

A coil and leaf springs testing stand



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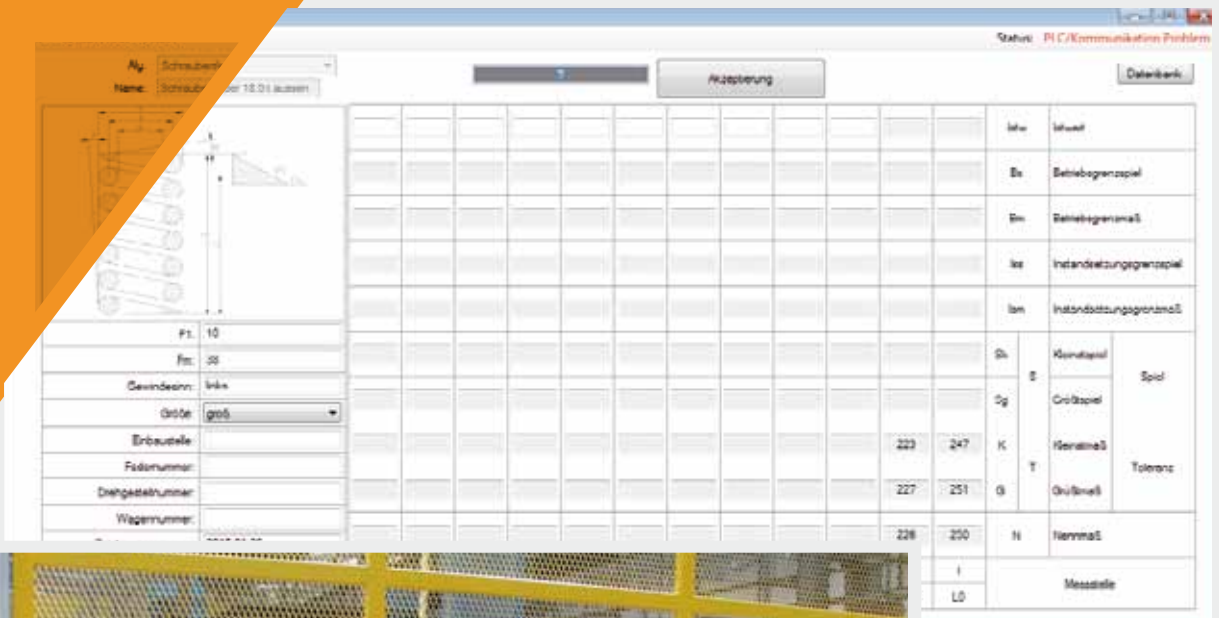
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A coil and leaf springs testing stand

The correct state of resilient elements is a prerequisite the proper functioning of rail vehicles. For this reason the coil and leaf springs must be regularly tested to determine their properties and characteristics.

Offered by MTL Asco Rail testing devices provide testing to the full extent required for coil and leaf springs.



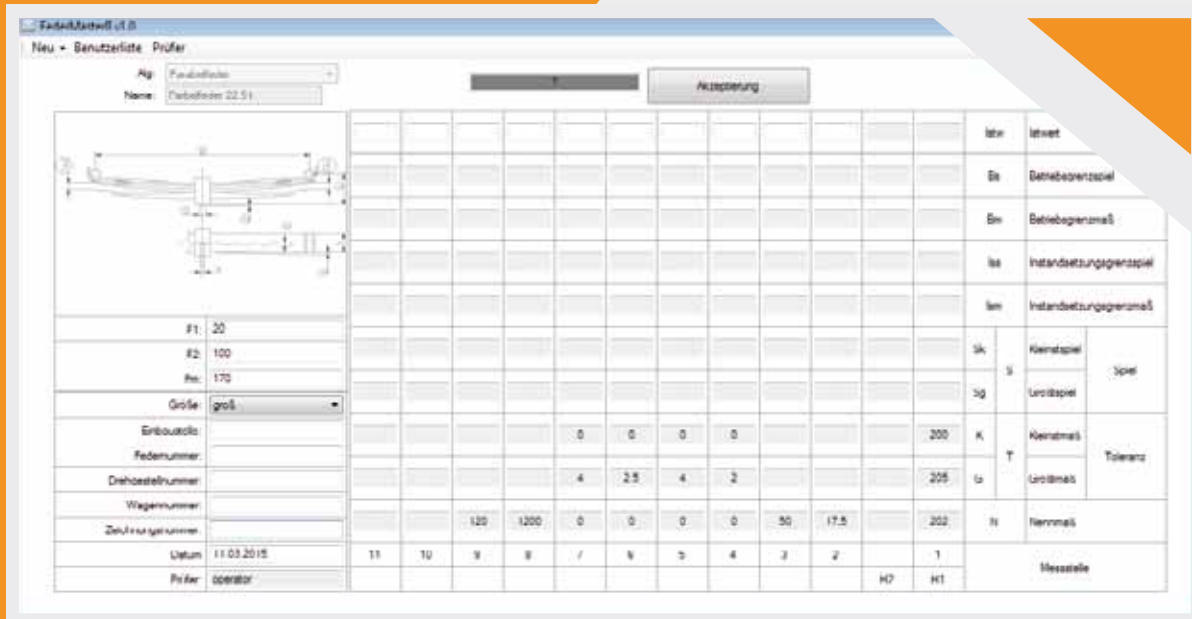
The screenshot shows a software interface for testing coil and leaf springs. On the left, there is a technical drawing of a spring with a load curve. Below it, a list of parameters is displayed:

- Pl: 10
- Fl: 20
- Gewindeart: links
- Größe: groß
- Erbauteile:
- Federart:
- Dehngrenznummer:
- Wagennummer:

The central part of the interface is a large table with columns for various parameters. The right-hand panel contains a 'Datenbank' button and a table with the following structure:

Info	Werte
Es	Betriebsgrenzspiel
Em	Betriebsgrenzmaß
Is	Instandsetzungsgrenzspiel
Im	Instandsetzungsgrenzmaß
Sk	Kenntafel
S	Spindel
Sg	Größtspiel
K	Kennmaß
T	Toleranz
G	Größtmaß
H	Nennmaß
i	
L0	Messstelle





The stand is designed to testing the following types of springs:

- coil springs and a set of those springs,
- volute springs,
- leaf springs and parabolic leaf springs,
- metal-rubber springs (optional),
- others resilient elements (optional).

The stand consist of:

- test bench with hydraulic unit, measuring table and trolleys, guarding device, force and distance sensors,
- electrical cabinet with a control panel and PLC controller,
- laptop with a database and registration results.

Basic technical parameters of the standard version:

- maximum load: 180 kN,
- actuator stroke: 450 mm,
- test load accuracy: < 1%,
- deflection measurement accuracy: 0,1 mm,
- maximum height in the free status of the tested spring: 500 mm,
- maximum external diameter of the tested spring: 250 mm,
- minimum internal diameter of the tested spring: 60 mm,
- maximum length of the tested leaf spring: 1400 mm,
- maximum height of the tested leaf spring: 300 mm,
- supply voltage: 3 x 400 V,
- dimensions: test bench 650 x 1970 x 2270 mm; control cabinet 600 x 960 x 520 mm,
- special designs possible in accordance with individual customer requirements.



Test results:

- length of the spring in mm at a given load,
- height of the leaf spring in mm at a given load,
- axial stiffness w kN/mm,
- characteristic diagram (kN-mm),
- other results of the test on request (lateral stiffness, lateral displacement, bending strength, angle bend).

Basic characteristics:

- automatic testing possibility of resilient elements with different procedures (VPI, technical conditions and others),
- easy to introduce new test elements and test parameters,
- the full test parameters recording (date, a person who tests, test elements etc.),
- possibility of device status remote diagnostics and change test parameters.