

2019 New Product Information

TOYO 2019



P7
GPH



DGTH
P3



P4
DGTY



P8
LGF



DM
P1



P5
CHS



P13
JTB



SNT
P2



P6
CHY



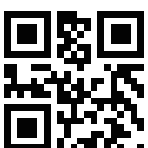
P11
NET/NEC



XC/SC
P9



P14
UNIT



Servo Cylinder

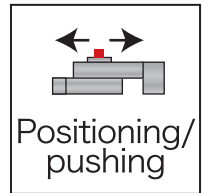
NEW

Mini servo cylinder

DM Series

- Servo Motor 25W/40W
- Longest Stroke 125mm
- Maximum Speed 600mm/s
- Maximum Thrust 342N

XC100 servo controller (including driver)



- Position control
- Pulse control
- Communication control

Voltage DC24V
controller (including driver)
(Please refer to page 9 for details)



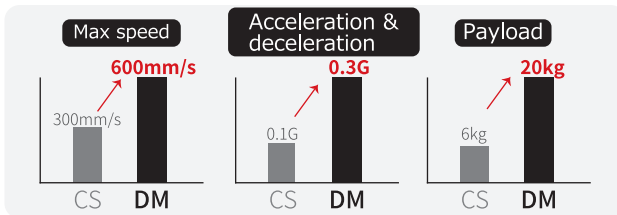
G Build in guideway DMG

Mini guideway DMH

Rod Type DMD

	DMG	DMH	DMD
Precision	★ ★ ★	★ ★ ★	★ ★ ★
Volume	★ ★	★ ★	★ ★ ★
Price	★	★ ★	★ ★ ★
Travel stability	★ ★ ★	★ ★ ★	★
Torque affordability	★ ★ ★	★ ★	★

1 Functional improvement, high speed, high accuracy



2 Built-in servo motor, achieve smaller size

Length, width and height greatly reduced, motor hidden into the body, can replace pneumatic cylinders directly.

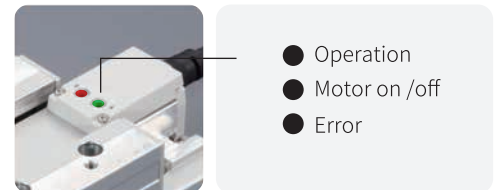
3 Specification

Model	Motor	Repeatability	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	±0.01mm	2	342	6	20	100			
			6	114	2.5	16	300			
			12	57	-	5	600			

4 Size is similar to pneumatic cylinders. Can replace pneumatic cylinders directly. Energy saving, long life, multiple position control

- Systems or equipment used to use with pneumatic cylinders, can directly change to servo cylinder.
- type, including built-in guideway, general guideway, economy guideway.
- customized clean room and dustproof.

5 Attached output light for monitoring operation status quickly.



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

- Control Interface same as TC100.
- Same size as TC100.
- Separates the pin between OC and LD greatly reduce the possibility of outside noise
- The customers who use TC100 can directly change to XC100.

Servo Cylinder/Single Robot

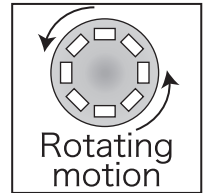
NEW

Servo thin type spinning hollow platform

D/SNT Series

- Servo Motor
- Max speed 200rpm/min
- Max torque 60N.m
- Cross roller bearing

SC100 servo controller (including driver)



- Position control
- Pulse control
- Communication control

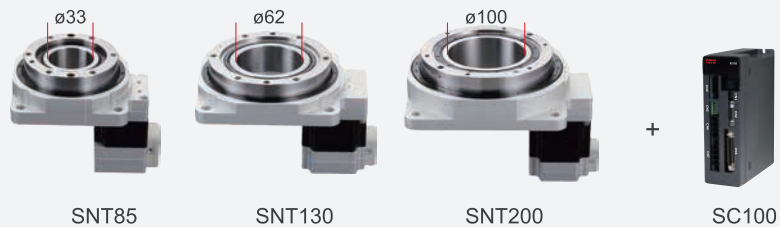
Voltage DC24V

controller (including driver)
(Please refer to page 10 for details)

Standard type DNT



Large thrust type SNT



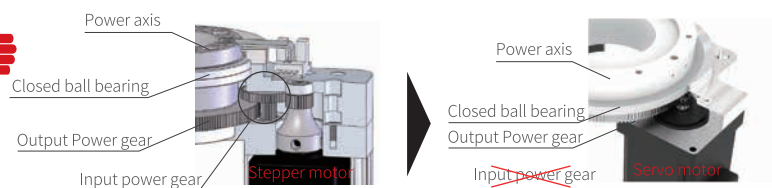
1

Specifications

Model	Motor	Max torque (N-m)	Inertia (kg*m ²)	Axial payload (N)	Angle accuracy	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

Structural improvement, High Torque, High speed, High Precision, Long Life



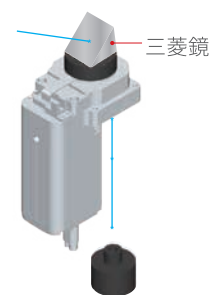
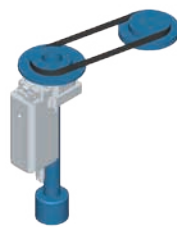
3

Motor hidden in with small volume

- Direct drive method, motor shaft directly drive with the gear of spinning hollow platform to reduce the deviation, repeatability can reach ±15 arc/sec
- Power is driven by a servo motor, High torque at both high and low speeds.
- Using crossed roller bearings, high rigidity of structure to achieve high axial and radial payload.

4

Applications



Servo Cylinder

NEW

Small size servo cylinder

DGTH Series



Servo motor
40W



Longest
stroke
800mm

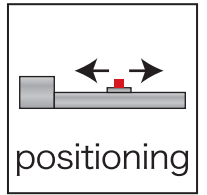


Maximum
speed
1000mm/s



Max payload
20kg

XC100
servo controller (including driver)



Position
control



Pulse
control



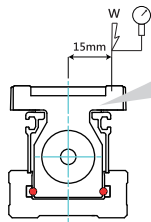
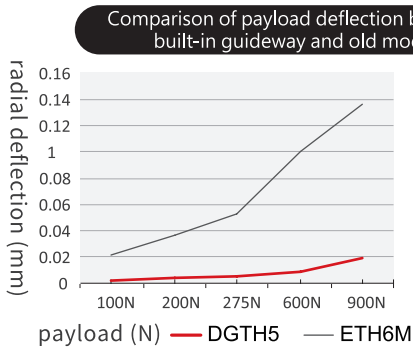
Communication
control

Voltage DC24V

controller (including driver)
(Please refer to page 9 for details)



1 rigidity strengthening, torque improving

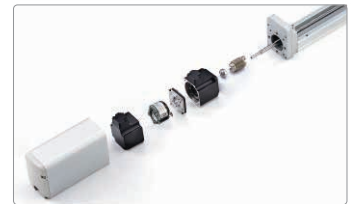


one-piece
irony slider
rigidity
improves!

2 Attached output light for Monitoring operation status quickly.

- Operation
- Motor on /off
- Error

3 Servo motor + none coupling design



- total length shortened
- high accuracy of positioning
- speedy respond

4 easy maintenance

- Adopting external grease port for lubricating grease without removing outer cover in all series.

5 using servo motor for drive great improvement of moving speed (compared with CGTH)

↑
Speed up
30%

Servo Cylinder

NEW

Mini servo cylinder

DGTY Series



Servo motor
40W



Longest
stroke
600mm

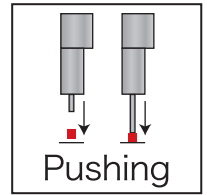


Maximum
speed
1000mm/s



Maximum
Thrust
342N

XC100
servo controller (including driver)



Position
control



Pulse
control



Communication
control

Voltage DC24V

controller (including driver)
(Please refer to page 9 for details)

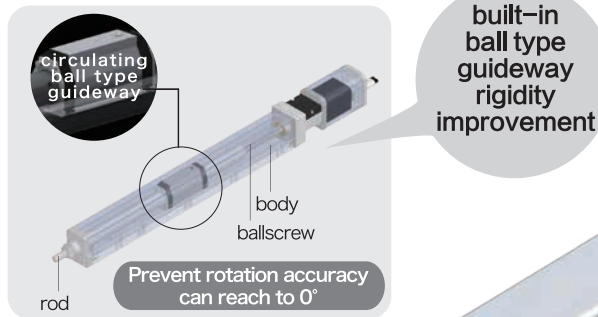


DGTY4
44mm width

DGTY5
54mm width

1 Built-in circulating ball type guideway

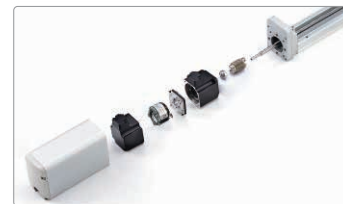
Built-in circulating ball guideway can greatly increase radial load and torque. It can inhibit the vibration when stop and can reach 800mm stroke. Prevent rotation accuracy can reach to 0° when the rod with none payload.



2 Attached output light for Monitoring operation status quickly.

- Operation
- Motor on /off
- Error

3 Servo motor + none coupling design



- total length shortened
- high accuracy of positioning
- speedy respond

4 using servo motor for drive great improvement of moving speed (compared with CGTH)

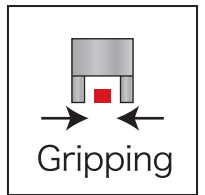
↑
Speed up
30%

Servo Cylinder

NEW

Long-stroke type

CHY Series



Closed loop stepper motor



Max stroke 150mm



Maximum speed 200mm/s



Max gripping force 120N



Controller built-in



Voltage DC24V

Long stroke, high gripping force, built-in controller, it's suitable for Human-machine cooperation robot.



TM Plug & Play Solution



CHY80

CHY150

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%

1 Built-in controller, save wiring

- gripper + controller, one piece design
- Special flange accessories can be used with robot directly
- Plug and play, convenience and time saving

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 signal (RS485). PLC/PC can drive the electric gripper flexibly.

5 Specification

		CHY80	CHY150
gripping force	Max gripping force (N)	120	45
	Min gripping force (%N)	25% 30	25% 11
	Resolution %	10%	
Stroke (mm)		0~80	0~150
Stroke (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

Servo Cylinder

2nd version

Ball screw type CHS Series



Closed loop
stepper motor



Max stroke
70mm

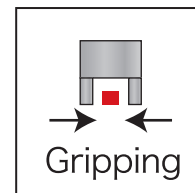


Maximum
speed
100mm/s



Max gripping
force
360N

TC100
stepper controller (including driver)



Position
control

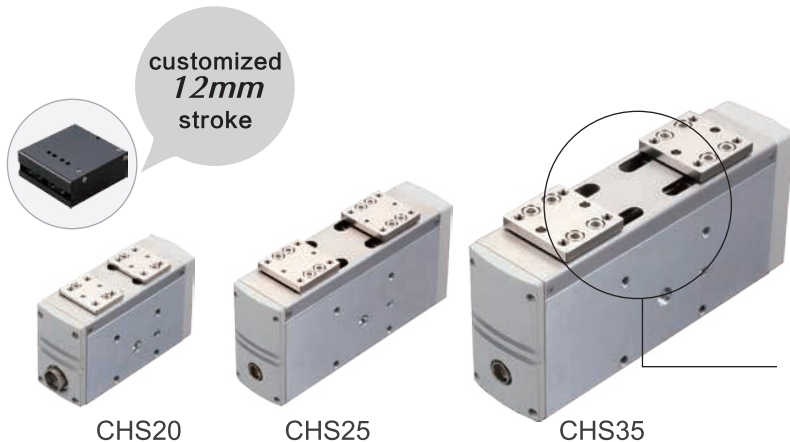


Pulse
control



Communication
control

Voltage DC24V



2

Multi position and clamping force control

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

3

Measuring workpiece and work piece 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 the sensor.

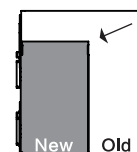
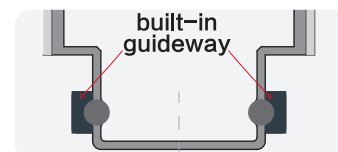
4

Specification

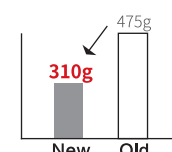
	CHS20	CHS25	CHS35	
gripping force	Max gripping force (N)	100	190	360
	Min gripping force (%N)	20% 20	20% 38	20% 72
	Resolution %	1%		
Stroke (mm)	0~20	0~40	0~70	
Stroke (mm/sec)	33	41	91	
Repeatability (mm)	±0.01	±0.01	±0.01	
Guiding structure	内嵌式线性滑轨			
Max gripping weight (kg)	1	1.9	3.6	
Operating temperature (°C)	0~40°			
Weight of gripper (g)	310	625	1730	

1

Using built-in guideway small size / light weight / high rigidity



● 30% size smaller
compared with CHS20



● 20% weight lighter
compared with CHS20

5

Using high accuracy grinding ballscrew



↑
Accuracy up
0.01mm

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.

Electric Actuator

NEW

IP66 waterpro of actuator

GPH Series

The only one actuator that meets IP66 rating in Taiwan



IP Code

IP

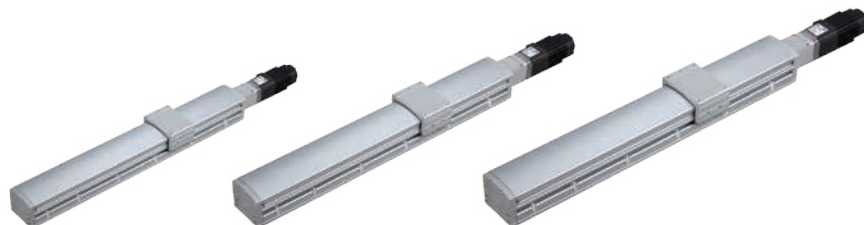
Solid particle protection

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

Liquid ingress protection

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

- IP66 Servo motor
- Longest stroke 1250mm
- Maximum speed 1000mm/s
- max payload 95kg



G GPH5 **G** GPH8 **G** GPH12

1

pass endurance test

Completely handle the common coolant splash in the machine tool.



實際測試照片

2

Special dust-proof design

Developing special structures that can be used in harsh environments filled with dust and splashing water.

3

Can be used with commercially servo motors (Motor needs to be IP66 rating)

4

Suitable for automatic pick and place in the processing machine, which can greatly shorten the processing time

Non-dustproof and waterproof series
stop processing



3 minutes

GPH Series
stop processing



1.5 minutes

Can effectively shorten the Cycle time especially for the processing of the machine

Built-in guideway type linear motor

LGF Series

The smallest size in the line of business



Linear motor



Longest stroke
3500mm



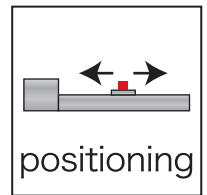
Maximum speed
2500mm/s



max payload
20kg



Clean room



Position control



Pulse control



Communication control

Voltage DC24V

controller (including driver)
(Please refer to page 10 for details)



SC100
servo controller (including driver)

features:



Long stroke



High payload



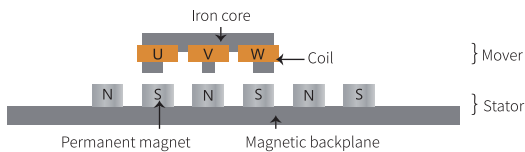
High pushing force



High rigidity



No screw type resonance



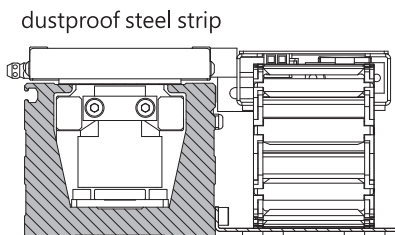
LGF15

1 Standard with optical scale (Renishaw)

- Using standard optical scale with a resolution of 0.001mm
- Using optical scale with optional resolution of 0.0005mm to Improve reproducibility
- Optional use with magnetic scale

3 High rigidity body/ dustproof steel strip

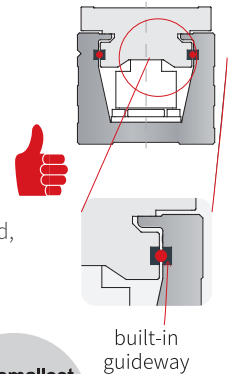
- Using one-piece aluminum extrusion structure with the analysis test, in order to get the best ratio of structure design between rigidity and the weight
- Adopting dustproof steel strip for all LGF series



one piece high rigidity body

2 Using high accurate built-in guideway

- The width of the body greatly reduced, and more silent.
- Straightness can reach $\pm 0.02\text{mm}$
- Repeatability can reach $\pm 0.002\text{mm}$

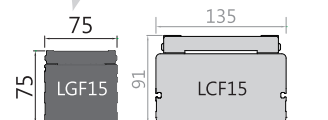


built-in guideway

4 Width of the body greatly reduced

- Width and Height of body reduced.
- Installation room reduced.

The smallest iron core model in the line of business.



40% smaller than the same thrust

5 Application industry

Application :



High speed gripping



Laser processing



Automatic machine

Servo Cylinder

NEW

DC入力伺服馬達驅控器

XC100



Servo motor
25W/40W



Position control
127point



Pulse control
LD/OC



Communication control
RS485



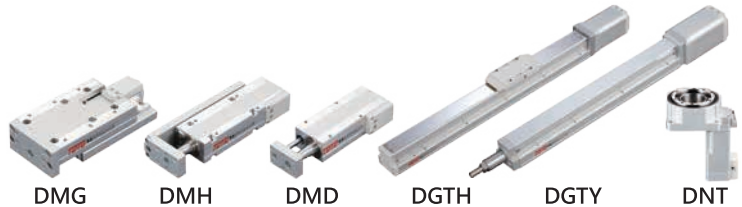
Voltage
DC24V



1

Abundant collocation

XC100 can match the product that relate to servo motor of servo cylinder series.



DMG

DMH

DMD

DGTH

DGTY

DNT

2

Control interface is same as TC100

- same pin wiring
- same PC operation interface, no need for relearning

3

A variety of control mode

control modes can be combined randomly to optimize the action mode

- Position control
- thrust control
- speed control

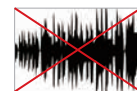
4

Various interface for PC/PLC

control mode	function explanation	Note
Pulse control	✓ Line Driver (200K Hz)	separate the pin for reducing noise
	✓ Open collector (60K Hz)	
I/O control	✓ 127個點位置	
Communication control	✓ Modbus-RS485	可16台並接
	✓ mini USB	TOYO-Single專用
Optional	✓ Encoder output extender model	

5

Greatly reduce of the outside noise



Line Driver / Open Collector separate the pin design, greatly reduce the outside noise

6

Extra communicate port for reducing wiring



7

Excellent performance

Motor	Advantage
<p>Servo motor</p>	✓ None out of steps
	✓ High resolution encoder
	✓ Smooth operation
	✓ Accurate positioning
	✓ Voltage DC 24V

8

Max to connect 16 stations via RS485



TC100

TC100

XC100

XC100

XC100

Single Robots/Linear Motor Robots

2nd version

AC入力伺服馬達/線馬驅控器

SC100



Servo motor
50~400W



Position control
127 point



Pulse control
LD/OC



Communication control
RS485



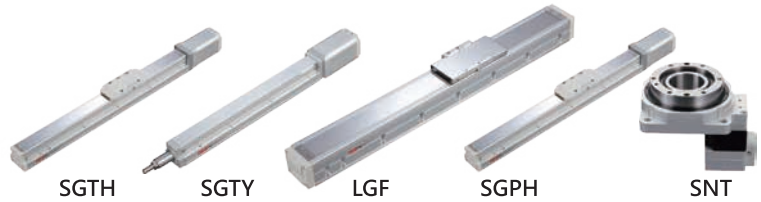
Voltage
AC2200V



1

Abundant collocation

SC100 can match the product that relate to robot and linear motor series.



2

Control interface is same as TC100/XC100

- Same pin wiring
- Same PC operation interface, no need for relearning

3

A variety of control mode

control modes can be combined randomly to optimize the action mode

- Position control
- thrust control
- speed control

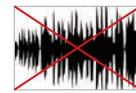
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	✓ mini USB	TOYO-Single專用
Optional	✓ Encoder output extender model	

5

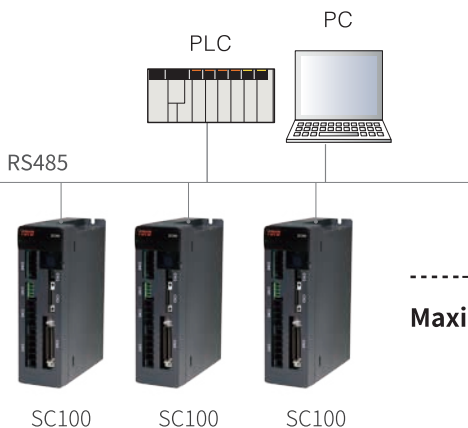
Greatly reduce of the outside noise



Line Driver / Open Collector separate the pin design, greatly reduce the outside noise

6

Different type of communicate port



Communication unit descriptions

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 & Size

Weight	250 gw
Size	115 x 75 x 30 mm

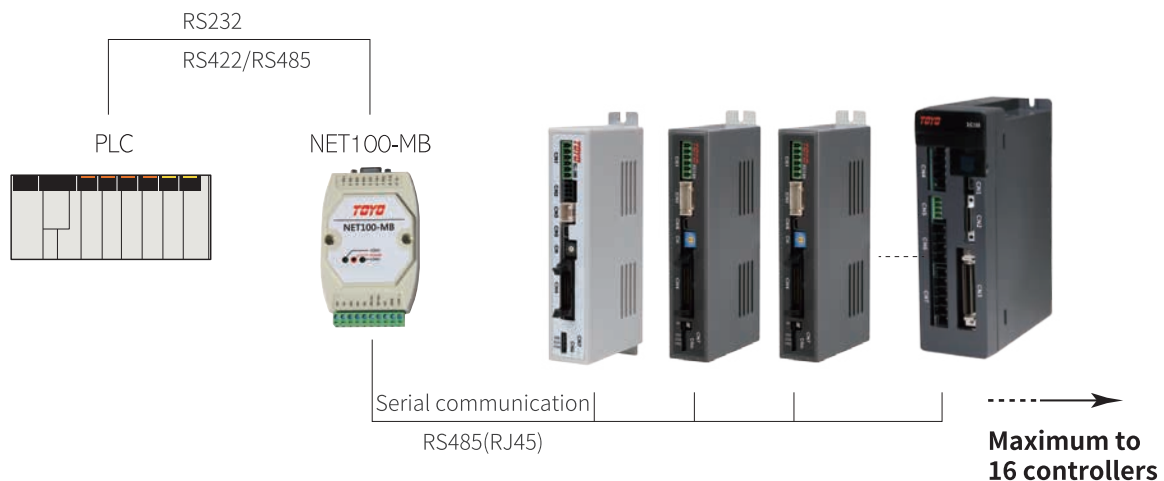
2 Easy Setting

You can link the following eight brands of PLC directly through NET-100-MB without writing program, which can corresponds the TC100 function to the PLC related temporary registers. Because the numbers of PLC types are too much, please contact our salesman to confirm the corpesponding PLC model or other brands PLC.



3 Easy Arrangement

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



EtherCAT Gateway

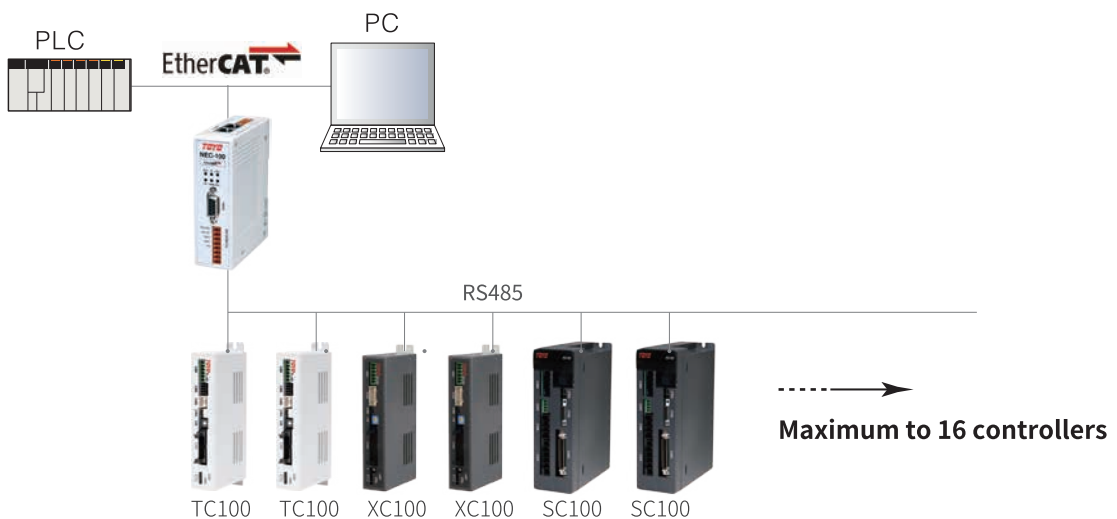
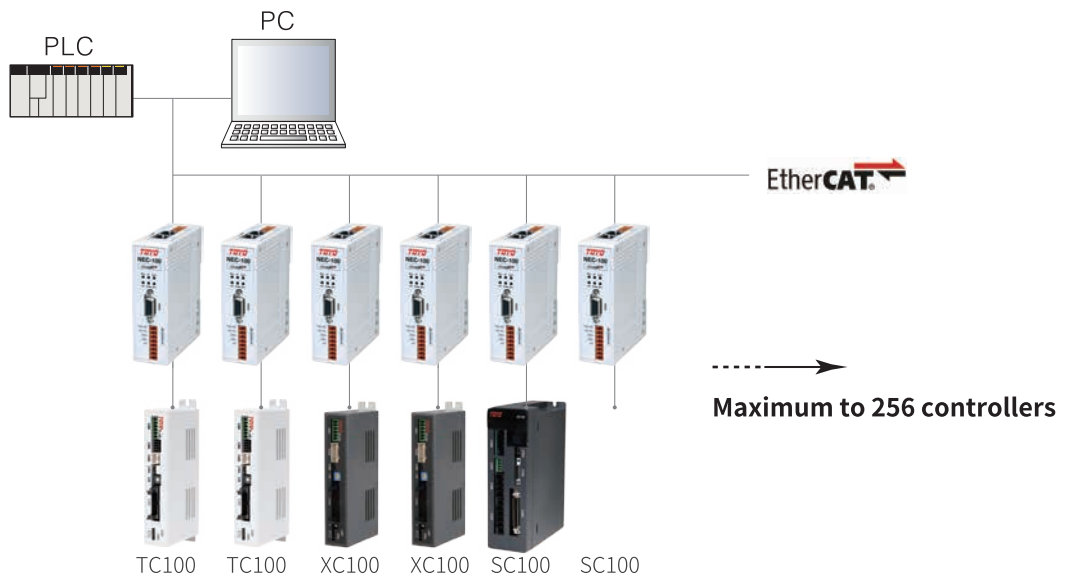
NEC-100



1 Features

- high performance MCU for information organization
- port-RJ45
- integrating toyo controller to connect the device with EtherCat
- completely serial line internet protocol transform ,no need PLC functional block
- Baud Rate 115200 bps max band rate 115200bps support

2 Various wiring architecture



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

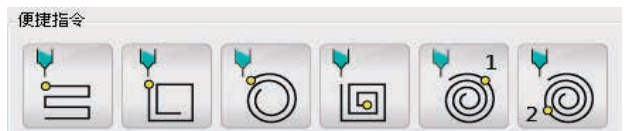


Z axis : Ball screw driven

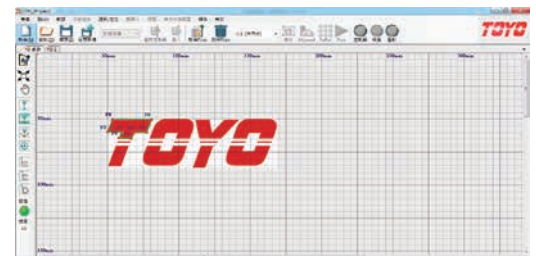
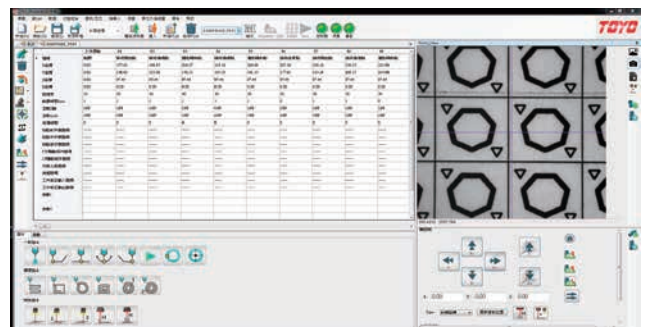
Y axis : Belt driven

X axis : Belt driven

1 Various Dispense Commands



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.

經濟型簡易驅動套件

AGV UNIT

Series



運行指令編輯軟體



Forward / backward



turn left & right



Maximum speed 71m/min



max payload 4600kg



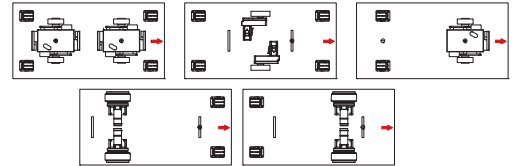
controller ABH3



ABH3 Series servo controller (including driver)

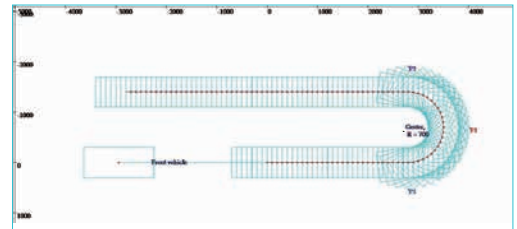
1

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

4

Can match with various specification of power-kit



US Series 驅動套件

- 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 驅動套件

- 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)



AWRII Series 驅動套件

- 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)

Servo motor

DM Series



Mini Servo Cylinder。

顛覆以往，進化更高性能。

TOYO Product Lineup

Electric Actuator Series



Servo Cylinder Series



Linear Motor Robots Series



Single Robots Series



AGVS Series



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