

Product Information

Torsion testing machines TorsionLine TL 020 / TL 200 / TL 500



Figure: Torsion testing machine TorsionLine

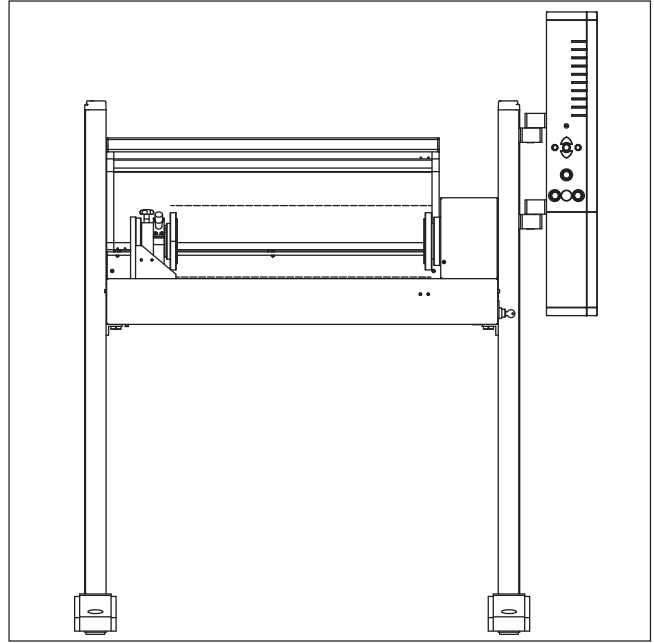


Figure: Drawing of TorsionLine

Application range

The torsion testing machines TorsionLine TL020, TL200 and TL500 are fitted for research of the torsional influence on materials and components. The torsion testing axis is located in horizontal direction.

Main applications

- Testing of plastics
- Testing of metallic materials, e.g. reverse torsion testing of wire, according DIN EN 2002-13
- Products of medical engineering, e.g. metal bone screws, according ISO 6475
- Fixture systems
- Screws in general
- Compound materials
- Cardan shafts
- Motor bearings

Advantages and features

- The maximum amount of stiffness guarantees an very accurate angle measurement in the complete torsional range
- High resolution of rotation angle measurement

- Mechanical overload protection for small torque cells during the installation of the specimen
- Maximum test speed for high specimen throughput
- Use of maintenance-free AC-servo-motor
- Operation with standard PC or laptop (no special interface card required) and *testXpert® II* application software
- Optional static load application unit (tensile and compression axial forces) , Fmax. 500 N
- Using for production, quality assurance, research and development
- Maximum of application flexibility and operation by modern software control
- Safety device with electrical interlock (conform to CE)
- Wide range of optional Zwick accessories

Product Information

Torsion testing machines TorsionLine TL 020 / TL 200 / TL 500

TorsionLine

Type	TL 020	TL 200	TL 500
Mmax [Nm]	20	200	500
Total height [mm]	1775	1775	1775
Total width [mm]	1475	1475	1475
Total depth [mm]	650	650	650
Operation height	adjustable	adjustable	adjustable
Safety device	electrical interlock	electrical interlock	electrical interlock
Locking piston for the torque cell	manually, electrical monitoring	manually electrical monitoring	manually electrical monitoring
Weight [kg] (with electronics console, torque cell)	185	188	188
Max. clamping length with 4 jaw chucks [mm]	510	510	510
Max. clamping length with universal flange (without specimen grips) [mm]	680	680	680
Max. diameter of specimen / specimen grips [mm]	200	200	200
Finish	RAL 7011 and RAL 7038	RAL 7011 and RAL 7038	RAL 7011 and RAL 7038
Electrical Connection [V]	1Ph/PE/N 230V AC 50/60Hz	3Ph/PE/N 400V AC 50/60Hz	3Ph/PE/N 400V AC 50/60Hz
Input power [kVA]	2,2	5	5
Ambient temperature [°C]	+10 ... +35	+10 ... +35	+10 ... +35
Humidity	20 – 90 %	20 – 90 %	20 – 90 %
Max. Noise level [dB(A)]	70	70	70
Torsional stiffness [Nm/°]	> 1000	> 1000	> 1000
Axial friction force of the slide approx. [N] (without torsional load)	4	4	4
Torsion drive			
Turning speed [U/min]	0.0005 – 180	0.0005 – 90	0.0005 – 50
[°/min]	0.072 – 64800	0.036 – 32400	0.036 – 18000
Angle resolution of the motor [angular second/digit]	3.29	1.89	0.92
Positioning, repetition accuracy [angular second] (without inversion of the direction) at 1000 °/min	≤ 20	≤ 10	≤ 10
Backlash in the moment zero crossing [angulare minute]	< 1	< 1	< 1
Item no.	• 623679 (BPC-T0020SN.A1K)	• 623678 (BPC-T0200SN.A4K)	• 631049 (BPC-T0500SN.A4K)

Torque cells

Scope of delivery including locking piston

For TorsionLine	Mmax [Nm]	Accuracy grade 1 ¹ [Nm]	Item no.
TL 020, TL 200	2	≥ 0.02	• 623682 (BPC-TC002NM.G01)
TL 020, TL 200	5	≥ 0.05	• 050251 (BPC-TC005NM.G02)
TL 020, TL 200	20	≥ 0.2	• 623681 (BPC-TC020NM.G01)
TL 200	200	≥ 2	• 623680 (BPC-TC200NM.G01)
TL 500	500	≥ 5	• 631051 (BPC-TC500NM.G01)

¹ according ISO 7500-1