TOYO

9001 14001 45001

EN

NEW PRODUCT CATALOG

ELECTRIC ACTUATOR/SERVO CYLINDER/LINEAR MOTOR MODULE/ RACK AND PINION SLIDE/CLEANROOM TYPE





WHAT'S NEW?



TOYO AUTOMATION CO., LTD



GLTH/GLTB Series

(Ball screw) (Belt)

Low Profile Electric Actuator

01
Lower Cost Than GTH
5~20%

02
Reduced Height
20mm
GLTH5 vs GTH5

03
Higher RPM Support
3600rpm

04
Double Lead Option
1440mm/s
Vmax

05
See Thru Coupling Housing
Easier Monitoring

06
Optional C5 Ballscrew, Better Repeatability
±3μm

07
Caged Ball Design
Longer Life

08
Black Body
Low Reflection Application

No more "Self Assembly And Parts Choosing."

Save Cost immediately

And more benefit!!

Motor installation & tuning — tuning — **Whole packages!**

Contact TOYO sales for more compatible motor brands



TOYO install motor for you!

- Electric actuator undergo strict quality inspection before leaving the factory, ensuring customers can use them with confidence, and they also receive after-sales service and support.
- Send motor to TOYO to avoid self assemble process. Save your time!
- Compatible for multiple motor brand
  - Mitsubishi
  - Panasonic
  - Yaskawa
  - Delta
  - Oriental



CGLTH CGLTHD CGLTB CGLMH TC100 Drive

Servo Cylinder, the whole package

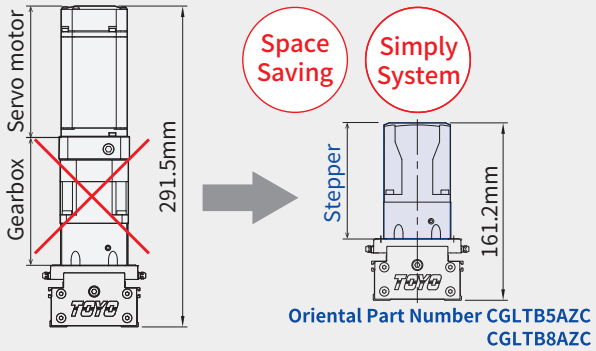
Oriental motor × TOYO



Stepper with belt drive is recommended! No gearbox required, space saving.

Due to the servo motor's insufficient inertia and the low rigidity of the belt, gain adjustment becomes challenging. To address this, a gearbox needs to be added, which leads to space constraints, reduced speed, and increased costs.

The AZ series offers advantages such as "no gain adjustment required," "high inertia tolerance," and "insensitivity to mechanism rigidity." These features eliminate the need for a gearbox, making it more suitable for belt-driven slides with long strokes and high-speed positioning.



Oriental Part Number CGLTB5AZC
CGLTB8AZC

I want to make a change! YES

Free Borrow Demo Machine Now!

We provide free test units to give you a thorough understanding of the product's movement and operational feel that cannot be fully assessed through the catalog alone.
You can either review the product's or use it directly!

Product Info

[GL Feature]

NEW

New Generation, New Experience!

All New Low Profile Integrate Bearing Design Actuator



Reduce Cost by 5~20%

Embedded bearing on the profile. Better space utilization. Higher moment load capacity.

Lower profile without sacrificing performance. Less material used, reduce weight, and lower carbon foot print.

Integrate Bearing Structure

Cost Effective



5~20%

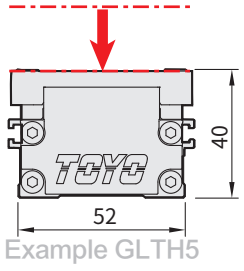
- Better manufacturing process, better cost structure than GTH series. Competitive product!

See Thru Coupling Housing



- Live monitoring. Check coupling without stopping the machine.
- Save time.

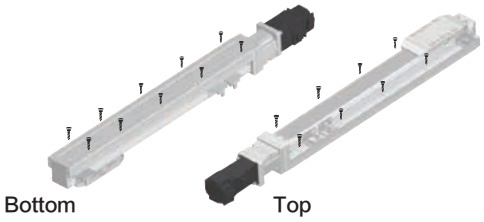
Lower Profile



- Reduced height. Low profile design.
- No matter used as single axis or MAS. Over all height reduced. More compact design that save expensive space cost.

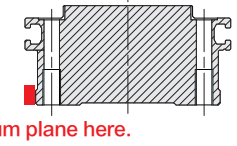
Mounting From Both Direction

- Top down or bottom up mount without remove anything.
- Optional PIN holes.



Datum Plane

- Datum plane on the side. Provide better positioning precision. Reduce installation time cost.



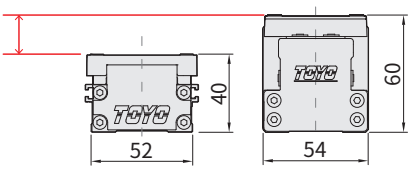
Better Performance Across All Our Competitor.Lowest Profile Ever!

Lower GC, Space Saving

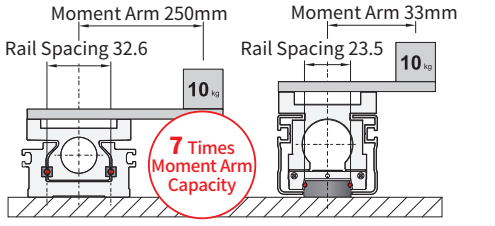
mm

Height Reduced By 20mm

Weight Reduced By 28%



Integrate Bearing, Better Rigidity



All Options

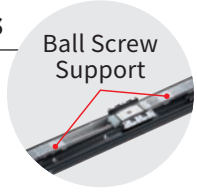


Ball Screw | Belt Drive | Dual Carriages | Clean Room

Ultra Long Stroke M Series

GLTH8M
Ball Screw Longest Stroke **2500** mm

GLTB8
Belt Drive Longest Stroke **3000** mm



Patented ball screw support preventing the screw from whipping.

Multiple Motor Position

- For more flexible design choice.



BC In-line | BL Left | BR Right | BM Bottom

Low Dust Option

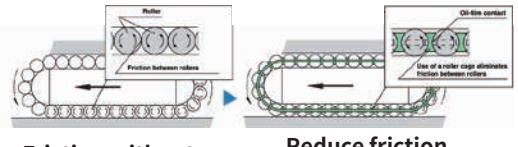
- **Open design :** Cover sheet as standard option. Effectively prevent object from dropping in.
- **Enclosed design :** Sealed cover sheet is the best way to prevent dust.
- **Clean room design :** Adding pneumatic ports. Suitable for clean room Class 10 application.



Pneumatic Port

Caged Ball, Reduce Noise, Increase Life

- No contact between balls. Lowering the noise and increasing life.

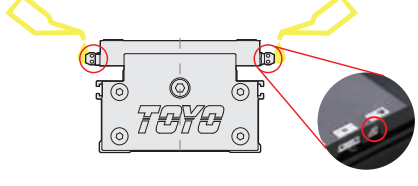


Friction without caged balls

Reduce friction with caged balls.
*Only GLTH8/GLTH12/GLMH8/ GLMH12/GLTB8

External Grease Port

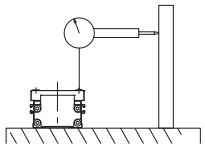
- Easier maintenance. One grease port for both rail and ballscrew.



High Accuracy

GLTH5/8

- Repeatability | ±0.005mm
- Straightness / Flatness | ±0.02mm/800mm



optional C5 ball screw

- repeatability up to **±3μm**

Optional screw grade C5

Black Body, Optional Cold Plate For Ballscrew

- Black body anodizing, enhancing aesthetics and increasing surface corrosion resistance, wear resistance, and thermal stability.
- Reduce light reflection like normal aluminum color does. Suitable for visual inspection and optical application.
- Optional cold plating ball screw.

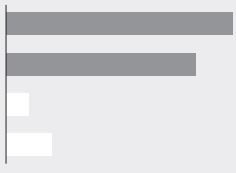
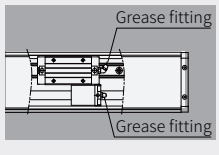




[Comparison Between GL and Iron Body]



With so many actuator on the market, should I choose an iron one or a GL aluminum one?

	Aluminum GL Series	Iron
		
▪ **Comparison between same width**	 Max Stroke (Belt) 3000mm Max Stroke (Ball screw) 2500mm ✓	 Other Brand Max Stroke (Belt) 300mm Max Stroke (Ball screw) 600mm
▪ **Weight**	 300mm Stroke. 1.5 kg (GLTH5) ✓	 Other Brand 300mm Stroke. 2.4 kg
▪ **Transmission**	  ☑ Ball Screw ☑ Belt Drive ✓	 ☑ Ball Screw
▪ **Maintenance**	 External grease port that maintain both rail and ball screw. ✓	 Grease port located in bearing block. Need to disassemble in order to maintain.
▪ **Lead time**	 < 14 days All self-made components, no waiting required. ✓	 > 14 days Need to wait for machining parts
▪ **Customize ability**	 Can order multi axis configurations directly ✓	 Can't customize. Order in single axis.

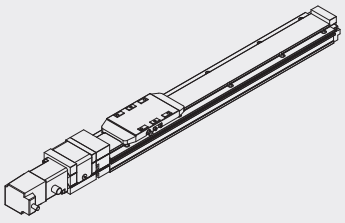
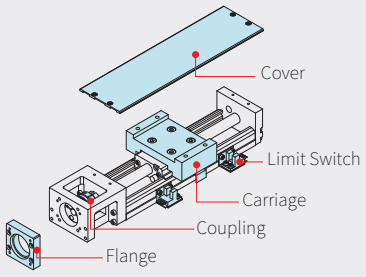
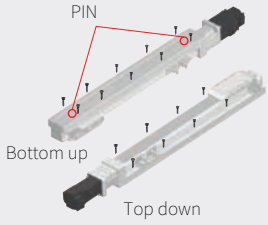
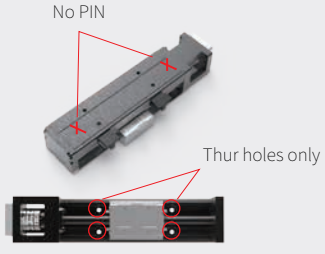
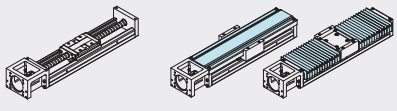
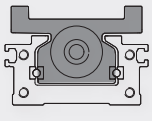
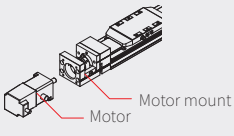
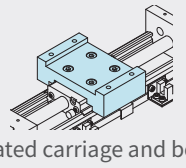
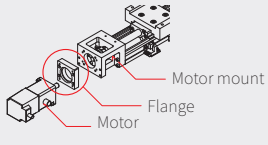
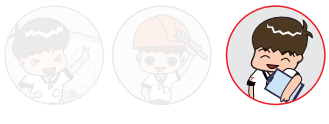
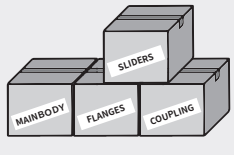
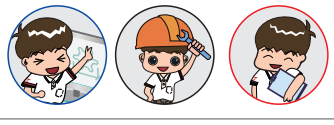






After this review, you should know which one to choose! In short, iron actuator are relatively complex and time-consuming to maintain and assemble.
The GL design is simple, easy to integrate, and convenient for assembly personnel to use.



	Aluminum Body GL Series	Iron Body
▪ **Structure** 	 Assemble ready ✓	 Need to find the blue parts separately
▪ **Implementation** 	 Top down/ Bottom up mount / PIN ✓	 Thur holes only/ No PIN
▪ **Variation** 	 ☑ Open ☑ Enclosed ☑Clean Room ✓	 ☑ Open ☑ Enclosed, need optional cover
▪ **Reliability** 	 One piece carriage  One piece motor mount. Reduce stacked tolerance. ✓	 Separated carriage and bearing  Separated flange. Tolerance stack-up
▪ **One stop shop** 	 One stop shop. Fast and easy. ✓	 Multiple shop. Complex purchasing procedure
▪ **Pricing** 	 Base on same performance, cost is only 50%~70% of iron actuator ✓	 Higher cost
▪ **Time cost** 	 Reduce 1/2 of design/assemble/ purchasing time ✓	 Time consuming

[LINEUP]

Improved version of GTH series. Smaller volume, same performance, lower cost.

Enclosed

Ball Screw

Short Stroke

▪ GLTH Series



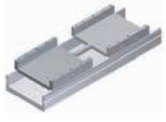
GLTH3	GLTH5	GLTH8	GLTH12	
±0.005mm				Repeatability
480 mm/s	1200 mm/s	1440 mm/s	1440 mm/s	Vmax
13 kg	30 kg	105 kg	110 kg	Max Payload
50~500 mm	50~1000 mm	50~1250 mm	50~1250 mm	Stroke

▪ GLTHD Series



GLTH5D	GLTH8D	
±0.005mm		Repeatability
1200 mm/s	1440 mm/s	Vmax
30 kg	105 kg	Max Payload
50~850 mm	50~1050 mm	Stroke

Dual Carriages



- Increasing A/B direction moment load capacity

Belt Drive

Long Stroke

▪ GLTB Series



GLTB5	GLTB8	
±0.06mm		Repeatability
1067 mm/s	2000 mm/s	Vmax
5 kg	8 kg	Max Payload
50~3000 mm	50~3000 mm	Stroke

Long Stroke, High Speed

Belt Drive Longes Stroke **3000** mm

- Suitable for over 1500mm stroke long distant high speed point to point applications. Like pick and place, printing or dispensing.

Ball Screw | Belt Drive | Clean Room | Integrate Bearing

Open

Ball Screw

Short Stroke

▪ GLMH Series



GLMH5 GLMH8

±0.005mm		Repeatability
1200 mm/s	1440 mm/s	Vmax
30 kg	105 kg	Max Payload
50~1000 mm	50~1250 mm	Stroke

Open Structure



- No friction between carriage and cover sheet.
- Optional cold plating for rail and ball screw.

Long Stroke

▪ GLTHM Series

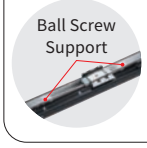


GLTH5M GLTH8M

±0.005mm		Repeatability
1200 mm/s	1440 mm/s	Vmax
30 kg	105 kg	Max Payload
650~2000 mm	700~2500 mm	Stroke

Long Stroke, High Precision

Ball Screw Longest Stroke **2500** mm



- No ball screw whipping anymore.

Clean Room

Class 100

Ball Screw / Belt Drive

Short Stroke

▪ GLCH Clean Room Series



GLCH5 GLCH8 GLCH12 GLCH5D Dual Carriages GLCH8D Dual Carriages GLCB5 GLCB8 *GLCB8 only up to Class 100

Application :

Semi-conductor | Plane Fab (LCD OLED) | Packaging (LED) | Battery Fab | Food Processing



Class 10 Pneumatic port

*By connecting pneumatic port. Run up to Class 10 clean room level.

10~30%



ETH2/ECH2 Series

Economic Heavy Payload Electric Actuator

01
Lower Profile
20%~35%

02
Horizontal/
Vertical
Max Payload
400/200 kg

03
Repeatability
±0.003~
±0.005mm

04
Higher Ball
Screw RPM
3600↑ rpm

05
New Width
ETH2-30

06
Lower Price
10%~30%

07
All With
Caged Ball
Longer Life

08
Grease
Port Equipped
Easier Maintenance

[LINEUP]

Clean Room

Ball Screw

Normal Environment

Ball Screw

Standard Guide

▪ ETH2



	ETH2-14	ETH2-17	ETH2-22	ETH2-30	ETH2-30
Repeatability	±0.005mm				
Motor	400W	400W	750W	1500W	750W+Gearbox
Vmax	1440 mm/s	2400 mm/s	1500 mm/s	1280 mm/s	640 mm/s
Max Payload	110 kg	120 kg	150 kg	250 kg	400 kg
Stroke	50~1200 mm	50~1500 mm	50~1800 mm	50~2100 mm	50~2100 mm

Standard Guide

▪ ETH2D(Dual Carriage)



	ETH2-14D	ETH2-17D	ETH2-22D	ETH2-30D	ETH2-30D
Repeatability	±0.005mm				
Motor	400W	400W	750W	1500W	750W+Gearbox
Vmax	1440 mm/s	2400 mm/s	1500 mm/s	1280 mm/s	640 mm/s
Max Payload	110 kg	120 kg	150 kg	250 kg	400 kg
Stroke	50~1050 mm	50~1300 mm	50~1550 mm	50~1750 mm	50~1750 mm

Clean Room

ISO 4

(Class10)

Ball Screw

Standard Guide

▪ ECH2



	ECH2-14	ECH2-17	ECH2-22
Repeatability	±0.005mm		
Motor	400W	400W	750W
Vmax	1440 mm/s	2400 mm/s	1500 mm/s
Max Payload	110 kg	120 kg	150 kg
Stroke	50~1200 mm	50~1500 mm	50~1800 mm

Standard Guide

▪ ECH2D(Dual Carriage)



	ECH2-14D	ECH2-17D	ECH2-22D
Repeatability	±0.005mm		
Motor	400W	400W	750W
Vmax	1440 mm/s	2400 mm/s	1500 mm/s
Max Payload	110 kg	120 kg	150 kg
Stroke	50~950 mm	50~1250 mm	50~1500 mm

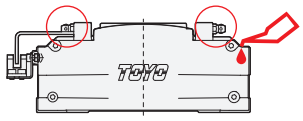
[ETH2/ECH2 Features]

Ball Screw Actuators

2nd Gen, compact design and lower price!

Grease Port Equipped

- Improvement from 1st Gen. Greasing from both side.

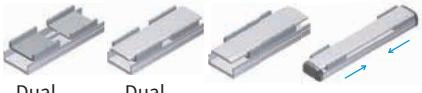


Different Motor Orientation



BC In-line | BL Left | BR Right | BM Bottom

Diverse Custom Options



Dual Carriages (Move separately) | Dual Carriages (Move together) | Extended Carriage | Opposite movement

Caged Ball Bearing

- With no ball collision or friction, it significantly reduces movement noise, extends service life, and decreases maintenance frequency.

Top-down, Bottom-up mount

- Direct mount without removing the cover.



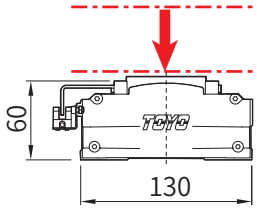
C5 Ball Screw (Optional)

- Standard C7 Ball Screw — Repeatability ±5μm
- Optional C5 Ball Screw — Repeatability ±3μm

Higher Ball Screw RPM

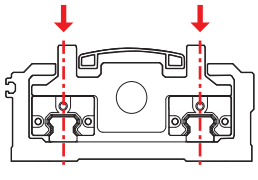
- Up to **3600~4000rpm**
  (Depends on the model)

Lower Center of Gravity



- Low profile
- Reduced weight and height. Makes overall design more compact whether use alone or in gantry configuration.

High Strength Structure



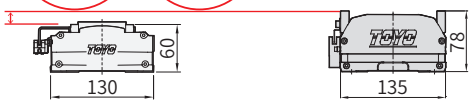
- Mounting holes place right on top of the rail. Reduced vibration and increase stability while high speed application.

Reduced Height, Width and Weight

Unit:mm

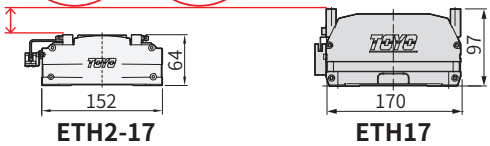
2nd Gen ETH2 VS ETH 1st Gen

Weight drop by 50% | Width reduced by 5mm | Height drop by 18mm



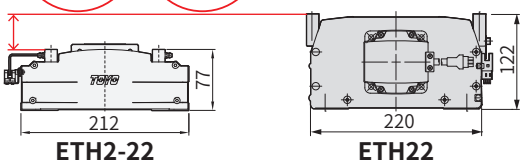
ETH2-14 ETH14

Weight drop by 40% | Width reduced by 18mm | Height drop by 33mm



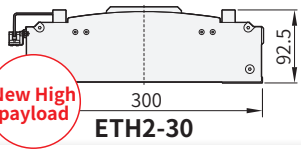
ETH2-17 ETH17

Half of the weight | Width reduced by 8mm | Height drop by 45mm



ETH2-22 ETH22

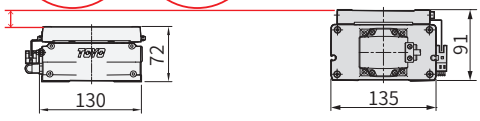
New High payload



ETH2-30

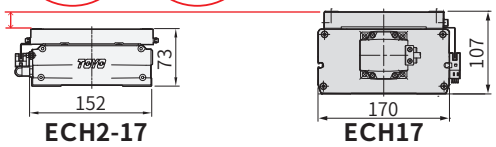
2nd Gen ECH2 VS ECH 1st Gen

Weight drop by 50% | Width reduced by 5mm | Height drop by 19mm



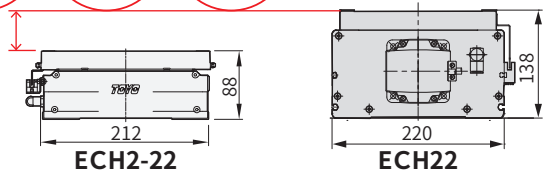
ECH2-14 ECH14

Weight drop by 40% | Width reduced by 18mm | Height drop by 34mm



ECH2-17 ECH17

Half of the weight | Width reduced by 8mm | Height drop by 50mm



ECH2-22 ECH22

TOYO's latest second-generation product features low assembly and lightweight design, significantly improving upon the usability and durability issues of the first generation. As technology advances, this evolved second-generation product will help upgrade your equipment!



ECH2 Clean Room Series Feature (Semi-Conductor Production Ready)

- **Air Fitting**

  Meet ISO4(Class 10) with air fitting

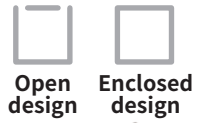


- **Suitable for different environment**

1. Offering Original and black color option.
2. Open and enclose cover options.
3. Optional cold plated ball screw and linear guide. Produce less dust, reduced wear, lower noise level, anti acid and no reflection. Only 2% reflection rate.



Black color *Only 1st Gen | Aluminum color



Open design | Enclosed design



Cold plated ball screw and rail

- **ISO CLASS Clean Room Certification**

All certification are coming from authorized institution examine base on ISO 14644-1.



- **Clean Room Assembly**

TOYO is few linear motion manufacturer in the world (Taiwan only) that can assemble actuators in clean room. Making sure minimized the contamination.





MG Series

Electric European Belt Actuator

01
Ultra Long Stroke.
Up To
3700mm

02
High payload,
High Rigidity
97kg
Max Payload

03
Better
Repeatability
±0.04mm

04
Vmax
3500mm/s

05
Better Moment
Load Capacity
38Times

06
No Bracket
Needed For
MAS Design
Lower Down Cost

07
Pulley Reduction/
Gearbox/Direct Drive
Multiple Choice

08
Integrate Bearing.
One Piece Carriage
High Rigidity

[LINEUP]

Belt Drive | Clean Room | Integrate Bearing

Standard Environment (Low Dust)

Belt Drive

Long Stroke

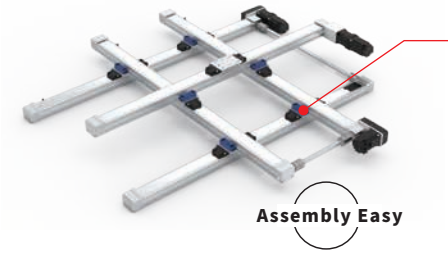
▪ MG

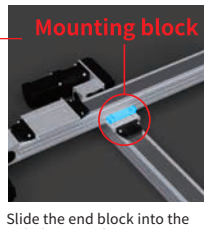


MG50 MG65 MG85

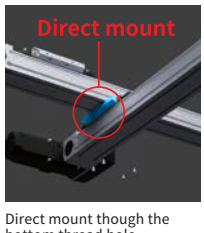
±0.04mm			Repeatability
3500 mm/s	3500 mm/s	3500 mm/s	Vmax
16 kg	50 kg	97 kg	Max Payload
300~3700 mm	300~3700 mm	300~3700 mm	Stroke

Easy Assembly **No bracket needed for building multi axis system. Carriage can direct mount to the body.**





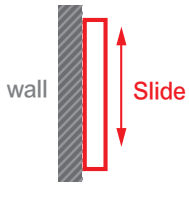
Slide the end block into the rail, then top-down secure the actuator on the carriage of another actuator.



Direct mount though the bottom thread hole.

- Extended carriage design with added through holes. Can be used to form various multi-axis connections, saving on fixture costs and assembly time.

Vertical App **Vertical application for a series**



- Mounting method: The body can be fixed using side-mounted brackets or by securing the grooves from below.

MAS App **MAS configuration and application**

- Suitable for large-area and long-distance transport. Widely adopted in industries such as panel manufacturing, PCB, semiconductors, optical lenses, automotive, and batteries.

Drive shaft



Gantry with drive shaft



XYZ with drive shaft



XYZ gantry with side mount Y and rod style Z



Cross stage



Gantry with two carriages



Free

Borrow Demo Machine Now!

I want to make a change! YES

We provide free test units to give you a thorough understanding of the product's movement and operational feel that cannot be fully assessed through the catalog alone.
You can either review the product's or use it directly!

Product Info

[MG Feature]

COST DOWN

5~10%

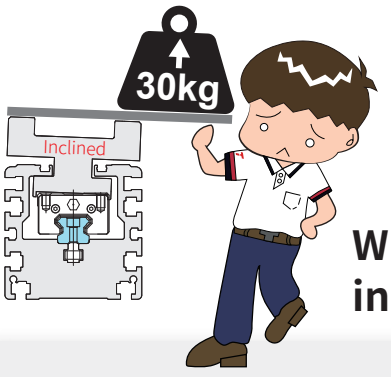


Economic

Includes a standard reducer, no extra purchase needed, making it more cost-effective.

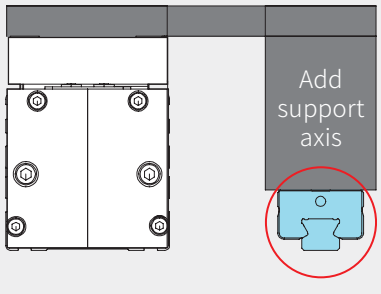
Way Better Moment Load Capacity

Electric European Belt Actuator MG Series



When the moment load is too large, the slider will be inclined. How to improve the deformation?

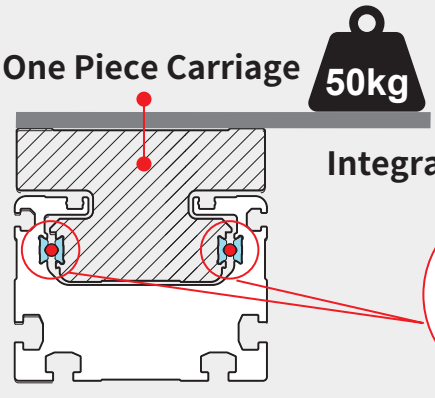
Before



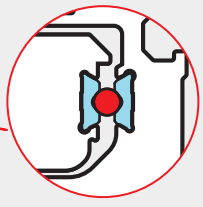
- Add support axis
- Cost increase

After

One Piece Carriage



Integrate Bearing Design

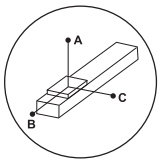


- Comparing to standard guide, integrate bearing reduce volume and improve moment load capacity.
- Reduced height and volume.
- One piece carriage, better rigidity.



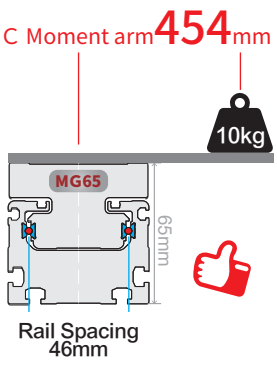
Way Better Moment Load Capacity

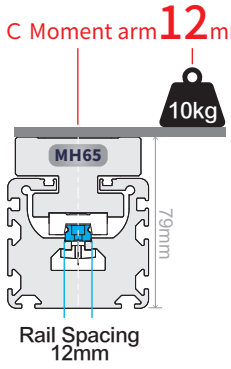
New MG65 VS Old MH65/MK65

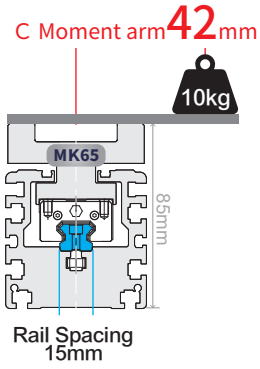


Better Moment Load Capacity 38 times

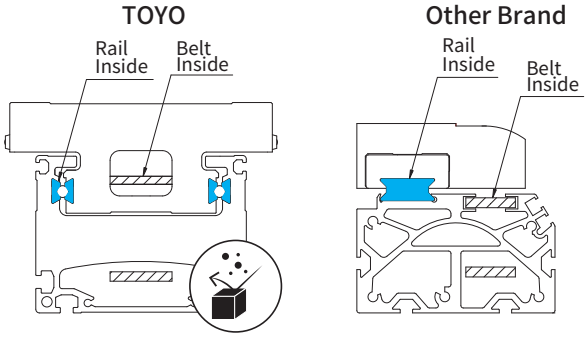
- The widest rail spacing allows for the maximum lateral moment capacity.
- Reduce height and volume effectively in the same time







Enclosed profile comparing to other brand



- Enclosed cover sheet design. Can effectively prevent dust, debris. Increasing overall life.
- Enclosed design prevent dust built inside. Easier to maintain. Can work in clean room required environment.

Using stepper motor, work without gearbox, save more space

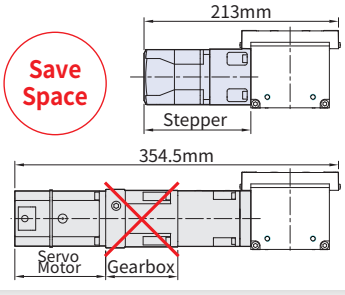
Orientalmotor × TOYO



- The servo motor's low inertia tolerance and belt rigidity make gain adjustment difficult, needing a gearbox, which adds space, slows speed, and increases costs.
  ⊕The AZ series offers "no gain adjustment," "high inertia tolerance," and "unaffected by mechanism rigidity," eliminating the need for a gearbox and making it ideal for long-stroke, high-speed positioning of belt slides.

System Simplify

Save Space



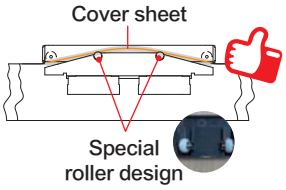
Multiple Reducing Method

- Reducer as standard option. Reduce cost. Can also work with gearbox.

	Type	Pulley Reduction	Gearbox	Direct Driv
MG50	Ratio	2.5:1	4:1	1:1
MG65	Ratio	2:1	3:1	1:1
MG85	Ratio	3:1	5:1	1:1

Low Dust Application

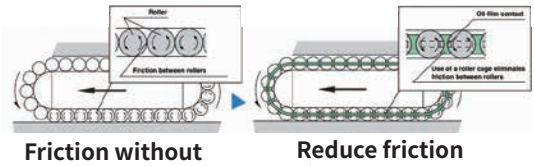
- The special roller-supported steel belt design reduces dust caused by friction between the slider and the steel belt.
- Clean room grease for all series. Optional pneumatic port, suitable for clean room application and up to CLASS 100 certification.





Caged Ball, Reduce Noise, Increase Life

- No contact between balls. Lowering the noise and increasing life.



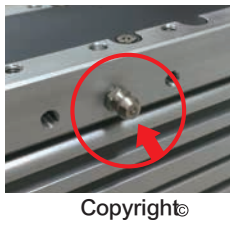
Friction without caged balls

Reduce friction with caged balls.

*MG65/85 only

Patented Grease Fitting on Both Side

- The patented single oil nozzle on the slider allows simultaneous lubrication of the rail and slider, making maintenance easier and faster. The nozzle direction can be customized.



Patented grease fitting design

Copyright©



Y43/Y62

Rod Type BallScrew Actuator

01 Ball Screw Drive **High Payload**

02 Max Horizontal Payload **100**kg

03 Max Vertical Payload **45**kg

04 High Repeatability **±0.01**mm

05 Optional Regen Resistor **Increasing Vertical Payload**

06 Flexible Motor Position

07 **High Strength Structure**

[LINEUP]

Ball Screw | Belt Drive | Clean Room | Integrate Bearing

Rod Style

Ball Screw

Integrate Bearing

▪ GTY Series



	GTY4	GTY5	GTY8	GTY12	
	±0.01mm				Reputability
	720 mm/s	1200 mm/s	1200 mm/s	1920 mm/s	Vmax
	25 kg	40 kg	110 kg	110 kg	Max Payload
	50~500 mm	50~600 mm	50~800 mm	50~800 mm	Stroke

Affordable

▪ Y Series



	Y43	Y43D	Y62	Y62D	Y95	
	±0.01mm					Reputability
	720 mm/s	720 mm/s	720 mm/s	720 mm/s	600 mm/s	Vmax
	40 kg	40 kg	100 kg	100 kg	1200 kg	Max Payload
	50~500 mm	50~500 mm	50~700 mm	50~700 mm	50~800 mm	Stroke

With Stepper

▪ CY Series



	TC100 Drive	CY43	CY43D	CY62	CY62D	
	±0.01mm					Reputability
	600 mm/s	600 mm/s	600 mm/s	240 mm/s	240 mm/s	Vmax
	40 kg	40 kg	40 kg	80 kg	80 kg	Max Payload
	50~500 mm	50~500 mm	50~500 mm	50~700 mm	50~700 mm	Stroke

Roller Screw

High Thrust

▪ YH Series



	YH95	
	±0.01mm	Reputability
	42 mm/s	Vmax
	3000 kg	Max Payload
	50~800 mm	Stroke

[Y43/Y62 Feature]

All New Design

External Grease Fitting
Easier Maintenance

Stainless Steel Rod
High Rigidity



Anti Rotation Design
Long Life

Radial Bearing Design
Longer Stroke

Anti Rotation Accuracy θ
±1°

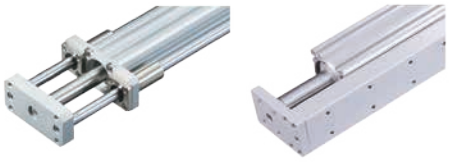
2nd Gen Affordable Rod Style Actuator

Self made component, lowering down the cost.

Rod Style Ball Screw Actuator

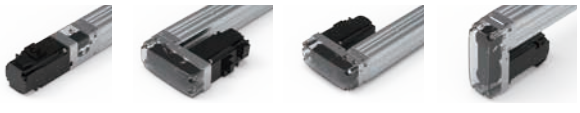
Optional Support

- Optional support rod for better side force resistant.
- Special design for anti rotation. Increasing life span.



Multiple Motor Position

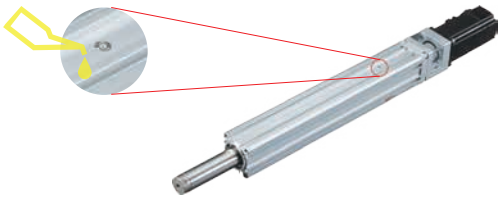
- For more flexible design choice.



BC In-line | BL Left | BR Right | BM Bottom

External Grease Port

- Easier maintenance. One grease port for all. No disassembly needed.



Transparent coupling housing

- Live monitoring. Check coupling without stopping the machine.
- Save time.



[Y43/Y62 Spec]

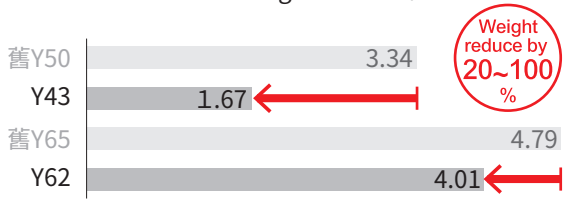
Model			Y43			Y62	
Repeatability		mm	±0.01			±0.01	
Lead		mm	2	6	12	6	12
Maximum linear speed		mm/s	120	360	720	360	720
Maximum Payload	Horizontal ※1	kg	40	30	20	100	80
	Vertical (No regen resistor)	kg	12	9	7	33	23
	Vertical (With 60W regen resistor)	kg	14	12	11	45	30
Rated Thrust		N	854	284	142	1156	578
Stroke (increments)		mm	50-500mm /50 Spacing			50-700mm /50 Spacing	
AC Servo Motor Output		W	100			400	
Ball Screw Ø		mm	C7Ø10			C7Ø14	

※1 If payload is near maximum, it requires to collocate externally with auxiliary guideway for bearing radial load.

Reduced Weight

Unit:kg

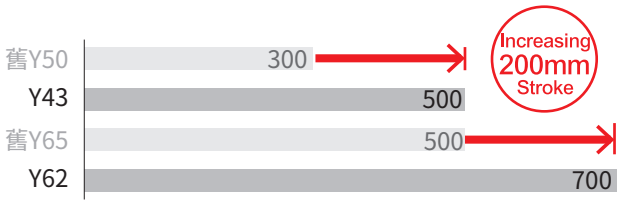
- Stainless rod, better weight distribution than iron rod used in 1st gen. An example of 300mm stroke



Longer Effective Stroke

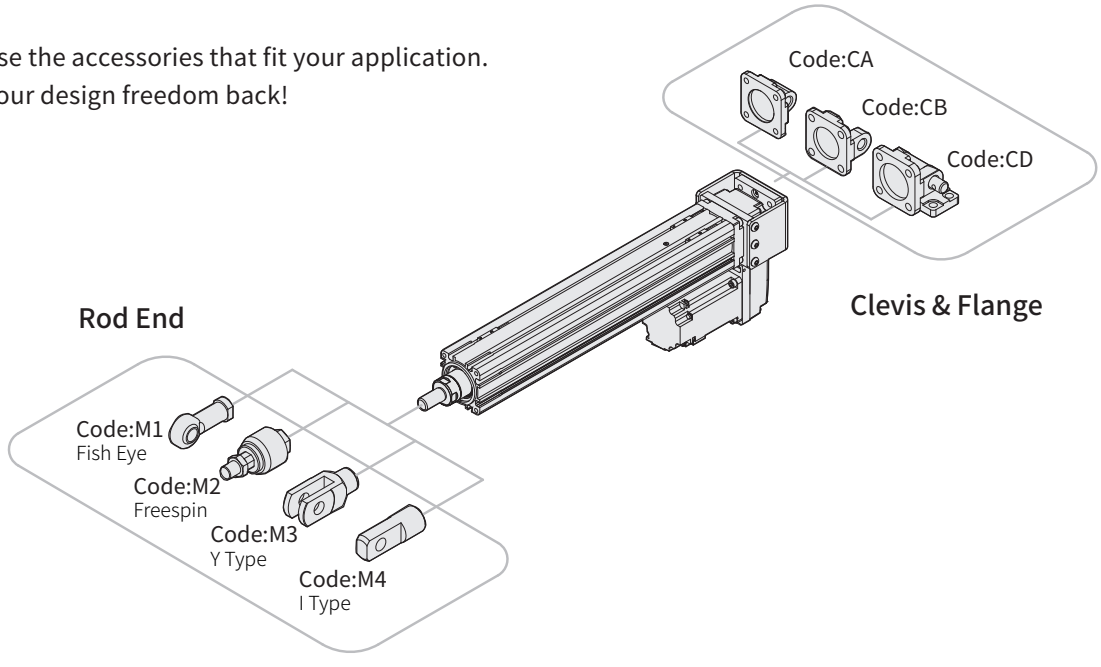
Unit:mm

- Radial bearing design for increasing stroke. Up to 700mm.



[Optional Accessories]

- Choose the accessories that fit your application.
- Get your design freedom back!





YH95/Y95

Planetary Screw Heavy Duty Actuator

01
Planetary Roller Screw
Heavy Payload

02
Max Horizontal Payload
3 tons

03
Max Vertical Payload
1.2 tons

04
High Precision
±0.01mm

05
Hydraulic Alternative
Lowering Maintenance Cost

06
Multiple Motor Orientation
Flexible Mount

07
Gearbox
Multiple Ratio Choice

08
High Rigidity Profile

[LINEUP]

Ball Screw | Clean Room | Integrate Bearing

Rod Style

Ball Screw Drive

Integrated Rail

▪ GTY Series



	GTY4	GTY5	GTY8	GTY12	
Repeatability	±0.01mm				
Vmax	720 mm/s	1200 mm/s	1200 mm/s	1920 mm/s	
Max Payload	25 kg	40 kg	110 kg	110 kg	
Stroke	50~500 mm	50~600 mm	50~800 mm	50~800 mm	

Economic

▪ Y Series



	Y43	Y43D	Y62	Y62D	Y95	
Repeatability	±0.01mm					
Vmax	720 mm/s	720 mm/s	720 mm/s	720 mm/s	600 mm/s	
Max Payload	40 kg	40 kg	100 kg	100 kg	1200 kg	
Stroke	50~500 mm	50~500 mm	50~700 mm	50~700 mm	50~800 mm	

Stepper Motor ption

Stepper Motor ption

▪ CY Series



	TC100 Drive +	CY43	CY43D	CY62	CY62D	
Repeatability	±0.01mm					
Vmax	600 mm/s	600 mm/s	240 mm/s	240 mm/s		
Max Payload	40 kg	40 kg	80 kg	80 kg		
Stroke	50~500 mm	50~500 mm	50~700 mm	50~700 mm		

Roller Screw Drive

High Thrust

▪ YH Series



	YH95
Repeatability	±0.01mm
Vmax	42mm/s
Max Payload	3000 kg
Stroke	50~800 mm

[YH95/Y95 Features]

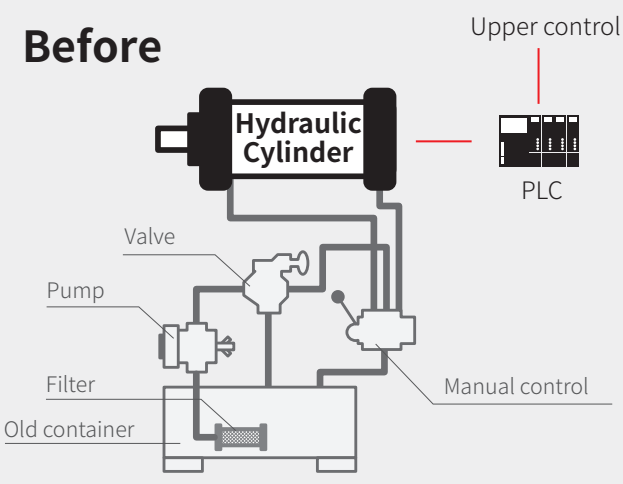
High Thrust Servo Cylinder



Long Rigidity, Low Maintenance Required Great Hydraulic System Alternative

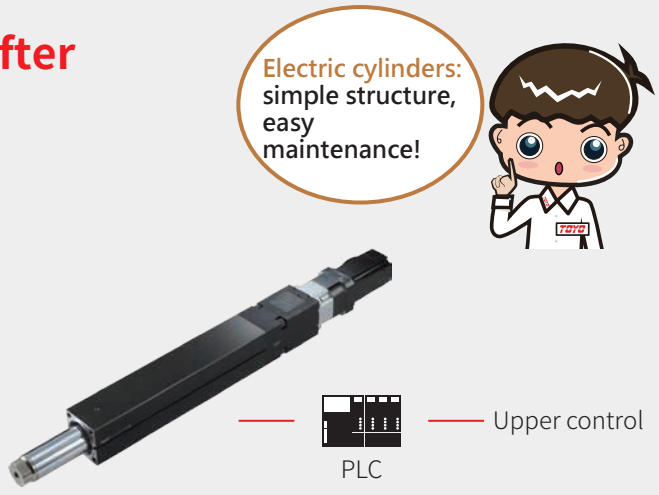
Quick to install, troubleshoot, and test; lower maintenance costs and compact size, ideal for space-constrained applications.

Before

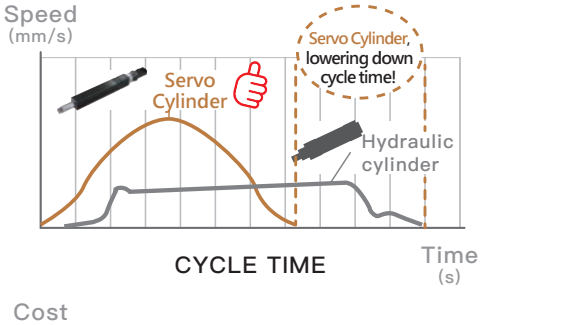


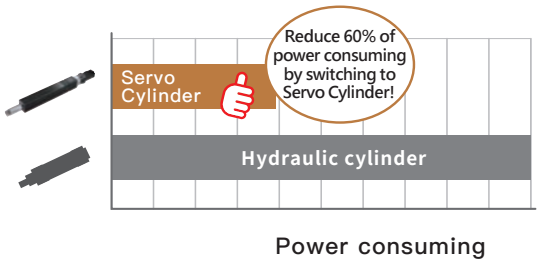
- Oil seal Leaking
- Inner tube rusting, scratching
- Flammable
- Sensitive to temperature
- High cost for whole system
- Limited flow speed
- Bad repeatability
- Complex system design. More back up part required.
- Multiple stop purchasing

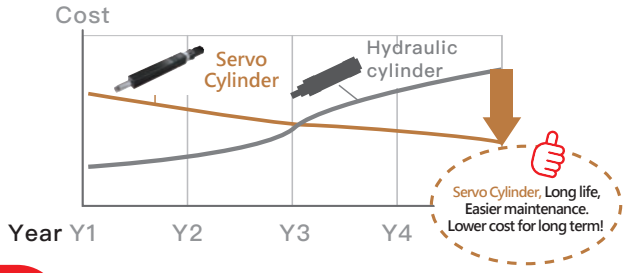
After

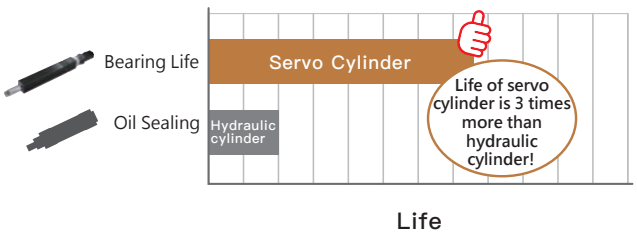


- Multiple position control
- Speed, torque control
- Low noise
- Less parts, easier structure
- High repeatability
- Simple structure
- Low power consuming
- One stop purchasing









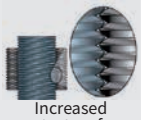
High Thrust Series



YH95

- Designed with a planetary roller screw, offering over three times the load capacity of similar-sized ball screws, with enhanced weight-bearing capability.

Planetary roller Screw



Increased contact surface

coming soon



Y95

- Ball screws have less contact area than roller screws, generate less heat, and are therefore more efficient at higher speeds.
- Lower cost

Ball Screw



Less contact surface

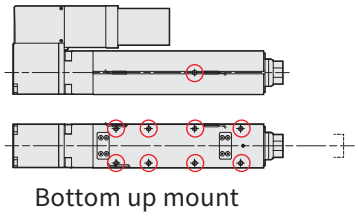
Spec Sheet

			YH95				Y95	
SPCES	Model							
	Repeatability (mm)		±0.01				±0.01	
	Reduction Ratio		3:1	5:1	8:1	10:1	-	2:1
	Motor max. speed (rpm)		1500				3600	
	Maximum Speed (mm/s)		42	25	16	13	600	300
	Maximum Payload	Horizontal (KG) ※2	1080	1500	2400	3000	700	1200
		Vertical (KG)	360	600	960	1200	200	400
	Rated Thrust (N) ※1		6150	10250	16400	20500	3150	6250
	Stroke (increments)(mm)		50 mm Pitch				50 mm Pitch	
Accessories	AC Servo Motor Output (W) ※3 ※4		750				750	
	Planetary Screw		Ø20				Ø20	
	Lead		5				10	
	Coupling		Ø58x53.4L				Ø19xØ17	
	Home Sensor	Outside	CS-6T					

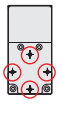
※1 When using it vertically, if the belt breaks, the load may fall down. Please be careful.
※2 The lead is 90 when the reducer is not installed on the actuator.
※3 Compatible with 750W~2KW servo motors. For more details, please contact our sales representatives.
※4 Compatible with motors from different brands.

Mounting design

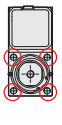
- Multiple mounting options. Flexible design choice.



Bottom up mount



Rear flange



Front flange

Multiple motor mount options

- Multiple motor mount options. Flexible design choice.



BC In-line



BL Left



BR Right

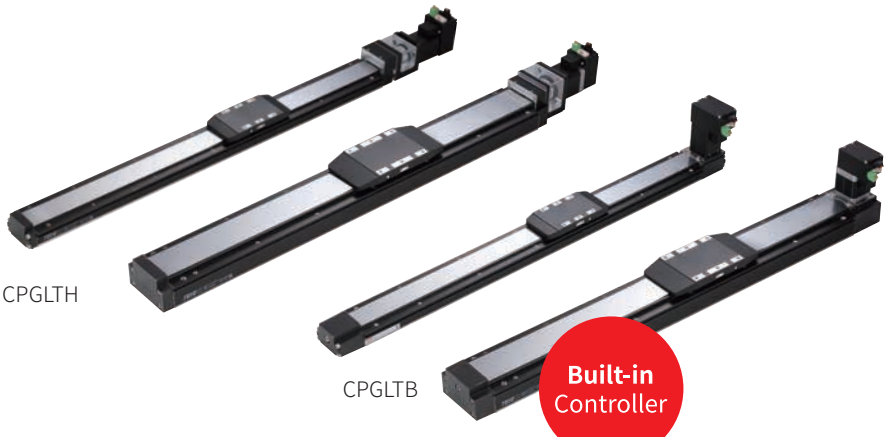


BW Upward

Easy Control | Good Value | Replaces Pneumatic Cylinder | Low Carbon Footprint



CPSG



CPGLTH

CPGLTB

Built-in Controller

CP Series

Economical Servo Cylinder

CPSG/CPGLTH/CPGLTB Series

01

Good Value

Cost Effective

02

Built-in Controller

Space Saving

03

High Repeatability

±0.005mm

It has absolute advantages over pneumatic cylinders

04

Multi-point control

IO:8 points

Communication: 64 points

05

Lower carbon footprint

Decrease

373.6 kg

Annual Carbon Emissions

06

Acceleration Control

↓ cycle time

07

Improved lifespan

No rubber gasket, Oil seal cracking problem

08

Support single coil, Dual coil solenoid valve control

Support electromagnetic valve mode

[LINEUP]

Ball Screw Drive | Belt Drive | Clean Room | Integrated Bearing

Standard Environment

Ball Screw Drive

Belt Drive

Integrated Bearing

▪ CPSG Series





CPSG20		CPSG25		CPSG35			
±0.01mm		±0.01mm		±0.01mm			Repeatability
2mm	8mm	2mm	8mm	2mm	6mm	12mm	Lead
100 mm/s	320 mm/s	100 mm/s	320 mm/s	100 mm/s	300 mm/s	600 mm/s	Max. speed
2 kg	1 kg	6 kg	2 kg	12 kg	6 kg	3 kg	Max. Payload
30/50/75 mm		50/75/100 mm		30/50/75/100 mm			Stroke Range

▪ CPGLTH Series

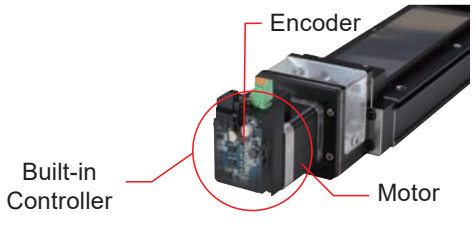



CPGLTH5			CPGLTH8		
±0.005mm			±0.005mm		Repeatability
2mm	6mm	12mm	6mm	12mm	Lead
100 mm/s	300 mm/s	600 mm/s	300 mm/s	600 mm/s	Max. speed
25 kg	10 kg	12 kg	30 kg	30 kg	Max. Payload
50~550 mm			50~650 mm		Stroke Range

▪ CPGLTB Series




CPGLTB5	CPGLTB8	
±0.06mm	±0.06mm	Repeatability
32mm	32mm	Lead
1600 mm/s	3000 mm/s	Max. speed
3 kg	5 kg	Max. Payload
50~1500 mm	50~1500 mm	Stroke Range



- **Built-in Controller**：Eliminating the need for wiring between the controller and the electric cylinder, and saving panel space. This reduces the need for extra resource.
- **Flexible control interface**：The system supports multiple control methods, including speed, position, and torque control, meeting the needs of various applications. It also offers multiple control interfaces such as RS485, I/O control with up to 64 control points. (Communication 64, I/O 8.)

[CPSG Feature]

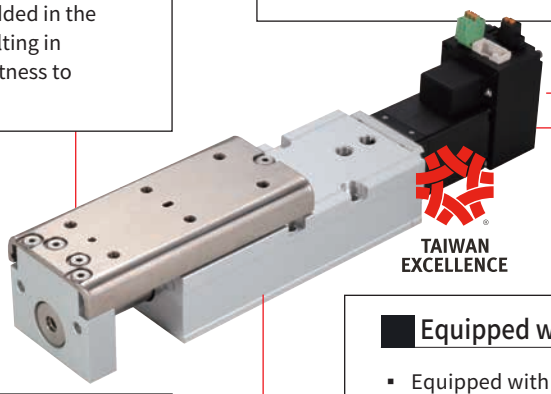
High Rigidity

The mechanism is equipped with precision ball screws and an integrated bearing design. Compared to traditional electric cylinders, the height is significantly reduced, and the torque performance is superior to that of traditional linear guide actuators. The steel rail is embedded in the aluminum body and then ground, resulting in improved running flatness and straightness to within ±0.02mm.

Integrated Drive Design

The integrated drive design supports I/O and communication control:

- I/O Model
  - ① DI: 6 points, DO: 7 points.
  - ② Parameters' definitions can be customized.
- Both UI-specific RS-485 and general-purpose RS-485 can operate simultaneously.
- Points and communication series can be expanded using the transfer board



Small Package

- Iron carriage: compact design with high rigidity.
- Built-in motor and drive: sleek appearance and compact size, requiring minimal installation space, making it suitable for small precision equipment.

Equipped with monitoring status LED lights

- Equipped with LED status indicator lights for quick monitoring of operating conditions.

Blue light: Indicates power (PWR).
Red light: Signals an alarm. The red light flashes during an error (ERR), and the specific error can be identified by the number of flashes.
Green light: Indicates servo status.
Servo-ON: The green light remains on.
Servo-OFF: The green light turns off.

[CPGLTH/CPGLTB Feature]

Multiple Motor Orientations

- Multiple motor orientations, provides the flexibility for equipment design.

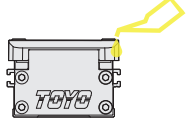


Transparent coupling housing

- Live Monitoring: Enables real-time coupling inspections without stopping the machine, saving time and improving efficiency.

Easy to maintain

- Features an external greasing system, allowing for easy maintenance without the need to remove the cover.



Black Anodized Body

- The main body is black anodized to enhance compatibility with AOI visual inspection equipment and prevent reflections from the original aluminum color.

Reduce dust

- The special cover strip design effectively prevents dirt and foreign objects from penetrating, making it suitable for cleanroom environments.
- The cover strip features a floating design, with the rubber cover at the edges to prevent cutting during installation or maintenance.

Top-down, bottom-up mount. Easy to install.

- Can be fixed from the top and bottom without removing the cover.
- Pin holes design.



[CP Feature]

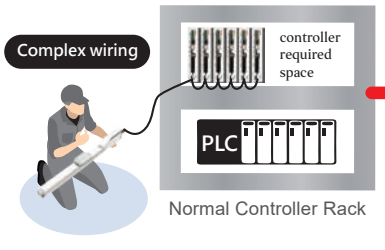
Economical Servo Cylinder

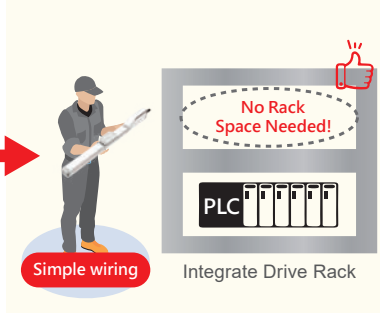
Integrate drive, no cable required.
Effectively reducing costs!

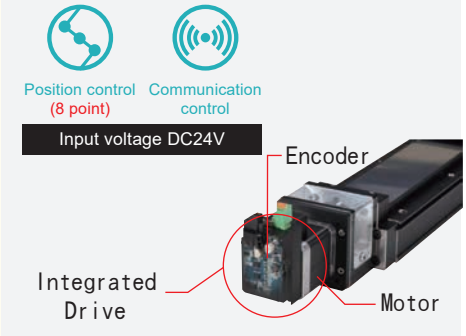


Integrate drive. Space saving.

- ECO's full series of controller substrates can be completely placed inside the body of the mechanism, with a full-featured integrated drive and control design.







Cost Effective

- There is no need to install external air pressure systems, buffers, solenoid valves and speed control valves, so costs can be effectively droped down.
- The initial investment cost is comparable. Long-term use minimizes the need for excessive spare parts and reduces the frequency of replacements, effectively lowering the total cost of ownership.

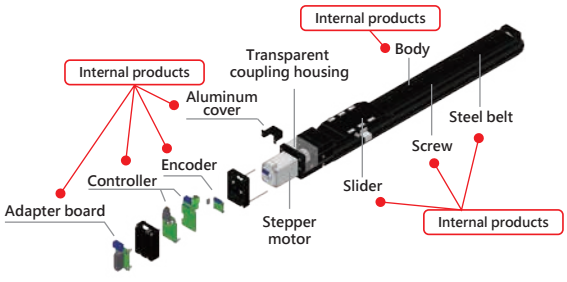
ECO Electric cylinder series



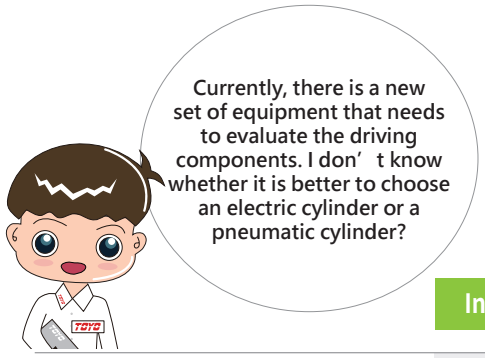
√ **ECO Electric cylinder**

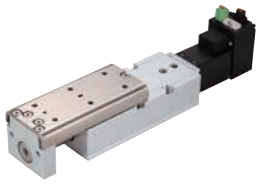
Short delivery time

- All major components are seamlessly integrated into a single unit, all of which are manufactured in Taiwan. With a comprehensive inventory in place, we ensure prompt delivery, significantly reducing lead times.



[Electric Cylinder vs. Pneumatic Cylinder Comparison]

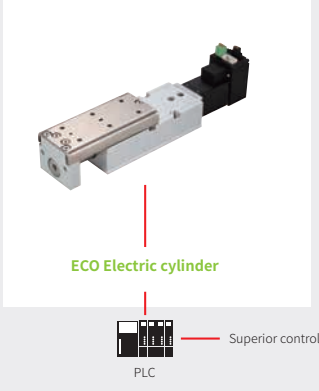
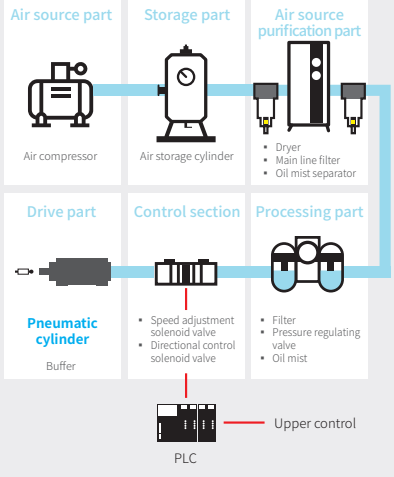




VS



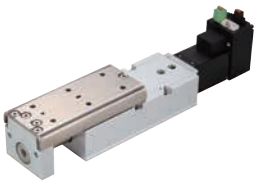
CP Series

	Integrated Drive Electric Cylinder	Pneumatic Cylinder
▪ Configuration	 ▪ Integrate drive ▪ Simple structure, reducing wiring ▪ Easy to maintain. Reducing downtime/replacement time	 ▪ Many hardware components ▪ Complex system ▪ Spare parts and maintenance cost are high
▪ Ordering method	< 3 weeks One-stop shop, simple and convenient	It depends Buy from different location. Long lead time. Hard to manage.
▪ Assembly	With PIN hole, Secure the screws to complete the assembly.	Each part needs to be assembled according to the exploded diagram. If there is any interference, it will need to be modified again, which is time-consuming.



From the above analysis, we can know that choosing electric cylinders can allow companies to effectively cope with the challenge of human resource shortage while saving energy and reducing carbon emissions. This not only helps reduce operating costs and environmental impact, but also improves the company's competitiveness and sustainable development capabilities.





CP Series

Controller built-in electric cylinder

VS

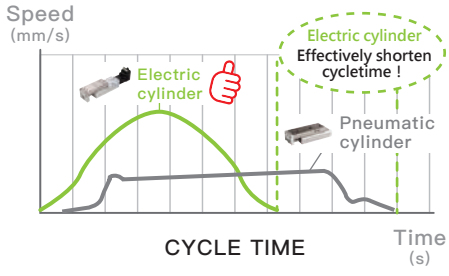


Pneumatic Cylinder

· CYCLE TIME Comparison

Due to the precise control of the CP pneumatic cylinder, the electric cylinder can achieve rapid acceleration and deceleration, thus shortening the cycle time.
Although pneumatic cylinders move quickly, when precise position control is required, the cycle time becomes longer.

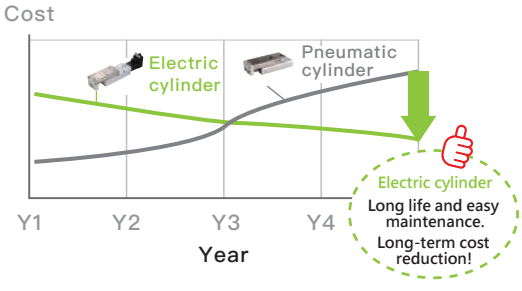




· Cost comparison

Long-Term Use and High-Precision Applications: If your application requires high accuracy, variable speed, and long-term reliable operation, electric cylinders, while having a higher initial cost, may be a better choice with a potentially lower total cost of ownership!



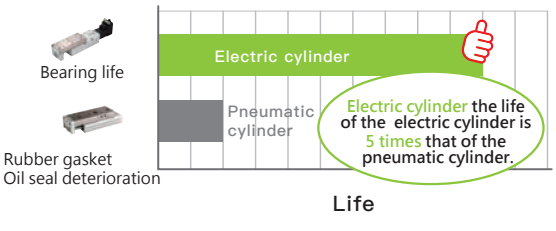


· Lifespan comparison

Product samples	Test conditions	Lifespan reasons	Traveling Life	Life
 CPGLTH5	240 days/year, 16 hours/day, Moving range 300, Horizontal load 10KG, Back and forth for 10 seconds	Bearing life	About 20,000km	15 years

The ECO electric cylinder series does not use components such as O-rings, gaskets, sealing gaskets, etc. that are used to prevent fluid or gas leakage and would cause deterioration, so there are no consumables. It uses ball circulator type slide rails and screws as the main transmission elements, so it has a long service life!

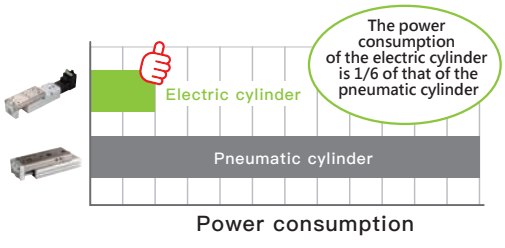




· Energy Saving

Electric cylinders directly convert mechanical kinetic energy through electrical energy. The conversion efficiency is high, and energy use is environmentally friendly and convenient. The following table calculates the carbon emissions that can be reduced by converting to an ECO electric cylinder and using each electric cylinder for one year!





Project	unit	Pneumatic cylinder	ECO Electric cylinder	Difference
Single transmission efficiency	W (1 J/s)	240	40	200 W
Power consumption per hour *1	kWh	240*1hr/1000=0.24	40*1hr/1000=0.04	0.2 kWh
Annual energy consumption *2	kWh	0.24*12*264=760.32	0.04*12*264=126.72	633.6 kWh
Carbon emission factor *3	kg CO_2e/ kWh	0.590	0.590	-
Annual carbon emissions	kg	448.4	74.8	Reduce 373.6 kg of carbon emissions

*1 The conversion degree can be calculated from the following Taipower website::https://elec.0123456789.tw/
*2 Assume it operates 264 days per year and 22 days per month · calculated below if operating 12 hours a day.
*3 Basis: The provisions of Article 28 Paragraph 2 of the Electricity Industry Law set the 110-year electric power carbon emission coefficient benchmark of the Republic of China at 0.590 kg CO_2e / kWh.



CSG20

CSG25

CSG35



TC100 Controller

CSG Series

High Rigidity Miniature Cylinder

High precision, multi-point position, and speed control

01
Max.Speed
600mm/s

02
Max.Stroke
125mm

03
High Repeatability
±0.01mm
It has absolute advantages over pneumatic cylinders

04
3 Control Modes
Pulse
I/O
Communication

05
Max.Payload
12.8kg

06
Closed-Loop Stepping Motor

07
TC100 Controller

08
Input Power
DC24V

[LINEUP]

Ball Screw Drive

G Integrated Bearing

Standard Environment

Integrated Bearing

▪ CSG Series





	CSG20		CSG25			CSG35			
Repeatability	±0.01mm		±0.01mm			±0.01mm			
Lead	2mm	4mm	2mm	4mm	8mm	2mm	6mm	12mm	
Max. speed	83.3 mm/s	166.6 mm/s	100 mm/s	200 mm/s	400 mm/s	100 mm/s	300 mm/s	600 mm/s	
Max. Payload	3 kg	1.5 kg	9.6 kg	7.4 kg	2.4 kg	12.8 kg	8.4 kg	5.2 kg	
Stroke Range	30/50/75 mm		50/75/100 mm			30/50/75/100/125 mm			

[TC100 compatible 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.





TAIWAN EXCELLENCE

TC100 Stepping Motor Controller

[CSG Feature]

Similar Or Smaller Size Than Pneumatic Cylinder

- Iron carriage: compact design with high rigidity.
- With the same size of pneumatic cylinders customers can easily replace electric cylinders.
- Alternatively pneumatic cylinder, can be shortened Cycle Time, improve efficiency, reduce production costs.

High Rigidity

- The mechanism is equipped with precision ball screws and an integrated bearing design.
- Compared to traditional electric cylinders, the height is significantly reduced, and the torque performance is superior to that of traditional linear guide actuators.
- The steel rail is embedded in the aluminum body and then ground, resulting in improved running flatness and straightness to within ±0.02mm.

FLATNESS & STRAIGHTNESS

±0.02mm



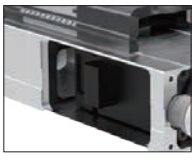
PATENTED INTEGRATED BEARING DESIGN



All in one integrated industrial-grade connector

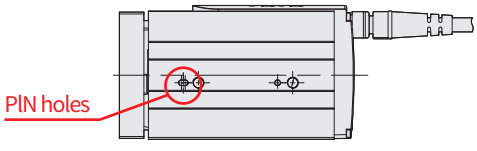
Built-in motor for miniaturization

- 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.

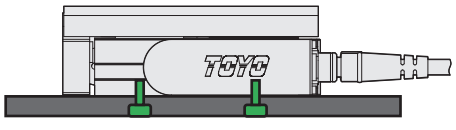


Easy To Install

- Comes with standard PIN holes, which is easy to install.

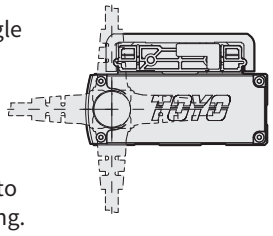


- Bottom Thread Mounting



All In One Integrated Industrial-Grade Connector

- The connector is gold plated to resist oxidation and provide 180 and 90 degree angles cable outlets.
- The connector with a 90-degree angle allows the customer to choose the direction.
- Easy installation and strengthen wiring.
- The interior has special processing to prevent the cable from disconnecting.
- With foolproofing, it's easy to install.



[TC100 Controller Feature]

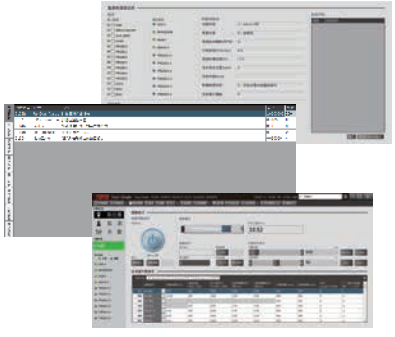
Controller for Servo Cylinder Series

Perfect combination with linear module and controller

1 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





TAIWAN EXCELLENCE

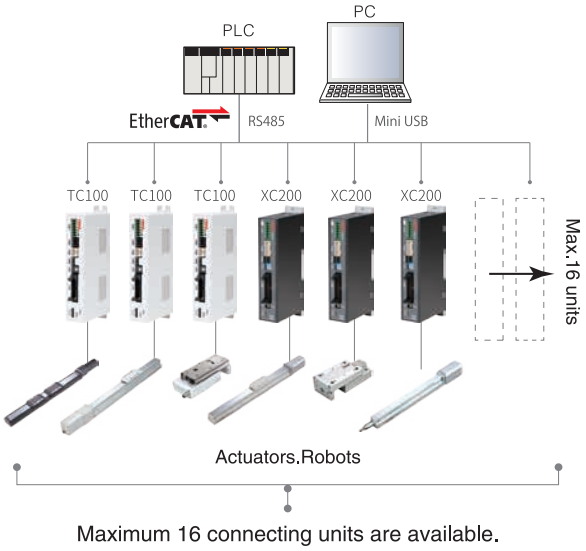
TC100 Stepping Motor

RoHS Certificate CE

EtherCAT®

Correspondence to the wiring-saving network

2 Connect 16 stations via RS-485



Maximum 16 connecting units are available.

Pulse、I/O、Communication
3 Control Modes all-in-one

Controller output motor
Encoder signal synchronously

3 Various control mode

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

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

4 Flexible control interface

One single unit can support 3 different control interfaces.

Control Mode	Function	Note
Pulse control	✓ Line Driver (200K Hz)	
	✓ 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

Self-made Components. Reduce Cost

20%
Self Assembly



2nd Gen

TAIWAN EXCELLENCE

LGW Series

Integrate Bearing Linear Motor Module

Small, Low Profile, Low Vibration, High Payload, High Accuracy, High Speed

01 Vmax/ Max Accele
2500mm/s
3G

02 Semi-Conductor Automation Ready
ISO 5
Class100

03 Repeatability
±1μm

04 Flexible Option of Read Head
1~0.1μm

05 External Grease Fitting
Fast Maintain. Increase Life

06 Integrate Bearing
Small. Low Profile

07 Caged Ball Rail
Reduce Noise

08 Software Compensation
Greatly Increase Accuracy

[LINEUP]

Linear motor drive | Clean Room | Integrate Bearing

Open □

Enclosed □

Clean Room ISO 5 Class 100

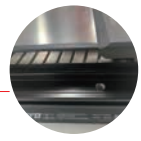
Ironcore linear motor drive

▪ LGTW Series



LGTW20





LGTW35

*Open

LGTW20			LGTW35			
1μm Read head	0.5μm Read head	0.1μm Read head	1μmRead head	0.5μm Read head	0.1μm Read head	Optical Encoder Resolution
±2μm	±1.5μm	±1μm	±2μm	±1.5μm	±1μm	Repeatability
2500 mm/s			2500 mm/s			Vmax
25~40 kg*			35~70 kg*			Payload
136.7 N			251 N			Rated Thrust
200~3000 mm			200~3000 mm			Stroke

*Depends on speed

▪ LGNW Series



LGNW20





LGNW35

*Enclosed

LGNW20			LGNW35			
1μm Read head	0.5μm Read head	0.1μm Read head	1μm Read head	0.5μm Read head	0.1μm Read head	Optical Encoder Resolution
±2μm	±1.5μm	±1μm	±2μm	±1.5μm	±1μm	Repeatability
2500 mm/s			2500 mm/s			Vmax
25~40 kg*			35~70 kg*			Payload
136.7 N			251 N			Rated Thrust
200~3000 mm			200~3000 mm			Stroke

*Depends on speed

▪ LGCW Clean Room Series

ISO 5 Class 100



LGCW20





*With external suction, can reach CLASS 100 clean room standard.

LGCW35

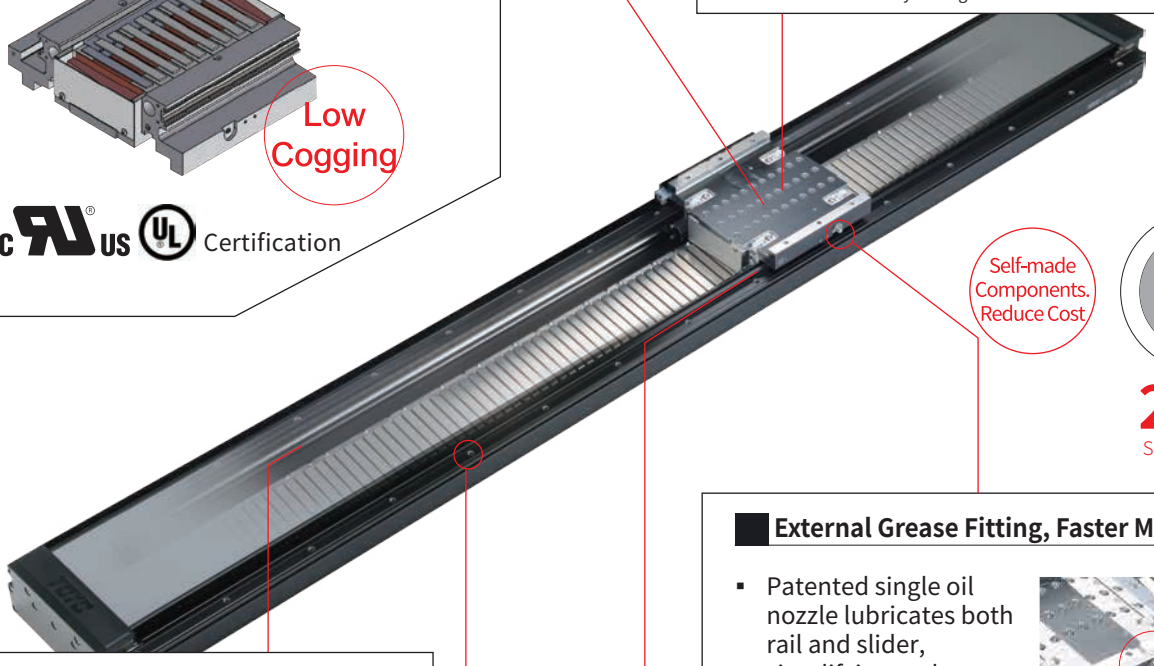
LGCW20			LGCW35			
1μm Read head	0.5μm Read head	0.1μm Read head	1μm Read head	0.5μm Read head	0.1μm Read head	Optical Encoder Resolution
±2μm	±1.5μm	±1μm	±2μm	±1.5μm	±1μm	Repeatability
2500 mm/s			2500 mm/s			Vmax
25~40 kg*			35~70 kg*			Payload
136.7 N			251 N			Rated Thrust
200~3000 mm			200~3000 mm			Stroke

*Depends on speed

[LGW Features]

Integrate Bearing Linear Motor Module

Small, Low Profile, Low Vibration, High Payload, High Accuracy, High Speed
Best option for high accuracy application fast adaptation



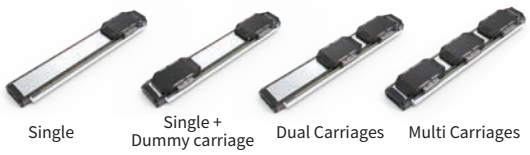
One Piece Motor and Carriage

- Increase cooling efficiency and enhance motor performance.
- Decrease height, reduce vibration, faster settlement

Low Cogging

c UL us Certification

Variable Motor+Carriage Customer Design



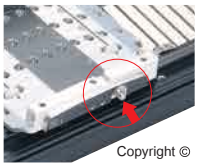
Single | Single + Dummy carriage | Dual Carriages | Multi Carriages

Self-made Components. Reduce Cost

20% Self Assembly

External Grease Fitting, Faster Maintain

- Patented single oil nozzle lubricates both rail and slider, simplifying and speeding up maintenance

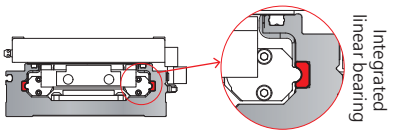


Copyright ©

Patented grease fitting design

High Precision Integrate Bearing Design

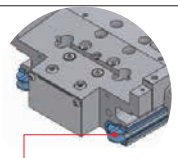
- Embedded rails in aluminum extrusion provide superior precision over standard mounted rails.

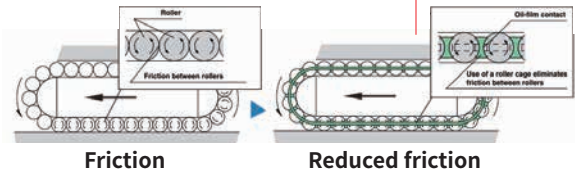


Straightness Flatness	±0.015mm/m
Reputability	±1μm

Caged Ball Rail, Reduce Noise, Increase Life

- Low friction between balls. Reduce noise, increase life. Reduce maintenance frequency.



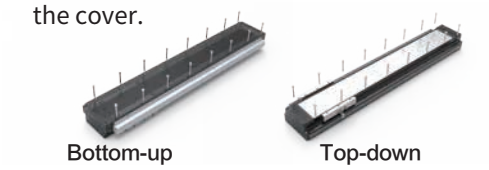


Friction without caged balls

Reduced friction with caged balls

Top-down Bottom-up Mount

- Direct mounting without removing the cover.



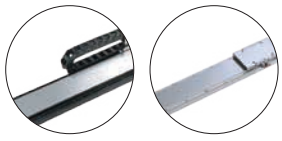
Bottom-up | Top-down

Application

Semi-Conductor | LCD OLED | LED Packaging | Battery Pre-processing | Food Processing

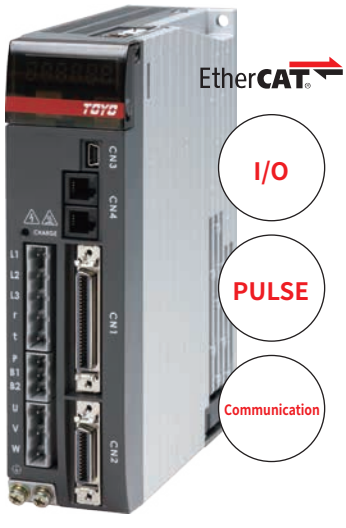
Variable options

- Blacken body as standard. Also offer aluminum color option.
- Optional blacken cover sheet
- Options for different environments. Normal, enclosed and clean room.



Blacken | Aluminum Color

TOYO Drive Feature



LC100
High Performance Drive

Work with LGW, LGF, LTF3, LNF3, LCF3 Series

- **Protocol Support :** I/O(255 points), PULSE, RS485, EtherCAT
- **Same Software UI :** The same Software UI with TC100/XC100. No relearning.



TOYO SINGLE UI

Chinese | English | Japanese

Three languages

- **Oscilloscope:** Converts motor data into time-domain curves in software, enabling signal observation without an oscilloscope.

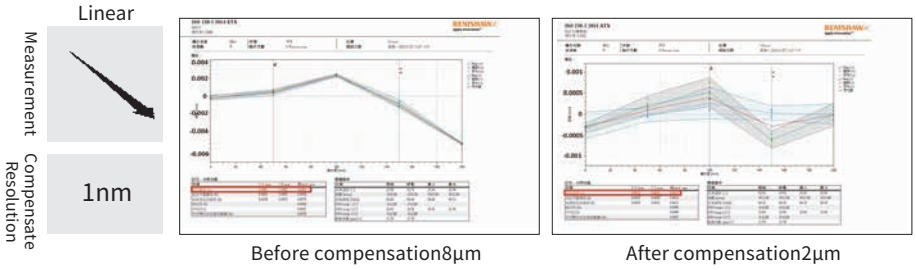


Oscilloscope interface

- **Absolute position compensation :** Compensated thru LC100 base on the result of laser interferometer



Interferometer



Before compensation8μm | After compensation2μm

Multiple Choice of Drives

- **Choose on your own preference**



Panasonic | Delta | Mitsubishi | Shihlin | Servotronix

[V.S. Standard LM Guide Linear Motor]



Let's see what's the difference with others!

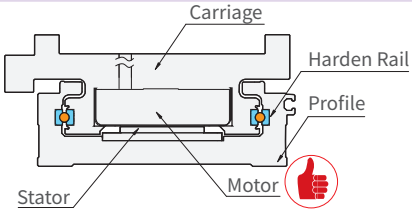


VS



LGW Series

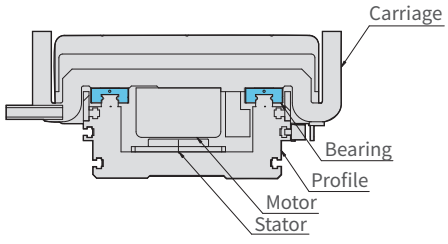
Integrate Bearing Linear Motor Module



- Integrated design of motor, carriage, and bearing significantly improves cooling efficiency and enhances motor performance.
- Decrease height, reduce vibration, faster settlement
- Better repeatability & flatness
- Bigger rail spacing. Increased moment load capacity and payload.

Other Brand LM Guide

Standard LM Guide Linear Motor Module

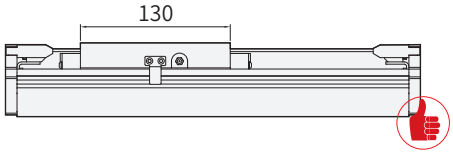


- The module is too large and occupies too much equipment space
- Lack of parallelism and height accuracy between two standard rails can reduce lifespan.

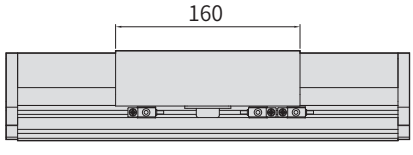
• Shorter OAL for The Same Thrust

mm

LGTW20	Continuous Thrust	Continuous Thrust	Other Brands
	136.7N	103N	



▪ Shorter Carriage, Longer Effective Storke

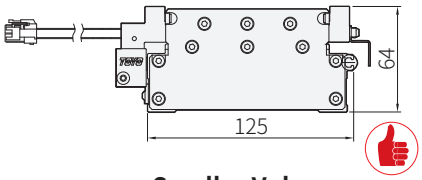


▪ Longer Carriage, Shorter effective stroke

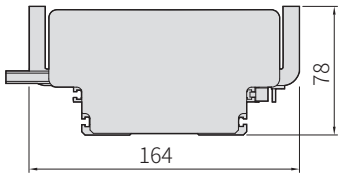
• Smaller Volume for The Same Thrust

mm

LGTW20	Continuous Thrust	Continuous Thrust	Other Brands
	136.7N	103N	



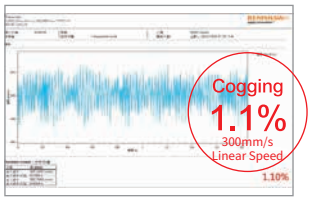
▪ Smaller Volume



▪ Bigger Volume

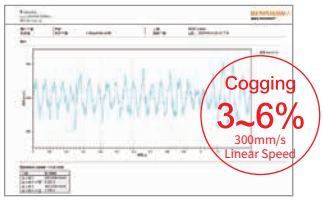
• Speed Stability

LGTW20	Continuous Thrust	Continuous Thrust	Other Brands
	136.7N	103N	



(502.74-497.23) ÷300mm/s*100 %=1.1%

▪ Smaller Cogging, Line Scan



(305.25-295.08) ÷300mm/s*100 %=3.3%

▪ Bigger Cogging

[V.S. Ball Screw Module]



Let's see what's the difference!



LGW Series

Integrate Bearing Linear Motor Module

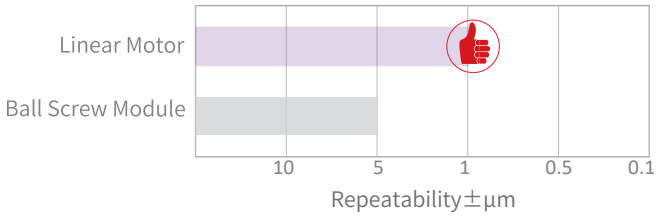
VS



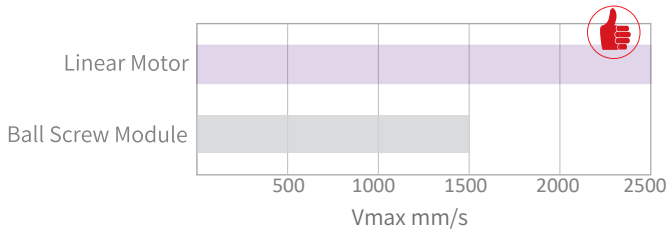
ETH17M/22M series

Standard Ball Screw Module

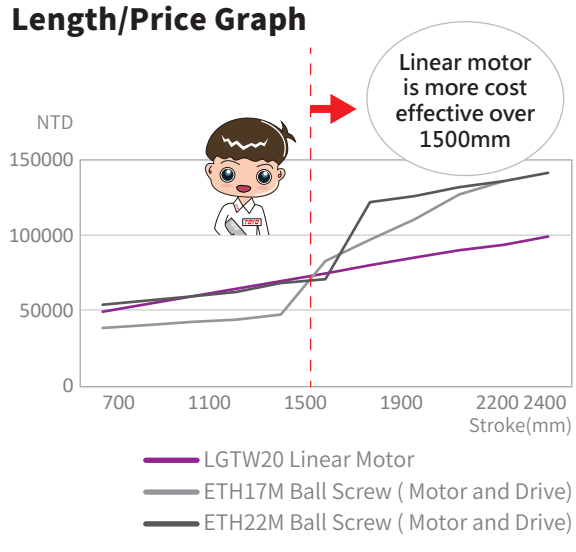
• Accuracy Comparison



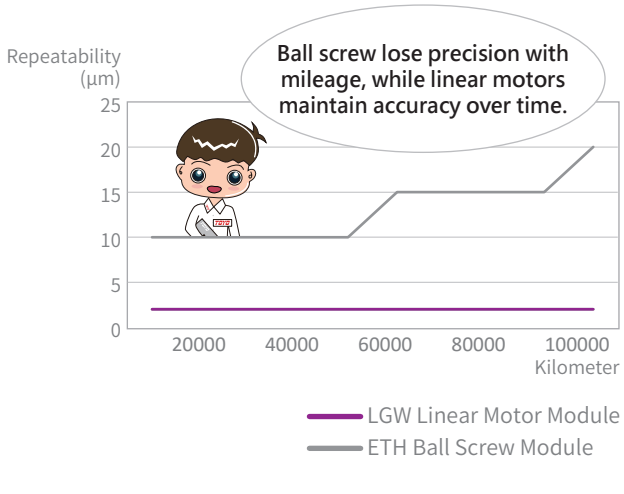
• Speed Comparison



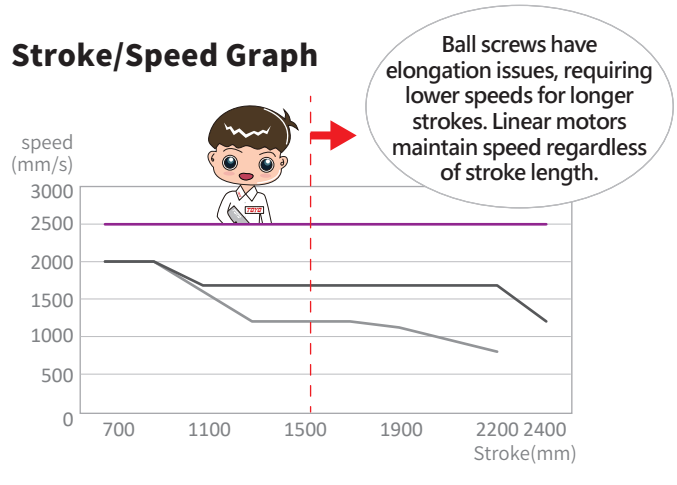
• Length/Price Graph



• Mileage/Accuracy Graph

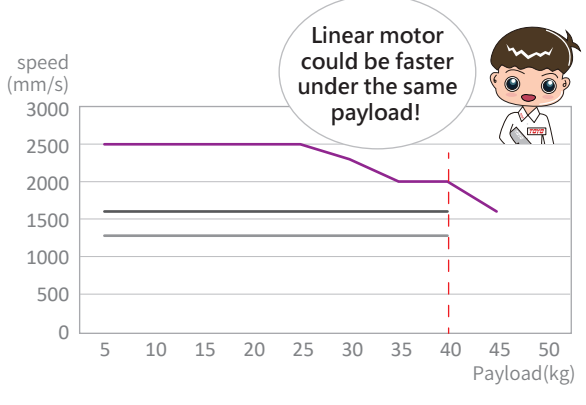


• Stroke/Speed Graph



*Under 30kg payload testing

• Speed/Payload Graph



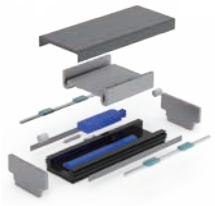
[Linear Motor Module vs. Self-assembled Linear Motor]

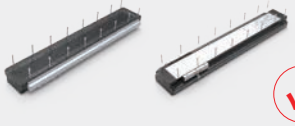




LGW Series

VS



	Linear Motor Module	Self-assembled
▪ **Linear Motor Sizing**	  Easy sizing on TOYO website. 5 steps for 1 mins ✓	 Contact individual supplier. Multiple spec needs to be confirmed and compared. Time wasted.
▪ **Design**	 Download 3D model after sizing. Quick and easy. ✓	 Design by yourself. Need to get 3D for all the parts. Time wasted again.
▪ **Part Number**	 One part number for all ✓	 Need to get all the part numbers. Hard to not make mistakes.
▪ **Ordering**	 < 3 weeks One stop shop for all service. Lead time 3 weeks. ✓	 > Not sure? Every components come from different place. Lead time not sure.
▪ **IQC**	 Comes with all the testing reports. Repeatability, laser interferometer testing video under ISO-230 standard ✓	 Doing the QC by yourself. Hard to get all the parts in the same time.
▪ **Assembly**	 Come with PIN. Easy mounting ✓	 Assemble all the parts. Time wasted



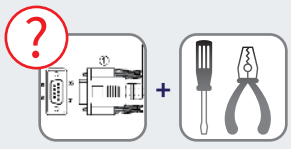
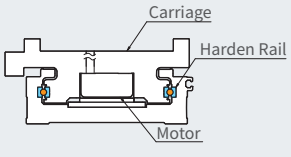
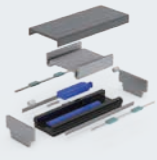
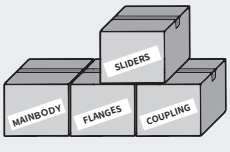
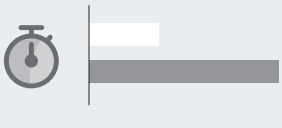




After this analysis, you should know which to choose! In summary, assembling stators and other components is complex and time-consuming. Choosing LGW simplifies assembly with convenient integration, saving time and easing implementation!



LGW Series

	TOYO Linear Motor Module	Self-assembled
▪ **Control** 	 Just connect the cable. It's just so easy. ✓	 Need to understand all pin out. Make cables. Hard to define NG components.
▪ **Power On Testing** 	 Can borrow demo from TOYO. TOYO tech support will help tuning the motor. ✓	 Tuning by yourself. Long and not easy process.
▪ **After-market Service** 	 Go find TOYO with any problem ✓	 Multiple supplier. Hard to fix the problem immediately.
▪ **Reliable** 	 One piece design for carriage. Grind rail after glued on. Better accuracy. ✓	 Assembly by yourself. Accuracy is not that good.
▪ **One Stop Shop** 	 One stop shop. Easier for purchasing ✓	 Multiple components from multiple supplier. More complicate.
▪ **Pricing** 	 Base on the same performance. Only 60~70% of the cost. ✓	 Components are expensive. Cannot cut cost.
▪ **Reducing Work Time** 	 Save 1/2 of your time ✓	 Time consuming



3rd Generation

PayLoad TOP 1 Capacity

LTF3 Series

High Force Ironcore Linear Motor Actuator

Heavy-Duty, Hi-Speed, PTP!

01 Vmax/ Max Accel
3500mm/s
3G

02 Max.Payload
250~400
kg

03 Repeatability
±1μm

04 Multi Read Head Option
1~0.1μm

05 External Grease Fitting
Fast Maintain Increase Life

06 Max.Stroke
5000
mm

07 Caged Ball Rail
Reduce Noise

08 Software Compensation
Greatly Increase Accuracy

[LINEUP]

Linear motor drive | Clean Room | Integrate Bearing

Ironcore linear motor drive

▪ LGTW/LGNW/LGCW Series

*OPEN TYPE *ENCLOSED TYPE *CLEAN ROOM TYPE



LGT(N)(C)W20



LGT(N)(C)W35

1	0.5	0.1	1	0.5	0.1	μm	Optical Encoder Resolution
±2	±1.5	±1	±2	±1.5	±1	μm	Repeatability
2500			2500			mm/s	Vmax
25~40*			35~70*			kg	Payload
136.7			251			N	Rated Thrust
200~3000			200~3000			mm	Stroke

*Depends on speed


*OPEN TYPE


*ENCLOSED TYPE


*CLEAN ROOM TYPE

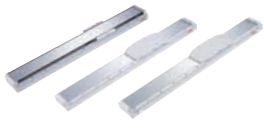
*With air fitting, can reach CLASS 100 clean room standard.

▪ LTF3/LNF3/LCF3 Series

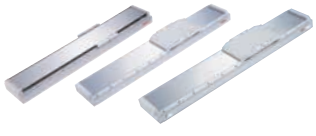
*OPEN TYPE *ENCLOSED TYPE *CLEAN ROOM TYPE



LT(N)(C)F3-15



LT(N)(C)F3-30



LT(N)(C)F3-50

1	0.5	0.1	1	0.5	0.1	1	0.5	0.1	μm	Optical Encoder Resolution
±2	±1.5	±1	±2	±1.5	±1	±2	±1.5	±1	μm	Repeatability
3500(15kg)			3500(30kg)			3000(55kg)			mm/s	Vmax
15~22*			30~40*			55~75*			kg	Payload
94			220			860			N	Rated Thrust
200~4600			200~4600			200~4200			mm	Stroke

*Depends on speed


*OPEN TYPE


*ENCLOSED TYPE


*CLEAN ROOM TYPE

*With air fitting,can reach CLASS 100 clean room standard.

▪ LGF Series



LGF-5



LGF-15

1	0.5	0.1	1	0.5	0.1	μm	Optical Encoder Resolution
±2	±1.5	±1	±2	±1.5	±1	μm	Repeatability
2500			2500			mm/s	Vmax
3*			15*			kg	Payload
14			59			N	Rated Thrust
160~1540			200~3000			mm	Stroke

*Depends on speed

▪ LTF3-250



LTF3-250



1	0.5	0.1	μm	Optical Encoder Resolution
±2	±1.5	±1	μm	Repeatability
2500			mm/s	Vmax
35~250*			kg	Payload
1064			N	Rated Thrust
200~5000			mm	Stroke

*Depends on speed

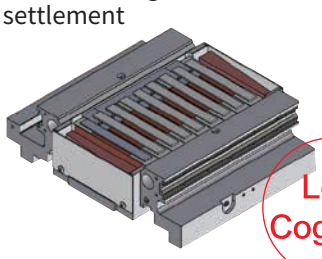
[LTF3 Features]

High Force Ironcore Linear Motor Robot

High Payload, High Accuracy, High Speed
Best option for high accuracy application fast adaptation

One Piece Motor and Carriage

- Increase cooling efficiency and enhance motor performance.
- Decrease height, reduce vibration, faster settlement

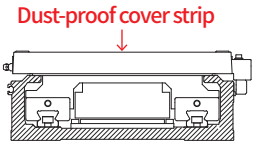


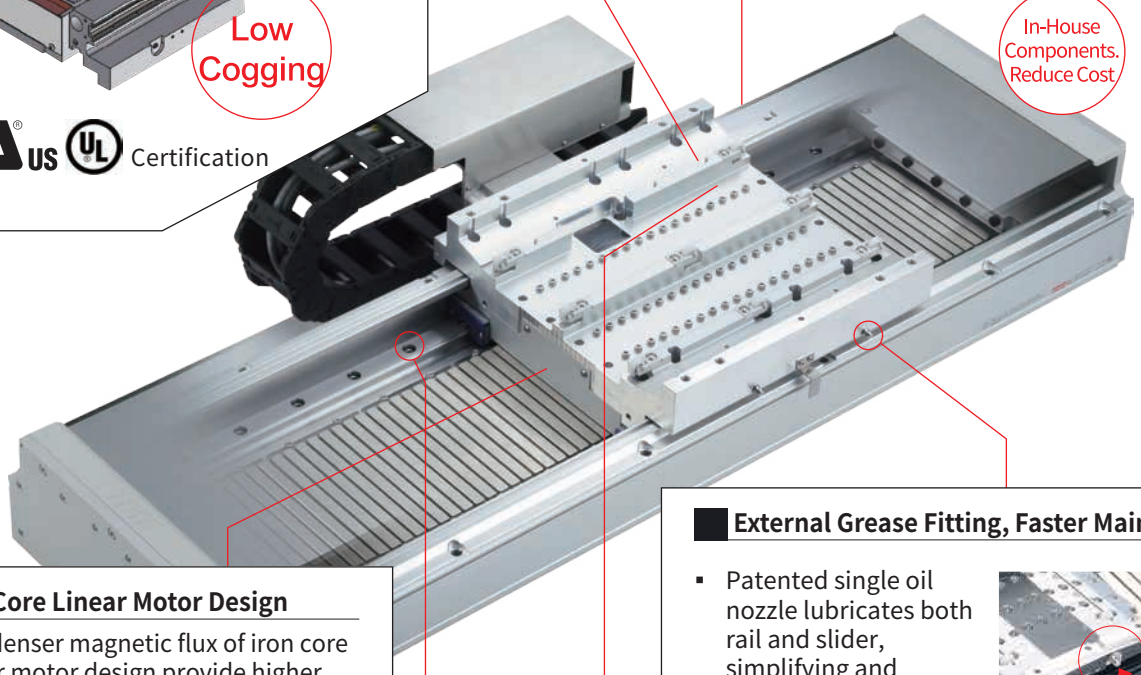
Low Cogging

c UL us Certification

Cover Strip

- Equipped with cover strip to prevent dust and other objects.

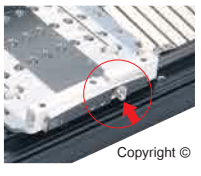




In-House Components. Reduce Cost

External Grease Fitting, Faster Maintain

- Patented single oil nozzle lubricates both rail and slider, simplifying and speeding up maintenance

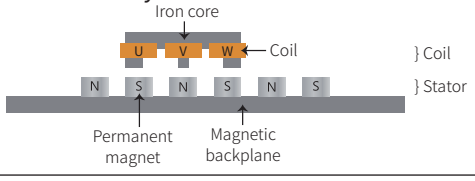


Copyright ©

Patented grease fitting design

Iron Core Linear Motor Design

- The denser magnetic flux of iron core linear motor design provide higher thrust.
- Flat body design provide better rigidity. Reduce vibration and deformation result in higher accuracy.



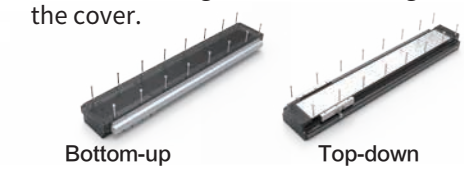
Toyo Silence Precision Linear Bearing

- Low noise operation
- Provide smooth operating experience, lowering maintenance demand and increase life.
- Suitable for high speed, low noise and low dust application.

65db

Top-down Bottom-up Mount

- Direct mounting without removing the cover.



Bottom-up Top-down

Long Stroke | High Payload | High Thrust | High Rigidity | No Vibration

[vs.LTF2]



Let's see what's the difference with LTF2!??



VS



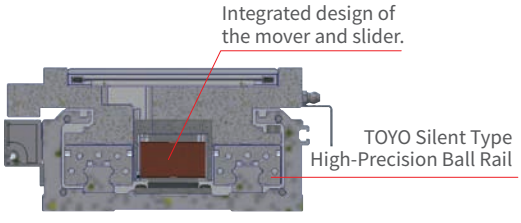
LTF3 Series

3rd-Generation Standard LM Guide Linear Motor Module

LTF2 Series

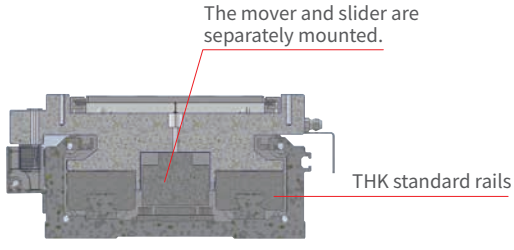
2nd-Generation Standard LM Guide Linear Motor Module

• Enhanced Structure



- Featuring toyo' s silent high-precision ball rail for superior performance.
- The mover and slider are designed as a single unit, significantly improving heat dissipation and boosting motor efficiency for high-speed acceleration and deceleration.
- Hortened home position enables a longer effective stroke.

VS



- Equipped with THK standard rails.
- Mover mounted beneath the slide
- Shorter total stroke

• Higher Speeds with the Same Load

Vmax 3500mm/s

Vmax 2000mm/s



LTF3-15

VS



LTF2-15

- Optimized mover coil design enhances motion performance, with a maximum line speed of 3500mm/s.

- The maximum line speed reaches 2000mm/s.

• Specification Optimization



LTF3-15 LTF3-30 LTF3-55

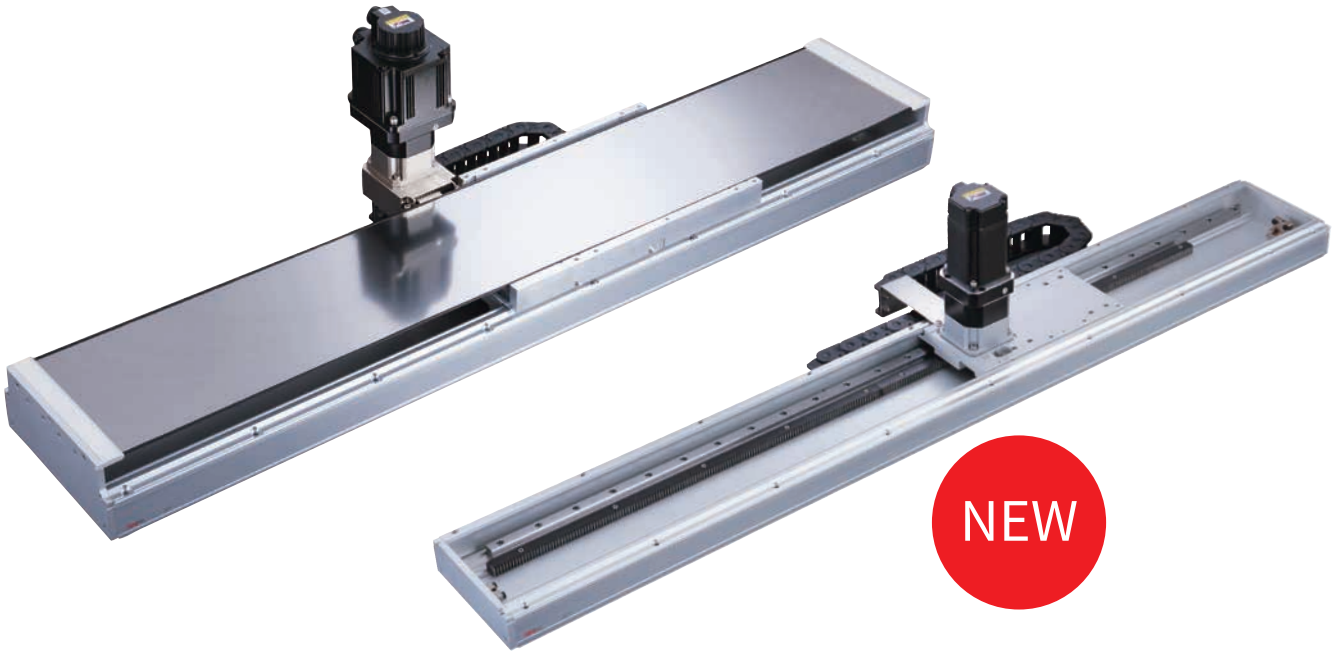
- Consolidated specifications by merging similar sizes (20 & 30 / 45 & 75), simplifying the original five specifications into three, making it easier for customers to differentiate and select the appropriate model.
- Certified with CE and UL standards.

VS



LTF2-15 LTF2-20 LTF2-30 LTF2-45 LTF2-75

- Five specification options: LTF2-15, LTF2-20, LTF2-30, LTF2-45, and LTF2-75.



ETK/ENK Series

Electric Rack and Pinion Actuator

01 Heavy-Duty Applications
max.payload **185**kg

02 Ultra-Long Stroke
max.stroke **5.7**m

03 High Positioning Accuracy
±0.08mm

04 High-Speed Operation
max.speed **2010**mm/s

05 **Direct Drive From Motor**
ENK (Non-Covered)

06 **Easy For Positioning**

07 **Easy Installation**

08 **Easy Maintenance**

Advantages of Rack And Pinion Actuator

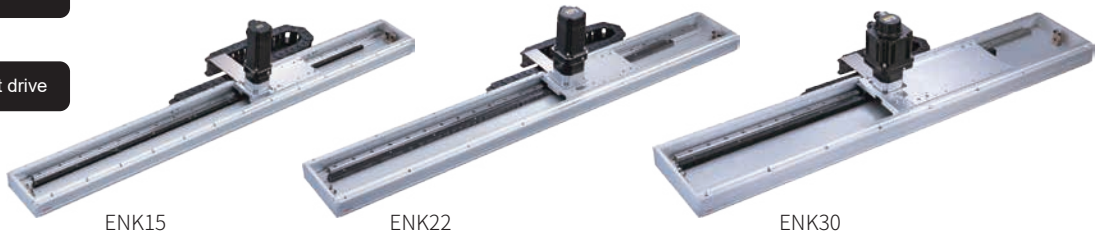
Standard Type



ETK15 ETK22 ETK30

Non - Covered

Direct drive



ENK15 ENK22 ENK30

Ultra-long stroke

Standard stroke up to 5700mm. It can reach extended stroke by connecting rack gear, guide way and aluminum extrusion.

Max. stroke **5700** mm

High payload and rigidity.

High rigidity rack gear design can withstand heavy weight. Suitable for high payload application. Provide smooth transferring and positioning. Suitable for low vibration application.

Max. payload **185** kg

Great repeatability

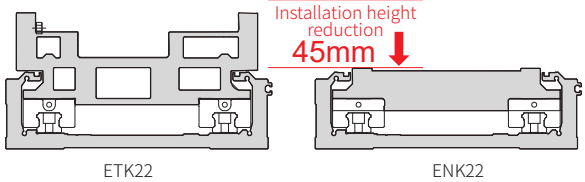
Achieving smooth and precise movement by rack and pinion mechanism. Ensure the micrometer-level repeatability under long stroke application.

Repeatability **±0.08** mm

Non-Covered (ENK) features

➡ Lower profile

More flexible for application with lower height.



ETK22 ENK22

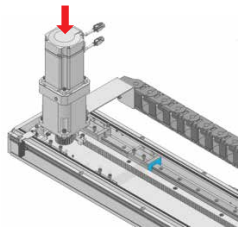
High speed

High speed and acceleration.

Max. speed **2010** mm/s

➡ Direct drive from motor

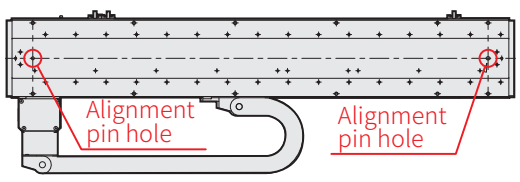
Direct mount onto rack gear without pulley and belt. Reducing power lost.



Advantages of Rack And Pinion Actuator

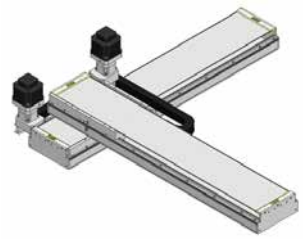
Easy for positioning

Easy positioning with standard alignment pin hole.



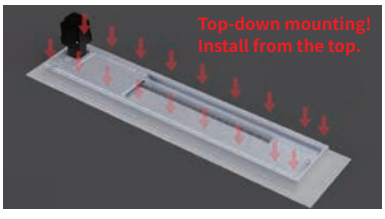
Mounting hole design

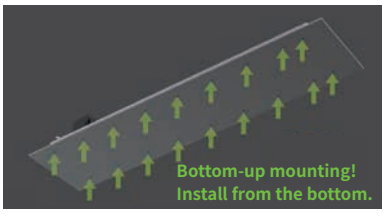
Mounting holes on ETK30's slider are correspond to ETHK30 and ETK22's extrusion body. And so does ETK22's to ETK15's.



Easy installation

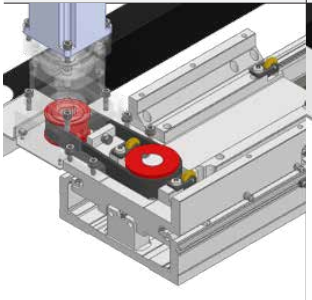
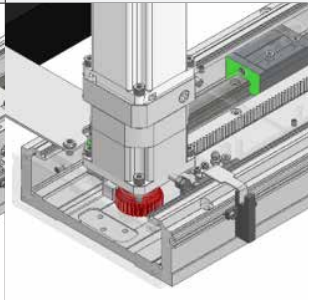
Support top-down or bottom-up screwing.
Easier for installation.





Driving mechanism comparison

Drive wheel(Small)/Driven wheel(Big) create gear ratio.

ETK	ENK
Belt drive	Direct drive
	

The 7th axis - Compatible with various robotic arms

Withstand huge amount of orientational torque. Suitable for applied with six-axis robotic arm or Scara robotic arm. Compatible with various brands of robot.

YAMAHA	DENSO	DENSO	Kawasaki	TM	TOYO
Horizontal 4-axis Scara	Horizontal 4-axis Scara	Vertical six-axis robotic arm	Huge six-axis robotic arm	Cobots	Wafer handling robot
					

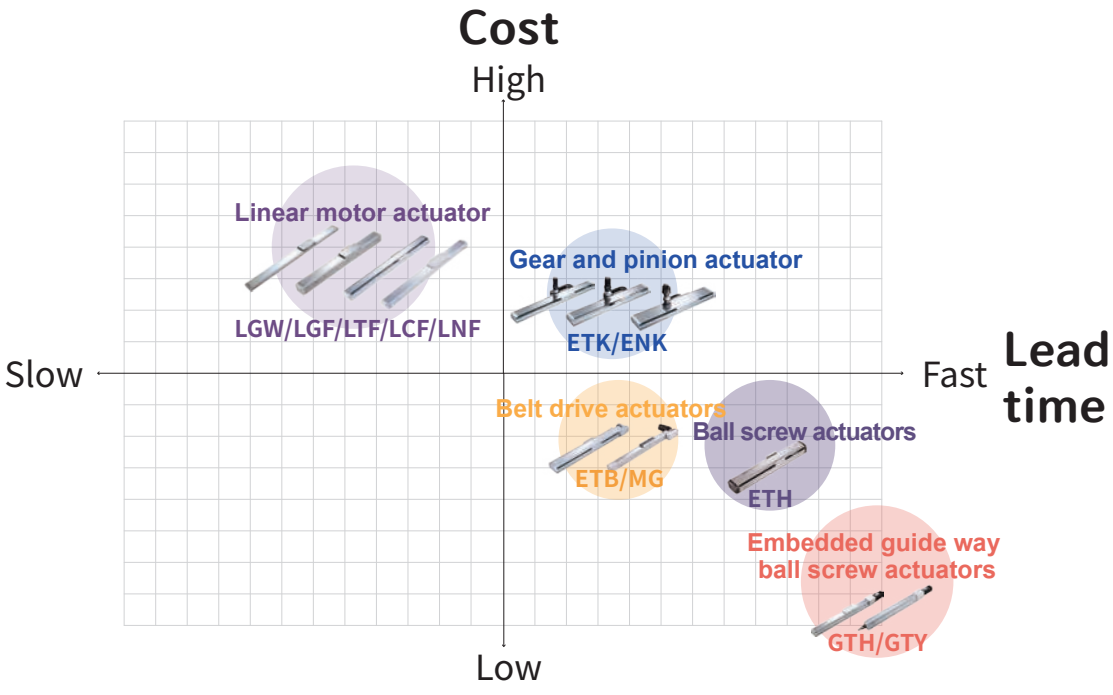
Comparison between Rack And Pinion Slide and other driving methods

Comparison of TOYO Ball screw drive/ Belt drive/ Gear and Pinion/ Linear motor drive actuator features

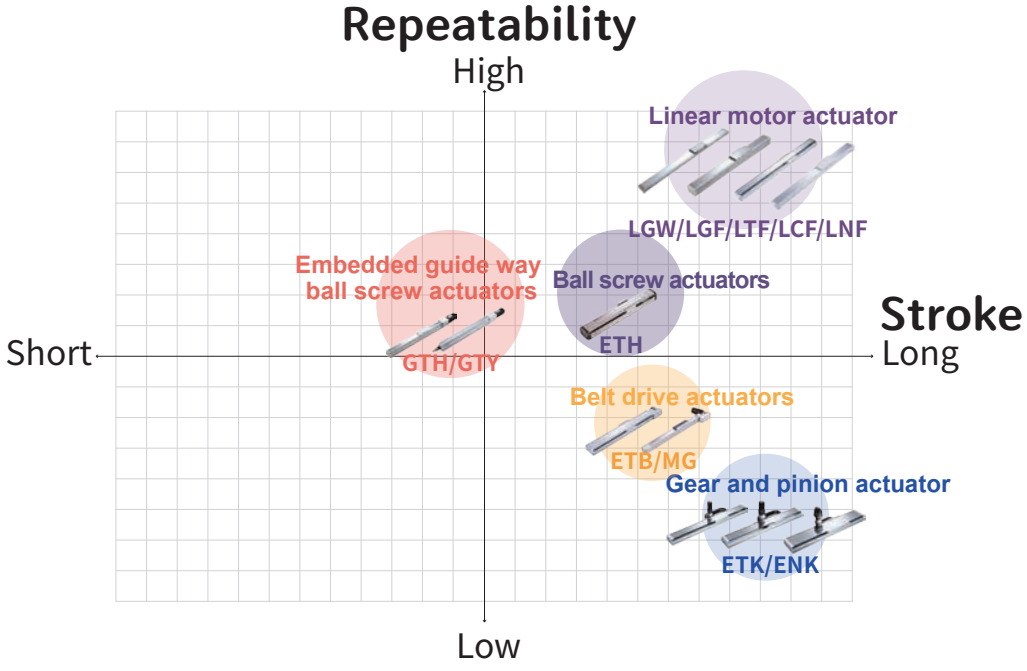
Drive Method	Unit	Belt drive	Ball screw drive	Gear and pinion	Linear motor drive
Model		ETB/ECB/MK/MG/GLTB	ETH/ECH/GTH/GLTH	ETK/ENK/STK	LTF2/LCF2/LNF2
Maximum Stroke	mm	5000	2400	12000	8000
Maximum Speed	mm/s 3600rpm/ min	5000	2400	2010	2500
Horizontal Payload	KG	200	150	185	120
Vertical Payload	KG	50	55	60	-
Compatible Motor Output	W	100~750	100~750	400~1000	100/200/400
Repeatability	mm	±0.04~±0.1	±0.005	±0.08	±0.001~±0.002
Longevity	km	10000	10000	10000	10000
Material		Aluminum	Aluminum	Aluminum	Aluminum / Iron
Grease Zerk		Standard for MK/MG/ GLTB (Slider)	Standard for GTH/GLTH (Ball screw / Slider)	Standard (Gear rack and slider)	Standard (Slider)
Fixation Method		Top-down and bottom-up mount for MG/ GLTB	Top-down and bottom-up mount for GTH/ GLTH	Top-down and bottom-up mount	Top-down and bottom-up mount
Appearance Design		ECB/MK/MG/GLTB Enclosed design. Preventing dust and external object.	ECH/GTH/GLTH Enclosed design. Preventing dust and external object.	Non-enclosed design.	LCF2/LNF2 Enclosed design. Preventing dust and external object.
Standard Pin Hole And Datum Plane		None	Standard for GTH/ GLTH	None	None
Noise Level		2	3	4 (Loudest)	1(Quietest)
Special Ordering		ETB/ECB/MK	ETH/ECH	All series	All series
Sensors		Yes	Yes	Yes	Yes
Cost (Without Motor And Gearbox)		Lowest	Pending on the spec	Pending on the spec	Highest
Applications		Transfer/ Material handling/ 3D printing	Transfer/ Material handling/ 3D printing	Laser cutting, Glass cutting/Steel plate cutting, Gantry milling machine, Construction elevator and aluminum machining/ Motion axis for robotic arm	Dispensing machine, Laser LCD patching machine, Laser cutting, Water jet, TFT examine, PCB examine, Testing machine for cable track, PCB drilling, Testing machine for safety belt, Wafer handling machine, Mask inspection equipment, LCD examine and Pick and place machine for CCD
Client		Automated equipment factory/ panel/ semi-conductor	Automated equipment factory/ panel/ semi-conductor	Automated equipment factory/ panel/ semi-conductor(Tough environment condition)	Semi-conductor examine equipment (Clean room environment)

Comparison between Rack And Pinion Slide and other driving methods

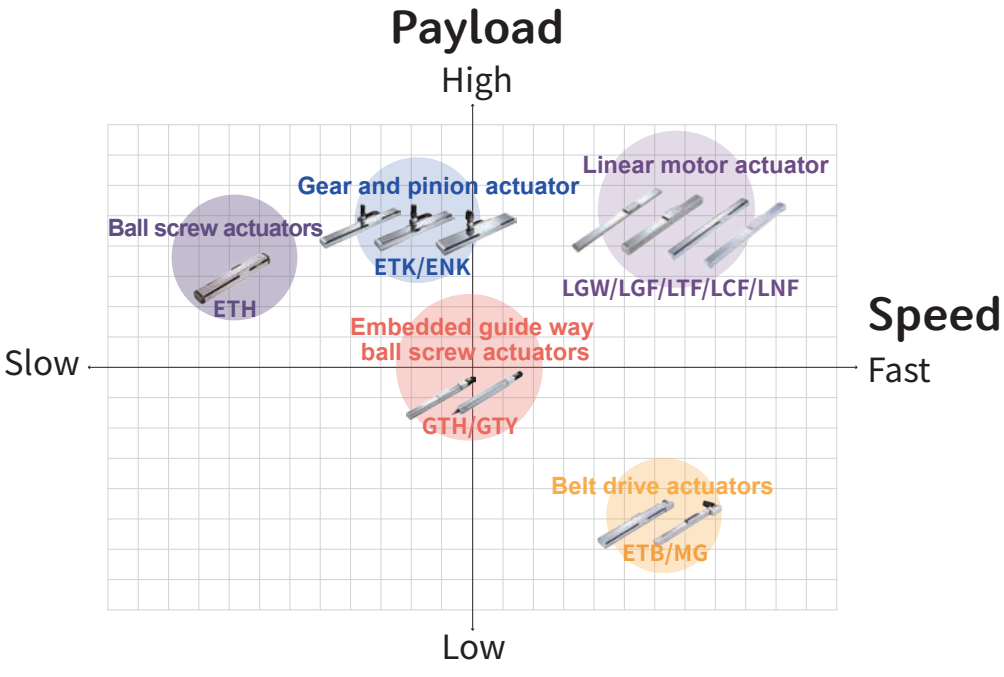
Cost/ Lead time Comparison



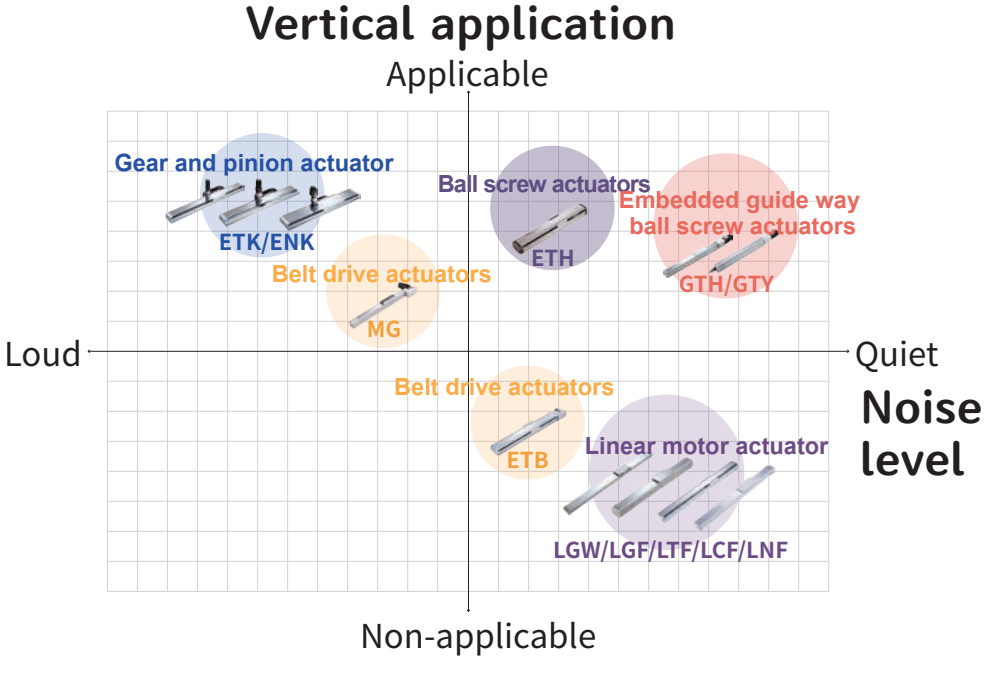
Stroke/ Repeatability Comparison



Payload/ speed Comparison



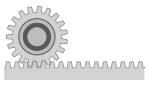
Vertical Application/ Noise Level Comparison



Inner structure-Rack and Pinion Actuator

Various carriage options

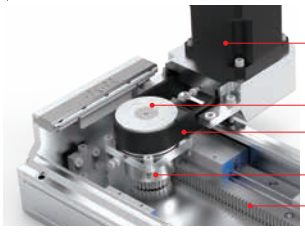
The transmission structure is driven by the rack, enabling linear motion.



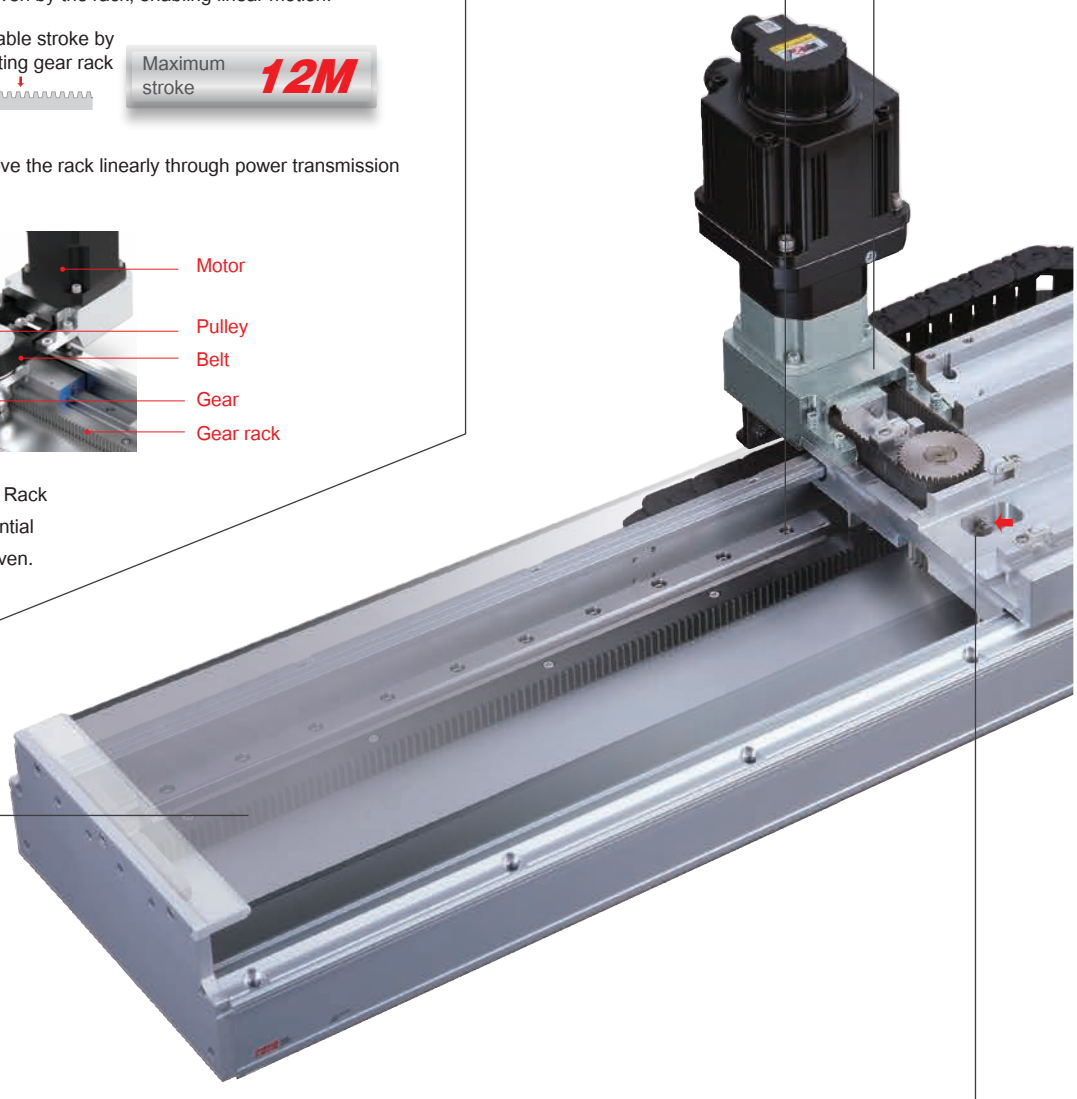
Extendable stroke by connecting gear rack

Maximum stroke **12M**

The motor drives the gear to move the rack linearly through power transmission using a belt pulley and belt.



When applying with long stroke. Rack driven actuators won't be a potential bending issue like ball screw driven.

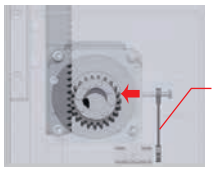


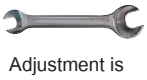
Cover sheet design

With cover sheet protection, it can prevent foreign objects from directly falling into the interior of the sliding carriage.

Gear adjustment design

Due to the friction and wear between gear and rack, backlash may occur. With the gear adjustment design, user can adjust the backlash and the belt tension. Ensuring long-term repeatability.



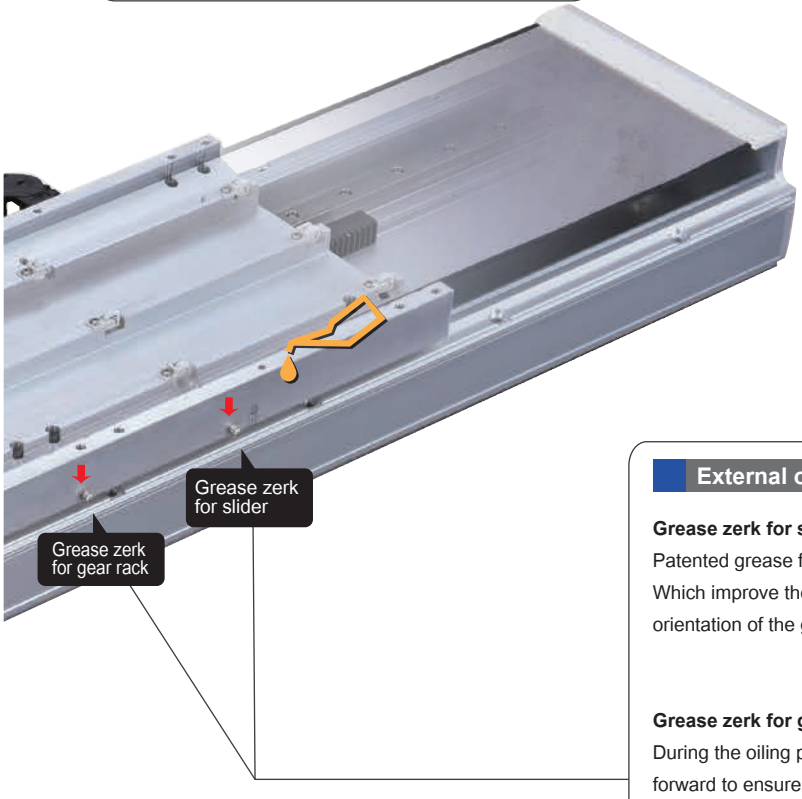


Adjustment is made using a hex key.



Standard equipped with cablechain

Standard equipped with a cablechain for all models reducing the time spent on selecting and assembly-ing cablechain.



Motor brand

Compatiable with several brands of motors.

Standard suitable motor brands			
Mitsubishi	Panasonic	Yaskawa	Delta

◎Please consult with our sales personnel for other motor specifications.

Motor Install options

Multiple motor installation positions provides the flexibility for machine design.


BW Motor
On Upper Side


BM Motor
On Lower Side

External oiling design for easier maintenance

Grease zerk for slider

Patented grease fitting on the slider to lubricate multiple areas. Which improve the oiling efficiency. Users can also decide the orientation of the grease fitting.

Grease zerk for gear rack

During the oiling process, keep carriage continues to move forward to ensure full stroke of the rack is fully coated with grease. To extend the lifespan.



Ball screw lead

Can customize screw specification and lead to match different payload and speed requirements.

Screw lead pitch		Lead pitch (rpm)
ET(N)K15	3:1	≒25.15/33.51
	4:1	≒18.86/25.13
ET(N)K22	5:1	≒24.5
	6:1	≒20.42
	8:1	≒15.31
ET(N)K30	5:1	≒28.9
	6:1	≒24.08
	8:1	≒18.06
	10:1	≒14.45

ISO14644-1

Catalog of Semiconductor Cleanroom Products

GLCH/GCH/ECH/GLCB/ECB/GCY/CGCH/CGCY/LGF/LCF2/LGCW/CHB2C/LBT/LXY/ETS/ZH/LTS/LTSU

Point



ISO CLASS
Cleanroom Certification

- All certification are coming from authorized institution examine base on ISO 14644-1.



fab
Clean Room Assembly

- TOYO is few linear motion manufacturer in the world (Taiwan only) that can assemble actuators in clean room. Making sure minimized the contamination.



Global Service System

- Service location around the world. TOYO subsidiary in Taiwan/ China/ Japan/ Korea/ USA/ India/ Thailand.

Product



Linear Actuator



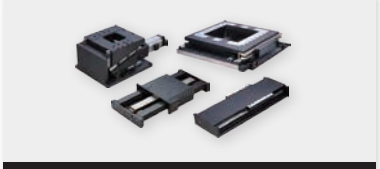
Servo Cylinder



Linear Motor Module



Electric Gripper



Nano Positioning Module



Nano Stages and Systems

Semi-Conductor | LCD OLED | LED Packaging | Battery Pre-processing | Food Processing

Features



Air Fitting

- Meet ISO4(Class 10) with air fitting



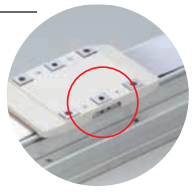
Low Dust Cover Sheet Design

- Special contact surface. Reducing friction and preventing dust.



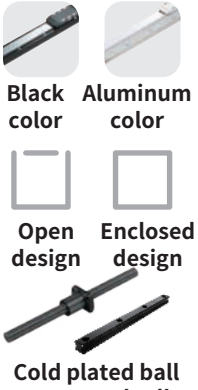
Easy Accessed Grease Fitting, Easier Maintenance

- External grease fitting for all series. Maintain ball screw and rail at once, no disassembly needed.
- Clean room level grease applied to all ball screw, rail and bearing.



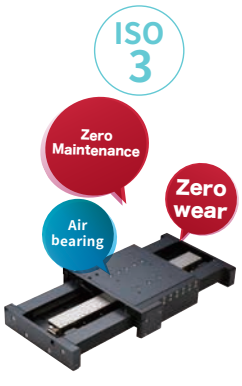
Suitable for different environment

- Offering Original and black color option.
- Open and enclose cover options.
- Optional cold plated ball screw and linear guide. Produce less dust, reduced wear, lower noise level, anti acid and no reflection. Only 2% reflection rate.



Zero Friction Air Bearing System

- Up to ISO 3 (Class 1)
- No wear, no lubrication needed
- None-contacted air bearing. No wear and performance drop.
- Unlimited life span. No lubrication pollution. The only requirement is air pressure. Ideal for clean room and medical environment.



Clean Room Certified Products(Attached Clean Room Standard)

ISO14644-1 Particle Concentration Standard(pcs/m3)

Clean Room Level		Particle Concentration					
ISO14644-1	**Fed Std-209E**	**0.1μm**	**0.2μm**	**0.3μm**	**0.5μm**	**1μm**	**5μm**
ISO 1		10	Invalid				
ISO 2		100	24	10	Invalid		
ISO 3	Class 1	1,000	237	102	35	Invalid	
ISO 4	Class 10	10,000	2,370	1,020	352	83	
ISO 5	Class 100	100,000	23,700	10,200	3,520	832	Invalid
ISO 6	Class 1,000	1,000,000	237,000	102,000	35,200	8,320	293
ISO 7	Class 10,000				352,000	83,200	2,930
ISO 8	Class 100,000				3,520,000	832,000	29,300
ISO 9					35,200,000	8,320,000	293,000

Application

- Exposure
- Wafer Inspection
- Laser Cutting
- Printing
- Optical Alignment
- Pick and Place

Global Location

Linear Motion Modules

None-motorized Actuator

ISO 4

Compatible with different motor brand. Maximized design freedom.

Ball Screw
GLCH



Repeatability	±0.005mm
Max Payload	110 kg
Stroke	50~1250 mm

Ball Screw
GCH



Repeatability	±0.005mm
Max Payload	110 kg
Stroke	50~1250 mm

Ball Screw
ECH



Repeatability	±0.005mm
Max Payload	150 kg
Stroke	50~2400 mm

Ball Screw
GCY



Repeatability	±0.005mm
Max Payload	110 kg
Stroke	50~800 mm

Belt Drive
GLCB



Repeatability	±0.06mm
Max Payload	8 kg
Stroke	50~3000 mm

Belt Drive
ECB



Repeatability	±0.04mm
Max Payload	85 kg
Stroke	50~4050 mm

Servo Cylinder

ISO 4

Best pneumatic replacement

Ball Screw
CGCH



Repeatability	±0.005mm
Max Payload	30 kg
Stroke	50~1050 mm

Ball Screw
CGCY



Repeatability	±0.005mm
Max Payload	30 kg
Stroke	50~800 mm

Electric Gripper

ISO 4

Controllable gripping strength, speed.

Ball Screw
CHS2C



Repeatability	±0.01mm
Max Gripping Strength	509 N
Stroke	68 mm

Linear Motor Module

High speed, acceleration. Multi-carriage. Increasing productivities

Ironcore Linear Motor
LGCW

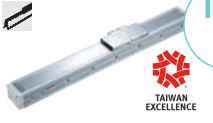
ISO 5



Repeatability	±0.002mm
Max Thrust	432~760 N
Stroke	200~3000 mm

Ironcore Linear Motor
LGF

ISO 5



Repeatability	±0.002mm
Max Thrust	25~266 N
Stroke	160~2520 mm

Ironcore Linear Motor
LCF2

ISO 4



Repeatability	±0.002mm
Max Thrust	266~1532 N
Stroke	202~3053 mm

Air Bearing Axis

ISO 3

Zero Noise, zero wear, Nano level alignment

Air Bearing
LBT210



Repeatability	±0.2μm
Speed ripple 100mm/s	0.1%
Straightness/Flatness	0.5μm

Air Bearing
LBT275



Repeatability	±0.2μm
Speed ripple 100mm/s	0.1%
Straightness/Flatness	0.5μm

Alignment Stage

ISO 5

Hollow design, Superior linear accuracy, Geometric accuracy

Cross Roller Guide
LXY150



Repeatability	±0.25μm
Speed ripple 300mm/s	0.3%
Straightness/Flatness	±2/±1.2μm

Cross Roller Guide
LXY300



Repeatability	±0.3μm
Speed ripple 100mm/s	0.3%
Straightness/Flatness	±1.5/±3μm

Integrated bearing
LXY100-G



Repeatability	±2μm
Speed ripple 300mm/s	0.3%
Straightness/Flatness	±3/±3μm

Horizontal Z-Axis

ISO 5

Hollow design

Standard - Standard Steel Guide
ZH20H



Repeatability	±1μm
Max Payload	80Kg
Straightness/Flatness	10μm

Low Type - Aluminum Cross Roller Guide
ZH20



Repeatability	±1μm
Max Payload	20kg
Straightness/Flatness	10μm

Cast iron Axis

ISO 5

Cast iron structure, anti vibration

Ironcore Linear Motor
LTS22



Coreless Linear Motor
LTSU22



Ball Screw
ETS22



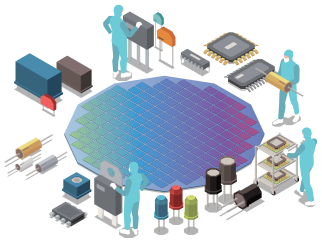
The following values are defined for a 300mm stroke:

Repeatability	±0.5μm	Repeatability	±0.5μm	Repeatability	±0.5μm
Accuracy	±2μm	Accuracy	±2μm	Accuracy	±2μm
Straightness/Flatness	±3μm	Straightness/Flatness	±3μm	Straightness/Flatness	±3μm

Nano Stages and Systems

Semiconductor Process Inspection Applications (Customized)

ISO 3



Wafer Inspection

An indispensable element in every wafer manufacturing plant is its optical inspection system. These surface characterization tools can detect various defects, including voids, pits, and scratches on the wafer surface. The inspection systems require smooth, high-speed line scanning, making the motion stability of the XY platform crucial to overall accuracy. TOYO NANO's nano platforms, with their exceptional dynamic performance, have long been a key supplier for these optical inspection applications.

Air bearing structures are particularly suitable for micron-level applications and wafer equipment due to their cleanroom compatibility.

Air Bearing Single Axis Platform



■ **High Speed Pick And Place**

Repeatability	±1μm
Max Accel	10G
Stroke	400mm

Dual Motor

Air Bearing XYZ Platform



Precision Machining

Repeatability	<1μm
Flatness	<5μm
Stroke	200×200×150mm

Aluminum base air bearing used for Z axis

Air Bearing XYZθ Platform



■ **Mask Inspection Machine**

Repeatability	±1μm
Flatness	<5μm
Stroke	500mm×500mm

Air bearing for all axis, outstanding structure

Air Bearing XYZθ Gantry



■ **White Light Interferometry**

Repeatability	<1μm
V max	300mm/sec
Stroke	300×300×100mm

Air bearing for all axis

Linear Motor XY Stage



■ **Laser Machining**

Repeatability	<1μm
V max	500mm/sec
Stroke	300mm×300mm

Linear motor dual drive system

Linear Motor Dual Drive XYθ Gantry

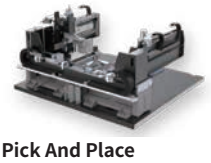


■ **Exposure Machine**

Repeatability	<1μm
V max	1000mm/sec
Stroke	450mm×450mm

Granite base gantry structure

Linear Motor Dual Drive XYZ Platform



■ **Pick And Place**

Repeatability	XY<1μm Z<2μm
V max	XY 1m/sec
Stroke	500×500×100mm

Air bearing for all axis, outstanding structure

XY Hollow Stage



■ **Wafer AOI**

Dimension of the cut out hole	350mm
Rotary angle	±20degrees
Repeatability	±0.5μm

Hollow XYZR configuration

Micro LED/PCB/LCD Panel Process Inspection Applications (Customized)

ISO 3



For multiple industries and applications

TOYONANO is at the forefront of critical technology development, continuously innovating high-precision components. In recent years, it has successfully entered the supply chains of high-precision semiconductor equipment, PCB, and panel industries, securing multiple patents for air-bearing platforms. With the rapid growth of the MicroLED industry and its high precision requirements, TOYONANO's platforms play a crucial role, providing precision positioning systems for applications such as mass transfer, electrical testing, and AOI inspection.

Linear Motor Dual Drive Gantry



■ **6 carriage printing machine**

Repeatability	<5μm
V max	1m/sec
Stroke	600mm×2000mm

Linear motor dual drive system

XYZ Linear Motor Gantry



■ **Laser machining**

Repeatability	<2μm
V max	1m/sec
Stroke	600×600×100mm

Granite gantry structure

XYZ Linear Motor Gantry



■ **Laser machining**

Repeatability	±2μm
Flatness	XY 1m/sec
Stroke	1000×800×100mm

VC-C anti vibration

XYZ Linear Motor Dive Table Style Gantry



■ **AOI**

Dimension of the cut out hole	350mm
Rotary angle	±20degrees
Repeatability	±0.5μm

Hollow XYZR configuration

LINE facebook Instagram YouTube

Linked in twitter WeChat KAKAO

TOYO GROUP GLOBAL SERVICE

- **東佑達自動化科技股份有限公司**
  TOYO AUTOMATION CO., LTD.
  台南市安南區新吉三路55號
  No. 55, Xinji 3rd Rd., Annan Dist., Tainan City 709, Taiwan.
  Tel:+886-6-2021347 Fax:+886-6-2025974

- **東佑達奈米系統股份有限公司**
  TOYO NANO SYSTEM CORPORATION.
  新竹縣湖口鄉八德路一段67號
  No. 67, Sec. 1, Bade Rd. Hukou Township, Hsinchu County 303117, Taiwan.
  Tel:+886-3-5696060 Fax: +886-3-5696161

- **東佑達機器人(蘇州)有限公司**
  TOYO ROBOT (SHUZHOU) CO., LTD.
  江蘇省昆山市張浦鎮振新東路586號(浩盛工業園C12-2)
  No 586, Zhenxin East Road, Zhangpu Town, Kunshan City, Jiangsu Province, China.
  Tel:+86-512-86890880 Fax:+86-512-86890881

- **東佑達自動化科技(深圳)有限公司**
  TOYO AUTOMATION (SHENZHEN) CO., LTD.
  深圳市寶安區龍華大浪華榮路明君商務中心1208室
  1208 Mingjun Business Center Huarong Road, Baoan District, Shenzhen City, China.
  Tel:+86-755-81713415 Fax:+86-755-81713435

- **TOYO ROBOTICS AMERICAS**
  Silicon Valley, CA, US
  Email : ta1@toyorobot.com

- **TOYO JAPAN 株式会社**
  埼玉県さいたま市大宮区桜木町1 - 266 - 3シンワKIビル413号室, Japan
  413 Shinwa KI Building, 3-266, Sakuragicho 1 chome, Omiya-ku Saitama-shi, Saitama 330-0854 Japan
  TEL:+81-48-658-8930

- **TOYOROBOTICS KOREA CO.LTD.**
  경기도 안산시 단원구 엠티브이12로 21번길 30
  30, Emtibeui 12-Ro, 21 Beon-Gil, Danwon-Gu, Ansan-Si, Gyeonggi-Do, Republic Of Korea
  Tel:+82-02-6941-1681

- **TOYO ROBOTICS PRIVATE LIMITED INDIA**
  Office No-15A, 4th Floor, A-Building City Vista, Kharadi, Pune - 411014, MH, India.
  TEL:+919226535061
  Email : sales@toyorobotics.co

- **TOYO VIETNAM (SALES OFFICE)**
  Thanh Xuan district, Hanoi city, Viet Nam
  TEL:+84 986 358 863
  Email : vietnamtoyo_1@toyorobot.com

- **TOYO ROBOT (THAILAND) CO., LTD.**
  118/27 Moo 18 Klong Nueng Klong Luang Pathumthani 12120 Thailand.
  E-mail : stanley@toyorobot.com

TOYO

Official Website

www.toyorobot.com