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NEW

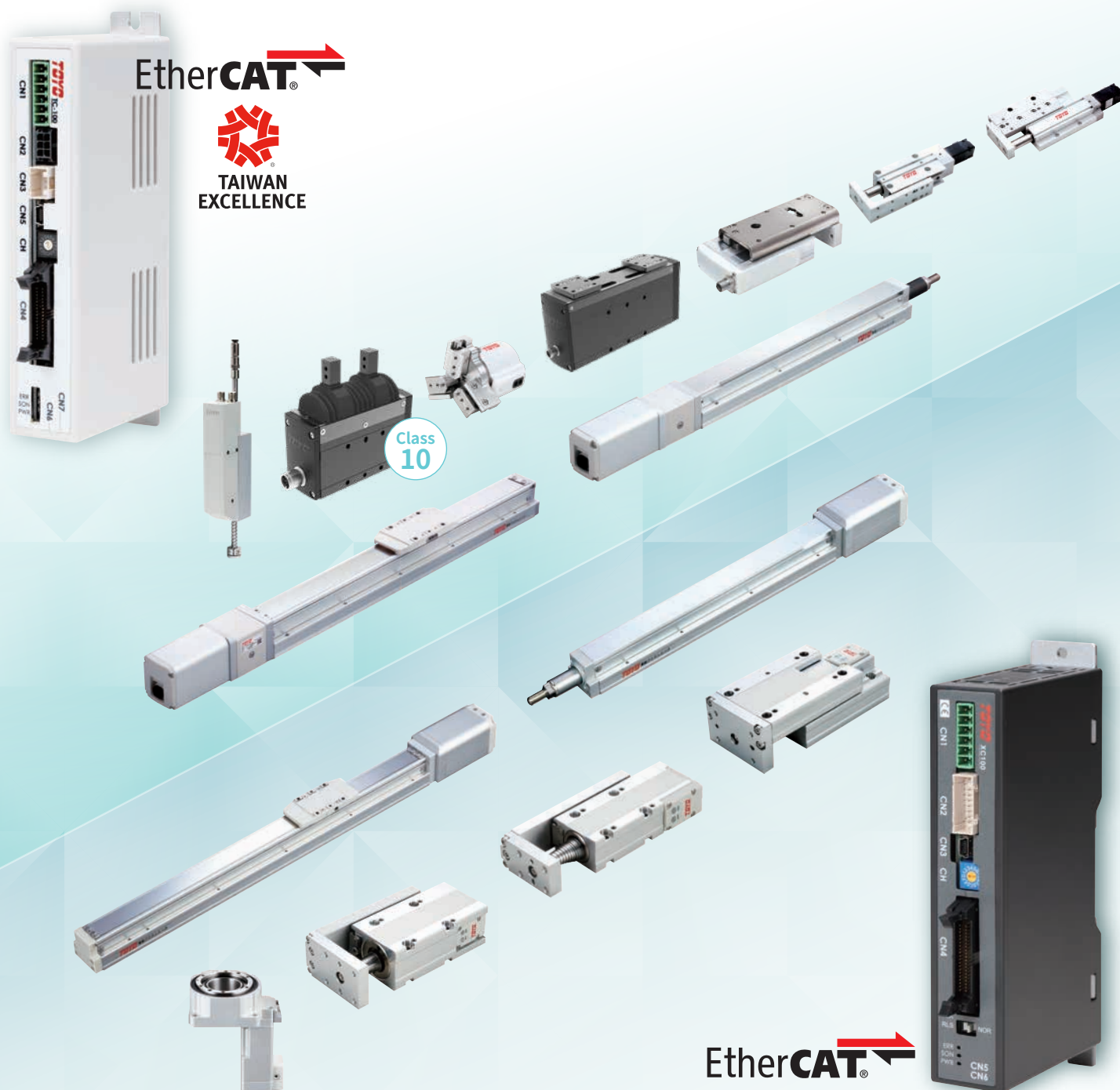
# Servo Cylinder

Economy Space

High Accuracy

High Speed

CGTH / CGTY / CGCH / CH / CSG / CSL / DGTH / DGTY / DM / DNT



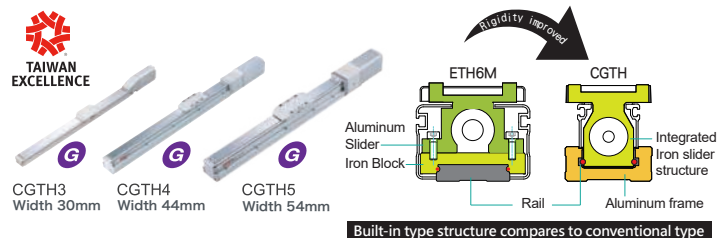
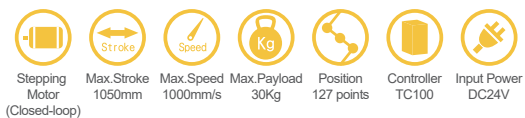
EtherCAT

# Servo Cylinder

## TC100 Controller

### CGTH Built-in guideway Robot

High rigidity, easy assembly

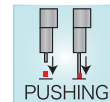
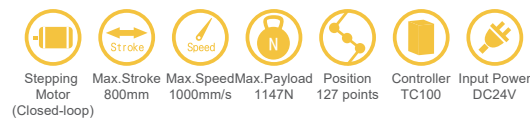


Built-in type structure compares to conventional type

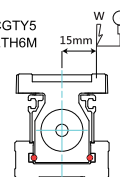
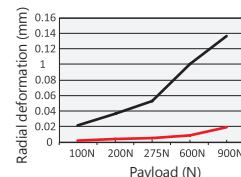
\*Clean room type module CGCH is optional

### CGTY Rod Type Built-in guideway Robot

Innovative structure, better accuracy

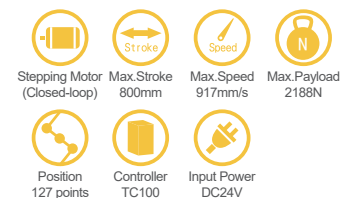


Built-in type load deformation compares to conventional type



### CSG High Rigidity Miniature Cylinder

High precision, multi-point position, and speed control



CSG New release



CSG25  
Width 68mm

#### 1 Multi-speed, multi-position control

- The closed circuit system can be used for speed and position setting and feedback.
- It can be used for pick-and-place, align, move and other actions.

#### 2 High precision and high speed

- Equipped with precise ballscrew, repeatability / accuracy can reach  $\pm 0.02\text{mm}$
- The maximum speed can reach 400mm/s.
- Acceleration and deceleration can reach 0.3g
- Acceleration and deceleration can reach 0.3g.

#### 3 Patented built-in linear guideway design

- Built-in linear guide way design, so that the straightness and flatness can reach  $\pm 0.02\text{mm}$

#### 4 Similar or smaller size than pneumatic cylinder

- With the same size of pneumatic cylinders customers can easily replace electric cylinders.
- Comes with standard PIN holes, which is easy to install.
- Alternatively pneumatic cylinder, can be shortened Cycle Time, improve efficiency, reduce production costs.

#### 5 Built-in motor for miniaturization

- The motor is built-inside and the structure is beautiful and generous.
- Effectively shorten the appearance size, and the length, width and height are greatly reduced.
- The motor can maintained stable, consistent output and feedback signals.

#### 6 Energy saving, environmental protection and long life

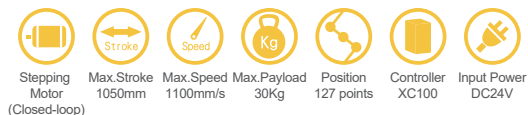
- Power consumption is 40% of a pneumatic cylinder, a considerable energy saving.
- The service life is 3 times that of the pneumatic cylinder.



## XC100 Controller

### DGTH Built-in guideway Robot

High rigidity, easy assembly and maintenance



Status indicates light make monitoring easily and quickly.



Servo motor applied.  
None coupling design.

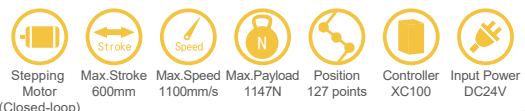


- Total length shortened.
- High position accuracy.
- Outstanding speed response performance.

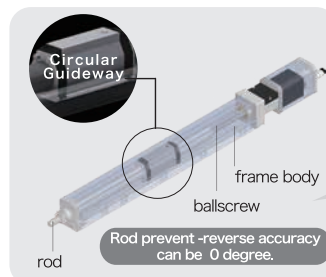
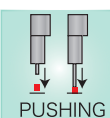


### DGTY Rod Type Built-in guideway Robot

Innovative structure, speed greatly improved



Status indicates light make monitoring easily and quickly.



Rigidity improved!



## CH Electric Gripper

High speed, high accurate gripping force and position control

- Stepping Motor (Closed-loop)
- Max.Stroke 68mm
- Max.Speed 200mm/s
- Max. Gripping Force 50Kg
- Position 127 points
- Controller TC100
- Input Power DC24V

The high gripping force was actualized with light and compact size by the peculiar cam structure.

CHB/CHG series adopts Archimedes' spiral curve design cam, Precise hold position, High torque control precision.



CHZ20 CHZ25 CHB6-S11 CHB6-S14 CHB6T-S14



CHS2-S12 CHS2B-S20 CHS2B-S40 CHS2B-S68 CHS2C-S20

Class 10

### Built-in controller



CHY2B-S80/S150 DHY-S80/S150 CHG2



Rotary Switch Settings

### 1 Built-in controller. Save wiring.

Gripper and controller integrated, one piece design. With optional flange, CHY/CHG2 gripper can connect robot end directly. Plug and play. Saving time and convenience.

### 2 Setting is simple

Set up the unit rotary switch before turning the power supply ON, and set the speed and gripping power as below.

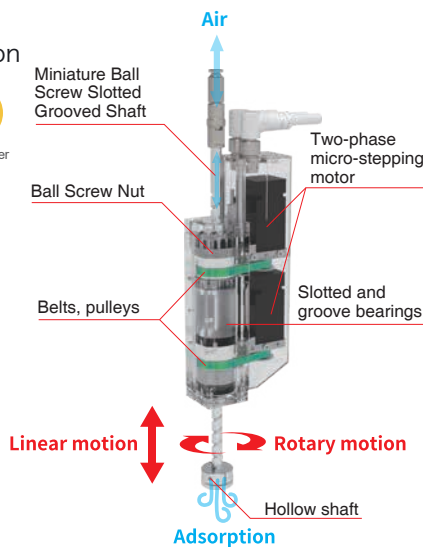
## CSL Electric Ball spline

Rotation, up and down, Suction

- Stepping Motor (Closed-loop)
- Max.Stroke 800mm
- Max.Speed 917mm/s
- Max.Payload 2188N
- Position 127 points
- Controller TC100
- Input Power DC24V



CSL8 Width 39.8mm



### Working principles

#### •Linear motion

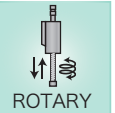
Drive the Z-axis motor, and rotate the ball-screw nut through the mechanism of the belt and pulley to achieve linear motion. At this time, the slotted groove bearing has the functions of the anti-rotation Ballscrew shaft and the transmission mechanism.

#### •Rotary motion

If the ball-screw nut and the bearing are rotated in the same direction at the same time, the output shaft will not move up and down but will rotate.

#### •Adsorption

The design of the hollow ball spline screw shaft provides positive and negative pressure to achieve the function of blowing or suction.



## DM Tiny Servo Cylinder

Brand new design, performance optimized

- Stepping Motor (Closed-loop)
- Max.Stroke 100mm
- Max.Speed 480mm/s
- Max.Thrust 427N
- Position 127 points
- Controller XC100
- Input Power DC24V



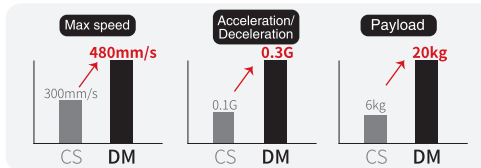
DMG25 DMG40 DMH25 DMH40



Status indicates light make monitoring easily and quickly.

- Servo On
- Motor On/Off
- Error

Rigidity improvement. High speed and high positioning accuracy.



\*CS is toyo elder type.



## DNT Hollow Rotary Actuator

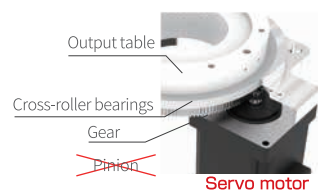
Higher force and accuracy

- Stepping Motor (Closed-loop)
- Cross Roller Bearing
- Max. Permissible Speed 200rpm/min
- Max. Torque 60N.m
- Position 127 points
- Controller XC100
- Input Power DC24V

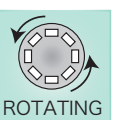


DNT60

Mechanism adjustment  
High torque / Higher speed  
Precision / Longer lifespan



New type D/SNT series to direct drive



# Controller

Perfect combination with linear module and controller

## TC100/XC100 Series

Controller for Servo Cylinder Series



NEW

EtherCAT

Correspondence to the wiring-saving network

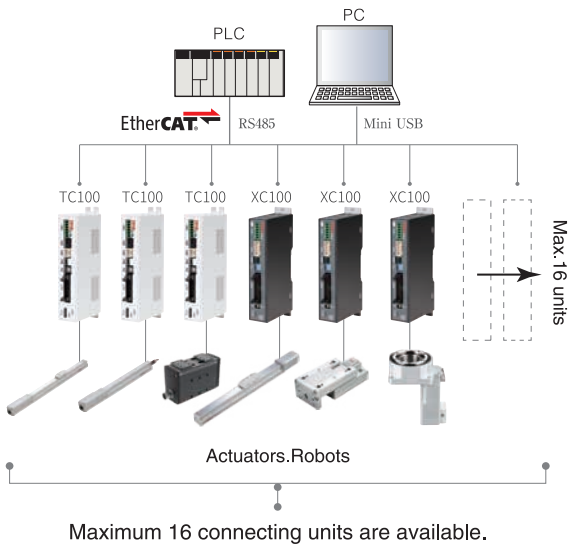
### 1 TC100, compatible to all series of modules

The same controller which is compatible to various modules and cables. It can be set up, adjusted easily and to reduce the cost of spare parts for repairing.



TC100 Stepping Motor

### 2 Connect 16 stations via RS-485



### 3 Flexible control interface

One single unit can support 3 different control interfaces.

| Control Mode          | Function                         | Note                                       |
|-----------------------|----------------------------------|--------------------------------------------|
| Pulse control         | ✓ Line Driver (200K Hz)          | XC100 separate the pin for reducing noise. |
|                       | ✓ Open collector (60K Hz)        |                                            |
|                       | ✓ Encoder expanded output module | Enable closed-loop control                 |
| I/O control           | ✓ 127 positioning points         |                                            |
| Communication control | ✓ EtherCAT                       | Max.16 axis                                |
|                       | ✓ Modbus-RS485                   | Max.16 axis                                |
|                       | ✓ mini USB                       | for TOYO-Single                            |

### 4 Various control mode

Following control modes can be combined randomly to optimize the action mode.

- Measurement control (Electrical gripper only)
- Position control
- Speed control
- Clamping force control (Electrical gripper only)
- Pushing force control

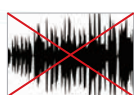
Industry's  
first

- 👍 Pulse・I/O・Communication 3 Control Modes all-in-one
- 👍 Controller output motor Encoder signal synchronously



**XC100  
Servo Motor**

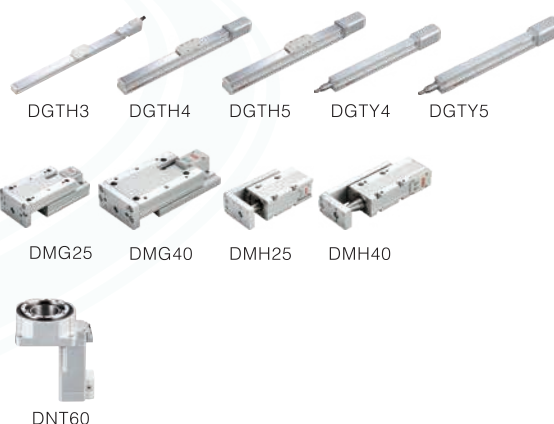
### Reduce Noise



Line Driver / Open Collector  
The separate pin design of LD & OC helps to reduce the external noise.

NEW

**EtherCAT®**  
Correspondence to the wiring-saving network



## 5 Excellent performance

### Smooth operation

| Controller | TC100                                                                  | XC100                                                                      |
|------------|------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Motor Type | Closed-loop Stepping Motor                                             | Servo Motor                                                                |
| Advantages | The speed can be increased 20% by switching the power voltage to DC48V | It can keep the same torque for the long stroke actuator in the high speed |
|            | Will not be out of steps even with high speed movement                 |                                                                            |
|            | Applied high resolution Encoder                                        |                                                                            |
|            | Smoother movement                                                      |                                                                            |
|            | More accurate positioning                                              |                                                                            |
|            | Power voltage to DC24V                                                 |                                                                            |

## 6 Easy-to-use UI software (TOYO-Single)

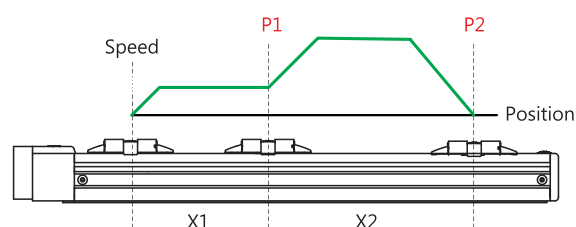
Support Traditional Chinese / English / Japanese user interfaces.

- Position teaching
- Program editing
- Operation monitoring
- Parameter setting
- Error log
- Data backup and reading



## 7 Continuous operating mode (support ABS-R/INC-R)

In this mode, it is able to continuously moving for multiple points with speed changed in non-stop state



## PC interface software for TC100 & XC100 (Windows)

### TOYO-Single user interface introduction

#### Basic Specification

| <br>TOYO-Single | Specification         | O/S                                      |
|--------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------|
|                                                                                                  | OS                    | Microsoft Windows 2000/XP/Vista/7/8.1/10 |
|                                                                                                  | CPU                   | Meet the requirement of the O/S          |
|                                                                                                  | Memory                | Meet the requirement of the O/S          |
|                                                                                                  | Free HD space         | 20MB or above free space                 |
|                                                                                                  | Communication ports   | RS-485、USB                               |
|                                                                                                  | Compatible controller | XC100、TC100                              |

#### Main Page-Position Points



**Basic status bar**  
Display current system status, from left to right, product name, software name, communication port, station ID/firmware version, software version and connection status.

**Model and controller status**  
Display current robot model and controller status.

**Current position**  
Display the current position.

**Simulation display**  
Simulate the movement of current hardware.

**TOOLBAR**  
The toolbar contains: new connection, new data file, open data file, save, copy, paste, read position point list, read parameters, overwrite position point list, overwrite parameter, overwrite all, display unit change and disconnect.

**SERVO/ORG control**  
Control servo ON or OFF, returning to the ORG, deceleration, stop and alarm reset.

**Position point list**  
Set position point moving mode, speed, torque, dwell time and next step.

**Function page selection**  
To select the setting of position points, monitoring and parameters.

**Automatic operation**  
Proceed with the selected position points automatically.

**Manual operation**  
Proceed with the selected position points and speed automatically. (suggest to use when confirming the teaching).

**Operating point**  
Display current position point.

**Manual Operation**  
Proceed with JOGGING and INCHING.

**Output monitoring**  
Display current output from controller and alarm status.

**Motor RPM Monitor :**

**Motor Current Monitor :**



## Monitoring Page

### Input monitoring

Monitoring all input signal and all signal is forced to output.

### Output monitoring

Monitoring all output signal but cannot be forced to output to other device.



### Alarm log

Display the last 50 alarm, the latest one is on top.

### Position and pushing position control

Torque limit movement control.

### Motor status monitoring

Monitoring the motor status, such as current, rotation speed, current position and alarm status...etc.

## Parameter Page

List of eight main demonstrated parameters

### Parameter content

The content includes the name, description of parameters and setting value of parameters.

| 参数名称  | 描述             | 单位            | 范围       | 默认值 |
|-------|----------------|---------------|----------|-----|
| 0100r | FullCountValue | 计数            | 1~100000 | 200 |
| 0100a | InfCountZone   | 计数            | 0~10000  | 0   |
| 0114h | PosDir         | 外部脉冲输入 - 旋转方向 | 0~1      | 0   |
| 0115h | SetComPulse    | 外部脉冲输入 - 脉冲宽度 | 0~3      | 0   |
| 0110h | NearZone       | NEAR 检测距离     | 0~10000  | 4   |

- Parameters of Motor
- Parameters of Thrust
- Common Parameters
- Setting of Input
- Setting of Output
- Speed Parameters
- Parameters of Homing
- Parameters of Communication Setting

24 Taiwan: 0800-800-893

24 China: 400-875-0009



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please scan the QR code  
for more details.

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