TL53

series

Product Segments

- **Care Motion**

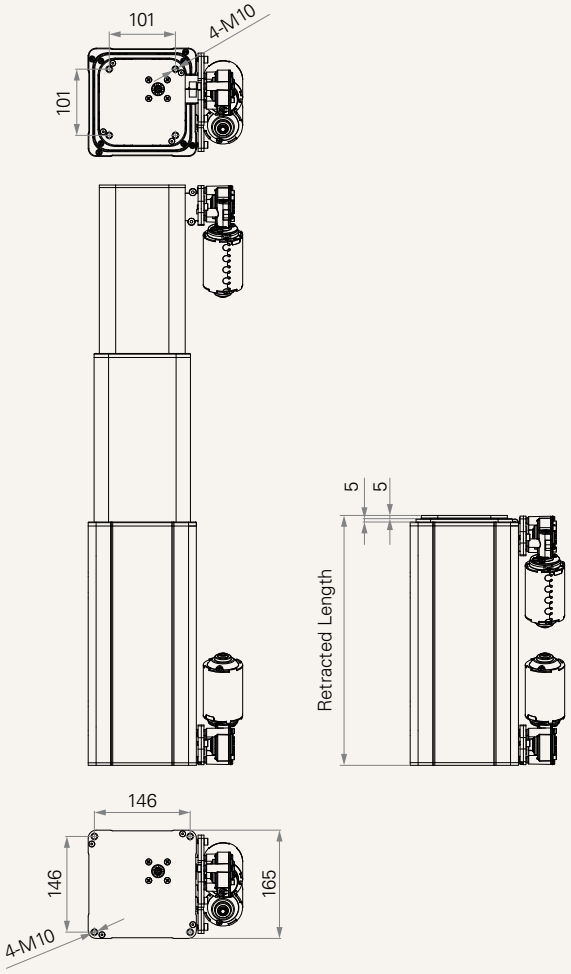
The TL53 is TiMOTION's premium medical lifting column, engineered for demanding healthcare environments where stability, reliability, and serviceability are critical. It is ideally suited for applications such as hospital beds, home care beds, and examination tables. Designed with an external motor configuration, the TL53 simplifies maintenance and motor replacement – reducing downtime and lowering long-term service costs. Its 3-stage telescopic structure delivers smooth, stable, and precise vertical movement, ensuring consistent performance across a wide range of operating conditions. Built with system integration in mind, the TL53 offers optional pre-tapped mounting holes on the outer tube, allowing for easy attachment of control boxes, power supplies, PCBs, or additional actuators. The result is a highly flexibility and scalable solution for complex medical equipment designs.

General Features

Max. load	5,000N (push)
Self-locking force	5,000N
Max. dynamic bending moment	500Nm
Max. static bending moment	1,000Nm
Max. speed at max. load	20mm/s
Max. speed at no load	27mm/s
Retracted length	≥Stroke/2 + 129mm
Outer profile	165*165mm square
Stages	3-stage
Stroke	450~510mm
Output signals	Hall sensor*2
Voltage	24V DC (thermal control)
Color	Silver
Operational temperature range	+5°C~+45°C

Drawing

Standard Dimensions
(mm)



Load and Speed

CODE	Push (N)	Bending moment (Nm)		Typical Current (A)		Typical Speed (mm/s)	
		Dynamic	Static	No Load 32V DC	With Load 24V DC	No Load 32V DC	With Load 24V DC
Motor Speed (4300RPM)							
B	5000	500	1000	4.5	12.0	27.0	20.0

Note

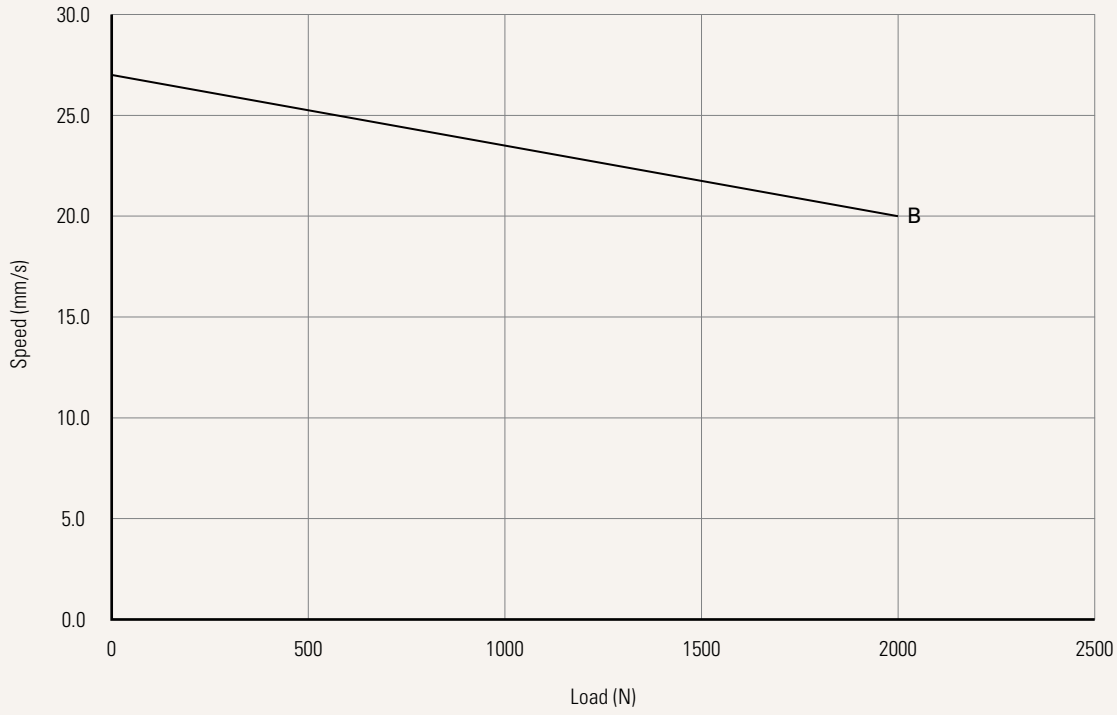
1 Parameters above are from tested average, please refer to approval drawing for final value.

2 The current & speed are tested with 24VDC motor.

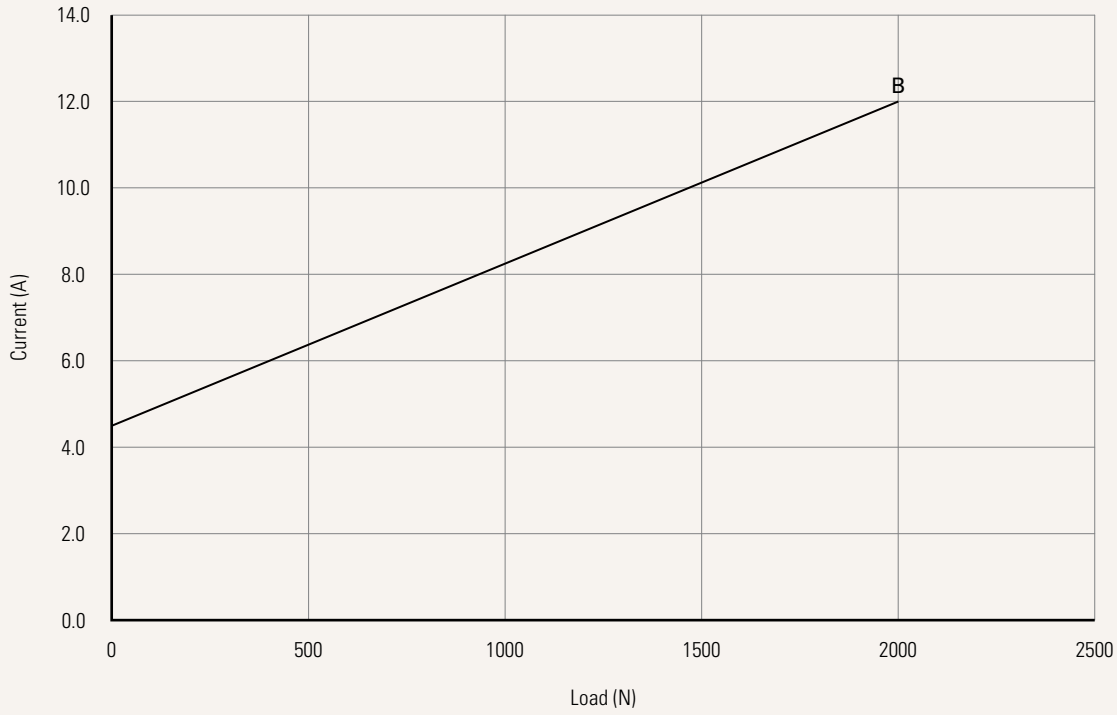
Performance Data (24V DC Motor)

Motor Speed (4300RPM)

Speed vs. Load



Current vs. Load



TL53 Ordering Key

TL53

Version: 20240812-C

Voltage	5 = 24V DC, PTC			
Load and Speed	See page 2			
Stroke (mm)	XXX = 450~510			
Retracted Length (mm)	See page 5			
Color	2 = Matte Silver+Pantone 428C Cable			
Output Signal	2 = Hall sensor*2			
Brake	M = Motor+Coupling brake			
Cable Exit See page 6	1 = Motor cable			
Cable Length (mm)	1 = Straight, 500	2 = Straight, 1000	3 = Straight, 1500	4 = Straight, 2000
Connector See page 6	1 = DIN 6P, 90° F = DIN 6P, 180°	Q = Molex 6P, 90° R = Molex 6P, 180°	G = Molex 8P, 90° H = Molex 8P, 180°	

Retracted Length (mm)

1. Retracted length needs to ≥ A+B

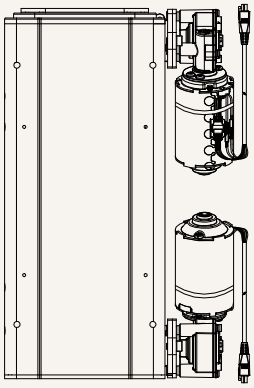
A. Load (N)	
CODE	A
	5000
	S / 2+129

Note

1 Different retracted length is relative to different bending moment, See page 2.

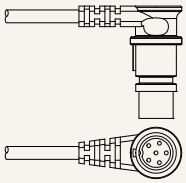
Cable Exit

1 = Motor cable

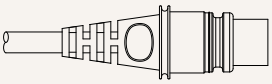


Connector

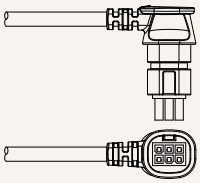
1 = DIN 6P, 90°



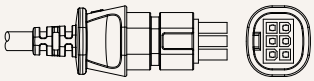
F = DIN 6P, 180°



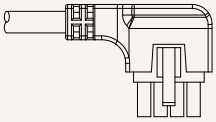
Q = Molex 6P, 90°



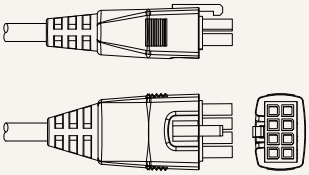
R = Molex 6P, 180°



G = Molex 8P, 90°



H = Molex 8P, 180°



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