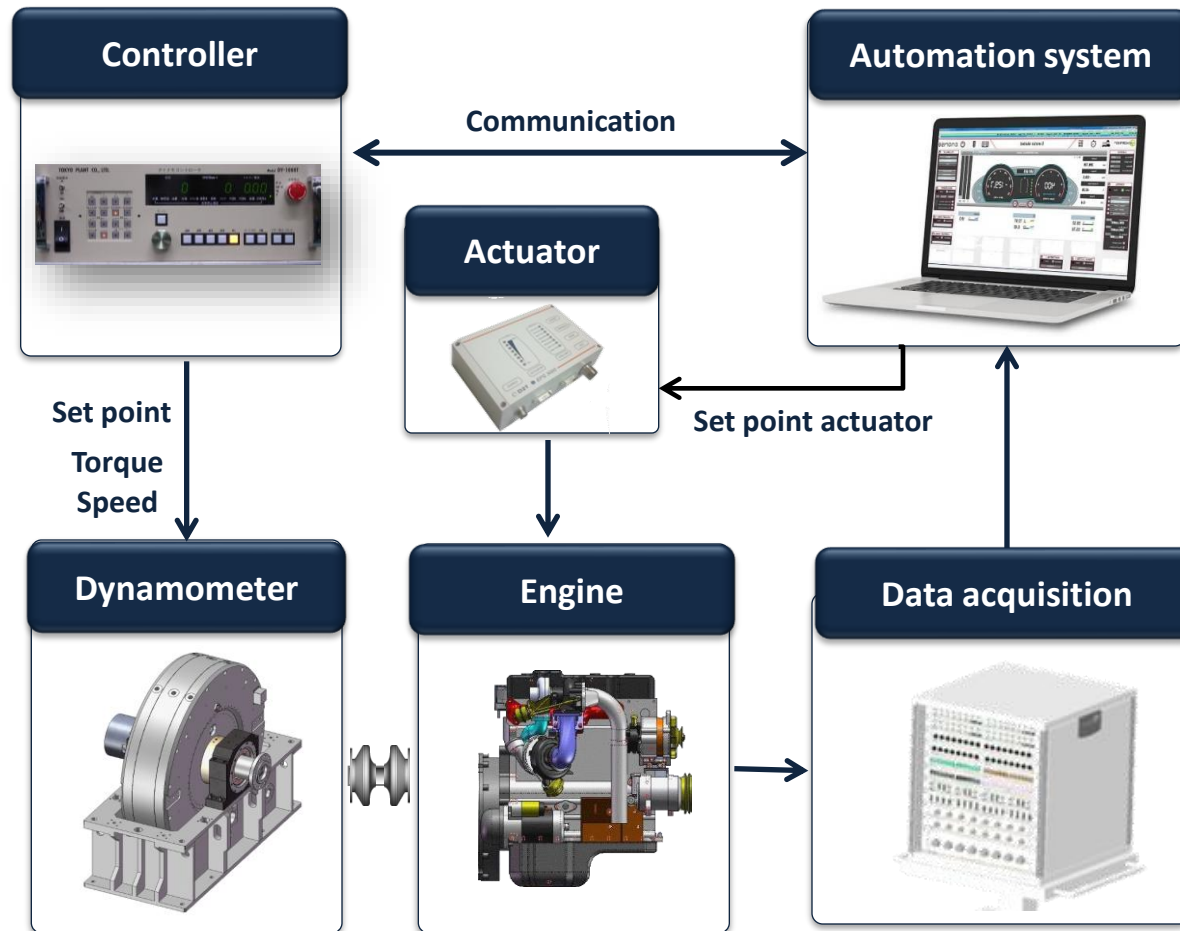


» Primary Applications

- Durability Performance Testing
- Partial-Load Performance Testing
- Full-Load Performance Testing
- Various Other Performance Tests (Steady-State and Transient)
- Marine Multiplier Control Rapid Load Variation Testing



» Diesel engine test



» EDB type



Key feature)

This non-reaction (non-swing) type eddy-current dynamometer uses a torque flange instead of a load cell, enabling high-accuracy torque measurement.

(The measurement accuracy varies depending on the manufacturer and specifications of the torque flange.)

It is ideally suited for emission-related testing conducted by off-road engine manufacturers, such as NRTC transient cycles.

The dynamometer main unit can be selected from our existing product lineup.

» ED-M type



Key feature)

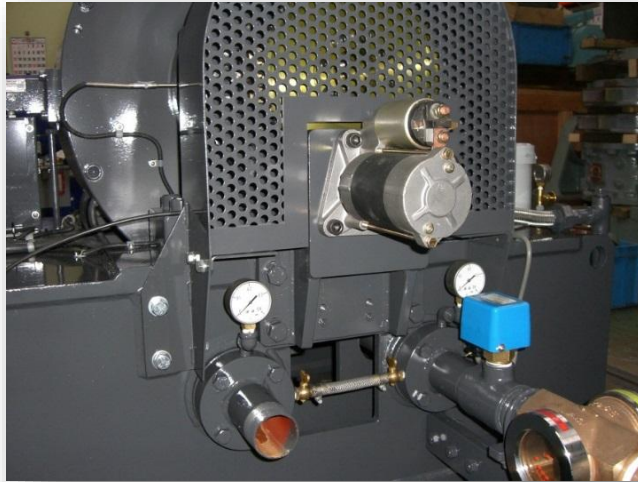
The rear side of the eddy-current dynamometer can be connected to a motor via an electromagnetic clutch.

The motor output specifications can be defined according to customer requirements.

This configuration is ideal for motoring tests, cranking tests, and noise-and-vibration evaluations, as well as hot and cold testing.

The dynamometer main unit can be selected from our standard product lineup.

» ED-S type



Key feature)

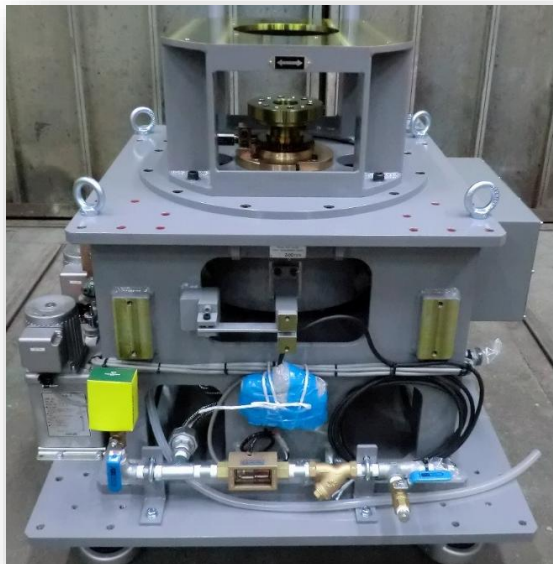
A starter motor can be mounted on the rear side of the eddy-current dynamometer.

The starter motor output specifications can be defined according to customer requirements

.It is also possible to install the customer's own vehicle-mounted starter motor.

The dynamometer main unit can be selected from our standard product lineup.

» ED-V type



Key feature)

The eddy-current dynamometer can be installed in a vertical orientation and connected directly to the unit under test(UUT)

Optional accessories include shaft couplings and mounting stands for the UUT.

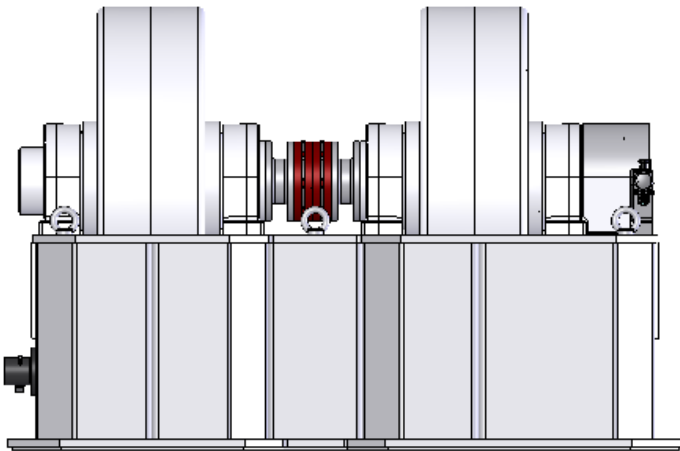
The dynamometer main unit can be selected from our standard product lineup.

» High power type



Key feature)
We also have experience manufacturing custom eddy-current dynamometers with capacities exceeding 750 kW. All manufacturing specifications are defined according to the customer's requirements.

» Tandem type



Key feature)
Two eddy-current dynamometers can be connected in parallel to accommodate testing of large engines. All manufacturing specifications are defined according to the customer's requirements. The dynamometer main unit can be selected from our standard product lineup.

» End of line test bench



» Scope of the project

- ✓41sets eddy current dynamometers
- ✓41sets dynamometer controller

Feature)

It contributes to improving the takt time of the engine production line, enabling customers to achieve their planned production volume.

» PTO test bench for tractor



» Scope of the project

- ✓Eddy current dynamometer
- ✓Dynamometer controller
- ✓Automation system
- ✓Fuel flow meter
- etc

Feature)

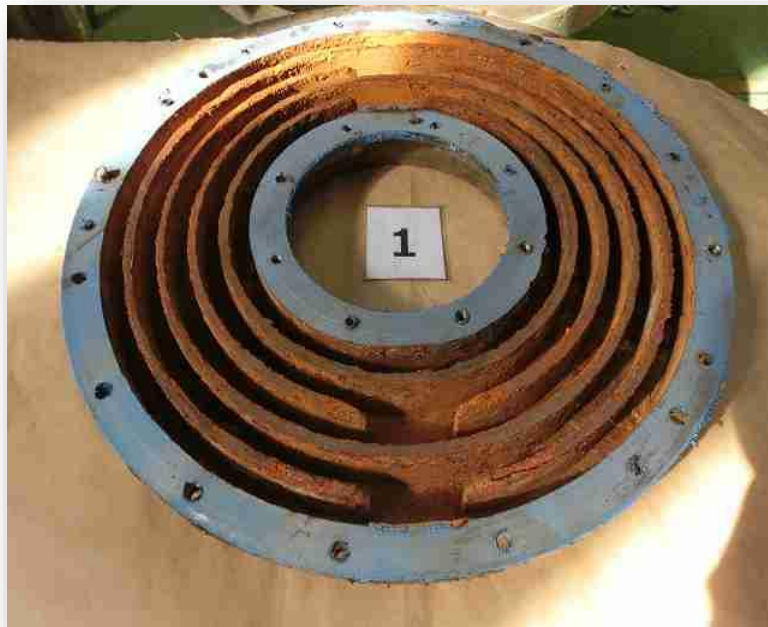
The output efficiency of the tractor's power take-off (PTO) is inspected.

» Maintenance and after-sales service

Even those who pay attention to their daily health can vaguely judge their physical condition on any given day though, However, without the help of a medical specialist, it is impossible to accurately determine the state of one's internal health.

The testing equipment wears out its many parts very slightly with each repeated test.

The oil used to minimize wear also deteriorates and wears out with frequency of use and the passage of time. Testing equipment that does not have a natural regenerative capacity can be kept in the best condition through periodic maintenance to monitor its health and perform necessary servicing. Periodic maintenance is required to ensure accurate data measurement with the test equipment.



» Regular maintenance prevents breakdowns before they occur.

Especially when the testing equipment is used under severe conditions, such as continuous endurance tests, the bearings and seals of each part are damaged quickly and need to be replaced periodically. After product maintenance, we closely check the condition of the product before shipping, including metrology and operational inspections.

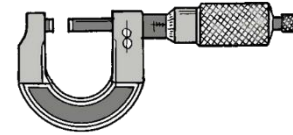
Only test equipment that has passed our strict standards is delivered to our customers again.

» Benefit for customers

- ✓ We will organize and manage the repair history, trouble history, and modification history, which will reduce the burden on the customer.
- ✓ We can prevent breakdowns and minimize damage from accidents and problems.
- ✓ We will prevent any trouble after the overhaul because our professional engineers will carry out the work. After the overhaul is completed, testing can be conducted with confidence.
- ✓ After overhaul, static torque accuracy returns to within $\pm 0.5\%$ F.S.
Therefore, the measurement system can be maintained and accurate test data can be measured.
Restored to like-new condition.
7,000 hours or 5 to 7 years of reliable use until the next maintenance period.
- ※ The maintenance cycle (number of years) varies depending on the customer's frequency of use and the test bench environment.
- ✓ If a full overhaul is performed, the warranty will be extended for an additional year after delivery.

» Main menu of maintenance

- ① Bearing replacement and greasing of rotating parts
- ② Replacement and supply of OIL to lubricating parts
- ③ Measurement of coupling runout and surface runout
- ④ Correction of shaft balance
- ⑤ Replacement and correction of bearing parts
- ⑥ Replacement and correction of seal parts
- ⑦ Checking and correcting electrical components
- ⑧ Checking, correcting and replacing all connectors and cables
- ⑨ Calibration of torque and load (temperature, pressure, and rotation are also possible)
- ⑩ Tightening of bolts
- ⑪ Cleaning and repainting
- ⑫ Calibration and test run inspection



» Maintenance report

After disassembling a product, we photograph, inspect, and test every single part, down to the last bolt.

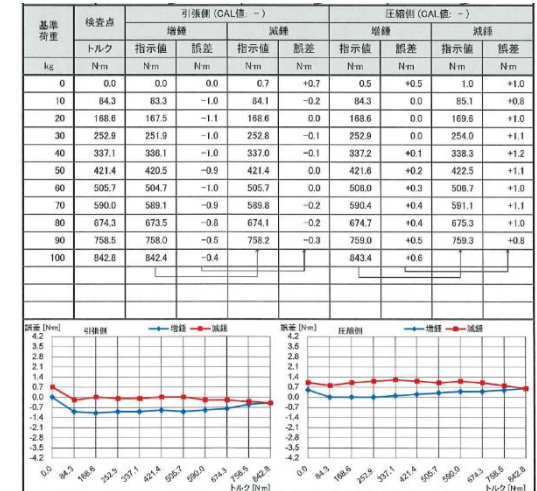
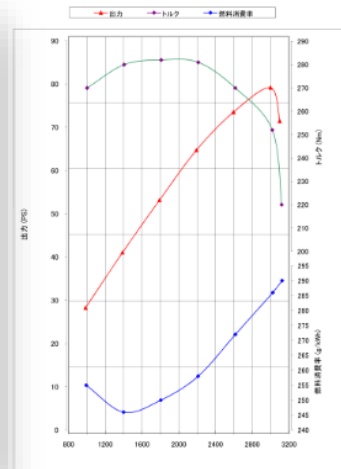
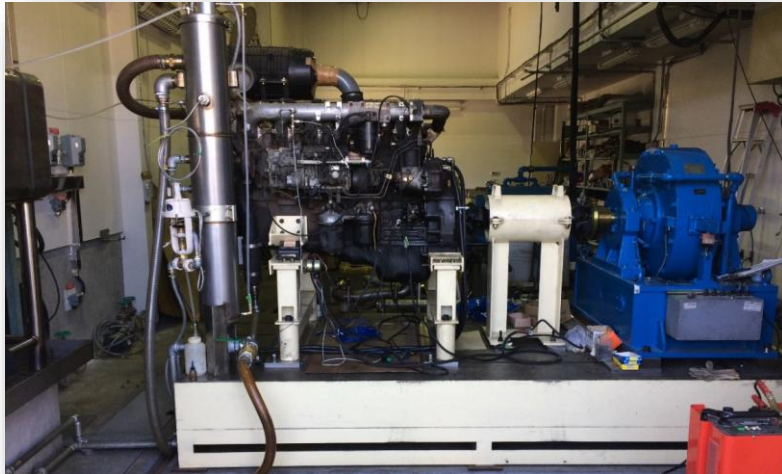
We are confident that the report is free of ambiguities, and our customers can be assured that it is free of ambiguities.

(In addition to the photos, the actual report will be annotated with arrows and notes on the problem areas.)



》 Performance test before delivery

Connect the dynamometer to the engine in our test bench and conduct a test run inspection. Mainly, Are there any oil or water leaks, or abnormal vibrations? We deliver the product to the customer after confirming that there are no problems with the product.



》 Proposal maintenance planning

The test equipment can be used for a span of 20 years or more with continuous maintenance.

We propose appropriate maintenance plans based on the frequency of use, operating hours, and other factors. If you need a plan for running costs and maintenance before or after purchasing our products, please feel free to contact us. when you need a plan for running costs and maintenance.



» Recommendation annual inspection on site

Failure to perform daily, monthly, and annual inspections of the product could, in the worst case, result in the death of an employee due to shattering of the rotating parts.

In addition, correct measurement data is essential for the development, experimentation, and testing of your application. When test equipment ages, high accuracy cannot be maintained and proper data cannot be obtained.

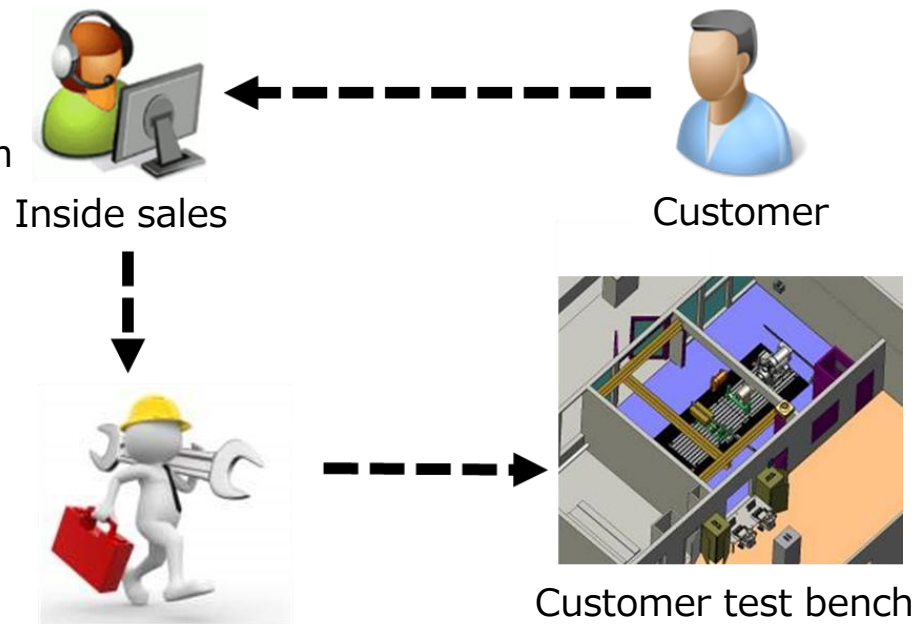
We recommend annual inspections to prevent these things from happening and to ensure safe use of our testing equipment.

We can dispatch engineers to any location in Japan upon your request.

(※This service is available for a fee.)

» Main menu of onsite inspection

- ① Torque and load calibration work (also available for temperature, pressure, and rotation)
- ② Appearance inspection
- ③ Oil change
- ④ Bolt tightening
- ⑤ Calibration of control and measurement system
- ⑥ Confirmation of trial operation
- ⑦ Submission of inspection report



» Spare parts and calibration

We can also supply single items of sensors such as spare parts for dynamometers, load cells, and rotation detectors. We also offer pick-up calibration of load cells and indicator meters.

Please contact us when you need them for your company's quality management.

(Advance booking is required).



» How to inquiry

✓ Please inform us of the product name and serial number.

(Example: Model P-55A hydraulic dynamometer, serial number: 4-digit number)

✓ The serial number is a 4-digit number engraved on the nameplate of the product itself.

✓ Please let us know the name of the necessary parts. If you do not know the name of the part, we will send you a cross-sectional drawing of the part.

We will participate in your project from the planning phase onward.

We provide seamless support throughout every stage — from creating requirement specifications and design documents, to product design, manufacturing, commissioning, and delivery. Rest assured, we also provide prompt and reliable after-sales service following delivery.

Planning



Please let us know your requirements, specifications, and requests. We can provide a variety of proposals based on your budget and testing needs.

We will also align with the customer's project goals to ensure successful achievement. A non-disclosure agreement will be concluded if necessary.

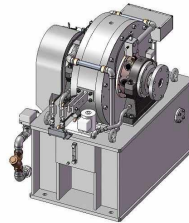
Contract



After the product manufacturing specifications, service requirements, definitions, and project amount are finalized, the contracting process will begin.

We will work closely with the customer to ensure that the project is executed in accordance with the agreed schedule.

Design, production



We will proceed with product manufacturing under strict delivery and safety control, ensuring compliance with the customer's defined requirements, functionality, and quality standards.

Also, conducting Pre-commissioning at our test bench.

Delivery Civil work



After packing, we deliver the products with the utmost care to ensure that they remain secure and intact during transportation.

We also carry out civil engineering work such as installation, piping, and wiring as requested by the customer.

Commissioning Acceptance



System configuration is carried out, followed by reproducible testing and final adjustments at the customer's test bench.

After service

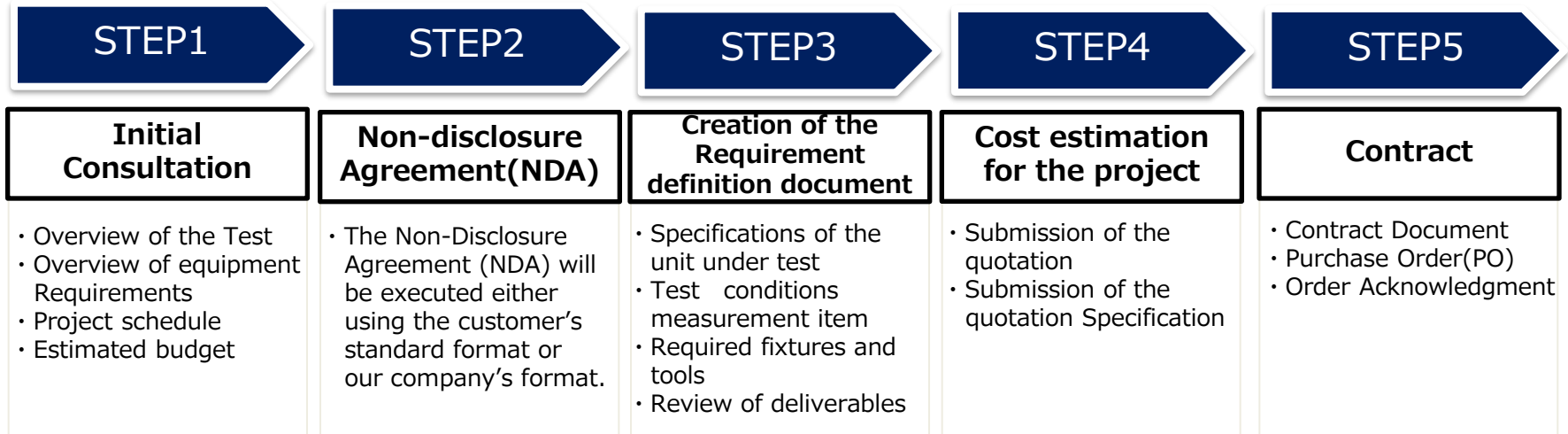


We provide long-term support even after product delivery.

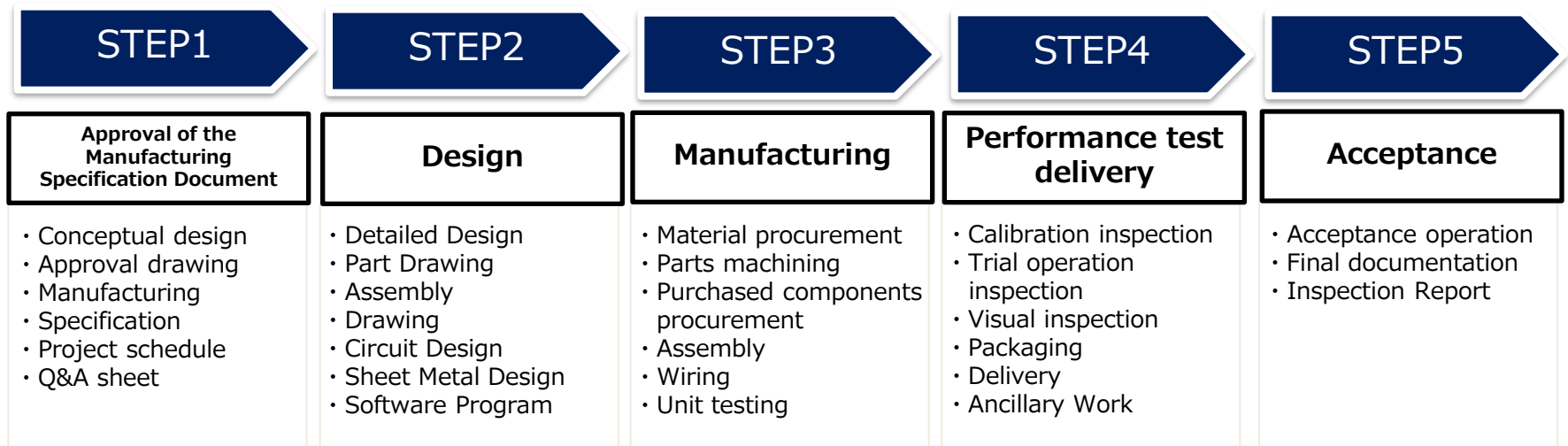
We offer prompt assistance anywhere as needed.

In addition, we propose product upgrades and maintenance planning to ensure continued optimal performance.

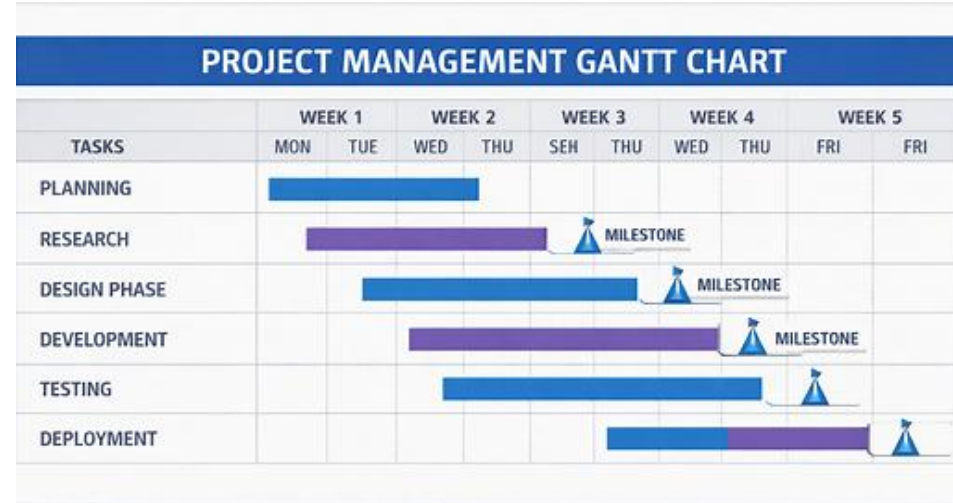
» Process from initial inquiry to contract finalization



» Process from project initiation to completion



» Project execution framework



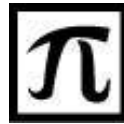
✓Project Leader and Assigned Members

We assign a Project Leader (responsible person) and project members according to the project's scale and type—whether it is a new installation, repair work, or on-site inspection.

✓Project Management

With clearly defined requirements and a firm commitment to achieving QCD (Quality, Cost, Delivery), we approach every project with the same passion as our customers and work sincerely toward its success.





Since 1948



Contact Information

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