

New Product Information

TOYO 2019



P7
GPH



DGTH
P3



P4
DGTY



P8
LGF



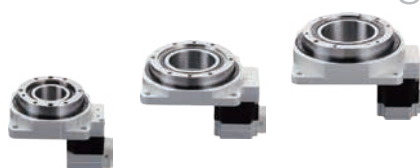
DM
P1



P5
CHG



P13
JTB



SNT
P2



P6
CHY



P11
NET/NEC



XC/SC
P9



P14
UNIT

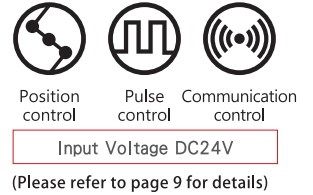
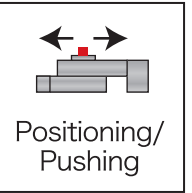


Tiny Servo Cylinder

DM Series

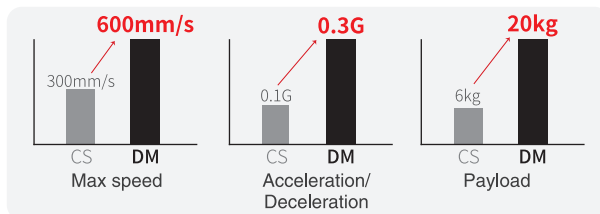
			
Servo Motor 25W/40W	Max.Stroke 125mm	Max.Speed 600mm/s	Max.Thrust 342N

XC100
Servo Controller



Items	DMG series (Build-in LM guide type)	DMH series (Standard guide type)	DMD Series (Economic type)
Accuracy	★ ★ ★	★ ★ ★	★ ★ ★
Size	★ ★	★ ★	★ ★ ★
Price	★	★ ★	★ ★ ★
Travel stability	★ ★ ★	★ ★	★
Allowable overhang	★ ★ ★	★ ★	★

1 Rigidity improvement. High speed and high positioning accuracy.



*CS is toyo elder type.

2 Servo motor built-in Space saving



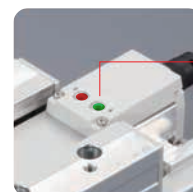
Compact and lightweight design, the size of DMD is just small as a business card.



4 Shaped and handled easily like air cylinders. Reduced assembly time.

- The electromechanical alternative to Air Cylinders with greater flexibility and control.
- Various type to be chosen to fit needs.
- Clean room and dustproof type could be customized.

5 Status indicates lamps make monitoring easily and quickly.



- Operation
- Motor on /off
- Error

3 Specification

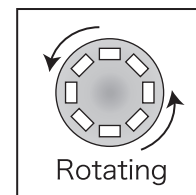
Model	Motor	Repeatability (mm)	Lead	Thrust (N)	Payload (kg)		Stroke (mm) & Max. Speed (mm/s)			
					Vertical	Horizontal	50	75	100	125
DM25	25W	±0.01mm	2	160	2	12	100			
			8	40	0.4	1.5	400			
DM40	40W		2	342	6	20	100			
			6	114	2.5	16	300			
			12	57	-	5	600			

6 XC100 Controller features (please refer to p9 for details.)

- Control Interface is same as TC100 controller.
- Size is same as TC100 controller.
- Noise reduced by the design of separation between open collector pin and line driver pin.
- TC100 users can transfer to XC100 usage directly without design modification.

Hallow Rotary Actuator

D/SNT Series



Servo Motor
25W~750W



Max.Speed
200rpm/min



Max.Torque
60N.m



Cross Roller
Bearing

SC100
Servo Controller



Position
control



Pulse
control



Communication
control

Input Voltage DC24V

(Please refer to page 10 for details)

DNT Series (Standard type)



SNT Series (High torque type)



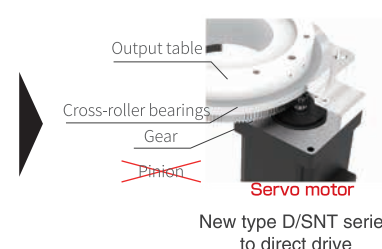
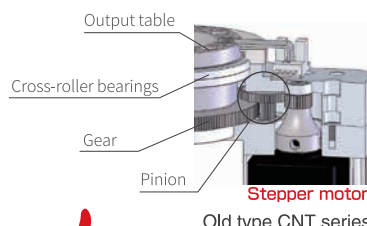
1

Specifications

Model	Motor	Max. Torque (N·m)	Allowable Inertial Moment (kg·m ²)	Axial Payload (N)	Angle Repeatability	Angle Stroke (°) and maximum speed (circle / min)
						360°none stroke limit
DNT60	25W	1.6	0.000496	100	±15 arcsec	200
SNT85	50W	4.6	0.00114	500	±15 arcsec	200
SNT130	200W	12.7	0.00863	2000	±15 arcsec	200
SNT200	750W	60.2	0.06344	4000	±15 arcsec	200

2

Mechanism adjustment High torque / High speed Precision / Long Lifecycle



3

Motor driven directly without pinion make size smaller



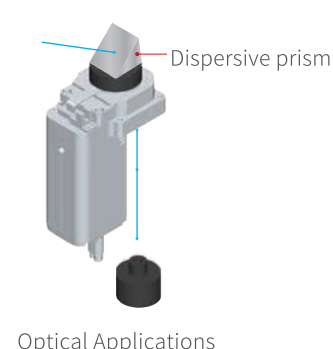
- The gear-reduction mechanism adjustment eliminates backlash, repeatability can reach ±15 arc/sec.

- Servo motor applied. Constant torque at all speed range.

- Crosse-roller bearings applied that high rigidity structure to achieve high axial and radial payload.

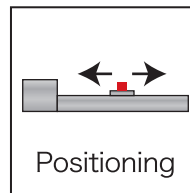
4

Applications



Slide Type Servo Cylinder

DGTH Series



- Servo motor 40W
- Max.Stroke 800mm
- Max.Speed 1000mm/s
- Max.Payload 20kg

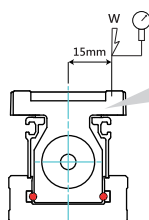
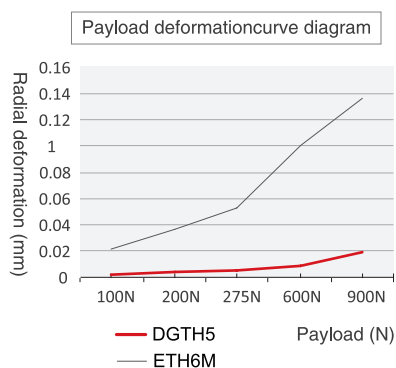
XC100
Servo Controller



- Position control
 - Pulse control
 - Communication control
- Input Voltage DC24V
(Please refer to page 9 for details)

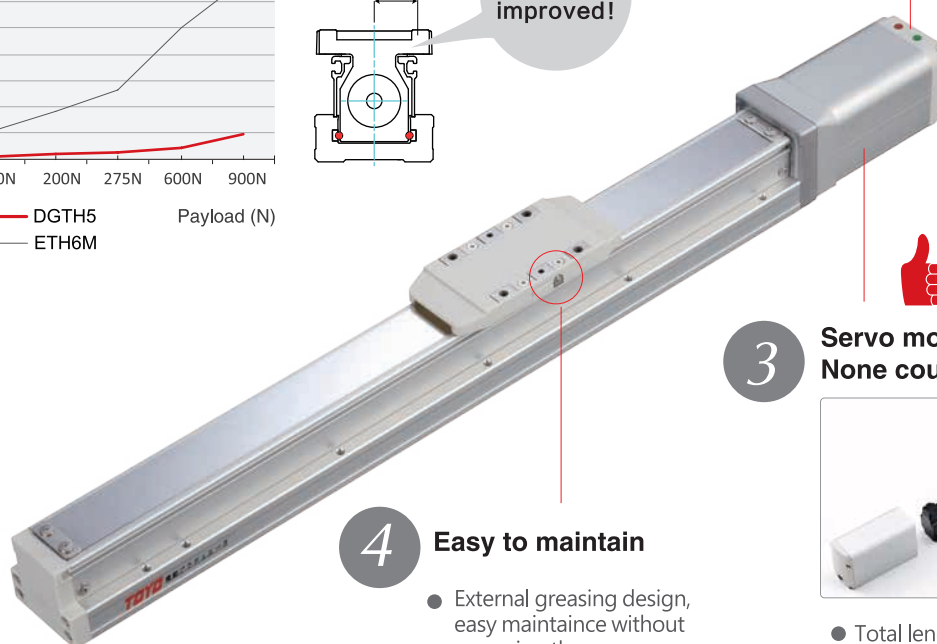


1 Dynamic Torque highly improved.



2 Status indicates lamps make monitoring easily and quickly.

- Operation
- Motor on /off
- Error



3 Servo motor applied. None coupling design.



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

4 Easy to maintain

- External greasing design, easy maintenance without removing the cover.

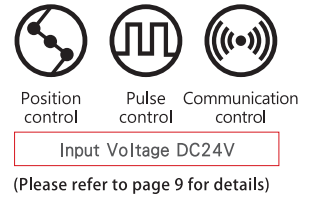
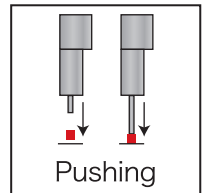
5 High Speed and Quick Acceleration (compared with CGTH)

↑
Speed up
30%

Rod Type Servo Cylinder

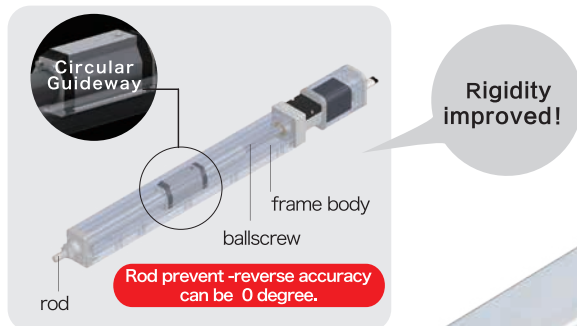
DGTY Series

			
Servo motor 40W	Max.Stroke 600mm	Max.Speed 1000mm/s	Max.Thrust 342N



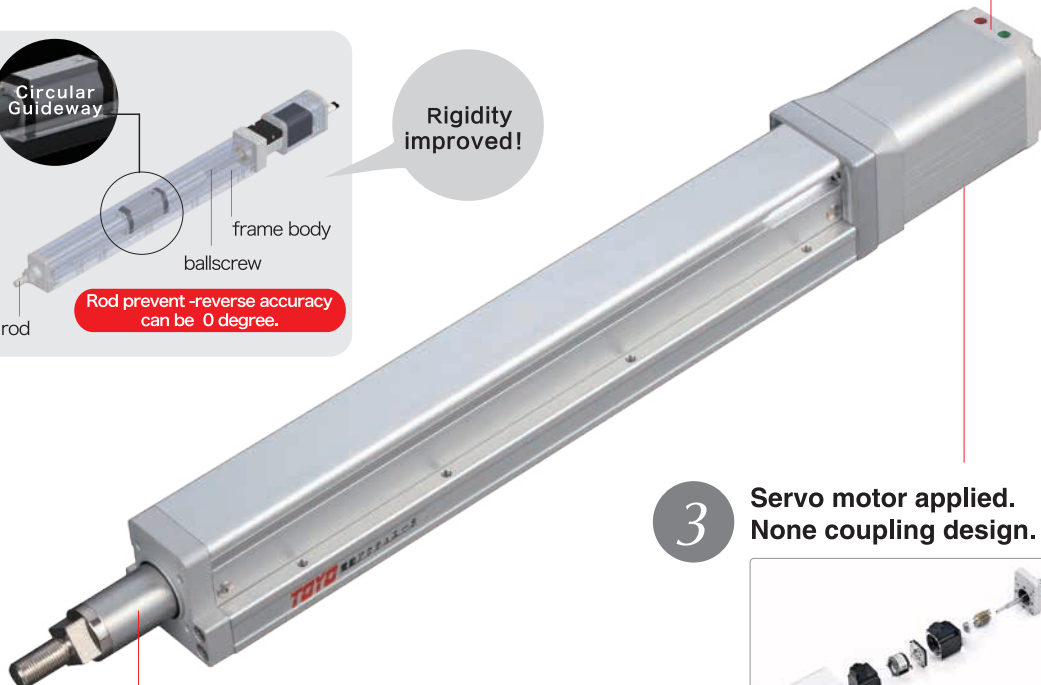
1 Built-in circular LM guide

Built-in circulating ball guideway can greatly increase radial load and torque. It can inhibit the vibration when stop and can reach 800mm stroke. Prevent rotation accuracy can reach to 0° when the rod with none payload.



2 Status indicates lamps make monitoring easily and quickly.

- Operation
- Motor on /off
- Error



3 Servo motor applied. None coupling design.



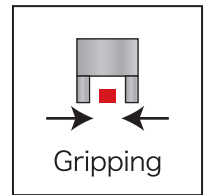
- Total length shortened.
- High position accuracy.
- Outstanding speed response performance.

4 High Speed and Quick Acceleration (compared with CGTH)

↑
Speed up
30%

Long-stroke type Electric Gripper

CHY Series



TM Plug & Play Solution



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

Workpiece check function

You also can utilize the HOLD output signal to check if the gripper fails to grip a workpiece or drops, without using the sensor.

3

Communication format in open

Gripping force and speed can be controlled directly through communication mode (RS485). PLC/PC can drive the electric gripper flexibly.

4

Setting is simple



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



Rotary Switch Settings

SW_No	Gripping force	SW_No	Speed
0	100%	0	100%
1	Communication Setting	1	10%
2	-	2	20%
3	30%	3	30%
4	40%	4	40%
5	50%	5	50%
6	60%	6	60%
7	70%	7	70%
8	80%	8	80%
9	90%	9	90%

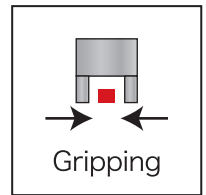
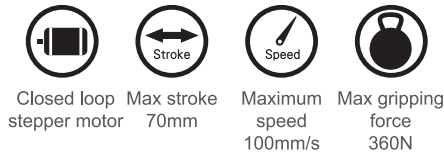
5

Specification

		CHY80	CHY150
Gripping force	Max gripping force (N)	120	45
	Min gripping force (%)N	25% 30	25% 11
	Resolution %	10%	
Stroke range (mm)		0~80	0~150
Speed (mm/sec)		200	200
Repeatability (mm)		±0.05	±0.05
Guiding structure		multi shafts	
Max Gripping Weight (kg)		1.2	0.45
Operating temperature (°c)		0~40°	
Weight of gripper (g)		845	890

Ball screw type Electric Gripper

CHG Series

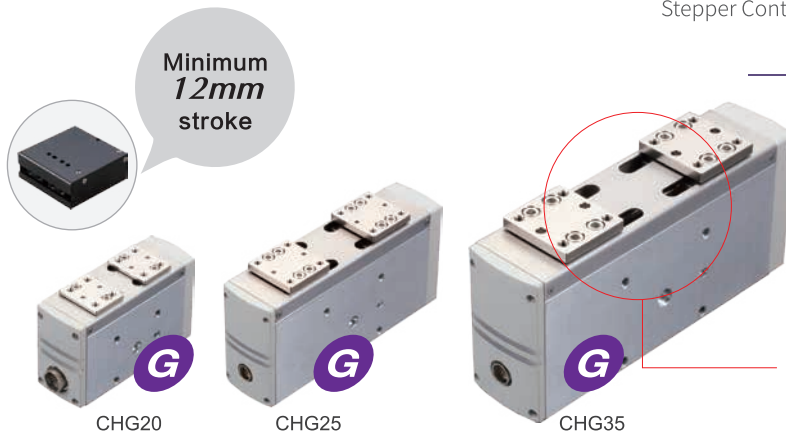


TC100
Stepper Controller



Input Voltage DC24V

Suitable for CHZ、CHB、CHG Series.



2

Multi-position Control Gripping Force Control

127 points position can be set.
Clamping force is settable in 1% unit from 30% to 100%.

3

Measuring Workpiece Workpiece check Function

With the position control function, the size measurement can be achieved 0.01mm.
You also can utilize the HOLD output signal to check if the gripper fails to grip a workpiece or drops, without using a sensor.

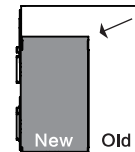
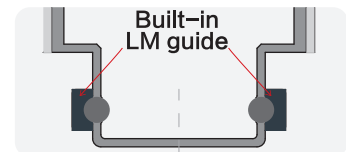
4

Specification

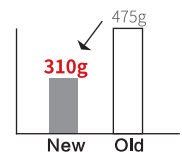
		CHG20	CHG25	CHG35
gripping force	Max gripping force (N)	100	190	360
	Min gripping force (%)N	20% 20	20% 38	20% 72
	Resolution %	1%		
Stroke range (mm)		0~20	0~40	0~70
Speed (mm/sec)		33	41	91
Repeatability (mm)		±0.01	±0.01	±0.01
Guiding structure		Built-in LM guide		
Max Gripping weight (kg)		1	1.9	3.6
Operating temperature (°c)		0~40°		
Weight of gripper (g)		310	625	1730

1

Built-in LM guide
Small size / Light weight /
High rigidity



● Size 30% smaller
Compared to CHG20



● Weight 20% lighter
Compared to CHG20

5

High accuracy
Ground ballscrew applied.



6

Speed/ acceleration control

The speed and acceleration can be set within 100mm/s. 1% unit set, the speed will change 1mm/s. Multi-speed could be set too.

IP66 Dust-proof/water-proof Actuator

GPH Series

The only one actuator that meets IP66 rating in Taiwan



IP66
Servo motor



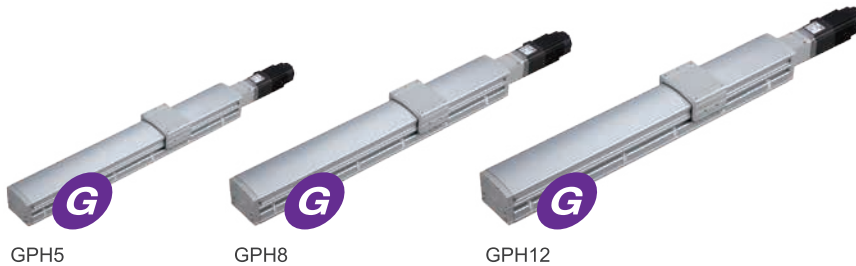
Max. Stroke
1250mm



Max. Speed
1000mm/s



Max. Payload
95kg



GPH5

GPH8

GPH12



IP Rating

IP

Protection against
solid objects

0	—
1	>50mm
2	>12.5mm
3	>2.5mm
4	>1mm
5	Dust protected
6	Dust tight

Protection against
water

0	None
1	Dripping water
2	Dripping water when tilted at 15°
3	Spraying water
4	Splashing of water
5	Water jets
6	Powerful water jets
7	Immersion, up to 1 m depth
8	Immersion, 1 m or more depth

1

Pass endurance test

Completely handle the common coolant splash in the machine tool.



Real test photo.

2

Special dust-proof frame design



Special dust-proof frame structures that can withstand strong/repeated splashes or washing processes!

3

Customer specified servo motors.

(Motor needs to be IP66 rating)

4

Pick and place task in the CNC machine is ok. Shorten the production cycle time.

Standard Actuators in CNC



Dust-proof/water-proof GPH Series



Shorten cycle time.

Built-in LM guide linear motor robot

LGF

Series

Compact size



Linear motor Max.Stroke
3500mm



Stroke



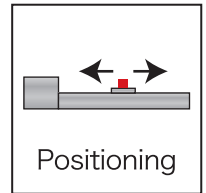
Speed



Max.payload
20kg



Clean room



Positioning



Position control



Pulse control



Communication control

Input Voltage DC24V

(Please refer to page 10 for details)

SC100

Servo Controller



Features :



Long stroke



High payload



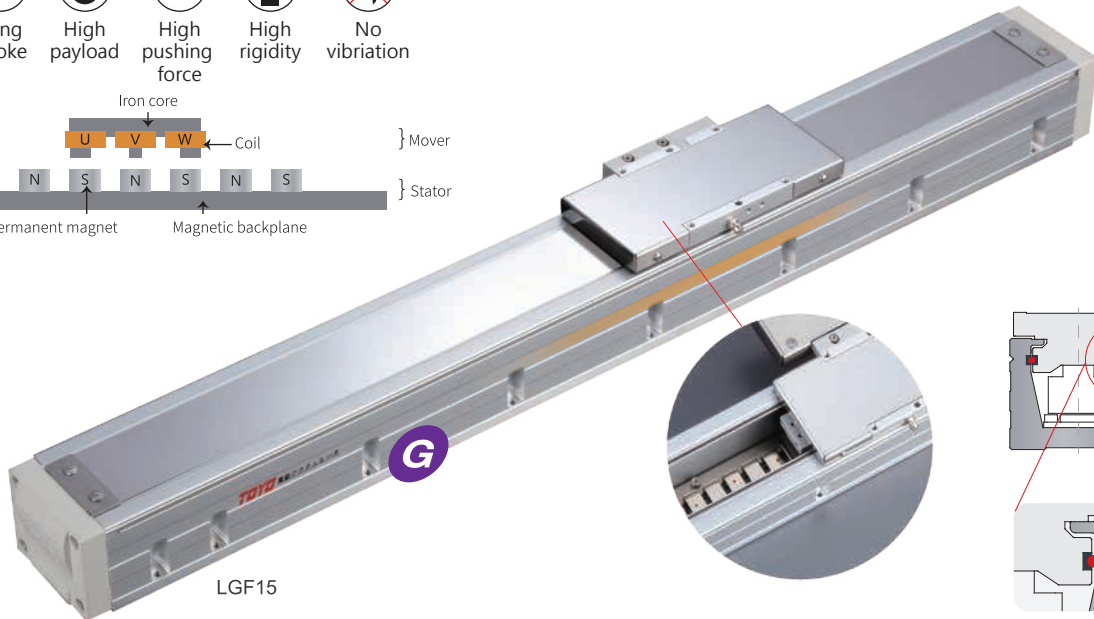
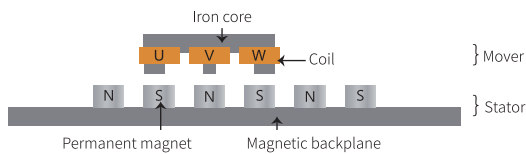
High pushing force



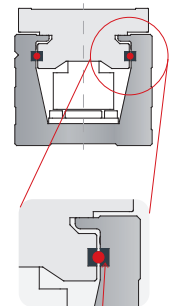
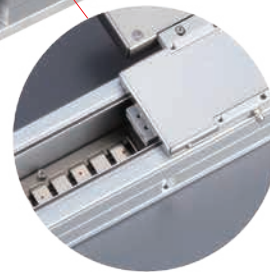
High rigidity



No vibration



LGF15



built-in LM guide

1

High-precision positioning with optical scale (Renishaw)

- Standard optical scale resolution : 0.001mm.
- Optical scale resolution : 0.0005mm is optional.
- Magnetic type scale is selectable too.

2

Built-in LM guide



- Quiet and high rigidity with a long service life.
- Straightness / Flatness improved to $\pm 0.02\text{mm}$.
- Repeated positioning accuracy $\pm 0.002\text{mm}$.

3

High rigidity mainframe/ Dustproof steel cover strip

- One-piece extruded aluminum structure for optimal rigidity and weight ratio.
- Adopting dustproof steel cover strip.

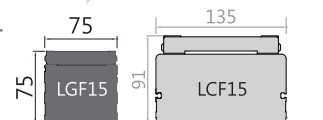
4

Width greatly reduced



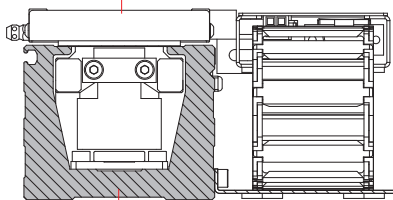
- Width/height of body reduced.
- Installation space saving.

Compact size



Size 40% smaller in same thrust.

Dustproof steel cover strip



One piece high rigidity mainframe

5

Applied industry

Application :



High speed pick & place



Laser processing



Automatic machine

Controller (for DC Servo motor)

XC100



Servo motor
25W/40W



Position control
127 points



Pulse control
LD/OC



Communication control
RS485



Voltage
DC24V



1

Compatible to all DC24V type actuators



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.



2

Control interface is same as TC100.



- Wiring is same.
- Reduce learning time.

3

Various control mode

Control modes can be used combinedly free to optimize the motion control.

- Position control
- Thrust control
- Speed control

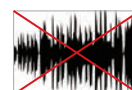
4

Flexible control interface for PC/PLC

Control Mode	Function	Note
Pulse control	✓ Line Driver (200K Hz)	separate the pins for reducing noise
	✓ Open Collector (60K Hz)	
I/O control	✓ 127 points	
Communication control	✓ Modbus-RS485	Maximum to 16 controllers
	✓ Mini USB	for TOYO-Single
Optional	✓ Encoder output extender model	

5

Noise reduced



Noise reduced by the design of separation between open collector pin and line driver pin.

6

Network connections with wiring saving



7

Excellent performance of servo motor

Motor	Advantage
 Servo motor	✓ None out of steps
	✓ High resolution encoder
	✓ Smooth operation
	✓ Accurate positioning
	✓ Input voltage DC 24V

8

Max to connect 16 axes via RS485



Controller (for AC Servo motor)

SC100



Servo motor
50~400W



Position control
127 points



Pulse control
LD/OC



Communication control
RS485



Voltage
AC220V



1

Compatible to all AC24V type actuators

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.



SGTH



SGTY



LGF



SGPH



SNT

2

Control interface is same as TC100/XC100

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Control modes can be used combinedly free to optimize the motion control.

- Position control
- Thrust control
- Speed Control

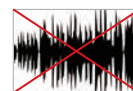
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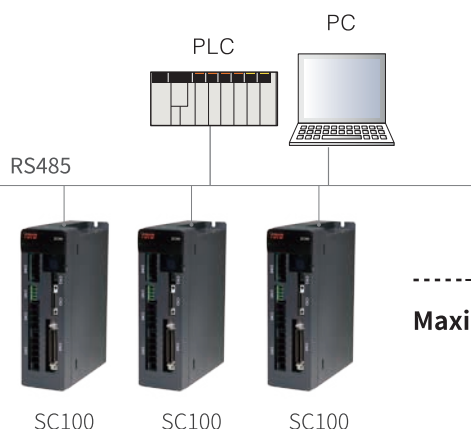
6

Field network connections below would be possible

CC-Link

EtherCAT

Ethernet



Maximum to 16 controllers

Gateway unit

NET-100-MB



1

Specifications

▼ Electrical specifications

Power supply voltage	DC24V
Voltage range	DC 22.5 V ~ DC 27.0 V
Power consumption	up to 1 W
Ground	100Ω or less

▼ Environmental specifications

Operating temperature	0 ~ 50 °C
Storage temperature	-20 °C ~ + 60 °C
Operating humidity	10%RH ~ 90%RH

▼ Weight & Dimensions

Weight	250 g
Dimensions	115 x 75 x 30 mm

2

Easy Setting



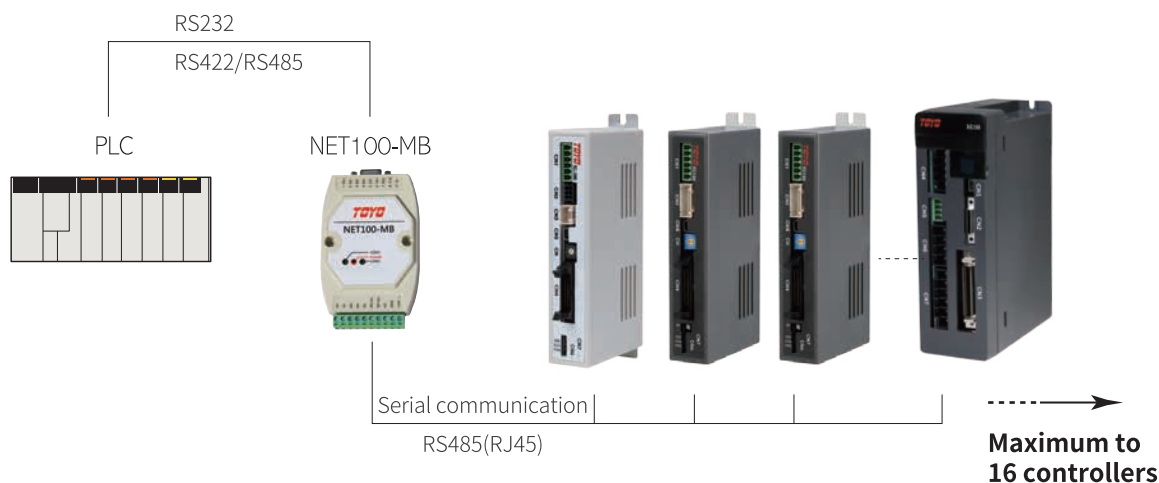
You can link the following eight brands of PLC directly through NET-100-MB without writing program, which can corresponds the TC100/XC100/SC100 function to the PLC Data registers.
Because the numbers of PLC types are too much, please contact our salesman to confirm the corresponding model.



3

Easy Arrangement

RS232 cable and standard network cable are available for connecting up to 16 controllers.



NEC-100



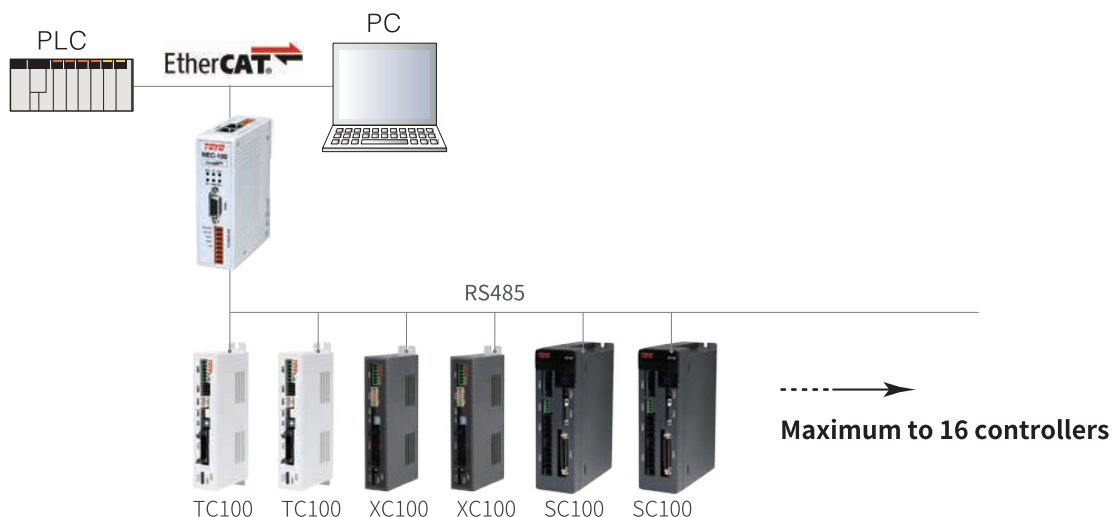
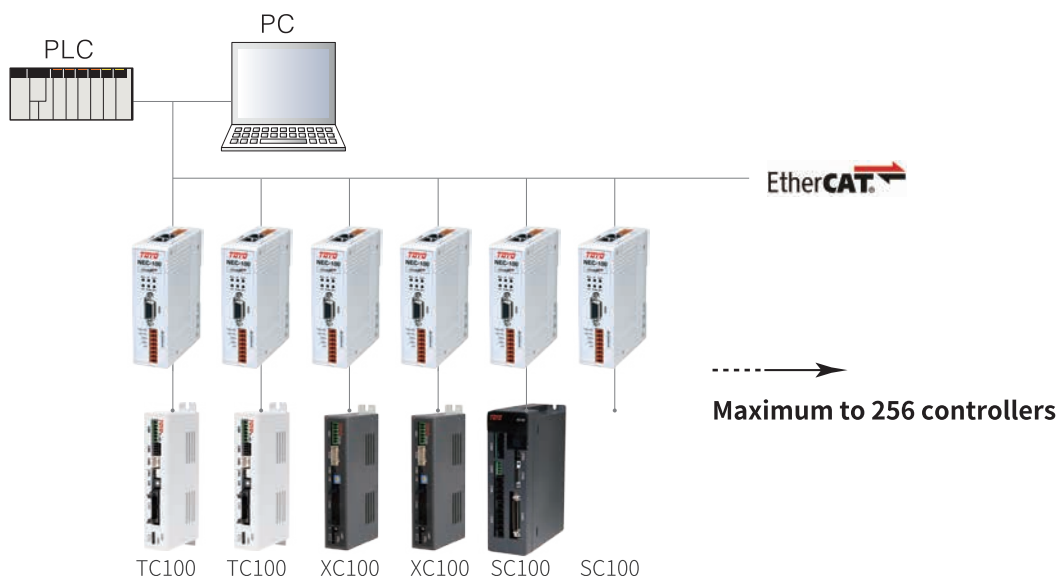
1

Features

- Powerful MCU handles efficient network traffic
- 2 X RJ45 bus interface
- Integrating toyo controller to connect the device with EtherCAT
- Performs complete serial protocol conversion, no PLC function blocks required
- Max baud rate 115200 bps support

2

System configuration as below:



Desktop Robot

JTB Series



Stepping
Motor



Max.Stroke
X500mm
Y500mm
Z100mm



Max.Speed
850mm/s



Max.Payload
X:15kg
Z:7kg



Points
30000



Controller
TSC400



Input Voltage
AC110V/220V



Z axis : Ball screw driven

Y axis : Belt driven

X axis : Belt driven

1

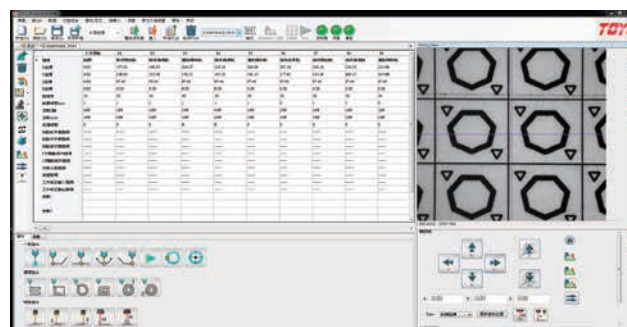
Various Dispense Commands



便捷指令



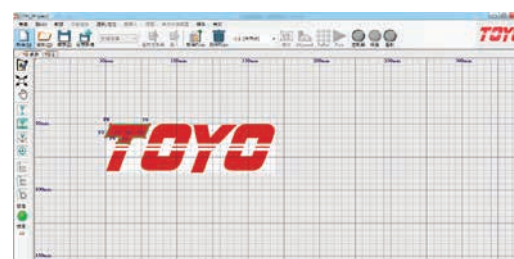
Convenient fill-in dispensing functions which allow you to dispense like drawing a picture using only 2 points for a rectangle and 3 points for a circle.



2

Multi Software Functions

- Import image file into the software convert to a program is capable.
- Import DXF file into the software convert to a program is capable.
- CCD camera adjustment function. (option)
- Editing path and pallet by using software wizard.



Model			JTB200	JTB300	JTB400	JTB500	JTB500 D
Operating Range	X/Y axis	(mm)	200/200	300/300	400/400	500/500	500/500 (Double X Axes)
	Z axis	(mm)	100	100	100	100	100
Maximum Portable Load	X axis	(kg)	8	15	15	15	X1:10 ; X2:10
	Z axis	(kg)	4	7	7	7	7
Maximum Speed ^{*1} PTP Movement setting range %	X and Y axes	(mm/s)	700(7~700)	900(9~900)	900(9~900)	900(9~900)	900(9~900)
	Z axis	(mm/s)	250(2.5~250)	400(4~400)	400(4~400)	400(4~400)	400(4~400)
Maximum Speed ^{*1} CP Movement setting range %	X, Y and Z Synthesized speed	(mm/s)	600(0.1~600)	850(0.1~850)	850(0.1~850)	850(0.1~850)	850(0.1~850)
Repeatability ^{*2}	X/Y axis	(mm)	±0.01	±0.01	±0.01	±0.01	±0.01
	Z axis	(mm)	±0.01	±0.01	±0.01	±0.01	±0.01
Dimensions/Weight	W×D×H	(mm)	497×454×672	597×554×672	697×654×672	797×754×672	797×754×672
	Weight	(kg)	33	41	51	61	61

Note :

*1、Maximum speed cannot be achieved when the robot is bearing its maximum portable load.

*2、Repeatability will be influenced by environment temperature and humidity. Position repeatability is not a guarantee of absolute precision.

Economic Driven Units

AGV UNIT Series



Operating command software



Forward / backward



Turn Left & Right



Maximum speed
71m/min



Max payload
4600kg



Controller
ABH3



ABH3 Series servo controller (including driver)

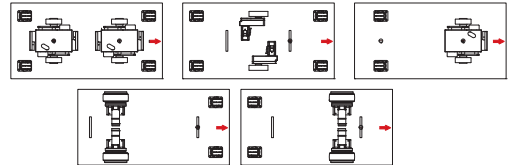
4

Can match with various specification of power-kit



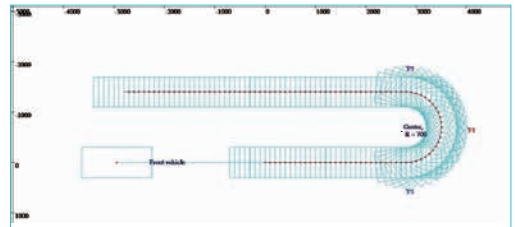
1

Different design choice for driven wheel



2

Simulate movement track function



3

Functional servo controller
ABH3 Series

- Speed control
- Torque control
- Analog current command
- Small simple structure
- No need to maintenance ,vibration resistant



US Series

- One piece design to reduce The body
- Operating maintenance easily- Customer can change driven Wheel by themselves
- Payload 500~1000kg
- Speed 30~60m/min
- Gearbox : special spur gear Gearbox
- Controller : double axis Controller(including driver)



SWR Series

- One piece design to reduce The body
- Operating maintenance easily- Customer can change driven Wheel by themselves
- Payload 500~2400kg
- Speed 60~71m/min
- Gearbox : special spur gear Gearbox
- Controller : double axis Controller(including driver)



AWR II Series

- Upgrade the used room of Gearbox in wheel
- Convenience for installing Chassis with special flange design
- Payload 500~4600kg
- Speed 48~69m/min
- Gearbox : planetary gearbox
- Controller : double axis Controller(including driver)

DM Series

Small as a
business
Card !

Tiny Servo Cylinder

With built-in Servo motor for enhanced compactness, lightness, and convenience.

TOYO Product Lineup

Electric Actuator Series



Servo Cylinder Series



Linear Motor Robot Series



Single Robot Series



AGVS Series



TOYO Automation Co., Ltd.

Add: No.50, Yongkehuan Road, Yongkang District, Tainan City, Taiwan.

T: +886-6-2021347 F: +886-6-2025974

TOYO Robot (Shuzhou) Co., Ltd.

Add: No 586, Zhenxin East Road, Zhangpu Town, Kunshan City, Jiangsu Province, China.

T: +86-512-86890880 F: +86-512-86890881

TOYO Automation (Shenzhen) Co., Ltd.

Add: 1208 Mingjun Business Center Huarong Road, Baoan District, Shenzhen City, China.

T: +86-755-81713415 F: +86-755-81713435

