

VOLTA

The electro-mechanical testing systems in the VOLTA family have been designed to run static, semi-static, dynamic and fatigue tests on a large variety of components and materials.
All the VOLTA versions include an RTC Real Time Controller, command software and force transducer

VOLTA systems use ball screw linear actuators, either single-phase or three-phase supply depending on the model. Ideal for installation in test laboratories, R&D divisions and product/process control centers.

Technical specifications

- Designed to run static, semi-static, dynamic and fatigue tests
- Test frequency up to 50Hz
- High stiffness test frame, made with double column and actuator assembled on the top cross strut
- No need for oil or compressed air
- High number of compatible accessories
- Test capacity from 3 kN to 15 kN
- Stroke 200 mm and 300 mm
- Controller RTC 9000 series

VOLTA electro-mechanical system

OIL FREE

LOW CONSUMPTION

LOW NOISE

HIGH FLEXIBILITY AND CONFIGURABILITY

TABLE TOP

SIMPLE TO USE

Applications

VOLTA systems allow various types of configurations to be achieved in terms of actuator strokes and they use a simple and intuitive software interface, capable of guaranteeing rapid access to the software's functions.

Main application fields:
- Biomedical
- Plastics
- Mechanical parts and components
- Rubber
- 3D printed objects
- Fabrics and ropes



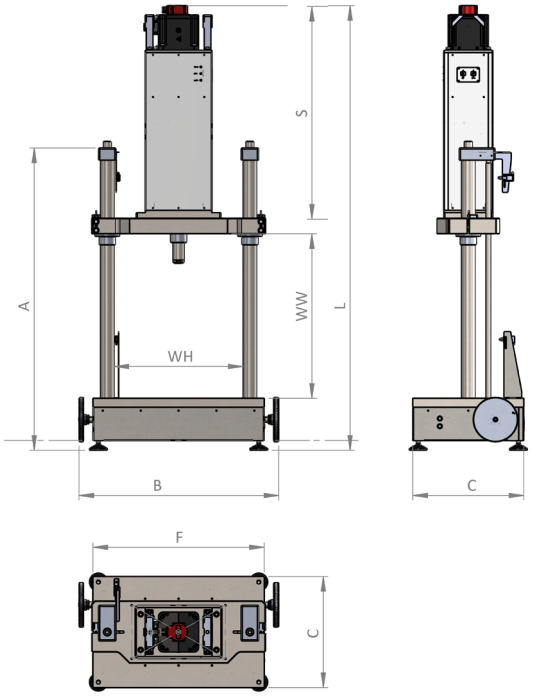
Al fine di migliorare le prestazioni tecniche del prodotto, la società si riserva di apportare variazioni senza preavviso.
In order to improve the technical performances of the product, the company reserves the right to make any change without notice.

VOLTA electro-mechanical system

TECHNICAL SPECIFICATIONS	eu	VOLTA *electro-mechanical system with ball-screw linear actuator*			
		SBK 3	SBK 5	SBK 10	SBK 15
Dynamic force (max)	kN	3	5	10	15
Static Force*	kN	4	6	12	18
Test frequency (max)*	Hz	50			
Stroke	mm	200 e 300			
Ball-screw pitch	mm	5 -10-15			
Force transducer	kN	Available versions from 5 kN to 20 kN			
Sensor accuracy	eu	1/1000 F.S.			
Actuator	/	Electro-mechanical - ball screw linear actuator (oil free)			
Operating temperature	°C	10-40 °C			
Power supply		AC 110-240V 50-60Hz	VAC 380-400V 50-60Hz		

*The indicated performance may change depending on the configuration of the machine, the test specification and the characteristics of the test sample.
Performance details are available in the actuator datasheet, to be requested from LiTeM (info@litem.info)

DIMENTIONS and WEIGHTS	eu	VOLTA *electro-mechanical system with ball-screw linear actuator*			
		SBK 3	SBK 5	SBK 10	SBK 15
A	mm	1360			
B	mm	895			
C	mm	500			
F	mm	770			
S	mm	955			
WH	mm	580			
WW (max)	mm	1000			
WW (min)	mm	200			
Peso	kg	480			



Systems coding

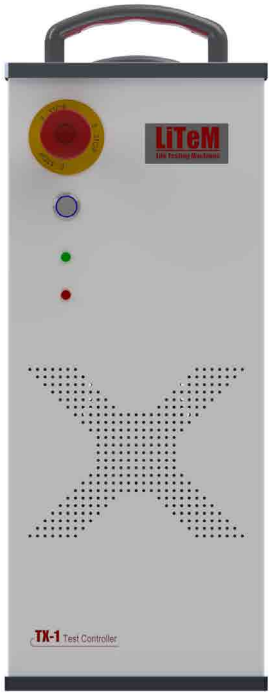
VOLTA - EMT 3 - 200 - 5 - 5

Ball-screw pitch [mm]	5	10	20

Force transducer [kN]	5	10	15	20

Stroke [mm]	200	300

Force [kN]	3	5	10	15



Controller and Software

TDX-1 Controller

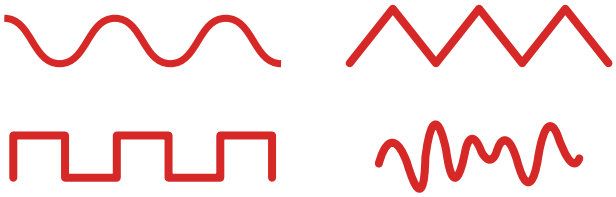
The RTC controllers are perfect control systems for static, dynamic and fatigue testing.
The control electronics consists of a processor with a Real Time operating system and high-speed FPGA board for acquiring signals coming from sensors and for the closure of the PID control loop for managing safety limits.
The integrated Real Time Processor generates various wave forms applied by the connected actuator.

TDX-1 Controller - Datalogger

The TDX-1 controller can be used as a data logger with 4 +/- 10V input channels; this function requires the activation of the WAVE MONITOR Tool software.

Available Wave Forms

- In load or displacement ramp with settable ramp speed rate
- Cyclical tests with constant amplitude with sinusoidal/triangular/square waves
- Variable amplitude tests with user defined profile or importable from an external text or excel file - Requires the activation of the Tool *PROFILE EDITOR* (software licence).



Types of tests and application fields

1. STATIC YIELD/FAILURE TESTS
2. STIFFNESS TESTS
3. DYNAMIC TESTS
4. CONSTANT AMPLITUDE FATIGUE TESTS
5. CONSTANT AMPLITUDE BLOCK FATIGUE TESTS
6. VARIABLE AMPLITUDE BLOCK FATIGUE TESTS
7. VARIABLE AMPLITUDE BLOCK FATIGUE TESTS

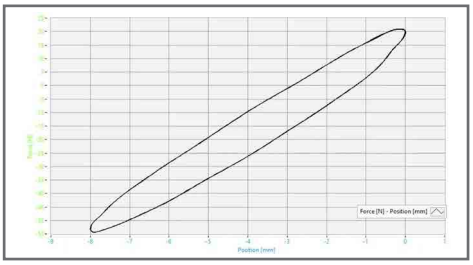
Kit and Accessories

Components included in the kit

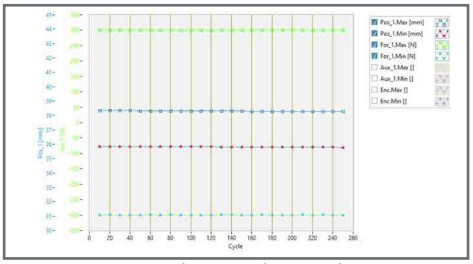
POS.	COMPONENT DESCRIPTION
1	VOLTA test rig with ball-screw linear actuator (SBK)
2	TDX-1 Real Time Controller
3	SX-1 Software Suite
4	PC, monitor 27", mouse, keyboard
5	Force transducer with top or low mounting plate
6	Interface base plate
7	Cables
8	User manual, calibration reports
9	1 day of remote training or at LiTeM headquarter



Command panel window



XY Graph



Max-min vs cycles graph

TECHNICAL SPECIFICATIONS	
Description	**VOLTA electro-mechanical system**
Real Time Controller TDX series	yes
Force Channel (control channel)	Input +/-10V, 16 bit
Displacement Channel (control channel)	Input +/-10V, 16 bit
PID output (voltage)	+/-10V
PID Loop Control Frequency (standard)	1000 Hz
Safety limits	Settable by operator
Panel emergency stop	yes
Remote emergency stop	yes
4 analog channels with synchronous reading	Can be activated with Software WAVE MONITOR
Power supply	AC 110-240V 50-60 Hz

Software Tool – WAVE MONITOR

The WAVE MONITOR software tool allows you to have a further four analog channels available with reading-only function. These channels can be acquired and registered by the software synchronously with the other command channels (force, displacement).

TUTORIAL VIDEO

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