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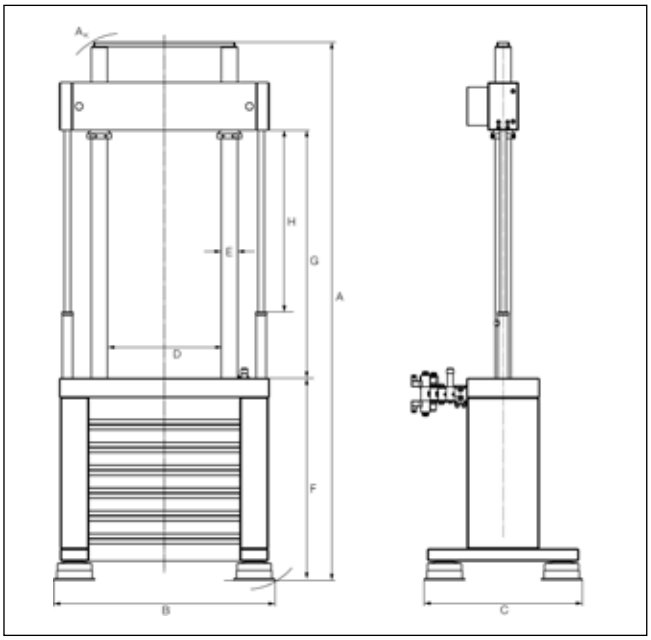
Materials Testing

Product Information

High-Speed Testing Machine Amsler HTM 2512

HTM 2512 with temperature chamber



Drawing of HTM with dimensions

Application

The fracture behavior of many materials depends among other things on the loading rate. The relevant data or constitutive equations are required for numerical calculation of crash safety.
Zwick's HTM range of servo-hydraulic high-speed testing machines enable strain-rate-dependent characteristic values to be determined over a wide speed range. High-speed punch and tensile tests, plus peel and shear tests can be performed on plastics and metals as well as on bonded and welded connections. Testing speed can easily be selected over a wide range from very slow to very fast.

Advantages

- Tests can be carried out over a wide speed range from quasi-static to 12 m/s
- actuator plus accumulator integrated into the machine table, saving space
- *testXpert*® provides a uniform software platform right through from test definition to evaluation
- Easy integration of optical extensometers
- Clamping of very short tensile specimens is also possible
- Machine is mounted on pneumatic springs, allowing installation almost anywhere.

Features

- Extremely stiff load frame designed to minimze the effects of high impulse peaks which occur during high-speed tests
- Hydrostatic bearing, equal area actuator for both tension and compression testing with hydraulic cushions at both ends
- Effective piston stroke of 200 mm enables testing of very ductile specimens or the testing of unusually long specimens
- System pressure 280 bar for maximum dynamic response and performance
- The accumulators used to supply hydraulic energy are mounted directly adjacent to the actuator to minimize flow and pressure losses
- Digital piston transducer is temperature-stable, possesses a very high dynamic response and requires no calibration
- Electronics with integrated high-speed data logging, standard four channels, which can be expanded to eight channels
- Protective guard and hydraulic safety systems reflect the particular demands placed on safety for high-speed tests

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HTM Type			2512
Nominal force		[kN]	25
Piston speed		[max /min m/s]	12 / 0.001
Total piston stroke		[mm]	250
Hydraulic end cushions		[mm]	2x25
Effective stroke		[mm]	200
Nominal pressure		[bar]	280
Actuator design			double rod-end actuator with hydrostatic bearings
Force measurement			piezo-electric
Position measurement			digital
Dimensions [1]			
A	Height of test frame	[mm]	2670
A_K	Diagonal tipping dimension (used for installation)	[mm]	2850
B	Max. width of test frame	[mm]	1090
C	Max. depth of test frame	[mm]	780
D	Distance between columns	[mm]	565
E	Column diameter	[mm]	80
F	Height of upper edge of lower crosshead	[mm]	1000
G	Max. vertical crosshead separation	[mm]	1370
H	Crosshead total travel	[mm]	1000
Weight		[kg]	1600
Item no.			
HTM 2512 load frame			• **046216** (BPS-FQ0025.20.00)
HTM 2512 cylinder			• **014113** (BPS-LQ0025.28.00)
HTM 2512 safety device			• **031189** (BPS-FQ0025.90.01)

[1] Dimensions without safety guard

The machine can be connected to a central 280 bar hydraulic ring main or to a dedicated hydraulic power unit.
A drain oil suction pump (item no. 924785) and a control station (item no. 072573) is also required.

HTM – measurement and control electronics	Item no.
testControl • Mounted in an electrical cabinet • Width x height x depth: 600 x 1100 x 600 mm • Including load measurement amplifier and 4-channel transient memory	• **014436** (BX40000-142)
Workstation for two transient memory cards (009521)	• **025382** (BXW20923.54.10-005)

HTM – Software	Item no.
testXpert® basic program	• **058389** (BXC069000.00.10)
Master test program 'Transient Recorder' • memory for performing tests with high-speed data logging	• **630497** (BX069907.00.00-07)
Test program for performing HTM tensile / punch tests	• **935674** (BXD069907-07-016)

Options	Item no.
Data logging • Additional transient memory card for 4 additional analog inputs	• **009521** (BX40000-122)
Measurement amplifier • Broadband measurement amplifier, frequency range DC up to 1 MHz (-3dB) e.g. for specimens with strain-gages applied	• **009360** (BX40000-124)
Module housing for up to 4 broadband measurement amplifiers (009360)	• **009361** (BX40000-125)
ProPact Correction software • For optimizing set-value signals, to achieve as constant a speed as possible	• **020926** (BX069807.12.00)
Temperature chamber -100 ... +250 °C	• **035653** (BXW91123-464)
Guide rails for temperature chamber	• **064982** (BX091200.02.00-48)

All Data at ambient temperature.