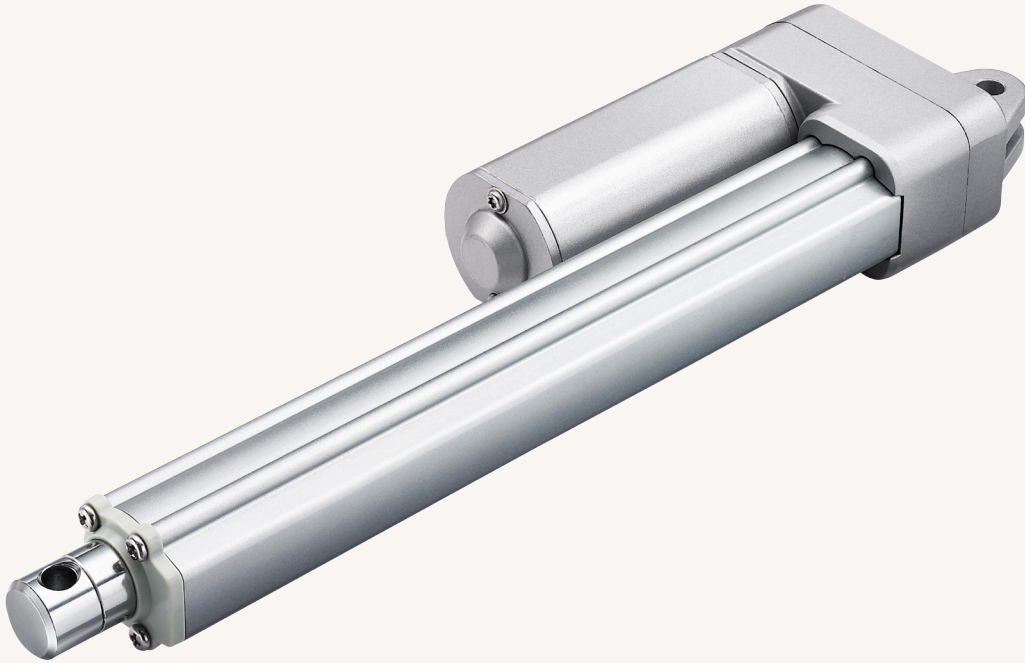# TA16
series

Product Segments

- **Care Motion**
- **Comfort Motion**

TiMOTION's TA16 series linear actuator is similar to the TA2 linear actuator, but is specifically designed for low-noise medical applications where a compact linear actuator is needed. It is available with optional IP66 protection and Hall sensors for position feedback. Certificates for the TA16 include EN60601-1 and IEC60601-1.

General Features

Voltage of motor	12V DC or 24V DC
Maximum load	3,500N in push/pull
Maximum speed at full load	13.5mm/s (with 1,500N in a push or pull condition)
Standard stroke	20~1000mm
Minimum installation dimension	Stroke+112mm
Color	Silver
Protection class	Up to IP66
Option	Hall sensor(s)
Certificate	EN60601-1 and IEC60601-1 compliant
Operational temperature range	+5°C~+45°C

With very low noise, small size for easy installation

Load and Speed

| CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load 32V DC	With Load 24V DC	No Load 32V DC	With Load 24V DC
Motor Speed (3800RPM, Duty Cycle 10%)							
A	2500	2500	2500	0.9	2.8	5.2	3.0
B	2000	2000	2000	0.9	2.8	8.3	4.7
C	1500	1500	1000	0.9	2.8	11.9	7.0
D	1000	1000	1000	1.0	2.8	17.7	10.3
Motor Speed (5600RPM, Duty Cycle 10%)							
G	3500	3500	2000	1.5	4.7	12.0	6.5
J	2000	2000	1000	1.5	3.2	17.0	10.5
K	1500	1500	700	1.5	3.5	23.5	13.5

Note

1 With a 12V motor, the current is approximately twice the current measured in 24V. With a 36V motor, the current is approximately two-thirds the current measured in 24V; speed will be similar for both voltages.

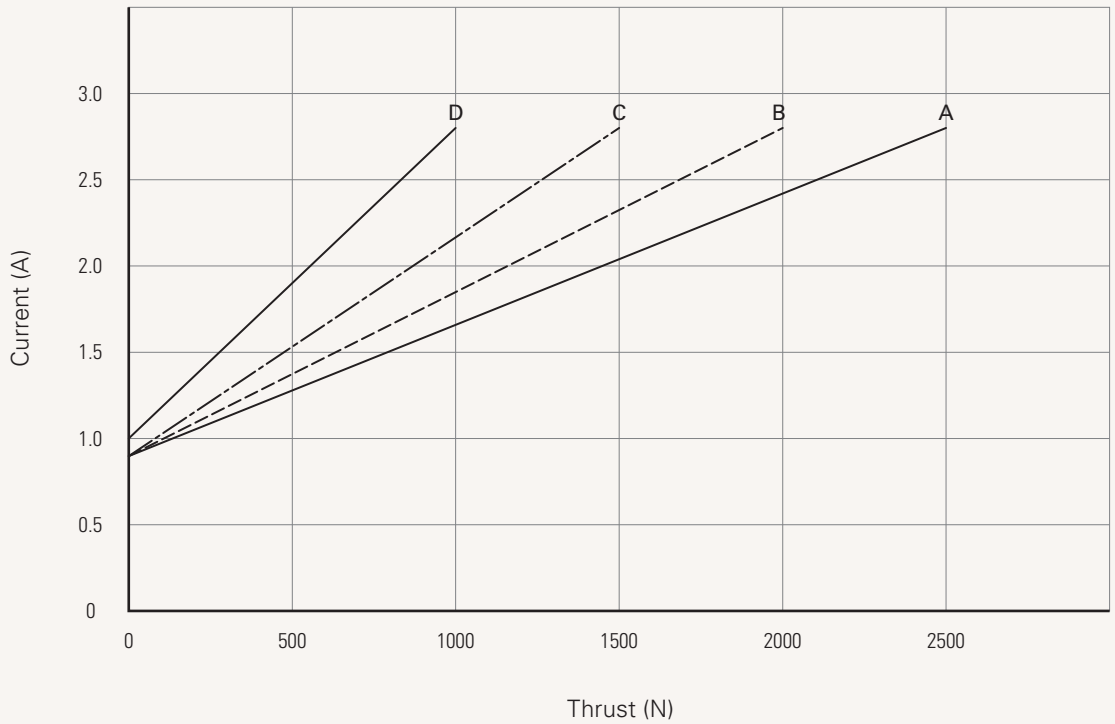2 Above self lock performance needs working with TiMOTION control system.

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Performance Data (24V DC Motor)

Motor Speed (3800RPM, Duty Cycle 10%)
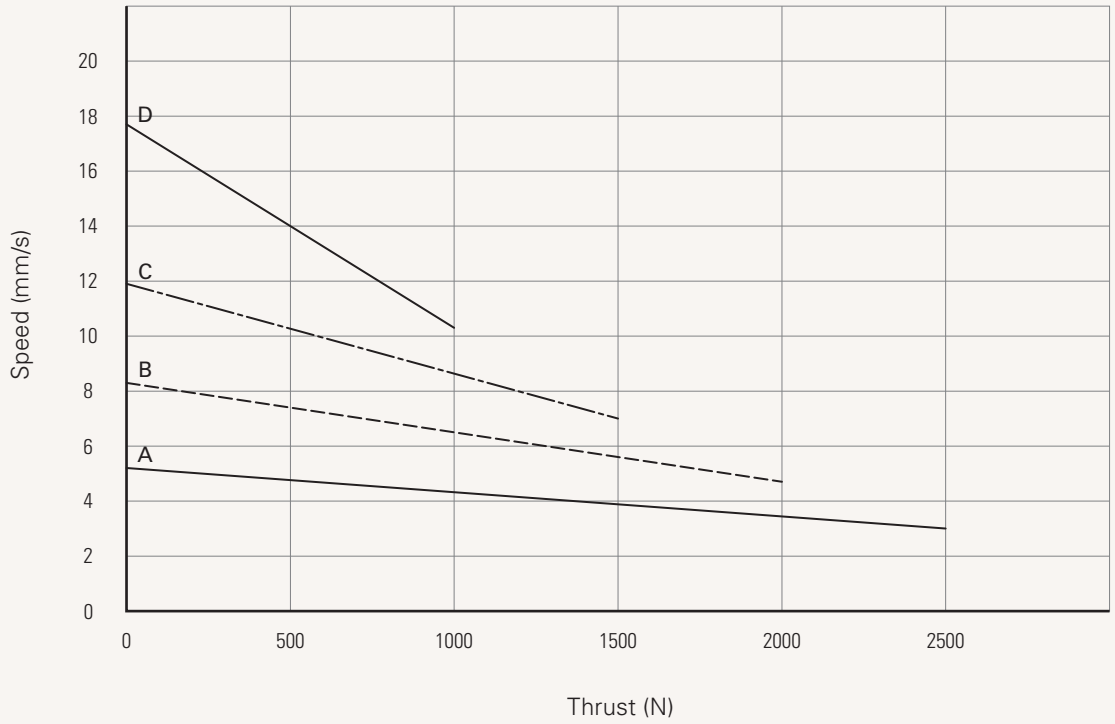
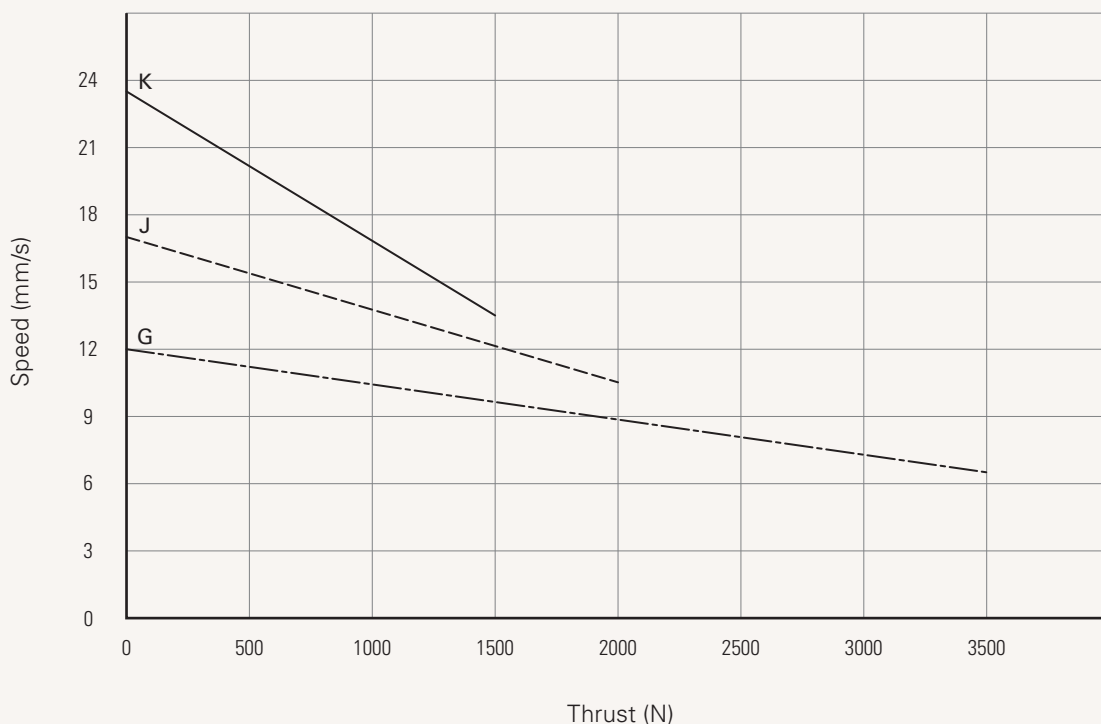### Speed vs. Thrust

Current vs. Thrust

Note

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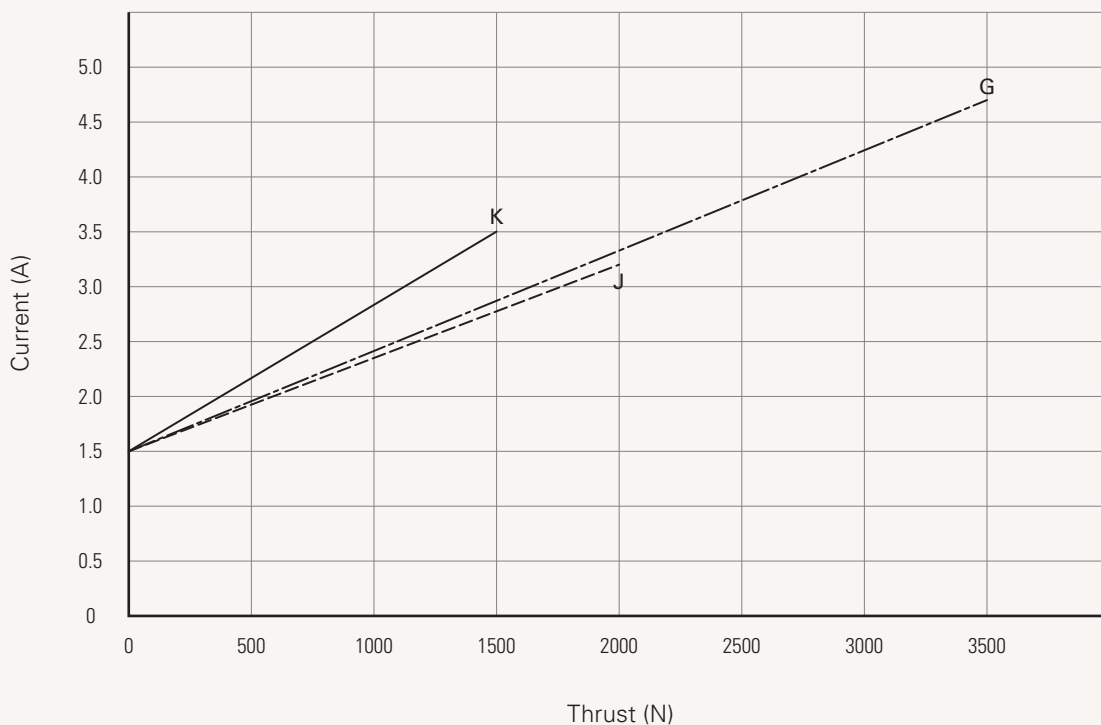
Ti MOTION

Performance Data (24V DC Motor)

Motor Speed (5600RPM, Duty Cycle 10%)

Speed vs. Thrust

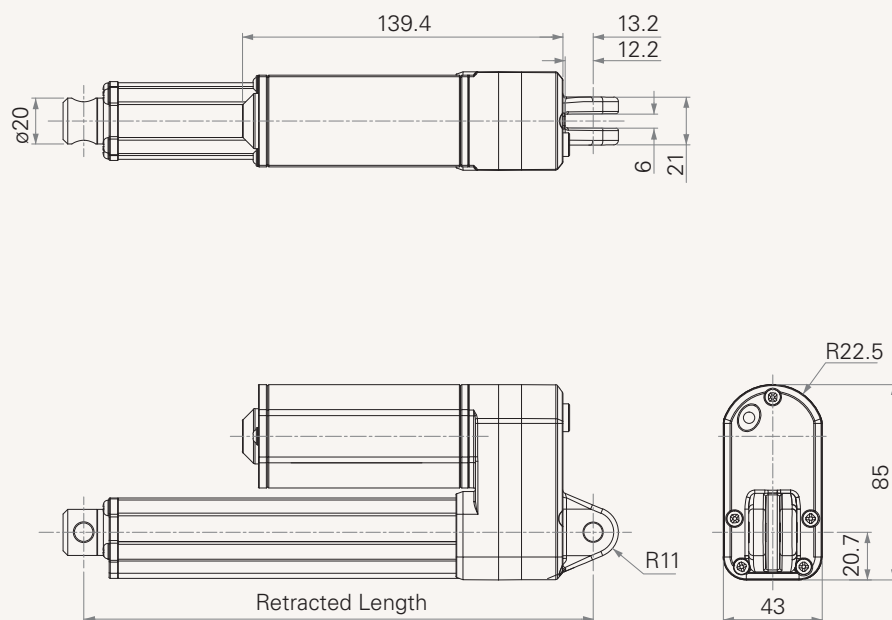**Current vs. Thrust**

Note

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

Drawing

Standard Dimensions
(mm)

Wire Definitions

CODE*	Pin					
	1	2	3	4	5	6
	🟢 (green)	🔴 (red)	⚪ (white)	⚫ (black)	🟡 (yellow)	🔵 (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
3	extend (VDC+)	common	upper limit switch	N/A	retract (VDC+)	lower limit switch
4	extend (VDC+)	common	upper limit switch	medium limit switch	retract (VDC+)	lower limit switch

Note

* See ordering key - functions for limit switches

Retracted length (mm)

1. Calculate A+B+C = Y

2. Retracted length needs to ≥ Stroke+Y

A. Attachment	Rear Attachment Code
Front Attachment Code	1, 2, 3
1, 2, 3	+112
4, 5, 6	+122

B. Load vs Stroke	Load (N)	
Stroke (mm)	< 3500	= 3500
20~150	-	+5
151~200	+8	+13
201~250	+8	+13
251~300	+13	+18
301~350	+13	+18
351~400	+18	+23

For stroke over 400mm, +5mm for each incremental 50mm stroke.

C. Output Signals	
Code	
0, 4, 5	-
1	+36

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TA16 Ordering Key

TA16

Voltage	1 = 12V		2 = 24V

Load and Speed	See page 2.

Stroke (mm)

Retracted Length (mm)	See page 6.

Rear Attachment (mm)
1 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 6.4, one piece casting with gear box
2 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 8.0, one piece casting with gear box
3 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 10.0, one piece casting with gear box

Front Attachment (mm)
1 = Aluminum casting, no slot, hole 6.4
2 = Aluminum casting, no slot, hole 8.0
3 = Aluminum casting, no slot, hole 10.0
4 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 6.4
5 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 8.0
6 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 10.0

Direction of Rear Attachment (Counterclockwise)	1 = 90°		2 = 0°

IP Rating	1 = Without	2 = IP54	3 = IP66

Functions for Limit Switches
1 = Two switches at full retracted/extended positions to cut current
2 = Two switches at full retracted/extended positions to cut current + 3rd LS to send signal
3 = Two switches at full retracted/extended positions to send signal
4 = Two switches at full retracted/extended positions to send signal + 3rd LS to send signal

Special Functions for Spindle Sub-Assembly	0 = Without		2 = Standard push only

Output Signals	0 = Without	1 = POT	4 = One Hall sensor	5 = Two Hall sensors

Connector

1 = DIN 6pin, 90° plug	E = MOLEX 8pin, plug
2 = Tinned leads	F = DIN 6pin, 180° plug
4 = Big 01pin, plug	G = Audio plug
C = Y cable (for direct cut system, water proof, anti pull)	

Cable Length

0 = Straight, 100mm	3 = Straight, 1000mm	6 = Straight, 2000mm	B~H = For direct cut system, please contact TiMOTION
1 = Straight, 500mm	4 = Straight, 1250mm	7 = Coiled, 200mm	
2 = Straight, 750mm	5 = Straight, 1500mm	8 = Coiled, 400mm	

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