# TA38M

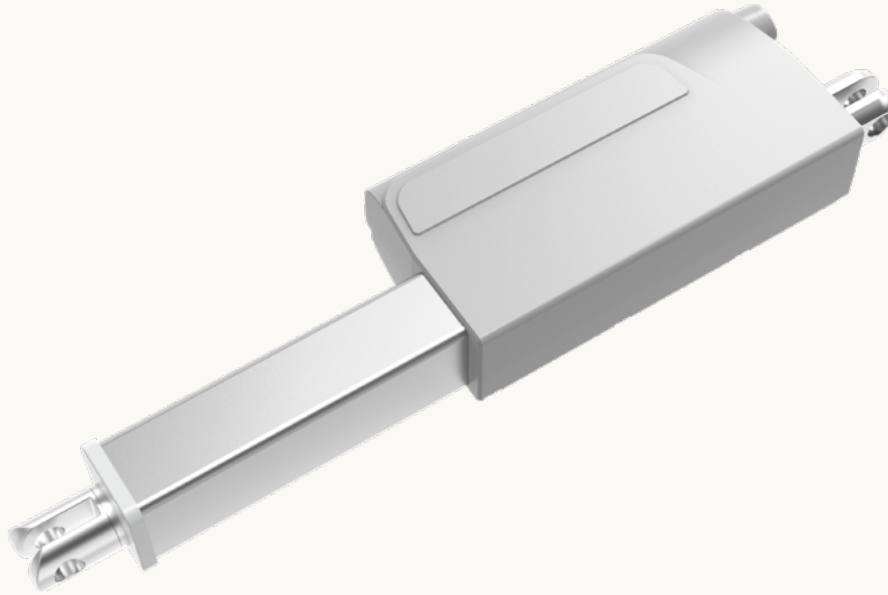## series



## Product Segments

- **Care Motion**

TiMOTION's TA38M series linear actuator is specially designed for medical applications where a compact linear actuator is needed. The TA38M features a very slim design with a small installation size of only stroke plus 115mm (note 1), providing manufacturers great freedom during the design process. The palm-sized motor with up to 2000N force is excellent for all kinds of space-limited products.

### General Features

| | |
|---|---|
| Max. load | 2,000N (push); 1,500N (pull) |
| Max. speed at max. load | 6.2mm/s |
| Max. speed at no load | 20mm/s |
| Retracted length | ≥ Stroke + 115mm (note 1) |
| IP Rating | IP66 |
| Stroke | 20~200mm |
| Options | Hall sensors |
| Voltage | 12/24V DC; 12/24V DC (PTC) |
| Color | Black or grey |
| Operational temperature range | +5°C~+45°C |

**Note1:** If stroke is from 20 to 45mm, the retracted length needs to ≥ 160mm.

## Drawing

Standard Dimensions
(mm)



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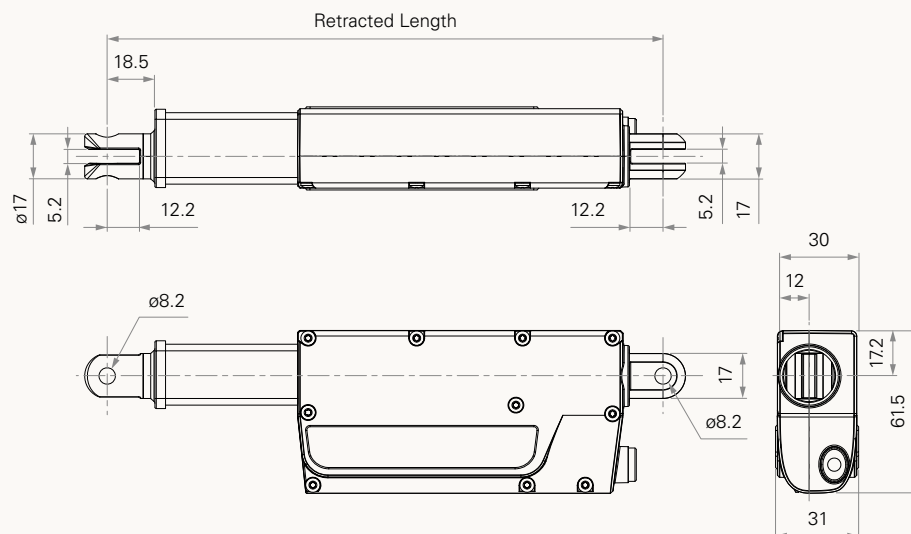
## Load and Speed

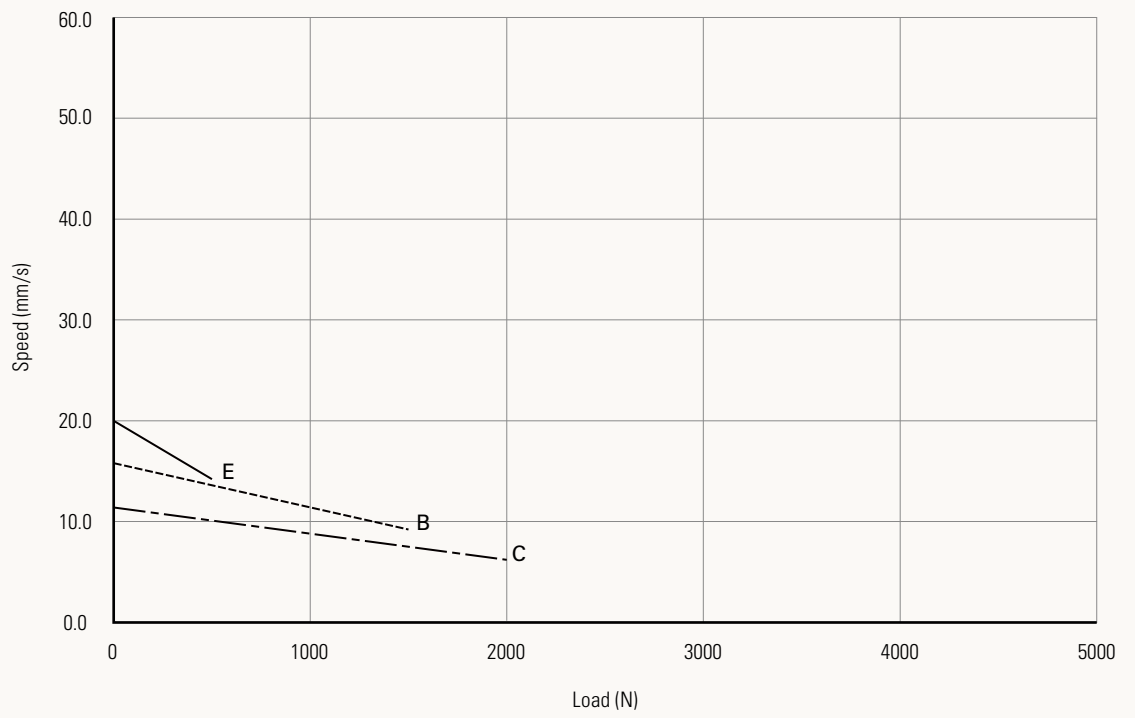| CODE | Load (N) | | Self Locking Force (N) | Typical Current (A) | | Typical Speed (mm/s) | |
|------|----------|------|------------------------|---------------------|------|----------------------|------|
| | Push | Pull | | No Load 32V DC | With Load 24V DC | No Load 32V DC | With Load 24V DC |
| **Motor Speed (6000RPM, Duty Cycle 10%)** | | | | | | | |
| **B** | 1500 | 1500 | 1200 | 1.3 | 3.8 | 15.8 | 9.2 |
| **C** | 2000 | 1500 | 2000 | 1.3 | 3.8 | 11.4 | 6.2 |
| **E** | 500 | 500 | 500 | 1.3 | 2.0 | 20.0 | 14.2 |

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

**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. ≥ 20mm, Max. please refer to below table.

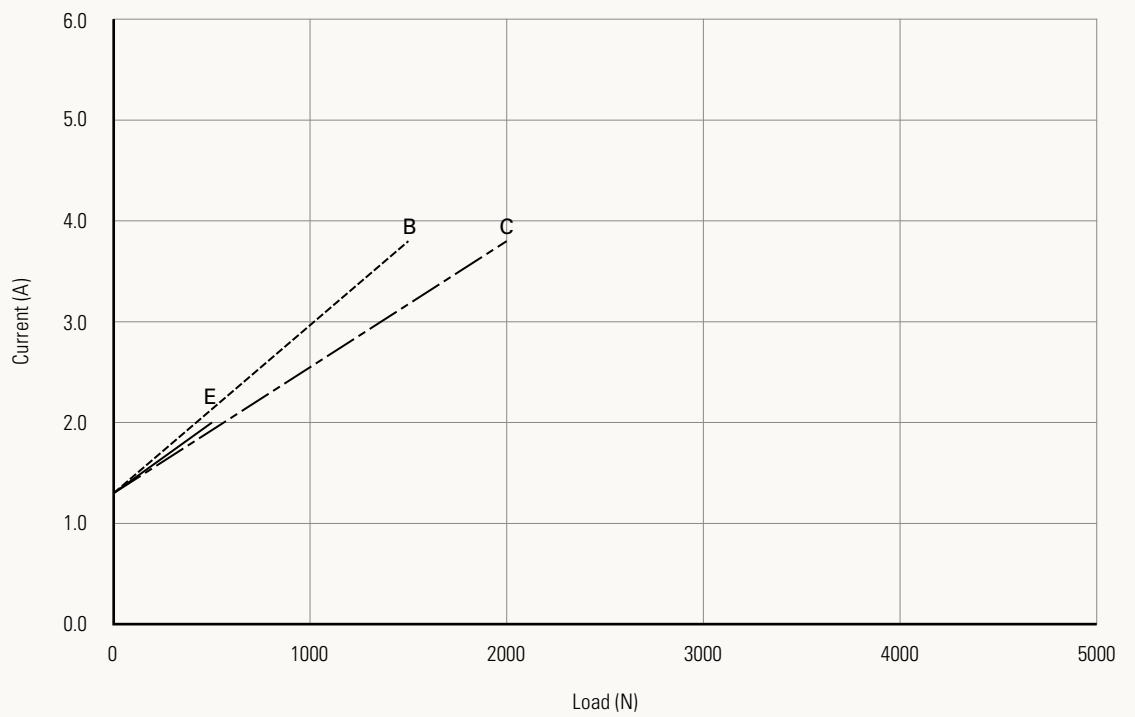| CODE | Load (N) | Max Stroke (mm) |
|------|----------|-----------------|
| **B, E** | ≤ 1500 | 200 |
| **C** | 2000 | 200 |

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## Performance Data (24V DC Motor)

Motor Speed (6000RPM, Duty Cycle 10%)

### Speed vs. Load



### Current vs. Load

# TA38M Ordering Key

## TA38M

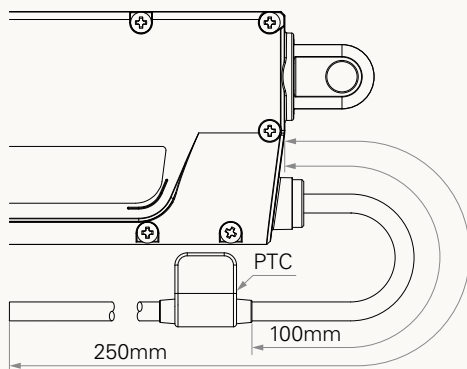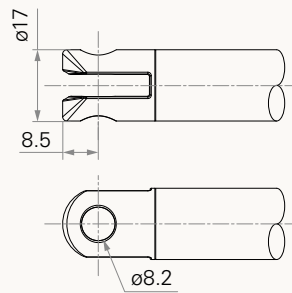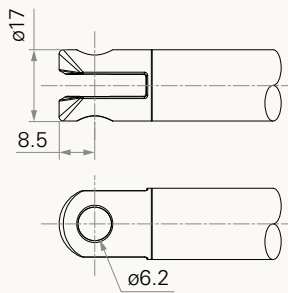| | | | | |
|---|---|---|---|---|
| **Voltage**<br>See page 5 | 1 = 12V DC | 2 = 24V DC | 5 = 24V DC, PTC | 6 = 12V DC, PTC |
| **Load and Speed** | See page 2 | | | |
| **Stroke (mm)** | See page 2 | | | |
| **Retracted Length (mm)** | See page 5 | | | |
| **Rear Attachment (mm)**<br>See page 5 | E = Aluminum casting, U clevis, width 5.2, depth 12.2, hole 6.2 | | G = Aluminum casting, U clevis, width 5.2, depth 12.2, hole 8.2 | |
| **Front Attachment (mm)**<br>See page 6 | E = Aluminum casting, U clevis, width 5.2, depth 12.2, hole 6.2 | | G = Aluminum casting, U clevis, width 5.2, depth 12.2, hole 8.2 | |
| **Direction of Rear Attachment (Counterclockwise)**<br>See page 6 | 1 = 90° | 2 = 0° | | |
| **Color** | 1 = Black | 2 = Pantone 428C | | |
| **IP Rating** | 1 = Without | 2 = IP54 | 3 = IP66 | |
| **Special Functions for Spindle Sub-Assembly** | 0 = Without | 2 = Standard push only | | |
| **Functions for Limit Switches**<br>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 | |
| **Output Signals** | 0 = Without | 5 = Hall sensor * 2 | | |
| **Connector**<br>See page 7 | 1 = DIN 6P, 90° plug<br>2 = Tinned leads<br>4 = Big 01P, plug | C = Y cable (For direct cut system, water proof, anti pull) | E = Molex 8P, plug<br>F = DIN 6P, 180° plug | |
| **Cable Length (mm)** | 0 = Straight, 100<br>1 = Straight, 500<br>2 = Straight, 750 | 3 = Straight, 1000<br>4 = Straight, 1250<br>5 = Straight, 1500 | 6 = Straight, 2000<br>7 = Curly, 200<br>8 = Curly, 400 | B~H = For direct cut system. See page 7 |

## Retracted Length (mm)

1. Calculate A+B = Y

2. Stroke 25~45mm, the retracted length needs to ≥ 160mm

3. Stroke 46~200mm, the retracted length needs to ≥ Stroke + Y

| A. | | |
|---|---|---|
| **Front Attach.** | Rear Attach. | |
| | General | |
| | E, G | |
| **E, G** | +115 | |

| B. | |
|---|---|
| **Stroke (mm)** | |
| **20~200** | - |

| C. | | |
|---|---|---|
| **Spindle Functions** | Load(N) | |
| | General | For patient hoist |
| | < 2500 | |
| **0** | - | - |
| **2** | +5 | - |

## Voltage



PTC

100mm

250mm

## Rear Attachment (mm)

E = Aluminum casting, U clevis, width 5.2, depth 12.2, hole 6.2



ø6.2

17

17

12.2

5.2

G = Aluminum casting, U clevis, width 5.2, depth 12.2, hole 8.2



ø8.2

17

17

12.2

5.2

# **TA38M** Ordering Key Appendix
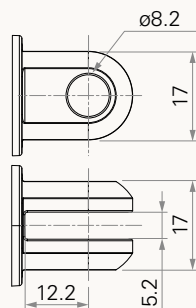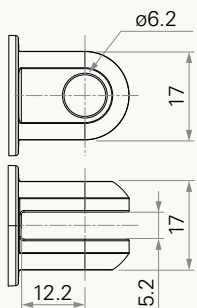
## Front Attachment (mm)

E = Aluminum casting, U clevis,
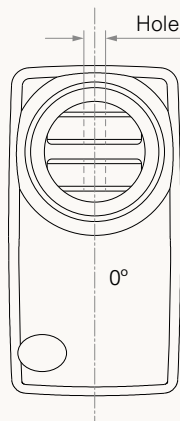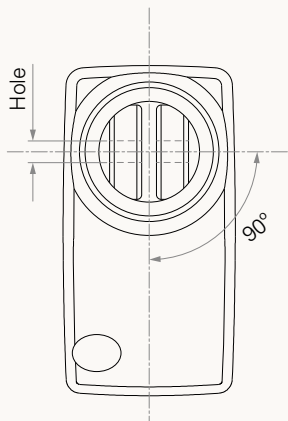  width 5.2, depth 12.2, hole 6.2

ø17

8.5

ø6.2

G = Aluminum casting, U clevis,
  width 5.2, depth 12.2, hole 8.2

ø17

8.5

ø8.2

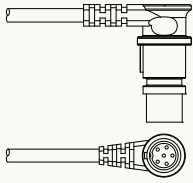## Direction of Rear Attachment (Counterclockwise)

1 = 90°

2 = 0°

Hole

90°

Hole

0°

## Functions for Limit Switches

**Wire Definitions**

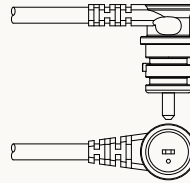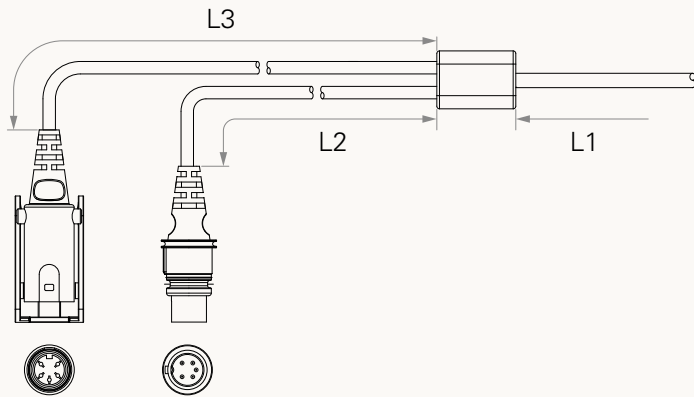| CODE | Pin | | | | | |
|------|-----|---|---|---|---|---|
| | ● 1 (Green) | ● 2 (Red) | ○ 3 (White) | ● 4 (Black) | ● 5 (Yellow) | ● 6 (Blue) |
| **1** | extend (VDC+) | N/A | N/A | N/A | retract (VDC+) | N/A |
| **3** | extend (VDC+) | common | upper limit switch | N/A | retract (VDC+) | lower limit switch |

## Connector

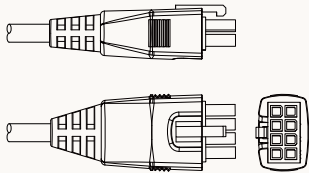1 = DIN 6P, 90° plug

2 = Tinned leads
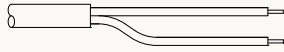
4 = Big 01P, plug

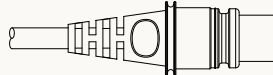C = Y cable (For direct cut system, water proof, anti pull)

### 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.