



~Advanced Test System and Test Bench Engineering Professional~

Tokyo Plant Co., Ltd.



Introduction

Portable type hydraulic dynamometer

We are the only manufacturer in Japan that develops, designs, produces, and sells portable-type hydraulic dynamometers, with more than 40 years of product history. Thanks to their high portability, low introduction cost, and capability to perform engine load performance testing, our products are highly regarded and have been adopted by many customers both in Japan and overseas.



» Track Record

Total units delivered: Over 500 units (No.1 market share in Japan)

Destinations: Japan and more than 10 countries overseas

» Major Customers (in no particular order)

TOYOTA, NISSAN, HONDA, Mitsubishi Motors, ISUZU, Fuji Heavy Industries, Yamaha Motor, Calsonic Kansei, Aisin Seiki, Yanmar, Kubota, Mitsubishi Heavy Industries, Komatsu, Shimadzu Corporation, Hitachi, Kawasaki Heavy Industries, CAT, NGK, Riken, Cataler, Ividen, Mitsui Engineering & Shipbuilding, Komatsu Zenoah, Mitsuboshi Belting, Daido Kogyo, Bando Chemical, Toho Gas, various universities, technical colleges, domestic and overseas research institutions, and multiple racing teams.

(Over 200 companies in total)

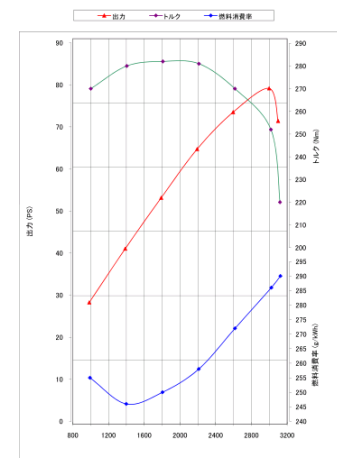
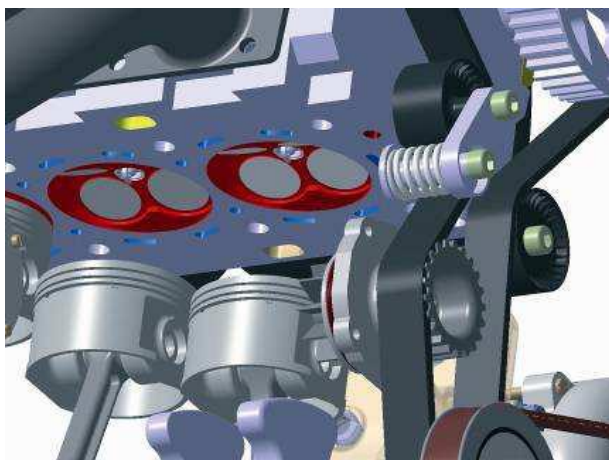
» Target Applications

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



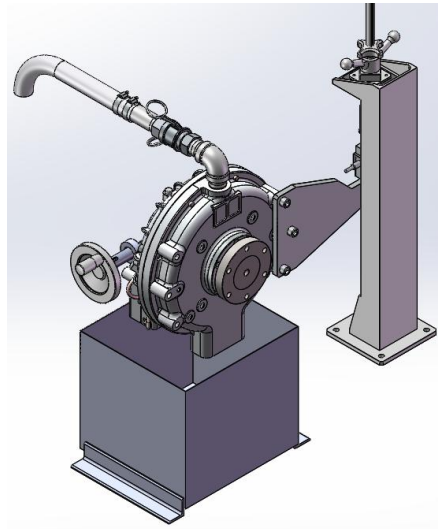
» Primary Applications

- 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



» Output range: 10kW – 1,000kW

We are the only manufacturer in Japan that offers portable type hydraulic dynamometers.
Our extensive product lineup provides optimal solutions for a wide range of customer applications.

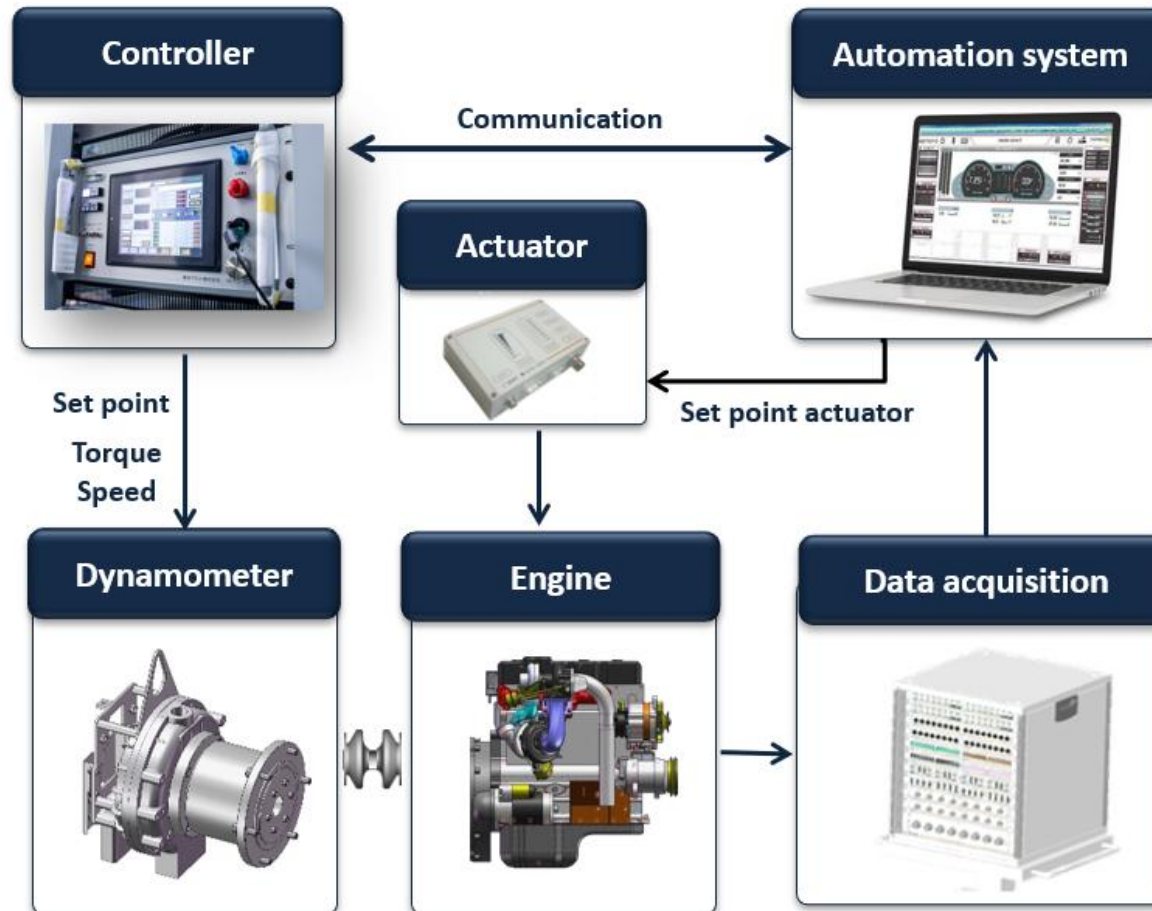


» Product Lineup For details, please refer to the product catalog.

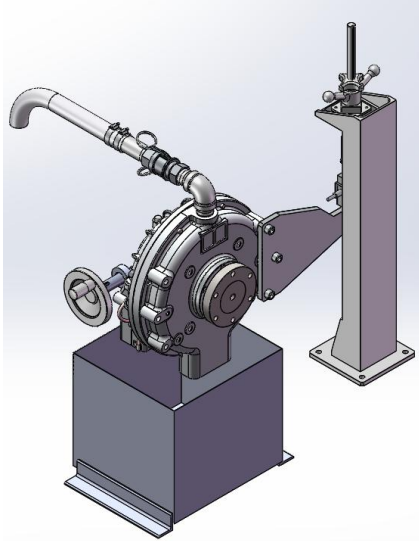
Model	Rotational direction	Main Specifications	Units under test
PTB type	One-direction CW or CCW	10 ~ 1,000kW /Middle speed range	Automobiles, trucks, construction machinery, agricultural machinery, and marine vessels

Custom specifications are also available.

» Diesel engine test



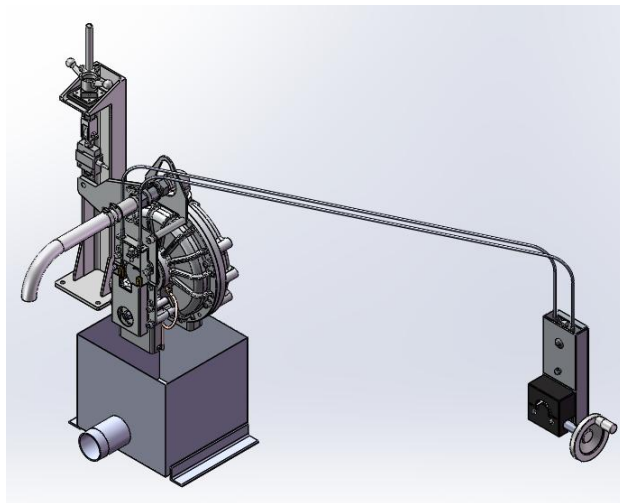
» A type : Manual direct-operation handle



Key features)

Insert the plug-in type load-adjustment handle into the dynamometer body, and manually operate the rotary load-control valve directly.

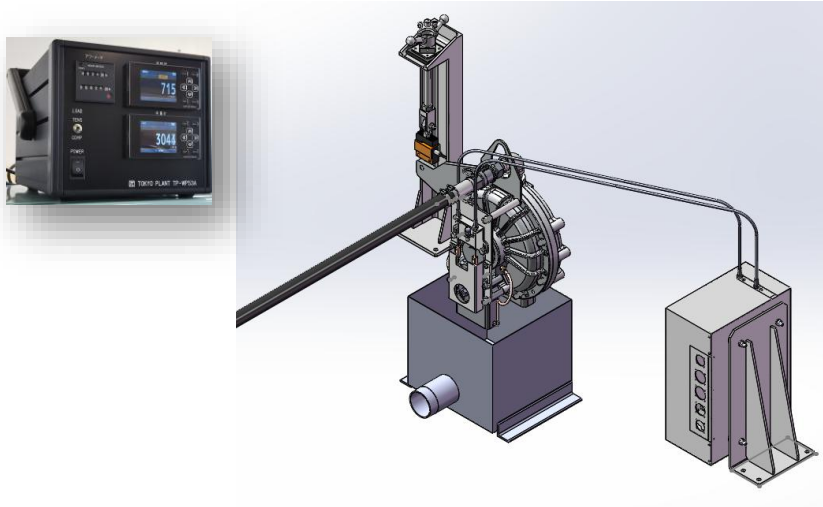
» B type : Manual remote-operation handle



Key features)

The remote-control unit is connected to the dynamometer body via a remote-operation wire. In this configuration, the rotary load-control valve is manually operated through the remote-operation wire.

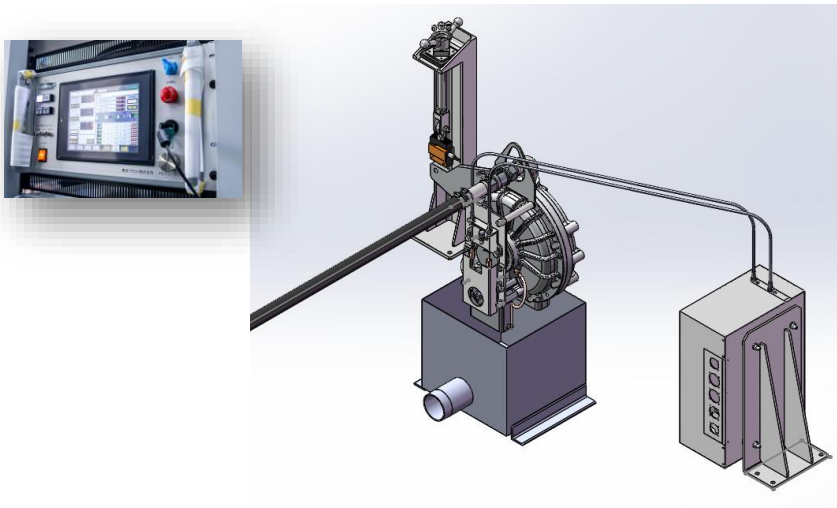
» C type : Manual control controller



Key features)

The remote-control unit is connected to the dynamometer body via a remote-operation wire. In this configuration, the rotary load-control valve is manually controlled from a remote location using push-button switch operation.

» D type : Automatic control controller

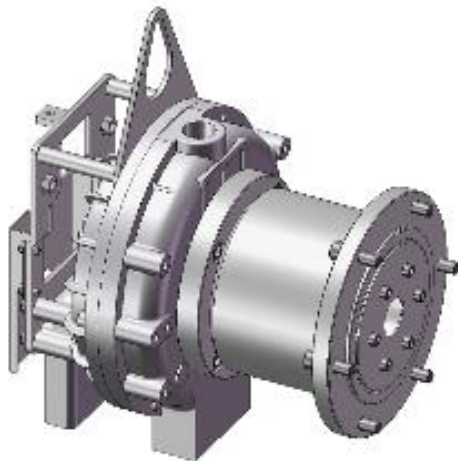


Key features)

The remote-control unit is connected to the dynamometer body via a remote-operation wire. In this configuration, the rotary load-control valve can be manually controlled from a remote location using push-button switch operation. Additionally, constant-speed control and constant-torque control can be selected, enabling the controller to automatically regulate the load to the target values set by the operator.

» Flywheel adopter

A key feature of our portable hydraulic dynamometer is its ability to be directly connected to the flywheel.



» Optional function

Specification Structure / Type	A	B	C	D
1) Flywheel Adopter	☐	☐	☐	☐
2) Angle Plate	☐	☐	☐	☐
3) Intermediate Shaft Unit	☐	☐	☐	☐
4) Torque flange(Torque meter)	☐	☐	☐	☐
5) Shaft , Dumper	☐	☐	☐	☐
6) Portable Bench System	☐	☐	☐	☐

※○: All items are paid, custom-made options.

※For details of item (6), please refer to the catalog of the Portable Bench System.

» Portable engine test stand



» Scope of the project

- ✓ Portable type Hydraulic dynamometer
- ✓ Dynamometer controller
- ✓ Automation system
- ✓ Fuel flow meter
- ✓ Data acquisition system
- ✓ Drive shaft, Flywheel adapter etc
- ✓ Engine mount

Feature)

It can be installed directly on the factory floor.
No rail base is required.
The engine flywheel can be directly coupled.

» Super small type (10kW)



» Scope of the project

- ✓ Portable type Hydraulic dynamometer

Feature)

It is a non-fixed type that can be connected directly to the unit under test.
It can also be used within a full 360° portable operating range.

》 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.

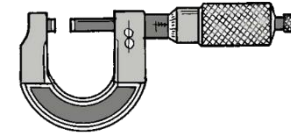
Only test equipment that has passed our strict standards is delivered to our customers again.

» 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.

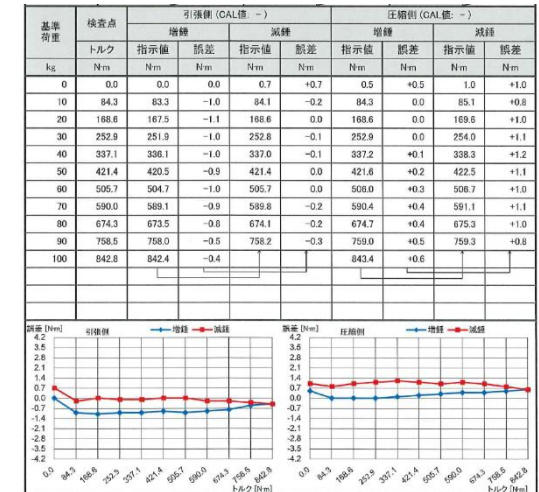
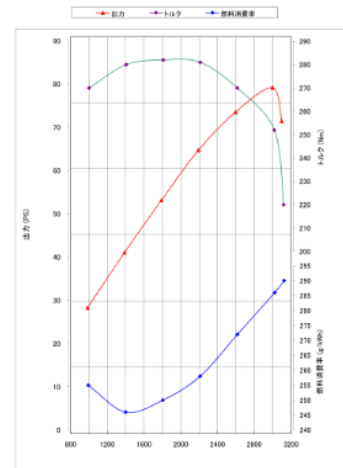
We are confident that the report is free of ambiguities, and our customers can be assured that it is free of ambiguities.

(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.

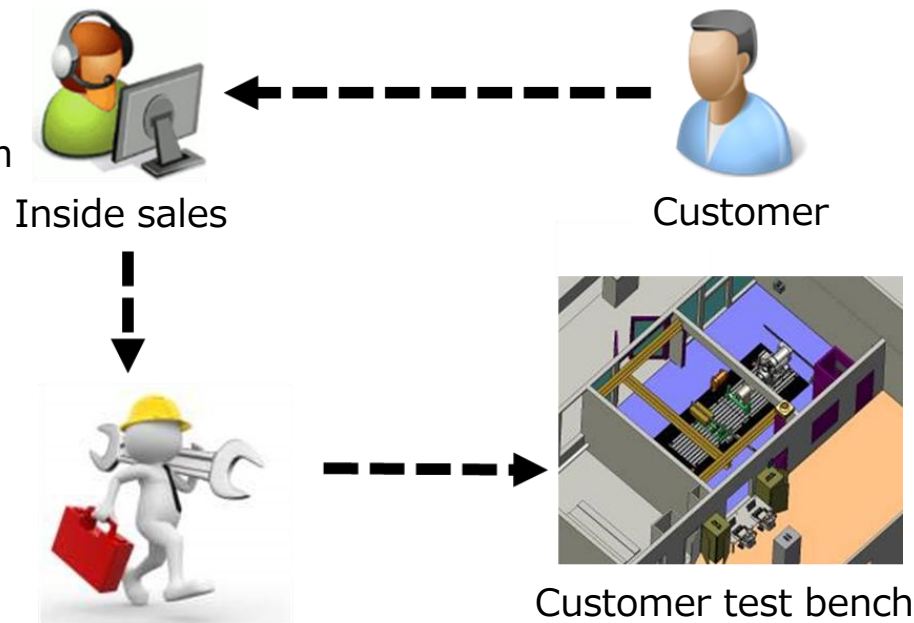
We recommend annual inspections to prevent these things from happening and to ensure safe use of our testing equipment.

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.

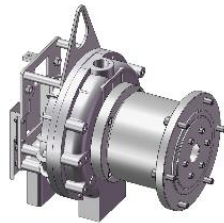
Contract



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

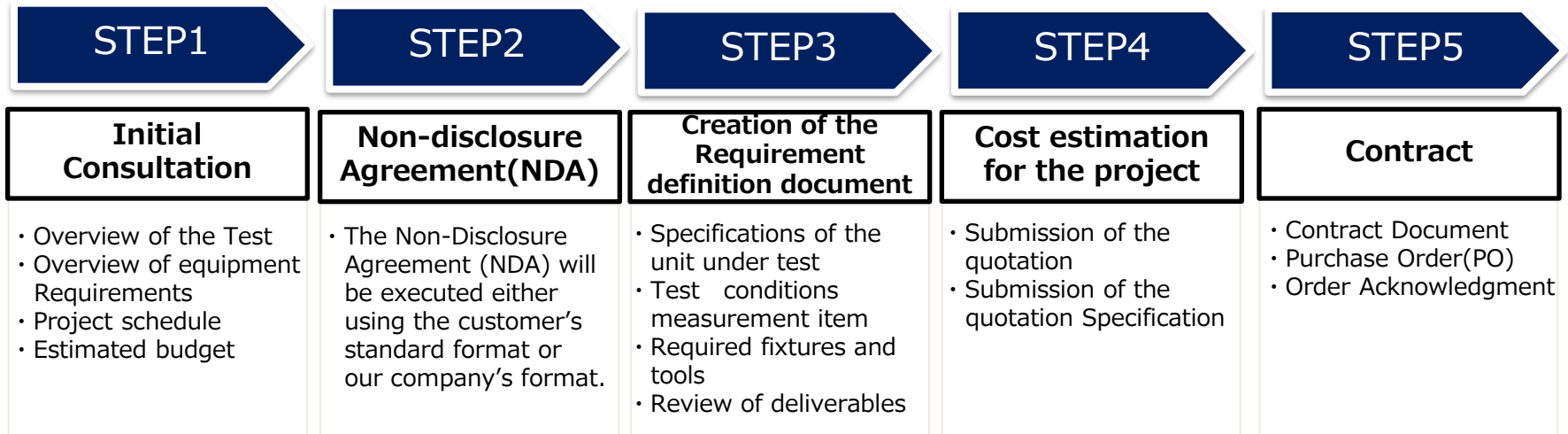


We provide long-term support even after product delivery.

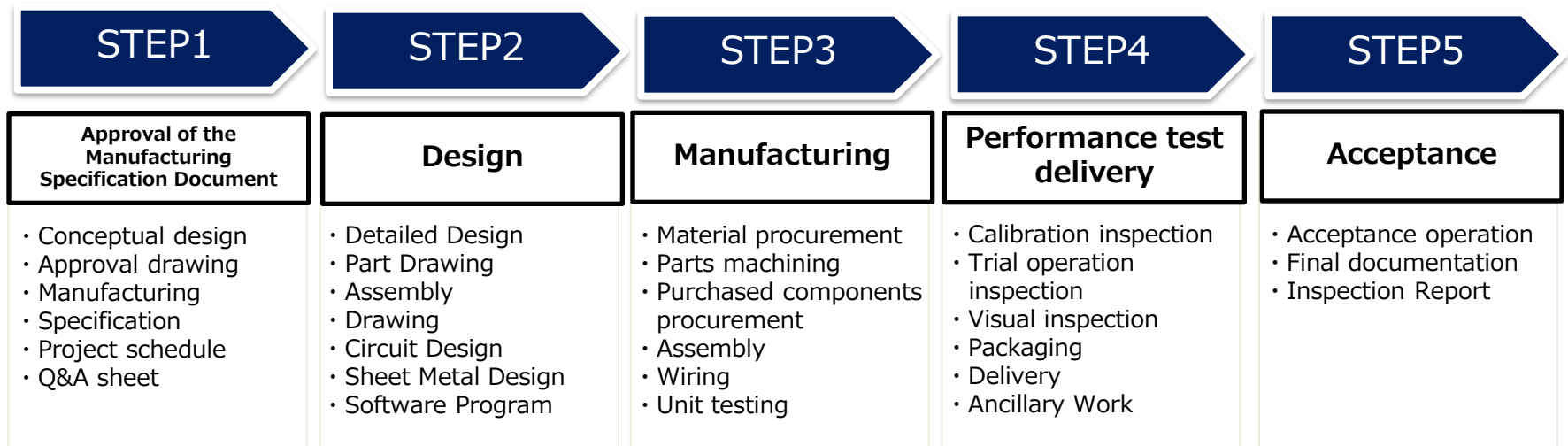
We offer prompt assistance anywhere as needed.

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

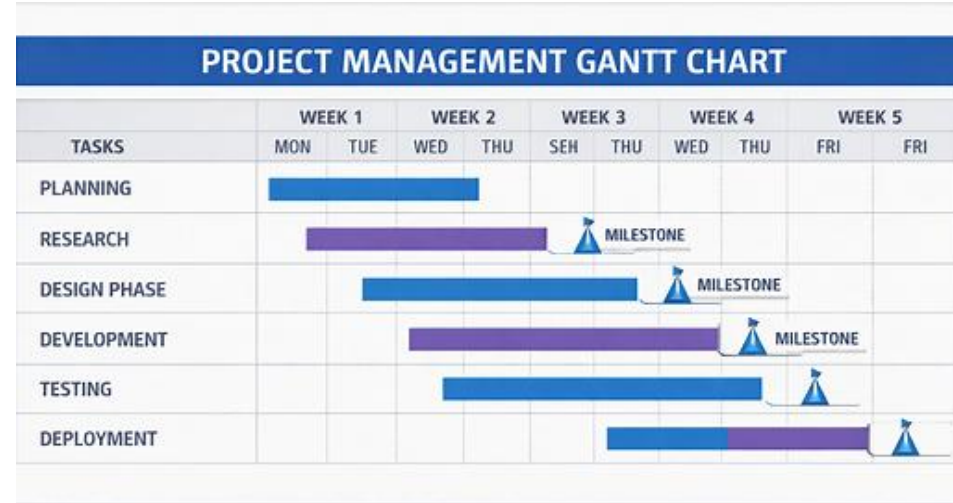
» Process from initial inquiry to contract finalization



» Process from project initiation to completion



» Project execution framework



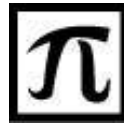
✓Project Leader and Assigned Members

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



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