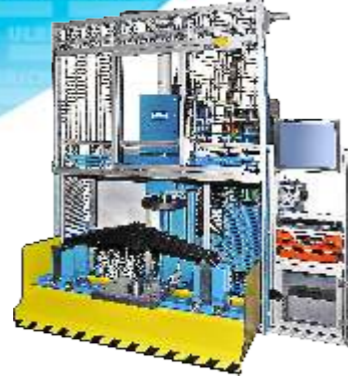


Railway Depo Equipment



Puffer Testmaschine



Spring Tester



Shock absorber test rig

Machines for testing assembling joining

ULBRICH

Competence in joining and testing machines, as well as in hydraulic solutions

We are a Privately owned Austrian Engineering company with Sister companies operating throughout Central and Eastern Europe.

Our main focus is based on the design, construction and the distribution of :

Hydraulic Press and Test Equipment

Hydraulic Components

Hydraulic Systems

Our goal is to provide customers with Test and Production equipment that enable our customers to sink their production costs and increase efficiency, quality and ultimately provide our customers with a significant competitive advantage.

In addition to our standard machinery we also work together with our customers to provide bespoke special hydraulic machines and system solutions based on their unique specifications.

Please visit us at our website

ULBRICH

www.ulbrich-group.com

Press fit and analysis units



Automated



Semi-automated

Maschinen zum Prüfen Montieren Fügen

ULBRICH

Kompetenz in Füge- und Prüfmaschinen sowie Hydraulik

Wir sind ein Familienbetrieb mit Stammsitz in Österreich und diversen Tochterbetrieben bzw. Niederlassungen in Zentral- und Osteuropa.

Wir beschäftigen uns – unter anderem – mit der Produktion und dem Vertrieb von:

Füge und Prüfmaschinen wie z.B. Feder-, Stoßdämpfer- und Pufferprüfmaschinen für die Bahnindustrie

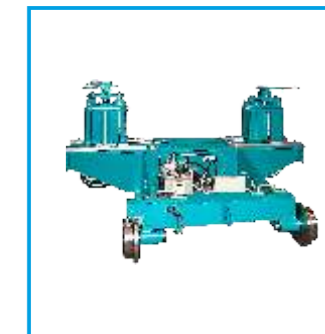
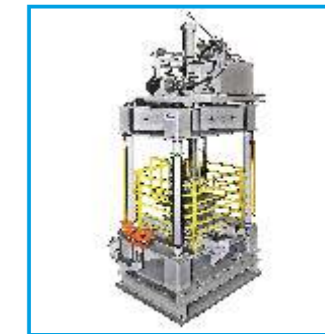
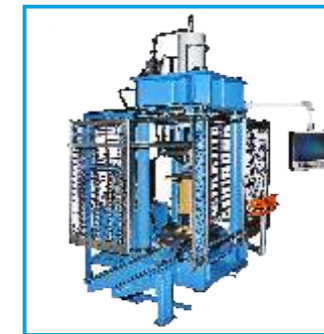
Füge- und Prüfmaschinen für die Automobilindustrie

Ziel unserer Tätigkeit ist es, die Produktivität, Prozesssicherheit und Wettbewerbsfähigkeit unserer Kunden zu stärken.

Neben Serien Prüf- und Fügemaschinen erarbeiten wir gemeinsam mit unseren Kunden hydraulische Sondermaschinen und Hydraulikanlagen für deren spezifische Bedürfnisse.

Bitte besuchen Sie uns auf unserer Webseite

A brief overview of our Test and Jointing Machines



Spring and shock absorber test rig



Wheel puller



Wire rope design and test machine

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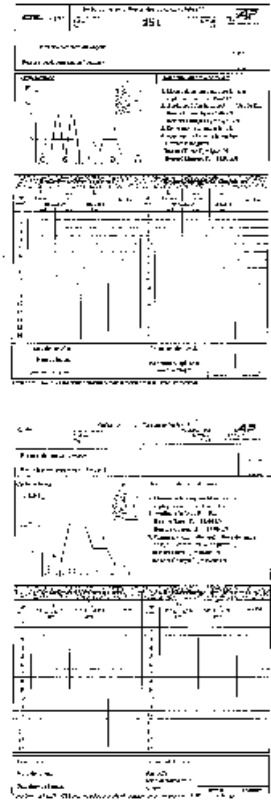
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Universal Spring Tester

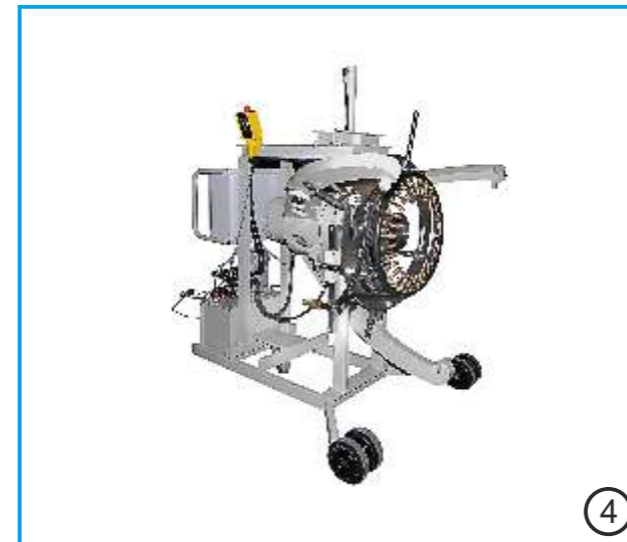
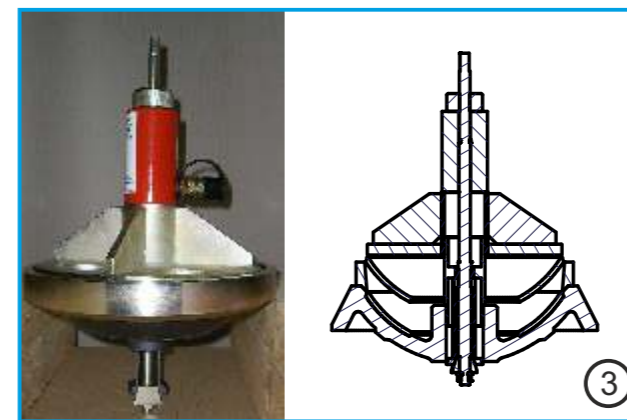
Special Solutions



Spring Tester - front insertion



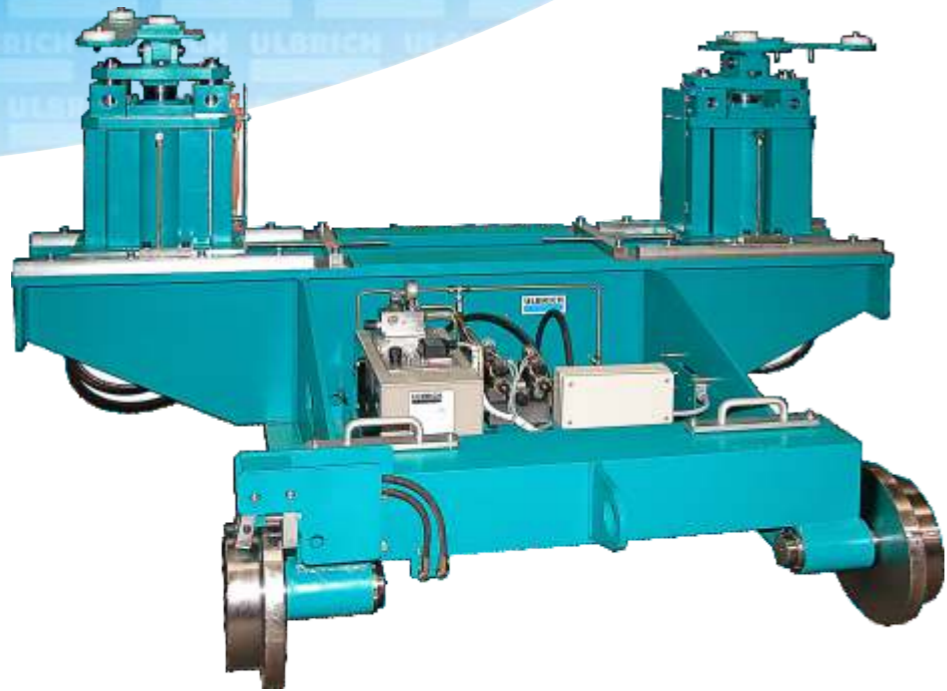
Spring Tester - insertion left or right



Our highly skilled Engineering team enable Ulbrich to offer Customers individual design solutions for their technical requirements.

- 1 Overhaul and redesign of boogie test stand
- 2 Test equipment for locomotive drive units
- 3 Mounting tool for bearing cup
- 4 Wheel set puller

Locomotive and carriage positioning, lifting and weighing system



Technical Description

The lifting equipment consists of two mobile jacks. Integrated within the superstructure is a hydraulic power pack which drives the two hydraulic cylinders. The cylinders are situated in the highly robust and laterally adjustable lifting blocks. The lifting blocks and the jack contact surfaces (lifting points) can be repositioned along the cross-beam via a spindle. This allows the flexibility to lift and control a number of different types of Locomotive and carriage.

Once the carriage has been lifted, the lifting blocks can be locked out using safety bolts which ensure that the height selected is safely maintained. The position of the safety bolts themselves can also be controlled by sensors.

An optional function to weigh and calculate the centre of gravity is available upon request. Here, the lifting blocks have been fitted out with "load cells", which can transfer the load input into a unit of weight. With the accompanying software these values can be evaluated in order to determine the centre of gravity.

Technical Data:

Stroke force pro contact surface 125 kN (force can be increased upon request)
Stroke 500 mm (increased stroke upon request)
Contact surface height at rest 1372 mm
Contact surface height fully extended 1872 mm
Contact surface laterally adjustable from 1500 - 2200 mm
Power requirement 1,5 kW
Optional:
Weight analysis via x4 load cells (150 kN per cell)
Weight measuring accuracy < 1,5 %

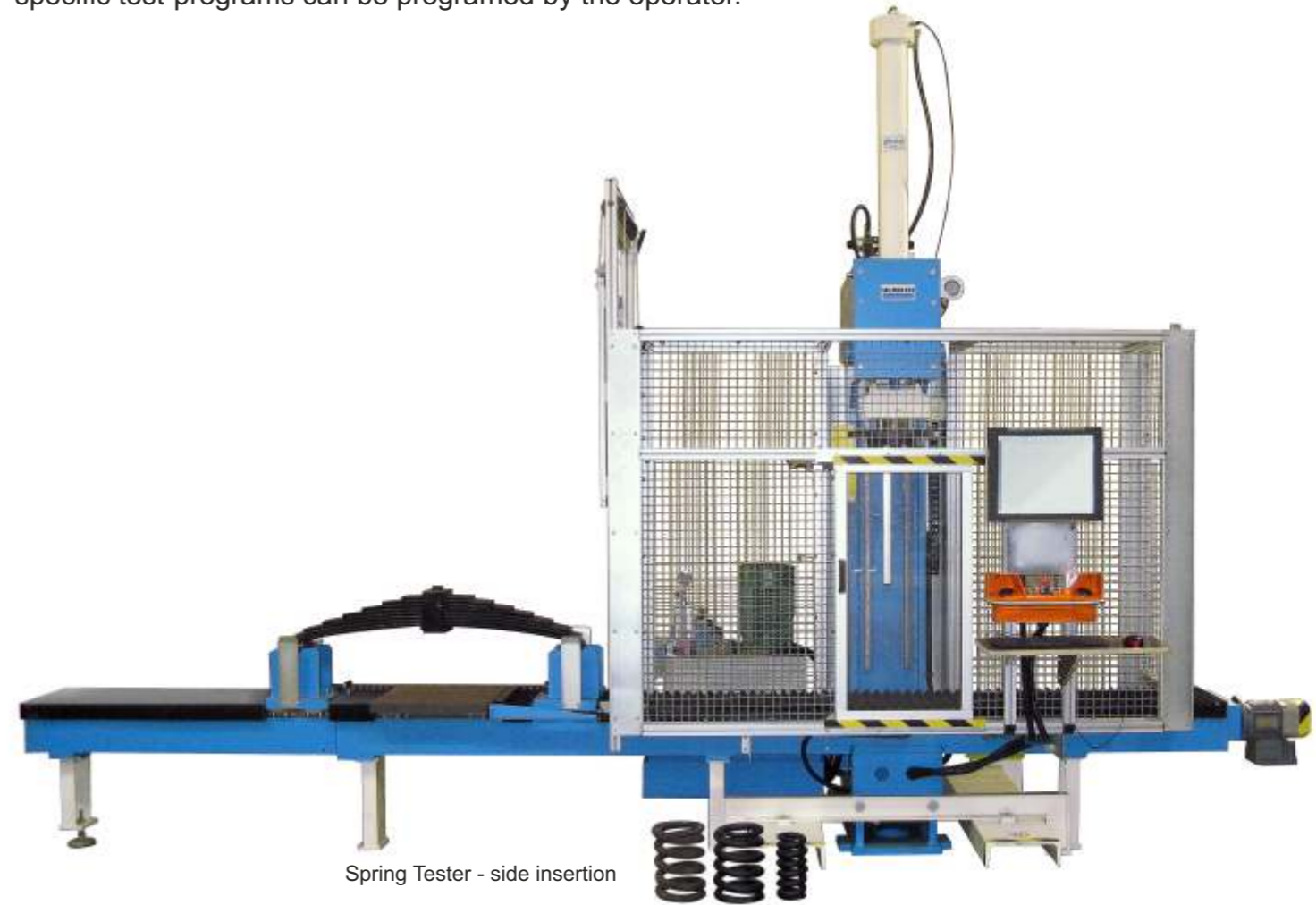
Operational Overview

During the production or servicing of locomotives and carriages it is often necessary to carry out assembly, service and repair work underneath. Therefore, it is highly recommendable to be in the position to raise and lower the locomotive and carriages simultaneously, to specific heights to allow the optimal working clearance. Due to the fact that the various construction, assembly and service stations are often situated in different locations throughout the plant; the need for the lifting system to be mobile is paramount. Upon completion of the lifting process, the operator can now utilise the optional load measurement and centre of gravity analysis module.



Process-Integrated determination of data characteristics and Quality control of Leaf and Coil springs

Ulbrich spring test machines are developed specifically for the railroad-industry. They are in use at workshops as well as for the OEM spring manufacturers. Beside the classic coil and leaf springs, we can also test parabolic and rubber springs on the same machine. According to the application requirements the axial stiff-ness as well as the transversal (horizontal) stiff-ness and its direction can be measured. Customer specific test-programs can be programed by the operator.



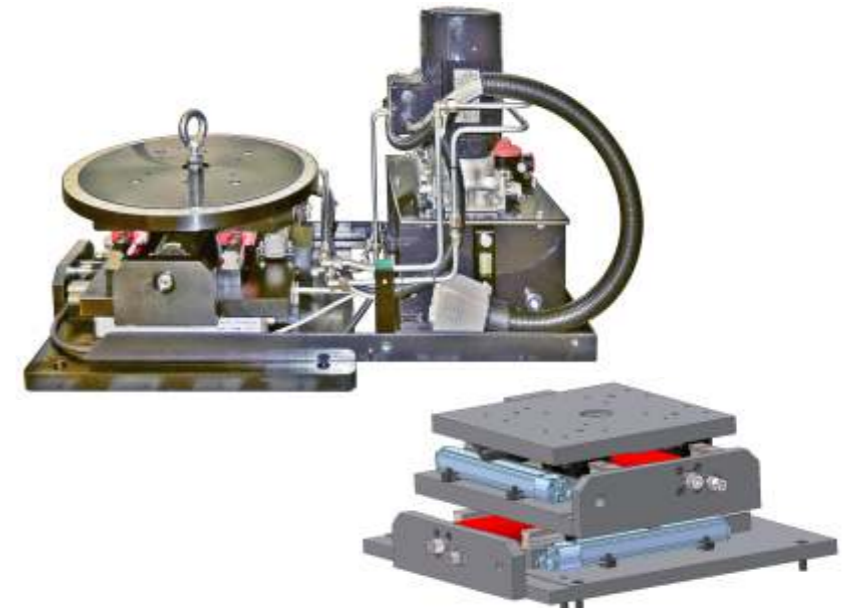
Spring Tester - side insertion

Lateral Spring Table

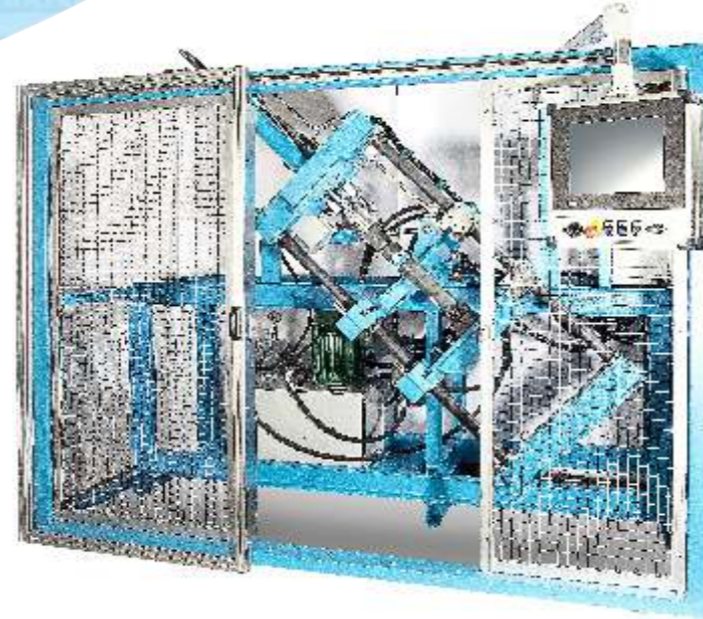
In addition to the analysis of the spring characteristics curve it is necessary to measure the angle of deflection, lateral displacement and the lateral forces of coil springs.

This is especially important with regards to matching up opposing transverse springs (left-right) assembled in railway undercarriages. Here it is absolutely essential to match together corresponding transverse spring characteristics in order to avoid lateral distortions when the wheel set springs are in compression.

The specially designed Ulbrich X Y lateral force measurement system (loose sled-slide rails) enables the operator to measure both the lateral movement as well as the actual displacement from the centre of the spring. Both values can be combined in the analysis / test protocol.



Universal Shock Absorber Test Machines



Model: 300/25 (mm/sec/kN)

Shock absorbers need to be regularly tested in order to ensure that the energy absorption properties are in-line with the specification.

Such tests will be carried out in accordance to the manufacturers quality control procedures or railway regulations.

The main test criterion revolve around the measurement of impacts in relation to a selected speed linked to a number of specific strokes with specific stroke lengths (normally displayed with a sinusoidal curve).

The resulting forces are measured and recorded using the integrated load-cells.

Basic characteristics of the control and test software

- Display shows the required / achieved data for the distance and speed
- Speed profile over the stroke from the stroke starting position and the No. of strokes-fully programmable
- Envelope for press curve graphically available on the screen panel
- I.O. / N.I.O. result on the screen panel
- Saving of Operator details and contract No.
- Memory for XX programmes
- Programme call up in accordance to contract No. or type of shock absorber
- All relevant process data shown on a operator friendly display screen
- Test result , operator, date, time , test parameter , contract No. and or type will saved and archived on the computers hard drive
- Test curve in the form of stroke / force diagram also available on the screen
- Printing / coding of results in the form of a sticker – optional
- Statistical analysis option available
- Memo field available for extra remarks

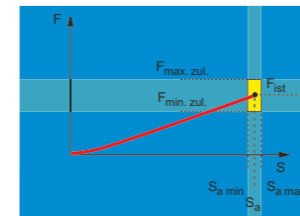
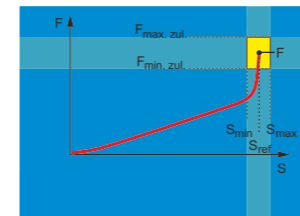
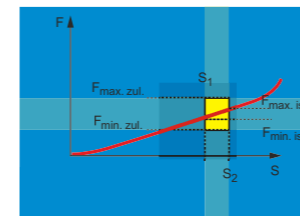
Main features as follows

- Max. press and extension force up to 45 kN
- Max. stroke 360 mm (i.e. +/- 180 mm)
- Max. total length of the shock absorber = 1100 mm
- Max. speed of the sinus curve profile up to 550 mm/sec.
- Test position from 0° vertical to 120°, fully adjustable
- Hydraulic system controlled by servo-valves incorporating a synchronous cylinder and a 7,5 kW up to 45 kW drive unit
- Option: Minimum speed xx mm/sec

ULBRICH		Stoßdämpferprüfprotokoll	
Die Prüfung wurde durchgeführt mittels Ulbrich Stoßdämpferprüfschleife 300/25			
Prüfdatum	05.12.2011		
Prüfabfertiger	Ulbrich		
Durchgeführte Arbeiten:			
Stoßdämpfer auf mechanische Beschädigungen kontrolliert			
Stoßdämpfer in Dämpferaufnahme gepasst			
Prüfzyklen gemäß Dämpferkennzeichnung eingestellt			
Inbetriebnahme Dämpferaufnahme eingetragener Prüfzyklen gestartet			
Prüfbedingungen:			
Der Dämpfer wird zyklisch in 4 verschiedenen Geschwindigkeitsstufen getestet.			
Pro-Geschwindigkeitsstufe werden 8 Prüfzyklen durchgeführt.			
Nach Beendigung der Prüfung wird ein Protokoll erstellt.			
Kraft / Weg - Diagramm			
Maximale Distanz	mm	Min./Max. F (N)	F (kN)
0,00	360	0,00	0,00
0,00	360	10,00	10,00
0,00	360	20,00	20,00
0,00	360	30,00	30,00
0,00	360	40,00	40,00
Prüfprotokoll: 05.12.2011 14:30			

Monitored Jointing and Test Machines from 50 kN to 1000 kN

In order to comply with current quality assurance standards, all production steps should be guided and controlled within defined tolerance levels and these values must be effectively documented. The ULBRICH Q-Control press system caters for the guidance and control of the press run with analysis of the force/distance curve and pre-set values.



Hydraulic Workshop-presses

ULBRICH Workshop-presses

These robust designed constructions are available with sideways re-positioning press-cylinders, extra press tables and variable press table heights. Workshop presses can be manually controlled or be driven semi automatically.

Capacity

- 1000 kN (100ton) – 6000 kN (600Ton)

Industry segments

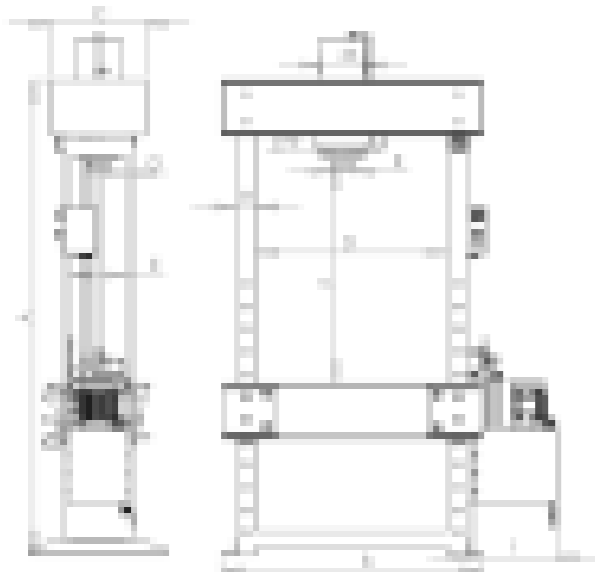
- Metal, plastic and wood industry
- Automotive industry
- Electro-technology and electronics-industry
- Workshops, and service centres etc.

Applications

- Repair and assembly
- Production processes eg. clamping and bolting
- Straightening of girders, axles, profiles and pipes



Dimensions	Unit	100	150	200	250	300
A	mm	2000	2050	2150	2150	2250
B	mm	1650	1700	1800	1850	1950
C	mm	530	560	660	690	740
D	mm	1100	1200	1300	1300	1400
E	mm	280	300	450	500	500
F	mm	900	900	900	900	900
G	mm	25	30	35	35	35
H	mm	110	120	160	200	250
K	mm	115	135	155	210	230
M	mm	220	280	300	370	400
Weight	kg	950	1200	1900	2450	3700
Characteristics						
Press force	kN	1000	1500	2000	2500	3000
Pressure	bar	263	306	283	233	252
Stroke	mm	400	400	400	400	400
Performance	kW	4,0	4,0	5,5	7,5	11,0
Operating speed	mm/s	5,1	5,1	4,8	4,1	4,4
Reset rate	mm/s	6,9	6,4	5,8	5,2	5,1



Model: 550/45 (mm/sec/kN)

Model: 550/45

Two press plate heights enable measurement of shock absorbers with varying lengths

High resolution / fully integrated distance measurement and control

Working area fully enclosed with protective cage

Joystick for test object positioning

Test parameter settings, analysis, display of results and saving of data via "touchscreen" PC

All test positions programmable with help from the angle transmitter

Data transfer via USB flash drive and / or LAN

Robust high precision loadcell



Model: 500/25 (mm/sec/kN)

Air Spring Test Machine



Technical description:

ULBRICH position- and force monitored, additionally position- and force controlled. Test machine for measuring the spring characteristics and sealing properties of air springs to the specifications and drawings.

Operation:

The test cycle is carried out in accordance to specified performance criterion, the actual test run itself is freely programmable thus enabling the test centre to control any number of different spring types.

The press force, compression depth, holding time, air cushion internal pressure, pre-test run compression set, the test protocol form and automatic archiving methodology can all be individually defined for an open ended number of test programs.

The open protection housing enables visual control of the spring and eases the placement and removal of the test object. The internal pressure of the spring is maintained by airlines which allow for the spring movement. Air pressure is displayed and can be adjusted according to the test criterion.

Safety standards are set up in accordance to customer needs and we carry out a workplace risk analysis taking into account the actual operational environment where the machine will be installed.

Additional Features:

- Production data entry and saving of the test cycle results in a user friendly format. This can be numeric and also graphically presented, saved and printed
- Barcode prints and other forms of labelling per printer are also possible but not in the standard delivery package
- Access to the control system and software only possible with code entry Entering of new test run programmes can be executed via an external PC
- Exit air pressure can be pre-selected
- LAN / WAN connectivity
- On-line diagnostic service available



Universal Buffer Test Machine

Process integrated analysis of energy absorption and Quality Control for rail buffers and rolling stock coupling systems

Railway buffers need to be regularly tested to ensure that the energy absorption characteristics are within the specified ranges. Test cycles are based on the OEM specifications, the National Railway Regulations and /or in accordance to the European Norm EN 15551- Annex D “(normative) Testing of

static characteristics of buffers”. The test run in accordance to this Norm requires the plotting of a force – distance curve during the entire press cycle. The test is carried out using a complete buffer system, i.e. the spring and shock absorber elements to be tested are fitted into a housing that correlates to the Norm.

The following types of springs can be fitted into the Buffer housing:

- Rubber and or other elastomeric spring systems
- Frictional dampers or annular springs
- Hydrodynamic and hydrostatic systems
- Parabolic and combined spring elements

Main software control features

- Display of stroke / force curve
- Calculation of force applied and energy absorption
- Customer can create and modify own Test Protocol layout
- I.O. / N.I.O. Anzeige
- Result of press, ie N.I.O. or I.O. displayed on control screen
- Entry and saving of operator information and contract number
- Programme memory capable of multiple spring types
- Programme call up via contract No. or the type of buffer
- All relevant process data presented on an open (editable) user friendly screen layout test result, operator, date, time, test info and contract No.
- displayed & recorded following every test run. All system relevant data (numerical and graphical) is registered and automatically archived on the P.C's hard drive
- Statistical analysis optional
- Memo fields can be integrated upon request

Maximum press force	1000 kN
Minimum press force	100 kN
Cylinder stroke	550 mm
Width of opening Z	900 mm
Width of opening front Y	600 mm
Width of opening side X	500 mm
Test object carrier height	700 mm
Test object carrier Dims.	400x600 mm
Test speed	7-14 mm/s
Motor performance	15 kW
Load cell	100-1000 kN
Test object carrier on rollers	
Buffer loading option	left or right



- Fully integrated high resolution distance measurement and control
- External loading area externally allows for easier handling via crane or forklift truck.
- (Customer can specify left-side or right-side)
- Protective housing door on slides with safety switch Test object carrier mounted on rollers for ease of placement / removal
- Superior high-pressure hydraulic cylinder with extremely robust piston and guides
- Communication via PC, in order to set test parameters, to display, analyse and save results
- Two-hand operation console. Position adjustable via flexible jointed arm
- Buffer carrier mounted to transport table. Insertion and removal driven by linear drive unit.
- Robust high precision load cell
- USB port
- Joystick
- PC on flexible jointed arm

ULBRICH		PROTOCOL	Sequential serial number	
Test object: PM 1000 10 Buffer Tester		10355	14.02.2012	
Contract Number: P.2012_045		Minor: 5-110_SerNr: 3		
Protocol description: V-854883		Series number of buffer:		
Description	Press depth (mm)	Force (kN)	Unit Value (kN)	Result
F1(N)	647	653	650.1	OK
F2(N)	25	30	22.2	OK
F3(N)	60	50	78.9	OK
F4(N)	105	300	354.9	OK
F5(N)				
F6(N)				
F7(N)				
Wt (kJ)	8.18kJ		15	OK
Wd(kJ)	8.05 kJ		8	OK

Operator: Kevin Smith
 Test result: OK
 Test Norm: IFC 529 (Eq. 1000) 2009-4-5-2010
 Quality control: _____