

Product Information

Torsion drives for zwickiLine

CTA: 141366 210206



zwickiLine with torsion drive



Application example: testing of an insulin pen

Applications

Torsion drives can be installed in zwickiLine materials testing machines to carry out uniaxial and multi-axis load tests (tensile or compression combined with torsion) as part of materials and components testing.

In case of hazardous specimens and/or high rotational speeds an optional CE-compliant safety device can be used. The factory sets a limit of 20 rotations per minute on torsion drives without safety device, if the nominal rotation speed is higher.

The system consists of

- zwickiLine materials testing machine in a force range of 0.5 kN to 5 kN from our standard product portfolio Available in different load frame heights
- Torsion drive on moving crosshead
- Precise load cells and torque transducers
- testControl II measurement and control electronics

Advantages and features

- Because of their modular design, torsion drives can be retrofitted to existing table-top or floor-standing testing machines at any time
- Operation with standard PC (no additional interface card required) and testXpert III testing software
- High-resolution rotation angle and travel measurement
- Easy handling and user-friendly operation for maximum flexibility
- Synchronization of the two test axes
- The modular design allows for the use of a number of components from the ZwickRoell standard products portfolio, including specimen grips, test tools, temperature chambers and more

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Torsion drives with flange connection

Item No.	1020233	1023835	
Nominal torque M_{nom}	2	20	Nm
Permissible axial force	2.5	5	kN
Drive			
Rotational speeds	0.01 ... 80 ¹⁾ 0.01 ... 20 ²⁾	0.01 ... 80 ¹⁾ 0.01 ... 20 ²⁾	rpm
Pitch circle connection flange \varnothing	40/75 ³⁾	40/75 ³⁾	mm
Power consumption	0.5	0.8	kVA
Electrical power specifications	230 V AC, 50/60 Hz, 1Ph/PE/N	230 V AC, 50/60 Hz, 1Ph/PE/N	

1) Maximum speed. Only in conjunction with a safety device

2) Reduced speed when operating without a safety device

3) Additional adapter flange with mounting stud \varnothing 20 mm included in the scope of delivery.

Load cell with two-sided flange connection

For a combination of force and torque transducer it is important to make sure that the load cell permits the occurring torque.

Nominal force F_{nom} [kN]	Permissible torque [Nm]	Load cell type	Pitch circle connection flange \varnothing [mm]	Accuracy Class 1 [N]	Item No.
0.01	2	Xforce HP	40/75	≥ 0.02	3005926
0.02	5	Xforce HP	40/75	≥ 0.04	1001897
0.05	5	Xforce HP	40/75	≥ 0.1	085849
$\varnothing 21.48$	5	Xforce HP	40/75	≥ 0.2	069525
0.2	5	Xforce HP	40/75	≥ 0.4	077002
0.5	5	Xforce HP	40/75	≥ 1.0	069529
1	10	Xforce HP	40/75	≥ 2.0	069531
2.5	20	Xforce HP	40/75	≥ 5.0	069532
5	100	Xforce K	40/75	≥ 10.0	059533

Torque transducer with two-sided flange connection

For a combination of force and torque transducer it is important to make sure that the torque transducer permits the occurring axial force.

Nominal torque M_{nom} [Nm]	Permissible axial force [kN]	Torque transducer type	Pitch circle connection flange \varnothing [mm]	Accuracy Class 1	Item No.
2	5	Type M	40		069536
5	5	Type M	40		069538
10	± 10	Type M	40		069539
20	10	Type M	75	≥ 0.2	069542

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Required accessories

Description	ArticleNumber
Emergency stop link¹⁾ Connection box for emergency stop link from several testControl II (slave) systems to one system.	1023870
Large machine base For attachment of both testControl II electronics units.	1041715
Alignment fixture for compensation of the axial offset of the test axis Alignment ex works included.	069771

1) 2x required

Safety devices

Description	ArticleNumber
Safety device for zwickiLine Z0.5/1.0/2.5/5.0 TN ¹⁾	1118445
Safety device for zwickiLine Z0.5/1.0/2.5/5.0 TH ¹⁾	1118446

1) Safety shield linkage (1041273) 2x required

Optional accessories

Description	ArticleNumber
Alignment fixture for axial offset and angle correction Alignment ex works included and option for angle correction on site.	3006208
Adjustment rod Suitable for alignment fixture 3006208.	3006211
Ethernet switch for 10/100/1000 Mbit Ethernet hub for connection of both electronics units. This way only one Ethernet connection is needed on the PC.	1026425
Safety door link¹⁾ Extension of tCII emergency stop link to include safety door functionality.	1041273
Increase to maximum permissible rotation speed of the torsion drive²⁾	063785
Remote control tCII with display for torsion	1025350
Storage system zwicki TN for load cells with flange	3006463

1) Mandatory requirement when using a safety door (2x)

2) Only permitted in conjunction with a safety door