

# Test systems

Customized system solutions

SPECIFICATION, DESIGN AND  
DEVELOPMENT OF TEST  
SYSTEMS

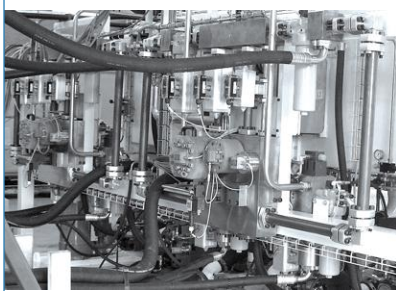
LABORATORY TEST EQUIPMENT

PRODUCTION TEST EQUIPMENT

MECHANICAL AND HYDRAULIC  
TEST EQUIPMENT

FLOW- & PRESSURE TEST

IN-HOUSE PRODUCTION



## DEVELOPMENT AND PRODUCTION OF TEST SYSTEMS

Quality control is an important area in most industrial productions. The requirements to complete a safe and efficient quality control of your products with appertaining documentation is often accommodated by the creation of a test system.

Through the years Serman & Tipsmark has built up substantial knowledge and experience with developing and producing test systems in close cooperation with our customers. Most of our systems are built on a combination of electro hydraulic, pneumatic and controlling components and the design of the mechanical tension of the product is often the key to a successful test.

## Test systems in general

Serman & Tipsmark has considerable know-how and experience in developing and producing test equipment for many different kinds of tasks such as:

- Pressure-, flow-, and temperature tests
- Leakage and oscillation tests
- Power, tension, and pressure tests
- Mechanical and fatigue tests

The systems manufactured to date vary up to the following outputs:

- Flow 0.1mL/min up to 4x400L/min
- Pressure up to 2,500 bar
- Forces up to 5MN dynamic stress

## High degree of experience

Serman & Tipsmark's customers come from many different industrial sectors, including:

- The wind turbine sector
- The mobile sector
- The industrial sector

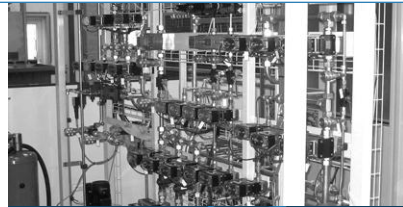
Our product portfolio ranges from small standard stand-alone systems to fully integrated test systems with monitoring and data collection.

- Valve production
- Flow meters
- Oil motors and control units
- Burner nozzles with vision control
- Blade tests
- Toothed rims
- Shaft fatigue
- Cylinder tests
- Hoses (steel, rubber)

## Full-line supplies

Among other things we develop solutions for testing machined sub-components before assembly. These include test for tolerance control, test of complete valves, cylinders and engines as well as the after-test drying of valves.

The systems are designed according to the individual customer's specifications – both for manual operation and robot operation for full-automatic testing.



## Efficiency and user-friendliness

In addition to operating economy and efficiency, ergonomics and user-friendliness are also important factors when designing a test solution. These are both important in regards to the daily operation and the necessary service possibilities.

Operation can be done manually or by using touch panels and barcode scanning.

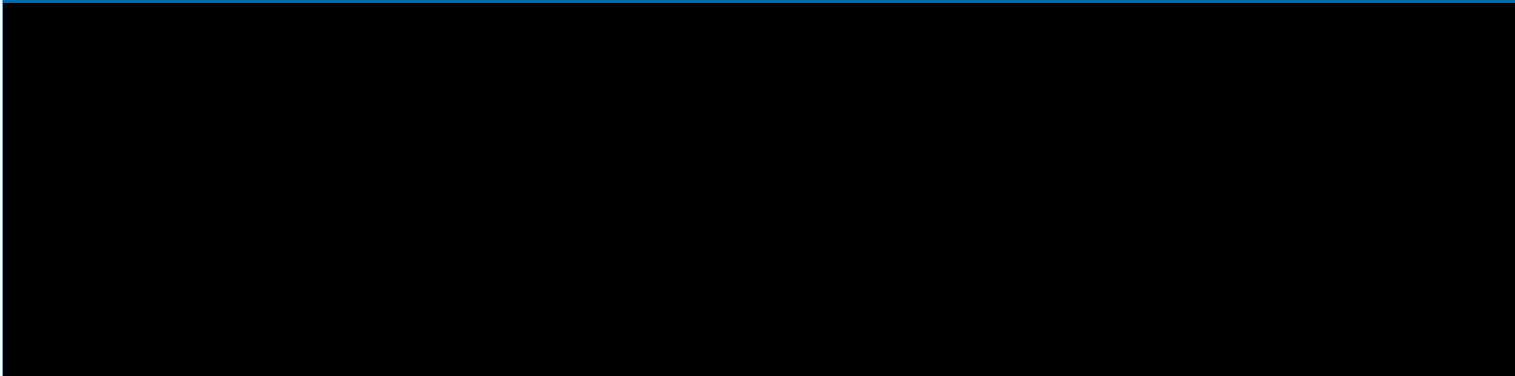
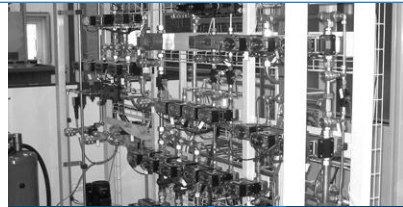
## Calibration and service

We are very experienced in calibration of built-in measuring equipment for test equipment, e.g. for pressure-, flow- and temperature tests. For these tasks we use our fully-equipped service vans and we bring our own calibrated reference measuring equipment. In addition to calibration we also offer hydraulic and mechanical machine service.

## Why choose a test system?

You should consider a test system if you wish to create more efficient product tests and ensure repetitive accuracy and traceability in your test data. Furthermore you may see the need for a test system based on the following factors:

- Mass production with variants
- Logging of test data
- Reducing wage shares in test
- Ensuring objective and preset criteria and parameters for test
- Use of printed test certificates
- Testing with massive force
- Testing over a long period of time



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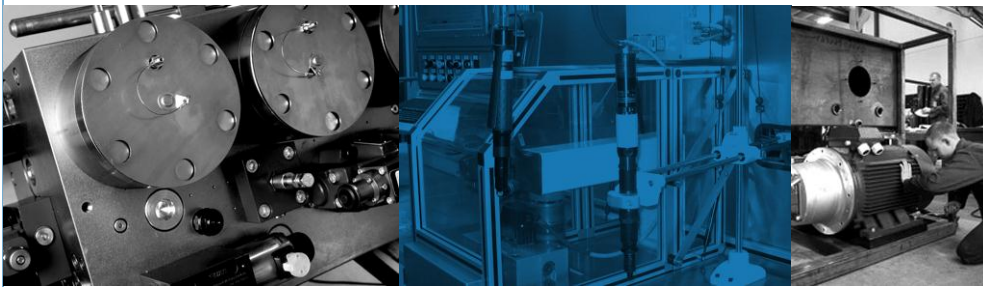
*On top of hydraulics*

## Control and automation

Serman & Tipsmark has profound experience with project design, manufacturing and servicing of control systems for complex process and bus controlled test systems. The control systems are manufactured and tested in our in-house workshop or in cooperation with closely associated partners. The panels are manufactured according to the IEC/EN, UL/ETL/CSA and ATEX standards and in compliance with the machine directive.

We have built up our experience in this area by integrating the following competences into the test control systems:

- Data collection in local or global databases
- Vision
- Touch panel operation
- Automatic quality control
- Robot operation
- Operation safety circuits
- Barcode scanning



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