TL3

series

Product Segments

- Care Motion
- Ergo Motion

TiMOTION's TL3 series columns are designed with an extruded aluminum square appearance, primarily for use in medical applications. Our high capacity, economical TL3 provides stable vertical lifting. This makes the engineering design process easier and safer by replacing older style lifting mechanisms that use many moving parts and have pinch points. The 3 stage design enables a greatly reduced retracted height and provides an increased stroke length while ensuring a high degree of stability.

General Features

Maximum load	4,000N
Maximum speed at full load	24.0mm/s (with 1,000N in a push condition)
Minimum installation dimension	Stroke/2+150mm (if max. load=1,000/2,000N)
Dimension of cross section	177.4x150.7mm
Stroke	100~700mm
Certificate	ES60601-1 and IEC60601-1 compliant
Operational temperature range	+5°C~+45°C
Option	POT, Hall sensors

Load and Speed

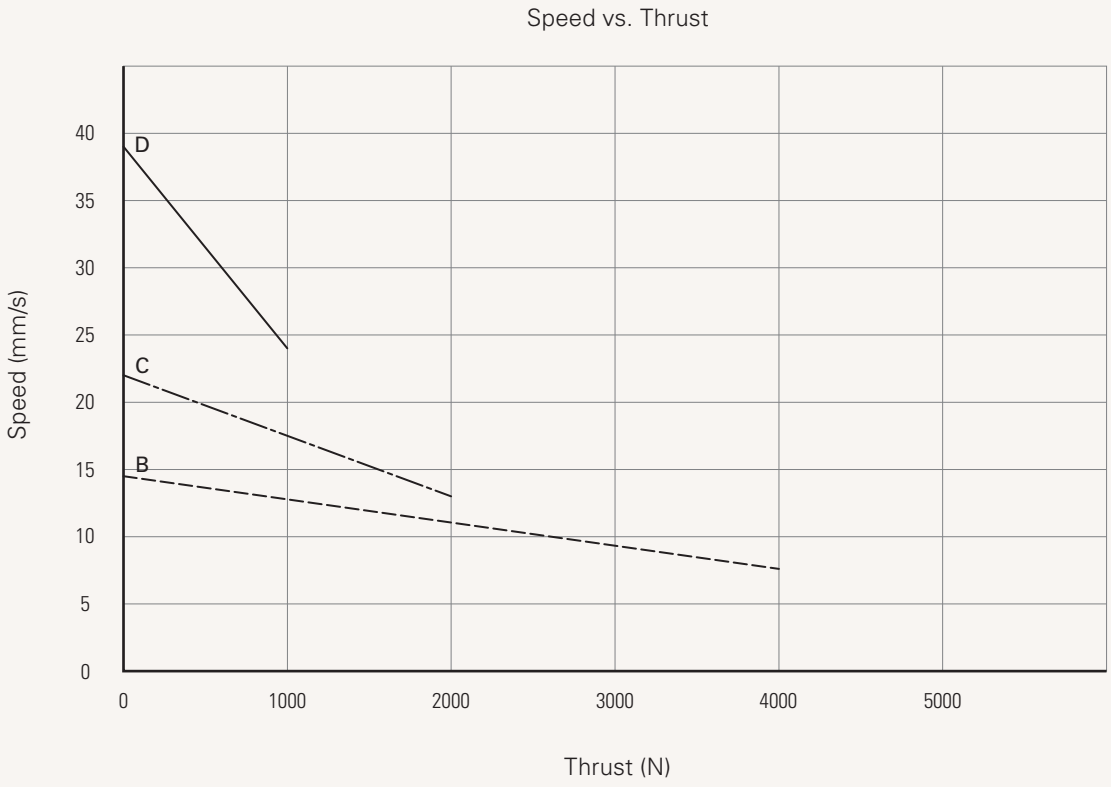
CODE	Load (N) PUSH	Dynamic Bending Moment (Nm)	Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
				No Load 32VDC	With Load 24VDC	No Load 32VDC	With Load 24VDC
Motor Speed (2200RPM)							
B	4000	1000	4000	2.5	6.0	14.5	7.6
C	2000	500	2000	2.5	4.0	22.0	13.0
D	1000	500	1000	2.5	3.5	39.0	24.0
Motor Speed (2800RPM)							
E	4000	1000	4000	3.5	7.2	18.5	11.0
F	2000	500	2000	3.5	6.0	37.0	20.0

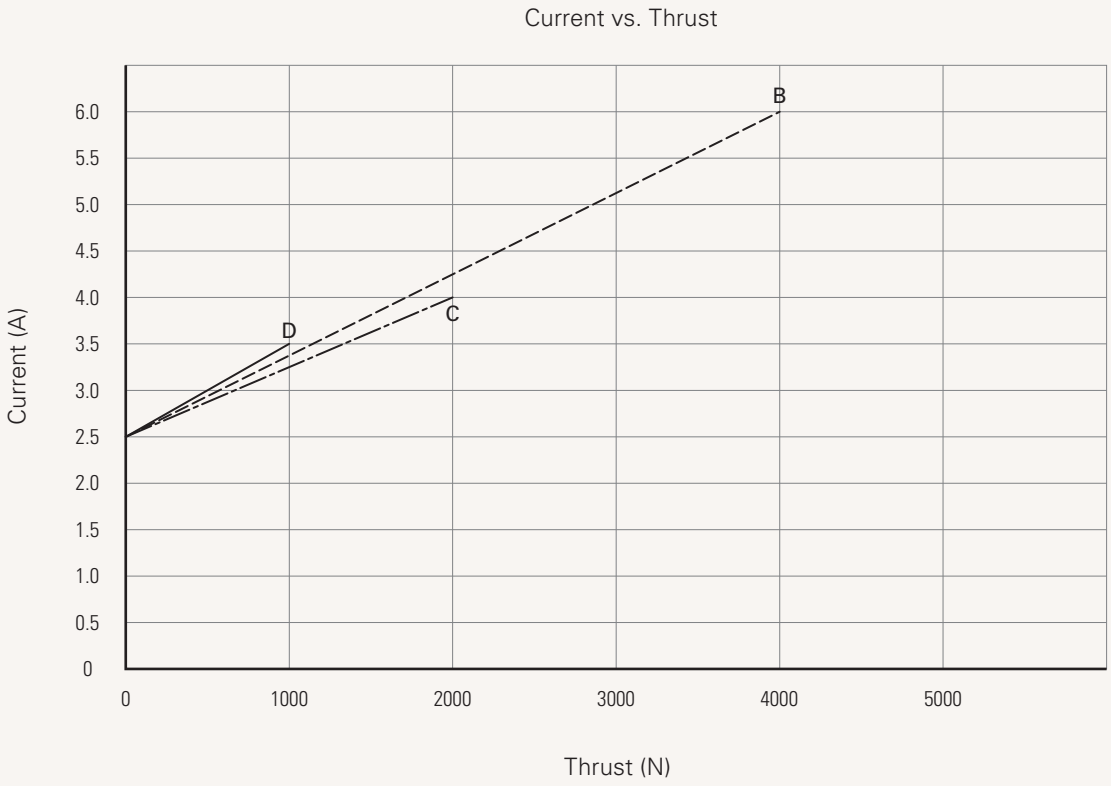
Note

1 Motor 12V current is around 2 times in 24V; speed is around the same.

Performance Data

Motor Speed (2200RPM)



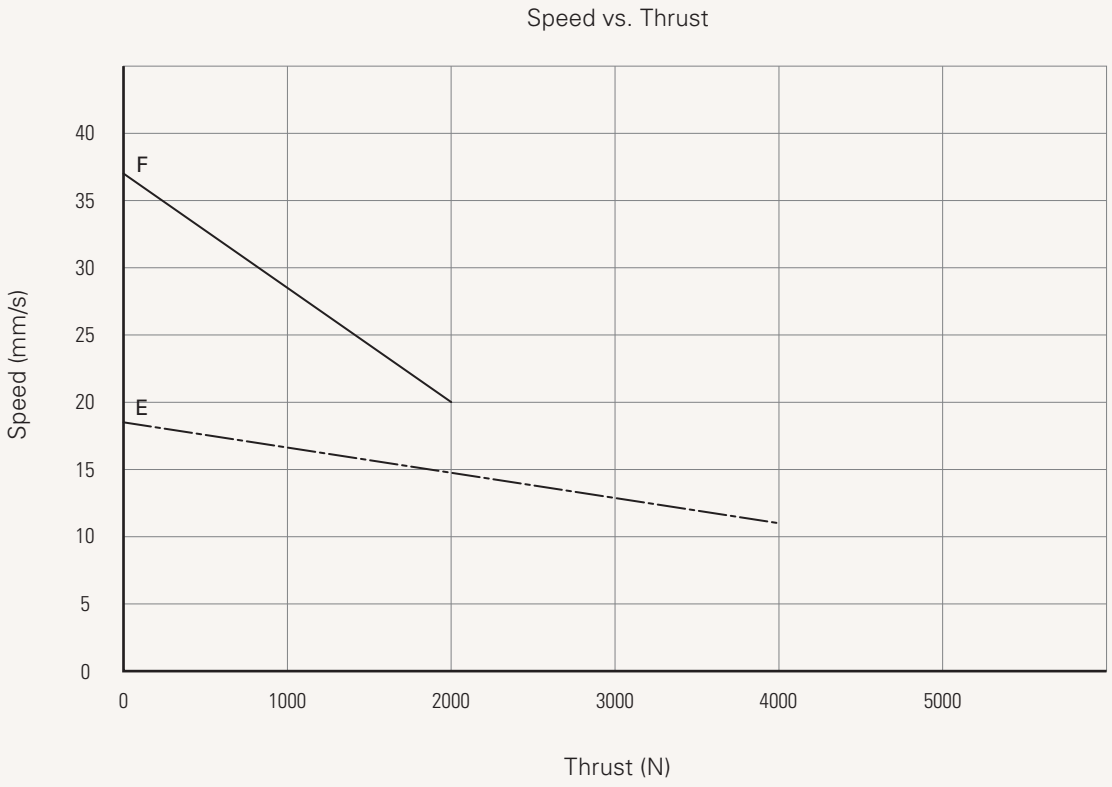


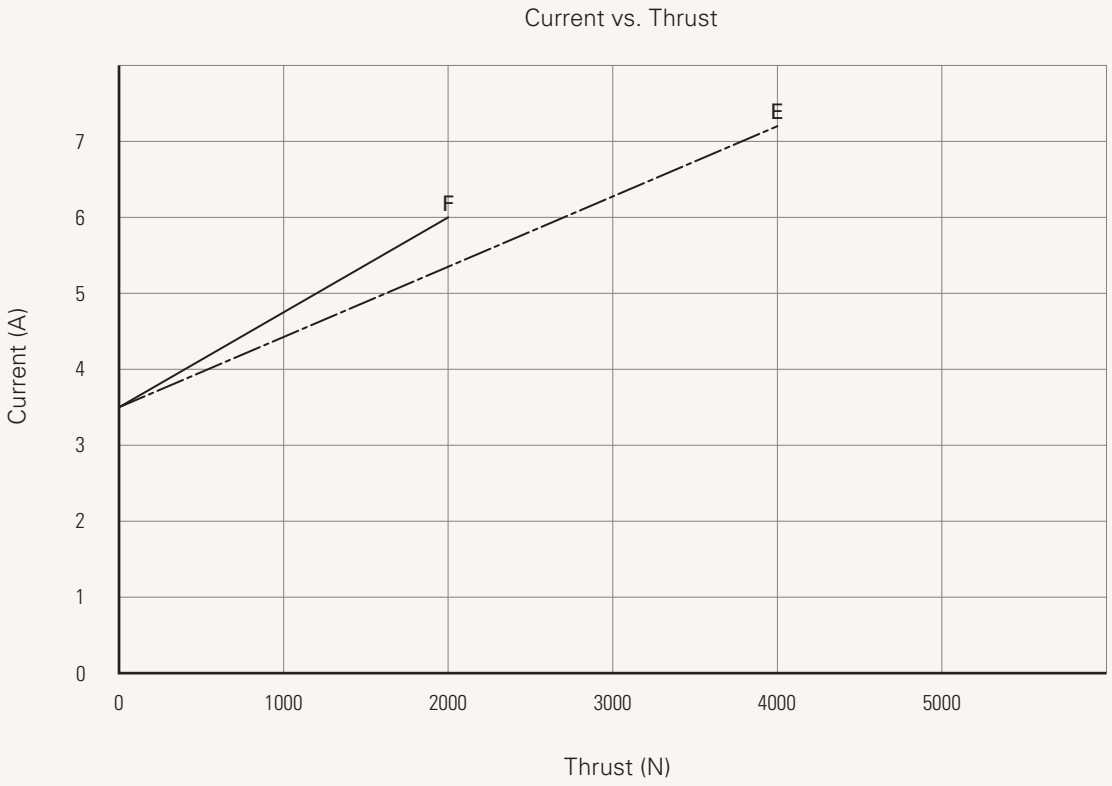
Note

1 The performance data in the curve charts shows theoretical value only.

Performance Data

Motor Speed (2800RPM)



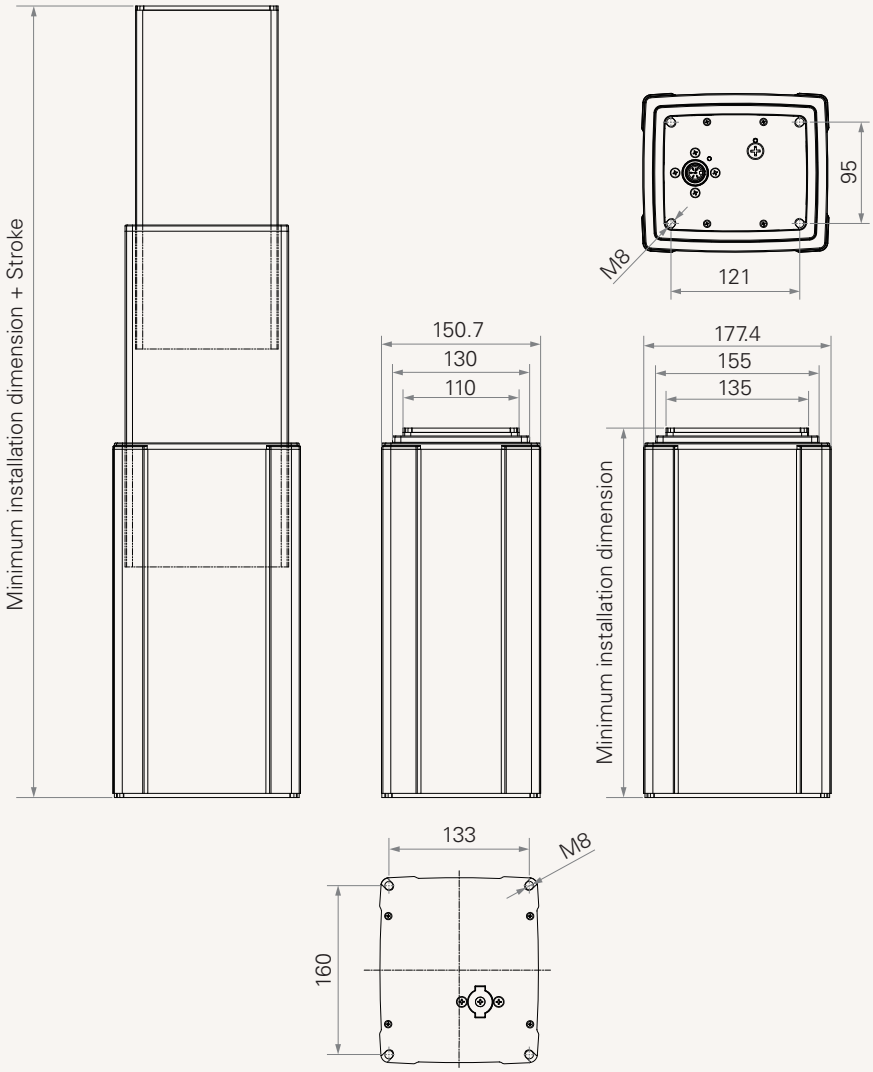


Note

1 The performance data in the curve charts shows theoretical value only.

Drawing

Standard Dimensions
(mm)



Retracted Length (mm)

1. Calculate A+B = Y

2. Minimum retracted length needs to ≥ (Stroke/2)+Y

A. Load and Type	Type		
Load and Speed Code	Top End Socket	Side Cable	Direct Cut
B, E (4,000N)	+220	+240	+240
C, F (2,000N)	+150	+170	+170
D (1,000N)	+150	+170	+170

B. When choosing POT	Type		
Load and Speed Code	Top End Socket	Side Cable	Direct Cut
B, E (4,000N)	+40	+20	+20
C, F (2,000N)	+40	+20	+20
D (1,000N)	+40	+20	+20

TL3 - Top End Socket Ordering Key

TL3

Version: 20160425-G

	Voltage	1 = 12V		2 = 24V
	Load and Speed	See page 2.		
	Stroke (mm)	100-700mm		
	Retracted Length (mm)	See page 6.		
	Cable Exit	1 = Top end socket		
	Special Functions for Spindle Sub-Assembly	0 = Without (standard)		
	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		
	IP Rating	1 = Without	2 = IPX4	3 = IPX6
	Output Signals	0 = Without	2 = Two Hall sensors	3 = POT
	Connector	1 = DIN 6pin, socket		
	Cable Length	0 = Without (the corresponding extension cable TEC needs to be ordered seperately, please contact TiMOTION.)		

TL3 - Side Cable Ordering Key

TL3

Version: 20160425-G

Voltage	1 = 12V		2 = 24V	
Load and Speed	See page 2.			
Stroke (mm)	100-700mm			
Retracted Length (mm)	See page 6.			
Cable Exit	2 = Bottom side cable		3 = Top side cable	
Special Functions for Spindle Sub-Assembly	0 = Without (standard)			
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			
IP Rating	1 = Without	2 = IPX4	3 = IPX6	
Output Signals	0 = Without	2 = Two Hall sensors	3 = POT	
Connector	1 = DIN 6pin, 90° plug			
Cable Length	1 = Straight, 500mm 2 = Straight, 750mm	3 = Straight, 1000mm 4 = Straight, 1250mm	5 = Straight, 1500mm 6 = Straight, 1750mm	

TL3 - Direct Cut Ordering Key

TL3

Version: 20160425-G

Voltage	2 = 24V			
Load and Speed	See page 2.			
Stroke (mm)	100-700mm			
Retracted Length (mm)	See page 6.			
Cable Exit	B = Top side cable: for TH; Bottom side cable: for TP		C = Bottom side cable: Y cable, for TH + TP	
Special Functions for Spindle Sub-Assembly	0 = Without (standard)			
Functions for Limit Switches	1 = Two switches at full retracted/extended positions to cut current			
IP Rating	1 = Without	2 = IPX4	3 = IPX6	
Output Signals	0 = Without			
Connector	C = For TH: Long DIN 5pin, 180° socket (with anti pull clip); For TP: Long DIN 5pin, 180° plug (with O ring)			
Cable Length	A = For direct cut system, please contact TiMOTION.			