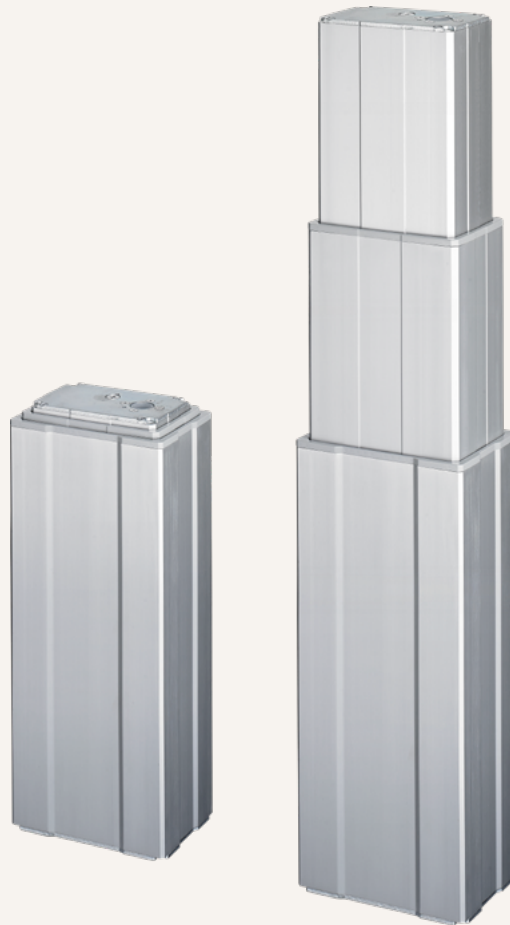


TL17

series



Product Segments

- **Care Motion**
- **Comfort Motion**
- **Ergo Motion**
- **Industrial Motion**

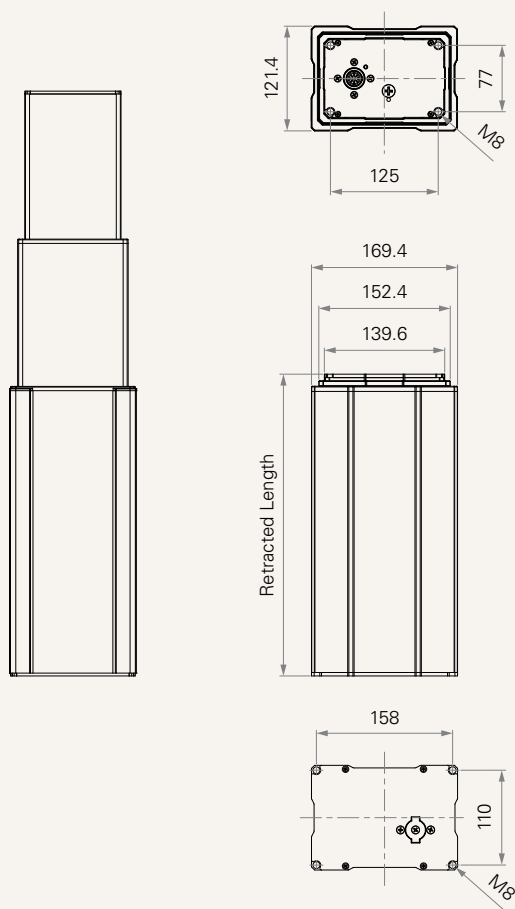
TiMOTION's TL17 series electric lifting columns are designed for any height adjustable workstation applications, such as the medical bed for healthcare industry. Constructed with an extruded aluminum rectangular appearance, our TL17 lift column provides a high degree of stability. This column makes engineering and design processes easier and the system safer by replacing older style lifting mechanisms that have many moving parts and pinch points. The 3 stage, telescopic design provides a greatly reduced retracted height and an increased stroke length.

General Features

| | |
|-------------------------------|---|
| Max. load | 2,000N (push) |
| Max. dynamic bending moment | 250Nm |
| Max. static bending moment | 500Nm |
| Max. speed at max. load | 11.5mm/s |
| Max. speed at no load | 41mm/s |
| Retracted length | $\geq \text{Stroke} / 2 + 150\text{mm}$ |
| IP rating | IPX6 |
| Dimension of outer tube | 3-stage, 169.4*121.4mm rectangular |
| Stroke | 250~1200mm |
| Certificate | IEC60601-1, ES60601-1, IEC60601-1-2 |
| Options | Hall sensor(s) |
| Color | Silver, black |
| Operational temperature range | +5°C~+45°C |

Drawing

Standard Dimensions
(mm)

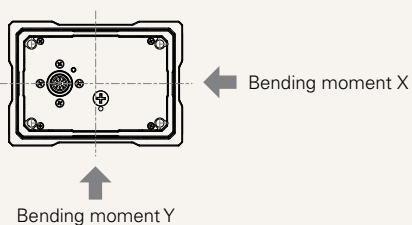


Load and Speed

| CODE | Load (N) | Self Locking Force (N) | Typical Current (A) | | Typical Speed (mm/s) | |
|-----------------------|----------|------------------------|---------------------|------------------|----------------------|------------------|
| | Push | | No Load 32V DC | With Load 24V DC | No Load 32V DC | With Load 24V DC |
| Motor Speed (2800RPM) | | | | | | |
| B | 2000 | 2000 | 2.5 | 4.0 | 22.0 | 11.5 |
| C | 1000 | 1000 | 2.5 | 4.3 | 41.0 | 22.0 |
| D | 1500 | 1500 | 2.5 | 4.5 | 34.5 | 16.0 |

Note

- 1 Please refer to the approved drawing for the final authentic value.
- 2 The current & speed in table are tested with 24V DC motor. With a 12V DC motor, the current is approximately twice the current measured in 24V DC; speed will be similar for both voltages.
- 3 This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.
- 4 Bending moment Y direction = $X \times 0.8$
- 5 Static bending moment = dynamic $\times 2$



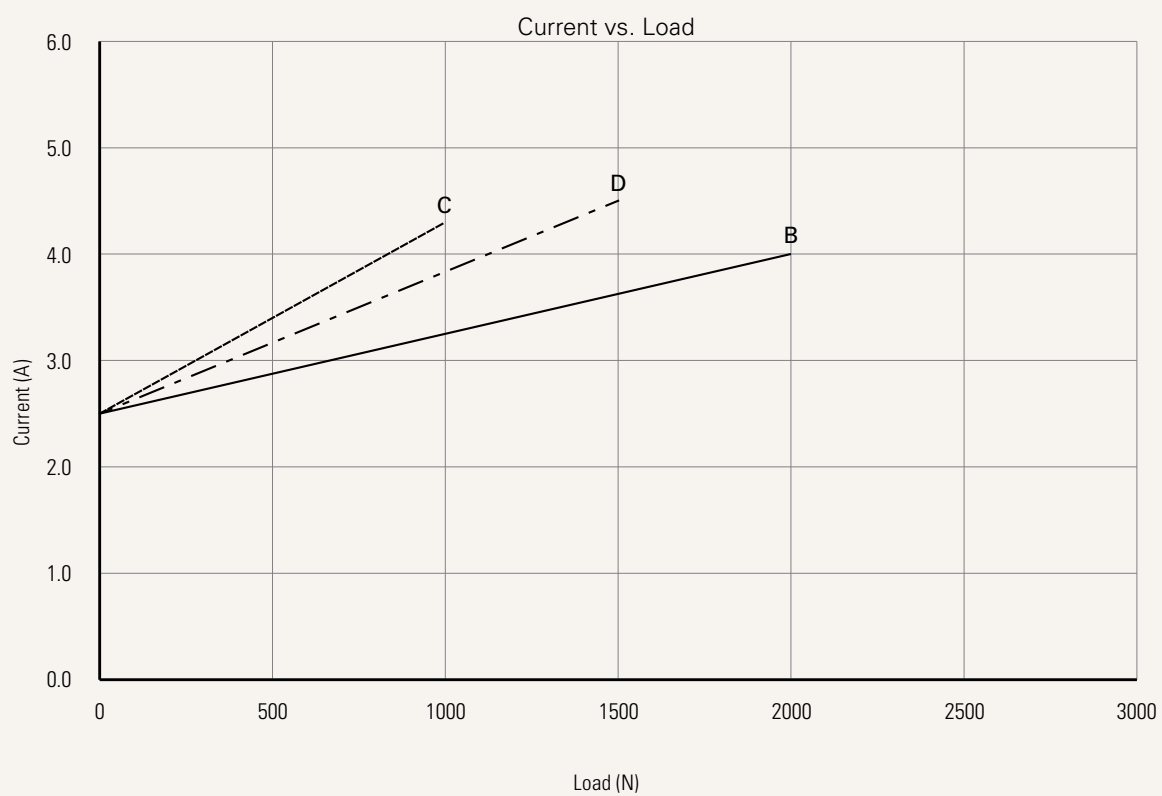
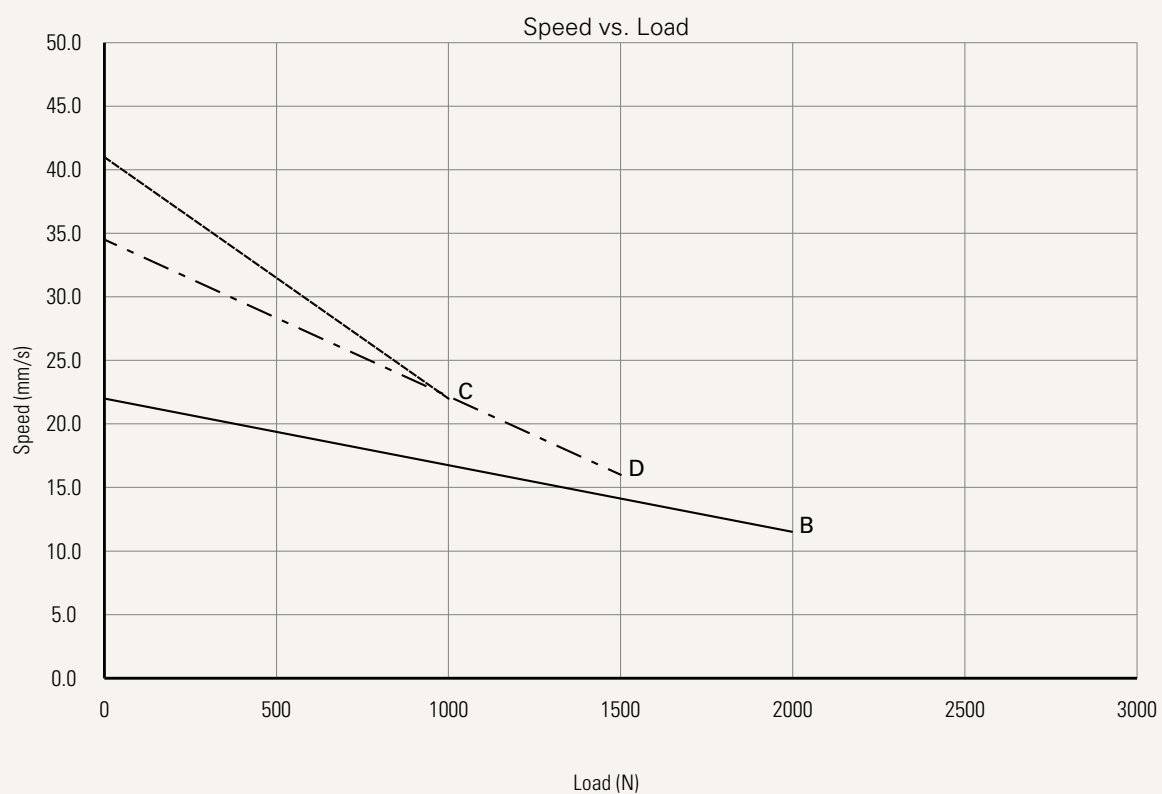
Dynamic Bending Moment (Nm) - X Direction

Retracted Length (mm) $(S/2) + 150$

Stroke (mm) 250-1200 250

Performance Data (24V DC Motor)

Motor Speed (2800RPM)



TL17 Ordering Key - Front End Socket

TL17

Version: 20200421-K

| | | |
|---|--|----------------------|
| Voltage | 1 = 12V DC | 5 = 24V DC, PTC |
| Load and Speed | See page 2 | |
| Stroke (mm) | 250~1200 | |
| Retracted Length (mm) | Minimum retract length needs to $\geq (\text{stroke} / 2) + 150$ | |
| Cable Exit See page 8 | 1 = Top end socket | |
| Special Functions for Spindle Sub-Assembly | 0 = Without (standard) | 1 = Safety nut |
| Functions for Limit Switches See page 8 | 1 = Two switches at full retracted / extended positions to cut current 3 = Two switches at full retracted / extended positions to send signal | |
| IP Rating | 1 = Without | 2 = IPX4 3 = IPX6 |
| Output Signals | 0 = Without | 2 = Hall sensor * 2 |
| Connector See page 8 | 1 = DIN 6P, socket | |
| Cable Length (mm) | 0 = Without (the corresponding extension cable TEC needs to be ordered separately) | |
| Color | 1 = Black | 2 = Matte silver |
| Tubes Direction See page 9 | 0 = Thinner on top | |
| Grounding Function | 0 = Without | 1 = With |

Note

1 TL17 is designed especially for push applications, not suitable for pull applications.

TL17 Ordering Key - Side Cable

TL17

Version: 20200421-K

| | | | | |
|---|--|--|--|-----------------------|
| Voltage | 1 = 12V DC | 5 = 24V DC, PTC | | |
| Load and Speed | See page 2 | | | |
| Stroke (mm) | 250~1200 | | | |
| Retracted Length (mm) | See page 7 | | | |
| Cable Exit See page 8 | 2 = Bottom side cable | 3 = Top side cable | | |
| Special Functions for Spindle Sub-Assembly | 0 = Without (standard) | 1 = Safety nut | | |
| Functions for Limit Switches See page 8 | 1 = Two switches at full retracted / extended positions to cut current 3 = Two switches at full retracted / extended positions to send signal | | | |
| IP Rating | 1 = Without | 2 = IPX4 | 3 = IPX6 | |
| Output Signals | 0 = Without | 2 = Hall sensor * 2 | | |
| Connector See page 8 | 1 = DIN 6P, 90° plug | 2 = Tinned leads | E = Molex 8P, plug | F = DIN 6P, 180° plug |
| Cable Length (mm) | 1 = Straight, 500 2 = Straight, 750 | 3 = Straight, 1000 4 = Straight, 1250 | 5 = Straight, 1500 6 = Straight, 1750 | 7 = Straight, 2000 |
| Color | 1 = Black (Black cable set) 2 = Matte silver (428C color cable set) | | 3 = Matte silver (Black cable set) | |
| Tubes Direction See page 9 | 0 = Thinner on top | 1 = Wider on top | | |
| Grounding Function | 0 = Without | 1 = With | | |

Note

1 TL17 is designed especially for push applications, not suitable for pull applications.

| | | |
|---|--|------------------------------------|
| Voltage | 1 = 12V DC | 5 = 24V DC, PTC |
| Load and Speed | See page 2 | |
| Stroke (mm) | 250~1200 | |
| Retracted Length (mm) | See page 7 | |
| Cable Exit See page 8 | B = Top side - for TH; Bottom side- for TP C = Bottom side - Y cable, for TH + TP D = Top side - for the 2nd column; Bottom side - for TH & TP; direct cut operation with 2 columns E = Top side - for the 2nd column & TH; Bottom side - for TP; direct cut operation with 2 columns | |
| Special Functions for Spindle Sub-Assembly | 0 = Without (standard) | 1 = Safety nut |
| Functions for Limit Switches See page 8 | 1 = Two switches at full retracted / extended positions to cut current | |
| IP Rating | 1 = Without | 2 = IPX4 3 = IPX6 |
| Output Signals | 0 = Without | |
| Connector See page 9 | C = Direct cut, water proof, anti-pull | |
| Cable Length (mm) See page 9 | B = Cable exit #B, L2=L3=100 C = Cable exit #C, L1=L2=L3=100 D = Cable exit #D, L2=L3=L4=100 E = Cable exit #E, L2=L3=L4=100 | |
| Color | 1 = Black (Black cable set) 2 = Matte silver (428C color cable set) | 3 = Matte silver (Black cable set) |
| Tubes Direction See page 9 | 0 = Thinner on top | 1 = Wider on top |
| Grounding Function | 0 = Without | 1 = With |

Note

1 TL17 is designed especially for push applications, not suitable for pull applications.

Retracted Length (mm)

1. Retracted length needs to $\geq A+B$







| A. Load (N) | 2000 | 1000 | 1500 |
|-------------|-------------|------|------|
| | (S/2) + 150 | | |

Note

1 Different retracted length is relative to different bending moment, [See page 2](#)

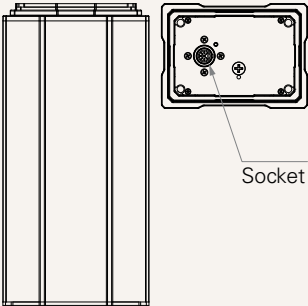
| B. Cable Exit | | | | |
|---------------|-------------------|----------------------|-------------------|------------|
| CODE | Top End Socket | Bottom Side Cable | Top Side Cable | Direct Cut |
| | 1 | 2 | 3 | B, D, E C |
| B | - | +20 | +15 | +35 +20 |

Functions for Limit Switches

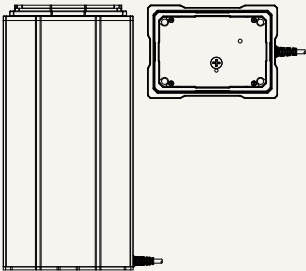
| Wire Definitions | | | | | | |
|------------------|---|---|---|---|--|--|
| CODE | Pin | | | | | |
| |  1 (Green) |  2 (Red) |  3 (White) |  4 (Black) |  5 (Yellow) |  6 (Blue) |
| 1 | extend (VDC+) | N/A | N/A | N/A | retract (VDC+) | N/A |
| 3 | extend (VDC+) | common | upper limit switch | N/A | retract (VDC+) | lower limit switch |

Cable Exit

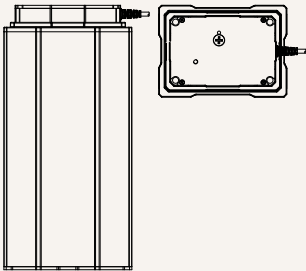
1 = Top end socket



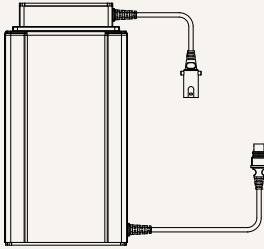
2 = Bottom side cable



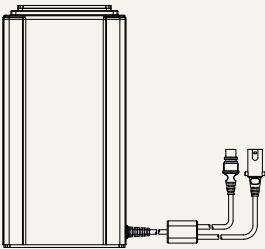
3 = Top side cable



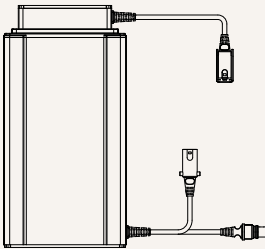
B = Top side - for TH; Bottom side - for TP



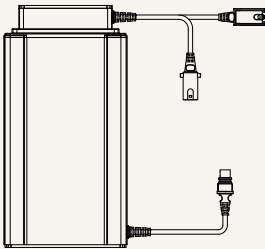
C = Bottom side - Y cable, for TH + TP



D = Top side - for the 2nd column; Bottom side - for TH & TP; direct cut operation with 2 columns

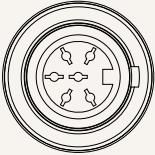


E = Top side - for the 2nd column & TH; Bottom side - for TP; direct cut operation with 2 columns

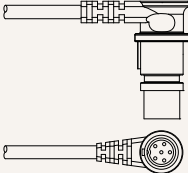


Connector

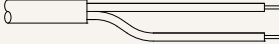
1 = DIN 6P, socket



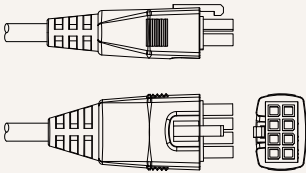
1 = DIN 6P, 90° plug




2 = Tinned leads



E = Molex 8P, plug

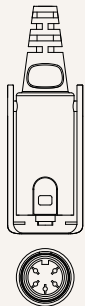


F = DIN 6P, 180° plug

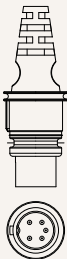


Connector

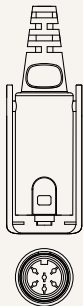
C = Direct cut, water proof, anti-pull



For TH:
long DIN 5P (Pin array 240°),
180° socket (with anti-pull clip)



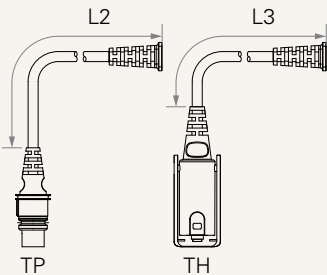
For TP:
long DIN 5P (Pin array 240°),
180° plug (with O-ring)



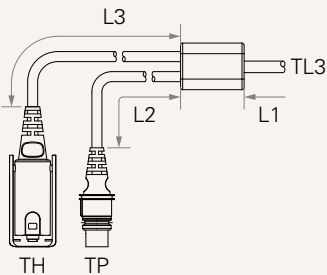
For Column 2:
long DIN 6P (Pin array 240°),
180° plug (with anti-pull clip)

Cable Length (mm)

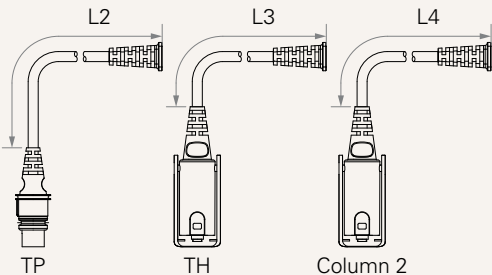
B = Cable exit #B, L2 = L3 = 100



C = Cable exit #C, L1 = L2 = L3 = 100

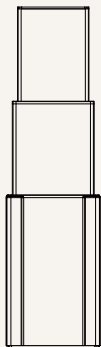


D, E = Cable exit #D, #E, L2 = L3 = L4 = 100

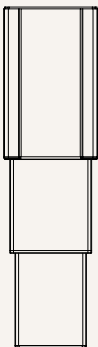


Tubes Direction

0 = Thinner on top



1 = Wider on top



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