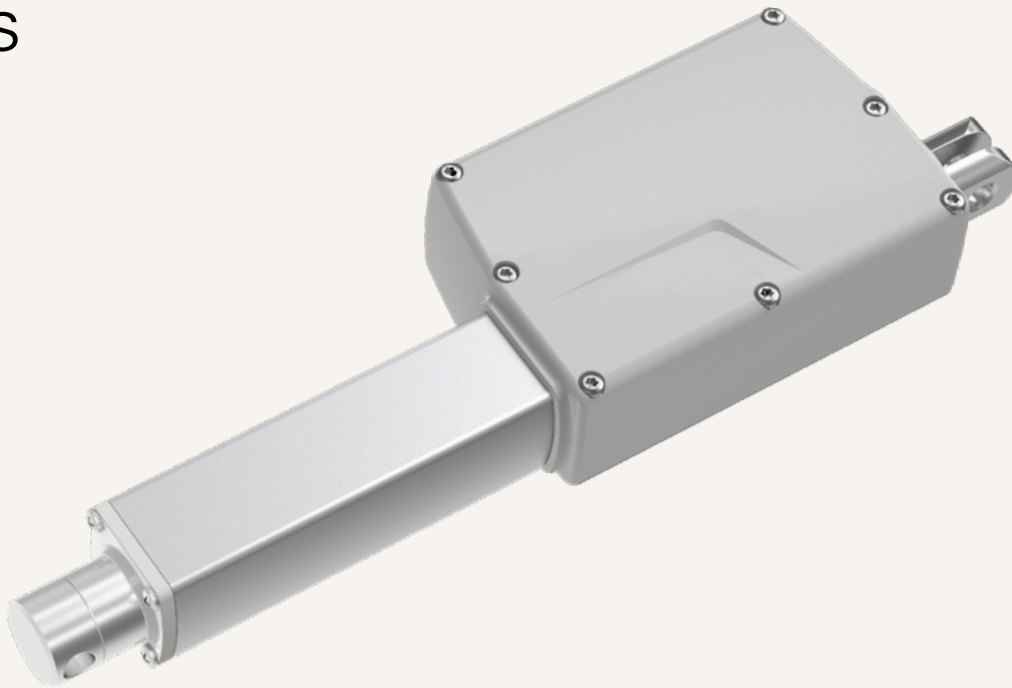# TA29
series

Product Segments

- **Care Motion**
- **Ergo Motion**

TiMOTION's TA29 is one of our new generation medical DC linear actuators, which can lift up to 6000N, yet has a small installation dimension. In addition to this, its IP rating is up to IP66W. The TA29 is highly recommended for various medical applications that require a short retracted length, yet need to support a large force, such as the leg adjustment or sling angle actuator on the patient hoist system.

General Features

Max. load	6,000N (push); 4,000N (pull)
Max. speed at max. load	3mm/s
Max. speed at no load	30.2mm/s
Retracted length	≥ 178mm (depending on chosen options)
IP rating	IP66W
Stroke	25~600mm
Voltage	12/24V DC; 12/24V DC (PTC)
Color	Black or grey
Operational temperature range	+5°C~+45°C
Suitable for patient hoist application	

Drawing

Standard Dimensions
(mm)
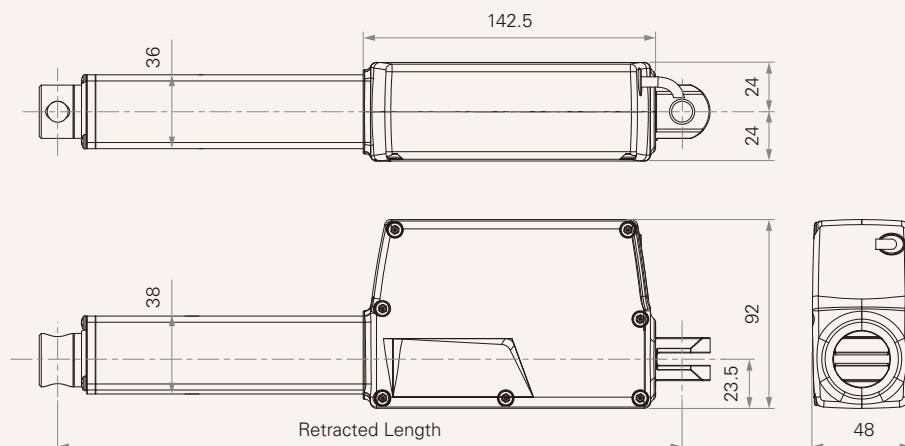
Load and Speed

| 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 (4800RPM, Duty Cycle 10%)							
B	1500	1500	1500	1.5	5.0	30.2	17.7
C	2500	2500	2500	1.5	5.0	16.0	9.1
D	3500	3500	3500	1.5	5.0	10.9	6.5
E	4500	4000	4500	1.5	4.5	6.5	4.0
P	6000	4000	6000	1.5	4.5	5.5	3.0
Motor Speed (5200RPM, Duty Cycle 10%)							
H	1000	1000	1000	1.5	3.5	30.0	15.0
K	1500	1500	1500	1.5	3.5	20.0	10.0
L	2000	2000	2000	1.5	3.7	15.0	7.5
M	2500	2500	2500	1.5	3.7	10.0	5.0
N	4000	4000	4000	1.5	3.7	5.4	2.8

Note

1 Please refer to the approved drawing for the final authentic value.

2 The current & speed in table are tested when the actuator is extending under push load.

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 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.

5 The current & speed in table and diagram are tested with TiMOTION control boxes, and there will be around 10% tolerance depending on different models of the control box. (Under no load condition, the voltage is around 32V DC. At rated load, the voltage output will be around 24V DC)

6 Standard stroke: Min. ≥ 25mm, Max. please refer to below table.

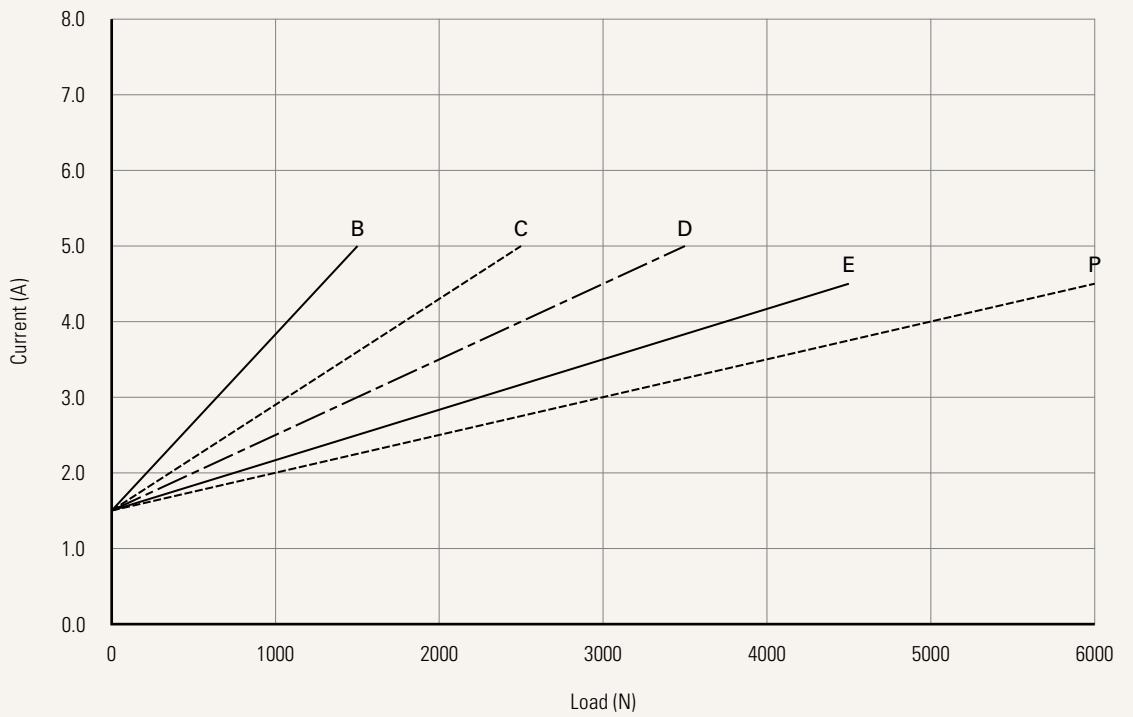| Load (N)	Max Stroke (mm)
6000	450
3500 ≤ load ≤ 4500	600
< 3500	1000

TiMOTION

Performance Data (24V DC Motor)

Motor Speed (4800RPM, Duty Cycle 10%)
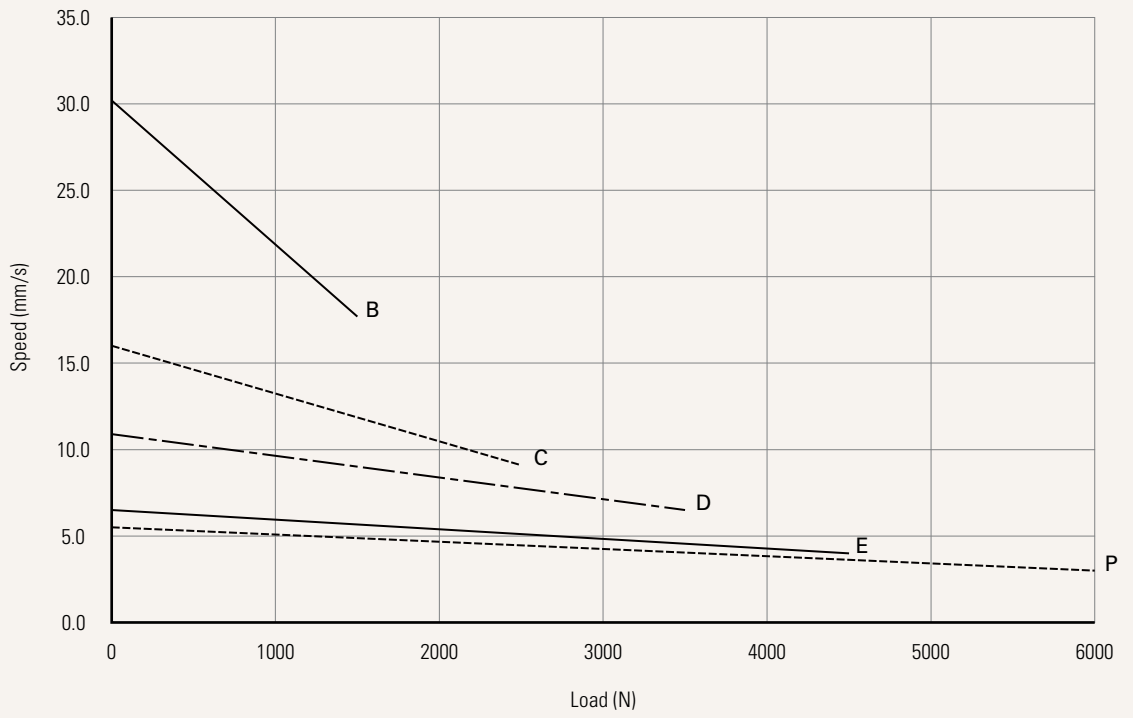
Speed vs. Load

Current vs. Load

Performance Data (24V DC Motor)

Motor Speed (5200RPM, Duty Cycle 10%)

Speed vs. Load

Current vs. Load

TA29 Ordering Key

Voltage	1 = 12V DC	2 = 24V DC	5 = 24V DC, PTC	6 = 12V DC, PTC
Load and Speed	See page 2			
Stroke (mm)	See page 2			
Retracted Length (mm)	See page 6			
Rear Attachment (mm) See page 7	3 = Aluminum casting, U clevis, slot 6.2, depth 12.2, hole 10.2		4 = Aluminum casting, U clevis, slot 6.2, depth 12.2, hole 12.2	
Front Attachment (mm) See page 7	3 = Aluminum CNC, without slot, hole 10.2		4 = Aluminum CNC, without slot, hole 12.2	
Direction of Rear Attachment (Counterclockwise) See page 7	1 = 90°	2 = 0°		
Color	1 = Black	2 = Pantone 428C		
IP Rating	1 = Without	2 = IP54	3 = IP66	5 = IP66W
Special Functions for Spindle Sub-Assembly	0 = Without (Standard) 1 = Safety nut		2 = Standard push only 3 = Standard push only + safety nut	
Functions for Limit Switches See page 8	1 = Two switches at full retracted / extended positions to cut current 2 = Two switches at full retracted / extended positions to cut current + third one in between 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 + third one in between to send signal 5 = Two switches at full retracted/extended positions to send signal (Operate with control box: TC1, TC8, TC10, TC14)			
Output Signals	0 = Without	2 = Hall sensor * 2	P = POT	
Connector See page 8	1 = DIN 6P, 90° plug 2 = Tinned leads 4 = Big 01P, plug	C = Y cable (for direct cut system, water proof, anti pull)	E = Molex 8P, plug F = DIN 6P, 180° plug	
Cable Length (mm)	0 = Straight, 100 1 = Straight, 500 2 = Straight, 750	3 = Straight, 1000 4 = Straight, 1250 5 = Straight, 1500	6 = Straight, 2000 7 = Curly, 200 8 = Curly, 400	B~H = For direct cut system See page 8

TA29 Ordering Key Appendix

Retracted Length (mm)

1. Calculate A+B+C+D = Y
2. Retracted length needs to ≥ Stroke + Y
3. Retracted length needs to > 178

A. Front Attachment

3, 4	+112

B. Stroke (mm) — Load (N)

B. Stroke (mm)	< 3500	3500	4000	4500	6000
25~150	-	+5	+10	+15	+30
151~200	+8	+13	+18	+23	+38
201~250	+8	+13	+18	+23	+38
251~300	+13	+18	+23	+28	+43
301~350	+13	+18	+23	+28	+43
351~400	+18	+23	+28	+33	+48
401~450	+23	+28	+33	+38	+53
451~500	+28	+33	+38	+43	+58
501~550	+33	+38	+43	+48	+63
551~600	+38	+43	+48	+53	+68

C. Spindle Functions — Load (N)

C. Spindle Functions	< 3500	3500	4000	4500	6000
0	-	-	-	-	-
1	+12	+12	+12	+12	+12
2	+6	+6	+6	+6	+6
3	+18	+18	+18	+18	+18

D. Output Signals

P_POT	+20

TA29 Ordering Key Appendix

Rear Attachment (mm)

3 = Aluminum casting, U clevis, slot
6.2, depth 12.2, hole 10.2

ø10.2

26

21

12.2 6.1

4 = Aluminum casting, U clevis, slot
6.2, depth 12.2, hole 12.2

ø12.2

26

21

12.2 6.1
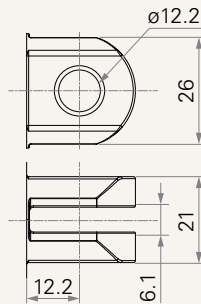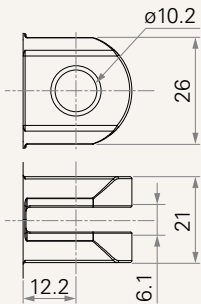
Front Attachment (mm)

3 = Aluminum CNC, without slot,
hole 10.2

ø10.2

9

ø26

4 = Aluminum CNC, without slot,
hole 12.2

ø12.2

9

ø26

Direction of Rear Attachment (Counterclockwise)

1 = 90°

Hole

90°

2 = 0°

Hole

0°

TA29 Ordering Key Appendix
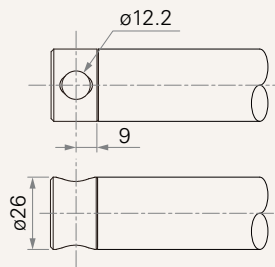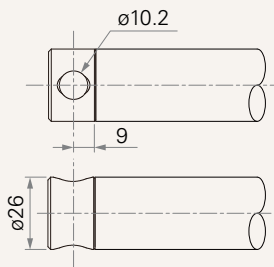
Functions for Limit Switches

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
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
5	extend (VDC+)	N/A	upper limit switch	common	retract (VDC+)	lower limit switch

---

Connector

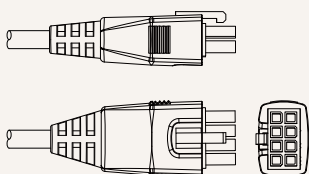1 = DIN 6P, 90° plug
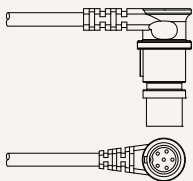
2 = Tinned leads
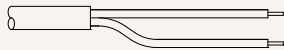
4 = Big 01P, plug
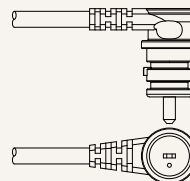
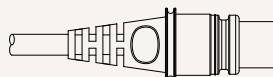C = Y cable (for direct cut system, water proof, anti pull)
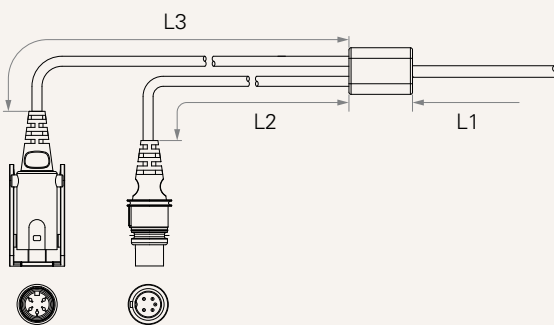
Cable length for direct cut system (mm)

CODE	L1	L2	L3
B	100	100	100
C	100	1000	400
D	100	2700	500
E	1000	100	100
F	100	600	1000
G	1500	1000	1000
H	100	100	1200

E = MOLEX 8P, plug

F = DIN 6P, 180° plug

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.