

LiTeM

Life Testing Machines

TORSIONAL TESTING SYSTEM

NewTOR



DRC Srl
PRODUCTION and SALES

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 GENERAL INFORMATION
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NewTOR

The torsional testing systems in the NewTOR family have been designed to run static, semi-static, dynamic and fatigue tests on a large variety of components and materials.

All the NewTOR versions include an RTC Real Time Controller, command software and torque transducer.

NewTOR systems use Brushless or Torque motors, ideal for installation in test laboratories, R&D divisions and product/process control centers.

The direct coupling, without gearboxes (direct drive), avoid the backlash and reduces the inertia of the rotating masses making these systems ideal for high load fatigue tests and high test frequencies.



Technical specifications

- Designed to run static, semi-static, dynamic and fatigue tests
- Test frequency up to 50Hz
- High stiffness test frame, realized with motor flange and sliding counter-flange on linear guides
- High number of compatible accessories
- Max torque from 1 Nm to 300 Nm
- Controller RTC 9000 series

Torsional testing system NewTOR



OIL FREE



LOW CONSUMPTION



LOW NOISE



HIGH FLEXIBILITY
AND CONFIGURABILITY



TABLE TOP



SIMPLE TO USE

Applications

NewTOR systems allow to realize different types of configuration thanks to the versatility of the gripping systems (plates or spindles) and the working length realized with the sliding counter-flange. The simple and intuitive software interface provides quick access to the software's features.

Main application fields:

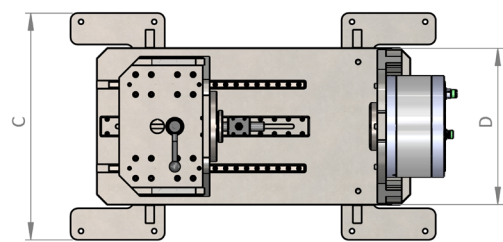
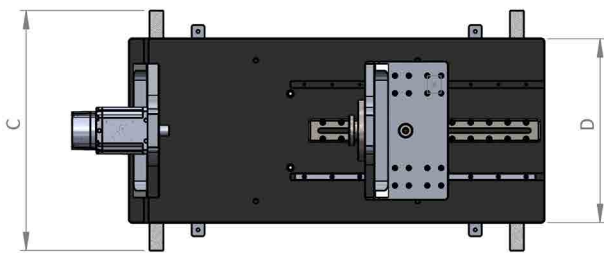
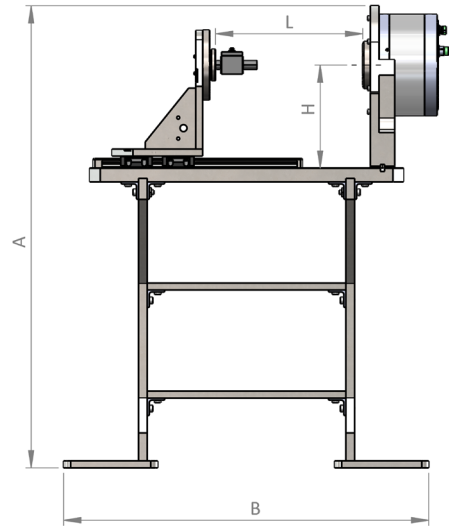
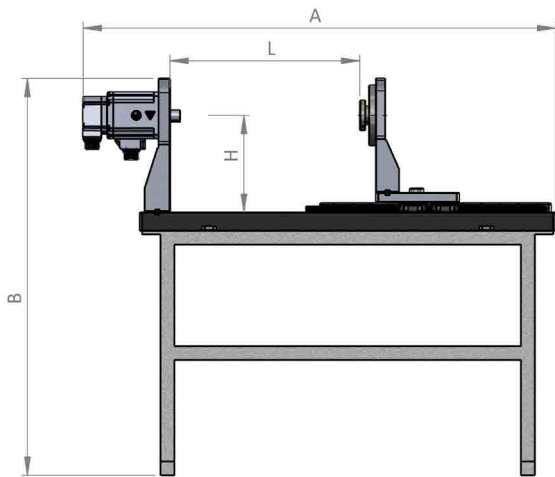
- Biomedical
- Plastic and rubber
- Mechanical parts and components
- 3D printed objects
- Torsion springs, wires, fasteners



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.

TECHNICAL SPECIFICATIONS	eu	NewTOR Torsional testing system with Brushless and Torque motors							
		TEM-1	TEM-5	TEM-10	TEM-20	TEM-50	TEM-100	TEM-200	TEM-300
Dynamic torque (max)	Nm	1	5	10	20	50	100	200	300
Static torque*	Nm	1.2	6	12	24	60	120	240	360
Test frequency (max)*	Hz	50							
Encoder resolution	°	0.01							
Torque transducer	Nm	2.5	10	25	50	100	250	500	1000
Sensor accuracy	eu	<= +/- 0.2%							
Motor	/	Brushless				Torque			
Power supply	/	AC 110-240V 50-60Hz				VAC 380-400V 50-60Hz			
Operating temperature	°C	10-40 °C							

*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 motor datasheet, to be requested from LiTeM (info@litem.info)



DIMENSIONS and WEIGHTS	eu	NewTOR Torsional testing system with Brushless and Torque motors							
		TEM-1	TEM-5	TEM-10	TEM-20	TEM-50	TEM-100	TEM-200	TEM-300
A	mm	1025				1325			
B	mm	860				1050			
C	mm	520				650			
D	mm	400				450			
L (max)	mm	600				490			
L (min)	mm	100				50			
H	mm	210				295			
Weight	kg	95				495			

Controller and Software

RTC 9001 Controller



The RTC controllers are perfect control systems for static, dynamic and fatigue testing.

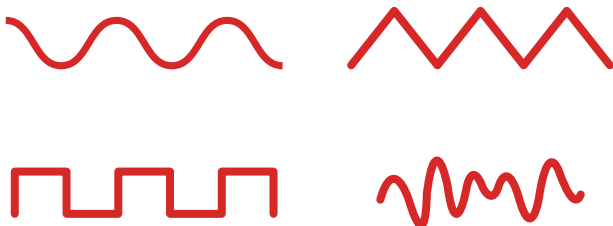
The control electronics consists of a processor with a Real Time operating system and high-speed FPGA board for acquiring signals coming from sensors and for the closure of the PID control

loop and safety limits managing. The integrated Real Time Processor generates various wave forms applied by the connected motor.

The RTC 9001 controller can be used as a data logger with 4 +/-10V input channels; this function requires the activation of Tool Scope 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 Editor Profile* (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

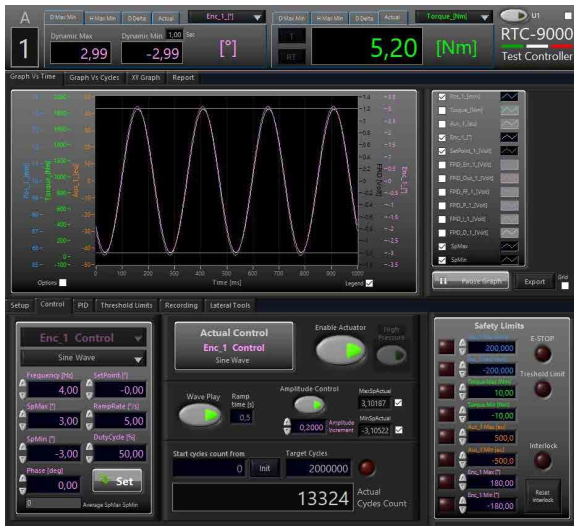
Systems coding

NewTOR - TEM

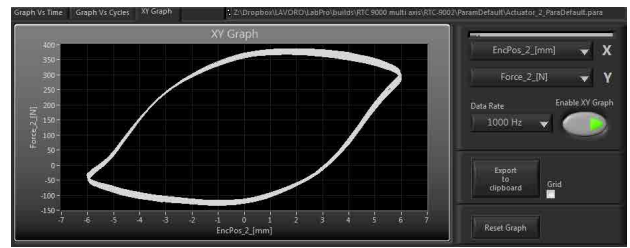
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Torque transducer [Nm]	2.5	10	25	50	100	250	500	1000
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Torque [Nm]	1	5	10	20	50	100	200	300
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Command panel window



Max-min vs cycles graph

TECHNICAL SPECIFICATIONS

Description	RTC 9001
RTC Real Time Controller	yes
Force/Torque Channel (control channel)	Input +/-10V, 16 bit
Displacement Channel (control channel)	Input +/-10V, 16 bit
Auxiliary Channel (control channel)	Input +/-10V, 16 bit
Incremental Encoder (control channel)	Incremental
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 Tool SCOPE
Power supply	AC 110-240V 50-60 Hz

Kit and Accessories

Components included in the kit

POS.	COMPONENT DESCRIPTION
1	NewTOR Test Rig with motor and flange
2	RTC 9001 controller
3	Software SS 9000
4	PC, monitor 27", mouse, keyboard
5	Torque transducer with sliding counter-flange on linear guides
6	Cables
7	User manual, calibration reports
8	1 day of remote training or at LiTeM headquarter



TUTORIAL VIDEO

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