

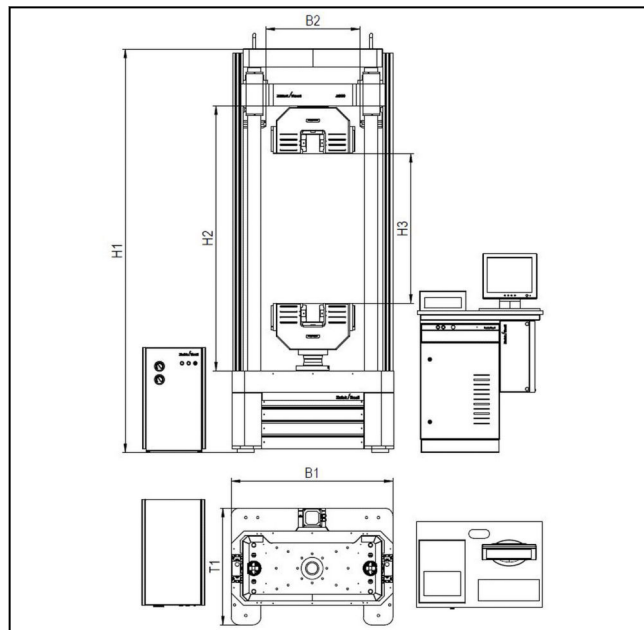
Product Information

Materials testing machine Z330E with testControl II

CTA: 66565 66566



Z600E with hydraulic grips



Drawing: Z600E with hydraulic grips

Advantages and features

Modern load frame design

- The robust load frame with four hard chrome-plated guide columns and a solid base crosshead and moving crosshead offer excellent guidance properties and high degree of machine rigidity.
- The drive features maintenance-free, digitally controlled AC drive technology. This is combined with an innovative motor feedback system, allowing excellent constant speed characteristics to be achieved even at extremely low speeds.
- It is possible to test specimens and components with varying lengths thanks to the large test area, which at the same time features a low overall height.

Optimum operator convenience

- Ergonomics are top priority when it comes to operating the new materials testing machine.
- The machine is adjustable for optimum ergonomic configuration; modular design allows adaptation as and when required.
- The zero-backlash prestressed precision ball-screws with digitally controlled AC servo drive makes operation that is nearly service-free possible.

Innovative electronics

- The new testControl II measurement and control electronics provide the ideal basis for precise, reproducible test results.
- Impressive features include new drive technology, high measured-value acquisition rates, and a modular design (for more information, see page 2).

Satisfying the most demanding safety requirements

- Compliance with the statutory safety requirements of the EC Machinery Directive is ensured in all materials testing machines, while an EC Declaration of Conformity accompanies every machine supplied.
- Only the latest safety technology and proven industrial components are used.
- The highest degree of safety for the operator, test results, specimen material, and testing system are guaranteed.

Future-proof

- Modular design means that the testing system can be re-equipped or upgraded whenever required.
- Moreover, testControl II control electronics are compatible with future-generation Zwick software.
- Even after a product has been discontinued, spare parts remain available for a minimum of 10 years.

Product Information

Materials testing machine Z330E with testControl II

Description	Value
Load frame	
Finish	RAL 7011 iron gray and RAL 7038 Agate gray
Ambient temperature	+10 to +35°C
Humidity (non-condensing)	20 to 90 %
Drive	
Motor	AC servo-motor with concentrated windings, Hiperface® motor feedback system
Break for the motor fixture	Yes
Control, set value preselection	Digital (real-time Ethernet, EtherCAT®)
Controller/cycle time	Adaptive/1000 Hz
Repeat positioning accuracy on crosshead	± 0.5 µm
Measurement and control electronics	
Number of available slots for measurement and control modules	5 synchronized module bus slots, 1 synchronized PCIe slot ¹⁾
Force measurement	Class 0.5/1, depending on load cell, compliant to DIN EN ISO 7500-1, ASTM E4, JIS B7721
Calculated resolution (e.g., load cell in tensile/compression direction)	24 bit
Measurement value sampling rate, internal	400 kHz
Measurement value transmission rate to PC	500 Hz (optional 2000 Hz)
Zero-point correction	Automatic, at start of measurement
Measurement signal run-time correction for all channels	Yes
Interface to PC	Ethernet
Eco mode	Yes, automatic switch off of power section (time can be set)
CE conformity	Yes, according to Machinery Directive 2006/42/EC
Rated values	
Mains frequency	50/60 Hz
Electrical connection	400 V +/- 10 % (3 Ph, N, PE)
Power consumption	6,5 kVA

1) A high-quality DCSC measurement module is included in the scope of delivery (occupies one module bus slot).

Options

Description	Item number
Display-equipped remote control for testControl II (with specimen grips control)	1008960
Display-equipped remote control for testControl II (without specimen grips control)	1008955
2,000-Hz measurement value transmission: Increasing the measurement value transmission from 500 Hz to 2000 Hz. The measured values are transmitted and processed to testXpert II.	057860
Table mounting to electronics container with PC support	1004700
Mounting of makroXtens at the rear 90°, can be swiveled 45° at the rear to the left, sensor arm length 300 mm (standard)	1007089
Mounting of makroXtens at the rear 90°, can be swiveled 45° at the rear to the left, sensor arm length 450 mm (when mounting a safety device at the rear)	1007092
Protection for lead screws	Acc. to load frame

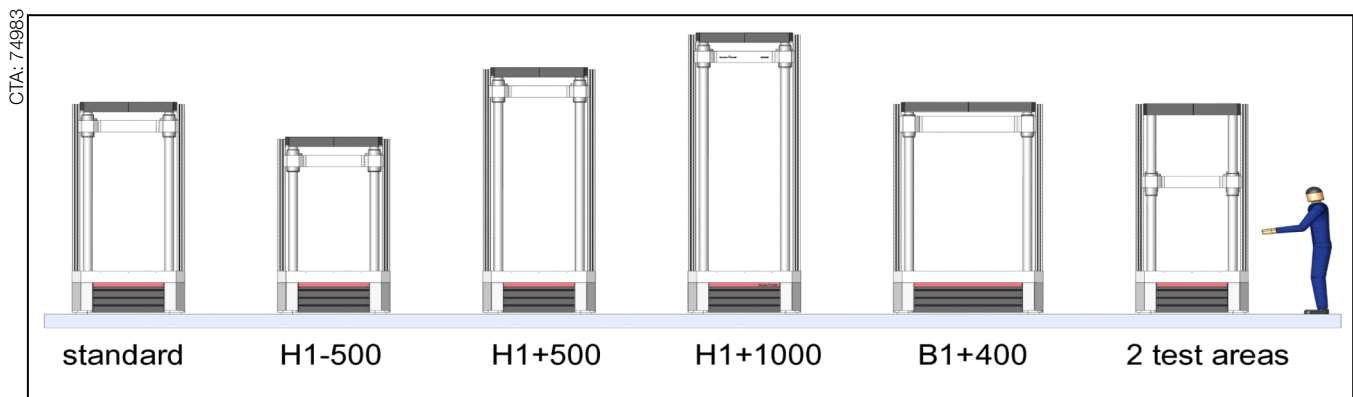
Product Information

Materials testing machine Z330E with testControl II

Product data

Type	Standard	H1 - 500	H1 + 500	H1 + 1000	B1 + 400	2 test areas	
Item number	1012978	1013494	1013493	1013498	1013499	1013511	
Load frame							
Test load F_N in tensile and compression directions	330	330	330	330	330	330	kN
Number of guide columns	4	4	4	4	4	4	
Number of lead screw drives	2	2	2	2	2	2	
Rigidity of the load frame at $H_2 = 1000$ mm	511	511	511	511	469	511	kN/mm
Height - H1	3036	2536	3536	4036	3036	3010	mm
Width - B1	1120	1120	1120	1120	1520	1120	mm
Depth - T1	720	720	720	720	720	720	mm
Test area width - B2	710	710	710	710	1060	660/620	mm
Test area height - H2	2100	1600	2600	3100	2100	2100	mm
Test stroke - H3 (with hydraulic grips)	1400	900	1900	2400	1400	1400	mm
Weight without accessories	1800	1700	1950	2050	2655	2100	kg
with hydraulic grips	2200	2100	2300	2400	3000	2500	kg
Specific floor loading (with hydraulic grips)	2.6	2.9	2.8	2.9	3.6	3.0	kg/cm ²
Noise level at maximum test speed	<75	<75	<75	<75	<75	<75	dB(A)
Drive							
Crosshead speed	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	mm/min
Increased crosshead return speed (at reduced force)	520	520	520	520	520	520	mm/min
Drive system's travel resolution	0.000124	0.000124	0.000124	0.000124	0.000124	0.000124	µm

Overview of load frame



Comment: For materials testing machines with side test area exist a separate product information.

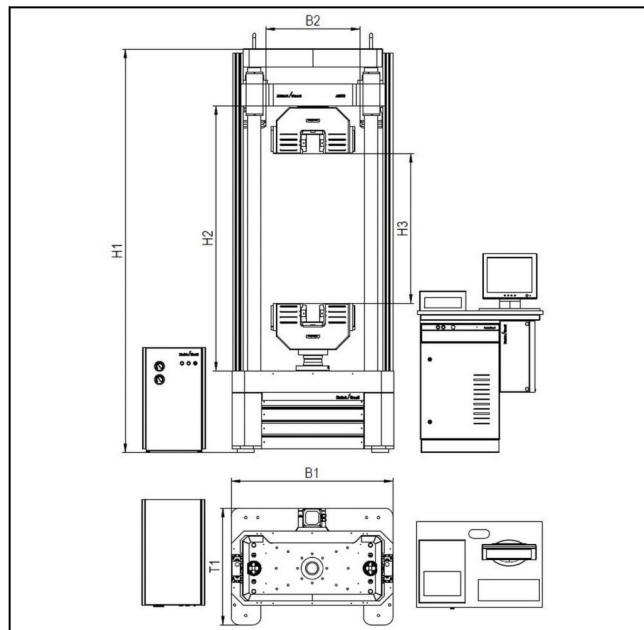
Product Information

Materials testing machine Z400E with testControl II

CTA: 66565 66566



Z600E with hydraulic grips



Drawing: Z600E with hydraulic grips

Advantages and features

Modern load frame design

- The robust load frame with four hard chrome-plated guide columns and a solid base crosshead and moving crosshead offer excellent guidance properties and high degree of machine rigidity.
- The drive features maintenance-free, digitally controlled AC drive technology. This is combined with an innovative motor feedback system, allowing excellent constant speed characteristics to be achieved even at extremely low speeds.
- It is possible to test specimens and components with varying lengths thanks to the large test area, which at the same time features a low overall height.

Optimum operator convenience

- Ergonomics are top priority when it comes to operating the new materials testing machine.
- The machine is adjustable for optimum ergonomic configuration; modular design allows adaptation as and when required.
- The zero-backlash prestressed precision ball-screws with digitally controlled AC servo drive makes operation that is nearly service-free possible.

Innovative electronics

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- Impressive features include new drive technology, high measured-value acquisition rates, and a modular design (for more information, see page 2).

Satisfying the most demanding safety requirements

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- Only the latest safety technology and proven industrial components are used.
- The highest degree of safety for the operator, test results, specimen material, and testing system are guaranteed.

Future-proof

- Modular design means that the testing system can be re-equipped or upgraded whenever required.
- Moreover, testControl II control electronics are compatible with future-generation Zwick software.
- Even after a product has been discontinued, spare parts remain available for a minimum of 10 years.

Product Information

Materials testing machine Z400E with testControl II

Description	Value
Load frame	
Finish	RAL 7011 iron gray and RAL 7038 Agate gray
Ambient temperature	+10 to +35°C
Humidity (non-condensing)	20 to 90 %
Drive	
Motor	AC servo-motor with concentrated windings, Hiperface® motor feedback system
Break for the motor fixture	Yes
Control, set value preselection	Digital (real-time Ethernet, EtherCAT®)
Controller/cycle time	Adaptive/1000 Hz
Repeat positioning accuracy on crosshead	± 0.5 µm
Measurement and control electronics	
Number of available slots for measurement and control modules	5 synchronized module bus slots, 1 synchronized PCIe slot ¹⁾
Force measurement	Class 0.5/1, depending on load cell, compliant to DIN EN ISO 7500-1, ASTM E4, JIS B7721
Calculated resolution (e.g., load cell in tensile/compression direction)	24 bit
Measurement value sampling rate, internal	400 kHz
Measurement value transmission rate to PC	500 Hz (optional 2000 Hz)
Zero-point correction	Automatic, at start of measurement
Measurement signal run-time correction for all channels	Yes
Interface to PC	Ethernet
Eco mode	Yes, automatic switch off of power section (time can be set)
CE conformity	Yes, according to Machinery Directive 2006/42/EC
Rated values	
Mains frequency	50/60 Hz
Electrical connection	400 V +/- 10 % (3 Ph, N, PE)
Power consumption	6,5 kVA

1) A high-quality DCSC measurement module is included in the scope of delivery (occupies one module bus slot).

Options

Description	Item number
Display-equipped remote control for testControl II (with specimen grips control)	1008960
Display-equipped remote control for testControl II (without specimen grips control)	1008955
2,000-Hz measurement value transmission: Increasing the measurement value transmission from 500 Hz to 2000 Hz. The measured values are transmitted and processed to testXpert II.	057860
Table mounting to electronics container with PC support	1004700
Mounting of makroXtens at the rear 90°, can be swiveled 45° at the rear to the left, sensor arm length 300 mm (standard)	1007089
Mounting of makroXtens at the rear 90°, can be swiveled 45° at the rear to the left, sensor arm length 450 mm (when mounting a safety device at the rear)	1007092
Protection for lead screws	Acc. to load frame

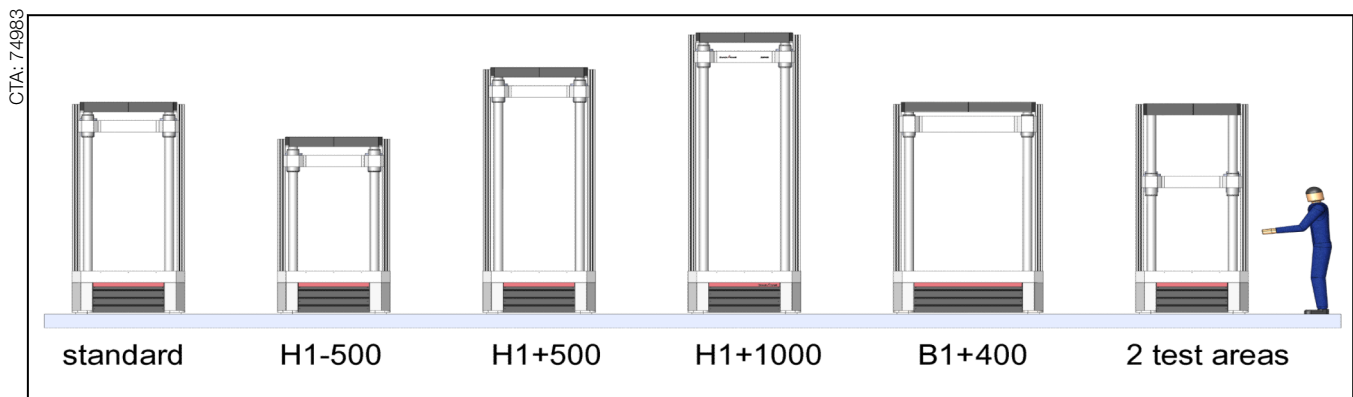
Product Information

Materials testing machine Z400E with testControl II

Product data

Type	Standard	H1 - 500	H1 + 500	H1 + 1000	B1 + 400	2 test areas	
Item number	1007988	1013457	1013456	1013460	1013466	1005183	
Load frame							
Test load F_N in tensile and compression directions	400	400	400	400	400	400	kN
Number of guide columns	4	4	4	4	4	4	
Number of lead screw drives	2	2	2	2	2	2	
Rigidity of the load frame at $H_2 = 1000$ mm	511	511	511	511	469	511	kN/mm
Height - H1	3036	2536	3536	4036	3036	3010	mm
Width - B1	1120	1120	1120	1120	1520	1120	mm
Depth - T1	720	720	720	720	720	720	mm
Test area width - B2	660	660	660	660	1060	660/620	mm
Test area height - H2	2130	1630	2630	3130	2130	2130	mm
Test stroke - H3 (with hydraulic grips)	1400	900	1900	2400	1400	1400	mm
Weight without accessories	1800	1700	1950	2050	2650	2100	kg
with hydraulic grips	2200	2100	2300	2400	3000	2500	kg
Specific floor loading (with hydraulic grips)	2.6	2.9	2.9	2.9	3.6	3.0	kg/cm ²
Noise level at maximum test speed	<75	<75	<75	<75	<75	<75	dB(A)
Drive							
Crosshead speed	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	mm/min
Increased crosshead return speed (at reduced force)	520	520	520	520	520	520	mm/min
Drive system's travel resolution	0.000124	0.000124	0.000124	0.000124	0.000124	0.000124	µm

Overview of load frame



Comment: For materials testing machines with side test area exist a separate product information.

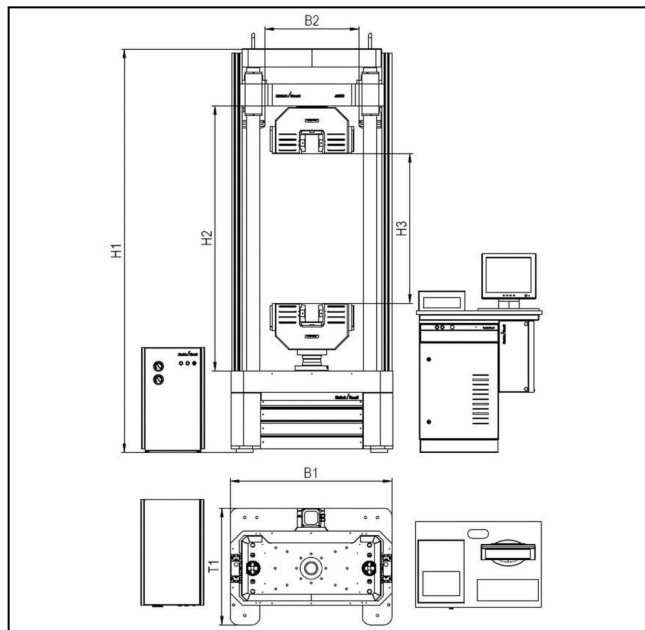
Product Information

Materials testing machine Z600E with testControl II

CTA: 66565 66566



Z600E with hydraulic grips



Drawing: Z600E with hydraulic grips

Advantages and features

Modern load frame design

- The robust load frame with four hard chrome-plated guide columns and a solid base crosshead and moving crosshead offer excellent guidance properties and high degree of machine rigidity.
- The drive features maintenance-free, digitally controlled AC drive technology. This is combined with an innovative motor feedback system, allowing excellent constant speed characteristics to be achieved even at extremely low speeds.
- It is possible to test specimens and components with varying lengths thanks to the large test area, which at the same time features a low overall height.

Optimum operator convenience

- Ergonomics are top priority when it comes to operating the new materials testing machine.
- The machine is adjustable for optimum ergonomic configuration; modular design allows adaptation as and when required.
- The zero-backlash prestressed precision ball-screws with digitally controlled AC servo drive makes operation that is nearly service-free possible.

Innovative electronics

- The new testControl II measurement and control electronics provide the ideal basis for precise, reproducible test results.
- Impressive features include new drive technology, high measured-value acquisition rates, and a modular design (for more information, see page 2).

Satisfying the most demanding safety requirements

- Compliance with the statutory safety requirements of the EC Machinery Directive is ensured in all materials testing machines, while an EC Declaration of Conformity accompanies every machine supplied.
- Only the latest safety technology and proven industrial components are used.
- The highest degree of safety for the operator, test results, specimen material, and testing system are guaranteed.

Future-proof

- Modular design means that the testing system can be re-equipped or upgraded whenever required.
- Moreover, testControl II control electronics are compatible with future-generation Zwick software.
- Even after a product has been discontinued, spare parts remain available for a minimum of 10 years.

Product Information

Materials testing machine Z600E with testControl II

Description	Value
Load frame	
Finish	RAL 7011 iron gray and RAL 7038 Agate gray
Ambient temperature	+10 to +35°C
Humidity (non-condensing)	20 to 90 %
Drive	
Motor	AC servo-motor with concentrated windings, Hiperface® motor feedback system
Break for the motor fixture	Yes
Control, set value preselection	Digital (real-time Ethernet, EtherCAT®)
Controller/cycle time	Adaptive/1000 Hz
Repeat positioning accuracy on crosshead	± 0.5 µm
Measurement and control electronics	
Number of available slots for measurement and control modules	5 synchronized module bus slots, 1 synchronized PCIe slot ¹⁾
Force measurement	Class 0.5/1, depending on load cell, compliant to DIN EN ISO 7500-1, ASTM E4, JIS B7721
Calculated resolution (e.g., load cell in tensile/compression direction)	24 bit
Measurement value sampling rate, internal	400 kHz
Measurement value transmission rate to PC	500 Hz (optional 2000 Hz)
Zero-point correction	Automatic, at start of measurement
Measurement signal run-time correction for all channels	Yes
Interface to PC	Ethernet
Eco mode	Yes, automatic switch off of power section (time can be set)
CE conformity	Yes, according to Machinery Directive 2006/42/EC
Rated values	
Mains frequency	50/60 Hz
Electrical connection	400 V +/- 10 % (3 Ph, N, PE)
Power consumption	9 kVA

1) A high-quality DCSC measurement module is included in the scope of delivery (occupies one module bus slot).

Options

Description	Item number
Display-equipped remote control for testControl II (with specimen grips control)	1008960
Display-equipped remote control for testControl II (without specimen grips control)	1008955
2,000-Hz measurement value transmission: Increasing the measurement value transmission from 500 Hz to 2000 Hz. The measured values are transmitted and processed to testXpert II.	057860
Table mounting to electronics container with PC support	1004700
Mounting of makroXtens at the rear 90°, can be swiveled 45° at the rear to the left, sensor arm length 300 mm (standard)	1007089
Mounting of makroXtens at the rear 90°, can be swiveled 45° at the rear to the left, sensor arm length 450 mm (when mounting a safety device at the rear)	1007092
Protection for lead screws	Acc. to load frame

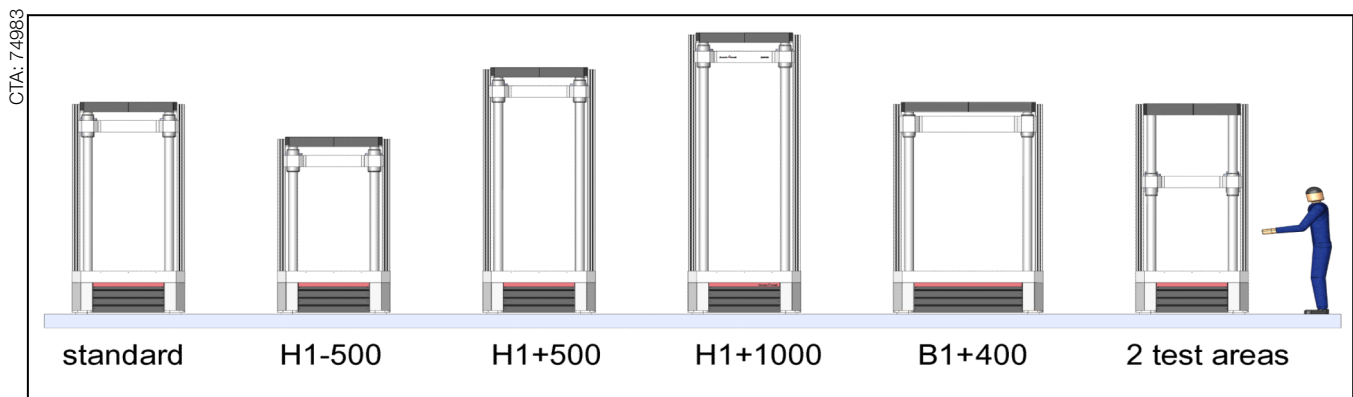
Product Information

Materials testing machine Z600E with testControl II

Product data

Type	Stand- ard	H1 - 500	H1 + 500	H1 + 1000	B1 + 400	2 test areas	
Item number	1004693	1011837	1011835	1011838	1011792	1018792	
Load frame							
Test load F_N in tensile and compression directions	600	600	600	600	600	600	kN
Number of guide columns	4	4	4	4	4	4	
Number of lead screw drives	2	2	2	2	2	2	
Rigidity of the load frame at $H_2 = 1000$ mm	925	925	925	853	781	853	kN/mm
Height - H1	3050	2550	3550	4050	3050	3075	mm
Width - B1	1220	1220	1220	1220	1620	1220	mm
Depth - T1	850	850	850	850	850	850	mm
Test area width - B2	710	710	710	710	1110	710	mm
Test area height - H2	2000	1500	2500	3000	2000	2000	mm
Test stroke - H3 (with hydraulic grips)	1130	630	1630	2130	1130	1130	mm
Weight without accessories	2860	2690	3040	3210	4100	3320	kg
With hydraulic grips	3500	3330	3680	3850	4740	3960	kg
Specific floor loading (with hydraulic grips)	4.2	4.0	4.4	4.6	5.7	4.7	kg/c m ²
Noise level at maximum test speed	<75	<75	<75	<75	<75	<75	dB(A)
Drive							
Crosshead speed	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	mm/ min
Increased crosshead return speed (at reduced force)	520	520	520	520	520	520	mm/ min
Drive system's travel resolution	0.000124	0.000124	0.000124	0.000124	0.000124	0.000124	µm

Overview of load frame

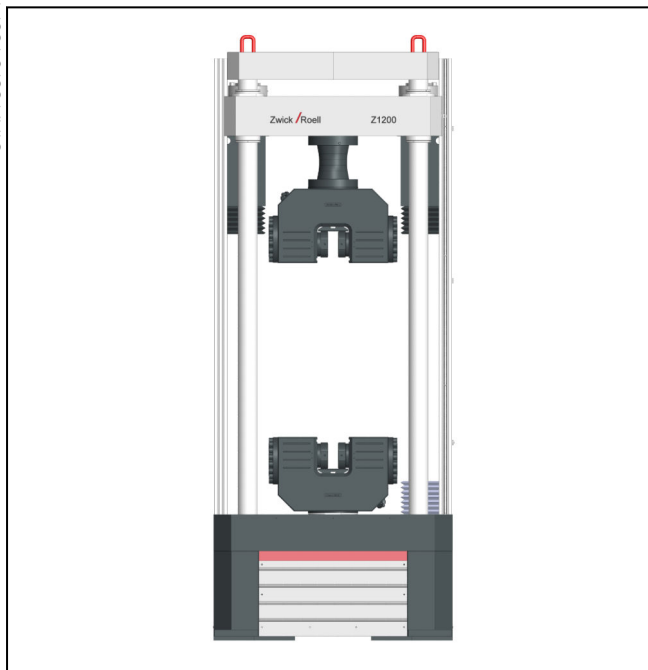


Comment: For materials testing machines with side test area exist a separate product information.

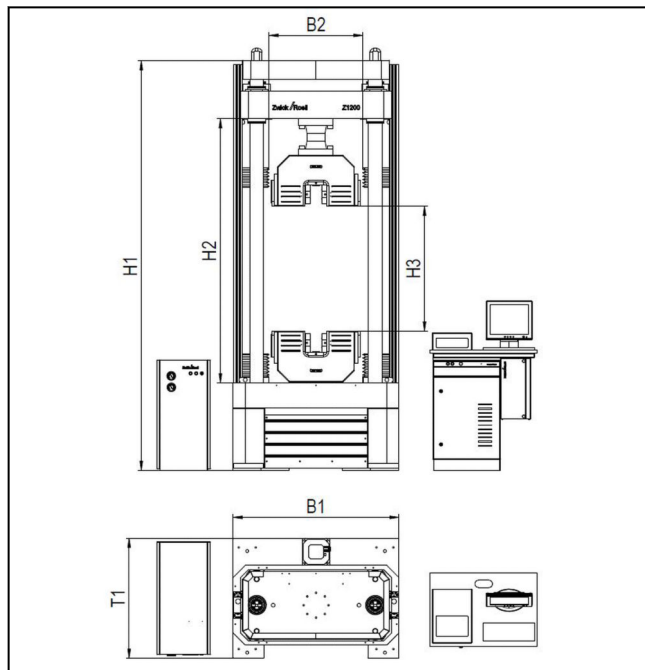
Product Information

Materials testing machine Z1200E with testControl II

CTA: 78873 78874



Z1200E with hydraulic grips



Drawing: Z1200E with hydraulic grips

Advantages and features

Modern load frame design

- The robust load frame with four hard chrome-plated guide columns and a solid base crosshead and moving crosshead offer excellent guidance properties and high degree of machine rigidity.
- The drive features maintenance-free, digitally controlled AC drive technology. This is combined with an innovative motor feedback system, allowing excellent constant speed characteristics to be achieved even at extremely low speeds.
- It is possible to test specimens and components with varying lengths thanks to the large test area, which at the same time features a low overall height.

Optimum operator convenience

- Ergonomics are top priority when it comes to operating the new materials testing machine.
- The machine is adjustable for optimum ergonomic configuration; modular design allows adaptation as and when required.
- The zero-backlash prestressed precision ball-screws with digitally controlled AC servo drive makes operation that is nearly service-free possible.

Innovative electronics

- The new testControl II measurement and control electronics provide the ideal basis for precise, reproducible test results.
- Impressive features include new drive technology, high measured-value acquisition rates, and a modular design (for more information, see page 2).

Satisfying the most demanding safety requirements

- Compliance with the statutory safety requirements of the EC Machinery Directive is ensured in all materials testing machines, while an EC Declaration of Conformity accompanies every machine supplied.
- Only the latest safety technology and proven industrial components are used.
- The highest degree of safety for the operator, test results, specimen material, and testing system are guaranteed.

Future-proof

- Modular design means that the testing system can be re-equipped or upgraded whenever required.
- Moreover, testControl II control electronics are compatible with future-generation Zwick software.
- Even after a product has been discontinued, spare parts remain available for a minimum of 10 years.

Product Information

Materials testing machine Z1200E with testControl II

Description	Value
Load frame	
Finish	RAL 7011 iron gray and RAL 7038 Agate gray
Ambient temperature	+10 to +35°C
Humidity (non-condensing)	20 to 90 %
Drive	
Motor	AC servo-motor with concentrated windings, Hiperface® motor feedback system
Break for the motor fixture	Yes
Control, set value preselection	Digital (real-time Ethernet, EtherCAT®)
Controller/cycle time	Adaptive/1000 Hz
Repeat positioning accuracy on crosshead	± 0.5 µm
Measurement and control electronics	
Number of available slots for measurement and control modules	5 synchronized module bus slots, 1 synchronized PCIe slot ¹⁾
Force measurement	Class 0.5/1, depending on load cell, compliant to DIN EN ISO 7500-1, ASTM E4, JIS B7721
Calculated resolution (e.g., load cell in tensile/compression direction)	24 bit
Measurement value sampling rate, internal	400 kHz
Measurement value transmission rate to PC	500 Hz (optional 2000 Hz)
Zero-point correction	Automatic, at start of measurement
Measurement signal run-time correction for all channels	Yes
Interface to PC	Ethernet
Eco mode	Yes, automatic switch off of power section (time can be set)
CE conformity	Yes, according to Machinery Directive 2006/42/EC
Rated values	
Mains frequency	50/60 Hz
Electrical connection	400 V +/- 10 % (3 Ph, N, PE)
Power consumption	24,5 kVA

¹⁾ A high-quality DCSC measurement module is included in the scope of delivery (occupies one module bus slot).

Options

Description	Item number
Display-equipped remote control for testControl II (with specimen grips control)	1008960
Display-equipped remote control for testControl II (without specimen grips control)	1008955
2,000-Hz measurement value transmission: Increasing the measurement value transmission from 500 Hz to 2000 Hz. The measured values are transmitted and processed to testXpert II.	057860
Table mounting to electronics container with PC support	1004700
Mounting of makroXtens at the rear 90°, can be swiveled 45° at the rear to the left, sensor arm length 450 mm (Standard)	1015610
Protection for lead screws	Acc. to load frame

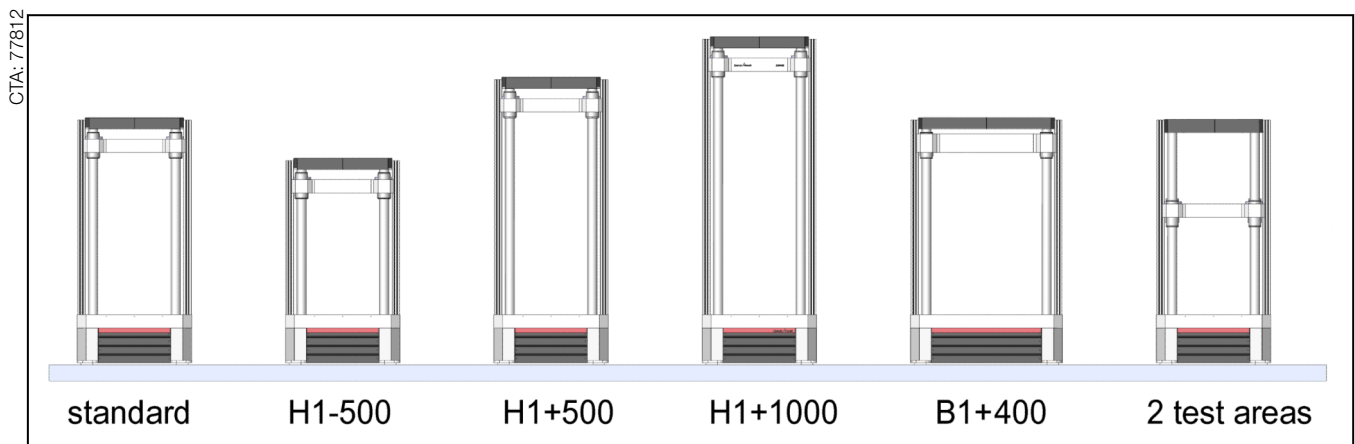
Product Information

Materials testing machine Z1200E with testControl II

Product data

Type	Stand-ard	H1 - 500	H1 + 500	H1 + 1000	B1 + 400	2 test areas	
Item number	1015376	1021338	1021335	1021339	1021340	1021358	
Load frame							
Test load F_N in tensile and compression directions	1200	1200	1200	1200	1200	1200	kN
Number of guide columns	4	4	4	4	4	4	
Number of lead screw drives	2	2	2	2	2	2	
Rigidity of the load frame at $H_2 = 1000$ mm	1972	1972	1972	1972	1034	1972	kN/mm
Height - H1	3635	3135	4135	4635	3635	3635	mm
Width - B1	1470	1470	1470	1470	1870	1470	mm
Depth - T1	1063	1063	1063	1063	1063	1063	mm
Test area width - B2	845	845	845	845	1245	845	mm
Test area height - H2	2340	1840	2840	3340	2340	2340	mm
Test stroke - H3 (with hydraulic grips)	1080	580	1580	2080	1080	1080	mm
Weight without accessories	6600	6500	6700	6800	7100	8100	kg
with hydraulic grips	8000	7900	8100	8200	8500	9600	kg
Specific floor loading (with hydraulic grips)	2.4	2.4	2.4	2.4	2.7	2.7	kg/cm ²
Noise level at maximum test speed	<75	<75	<75	<75	<75	<75	dB(A)
Drive							
Crosshead speed	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	mm/min
Increased crosshead return speed (at reduced force)	550	550	550	550	550	550	mm/min
Drive system's travel resolution	0.000176	0.000176	0.000176	0.000176	0.000176	0.000176	µm

Overview of load frame

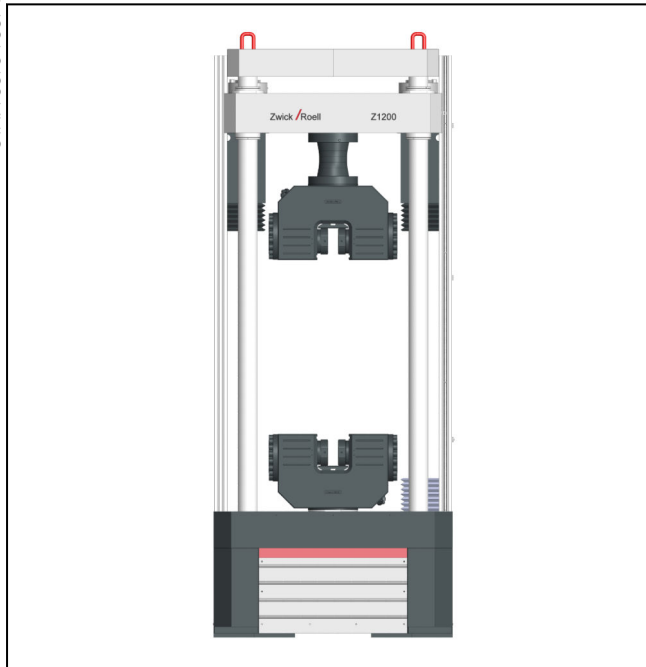


Comment: For materials testing machines with side test area exist a separate product information.

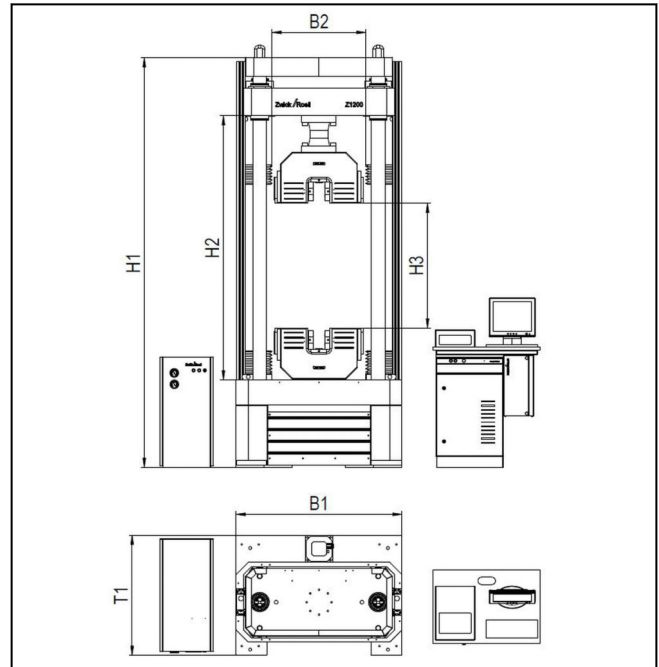
Product Information

Materials testing machine Z1600E with testControl II

CTA: 78873 78874



Z1200E with hydraulic grips



Drawing: Z1200E with hydraulic grips

Advantages and features

Modern load frame design

- The robust load frame with four hard chrome-plated guide columns and a solid base crosshead and moving crosshead offer excellent guidance properties and high degree of machine rigidity.
- The drive features maintenance-free, digitally controlled AC drive technology. This is combined with an innovative motor feedback system, allowing excellent constant speed characteristics to be achieved even at extremely low speeds.
- It is possible to test specimens and components with varying lengths thanks to the large test area, which at the same time features a low overall height.

Optimum operator convenience

- Ergonomics are top priority when it comes to operating the new materials testing machine.
- The machine is adjustable for optimum ergonomic configuration; modular design allows adaptation as and when required.
- The zero-backlash prestressed precision ball-screws with digitally controlled AC servo drive makes operation that is nearly service-free possible.

Innovative electronics

- The new testControl II measurement and control electronics provide the ideal basis for precise, reproducible test results.
- Impressive features include new drive technology, high measured-value acquisition rates, and a modular design (for more information, see page 2).

Satisfying the most demanding safety requirements

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- Only the latest safety technology and proven industrial components are used.
- The highest degree of safety for the operator, test results, specimen material, and testing system are guaranteed.

Future-proof

- Modular design means that the testing system can be re-equipped or upgraded whenever required.
- Moreover, testControl II control electronics are compatible with future-generation Zwick software.
- Even after a product has been discontinued, spare parts remain available for a minimum of 10 years.

Product Information

Materials testing machine Z1600E with testControl II

Description	Value
Load frame	
Finish	RAL 7011 iron gray and RAL 7038 Agate gray
Ambient temperature	+10 to +35°C
Humidity (non-condensing)	20 to 90 %
Drive	
Motor	AC servo-motor with concentrated windings, Hiperface® motor feedback system
Break for the motor fixture	Yes
Control, set value preselection	Digital (real-time Ethernet, EtherCAT®)
Controller/cycle time	Adaptive/1000 Hz
Repeat positioning accuracy on crosshead	± 0.5 µm
Measurement and control electronics	
Number of available slots for measurement and control modules	5 synchronized module bus slots, 1 synchronized PCIe slot ¹⁾
Force measurement	Class 0.5/1, depending on load cell, compliant to DIN EN ISO 7500-1, ASTM E4, JIS B7721
Calculated resolution (e.g., load cell in tensile/compression direction)	24 bit
Measurement value sampling rate, internal	400 kHz
Measurement value transmission rate to PC	500 Hz (optional 2000 Hz)
Zero-point correction	Automatic, at start of measurement
Measurement signal run-time correction for all channels	Yes
Interface to PC	Ethernet
Eco mode	Yes, automatic switch off of power section (time can be set)
CE conformity	Yes, according to Machinery Directive 2006/42/EC
Rated values	
Mains frequency	50/60 Hz
Electrical connection	400 V +/- 10 % (3 Ph, N, PE)
Power consumption	24,5 kVA

¹⁾ A high-quality DCSC measurement module is included in the scope of delivery (occupies one module bus slot).

Options

Description	Item number
Display-equipped remote control for testControl II (with specimen grips control)	1008960
Display-equipped remote control for testControl II (without specimen grips control)	1008955
2,000-Hz measurement value transmission: Increasing the measurement value transmission from 500 Hz to 2000 Hz. The measured values are transmitted and processed to testXpert II.	057860
Table mounting to electronics container with PC support	1004700
Mounting of makroXtens	
Protection for lead screws	Acc. to load frame

Product Information

Materials testing machine Z1600E with testControl II

Product data

Type	Z1600E	
Item number	1022551	
Load frame		
Test load F_N in tensile and compression directions	1600	kN
Number of guide columns	4	
Number of lead screw drives	2	
Rigidity of the load frame at $H_2 = 1000$ mm	2200	kN/mm
Height - H1	3950	mm
Width - B1	1620	mm
Depth - T1	1065	mm
Test area width - B2	1080	mm
Test area height - H2	2590	mm
Test stroke - H3 (with hydraulic grips)	1048	mm
Weight without accessories	7980	kg
with hydraulic grips	10560	kg
Specific floor loading (with hydraulic grips)	3.2	kg/cm ²
Noise level at maximum test speed	<75	dBA
Drive		
Crosshead speed	400	mm/min
Increased crosshead return speed (at reduced force)	520	mm/min
Drive system's travel resolution	0,000188	µm

Product Information

Materials testing machine with ball lead screw drive Z2000E



Figure: Zwick Z2000E with hydraulic grips

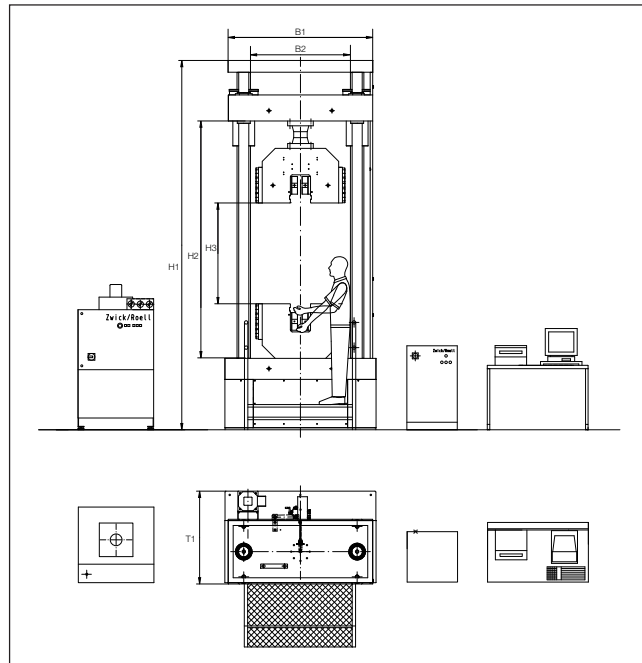


Figure: Drawing of Zwick Z2000E with hydraulic grips

Key benefits

- These electro-mechanical materials testing machines are fitted with a ball lead screw drive.
- Wide measuring range allows precise determination of even small test loads without re-tooling.
- Long travel combined with comparatively low build-height provides trouble-free specimen clamping and user-friendly testing over a wide range of specimen lengths.
- Low-maintenance, pre-stressed ball lead screws ensure accurate, long-term tensile and compression testing.

Further advantages and features

- The load frame is robust and extremely stiff.
- Standard tests using Zwick *testXpert*[®] software require only single-button operation.
- Modular design throughout the system allows the entire Zwick accessory range to be used, including a wide variety of extensometers, specimen grips and other test tools.
- Should new test requirements arise, additional test tools (e.g. calibration blocks) are easily installed via a T-slot or screw system.
- Can be tailored to customers' specific requirements (e.g. test area dimensions, test devices, specimen grips, test speed ranges, testing software).

Product Information

Materials testing machine with ball lead screw drive Z2000E

Model	Z2000E
Fmax [kN]	2000
[lb]	450000
Number of lead columns	4
Number of drive columns (ball lead screws)	2
Stiffness of load frame	
crosshead deflection and elongation of lead screw drive approx. [kN/mm]	1510
including load cell, hydraulic grips and drive approx. [kN/mm]	
Dimensions of load frame	
H1 – Height [mm]	4420
B1 – Width [mm]	1800
T1 – Depth [mm]	1090
Dimensions of test area	
H2 – Height [mm]	2826
B2 – Width [mm]	1090
Test stroke max.	
without tools / specimen grips [mm]	2500
H3 – with hydraulic grips (including load cell) [mm]	1200
Test speed [mm/min]	0.001 – 300
Weight	
without tools / specimen grips (with electronics) [kg]	9800
with specimen grips [kg]	13500
Specific floor loading [kg/cm ²]	2.25
Resolution of crosshead travel [µm/Impuls]	0.0032
Position accuracy [µm]	1.0
Item no.	• 030265
	(BPC-F2000EN.R16)

Environmental conditions	
Operating temperature [°C]	+10 ... +35
Storage temperature [°C]	-25 ... +55
Humidity range (not condensing) [%]	< 90
Electrical connection	
Mains voltage 3 Ph/N/PE ^{1 2} [V]	400
Mains frequency [Hz]	50 / 60
Drive power	
without specimen grips [kVA]	20
with hydraulic grips [kVA]	28.5
Fuse [A]	50
Noise level at 1m distance [dB(A)]	< 70
Color coating of rack	RAL7011 (iron gray), RAL7038 (agate gray)

¹ Three phase AC motor (L1, L2, L3), neutral wire N, protective earth PE

² < ± 10 % related to the mains voltage