

# CTH12

單軸  
1-axis

## 螺桿驅動 Ball Screw Drive



最大行程  
Maximum Stroke **1050mm**

最高速度  
Maximum Speed **1000mm/s**

馬達容量  
Motor Output **42□mm**

滾珠螺桿  
Ball Screw **∅16mm**

直線滑軌  
Linear Guide **12x7.5-2pcs**

### 型號表示方式 Ordering Method

# CTH12-L10-300-M-TC100-03-A0001

本體型號  
Model

特注式樣  
Customization Order No.

螺桿導程  
Ball Screw Lead

|    |      |
|----|------|
| 05 | 5mm  |
| 10 | 10mm |
| 20 | 20mm |

行程  
Stroke

|                  |
|------------------|
| 50-1050mm        |
| 間隔50 Pitch 50 mm |

馬達位置  
Motor Position

|    |                                       |
|----|---------------------------------------|
| M  | 馬達直結<br>Motor Hidden in the Structure |
| BM | 馬達下折<br>Motor On Lower Side           |
| BR | 馬達右折<br>Motor On Right Side           |
| BL | 馬達左折<br>Motor On Left Side            |

對應控制器  
Corresponding Controller

|       |
|-------|
| TC100 |
|-------|

線長  
Cable Length

|    |     |
|----|-----|
| 01 | 1m  |
| 03 | 3m  |
| 05 | 5m  |
| 10 | 10m |

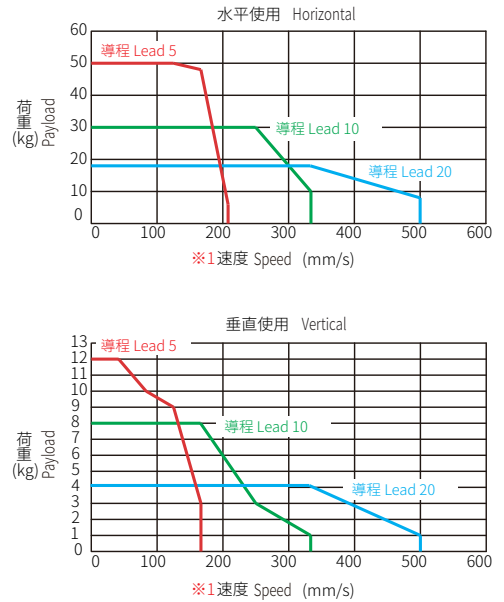
標配3m  
Standard:3m

**基本仕様 Specification**

|                            |                              |                      |      |       |     |
|----------------------------|------------------------------|----------------------|------|-------|-----|
| 規格<br>Spec                 | 位置重複精度 Repeatability (mm)    | ±0.01                |      |       |     |
|                            | 螺桿導程 Ball Screw Lead (mm)    | 5                    | 10   | 20    |     |
|                            | 最高速度 Maximum Speed (mm/s) ※2 | ≤250                 | ≤500 | ≤1000 |     |
|                            | 最大可搬重量<br>Maximum Payload    | 水平使用 Horizontal (kg) | ≤50  | ≤30   | ≤18 |
|                            |                              | 垂直使用 Vertical (kg)   | ≤12  | ≤8    | ≤4  |
|                            | 定格推力 Rated Thrust (N)        | 565                  | 283  | 141   |     |
| 標準行程 Stroke / Pitch(mm) ※1 | 50-1050 / 50                 |                      |      |       |     |
| 部品<br>Parts                | 馬達尺寸 Motor Dimension (mm)    | 42□                  |      |       |     |
|                            | 滾珠螺桿規格 Ball Screw Spec       | C7 φ 16mm            |      |       |     |

※1 行程超過750時，會產生螺桿偏擺震動，此時請將速度調降。詳細請參考P21頁說明。  
When the stroke is over 750mm, the run-out of the ballscrew will occur.  
We recommend to low down the working speed under this circumstances. Please refer to P21 for details.  
※2 此處最高速度為軟體移動速度設定為100%時。  
The maximum speed shown here is when software speed setting is 100%.

**速度-荷重曲線圖 Speed-Payload Curve Diagram**



**容許負載力距表 Allowable Moment**

| (單位 Unit:mm)                    | (單位 Unit:mm)              | (單位 Unit:mm)                  |
|---------------------------------|---------------------------|-------------------------------|
| 水平安裝<br>Horizontal Installation | 壁面安裝<br>Wall Installation | 垂直安裝<br>Vertical Installation |
| 導程 5 Lead                       | 導程 5 Lead                 | 導程 5 Lead                     |
| 30kg 1000 70 85                 | 30kg 75 65 950            | 8kg 300 300                   |
| 40kg 800 45 50                  | 40kg 50 40 700            | 10kg 260 260                  |
| 50kg 650 35 40                  | 50kg 35 30 500            | 12kg 220 220                  |
| 導程 10 Lead                      | 導程 10 Lead                | 導程 10 Lead                    |
| 15kg 1050 110 70                | 15kg 150 140 950          | 4kg 680 680                   |
| 25kg 880 100 115                | 20kg 110 95 800           | 6kg 450 450                   |
| 30kg 550 60 70                  | 30kg 65 55 500            | 8kg 320 320                   |
| 導程 20 Lead                      | 導程 20 Lead                | 導程 20 Lead                    |
| 8kg 1000 240 250                | 8kg 180 180 750           | 1kg 1000 1000                 |
| 12kg 650 150 160                | 12kg 145 140 570          | 2kg 800 800                   |
| 18kg 400 90 95                  | 18kg 90 85 375            | 4kg 600 600                   |

**靜態容許負載慣量 Static Loading Moment**

|    |               |
|----|---------------|
|    | (單位 Unit:N.m) |
| MY | 150           |
| MP | 150           |
| MR | 130           |

**對應控制器一覽表 Corresponding Controller Chart**

| 外觀<br>Exterior | 控制器型號<br>Controller Model | 控制介面<br>Control Mode  | 特點<br>Features  | 電氣規格<br>Electrical Spec.  | 詳細參閱<br>Reference Page |
|----------------|---------------------------|---|---|---|------------------------|
|                | TC100                     | <b>Pulse控制</b><br>Pulse Control Mode<br><br><b>I/O控制</b><br>I/O Control Mode<br><br><b>通訊控制</b><br>Communication Control Mode | Line driver 500k Hz<br>Open collector 200k Hz<br>同時間只能使用一種。<br>Support Line driver and Open collector Max.pulse receiving speed 500k/200k Hz.<br><br>利用I/O變化，最多可以執行127個位置控制。<br>By I/O control, max. 127 positioning points, can be executed.<br><br>採Modbus的RS485通訊介面(最大並接16台)及一組mini USB (TOYO Single專用)。<br>Use Modbus as the interface of RS485 (connect max. 16 controllers) and 1 set mini USB. (special for TOYO-single) | 控制電路只能使用24V。<br>工作電壓DC24V，額定電流 2A，峰值電流3A。<br>工作電壓DC48V，額定電流 1A，峰值電流2A。<br>使用DC48V時在相同扭力下，轉速會提升，詳細內容請跟服務窗口連絡。<br>The voltage of control circuit is 24V only.<br>Operating voltage DC24V, rated current 2A, peak current 3A.<br>Operating voltage DC48V, rated current 1A, peak current 2A.<br>When the voltage is DC48V but same torque, the rotation speed will be raised. Please contact your service window to details. | P.99                   |

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單軸  
1-axis

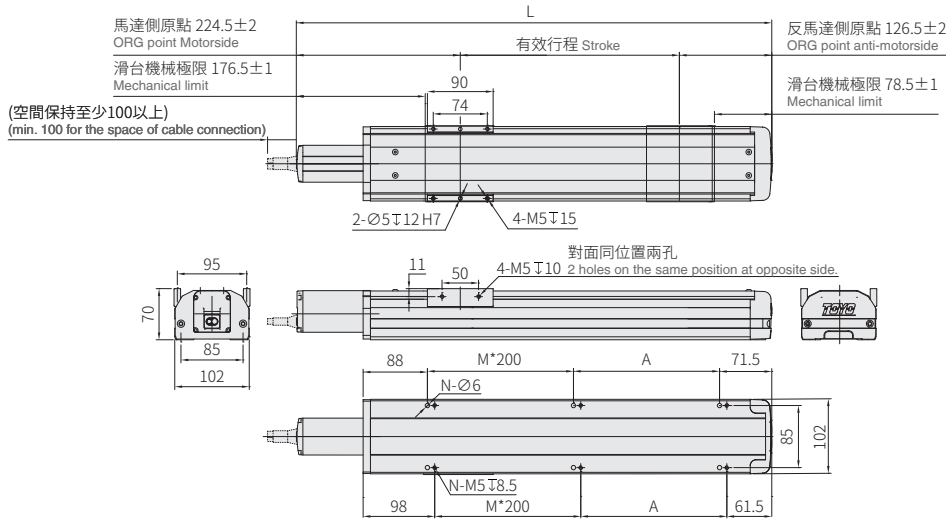
# 螺桿驅動 Ball Screw Drive

M 馬達直結 Motor Hidden in the Structure



CAD圖面可至www.toyorobot.com下載  
Please download the CAD file from TOYO's website: www.toyorobot.com

(單位 Unit : mm)



| 有效行程 Stroke | 50   | 100  | 150  | 200  | 250  | 300  | 350  | 400 | 450  | 500  | 550  | 600  | 650   | 700   | 750   | 800  | 850   | 900   | 950   | 1000  | 1050  |
|-------------|------|------|------|------|------|------|------|-----|------|------|------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| L           | 401  | 451  | 501  | 551  | 601  | 651  | 701  | 751 | 801  | 851  | 901  | 951  | 1001  | 1051  | 1101  | 1151 | 1201  | 1251  | 1301  | 1351  | 1401  |
| A           | 150  | 200  | 50   | 100  | 150  | 200  | 50   | 100 | 150  | 200  | 50   | 100  | 150   | 200   | 50    | 100  | 150   | 200   | 50    | 100   | 150   |
| M           | 0    | 0    | 1    | 1    | 1    | 1    | 2    | 2   | 2    | 2    | 3    | 3    | 3     | 3     | 4     | 4    | 4     | 4     | 5     | 5     | 5     |
| N           | 4    | 4    | 6    | 6    | 6    | 6    | 8    | 8   | 8    | 8    | 10   | 10   | 10    | 10    | 12    | 12   | 12    | 12    | 14    | 14    | 14    |
| *Weight(kg) | 5.48 | 5.87 | 6.26 | 6.64 | 7.03 | 7.42 | 7.81 | 8.2 | 8.58 | 8.97 | 9.36 | 9.75 | 10.14 | 10.52 | 10.91 | 11.3 | 11.69 | 12.08 | 12.46 | 12.85 | 13.24 |

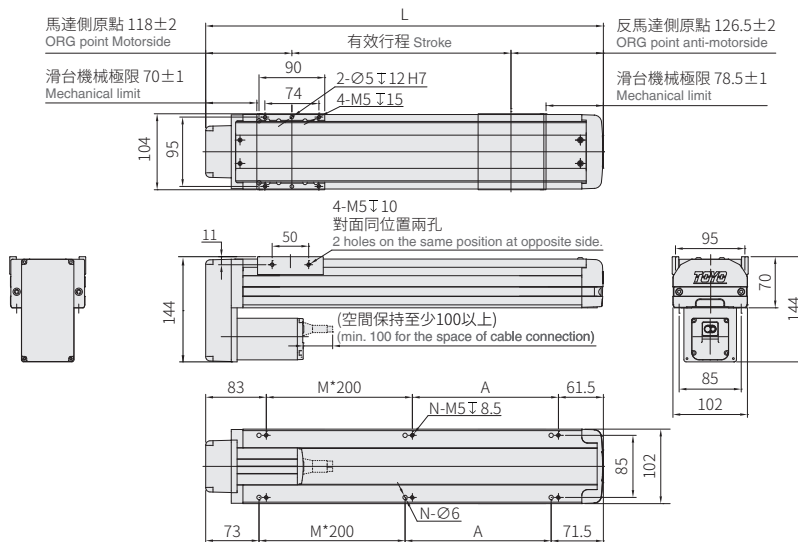
\*重量包含本體與馬達。 Weight of model with motor.

BM 馬達下折 Motor On Lower Side



CAD圖面可至www.toyorobot.com下載  
Please download the CAD file from TOYO's website: www.toyorobot.com

(單位 Unit : mm)



| 有效行程 Stroke | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750   | 800    | 850    | 900    | 950    | 1000   | 1050   |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| L           | 294.5 | 344.5 | 394.5 | 444.5 | 494.5 | 544.5 | 594.5 | 644.5 | 694.5 | 744.5 | 794.5 | 844.5 | 894.5 | 944.5 | 994.5 | 1044.5 | 1094.5 | 1144.5 | 1194.5 | 1244.5 | 1294.5 |
| A           | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100    | 150    | 200    | 50     | 100    | 150    |
| M           | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 2     | 2     | 2     | 3     | 3     | 3     | 3     | 4     | 4      | 4      | 4      | 5      | 5      | 5      |
| N           | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 8     | 8     | 8     | 10    | 10    | 10    | 10    | 12    | 12     | 12     | 12     | 14     | 14     | 14     |
| *Weight(kg) | 5.86  | 6.25  | 6.64  | 7.03  | 7.41  | 7.8   | 8.19  | 8.57  | 8.96  | 9.35  | 9.74  | 10.12 | 10.51 | 10.9  | 11.28 | 11.67  | 12.06  | 12.44  | 12.83  | 13.22  | 13.61  |

\*重量包含本體與馬達。 Weight of model with motor.

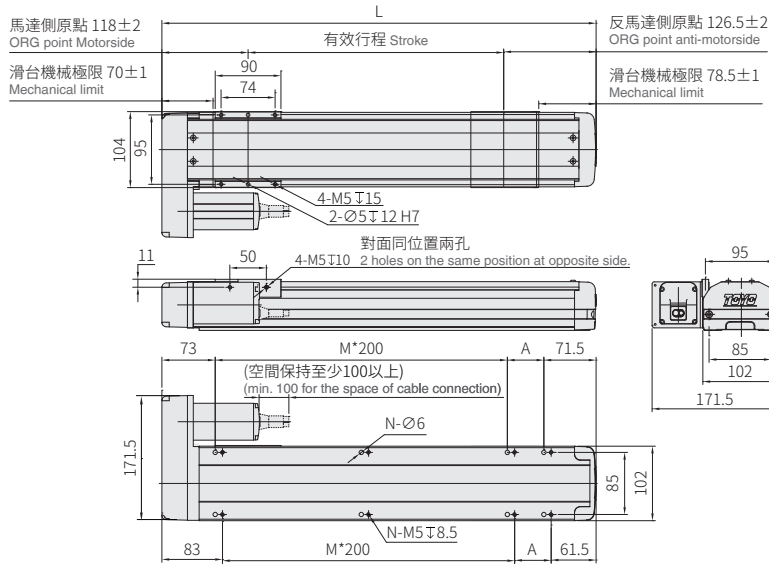
免費服務專線：大陸 400-875-0009 台灣 0800-800-893  
Toll-free Number China Taiwan

**BL** 馬達左折 Motor On Left Side



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(單位 Unit : mm)



| 有效行程 Stroke | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750   | 800    | 850    | 900    | 950    | 1000   | 1050   |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| L           | 294.5 | 344.5 | 394.5 | 444.5 | 494.5 | 544.5 | 594.5 | 644.5 | 694.5 | 744.5 | 794.5 | 844.5 | 894.5 | 944.5 | 994.5 | 1044.5 | 1094.5 | 1144.5 | 1194.5 | 1244.5 | 1294.5 |
| A           | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100    | 150    | 200    | 50     | 100    | 150    |
| M           | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 2     | 2     | 2     | 3     | 3     | 3     | 3     | 4     | 4      | 4      | 4      | 5      | 5      | 5      |
| N           | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 8     | 8     | 8     | 10    | 10    | 10    | 10    | 12    | 12     | 12     | 12     | 14     | 14     | 14     |
| *Weight(kg) | 5.86  | 6.25  | 6.64  | 7.03  | 7.41  | 7.8   | 8.19  | 8.57  | 8.96  | 9.35  | 9.74  | 10.12 | 10.51 | 10.9  | 11.28 | 11.67  | 12.06  | 12.44  | 12.83  | 13.22  | 13.61  |

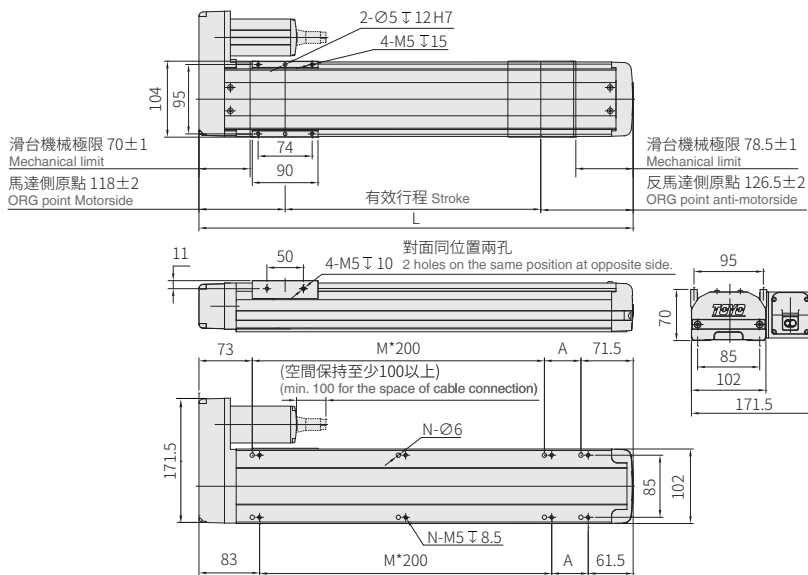
\*重量包含本體與馬達。Weight of model with motor.

**BR** 馬達右折 Motor On Right Side



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(單位 Unit : mm)



| 有效行程 Stroke | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750   | 800    | 850    | 900    | 950    | 1000   | 1050   |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| L           | 294.5 | 344.5 | 394.5 | 444.5 | 494.5 | 544.5 | 594.5 | 644.5 | 694.5 | 744.5 | 794.5 | 844.5 | 894.5 | 944.5 | 994.5 | 1044.5 | 1094.5 | 1144.5 | 1194.5 | 1244.5 | 1294.5 |
| A           | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100   | 150   | 200   | 50    | 100    | 150    | 200    | 50     | 100    | 150    |
| M           | 0     | 0     | 1     | 1     | 1     | 1     | 2     | 2     | 2     | 2     | 3     | 3     | 3     | 3     | 4     | 4      | 4      | 4      | 5      | 5      | 5      |
| N           | 4     | 4     | 6     | 6     | 6     | 6     | 8     | 8     | 8     | 8     | 10    | 10    | 10    | 10    | 12    | 12     | 12     | 12     | 14     | 14     | 14     |
| *Weight(kg) | 5.86  | 6.25  | 6.64  | 7.03  | 7.41  | 7.8   | 8.19  | 8.57  | 8.96  | 9.35  | 9.74  | 10.12 | 10.51 | 10.9  | 11.28 | 11.67  | 12.06  | 12.44  | 12.83  | 13.22  | 13.61  |

\*重量包含本體與馬達。Weight of model with motor.

CTH 系列  
Slider Cylinder

CY 系列  
Rod Cylinder

CS 系列  
Electric miniature cylinder

CH 系列  
Electric gripper

控制器規格  
Spec of controller

CTH  
CTH5  
CTH6  
CTH10  
CTH12  
CTH13