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
Dimension of outer tube	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)

121.4

169.4

Retracted Length

148.4

196.4
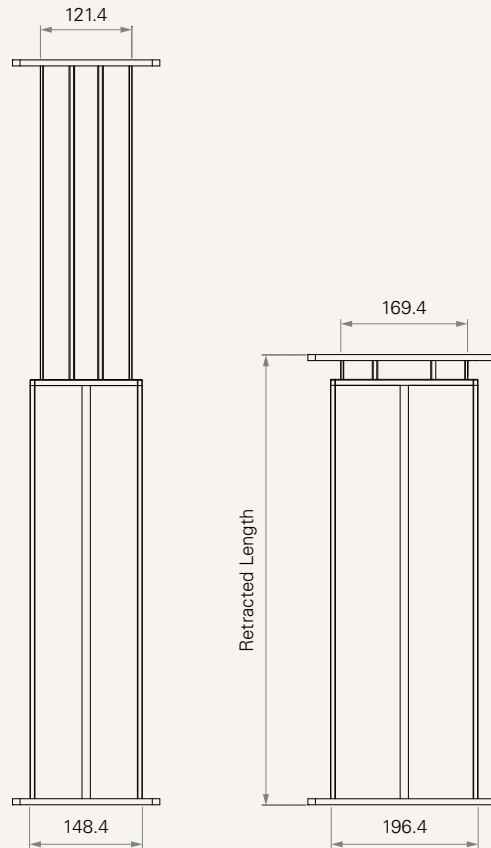
Load and Speed

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, Duty Cycle 10%)						
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*0.8
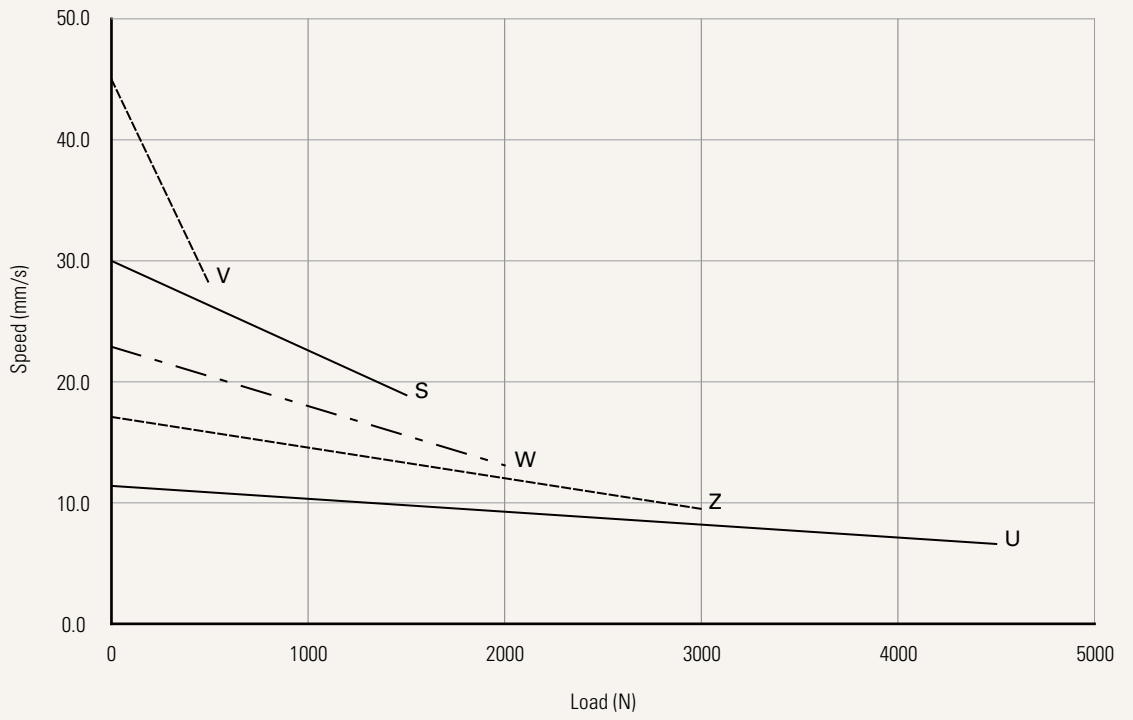
5 Static bending moment = dynamic*2

Dynamic bending moment (Nm)- X direction		
Retracted length (mm)		S+147
Stroke (mm)	100-1000	250

Bending moment X

Bending moment Y

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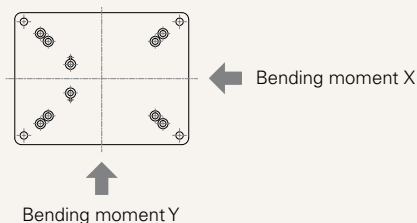
Performance Data (24V DC Motor)

Motor Speed (3800RPM, Duty Cycle 10%)

Speed vs. Load

Current vs. Load

TL18 Ordering Key

TL18

Voltage	1 = 12V DC	2 = 24V DC	
Load and Speed	See page 2		
Stroke (mm)	100-1000		
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 See page 6	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
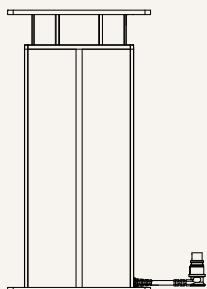
Retracted Length (mm)

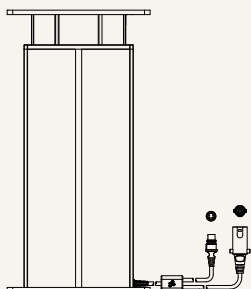1. Retracted length needs to ≥ Stroke+A

A. Plate

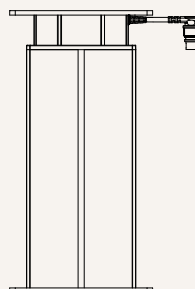| Top Plate	Bottom Plate	
	1	2
1	+147	+151
2	+151	+155

TL18 Ordering Key Appendix
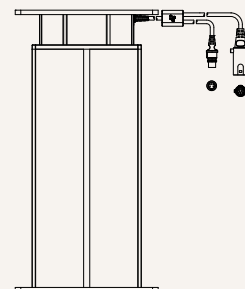
Cable Exit

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
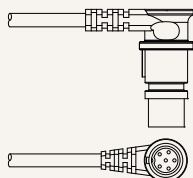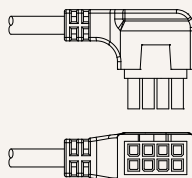
Wire Definitions

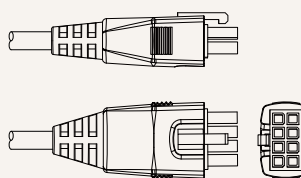| CODE	Pin					
		🟢 1 (Green)	🔴 2 (Red)	⚪ 3 (White)	⚫ 4 (Black)	🟡 5 (Yellow)	🔵 6 (Blue)
1		extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
2		extend (VDC+)	N/A	middle switch pin B	middle switch pin A	retract (VDC+)	N/A

Connector
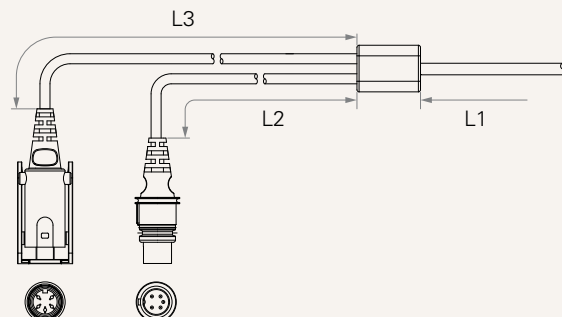
1 = DIN 6P, 90° plug

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

E = Molex 8P, 180° plug
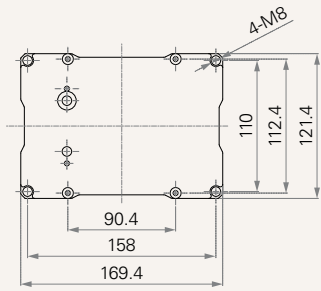
C = Y cable, for direct cut system

L3

L2

L1

Cable Length for Direct Cut System (mm)

CODE	L1	L2	L3
B	100	100	100

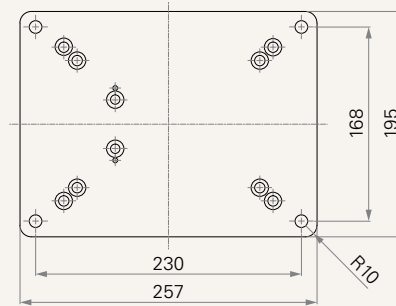# **TL18** Ordering Key Appendix

Top Plate

1 = Small plate

Small Plate: 4 fixation holes
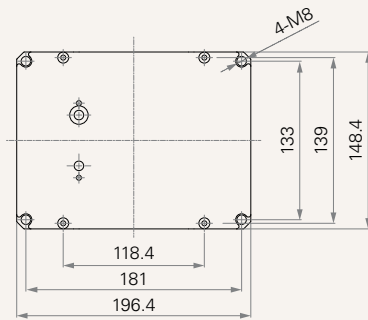
Thickness 4mm

2 = Big plate

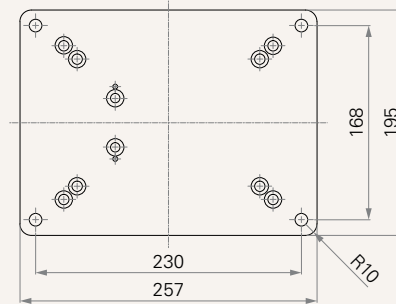
Big Plate: 4 fixation holes

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.