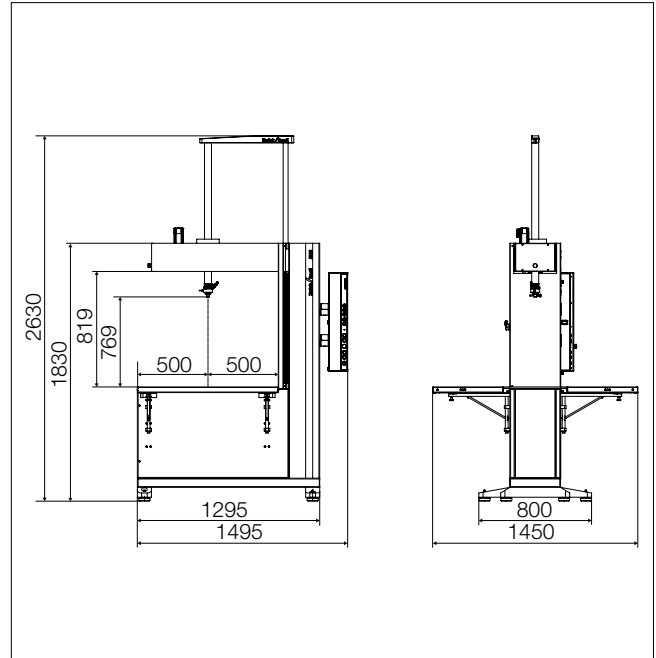


Product Information

cLine materials testing machine Z005 and Z010



Range of application

The cLine materials testing machine product group features a test area which is open to three sides. These testing machines are especially suitable for component testing and for materials-testing flexible foams. Component testing is primarily performed on flexible foam products such as vehicle seats and cushions and also mattresses. For materials testing, cubes or slabs of flexible foams are used.

Compression tests, cyclic indentation tests and pulsating compressive strength tests (alternating load tests) are applied. Used in conjunction with our intuitive testXpert II testing software, cLine materials testing machines are very easy to operate.

Ergonomic operation

Improved ergonomics thanks to operation from the side, swiveling table extensions incorporated on both sides, an additional single-sided table extension and an optional display-equipped remote control for set-up and operating modes.

Standard-compliant positioning accuracy

Standard-compliant positioning accuracy is reliably achieved. The corrected targets are approached via online correction performed automatically in the testing software and the testControl II electronics. For the user this means greater accuracy in displacement measurement at specified loads.

Powerful drives

Extremely low minimum speeds can be set, combined with greater speed-constancy, while the drive with zero-backlash ball-screw delivers high crosshead travel resolution. The motor employs zero-maintenance AC technology.

The high test-speed range can be used without restriction, while faster return speeds mean reduced cycle times and increased test throughput.

Safety for you and the entire testing system

Features ensuring safety include the 2-channel (= double safeguard) safety circuit, operating-mode selector switch, Drive Off switch and motor holding brake.

Stiff, robust machine frame

The machine frame features rigid welded steel sheet construction.

Indenter tools

Indenters are available in different diameters according to the requirements of standards of company specifications and are circular flat, hemispherical or spherical. They are easy to install and change.

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cLine materials testing machine Z005 and Z010

Integration into production process

cLine materials testing machines can optionally be integrated into the production process, for example by means of roller conveyors before and after the support table.

Made in Germany

cLine, including all mechanical, electronic and software components, together with the extensive range of accessories are developed and produced at Zwick Roell's production facility in Germany and are therefore ideally matched to each other. This means that cLine is an extremely high-quality product and also allows Zwick to offer the best possible support.

Powerful, innovative testControl II electronics

cLine is equipped with testControl II digital measurement and control electronics, mounted vertically on the load frame for better protection against ingress of liquids or conductive particles.

Eco mode

testControl II automatically switches to eco mode when not in use, saving energy.

testXpert II – intelligent and reliable

testXpert II testing software and testControl II electronics are perfectly matched, ensuring safe, efficient, reliable operation of the testing machine. testXpert II offers the optimum solution for any testing requirement.

Built-in safety in accordance with EC Machinery Directive

The statutory safety requirements of the EC Machinery Directive are implemented in all Zwick machines, which are accompanied by an EC Declaration of Conformity on delivery. Only the latest safety technologies and proven industrial components are used. A very high level of safety is guaranteed for user, test results, specimen material and testing system.

Ergonomic remote control with display

The entire test can be performed via the displayequipped remote control unit, independently of the PC. In addition, rapid, high-precision positioning is possible via the rocker switch with integrated thumbwheel.

Overview of key advantages of testControl II electronics



Machine compliance correction

The high-quality drive technology and on-line machine compliance correction enable extremely accurate travel measurement and positioning.



System monitoring

Detailed information regarding current status and usage level of testing equipment greatly simplifies processes such as planning maintenance and spares/replacement procurement.



Fast, adaptive drive-controller

The high drive control frequency of 1000 Hz enables fast, precise force and strain control. Benefits include enabling components to be loaded very quickly and accurately with the specified force. In addition, all control parameters required for fast, accurate approach to target positions are automatically set, enabling time and cost savings by eliminating the need for time-consuming pre-tests.



Maximum accuracy

High (24-bit) measured-value resolution for maximum test-result accuracy and reproducibility. This means for example that even minimal force changes on the specimen can be recorded and displayed accurately.

Product Information

cLine materials testing machine Z005 and Z010

Type	Z005	Z010
Item number	1006325	1006326
Fmax	5 kN	10 kN
Test area		
Height	819 mm	
Width	1000 mm	
Depth (table-leaves retracted)	450 mm	
Depth (table-leaves expanded)	1450 mm	
Load frame		
Height	2630 mm	
Width (with electronic)	1495 mm	
Depth (table-leaves retracted)	800 mm	
Depth (table-leaves expanded)	1450 mm	
Maximum travel of the moving crosshead (without accessories)	600 mm	
Weight with electronic	ca. 580 kg	
Noise level at maximum test speed	55 dB(A)	
Finish	RAL 7021 black grey, RAL 7038 agate grey, RAL 3031 orientred	
Ambient temperature	+10 ... +35 °C	
Air humidity	20 ... 90 %	
Drive system		
Motor	AC servo-motor	
Motor holding brake	yes	
Input signal, set-value preset	digital (real-time Ethernet, EtherCAT®)	
Controller / Cycle time	adaptive / 1000 Hz	
Crosshead speed $V_{Min} \dots V_{Nenn}$	0,0005 ... 1000 mm/min	
Increased crosshead return speed (at reduced force)	1500 mm/min	
Drive systems's travel resolution	0,0232 µm	
Positioning, repetition accuracy	± 2 µm	
Measurement and control electronics		
Number of slots available for measurement and control modules	2 synchronized module bus slots (expandable to 5) ⁽¹⁾ 1 synchronised PCIe slots	
Force measurement	grade 0.5 / 1 see load cell, to DIN EN ISO 7500-1, ASTM E4	
Measurement range	up to 165 % of F_N	
Calculated resolution (e.g. in tensile / compression direction)	24 bit	
Data acquisition rate, internal	400 kHz	
Test data transmission rate to the PC	500 Hz (optional 2000 Hz)	
Zero-point correction	automatically at measurement begin	
Measurement signal runtime correction for all channels	yes	
Interface for PC	Ethernet	
Eco Mode	yes, power section automatically switched off (time adjustable)	
CE conformity	yes, according to machine guidelines 2006/42/EG	

Product Information

cLine materials testing machine Z005 and Z010

Type	Z005	Z010
Item number	1006325	1006326
Fmax	5 kN	10 kN
Power ratings		
Electrical connections	230 VAC (1 PH, N, PE)	
Range of tolerance	± 10 %	
Mains frequency	50/60 Hz	
Power rating	0,7kVA	0,8kVA
EMC characteristics	Conforms to the relevant highest requirements of EN 63126-1 (Class B immunity, Class A emitted interference)	

Further cLine materials testing machines (30/50 kN) are available on request.

Optional accessories

Description	Item Number
Extension of the testing table for the cLine materials testing machine	1011378
- One-sided bench table extension by 250 mm	
- For testing of molded foam samples	
- Suitable for use with 5 kN and 10 kN cLine	