

# TA36

## series



### Product Segments

#### • Care Motion

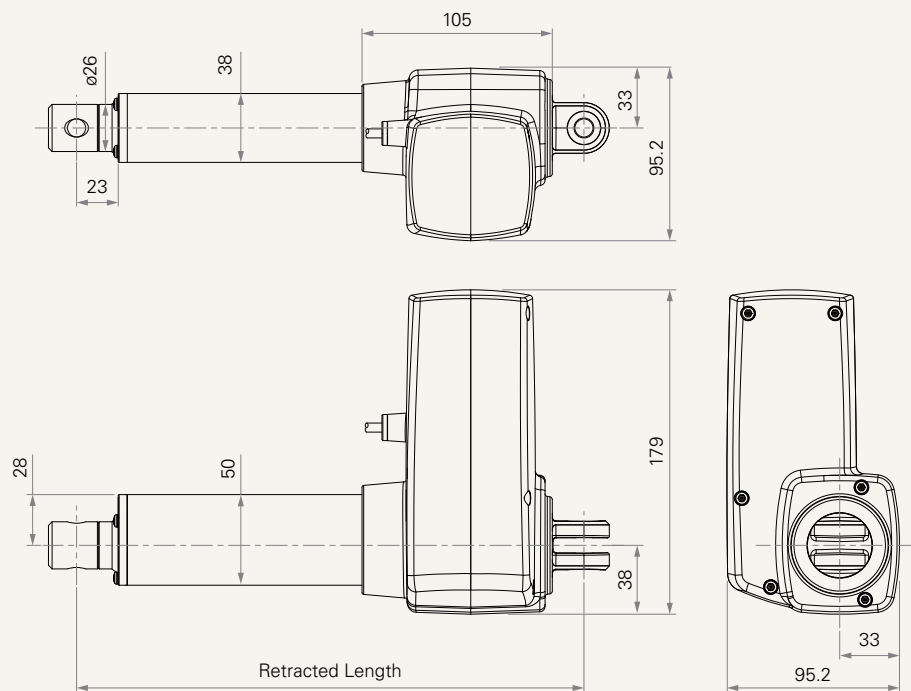
TA36 is one of our new generation medical actuators. It can lift up to 10000N and its IP rating is up to IP66W. The zero backlash design is stable and can be applied to various medical applications. The TA36 is suitable for operating beds or high-load patient lift systems.

#### General Features

|                                                      |                                     |
|------------------------------------------------------|-------------------------------------|
| Max. load                                            | 10,000N (push); 6,000N (pull)       |
| Max. speed at max. load                              | 5.4mm/s                             |
| Max. speed at no load                                | 13.9mm/s                            |
| Retracted length                                     | ≥ Stroke + 170mm                    |
| IP rating                                            | IP66W                               |
| Certificate                                          | IEC60601-1, ES60601-1, IEC60601-1-2 |
| Stroke                                               | 25~600mm                            |
| Output signals                                       | Hall sensors                        |
| Options                                              | Manual release (for patient hoist)  |
| Voltage                                              | 12/24/36V DC; 24V DC (PTC)          |
| Color                                                | Black, grey                         |
| Operational temperature range<br>at full performance | +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 (4300RPM long motor, Duty cycle 10%) |          |      |                        |                     |                  |                      |                  |
| B                                                | 6000     | 6000 | 6000                   | 1.5                 | 6.0              | 13.9                 | 8.0              |
| C                                                | 8000     | 6000 | 8000                   | 1.5                 | 7.8              | 11.9                 | 7.0              |
| D                                                | 10000    | 6000 | 10000                  | 1.5                 | 9.8              | 10.3                 | 5.4              |
| E                                                | 10000    | 6000 | 10000                  | 1.5                 | 6.0              | 6.0                  | 3.9              |

## Note

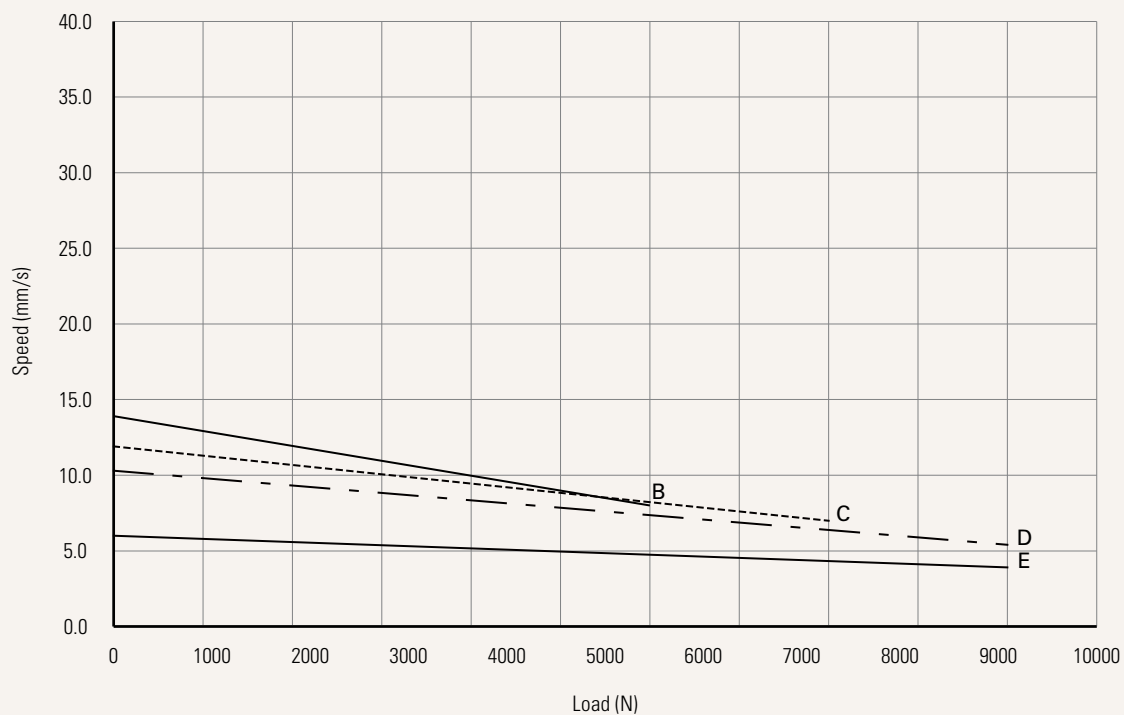
- Please refer to the approved drawing for the final authentic value.
- This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.
- The current & speed in table are tested when the actuator is extending under push load.
- 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)
- Standard stroke: Min.  $\geq 25$ mm, Max. please refer to below table.

| CODE           | Load (N)       | Max Stroke (mm) |
|----------------|----------------|-----------------|
| <b>C, D, E</b> | $\geq 8000$    | 450             |
| <b>B</b>       | $\approx 6000$ | 600             |

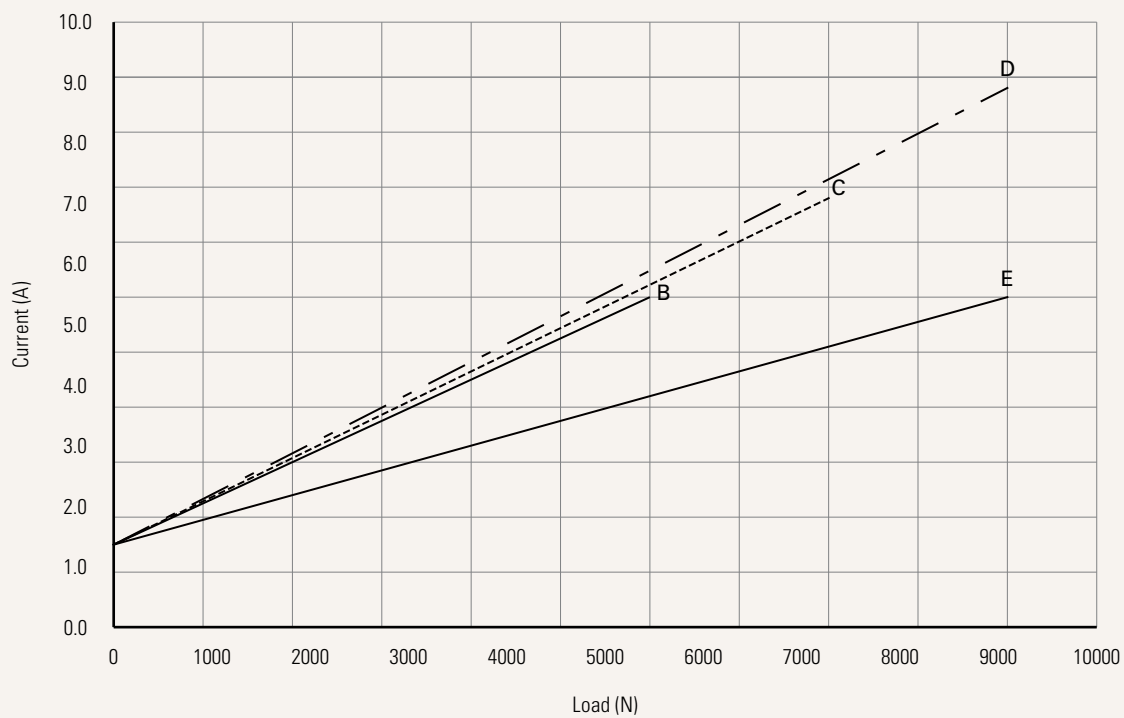
## Performance Data (24V DC Motor)

Motor Speed (4300RPM long motor, Duty cycle 10%)

Speed vs. Load



Current vs. Load



# TA36 Zero Backlash Ordering Key

TA36

Version: 20240304-J

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |            |                 |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|-----------------|
| <b>Voltage</b>                                                                       | 1 = 12V DC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2 = 24V DC | 3 = 36V DC | 5 = 24V DC, PTC |
| <b>Load and Speed</b>                                                                | C = 8000N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | E = 10000N |            |                 |
| <b>Stroke (mm)</b>                                                                   | <a href="#">See page 2</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |                 |
| <b>Retracted Length (mm)</b>                                                         | <a href="#">See page 7</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |                 |
| <b>Rear Attachment (mm)</b><br><a href="#">See page 8</a>                            | 1 = Aluminum casting, no slot, hole 10.0<br>2 = Aluminum casting, no slot, hole 12.0<br>5 = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 10.0<br>6 = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 12.0<br>7 = Aluminum casting, clevis U, slot 8.2, depth 17.0, hole 10.0<br>8 = Aluminum casting, clevis U, slot 8.2, depth 17.0, hole 12.0                                                                                                                                                                                |            |            |                 |
| <b>Front Attachment (mm)</b><br><a href="#">See page 8</a>                           | 1 = Aluminum CNC, no slot, hole 10.0<br>2 = Aluminum CNC, no slot, hole 12.0<br>5 = Iron CNC, clevis U, slot 6.2, depth 17.0, hole 10.0<br>6 = Iron CNC, clevis U, slot 6.2, depth 17.0, hole 12.0<br>7 = Iron CNC, clevis U, slot 8.2, depth 17.0, hole 10.0<br>8 = Iron CNC, clevis U, slot 8.2, depth 17.0, hole 12.0<br>K = Iron, rod end bearing, no slot, hole 10.0                                                                                                                                                                       |            |            |                 |
| <b>Direction of Rear Attachment (Counterclockwise)</b><br><a href="#">See page 9</a> | 1 = 0°<br>3 = 90°                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |            |                 |
| <b>Color</b>                                                                         | 1 = Black<br>2 = Pantone 428C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |            |                 |
| <b>IP Rating</b>                                                                     | 1 = Without<br>2 = IP54<br>3 = IP66<br>5 = IP66W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |            |                 |
| <b>Special Functions for Spindle Sub-Assembly</b>                                    | 0 = Without (Standard)<br>1 = Safety nut                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |            |                 |
| <b>Functions for Limit Switches</b><br><a href="#">See page 9</a>                    | 1 = Two switches at full retracted / extended positions to cut current<br>2 = Two switches at full retracted / extended positions to cut current + third one in between to send signal<br>3 = Two switches at full retracted / extended positions to send signal<br>4 = Two switches at full retracted / extended positions to send signal + third one in between to send signal<br>5 = Two switches at full retracted / extended positions to send signal (Operate with control box: TC1, TC8, TC10, TC14, TC21; compatible with hall sensors) |            |            |                 |
| <b>Output Signals</b>                                                                | 0 = Without<br>2 = Hall sensor * 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |            |                 |
| <b>Connector</b><br><a href="#">See page 10</a>                                      | 1 = DIN 6P, 90° plug<br>2 = Tinned leads<br>4 = Big 01P, plug<br>E = Molex 8P, plug<br>F = DIN 6P, 180° plug<br>G = Audio plug<br>P = Molex 8P, 90° plug, without anti-clip                                                                                                                                                                                                                                                                                                                                                                     |            |            |                 |
| <b>Cable Length (mm)</b>                                                             | 0 = Straight, 100<br>1 = Straight, 500<br>2 = Straight, 750<br>3 = Straight, 1000<br>4 = Straight, 1250<br>5 = Straight, 1500<br>6 = Straight, 2000<br>7 = Curly, 200<br>8 = Curly, 400                                                                                                                                                                                                                                                                                                                                                         |            |            |                 |

# TA36 Standard Version Ordering Key

TA36

Version: 20240304-J

|                                                        |                                                                                                                                                           |                       |                                                               |                 |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------|-----------------|
| <b>Voltage</b>                                         | 1 = 12V DC                                                                                                                                                | 2 = 24V DC            | 3 = 36V DC                                                    | 5 = 24V DC, PTC |
| <b>Load and Speed</b>                                  | <a href="#">See page 2</a>                                                                                                                                |                       |                                                               |                 |
| <b>Stroke (mm)</b>                                     | <a href="#">See page 2</a>                                                                                                                                |                       |                                                               |                 |
| <b>Retracted Length (mm)</b>                           | <a href="#">See page 7</a>                                                                                                                                |                       |                                                               |                 |
| <b>Rear Attachment (mm)</b>                            | C = Aluminum casting, clevis U, slot 8.2, depth 17.0, hole 10.2, with plastic T-bushing                                                                   |                       |                                                               |                 |
|                                                        | <a href="#">See page 8</a>                                                                                                                                |                       |                                                               |                 |
| <b>Front Attachment (mm)</b>                           | B = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 12.2                                                                                           |                       |                                                               |                 |
|                                                        | C = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 10.2, with plastic T-bushing                                                                   |                       |                                                               |                 |
|                                                        | <a href="#">See page 8</a>                                                                                                                                |                       |                                                               |                 |
| <b>Direction of Rear Attachment (Counterclockwise)</b> | 1 = 0°                                                                                                                                                    | 3 = 90°               |                                                               |                 |
|                                                        | <a href="#">See page 9</a>                                                                                                                                |                       |                                                               |                 |
| <b>Color</b>                                           | 1 = Black                                                                                                                                                 | 2 = Pantone 428C      |                                                               |                 |
| <b>IP Rating</b>                                       | 1 = Without                                                                                                                                               | 2 = IP54              | 3 = IP66                                                      | 5 = IP66W       |
| <b>Special Functions for Spindle Sub-Assembly</b>      | 0 = Without (Standard)<br>1 = Safety nut                                                                                                                  |                       | 2 = Standard push only<br>3 = Standard push only + safety nut |                 |
| <b>Functions for Limit Switches</b>                    | 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, TC21; compatible with hall sensors) |                       |                                                               |                 |
|                                                        | <a href="#">See page 9</a>                                                                                                                                |                       |                                                               |                 |
| <b>Output Signals</b>                                  | 0 = Without                                                                                                                                               | 2 = Hall sensor * 2   |                                                               |                 |
| <b>Connector</b>                                       | 1 = DIN 6P, 90° plug                                                                                                                                      | E = Molex 8P, plug    | P = Molex 8P, 90° plug,                                       |                 |
|                                                        | 2 = Tinned leads                                                                                                                                          | F = DIN 6P, 180° plug | without anti-clip                                             |                 |
|                                                        | 4 = Big 01P, plug                                                                                                                                         | G = Audio plug        |                                                               |                 |
|                                                        | <a href="#">See page 10</a>                                                                                                                               |                       |                                                               |                 |
| <b>Cable Length (mm)</b>                               | 0 = Straight, 100                                                                                                                                         | 3 = Straight, 1000    | 6 = Straight, 2000                                            |                 |
|                                                        | 1 = Straight, 500                                                                                                                                         | 4 = Straight, 1250    | 7 = Curly, 200                                                |                 |
|                                                        | 2 = Straight, 750                                                                                                                                         | 5 = Straight, 1500    | 8 = Curly, 400                                                |                 |

# TA36 Patient Hoist Ordering Key

TA36

Version: 20240304-J

|                                                        |                                                                                                                                |                       |                    |           |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------|-----------|
| <b>Voltage</b>                                         | 2 = 24V DC                                                                                                                     | 5 = 24V DC, PTC       |                    |           |
| <b>Load and Speed</b>                                  | <a href="#">See page 2</a>                                                                                                     |                       |                    |           |
| <b>Stroke (mm)</b>                                     | <a href="#">See page 2</a>                                                                                                     |                       |                    |           |
| <b>Retracted Length (mm)</b>                           | <a href="#">See page 7</a>                                                                                                     |                       |                    |           |
| <b>Rear Attachment (mm)</b>                            | C = Aluminum casting, clevis U, slot 8.2, depth 17.0, hole 10.2, with plastic T-bushing                                        |                       |                    |           |
| <a href="#">See page 8</a>                             |                                                                                                                                |                       |                    |           |
| <b>Front Attachment (mm)</b>                           | F = Aluminum casting, U clevis, slot 8.2, depth 19.0, hole 10.2, with plastic T-bushing, for Manual Release                    |                       |                    |           |
| <a href="#">See page 8</a>                             | G = Aluminum casting, U clevis, slot 8.2, depth 19.0, hole 10.2, with plastic T-bushing, Without press down for manual release |                       |                    |           |
| <b>Direction of Rear Attachment (Counterclockwise)</b> | 1 = 0°                                                                                                                         |                       |                    |           |
| <a href="#">See page 9</a>                             |                                                                                                                                |                       |                    |           |
| <b>Color</b>                                           | 1 = Black                                                                                                                      | 2 = Pantone 428C      |                    |           |
| <b>IP Rating</b>                                       | 1 = Without                                                                                                                    | 2 = IP54              | 3 = IP66           | 5 = IP66W |
| <b>Special Functions for Spindle Sub-Assembly</b>      | 6 = Mechanical push only + safety nut                                                                                          |                       |                    |           |
| <b>Functions for Limit Switches</b>                    | 1 = Two switches at full retracted / extended positions to cut current                                                         |                       |                    |           |
| <a href="#">See page 9</a>                             |                                                                                                                                |                       |                    |           |
| <b>Output Signals</b>                                  | 0 = Without                                                                                                                    |                       |                    |           |
| <b>Connector</b>                                       | 1 = DIN 6P, 90° plug                                                                                                           | F = DIN 6P, 180° plug | G = Audio plug     |           |
| <a href="#">See page 10</a>                            |                                                                                                                                |                       |                    |           |
| <b>Cable Length (mm)</b>                               | 1 = Straight, 500                                                                                                              | 3 = Straight, 1000    | 5 = Straight, 1500 |           |
|                                                        | 2 = Straight, 750                                                                                                              | 4 = Straight, 1250    | 6 = Straight, 2000 |           |

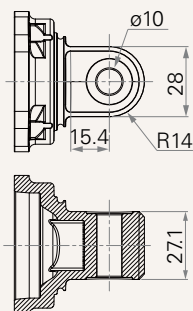
## Retracted Length (mm)

1. Calculate  $A+B = Y$
2. Retracted length needs to  $\geq \text{Stroke} + Y$

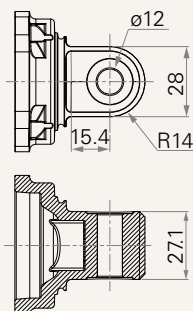
| A. Front Attachment           |      |               | B. Load V.S. Stroke |          |     |      |               |
|-------------------------------|------|---------------|---------------------|----------|-----|------|---------------|
| CODE                          |      | Patient Hoist | Stroke (mm)         | Load (N) |     |      | Patient Hoist |
|                               |      |               |                     | General  |     |      |               |
|                               |      |               |                     | B        | C   | D, E |               |
| <b>1, 2</b>                   | +170 | -             | <b>25~150</b>       | -        | -   | +5   | -             |
| <b>5, 6, 7, 8</b>             | +180 | -             | <b>151~200</b>      | -        | +5  | +10  | -             |
| <b>B, C</b>                   | +182 | -             | <b>201~250</b>      | +5       | +10 | +15  | -             |
| <b>K</b>                      | +182 | -             | <b>251~300</b>      | +10      | +15 | +20  | +5            |
| <b>F, G (Patient Hoist) -</b> | -    | +253          | <b>301~350</b>      | +15      | +20 | +25  | +10           |
|                               |      |               | <b>351~400</b>      | +20      | +25 | +30  | +15           |
|                               |      |               | <b>401~450</b>      | +25      | +30 | +35  | +20           |
|                               |      |               | <b>451~500</b>      | +30      | +35 | +40  | +25           |
|                               |      |               | <b>501~550</b>      | +35      | +40 | +45  | +30           |
|                               |      |               | <b>551~600</b>      | +40      | +45 | +50  | +35           |
|                               |      |               | <b>601~650</b>      | +45      | +50 | +55  | +40           |
|                               |      |               | <b>651~700</b>      | +50      | +55 | -    | -             |
|                               |      |               | <b>701~750</b>      | +55      | +60 | -    | -             |
|                               |      |               | <b>751~800</b>      | +60      | +65 | -    | -             |
|                               |      |               | <b>801~850</b>      | +65      | -   | -    | -             |
|                               |      |               | <b>851~900</b>      | +70      | -   | -    | -             |

## Rear Attachment (mm)

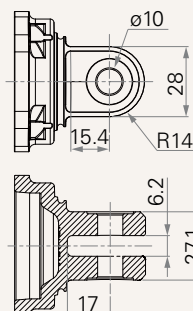
1 = Aluminum casting, no slot, hole 10.0



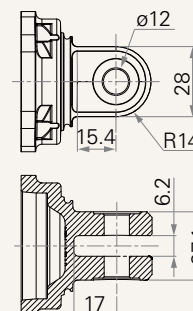
2 = Aluminum casting, no slot, hole 12.0



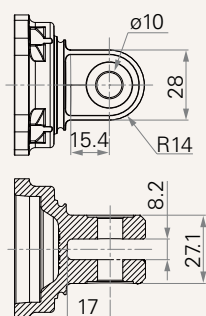
5 = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 10.0



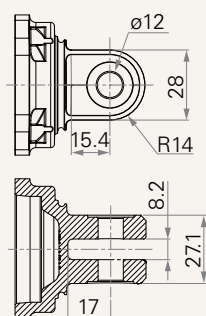
6 = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 12.0



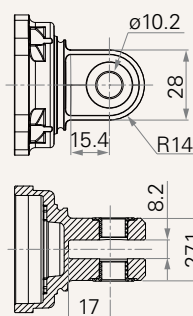
7 = Aluminum casting, clevis U, slot 8.2, depth 17.0, hole 10.0



8 = Aluminum casting, clevis U, slot 8.2, depth 17.0, hole 12.0

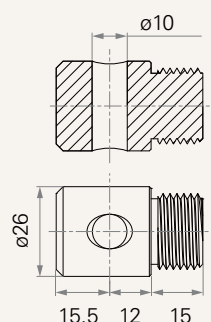


C = Aluminum casting, clevis U, slot 8.2, depth 17.0, hole 10.2, T bush

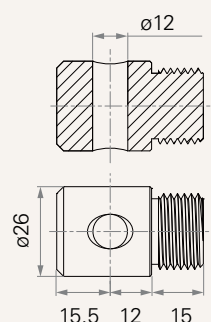


## Front Attachment (mm)

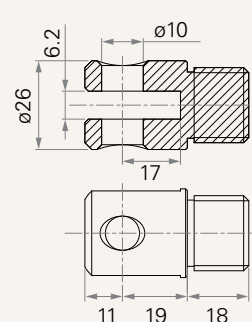
1 = Aluminum CNC, no slot, hole 10.0



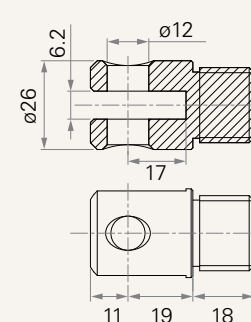
2 = Aluminum CNC, no slot, hole 12.0



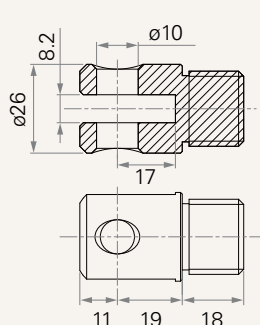
5 = Iron CNC, clevis U, slot 6.2, depth 17.0, hole 10.0



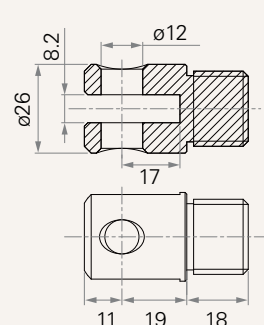
6 = Iron CNC, clevis U, slot 6.2, depth 17.0, hole 12.0



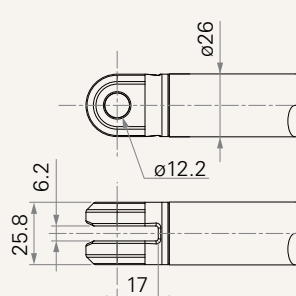
7 = Iron CNC, clevis U, slot 8.2, depth 17.0, hole 10.0



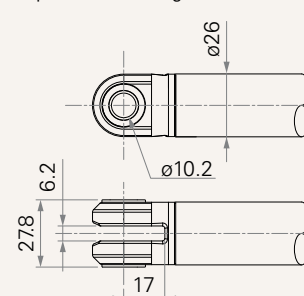
8 = Iron CNC, clevis U, slot 8.2, depth 17.0, hole 12.0



B = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 12.2



C = Aluminum casting, clevis U, slot 6.2, depth 17.0, hole 10.2, with plastic T-bushing

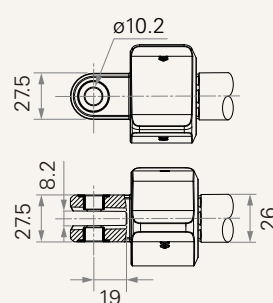
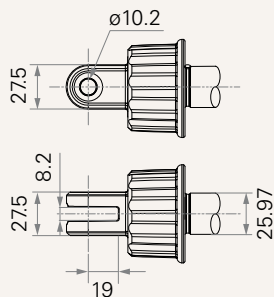
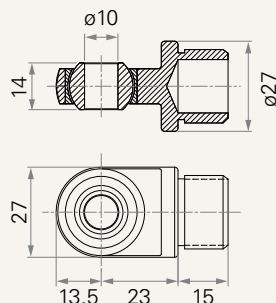


## Front Attachment (mm)

K = Iron, rod end bearing, no slot, hole 10.0

F = Aluminum casting, U clevis, slot 8.2, depth 19.0, hole 10.2, with plastic T-bushing, for Manual Release

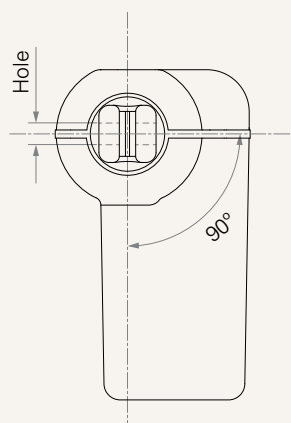
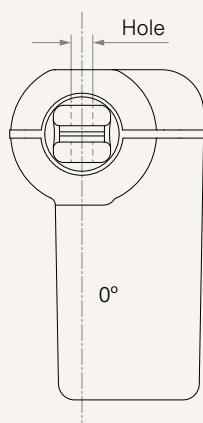
G = Aluminum casting, U clevis, slot 8.2, depth 19.0, hole 10.2, with plastic T-bushing, Without press down for manual release



## Direction of Rear Attachment (Counterclockwise)

1 = 0°

3 = 90°



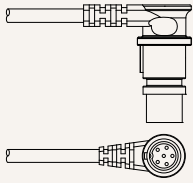
## Functions for Limit Switches

### Wire Definitions

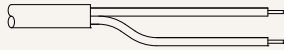
| CODE | Pin           |         |                     |                     |                |                    |
|------|---------------|---------|---------------------|---------------------|----------------|--------------------|
|      | 1 (Green)     | 2 (Red) | 3 (White)           | 4 (Black)           | 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

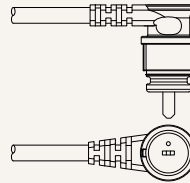
1 = DIN 6P, 90° plug



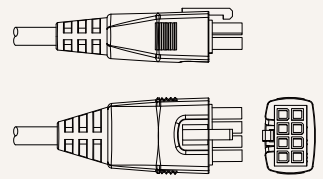
2 = Tinned leads



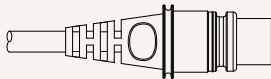
4 = Big 01P, plug



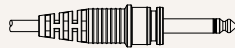
E = Molex 8P, plug



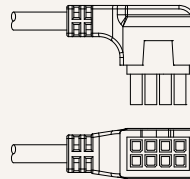
F = DIN 6P, 180° plug



G = Audio plug



P = Molex 8P, 90° plug, without anti-clip



## 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.