

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⁾ | | rpm |
| Drive system | | | |
| Rotational speeds | 0.01 ... 80 ¹⁾ 0.01 ... 20 ²⁾ | | |
| Pitch circle connection flange \varnothing | 40/75 ³⁾ | 40/75 ⁴⁾ | mm |
| Power consumption | 0.5 | | 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.
- 4) The scope of delivery includes additional adapter flanges with mounting stud \varnothing 20 mm.

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 |
| 0.1 | 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 | | 069529 |
| 1 | 10 | Xforce HP | 40/75 | | 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