

# TL18

series



## Product Segments

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

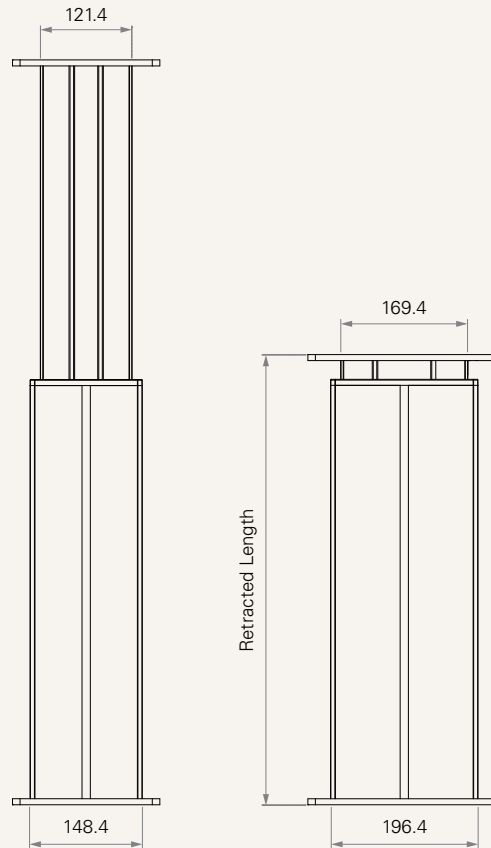
The TL18 column is designed for medical applications such as nurse carts, ophthalmological devices, X-ray machines, etc. The TL18 features an extruded aluminum rectangular appearance. Our high capacity, yet economical, TL18 provides stable vertical lifting. This streamlines the engineering design process and replaces the older style, unsafe lifting mechanisms which have many moving stages and pinch points.

### General Features

Max. load	4,500N (push)
Self-locking force	4,500N
Max. dynamic bending moment	250Nm
Max. static bending moment	500Nm
Max. speed at max. load	6.6mm/s
Max. speed at no load	45mm/s
Retracted length	≥ Stroke + 147mm
Outer profile	196.4*148.4mm rectangular
Stages	2-stage
Stroke	100~1000mm
Certificate	IEC60601-1, ES60601-1, IEC60601-1-2, UL73, EMC
Output signals	Hall sensors
Options	Cable exit from top or bottom side, direct cut system
Voltage	12 / 24V DC
Operational temperature range	+5°C~+45°C

**Drawing**

Standard Dimensions  
(mm)



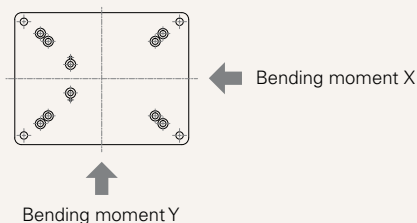
**Load and Speed**

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
<b>Motor Speed (3800RPM, Duty Cycle 10%)</b>						
<b>U</b>	4500	4500	2.5	4.7	11.4	6.6
<b>Z</b>	3000	3000	2.5	4.5	17.1	9.5
<b>W</b>	2000	2000	2.5	4.2	21.15	13.1
<b>S</b>	1500	1500	2.5	4.4	30.0	18.9
<b>V</b>	500	500	2.5	3.0	45.0	28.0

**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 =  $X * 0.8$
- 5 Static bending moment = dynamic \* 2

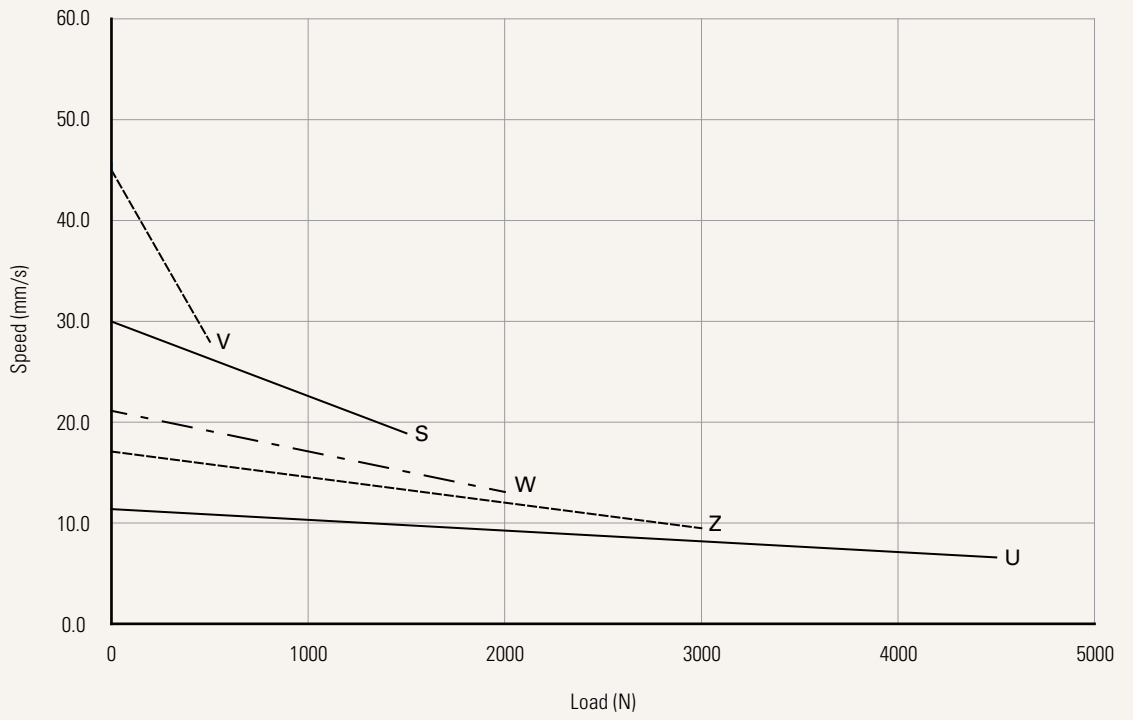
Dynamic bending moment (Nm)- X direction		
Retracted length (mm)	<a href="#">See page 5</a>	
Stroke (mm)	100-1000	250



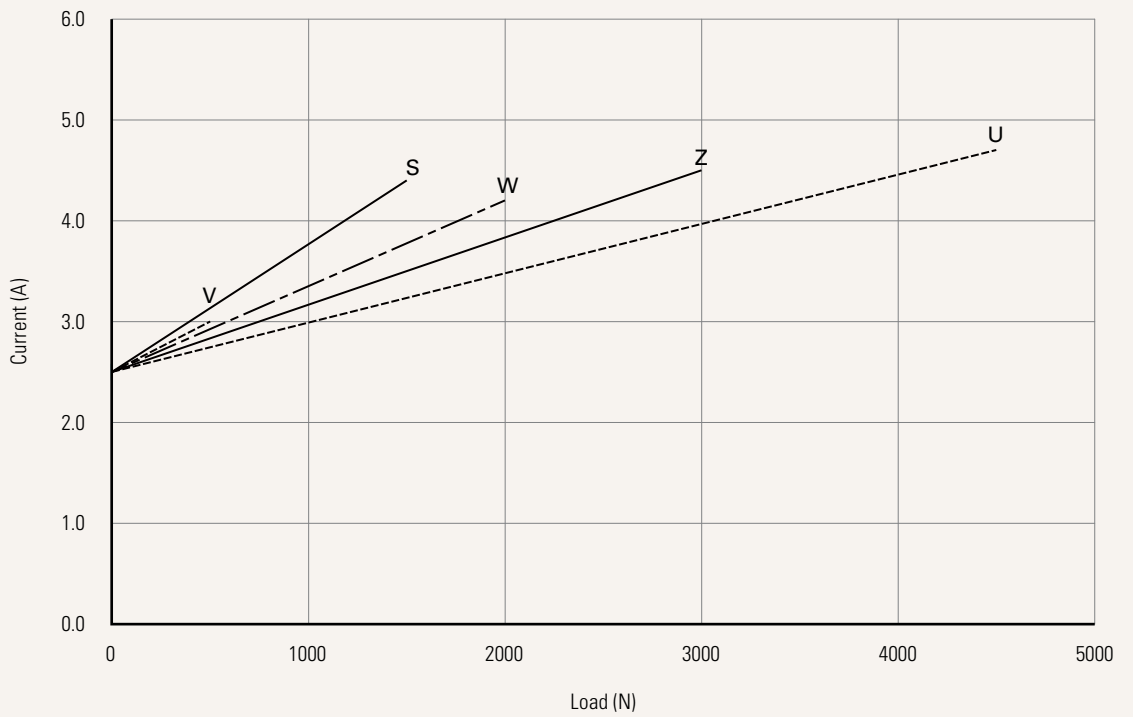
Performance Data (24V DC Motor)

Motor Speed (3800RPM, Duty Cycle 10%)

Speed vs. Load



Current vs. Load



<b>Voltage</b>	1 = 12V DC	2 = 24V DC
<b>Load and Speed</b>	<a href="#">See page 2</a>	
<b>Stroke (mm)</b>	100-1000	
<b>Retracted Length (mm)</b>	<a href="#">See page 2</a>	
<b>Cable Exit</b> <a href="#">See page 6</a>	2 = Bottom side cable	3 = Top side cable
<b>Special Functions for Spindle Sub-Assembly</b>	0 = Without (standard)	1 = Safety nut
<b>Functions for Limit Switches</b> <a href="#">See page 6</a>	1 = Two switches at full retracted / extended positions to cut current 3 = Two switches at full retracted / extended positions to send signal	
<b>Color</b>	1 = Black (Black cable set) 2 = Silver (428C color cable set)	3 = Silver (Black cable set)
<b>IP Rating</b>	1 = Without	
<b>Output Signals</b>	0 = Without	2 = Hall sensor * 2
<b>Top Plate</b> <a href="#">See page 7</a>	1 = Small plate	2 = Big plate
<b>Bottom Plate</b> <a href="#">See page 7</a>	1 = Small plate	2 = Big plate
<b>Connector</b> <a href="#">See page 6</a>	1 = DIN 6P, 90° plug C = Y cable, for direct cut system	D = Molex 8P, without anti-clip, 90° plug E = Molex 8P, 180° plug
<b>Cable Length (mm)</b>	1 = Straight, 500 2 = Straight, 750 3 = Straight, 1000	4 = Straight, 1250 5 = Straight, 1500 6 = Straight, 1750 7 = Straight, 2000 B = For direct cut system <a href="#">See page 6</a>

### Note

1 TL18 is designed especially for push applications, not suitable for pull applications

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## Retracted Length (mm)

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

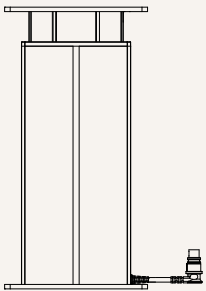
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### A. Plate

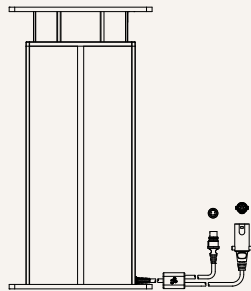
Top Plate	Bottom Plate	
	1	2
1	+147	+151
2	+151	+155

## Cable Exit

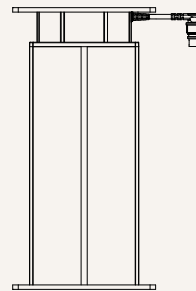
2 = Bottom side cable



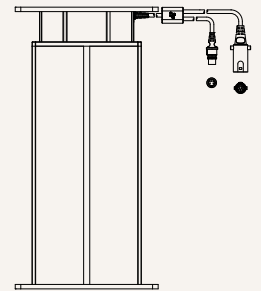
2 = Bottom side- Y cable, for TH + TP



3 = Top side cable



3 = Top side- Y cable, for TH + TP



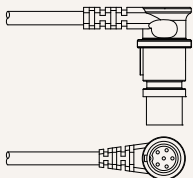
## Functions for Limit Switches

### Wire Definitions

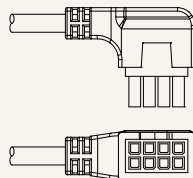
CODE	Pin					
	1 (Green)	2 (Red)	3 (White)	4 (Black)	5 (Yellow)	6 (Blue)
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
3	extend (VDC+)	common	upper limit switch	N/A	retract (VDC+)	lower limit switch

## Connector

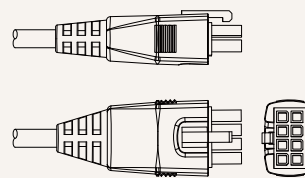
1 = DIN 6P, 90° plug



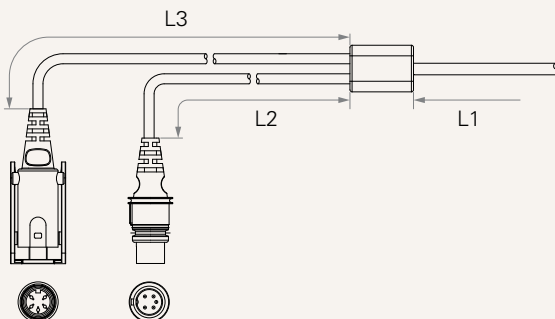
D = Molex 8P, without anti-clip, 90° plug



E = Molex 8P, 180° plug



C = Y cable, for direct cut system

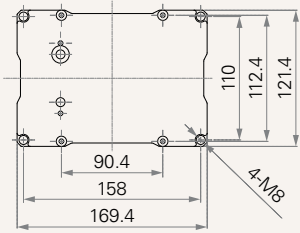


### Cable Length for Direct Cut System (mm)

CODE	L1	L2	L3
B	100	100	100

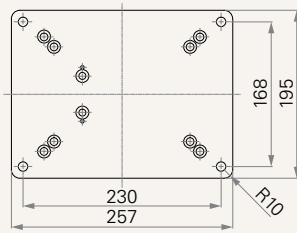
## Top Plate

1 = Small plate



Small Plate: 4 fixation holes  
Thickness 4mm

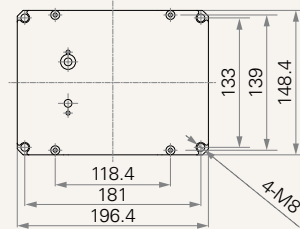
2 = Big plate



Big Plate: 4 fixation holes  
Thickness 8mm

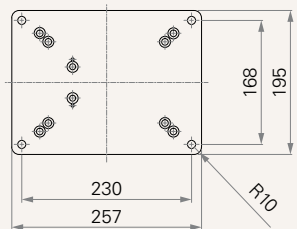
## Bottom Plate

1 = Small plate



Small Plate: 4 fixation holes  
Thickness 4mm

2 = Big plate



Big Plate: 4 fixation holes  
Thickness 8mm

## Terms of Use

The user is responsible for determining the suitability of TiMOTION products for a specific application. TiMOTION products are subject to change without prior notice.