FATIGUE TESTING MACHINES

DEVCO develops servo-hydraulic systems for accurate and reliable fatigue tests. In our machines we use hydrostatic type custom made actuators that minimize friction and allow to perform high frequency tests up to 600 Hz (with a load of 10 kN).

Thanks to these performances our machines are used in high standard laboratories to perform testing of materials and components used in advanced applications.

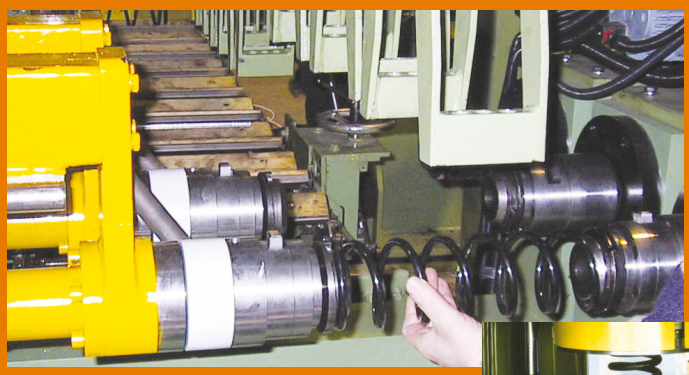
In order to ensure the long-life of the tested material, a fatigue testing machine requires high-frequency equipment. Actually, a 109 cycles test performed with a traditional 50 Hz fatigue testing machine requires more than 7 months. The same fatigue test performed with a high-frequency 600 Hz fatigue testing machine would take only 19 days.

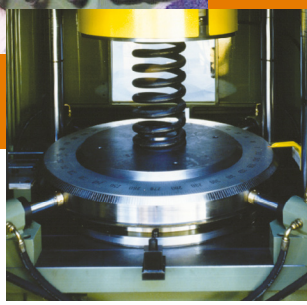
Even for long time tests, our machines maintain a high-fidelity waveform while running at a high frequency. According to the customers' needs, we can provide testing machines with static load from 5 to 1000 kN with standard waveforms (sine, ramp, square) or programmable ones.

COIL SPRING TESTING MACHINES

Coil spring testing machines, with nominal load from 5 to 500 kN, are characterized by a vertical or horizontal servo-controlled actuator which charges the spring and detects the deflection and the force exerted using potentiometers and load cells.

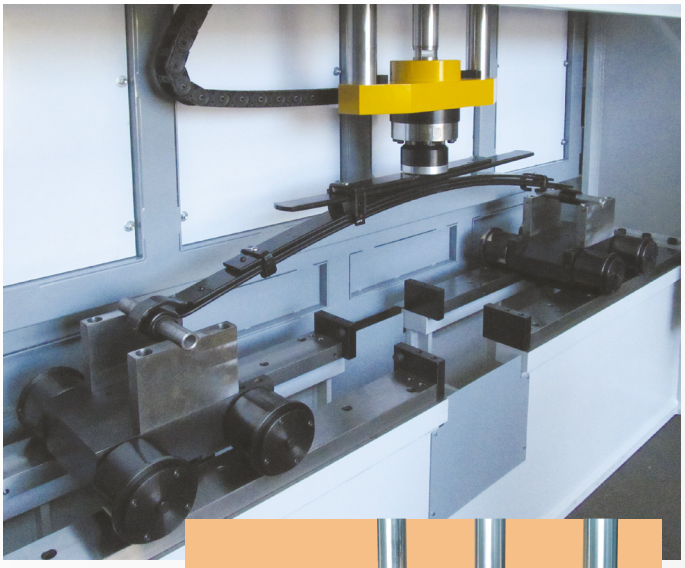
Coil spring testing machines can be equipped with a floating table to measure the chasse value. This measurement is performed through the use of two potentiometers that detect the motion of the spring base in relation to its axis during compression.
These machines can be also equipped with a lateral actuator that, through the floating table, detects the spring lateral flexibility.

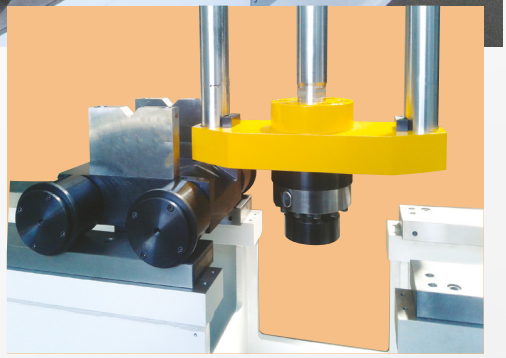


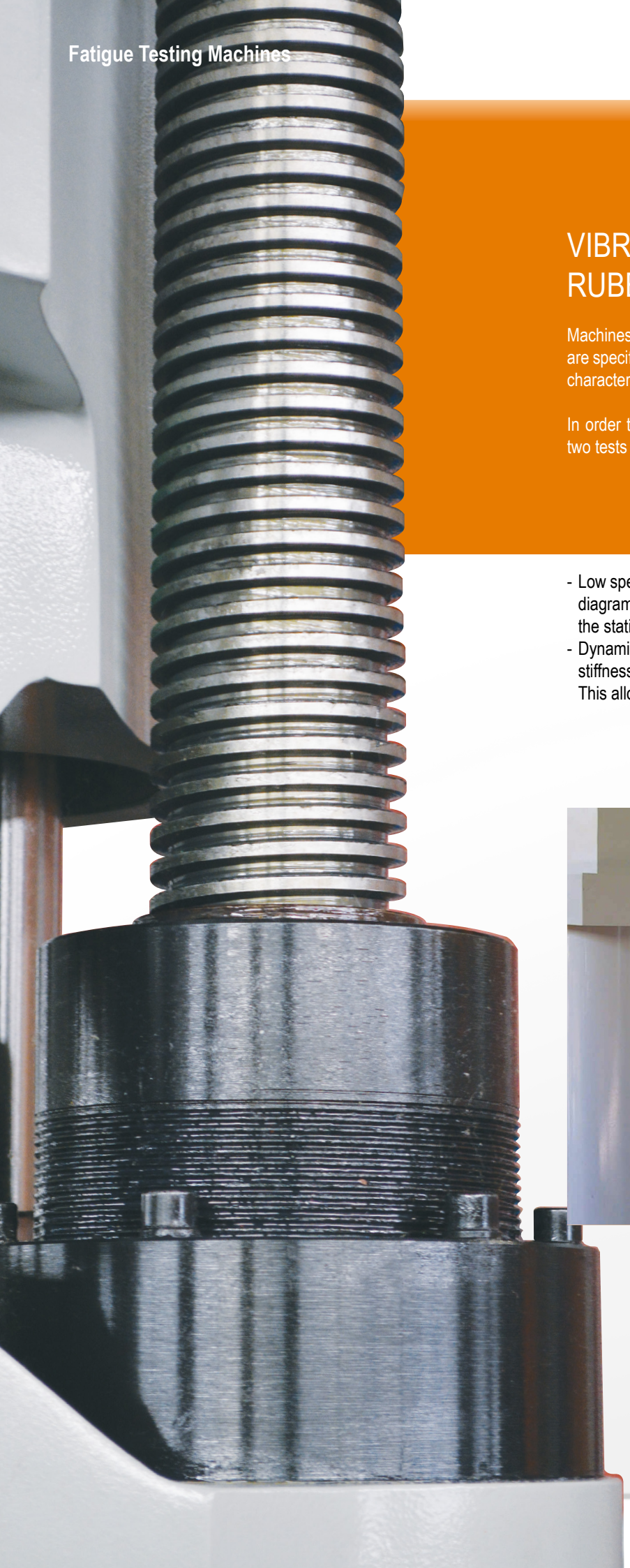


LEAF-SPRING TESTING MACHINES

Leaf-spring testing machines with nominal load up to 500 kN, are characterized by a vertical servo-controlled actuator which presses the leaf and allows the measurement of free height, deflection and force exerted.





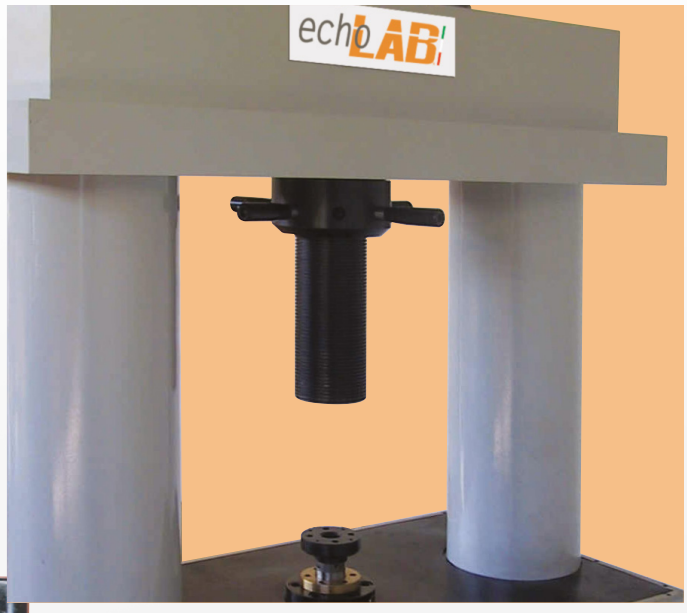


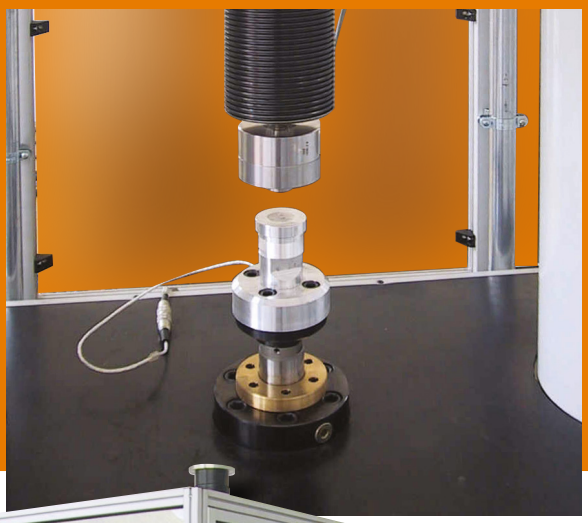
VIBRATION-DAMPING TESTS ON RUBBER COMPONENTS

Machines which perform tests on rubber or metal-rubber components are specifically designed to detect and compare the static and dynamic characteristics (stiffness and damping) of the specimen under test.

In order to simulate a real working condition of the tested specimen, two tests could be performed in sequence:

- Low speed test (static test): through this test, which detects the static diagram in real working conditions, it is possible to obtain the value of the static rigidity of the sample tested;
- Dynamic test: through this test it is possible to measure the dynamic stiffness and the phase shift angle between displacement and load. This allows to identify the damping value of the sample tested.





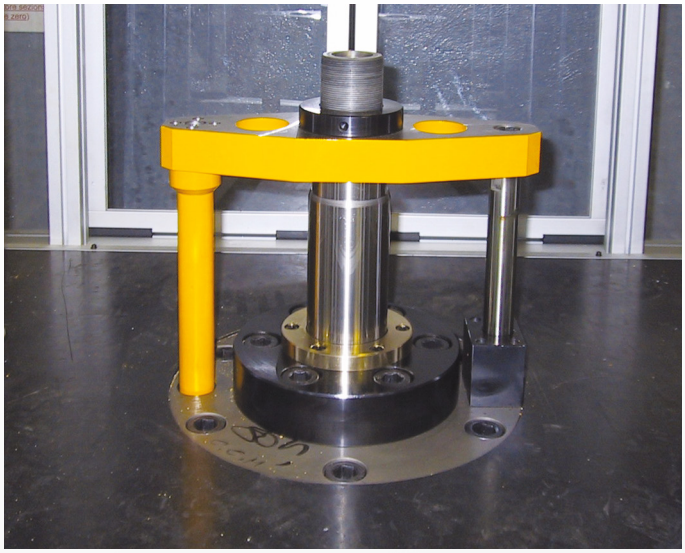
Detections are made using accurate position transducers for acceleration and load.
The operation frequency ranges of this kind of machines are essentially two: 4-25/40 Hz, with +/- 0.05/2.5 mm excitation amplitude and 25-500 Hz, with +/- 0.025/0.2 mm excitation amplitude. For special requirements, such as checking a motor support in resonance conditions, an inertial mass with variable weights can be installed on the machine.

Even for long time tests, our machines maintain a high-fidelity waveform while running at a high frequency. According to the customers' needs, we can provide testing machines with static load from 5 to 1000 kN with standard waveforms (sine, ramp, square) or programmable ones.

SHOCK ABSORBER TESTING MACHINES

Shock absorber testing machines detect displacement, speed and load using potentiometers speed transducers and load cells. Detected data are stored in files by the machine controlling software and can be used for the creation of diagrams (force-displacement, force-speed, force-temperature etc.) for the shock absorber characterization.

Shock absorber testing machines can be electromechanical, driven by direct current or brushless motor or hydraulic, equipped with a servo-controlled actuator suitable for high speed tests (max 3m/sec).



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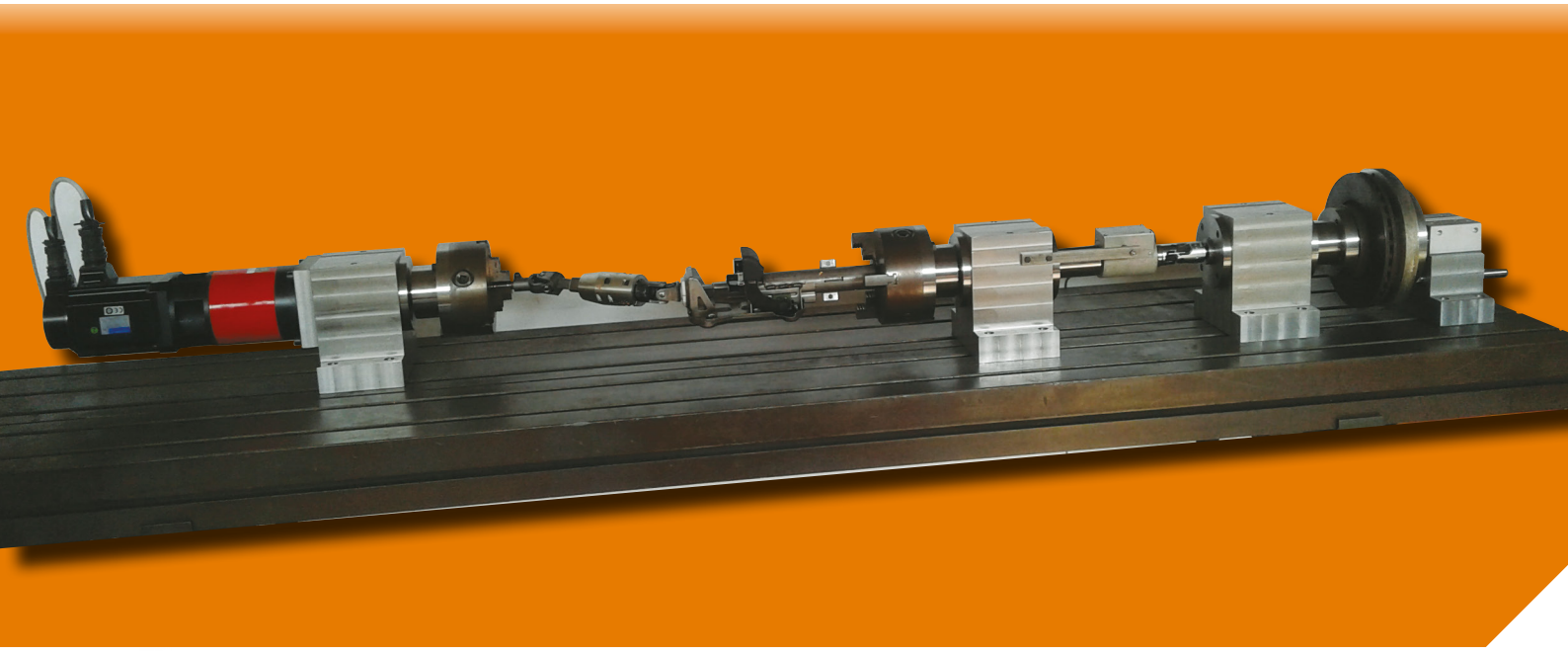

TORSION TESTING MACHINES

Torsion testing machines are designed to perform **torsion tests**. Torque measurement is performed through the counterreaction control of the force and the angular displacement using accurate torque meters and rotary potentiometers.

These testing machines are suitable for tests of rubber-metal specimens. The torque can be measured over the whole programmed angular range. The component to be tested can be fixed according to its shape using a customized jaw. The machine can be also equipped with a no-good parts automatic marker.

All our machines are customized according to the customer needs.
We can supply testing machines with robotized loading for production lines. Testing machines can be also equipped with Environmental Chambers to determine the effects of temperature during the fatigue test performed with controlled temperature.

We can supply machinery with robotized loading for production lines.
The system can be supplied with Environmental Chambers and used to determine the effects of temperature during the fatigue test.
All our machine are customized according to customers' needs.