

Torsion testing machines KM.4 series KMTest 6.20 to 6.5000

KM.4 torsion test systems from LABORTECH measure torque in the range of 20–5000 Nm. They are electromechanical, horizontal and designed for torsion testing and simulation of operating conditions. SIEMENS' compact design and electronics ensure precision and reliability. The modular design provides high rigidity and long life. The AC servo drive allows precise speed control, control is via a SIEMENS PLC with a touch screen and FARO Test software. The machines meet EN ISO 13849-1/2 standards and international standards ASTM, ISO, GOST. They are CE compliant and can be customized to different test requirements...

Key features

- The test systems allow precise torque measurements in the range of 20 Nm to 5000 Nm, making them suitable for a variety of applications from laboratory research to industrial testing.
- The horizontal rotational torsion design with modular design ensures high mechanical resistance, long service life and stable results even under long-term loads.
- The dynamic AC servo drive of the infinitely variable speed control enables the simulation of real operating conditions and ensures maximum testing accuracy.
- The machines meet EN ISO 13849-1/2 safety standards and are equipped with protective covers to protect the operator during testing.
- Standards and certifications – KM.4 systems conform to international standards for torsion testing, including ASTM A938, ASTM E143, ASTM F543 (except Annex A4), ISO 594, ISO 7800, ISO 7864, GOST, ISO 7886-1, ISO 6475, and are CE compliant. Advanced control and software.
- The machine is controlled via a SIEMENS PLC with a touch LCD display and FARO Test software, which makes it easy to set test parameters and

Torsional force under control – precision, performance
and reliability in one...



Industry

engineering, construction, medical and automotive industries, research institutions, universities, etc.

Key features and advantages of the KM.4 series

We use new technologies and emphasize safety...



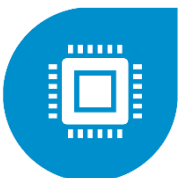
Test frames with integrated AC drive

The KMTest test frame is designed for maximum robustness and precision. Its high rigidity and precise horizontal crossbeam guidance system with almost zero friction guarantee absolute coaxiality and high static and dynamic load capacity, including resistance to off-axis loads. The frame uses a linear guide with a profile rail. KMTest testing machines are equipped with powerful, dynamic and maintenance-free AC servo drives, providing exceptional accuracy and reliability in testing. These drives ensure consistent speeds even at extremely low values, down to 0.0005 rpm, which is essential for performing high-precision torsional tests.



Torque sensors

The KMTest torque sensors are available in both rotary and non-rotary variants and enable highly accurate measurements in industrial applications and on test benches. The KM2 version is equipped with an integrated EEPROM with calibration constants for both directions, including linearization. The sensors are calibratable according to ČSN EN ISO 7500-1 and ASTM E4-21 standards, have a short-term overload capacity of up to 150% and excel in high mechanical resistance.



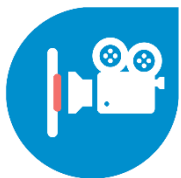
Measuring and control electronics

The testing machines are equipped with a digital LCD touch screen and integrated FAROTest-S software running on a SIEMENS PLC. The electronics allow connection to a PC via Ethernet 10/100 Mbit, which allows easy connection with SMTTest-BASIC software. The software provides a graphical view of the test progress, making it easy to monitor and analyze the results in real time. The electronics meet CE standards and include ECO mode and E-Stop function according to ISO 13850:2015 to increase safety and energy efficiency.



FAROTest-S Trial Software

FAROTest-S – Intelligent torsion test software. [FAROTest-S](#) is a powerful and intuitive system software designed to perform basic rotational tests on SIMATIC systems. It supports test methods according to the international standards EN ISO 7800, GOST 1545 and their equivalent ASTM A938, which specify technological tests of formability under simple torsion conditions. The software enables precise speed measurement with a defined load, with the sample fixed between the fixed and rotating jaws. The recorded data is compared with predetermined standards to verify the plasticity of the samples.

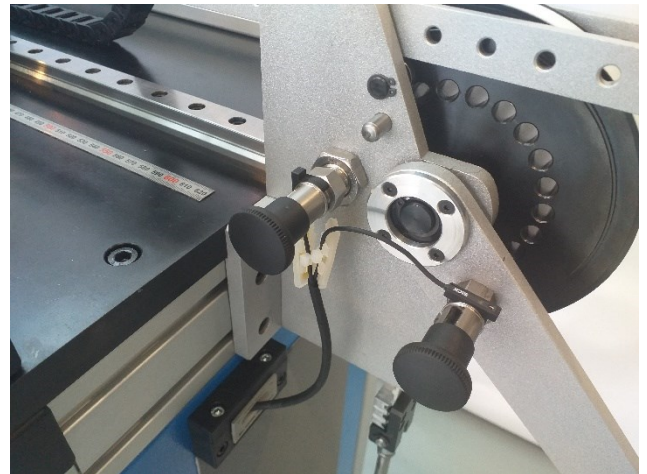


Testing accessories

KMTest testing machines are designed with flexibility and customizability in mind, allowing for easy integration of different types of accessories. These components allow tests to be carried out at various temperatures, including extremely high. With the ability to expand with constant load systems and compatibility with measurement and control electronics, KMTest machines are easily adaptable to specific testing requirements.



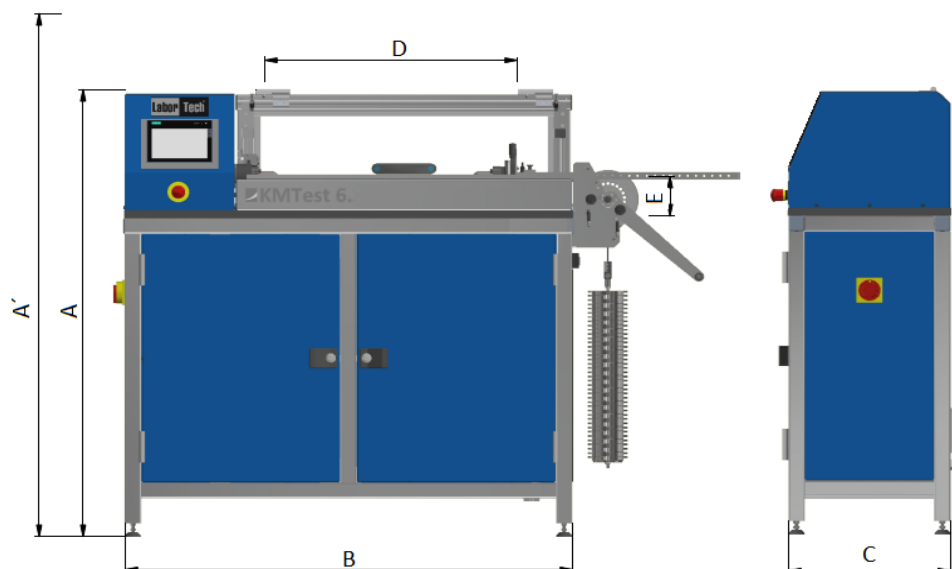
WIREBENT Test Sample Preparation Equipment



Constant load accessories

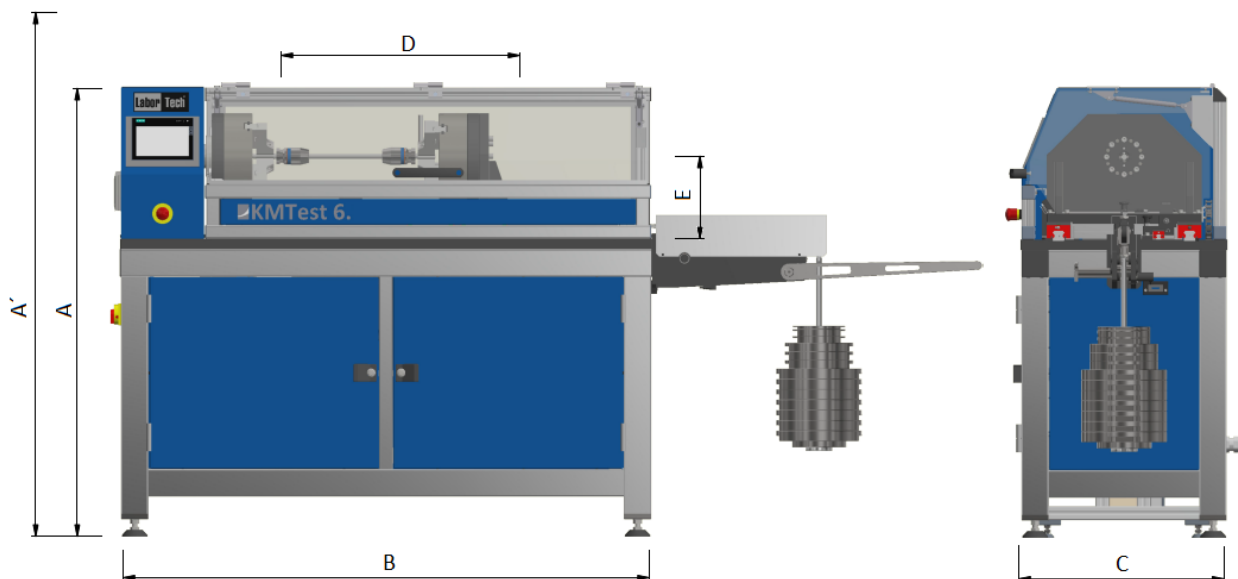
Specifications of KMTesT series 4 torsion testing machines

Ratings	Units	KMTesT 6.20	KMTesT 6.50	KMTesT 6,200	KMTesT 6,200
Product code		1.13020119	1.13020219	1.13020319	1.13020419
Test Torque	Nm	20	50	100	200
Machine configuration		Horizontal desktop or stand design with internal electronics			
Measurement accuracy		Better than +/- 0.5% read down to 1/1000th of load cell capacity			
Workspace					
Working space length (D)	mm	0 to 600	0 to 600	0 to 780	0 to 780
Working area depth (C)	mm	316	316	416	416
Trial frame – tabletop version					
Machine height (A)	mm	1160	1160	1230	1230
Machine height with open cover (A')	mm	1539	1539	1620	1620
Machine width (B)	mm	1096	1096	1230	1230
Machine depth (C)	mm	396	396	496	496
Centerline height above baseline (E)	mm	72	72	98	98
Electric drive					
Test speed	RPM	0.0003 to 180	0.0003 to 180	0.0003 to 100	0.0003 to 100
Machine drive differentiation	%/Ot	0,000136	0,000136	0,000062	0,000062
Precision speed control	%	+/- 0,03	+/- 0,03	+/- 0,03	+/- 0,03
Engine type		AC servo motor with high torque thanks to special winding			
Electrical connection					
Supply voltage/frequency	V/Hz	115 or 230/50-60/1 phase			
Machine power consumption	Kva	0,55	1,2	3,2	3,2
Other parameters					
The basic weight of the machine without	Kg	174	174	182	182
Machine noise at V max ⁴	dB	67	67	67	67
Color combination	RAL	1015, 5015			
Interface to PC ⁵		Ethernet			
Environmental conditions					
Working Environment Temperature	°C	+10 ... +35			
Humidity of the working environment	%	<90			



Specifications of KMTesT series 4 torsion testing machines

Ratings	Units	KMTesT 6,500	KMTesT 6.1000	KMTesT 6.2000	KMTesT 6.5000
Product code		1.13001119	1.13001219	1.13001319	1.13001419
Test Torque	Nm	500	1000	2000	5000
Machine configuration		Horizontal rack design with internal electronics			
Measurement accuracy		Better than +/- 0.5% read down to 1/1000th of load cell capacity			
Workspace					
Working space length (D)	mm	0 to 890	0 to 890	0 to 920	0 to 920
Working area depth (C)	mm	516	516	585	604
Trial frame – tabletop version					
Machine height (A)	mm	1320	1320	1360	1380
Machine height with open cover (A')	mm	1903	1903	2160	2180
Machine width (B)	mm	1577	1577	1840	1960
Machine depth (C)	mm	596	596	665	684
Centerline height above baseline (E)	mm	160	160	190	210
Electric drive					
Test speed	RPM	0.0003 to 180	0.0003 to 180	0.0003 to 100	0.0003 to 100
Machine drive differentiation	%/Ot	0,000136	0,000136	0,000062	0,000062
Precision speed control	%	+/- 0,03	+/- 0,03	+/- 0,03	+/- 0,03
Engine type		AC servo motor with high torque thanks to special winding			
Electrical connection					
Supply voltage/frequency	V/Hz	400 V/50-60/1 phase			
Machine power consumption	Kva	6,5	6,5	8,3	10,5
Other parameters					
The basic weight of the machine without	Kg	830	830	1120	1560
Machine noise at V max ⁴	dB	67	67	67	67
Color combination	RAL	1015, 5015			
Interface to PC ⁵		Ethernet			
Environmental conditions					
Working Environment Temperature	°C	+10 ... +35			
Humidity of the working environment	%	<90			



The elements that characterize us...

We offer everything from development to implementation and listen to your needs...



Warranty and post-warranty service

From the moment our machines are delivered, our commitment does not end. We pride ourselves on standing behind our products and customers even after they leave our company. In order to ensure maximum satisfaction and peace of mind with our devices, we provide a complete online warranty and post-warranty service. Thanks to our dedicated team of experts, we are here to provide you with the best possible support throughout the entire lifecycle of our products. With our online warranty and post-warranty service, you are safe, aware of our support whenever you need it.



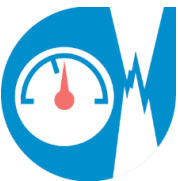
Ecological approach

We are proud to be a company that not only develops and manufactures quality testing machines and equipment, but also takes the environment seriously. For us, ecology is not just a phrase, but an essential aspect of our business. We are committed to minimal environmental impact and sustainable working practices. Our commitment to the environment does not end with the possession of the ISO 14001:2016 certificate. We believe that every step towards sustainability is crucial for the future of our planet.



Simple operation

In the company, our company emphasizes quality training and training for the operation of our machines. We believe that expertise and ease of use are key factors in achieving optimal results and customer satisfaction. When developing our devices, we focus not only on performance and innovation, but also on ease of use. This allows for quick adaptation and efficient work even for less experienced users. We are here to ensure that our technologies are not only powerful, but also easy to use for all users.



Reliability, accuracy and repeatability of measurements

With LabTest test machines, accuracy and repeatability of force and displacement measurements are our top priority. We have combined these key aspects with high dynamics of electronics to guarantee a more affordable and efficient way to set up our devices. Thanks to the innovative approach to electronics in our testing machines, we have achieved excellent accuracy and repeatability in the testing process. The reliability of our equipment is important not only for research and development, but also for industrial and testing applications.



Versatility and versatility

Our LabTest testing machines have a double advantage: versatility and intuitive operation, which brings efficiency during the tests themselves. By combining our high-quality testing machines with highly functional accessories, we offer versatility for a wide range of testing needs. This flexibility allows our customers to perform different types of tests and measurements with one device, which is an economic and practical benefit. Thanks to these features, you can rely on precise results and trouble-free operation in everyday practice.



Safety at the highest level

We strongly promote safety at the highest level in accordance with the latest directives 2006/42/EC and 2023/1230 and industry standards such as IEC 60947. Every product we create is the result of many years of experience, research and experimentation in the field of mechanical testing of materials. Our compliance with standards is documented by the EC and EU Declaration of Conformity, which is why we leave nothing to chance.



Mechanical resistance and maintenance-free operation

When developing products, we emphasize that LabTest machines have robustness, rigidity, long service life, mechanical resistance and maintenance-free operation – these are our key priorities. Our offer includes professional engineering and consulting services, which harmoniously blend in the design of systems and the implementation of the tests themselves.