

TL18

series



Product Segments

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

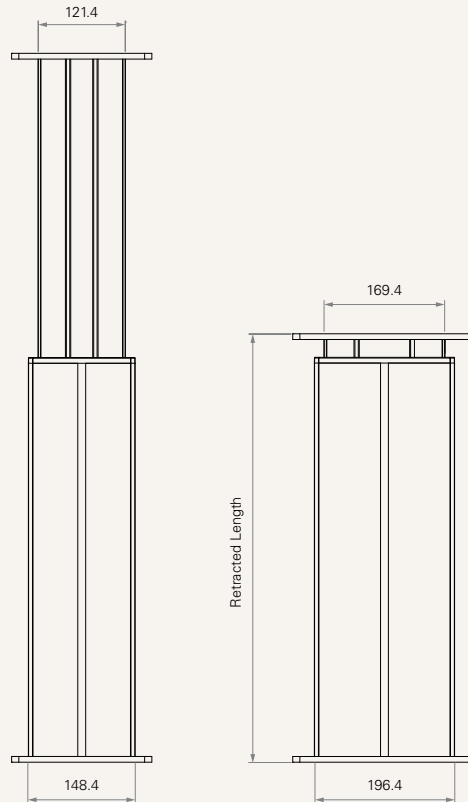
The TL18 column is designed for medical applications such as nurse carts, ophthalmological devices, X-ray machines, etc. The TL18 features an extruded aluminum rectangular appearance. Our high capacity, yet economical, TL18 provides stable vertical lifting. This streamlines the engineering design process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

General Features

Max. load & self – locking force	4,500N (push)
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
Dimension of outer tube	2-stage, 196.4*148.4mm rectangular
Stroke	100~700mm
Certificate	IEC60601-1, ES60601-1, IEC60601-1-2, UL73, EMC
Options	Hall sensor(s), cable exit from top or bottom side, direct cut system
Operational temperature range	+5°C~+45°C

Drawing

Standard Dimensions
(mm)

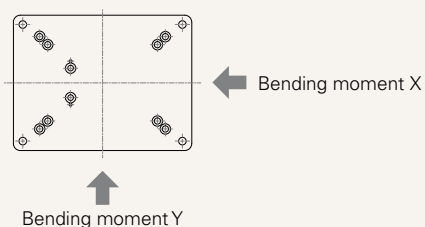


Load and Speed

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 (3800RPM)						
U	4500	4500	2.5	4.9	11.4	6.6
Z	3000	3000	2.5	5.5	17.1	9.5
W	2000	2000	2.5	4.8	22.9	13.1
S	1500	1500	2.5	4.7	30.0	18.9
V	500	500	2.5	4.0	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 = $X \cdot 0.8$
- 5 Static bending moment = dynamic * 2

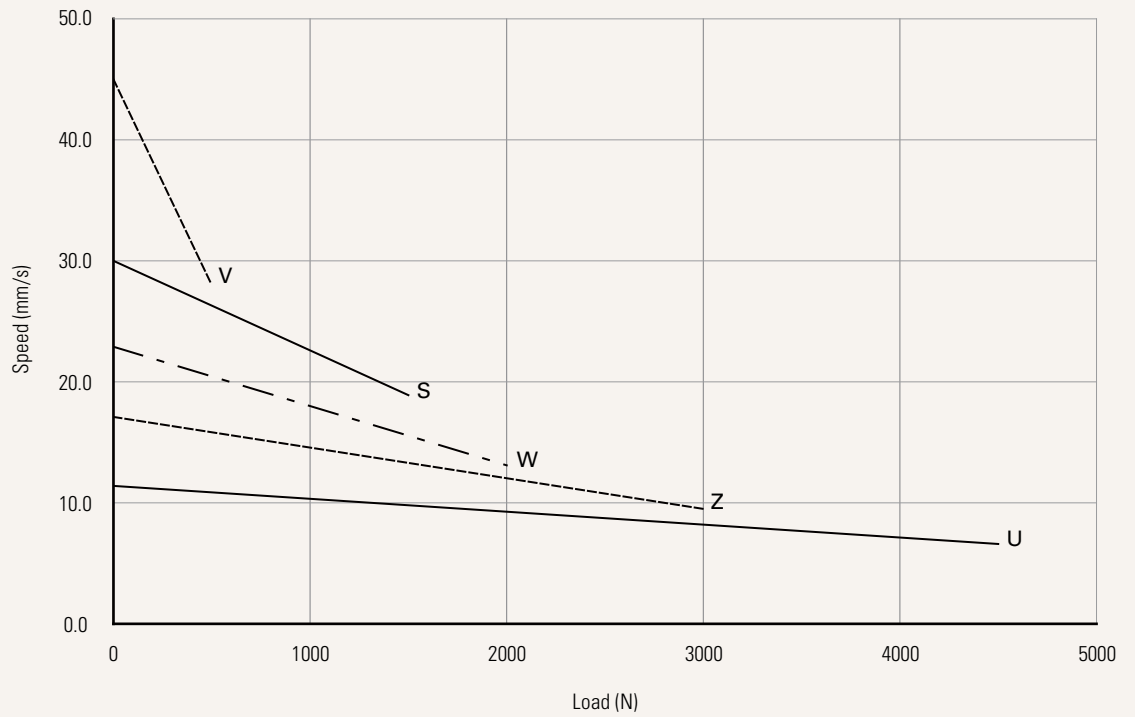


Dynamic bending moment (Nm)- X direction	
Retracted length (mm)	S+147
Stroke (mm)	100-700 200

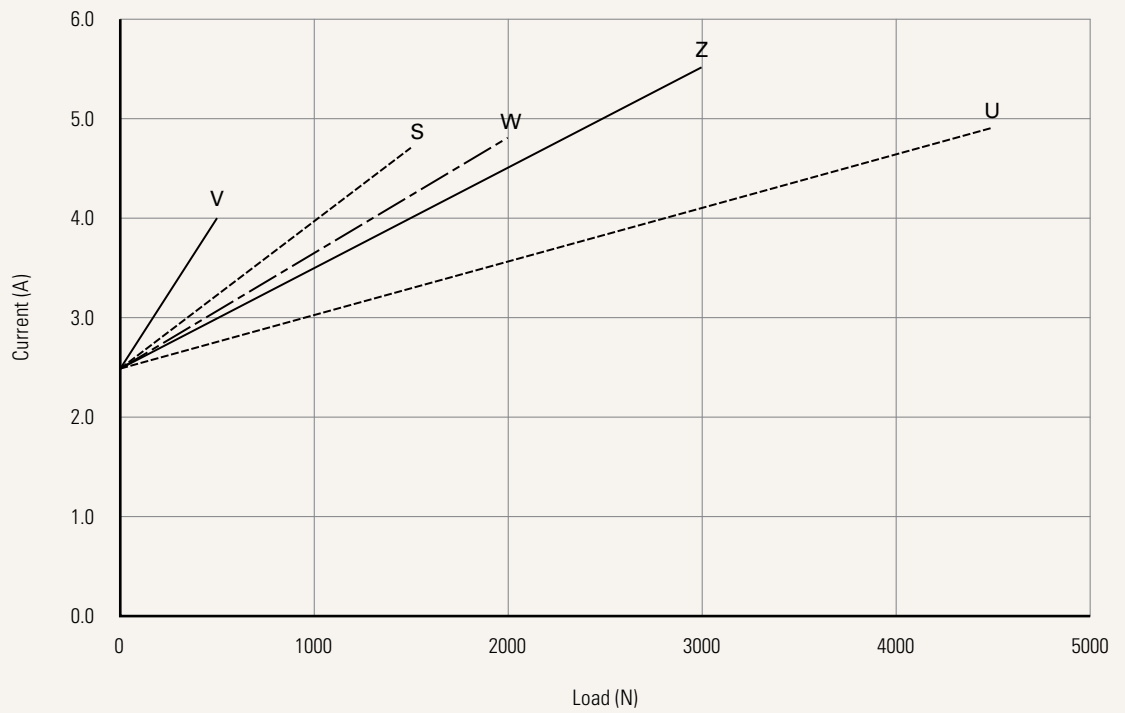
Performance Data (24V DC Motor)

Motor Speed (3800RPM)

Speed vs. Load



Current vs. Load



Voltage	1 = 12V DC	2 = 24V DC
Load and Speed	See page 2	
Stroke (mm)	100-700	
Retracted Length (mm)	See page 2	
Cable Exit	2 = Bottom side cable	3 = Top side cable
Special Functions for Spindle Sub-Assembly	0 = Without (standard)	1 = Safety nut
Functions for Limit Switches	1 = Two switches at full retracted / extended positions to cut current 3 = Two switches at full retracted / extended positions to send signal	
Color	1 = Black (Black cable set) 2 = Silver (428C color cable set)	3 = Silver (Black cable set)
IP Rating	1 = Without	
Output Signals	0 = Without	2 = Hall sensor*2
Top Plate	1 = Small plate	2 = Big plate
Bottom Plate	1 = Small plate	2 = Big plate
Connector	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
Cable Length (mm)	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 See page 6

Note

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

Retracted Length (mm)

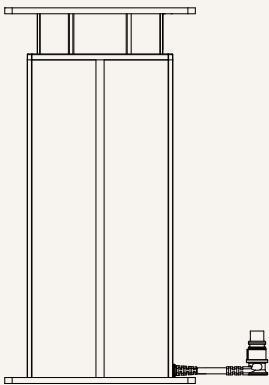
1. Retracted length needs to \geq Stroke+A

A. Plate

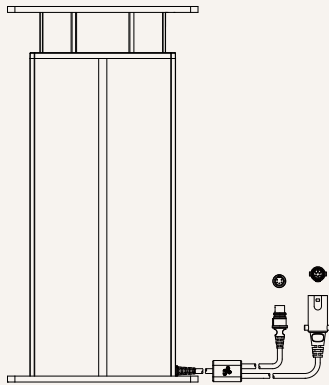
Top plate	Bottom plate	
	1	2
1	+147	+151
2	+151	+155

Cable Exit

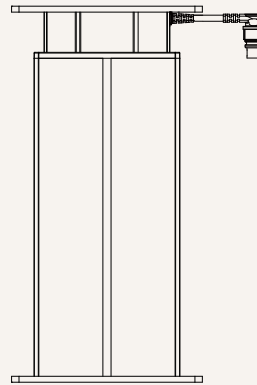
2 = Bottom side cable



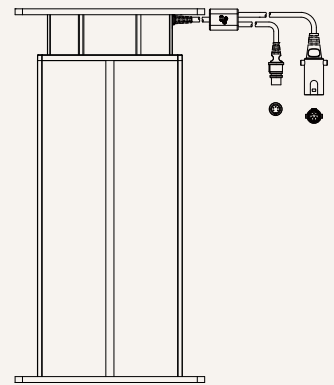
2 = Bottom side cable
Y cable, for TH + TP



3 = Top side cable



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



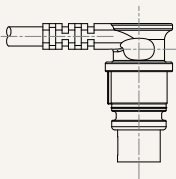
Functions for Limit Switches

Wire Definitions

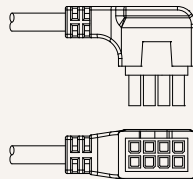
CODE	Pin					
	● 1 (Green)	● 2 (Red)	○ 3 (White)	● 4 (Black)	● 5 (Yellow)	● 6 (Blue)
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
2	extend (VDC+)	N/A	middle switch pin B	middle switch pin A	retract (VDC+)	N/A

Connector

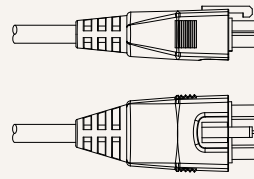
1 = DIN 6P, 90° plug



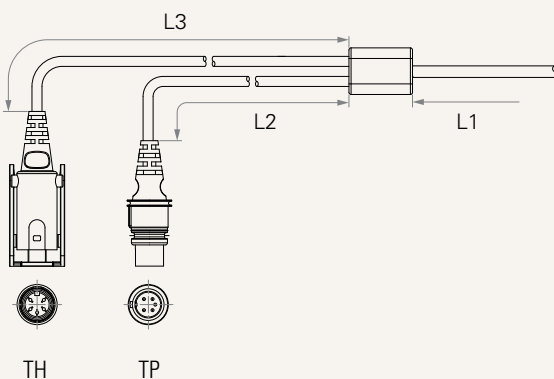
D = Molex 8P, without anti-clip,
90° plug



E = Molex 8P, 180° plug



C = Y cable, for direct cut system

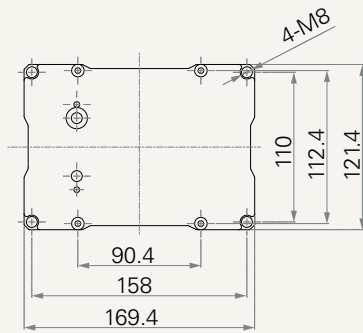


Cable Length for Direct Cut System (mm)

CODE	L1	L2	L3
B	100	100	100

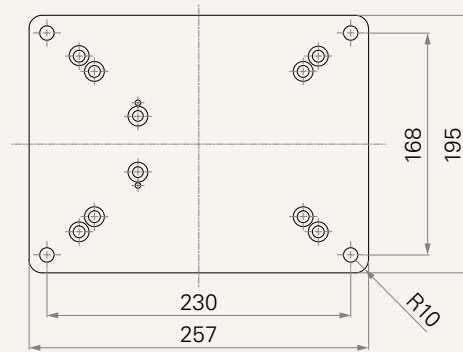
Top Plate

1 = Small plate



Small Plate: 4 fixation holes
Thickness 4mm

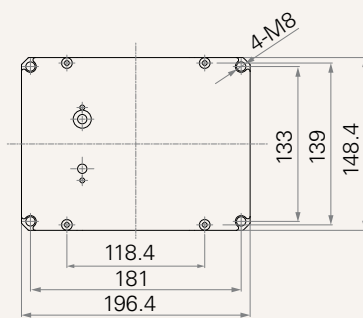
2 = Big plate



Big Plate: 4 fixation holes
Thickness 8mm

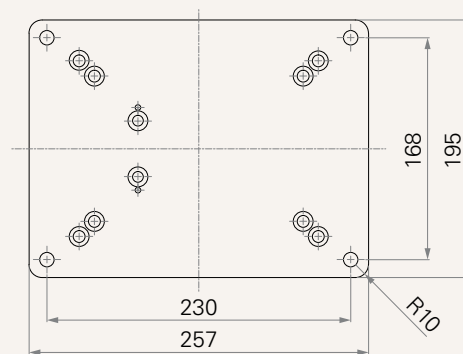
Bottom Plate

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.