



ELECTRIC CYLINDER 2026



—— LINEAR MOTION EXPERT ——

PRODUCT INDEX



Company Intro

Page 2

ESR Series

Light Duty Electric Cylinder
Inner Dia: 20-100 mm
Max. Stroke: 2000 mm
Max. Payload: 1500 kg

Page 13



EMR Series

Medium Duty Electric Cylinder
Inner Dia: 80-125 mm
Max. Stroke: 2000 mm
Max. Payload: 6000 kg

Page 49



EHR Series

Heavy Duty Electric Cylinder
Inner Dia: 120-320 mm
Max. Stroke: 1000 mm
Max. Payload: 120 t

Page 67



EQR Series

Multi-Stage Telescopic Electric Cylinder
Inner Dia: 70-115 mm
Max. Stroke: 2000 mm
Max. Payload: 20 t

Page 99

Reference Data

Page 103

COMPANYINTRO



TPA Motion Control was founded in 2016 and is affiliated with Jiujun Group. Its headquarters is located in Kunshan, China. Currently, it has two major R&D centers and manufacturing bases (in Kunshan and Shenzhen); it also has more than ten service outlets across the country. Its products are sold worldwide, mainly in China (including Taiwan), Southeast Asia, and Europe and America. The total production area is over 50,000 square meters, with more than 500 employees, and it possesses nearly 400 sets of advanced equipment.



Registered trademark TPA, its meaning: TPA Motion Control continuously "Transfers" and changes in the process of exploration; "Passion" is full of enthusiasm in the work; "Active" is proactive and enterprising in the development; always advancing forward with an energetic spirit.

TPA Motion Control - dedicated to high-speed and high-precision transmission products, is a national-level specialized, innovative "little giant" enterprise, a national high-tech enterprise, a national postdoctoral research station, an Jiangsu provincial specialized, innovative small and medium-sized enterprise, a potential unicorn enterprise in Jiangsu Province. Its main products include: precision linear modules (Japanese scale group, European scale group, electric cylinder, steel base module, embedded aluminum base module, simple module), precision linear motors (single-axis linear motor, linear motor platform, moving and stationary stators), magnetic levitation intelligent transmission systems (magnetic drive ring line, magnetic levitation transmission system).

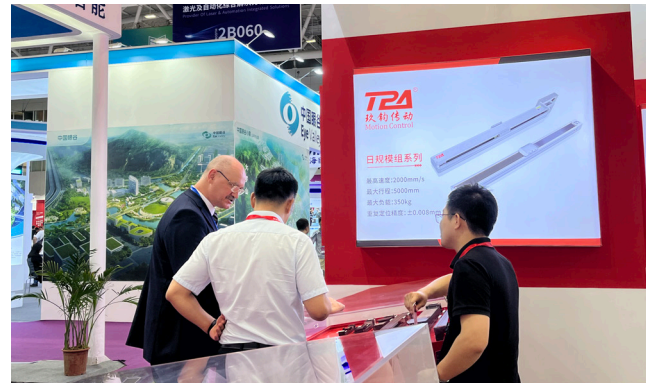
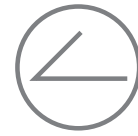
The TPA Motion Control products mainly serve eight major industrial sectors: new energy, 3C, semiconductors, new display, healthcare, automobiles, circuit boards, and military industries. They are widely used in various operation forms such as loading and unloading, transportation, positioning, classification, scanning, inspection, dispensing, soldering, etc. The modular products can meet the diversified application scenarios of customers.



TPA Motion Control will adhere to the company mission of "always providing high-quality services to partners, taking responsibility far, and achieving mutual benefit through altruism", optimize its products, continuously innovate, and always provide services to customers with efficient operations, high-quality products, and the spirit of striving for excellence.

TPA Motion Control takes technology as its core, products as its foundation, market as its orientation, and an outstanding service team to create a new industry benchmark of "TPA Motion Control - Empowering the Nation through Manufacturing".

CORPORATE VALUES



The core competition and the company's values are the important embodiment of enterprise brand value.

Excellent marketing team, professional product consultation, attentive customer service and perfect after-sales system.

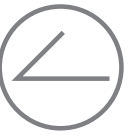
Integrity and respect for individuals. Any discussion is premised on improving the work. Respect differences and protect multi-style personalities.

Dedicated, customer first. Provide impeccable service to customers. The company must consider the feelings and interests of customers at the same time when doing anything or making any decision.

Professional and full of passion. Diligence and dedication make us outstanding, devotion makes us vivid, and passion makes us outstanding.

Initiative and continuous innovation. Everyone is a force to push the company forward. We advocate individual initiative innovation. Everyone will spare no effort to support and actively cooperate with anything that is beneficial to the company. We believe that everyone's efforts will have a profound impact on the company.

CHOOSE US



01 Platform advantage

A professional manufacturer of transmission components, with two R&D centers (Kunshan and Shenzhen)
Four major manufacturing bases (Kunshan, Shenzhen, Ningbo, Jinan). With a production and manufacturing workshop of over 50,000 square meters and nearly 400 sets of self-owned processing equipment, all the products sold have full independent intellectual property rights.

02 Team advantage

The company has a complete organizational structure, and the core team members have all been working in the industry for more than ten years. The team is young, energetic and courageous in taking on responsibilities. We can provide customers with accurate selection plans and other related consulting services.

03 Technological advantage

The company has over a hundred senior technical R&D personnel in the industry. We can provide customers with non-standard customized demands and diverse flexible solutions.

04 Product advantage

The core components are self-produced, with a high self-sufficiency rate. Based in the field of transmission for automated equipment. Our product range is comprehensive and can meet various demands of customers in terms of transmission forms.

05 Quality advantage

It is equipped with advanced manufacturing facilities and professional testing equipment. Complete production process flow and professional team. Multiple quality inspection processes ensure product consistency.

06 Service advantage

Our company has a global sales network, offices and a professional after-sales team, which enables us to respond more quickly to customers' pre-sale, in-sale and after-sale service demands.

07 Social responsibility

Provide employees with a comfortable, safe and healthy working environment. Precision transmission components are self-produced and self-sold, breaking the reliance on imports and getting rid of the "bottleneck" obstacle. Focusing on high-speed and high-precision transmission products, we contribute to the development of national intelligent manufacturing.

08 Price advantage

Large scale, high production capacity, precise staffing and stable personnel structure. It can help customers reduce production costs, increase product profits and market competitiveness.

COMPANY ENVIRONMENT



East China Manufacturing Base



Corporate Lobby



Office environment



Multifunctional Training Hall



CNC machining center



Processing workshop

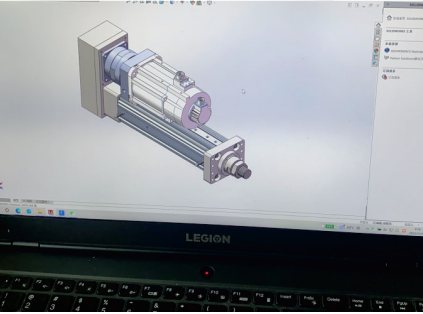


Dust-free workshop

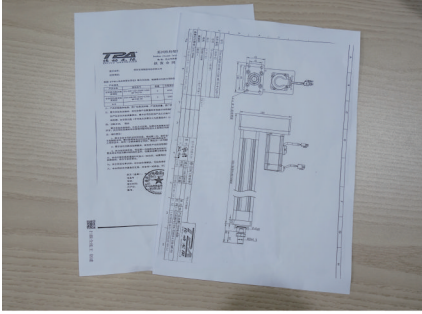


Assembly shop

PRODUCTION PROCESS



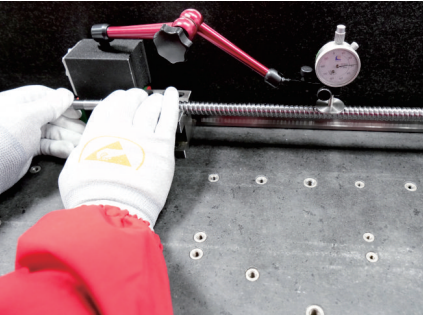
Design customized drawings according to customer requirements.



Order confirmation, Customers return contracts and drawings.



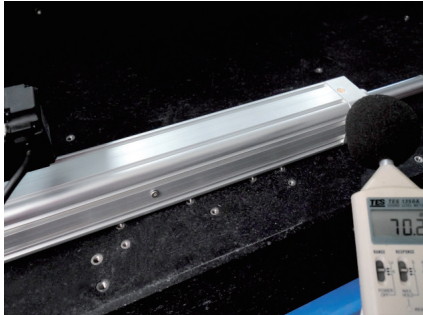
CNC production and processing according to drawings



Check the flatness of the base.



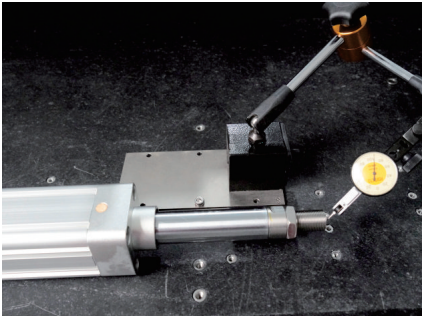
Check the parallelism of the base.



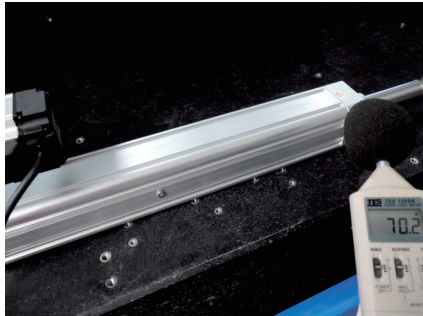
Check the verticality of screw concentricity.



Check for any stuck condition.



Test the accuracy of repeated positioning by electrifying.



Running noise detection of module.



The sliding table is shipped with the corresponding inspection report to ensure that the products meet the use requirements, and the sliding table is allowed to leave the factory.

Electric cylinder specification index

● Light Duty Electric Cylinder

Environment	Drive system	Model	Motor power	Inner dia (mm)	Repeatability (mm)	Ball screw specification		Maximum speed ^{*1} (mm/s)	Stroke (mm)
						Diameter(mm)	Lead(mm)		
Clean room	Ball screw	TPA-ESR-25	50W	25	±0.02	Ø10	2	100	10~400
			100W						
			NEMA 17						
		TPA-ESR-40	200W	40	±0.02	Ø12	5	250	10~600
			400W				10	500	
			NEMA 17					500	
		TPA-ESR-50	100W	50	±0.02	Ø16	5	250	10~800
			200W				10	500	
			400W					500	
		TPA-ESR-65	750W	65	±0.02	Ø20	5	250	10~1000
			200W						
			400W						
		TPA-ESR-80	750W	80	±0.02	Ø25	10	500	10~1500
			NEMA 23						
			750W						
		TPA-ESR-100	1000W	100	±0.02	Ø32	5	250	10~2000
			1500W						
			2000W						
		TPA-ESR-100	750W	100	±0.02	Ø32	10	500	10~2000
			1000W						
			1500W						
			2000W						

● Medium Duty Electric Cylinder

Environment	Drive system	Model	Motor power	Inner dia (mm)	Repeatability (mm)	Ball screw specification		Maximum speed* ¹ (mm/s)	Stroke (mm)
						Diameter(mm)	Lead(mm)		
Clean room	Ball screw	TPA-EMR-80	750W	80	±0.02	Ø32	10	500	50~1800
			1000W				20	1000	
			1500W						
			2000W						
		TPA-EMR-100	1500W	100	±0.02	Ø40	10	500	50~1800
			2000W				20	1000	
			3500W						
			5500W						
		TPA-EMR-125	1500W	125	±0.02	Ø50	10	500	50~2000
			2000W				20	1000	
			3000W						
			7500W						

● Heavy Duty Electric Cylinder

Environment	Drive system	Model	Motor power	Inner dia (mm)	Repeatability (mm)	Ball screw specification		Maximum speed ^{*1} (mm/s)	Stroke (mm)
						Diameter(mm)	Lead(mm)		
Clean room	Ball screw	TPA-EHR-120	2000W	120	±0.02	Ø40	10	500	10~1000
			3000W				20	1000	
			5500W						
			7500W						
		TPA-EHR-140E1	5500W	140	±0.02	Ø63	10	500	10~1000
			7500W				20	1000	
			11000W						
			15000W						
		TPA-EHR-140E2	5500W	140	±0.02	Ø63	16	800	10~1000
			7500W				20	1000	
			11000W						
			22000W						
		TPA-EHR-140E3	5500W	140	±0.02	Ø63	16	800	10~1000
			7500W				20	1000	
			11000W						
			22000W						
		TPA-EHR-180	11000W	180	±0.02	Ø80	20	1000	10~1000
			15000W						
			22000W						
			30000W						
		TPA-EHR-220	15000W	220	±0.02	Ø100	20	1000	10~1000
			22000W				25	1250	
			30000W						
			45000W						
		TPA-EHR-280	15000W(1500RPM)	280	±0.02	Ø100 Ø125	25	625	10~1000
			20000W(1500RPM)				32	800	
			30000W(1500RPM)						
			45000W(1500RPM)						
		TPA-EHR-320	20000W(1500RPM)	320	±0.02	Ø160	32	800	10~1000
			30000W(1500RPM)				45	1000	
			45000W(1500RPM)						
			52000W(1500RPM)						

● Multi-Stage Telescopic Electric Cylinder

Environment	Drive system	Model	Motor power	Inner dia (mm)	Repeatability (mm)	Ball screw specification		Maximum speed ^{*1} (mm/s)	Stroke (mm)
						Diameter(mm)	Lead(mm)		
Clean room	Ball screw	TPA-EQR-70	750W	70/62/54	±0.02	Ø16 / Ø32	10	500	10~2000
		TPA-EQR-115	750W	115/90/68	±0.02	Ø20 / Ø40	20	1000	10~2000

Note:
*1 The max speed based on servo motor rated speed 3000 rpm.
*2 Following show standard spec, if need to customize, please contact TPA sales team.

Typical Industries

The electric cylinder is a mechanical linear drive unit. The drive component consists of an electrically actuated spindle that converts the rotary motion of the motor into linear motion of the piston rod. In many applications, it can serve as a suitable alternative to pneumatic and hydraulic actuators. The electromechanical system of the electric cylinder can eliminate the costs and pollution caused by oil and air, providing an economically and environmentally friendly solution for automated factories.

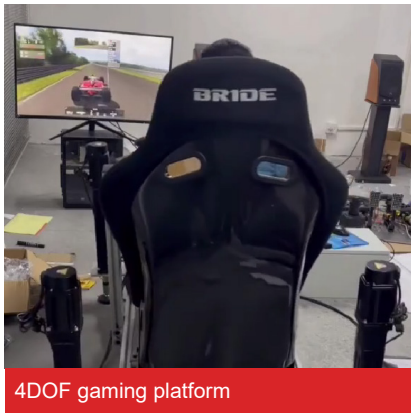
- Servo pressing
- Material handling and feed systems
- Testing equipment and laboratory applications
- Process automation in the food and beverage industry
- Medical positioning equipment
- Packaging machinery
- Entertainment / Simulation
- Machining (Material Cutting / Broaching / Metal Forming / Tube Bending / Stamping)



Bearing pressing machining



lifting platform



4DOF gaming platform



Automobile welding lifting platform



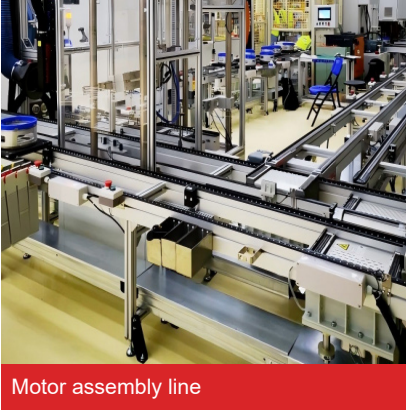
Rotary riveting machine



Pressure testing device



Mask processing machine



Motor assembly line



6DOF simulation platform

Product Features -- Sectional View

• Sectional view(Direct coupled mount)



• Front flange

As one of the installation methods for the electric cylinder body, it can effectively fix and stabilize the operation. Depending on the different industries and applications, the other type of installation flange is optional, such as: Rear flange, Side mounting, Trunnion, Front guidance, Rear eye and Rear clevis.

• Easy lubrication port

Lubrication can be easily and quickly applied from the outside using an oil injector. The result is reduced down time for product maintenance yielding a higher ROI and a longer product life.

• Sensors

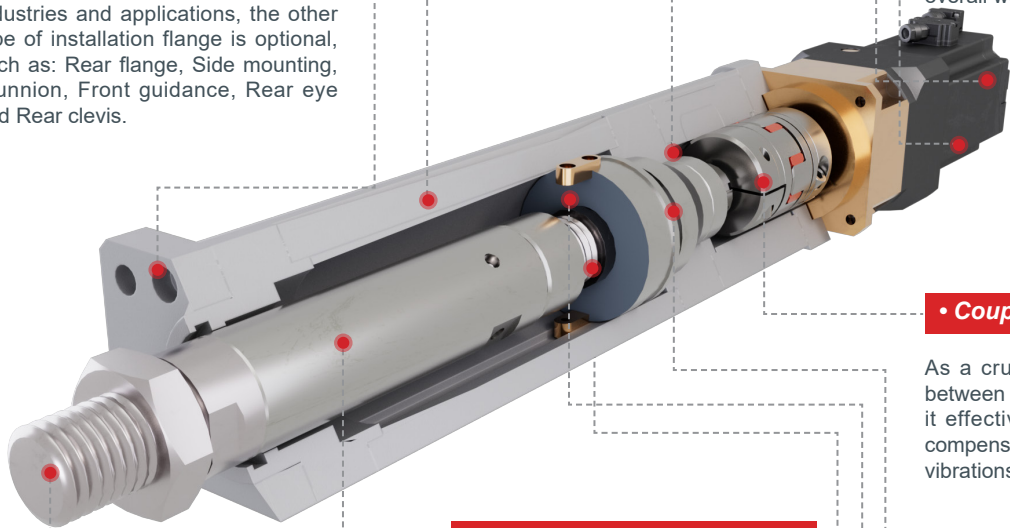
The sensors type usually magnetic switch (ESR) or proximity switch, can be directly integrated into the profile slot or thread hole.

• Motor

Usually match servo motor and stepper motor. The user can provide it themselves or request the supplier to provide it along with the electric cylinder.

• Planetary gearbox

By the precise meshing of gears, the speed is reduced, the torque is increased, and the load inertia is decreased. Usually, a gearbox is added to the electric cylinder for the high thrust application to optimize the overall working performance.



• Coupling

As a crucial connecting component between the motor and the ball screw, it effectively transmits torque, while compensating for errors and absorbing vibrations.

• Piston rod support bearing & Protection

The extra long cylinder rod bearing allows high lateral load forces. A wiper ring prevents the ingress of external contamination under normal conditions.

• Screw support bearing (Motor end)

A double stacked set of angular contact bearings allows for high thrust forces in both the extend and retract directions. The result is a design with high force density and minimal clearance when changing directions of motion.

• Ballscrew

A high-quality precision class 7 ballscrew (Standard) is used. For some special use cases, the class 5 ballscrew and lead screw is optional. The ball bearings between screw and nut ensure a low frictional resistance.

• Buffer washer & Piston rod anti-rotation guidance

Mechanical limit measures can be implemented during the retraction movement of the ball screw to reduce wear and prevent the piston rod from twisting during extension and retraction.

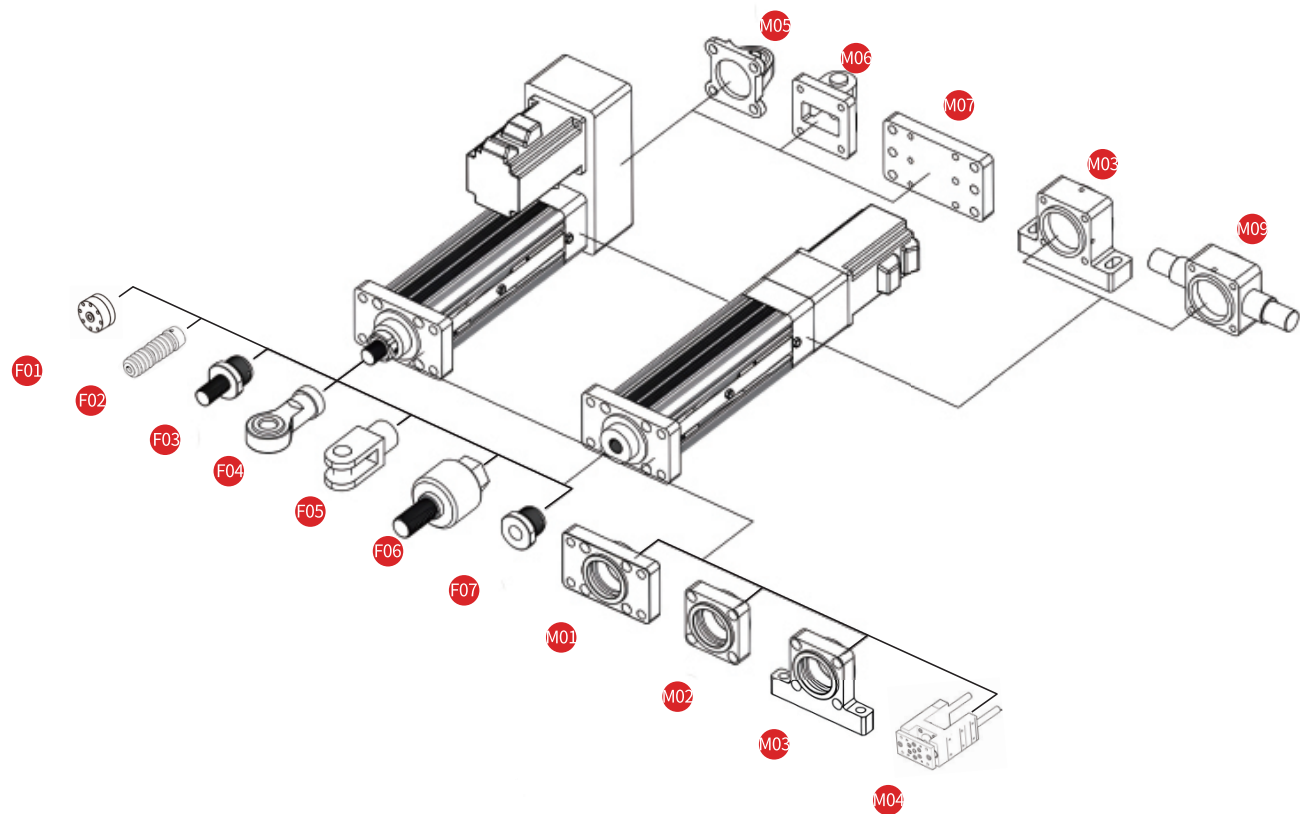
• Sectional view(Parallel mount)



• Parallel kit

Motor parallel mount can make design compact, the parallel kit mainly include pulley, timing belt and cover to replace the coupling component. The pulley ratio have 1:1 and 1:2 two options.

Product Features -- Peripherals overview



Mounting attachments and accessories		
Code	Part name	Description
YL	F01--Load cell	For thrust measurement and precise control
FQ	F02--Protective bellows	Protect the cylinder piston rod against oil stains and dust
W	F03--Male thread	Thread outside, for matching several kinds of joint component
G	F04--Rod eye	With spherical bearing
Y	F05--Rod clevis	Permits a swivelling movement of the cylinder in one plane
F	F06--Self-aligning rod coupler	For compensating radial and angular deviations
N	F07--Female thread	Thread inside, for matching several kinds of joint component
FA	M01--Front flange	For the fixation of the cylinder when mounted vertically
/	M02--Standard cylinder base	Standard flange of cylinder
LB	M03--Side mounting kit	For the fixation of the cylinder when mounted horizontally
QDX	M04--Front guidance	For protecting electric cylinders against rotation at high torque loads
CA	M05--Rear eye	With single spherical bearing, allow the cylinder to swing up and down
CB	M06--Rear clevis	With double spherical bearing, usually use with rear clevis and rod eye
FB	M07--Rear flange	For the fixation of the cylinder when mounted vertically
TC	M08--Trunnion	For mounting anywhere along the cylinder profile, it's the rotational motion pivot point

Knowledge classroom

• Innovative features of electric cylinder:

1、The main competing products of electric cylinders are cylinders and hydraulic cylinders
Cylinder is used in precision automation industry, and the product load is small, ranging from several kilograms to hundreds of kilograms. The cylinder is inflated and deflated by air pump to realize displacement. In this process, industrial noise will be produced, and the trachea will age later, which will cause gas leakage and affect work efficiency.
The hydraulic cylinder is used in the use environment with large thrust and several tons or dozens of tons. Among them, the use of hydraulic cylinder in the later stage will cause the leakage of hydraulic oil and the pollution of work piece or working environment. Causing unnecessary economic losses and trouble in later maintenance.
Electric cylinders can be used in precision automation industry and in high thrust environment. Among them, the electric cylinder uses servomotor and ball screw, and the accuracy and stability are equivalent to those of the cylinder and hydraulic cylinder, which has been obviously improved. Except for some wearing parts. Hardly affect that use of the electric cylinder.

2、Portable use of electric cylinder
The electric cylinder is controlled by servo motor. Just set up PLC and connect cables. Control can be completed. And later need to change the movement schedule. Only need to modify the parameters in PLC to complete. Go wherever you think.

3、Diversity of accessories for electric cylinders
Electric cylinders can use standard parts consistent with cylinders (front and rear flanges/joint bearings/single ears). We can also make non-standard accessories according to customers requirements. You can even increase the grating ruler to enhance the accuracy of the electric cylinder.

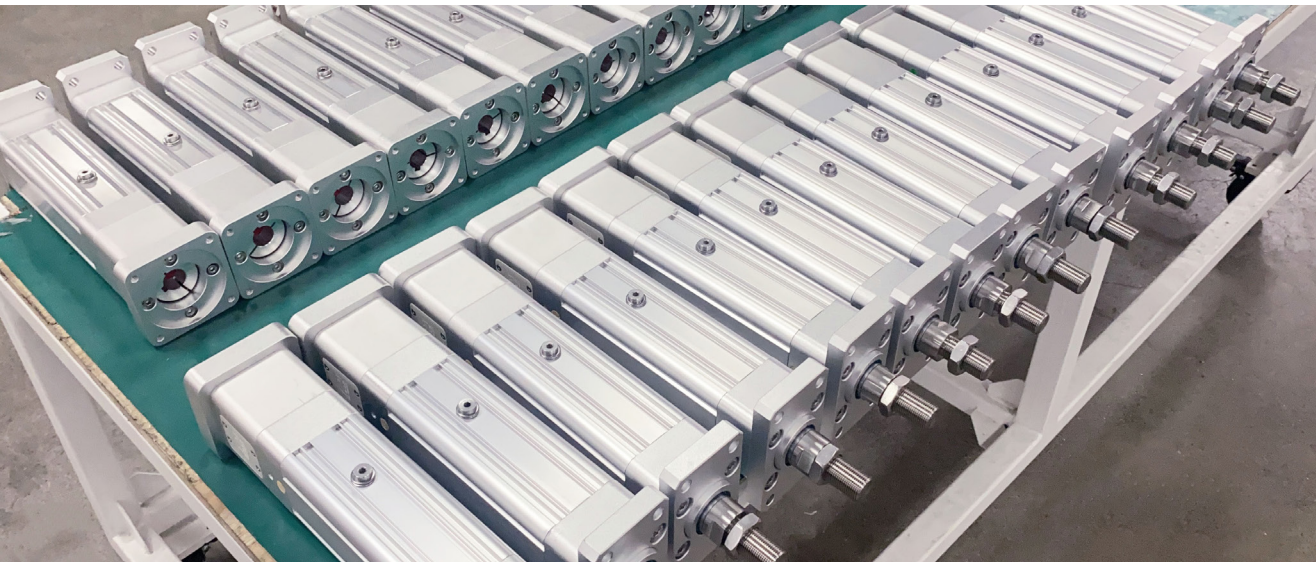
• Technical advantages of electric cylinder

1、High transmission efficiency of electric cylinder
The ball screw s rolling friction, the transmission efficiency is about 90-96%, and it is more controllable than the air pump of the cylinder. More accurate.

2、Late maintenance cost of electric cylinder
The electric cylinder can work in a complicated environment, and its operation and maintenance are relatively simple, and it only needs a regular grease injection lubrication. We don't need any wearing parts to replace our electric cylinder. In this way, compared with the pneumatic system, the hydraulic system actually reduces the cost of our after-sales service.

3、The service life of electric cylinders is longer
The electric cylinder has repeatable and reproducible performance in the whole service life of the product, which can reach hundreds of cycles under rated load, and it is easy to predict the service life. The service life of the hydraulic cylinder depends on the design and seal wear, and its service life will be greatly reduced in the harsh environment.

4、The pipeline and solenoid valve of the traditional cylinder are omitted, and there is no trouble of air leakage and maintenance.
Cylinder operation consumes compressed air. In the process of compressed air transportation, there will be a certain pressure loss after passing through resistive elements such as throttle valve and pipeline bend. In addition, air leakage at joints, cylinders or solenoid valves is common in equipment. Although the leakage standard during installation is lower than 2 %, the leakage of many factories is as high as 3% 5%. Leakage will also cause some pressure loss. The electric cylinder adopts motor and controller, which greatly improves the energy consumption.





Max Stroke	400mm	Max Speed	100mm/s	Motor Power	100W	Ball Screw	Ø10mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Light Duty Electric
Cylinder

• **Ball Screw Dia**
Ø10mm

• **Inner Dia**
25
40
50
63
80
100

• **Lead**
02mm

• **Stroke**
10-400mm

• **Repeated Accuracy**
C: Common ±0.02mm
P: Precision ±0.01mm

• **Motor Direction**
M: Direct Coupled
Mount
MR: Parallel Mount

• **Installation Flange**
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

• **Front Joint Option**
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

• **Motor Flange**
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance
BJ: Stepper motor

• **Motor Power**
05: 50W
10: 100W
42: NEMA 17

• **Brake**
05

• **Gear Ratio**
3、4、5Etc.

• **Quantity**
1
2
3
No Mark:None

• **Custom**
F

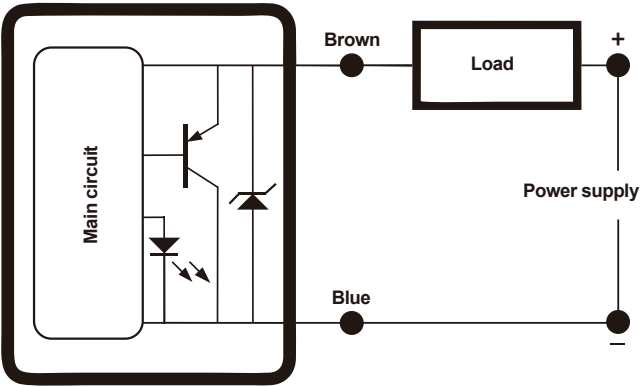
• **Magnetic Switch**
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

ESR - 25-10 02 C-L100-M-FA - W-P 05 B-J3 - C 3 - F

Datasheet

Spec	Repeated accuracy (mm)	±0.02	
	Rated speed of motor (RPM)	3000	
	Rated torque (N.m)	0.16	0.32
	Motor power (W)	50	100
	Ball screw lead (mm)	2	2
	Rated speed (mm/s)	100	100
	Rated thrust (N)	425	850
	Max payload (KG)	40KG	
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground	
	Valid stroke (mm)	10~400mm	
Parts	Ball screw Ø (mm)	Ø10	
	External material	Aluminium Profile	
	Sensor	Magnetic Switch	
	Operating environment	-10 ~ 70°C , 85%RH, No condensation	

Sensor layout



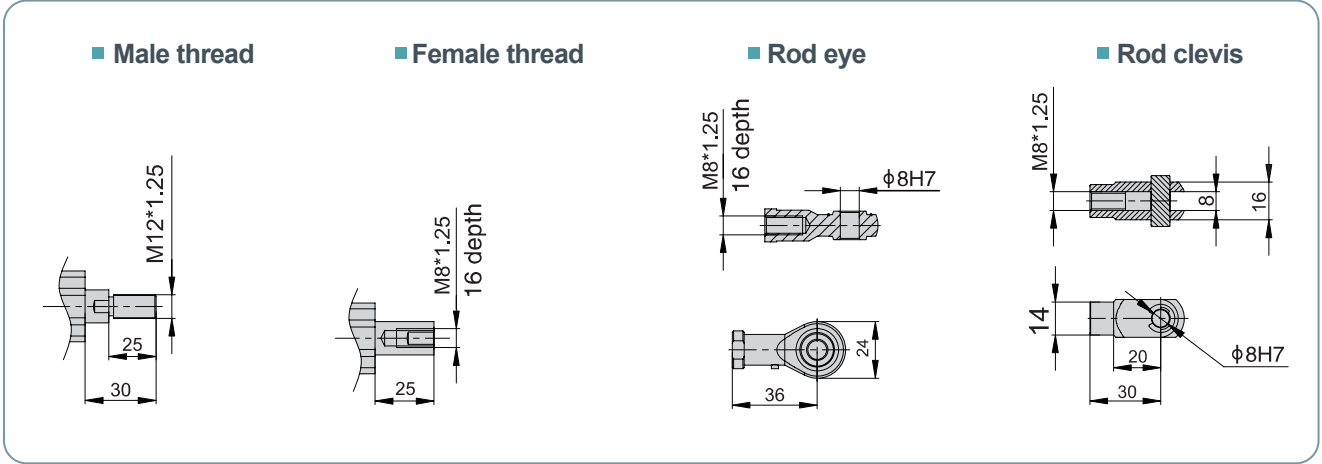
Thrust formula of electric cylinder

$F=T \times \eta \times 2 \pi \times R / L$
F: Rated thrust of electric cylinder (KN)
T: Rated torque of motor (N-m)
 η : Efficiency (Usually 85%, depend on specific industry)
R: Gear / Pulley ratio
L: Ball screw lead (mm)

Suitable motor brand

Servo motor dimension																			
Power(W)	Brand	Model		LL	LL(Brake)	LA	LE	LZ	LC	LG	LW	RH	W	LR	S	LB	M	QK	QL
100W	Mitsubishi	HC-KFS12 □ K	B:With brake □ :No brake	86.5	124.5	46	2.5	4.5	42	5	-	-	-	25	8h6		-	-	-
	Panasonic	MSMD012G1 □	V:With brake U:No brake	92	122	45	3	3.4	38	6	14	6.2	3h9	25	8h6		M3x6L	-	-
	Delta	ECMA-C20401 □ S	S:With brake R:No brake	100.6	136.6	46	2.5	4.5	40	5	16	6.2	3	25	8h6		M3x6L	-	-

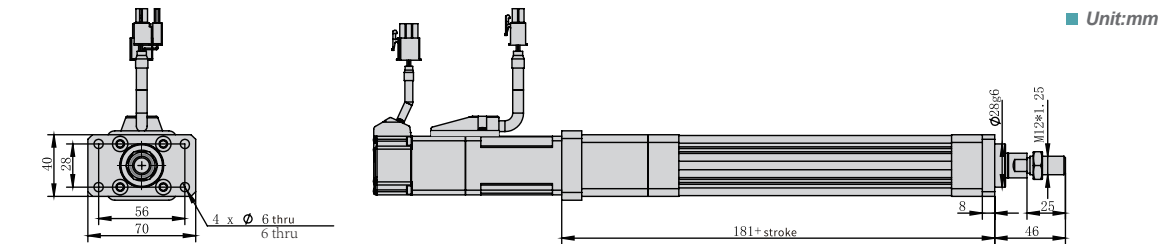
Front joint option



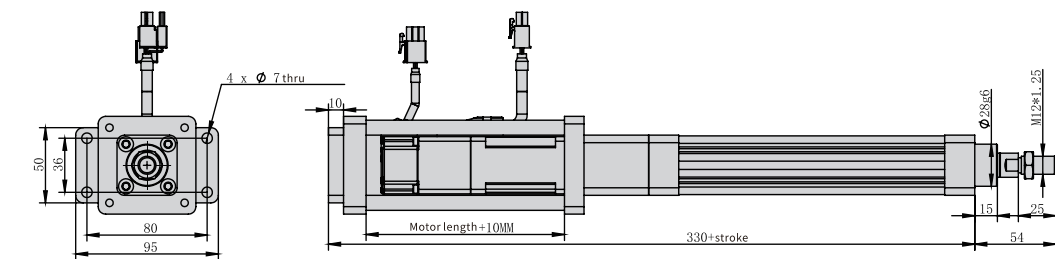


• Motor Direction

M Direct Coupled Mount



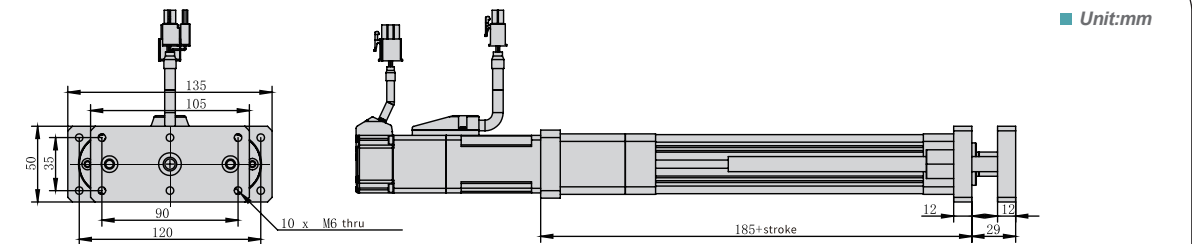
FA Front flange	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.35	1.5	1.65	1.8	1.95	2.1	2.25	2.4



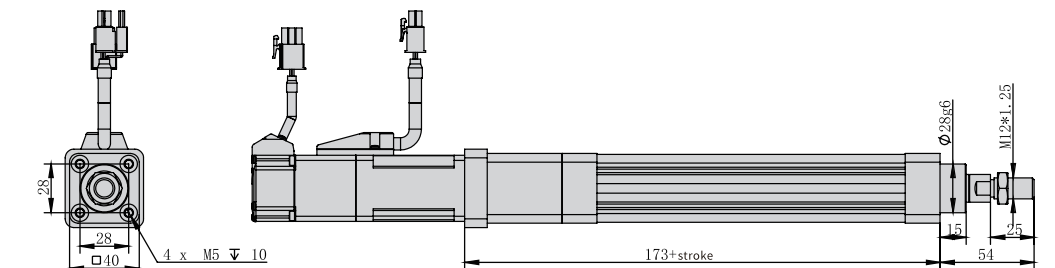
FB Rear flange	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.88	2.03	2.18	2.33	2.48	2.63	2.78	2.93

Note:Weight increases by 0.03 kg per 10 mm stroke.

M Direct Coupled Mount



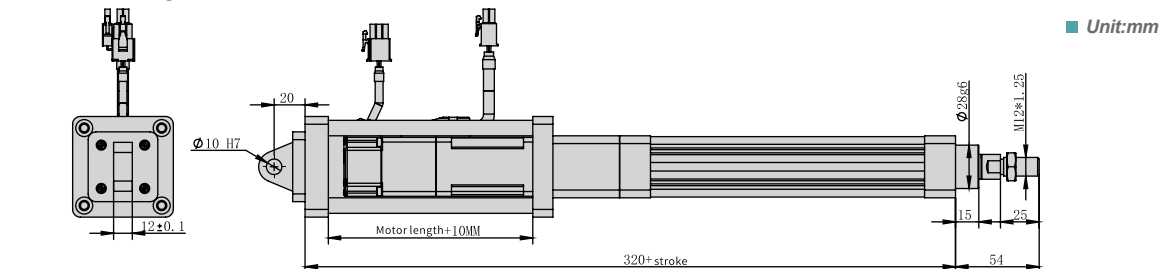
QDX Front guidance	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.89	2.04	2.19	2.34	2.49	2.64	2.79	2.94



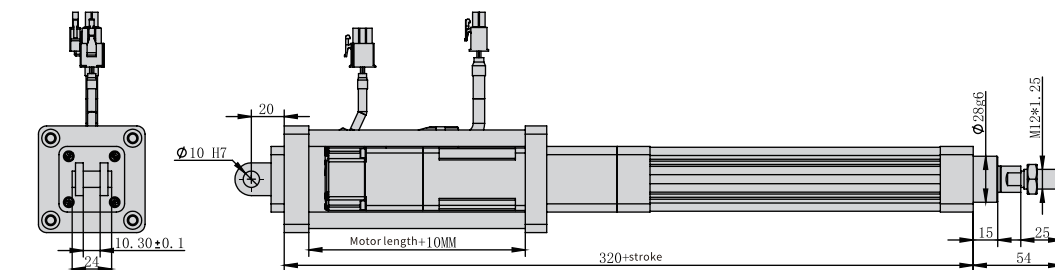
Standard Cylinder base	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.33	1.48	1.63	1.78	1.93	2.08	2.23	2.38

Note:Weight increases by 0.03 kg per 10 mm stroke.

M Direct Coupled Mount



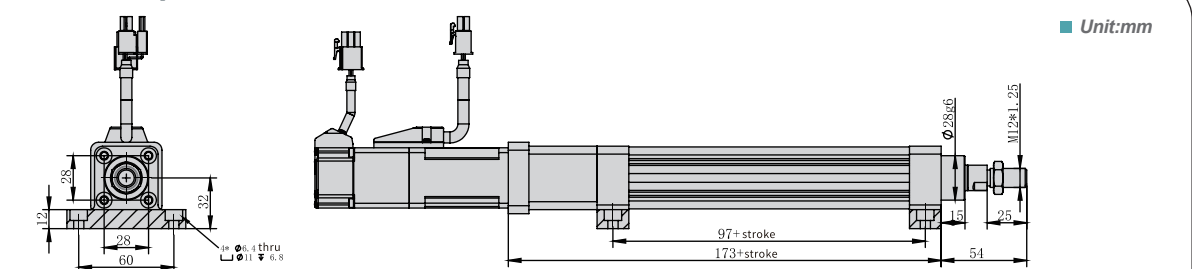
CA Rear eye	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	2.02	2.17	2.32	2.47	2.62	2.77	2.92	3.07



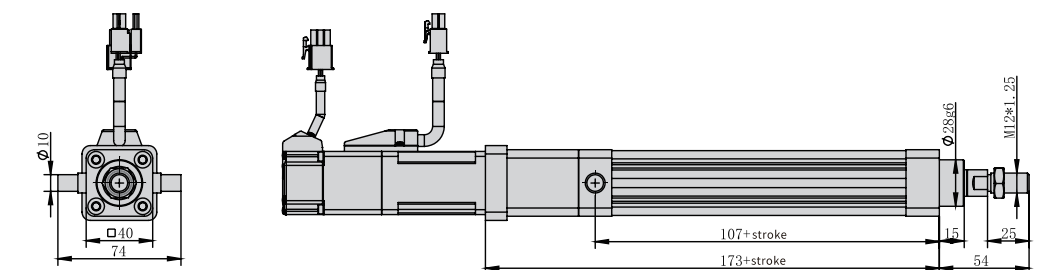
CB Rear clevis	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	2.01	2.16	2.31	2.46	2.61	2.76	2.91	3.06

Note:Weight increases by 0.03 kg per 10 mm stroke.

M Direct Coupled Mount



LB Side mounting	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.43	1.58	1.73	1.88	2.03	2.18	2.33	2.48



TC Trunnion	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.34	1.49	1.64	1.79	1.94	2.09	2.24	2.39

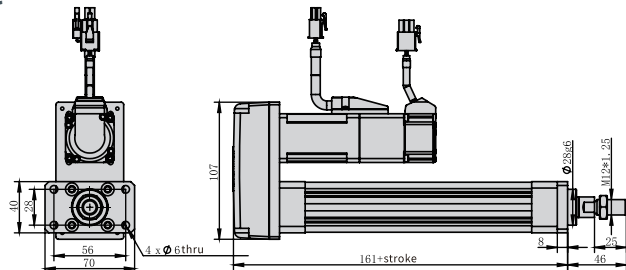
Note:Weight increases by 0.03 kg per 10 mm stroke.



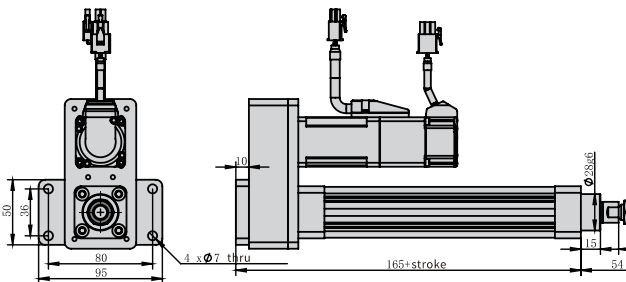
• Motor Direction

MR Parallel Mount

Unit:mm



FA Front flange	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.55	1.7	1.85	2	2.15	2.3	2.45	2.6

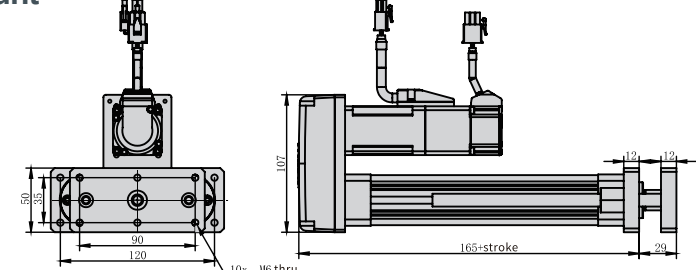


FB Rear flange	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	2.08	2.23	2.38	2.53	2.68	2.83	2.98	3.13

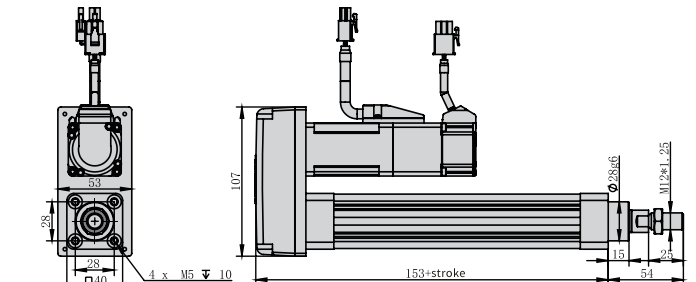
Note:Weight increases by 0.03 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



QDX Front guidance	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	2.09	2.24	2.39	2.54	2.69	2.84	2.99	3.14

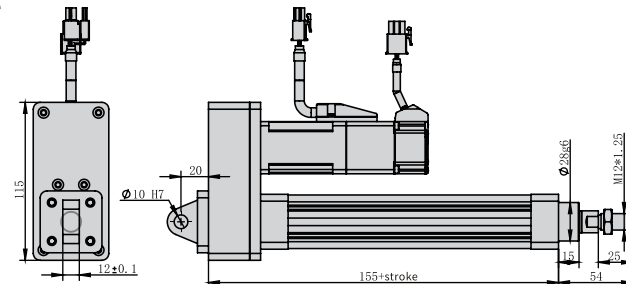


Standard Cylinder base	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.53	1.68	1.83	1.98	2.13	2.28	2.43	2.58

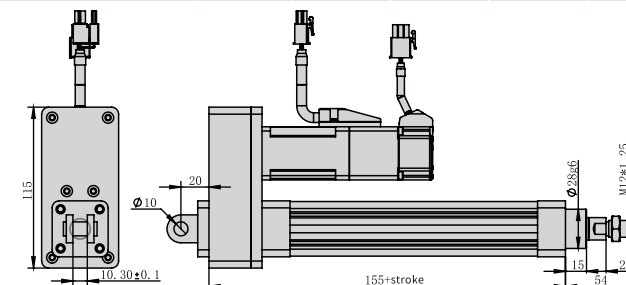
Note:Weight increases by 0.03 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



CA Rear eye	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	2.22	2.37	2.52	2.67	2.82	2.97	3.12	3.27

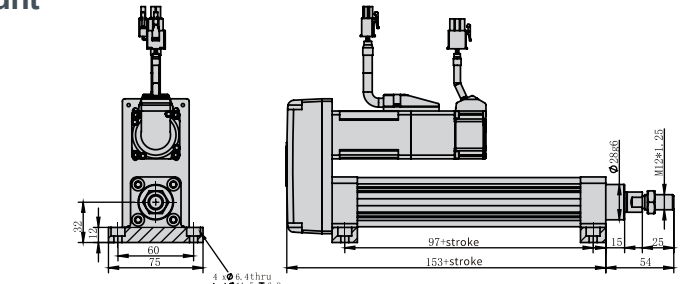


CB Rear clevis	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	2.21	2.36	2.51	2.66	2.81	2.96	3.11	3.26

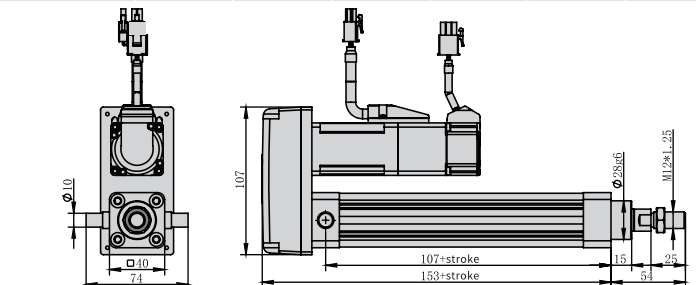
Note:Weight increases by 0.03 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



LB Side mounting	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.63	1.78	1.93	2.08	2.23	2.38	2.53	2.68



TC Trunnion	Stroke (mm)	50	100	150	200	250	300	350	400
	Weight (kg)	1.54	1.69	1.84	1.99	2.14	2.29	2.44	2.59

Note:Weight increases by 0.03 kg per 10 mm stroke.



Max Stroke	600mm	Max Speed	500mm/s	Motor Power	400W	Ball Screw	Ø12mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Light Duty Electric
Cylinder

Ball Screw Dia
Ø12mm

Lead
05mm
10mm

Stroke
10-600mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Direction
M: Direct Coupled
Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
20: 200W
40: 400W
42: NEMA 17
57: NEMA 23
63: NEMA 24

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

Inner Dia
25
40
50
63
80
100

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

ESR - 40 - 12 05 C - L100 - M - FA - W - P 20 B - J3 - C 3 - F

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance
BJ: Stepper motor

Brake
3、4、5Etc.

Gear Ratio

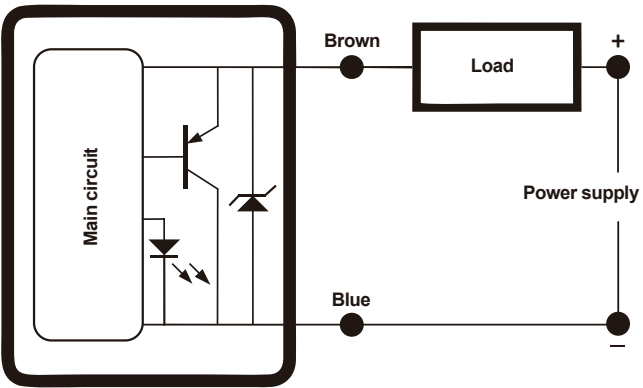
Quantity
1
2
3
No Mark:None

Costom

Datasheet

Spec	Repeated accuracy (mm)	±0.02			
	Rated speed of motor (RPM)	3000			
	Rated torque (N.m)	0.64		1.27	
	Motor power (W)	200		400	
	Ball screw lead (mm)	5	10	5	10
	Rated speed (mm/s)	250	500	250	500
	Rated thrust (N)	680	340	1360	680
	Max payload (KG)	150KG			
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground			
	Valid stroke (mm)	10~600mm			
Parts	Ball screw Ø (mm)	Ø12			
	External material	Aluminium Profile			
	Sensor	Magnetic Switch			
	Operating environment	-10 ~ 70°C , 85%RH, No condensation			

Sensor layout



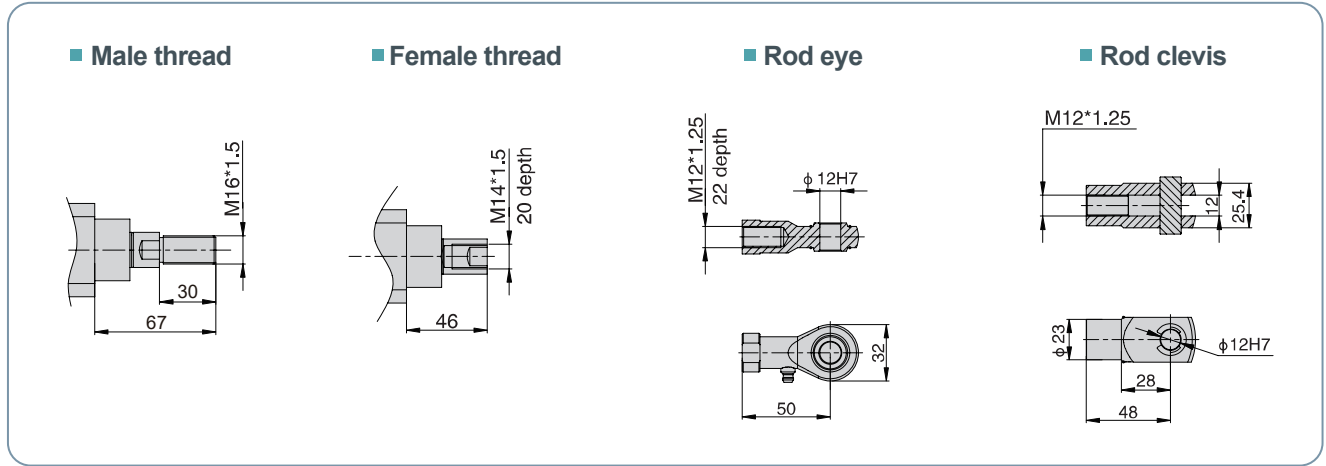
Thrust formula of electric cylinder

$F=T \times \eta \times 2 \pi \times R / L$
F: Rated thrust of electric cylinder (KN)
T: Rated torque of motor (N-m)
 η : Efficiency (Usually 85%, depend on specific industry)
R: Gear / Pulley ratio
L: Ball screw lead (mm)

Suitable motor brand

Servo motor dimension																			
Power(W)	Brand	Model		LL	LL(Brake)	LA	LE	LZ	LC	LG	LW	RH	W	LR	S	LB	M	QK	QL
400W	Mitsubishi	HC-KFS43 □ K	B:With brake □ :No brake	124.5	165.5	70	3	5.8	62	7	-	-	-	30			-	-	-
	Panasonic	MSMJ042G1 □	V:With brake U:No brake	99	135	70	3	4.5	60	6.5	20	11	5h9	30			M5x10L	-	-
	Delta	ECMA-C20604 □ S	S:With brake R:No brake	130.7	166.6	70	3	5.5	60	7.5	20	11	5	30			M4x15L	-	-
		ECMA-C20804 □ S	S:With brake R:No brake	112.3	152.8	90	3	6.6	80	8	20	11	5	35			M4x15L	-	-

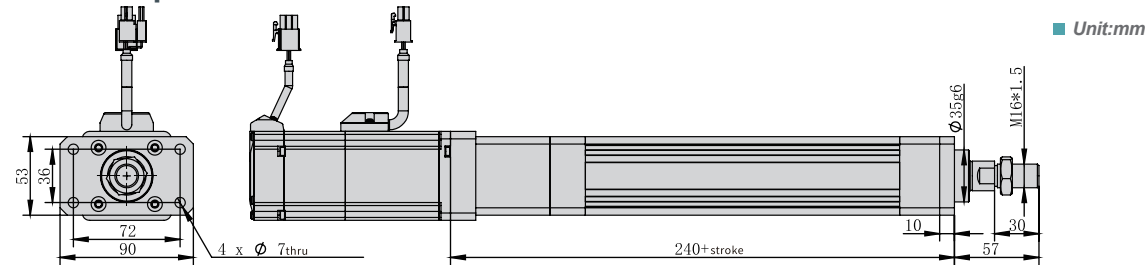
Front joint option



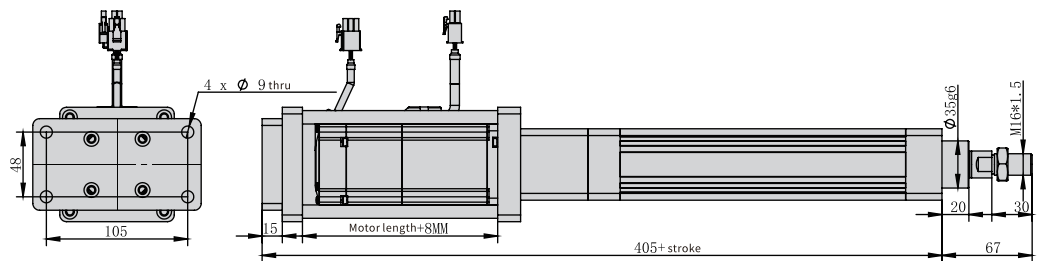


• Motor Direction

M Direct Coupled Mount



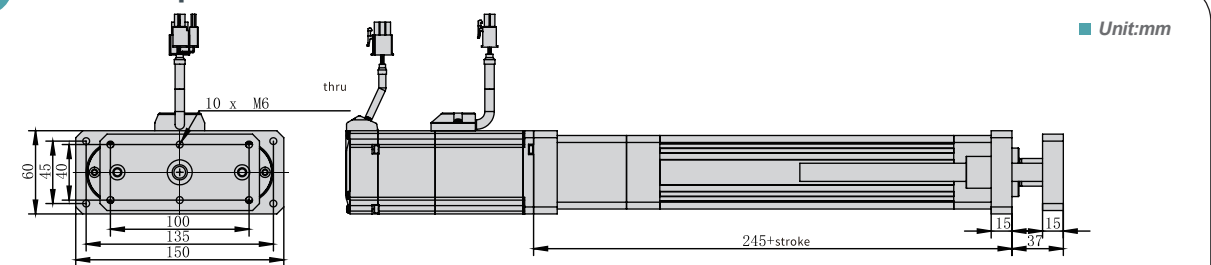
FA Front flange	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.25	5.5



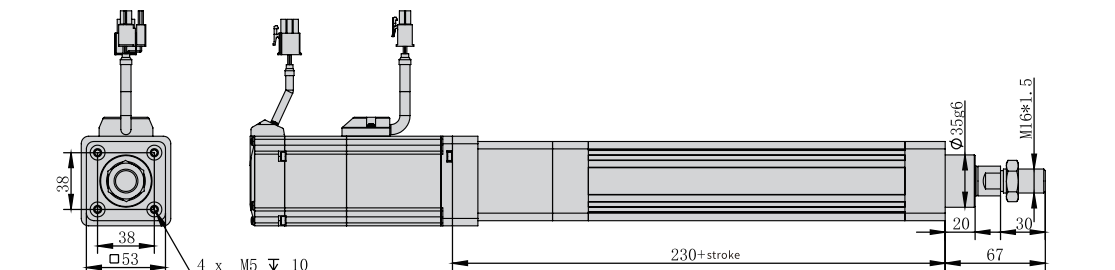
FB Rear flange	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.68	3.93	4.18	4.43	4.68	4.93	5.18	5.43	5.68	5.93	6.18	6.43

Note: Weight increases by 0.05 kg per 10 mm stroke.

M Direct Coupled Mount



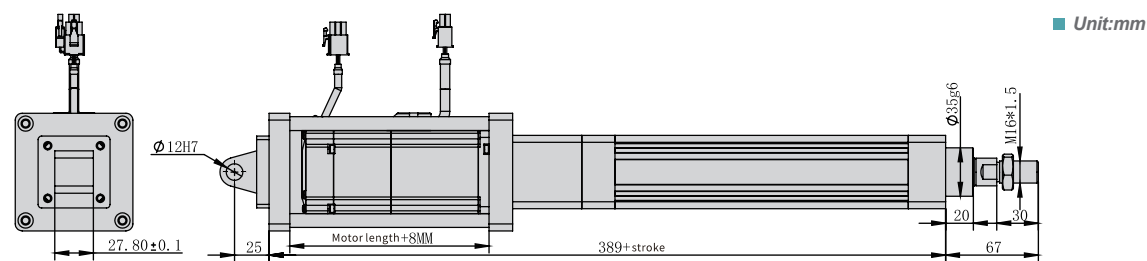
QDX Front guidance	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.92	4.17	4.42	4.67	4.92	5.17	5.42	5.67	5.92	6.17	6.42	6.67



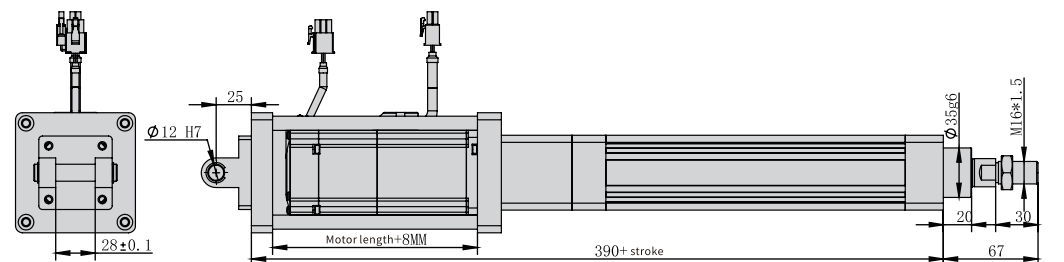
Standard Cylinder base	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.72	2.97	3.22	3.47	3.72	3.97	4.22	4.47	4.72	4.97	5.22	5.47

Note: Weight increases by 0.05 kg per 10 mm stroke.

M Direct Coupled Mount



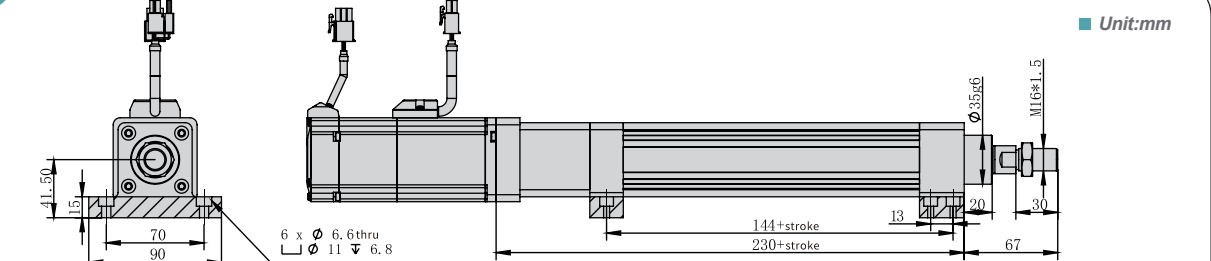
CA Rear eye	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.86	4.11	4.36	4.61	4.86	5.11	5.36	5.61	5.86	6.11	6.36	6.61



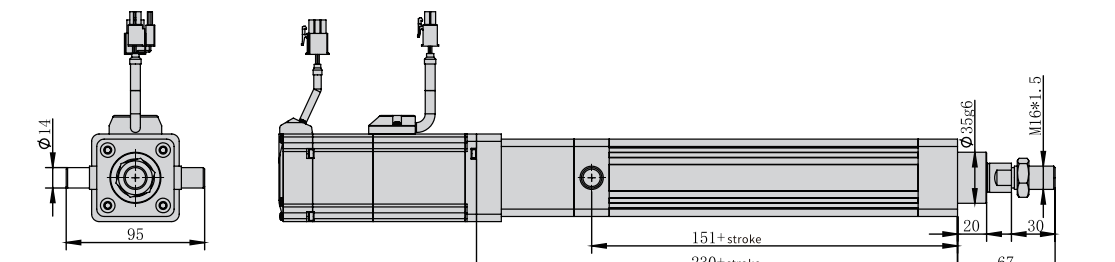
CB Rear clevis	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.8	4.05	4.3	4.55	4.8	5.05	5.3	5.55	5.8	6.05	6.3	6.55

Note: Weight increases by 0.05 kg per 10 mm stroke.

M Direct Coupled Mount



LB Side mounting	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.94	3.19	3.44	3.69	3.94	4.19	4.44	4.69	4.94	5.19	5.44	5.69



TC Trunnion	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.74	2.99	3.24	3.49	3.74	3.99	4.24	4.49	4.74	4.99	5.24	5.49

Note: Weight increases by 0.05 kg per 10 mm stroke.

ESR

EMR

EHR

EQR

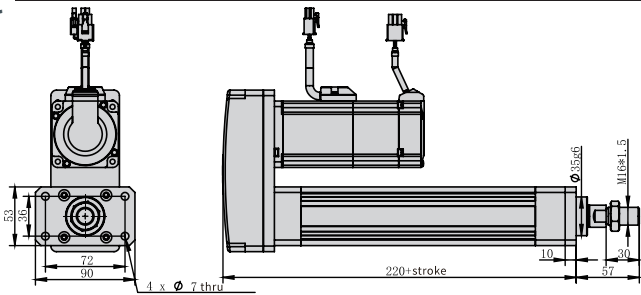
Reference



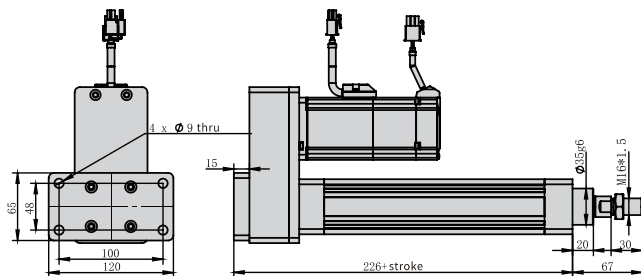
• Motor Direction

MR Parallel Mount

Unit:mm



FA Front flange	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.8	2.95	3.1	3.25	3.4	3.55	3.7	3.85	4	4.15	4.3	4.45

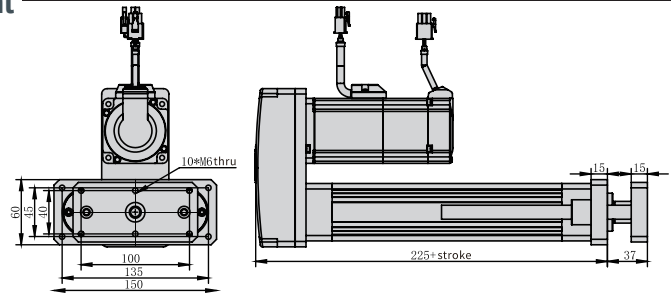


FB Rear flange	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.72	3.87	4.02	4.17	4.32	4.47	4.62	4.77	4.92	5.07	5.22	5.37

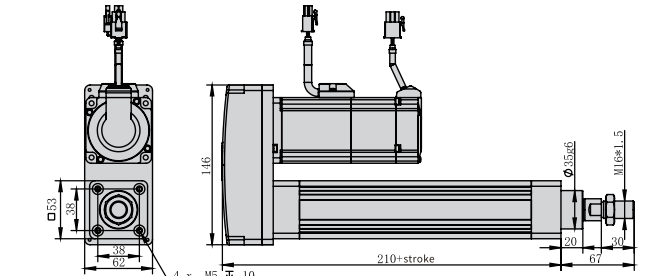
Note:Weight increases by 0.05 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



QDX Front guidance	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.97	4.22	4.47	4.72	4.97	5.22	5.47	5.72	5.97	6.22	6.47	6.72

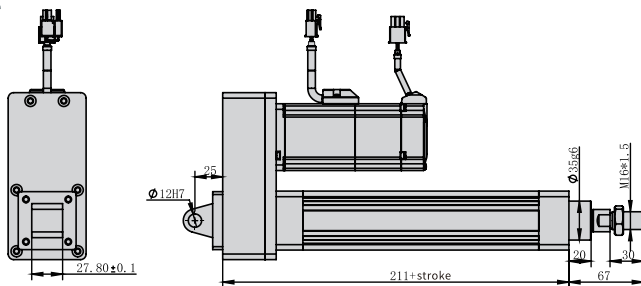


Standard Cylinder base	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.77	3.02	3.27	3.52	3.77	4.02	4.27	4.52	4.77	5.02	5.27	5.52

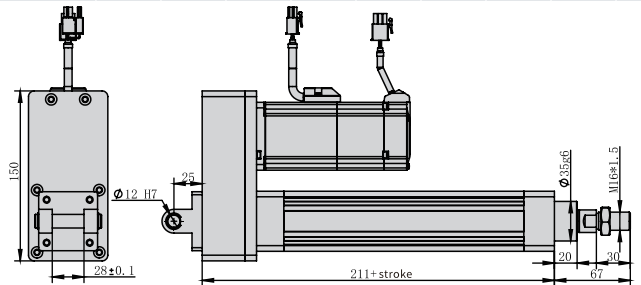
Note:Weight increases by 0.05 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



CA Rear eye	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.91	4.16	4.41	4.66	4.91	5.16	5.41	5.66	5.91	6.16	6.41	6.66

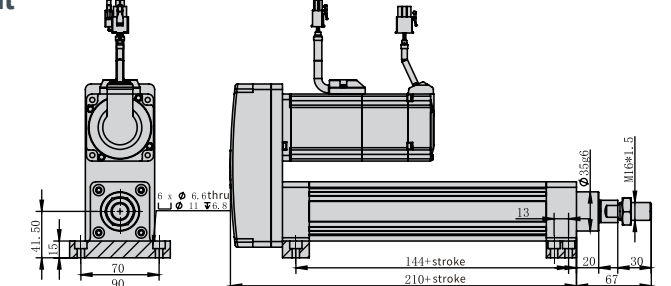


CB Rear clevis	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	3.85	4.1	4.35	4.6	4.85	5.1	5.35	5.6	5.85	6.1	6.35	6.6

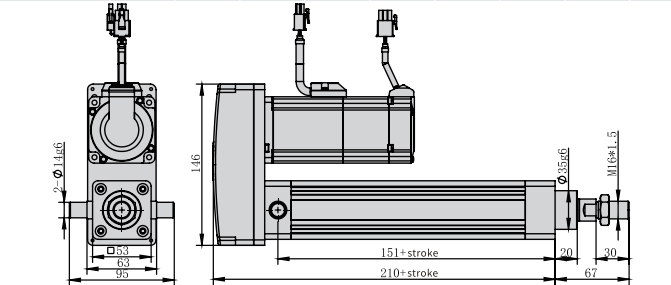
Note:Weight increases by 0.05 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm

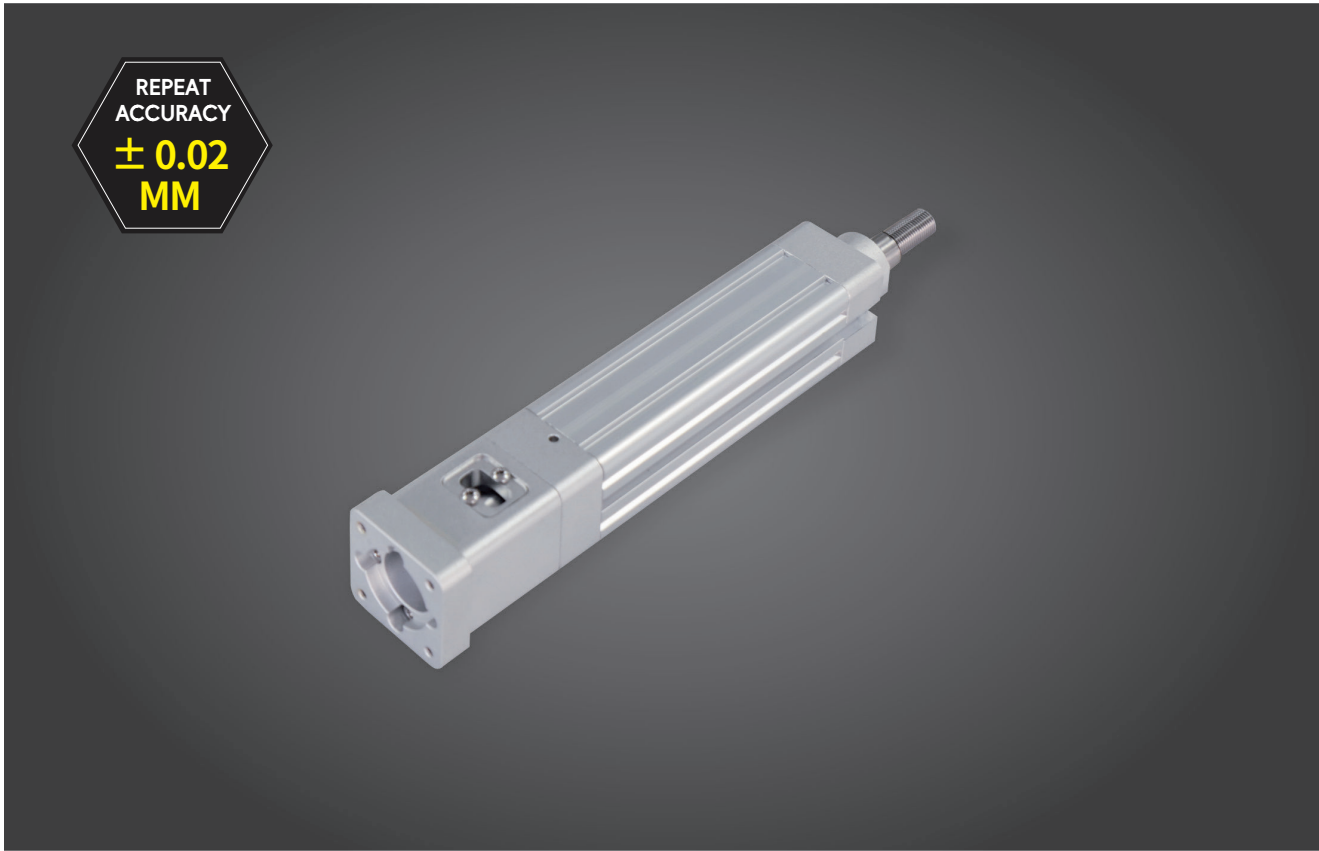


LB Side mounting	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.99	3.24	3.49	3.74	3.99	4.24	4.49	4.74	4.99	5.24	5.49	5.74



TC Trunnion	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600
	Weight (kg)	2.69	2.84	2.99	3.14	3.29	3.44	3.59	3.74	3.89	4.04	4.19	4.34

Note:Weight increases by 0.05 kg per 10 mm stroke.



Max Stroke	800mm	Max Speed	500mm/s	Motor Power	400W	Ball Screw	Ø16mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Light Duty Electric Cylinder

Ball Screw Dia
Ø16mm

Lead
05mm
10mm
16mm

Stroke
10-800mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Direction
M: Direct Coupled Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
10: 100W
20: 200W
40: 400W
75: 750W
42: NEMA 17
57: NEMA 23
63: NEMA 24

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

ESR - 50 - 16 05 C-L100-M-FA - W-P 20 B-J3 - C 3 - F

Inner Dia
25
40
50
63
80
100

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance
BJ: Stepper motor

Brake
3、 4、 5Etc.

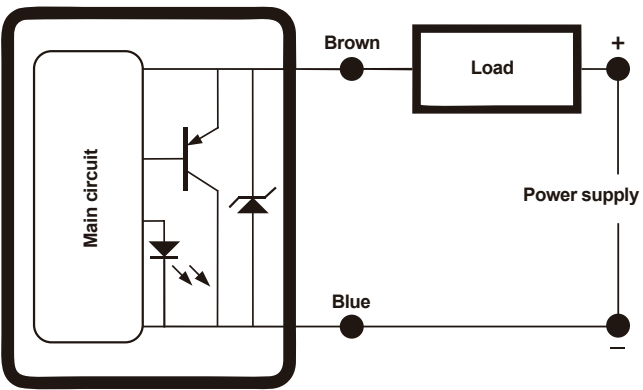
Quantity
1
2
3
No Mark:None

Costom

Datasheet

Spec	Repeated accuracy (mm)	±0.02			
	Rated speed of motor (RPM)	3000			
	Rated torque (N.m)	1.27		2.39	
	Motor power (W)	400		750	
	Ball screw lead (mm)	5	10	5	10
	Rated speed (mm/s)	250	500	250	500
	Rated thrust (N)	1360	680	2550	1275
	Max payload (KG)	300KG			
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground			
	Valid stroke (mm)	10~800mm			
Parts	Ball screw Ø (mm)	Ø16			
	External material	Aluminium Profile			
	Sensor	Magnetic Switch			
	Operating environment	-10 ~ 70°C , 85%RH, No condensation			

Sensor layout



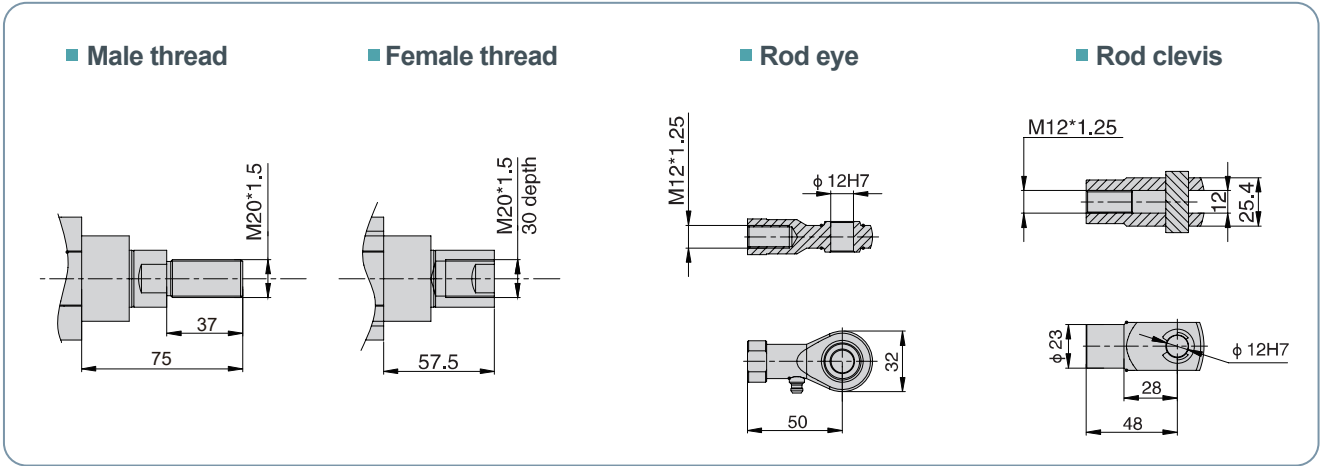
Thrust formula of electric cylinder

$F=T \times \eta \times 2 \pi \times R / L$
F: Rated thrust of electric cylinder (KN)
T: Rated torque of motor (N-m)
 η : Efficiency (Usually 85%, depend on specific industry)
R: Gear / Pulley ratio
L: Ball screw lead (mm)

Suitable motor brand

Servo motor dimension																			
Power(W)	Brand	Model		LL	LL(Brake)	LA	LE	LZ	LC	LG	LW	RH	W	LR	S	LB	M	QK	QL
400W	Mitsubishi	HC-KFS43 □ K	B:With brake □ :No brake	124.5	165.5	70	3	5.8	62	7	-	-	-	30			-	-	-
	Panasonic	MSMJ042G1 □	V:With brake U:No brake	99	135	70	3	4.5	60	6.5	20	11	5h9	30			M5x10L	-	-
	Delta	ECMA-C20604 □ S	S:With brake R:No brake	130.7	166.6	70	3	5.5	60	7.5	20	11	5	30			M4x15L	-	-
		ECMA-C20804 □ S	S:With brake R:No brake	112.3	152.8	90	3	6.6	80	8	20	11	5	35			M4x15L	-	-

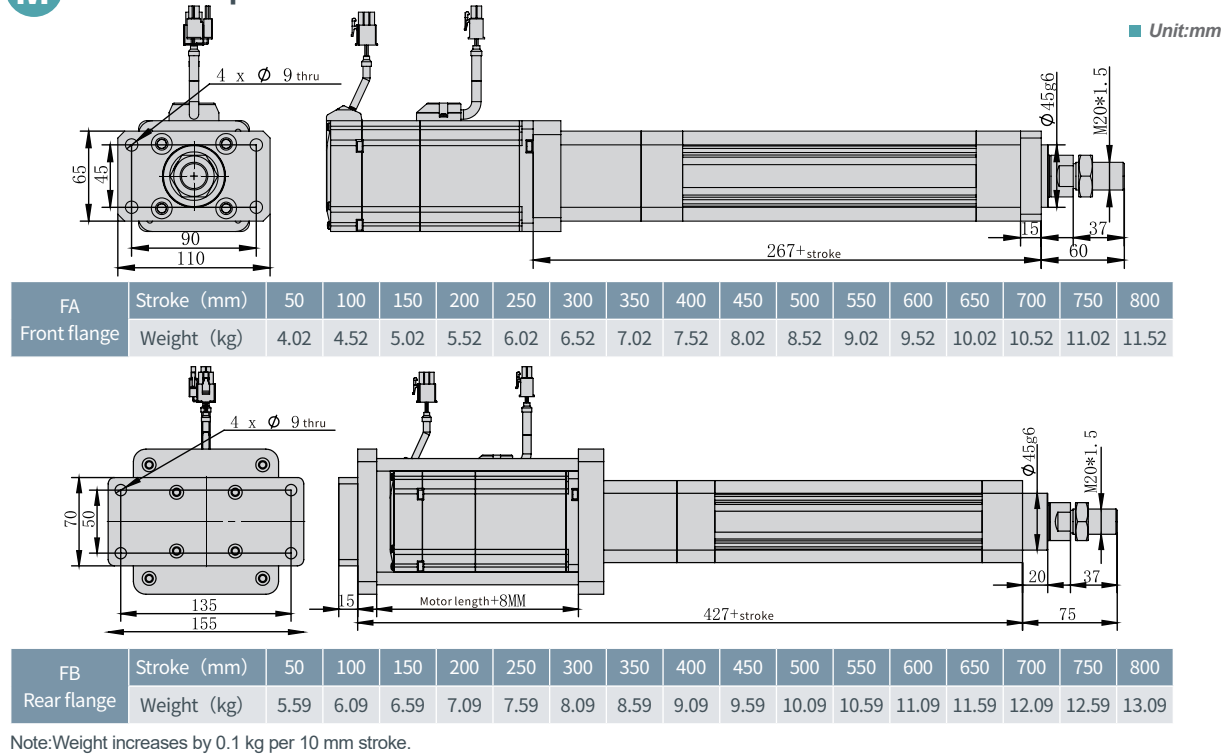
Front joint option



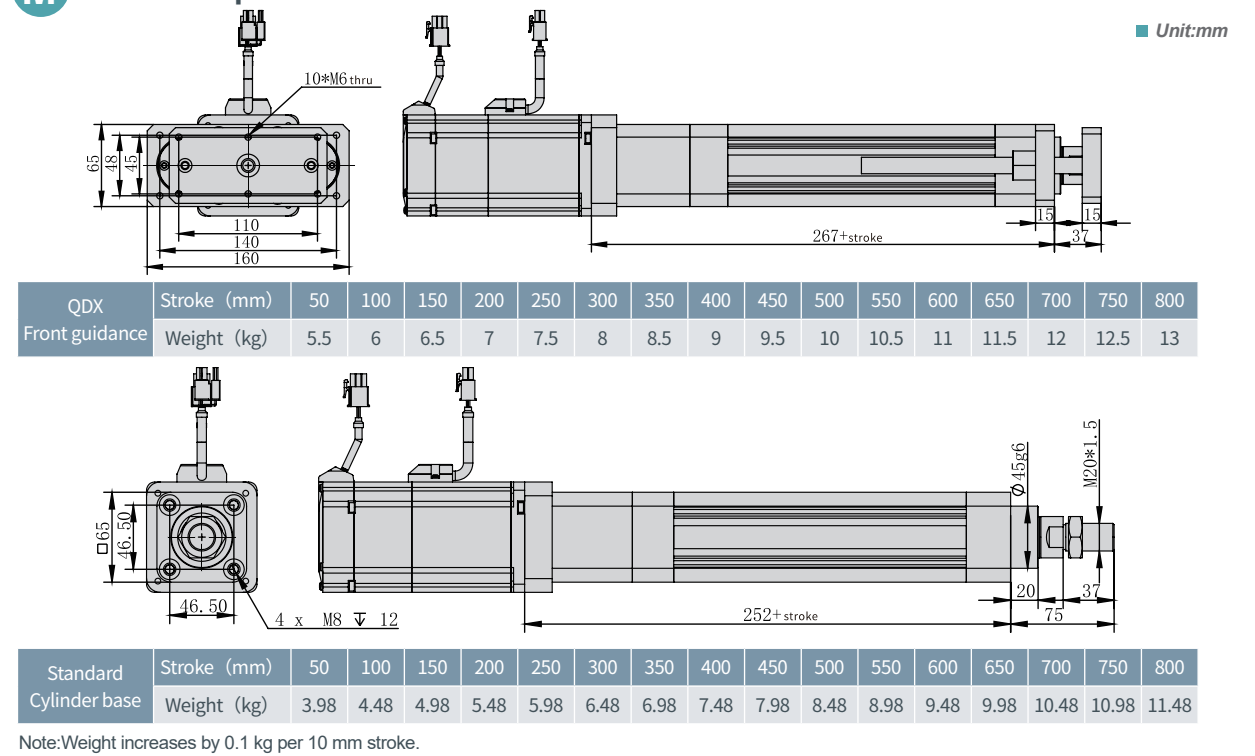


• Motor Direction

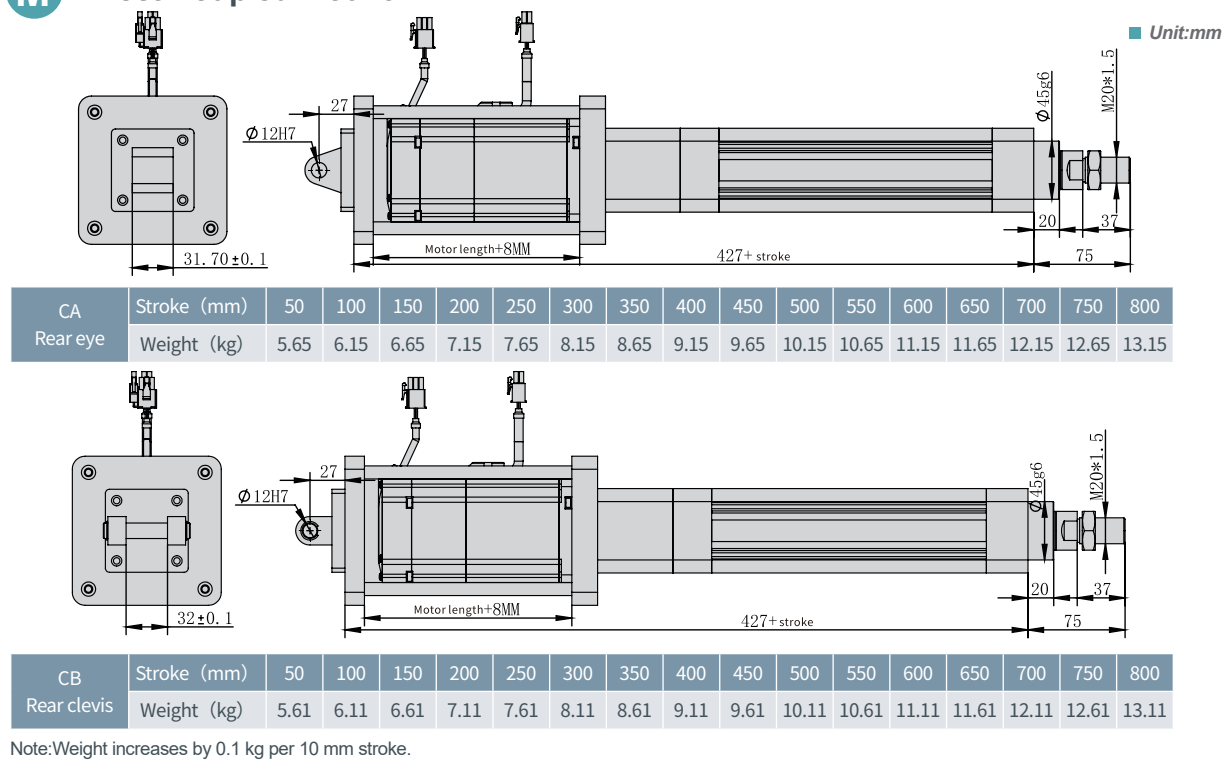
M Direct Coupled Mount



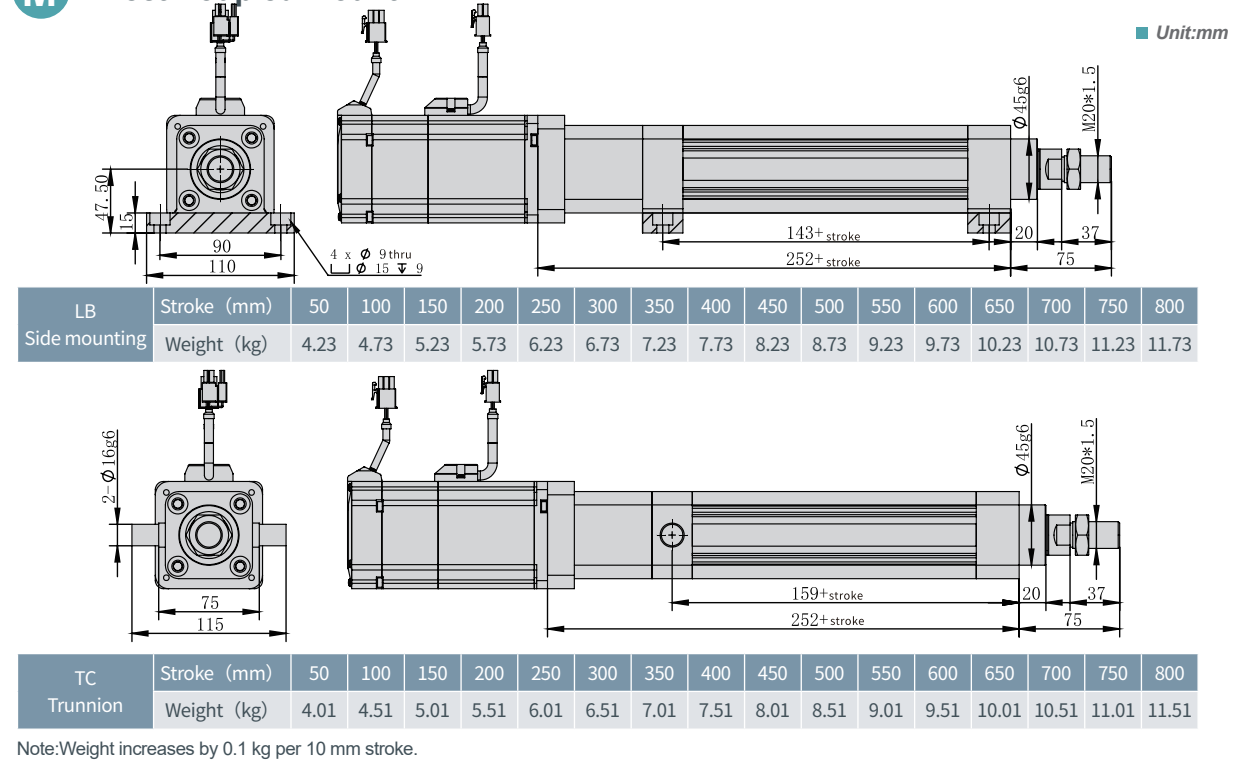
M Direct Coupled Mount



M Direct Coupled Mount



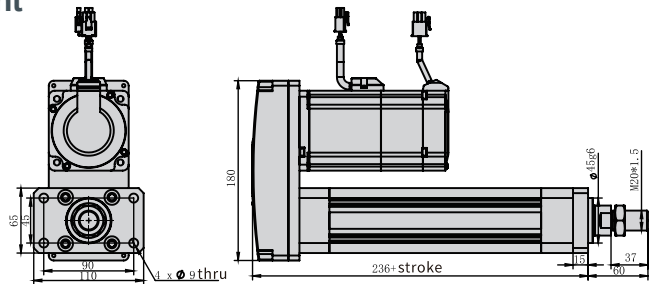
M Direct Coupled Mount





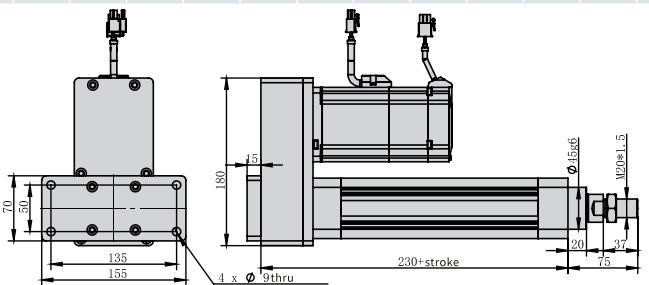
• Motor Direction

MR Parallel Mount



Unit:mm

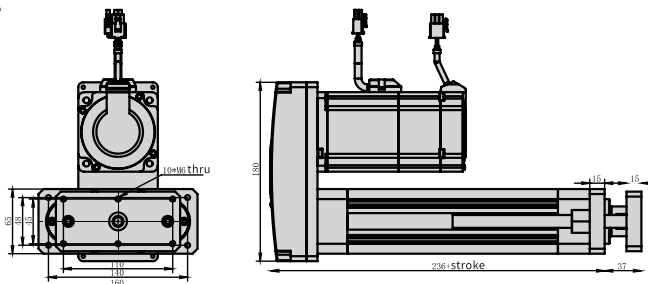
FA Front flange	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		4.32	4.82	5.32	5.82	6.32	6.82	7.32	7.82	8.32	8.82	9.32	9.82	10.32	10.82	11.32	11.82



FB Rear flange	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		5.89	6.39	6.89	7.39	7.89	8.39	8.89	9.39	9.89	10.39	10.89	11.39	11.89	12.39	12.89	13.39

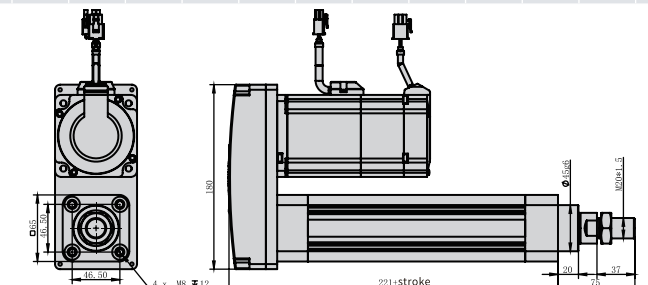
Note:Weight increases by 0.1 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

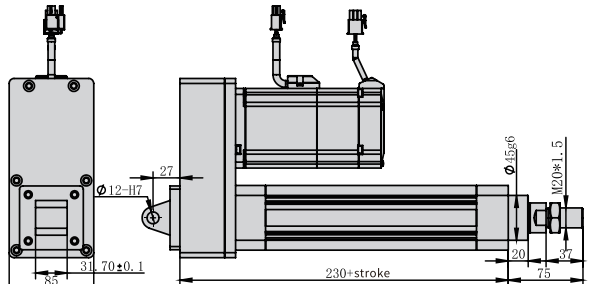
QDX Front guidance	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		5.8	6.3	6.8	7.3	7.8	8.3	8.8	9.3	9.8	10.3	10.8	11.3	11.8	12.3	12.8	13.3



Standard Cylinder base	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		4.28	4.78	5.28	5.78	6.28	6.78	7.28	7.78	8.28	8.78	9.28	9.78	10.28	10.78	11.28	11.78

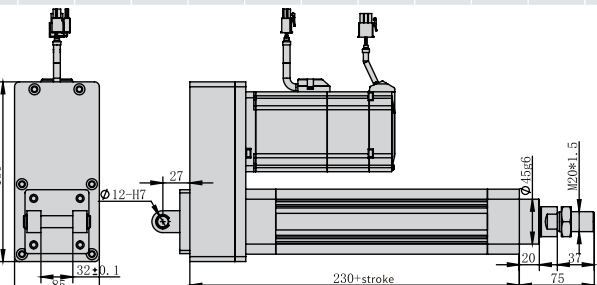
Note:Weight increases by 0.1 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

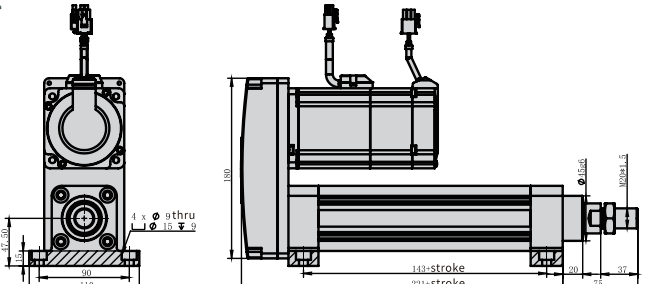
CA Rear eye	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		5.95	6.45	6.95	7.45	7.95	8.45	8.95	9.45	9.95	10.45	10.95	11.45	11.95	12.45	12.95	13.45



CB Rear clevis	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		5.91	6.41	6.91	7.41	7.91	8.41	8.91	9.41	9.91	10.41	10.91	11.41	11.91	12.41	12.91	13.41

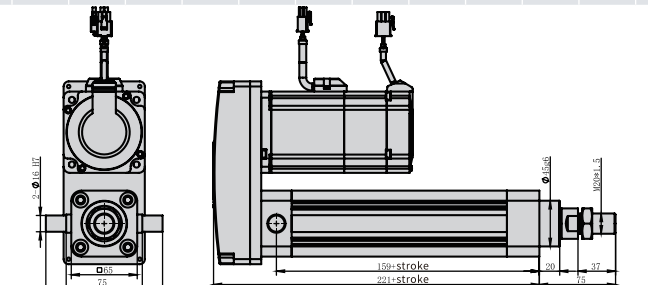
Note:Weight increases by 0.1 kg per 10 mm stroke.

MR Parallel Mount



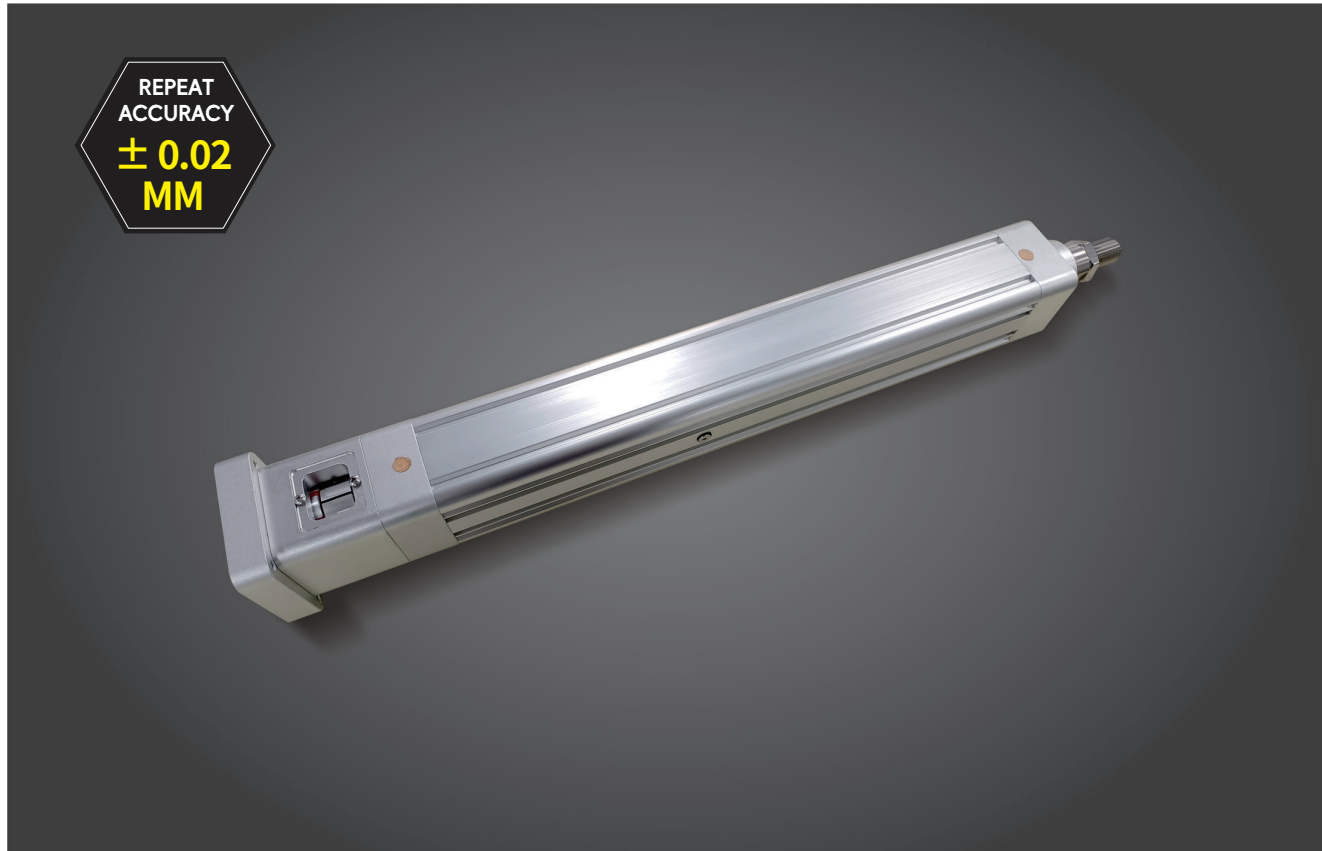
Unit:mm

LB Side mounting	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		4.53	5.03	5.53	6.03	6.53	7.03	7.53	8.03	8.53	9.03	9.53	10.03	10.53	11.03	11.53	12.03



TC Trunnion	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)		4.31	4.81	5.31	5.81	6.31	6.81	7.31	7.81	8.31	8.81	9.31	9.81	10.31	10.81	11.31	11.81

Note:Weight increases by 0.1 kg per 10 mm stroke.



Max Stroke	1000mm	Max Speed	500mm/s	Motor Power	750W	Ball Screw	Ø20mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Light Duty Electric
Cylinder

Ball Screw Dia
Ø20mm

Lead
05mm
10mm
20mm

Stroke
10-1000mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Direction
M: Direct Coupled
Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
20: 200W
40: 400W
75: 750W
57: NEMA 23
63: NEMA 24
86: NEMA 34

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

ESR - 63 - 20 05 C - L100 - M - FA - W - P 20 B - J3 - C 3 - F

Inner Dia
25
40
50
63
80
100

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Brake
3, 4, 5Etc.

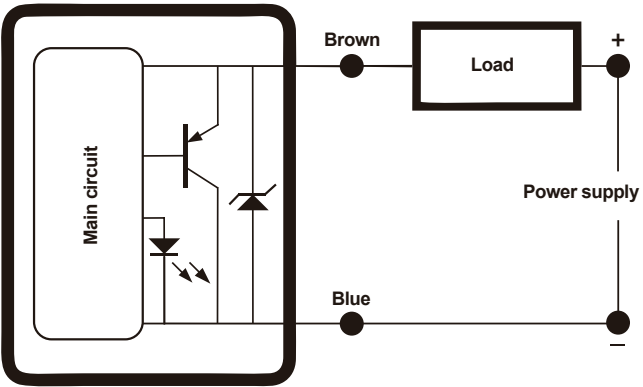
Quantity
1
2
3
No Mark:None

Custom

Datasheet

Spec	Repeated accuracy (mm)	±0.02							
	Rated speed of motor (RPM)	3000							
	Rated torque (N.m)	1.27		2.39		3.18		4.78	
	Motor power (W)	400		750		1000		1500	
	Ball screw lead (mm)	5	10	5	10	5	10	5	10
	Rated speed (mm/s)	250	500	250	500	250	500	250	500
	Rated thrust (N)	1360	680	2550	1275	3400	1700	5100	2550
	Max payload (KG)	500KG							
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground							
	Valid stroke (mm)	10~1000mm							
Parts	Ball screw Ø (mm)	Ø20							
	Gearbox	Gear ratio: 3, 4, 5, 6, 7, 8, 10...							
	External material	Aluminium Profile							
	Sensor	Magnetic Switch							
Operating environment		-10 ~ 70°C , 85%RH, No condensation							

Sensor layout



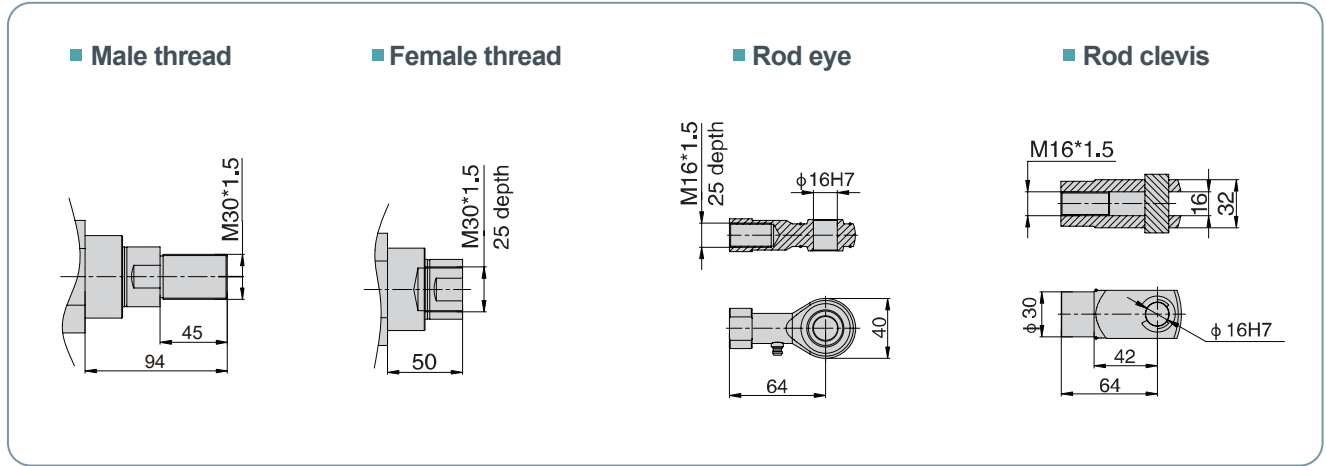
Thrust formula of electric cylinder

$F=T \times \eta \times 2 \pi \times R / L$
F: Rated thrust of electric cylinder (KN)
T: Rated torque of motor (N-m)
 η : Efficiency (Usually 85%, depend on specific industry)
R: Gear / Pulley ratio
L: Ball screw lead (mm)

Suitable motor brand

Servo motor dimension																			
Power(W)	Brand	Model		LL	LL(Brake)	LA	LE	LZ	LC	LG	LW	RH	W	LR	S	LB	M	QK	QL
400W	Mitsubishi	HC-KFS43 □ K	B:With brake : □ No brake	124.5	165.5	70	3	5.8	62	7	-	-	-	30			-	-	-
	Panasonic	MSMJ042G1 □	V:With brake U:No brake	99	135	70	3	4.5	60	6.5	20	11	5h9	30			M5x10L	-	-
	Delta	ECMA-C20604 □ S	S:With brake R:No brake	130.7	166.6	70	3	5.5	60	7.5	20	11	5	30			M4x15L	-	-
		ECMA-C20804 □ S	S:With brake R:No brake	112.3	152.8	90	3	6.6	80	8	20	11	5	35			M4x15L	-	-

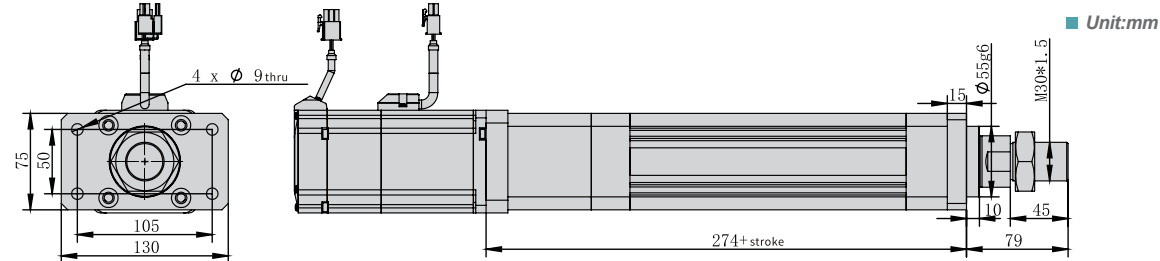
Front joint option



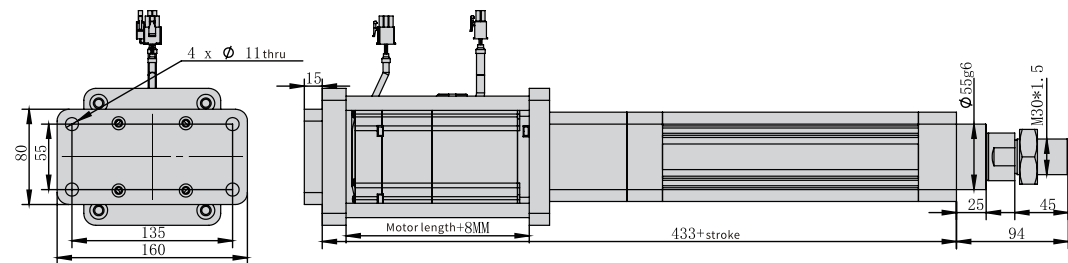


• Motor Direction

M Direct Coupled Mount



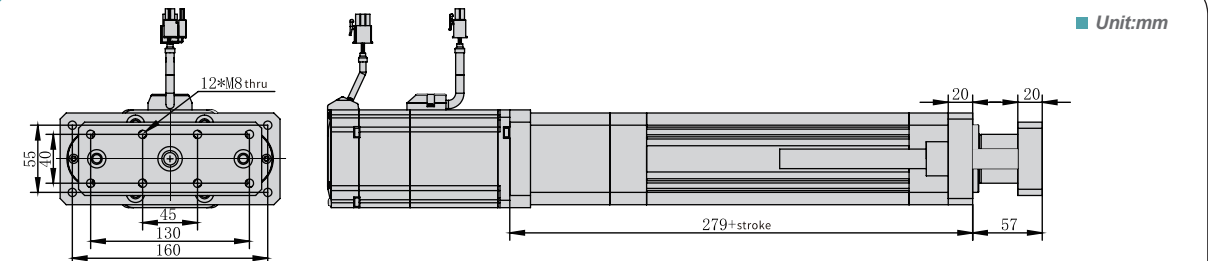
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	7.56	8.76	9.96	11.16	12.36	13.56	14.76	15.96	17.16	18.36



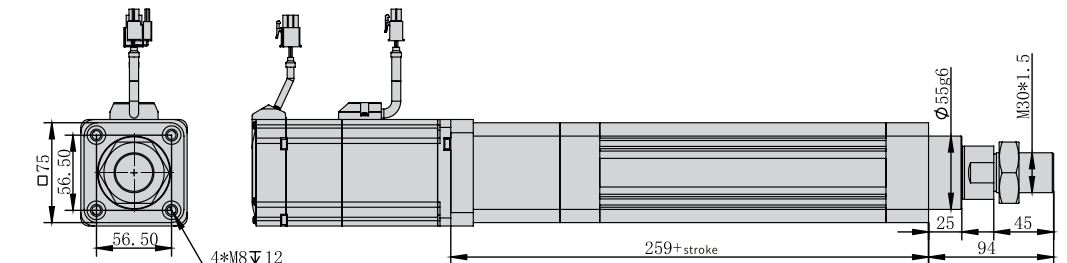
FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.52	9.72	10.92	12.12	13.32	14.52	15.72	16.92	18.12	19.32

Note: Weight increases by 0.12 kg per 10 mm stroke.

M Direct Coupled Mount



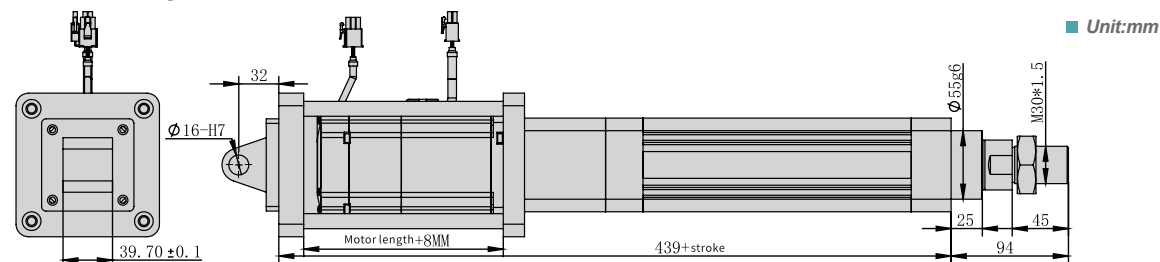
QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.24	9.44	10.64	11.84	13.04	14.24	15.44	16.64	17.84	19.04



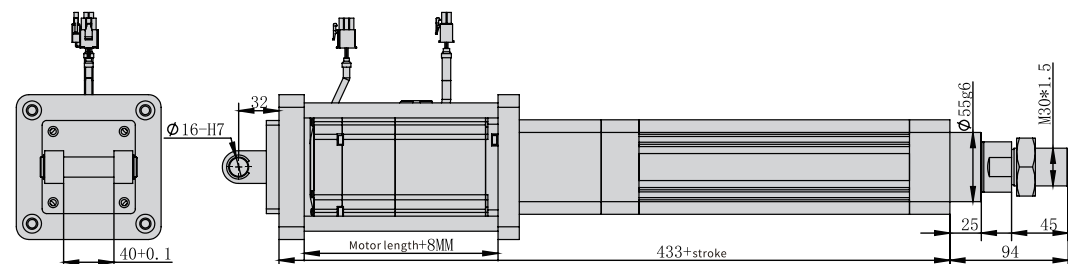
Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	7.3	8.5	9.7	10.9	12.1	13.3	14.5	15.7	16.9	18.1

Note: Weight increases by 0.12 kg per 10 mm stroke.

M Direct Coupled Mount



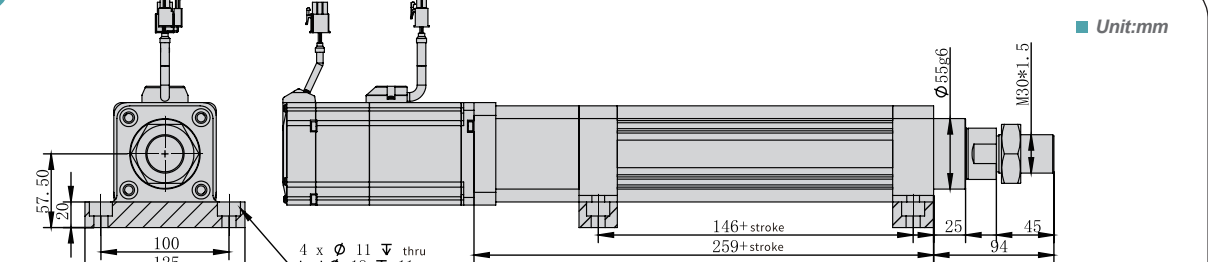
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.91	10.11	11.31	12.51	13.71	14.91	16.11	17.31	18.51	19.71



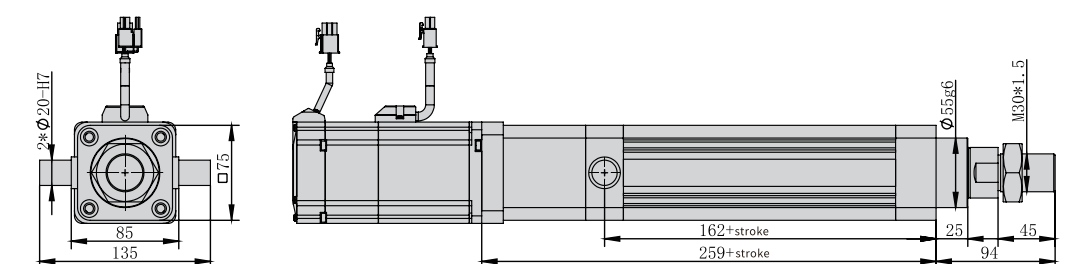
CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.89	10.09	11.29	12.49	13.69	14.89	16.09	17.29	18.49	19.69

Note: Weight increases by 0.12 kg per 10 mm stroke.

M Direct Coupled Mount



LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	7.68	8.88	10.08	11.28	12.48	13.68	14.88	16.08	17.28	18.48



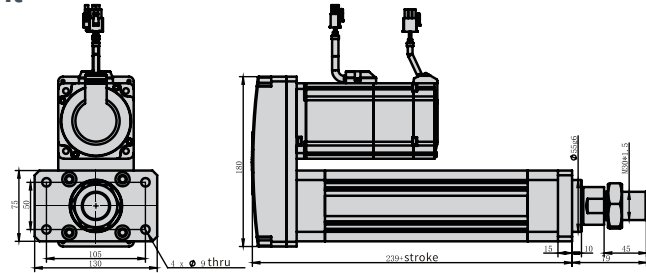
TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	7.52	8.72	9.92	11.12	12.32	13.52	14.72	15.92	17.12	18.32

Note: Weight increases by 0.12 kg per 10 mm stroke.



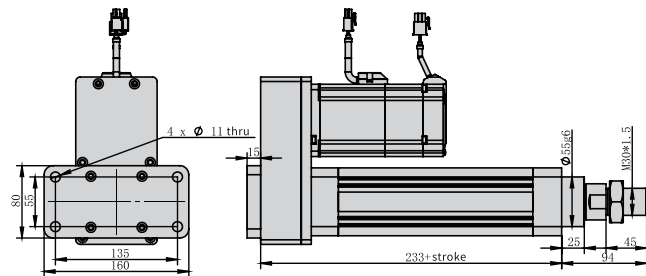
• Motor Direction

MR Parallel Mount



Unit:mm

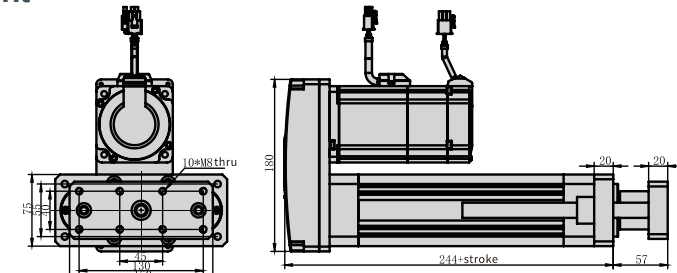
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.76	9.96	11.16	12.36	13.56	14.76	15.96	17.16	18.36	19.56



FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.8	10	11.2	12.4	13.6	14.8	16	17.2	18.4	19.6

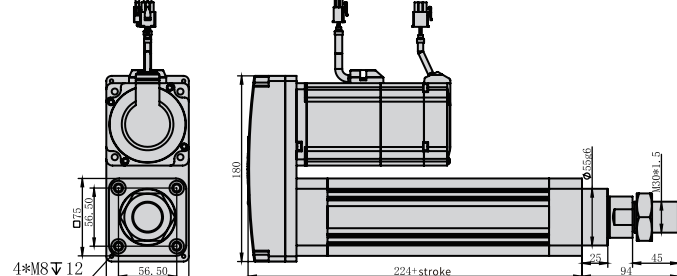
Note:Weight increases by 0.12 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

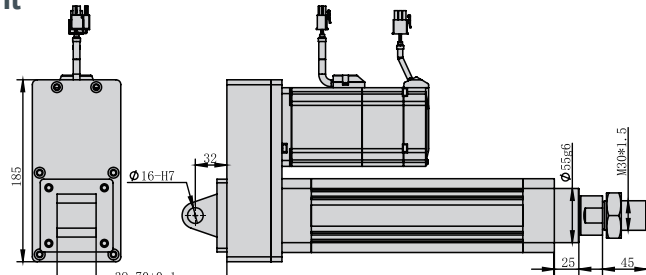
QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	9.54	10.74	11.94	13.14	14.34	15.54	16.74	17.94	19.14	20.34



Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.5	9.7	10.9	12.1	13.3	14.5	15.7	16.9	18.1	19.3

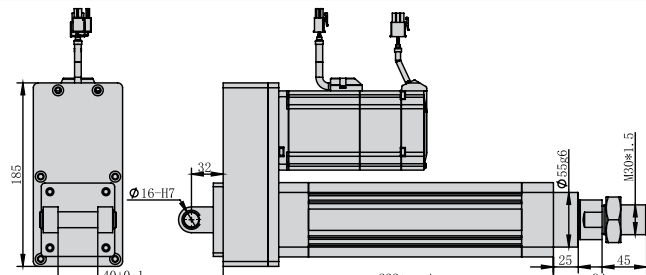
Note:Weight increases by 0.12 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

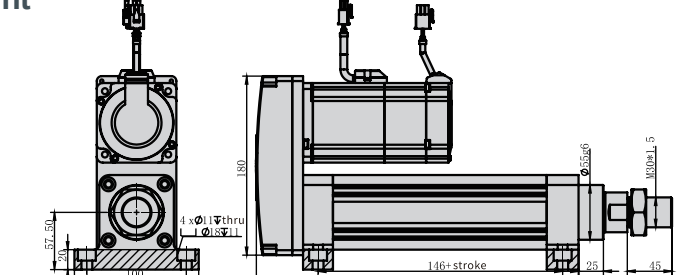
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	9.1	10.3	11.5	12.7	13.9	15.1	16.3	17.5	18.7	19.9



CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	9	10.2	11.4	12.6	13.8	15	16.2	17.4	18.6	19.8

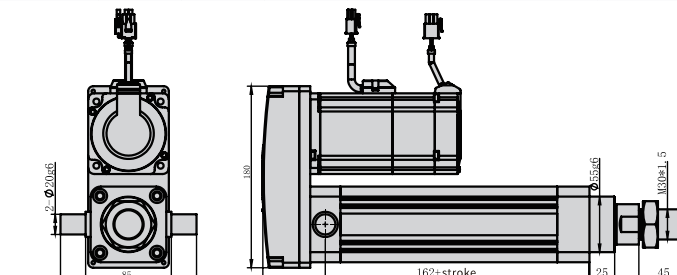
Note:Weight increases by 0.12 kg per 10 mm stroke.

MR Parallel Mount



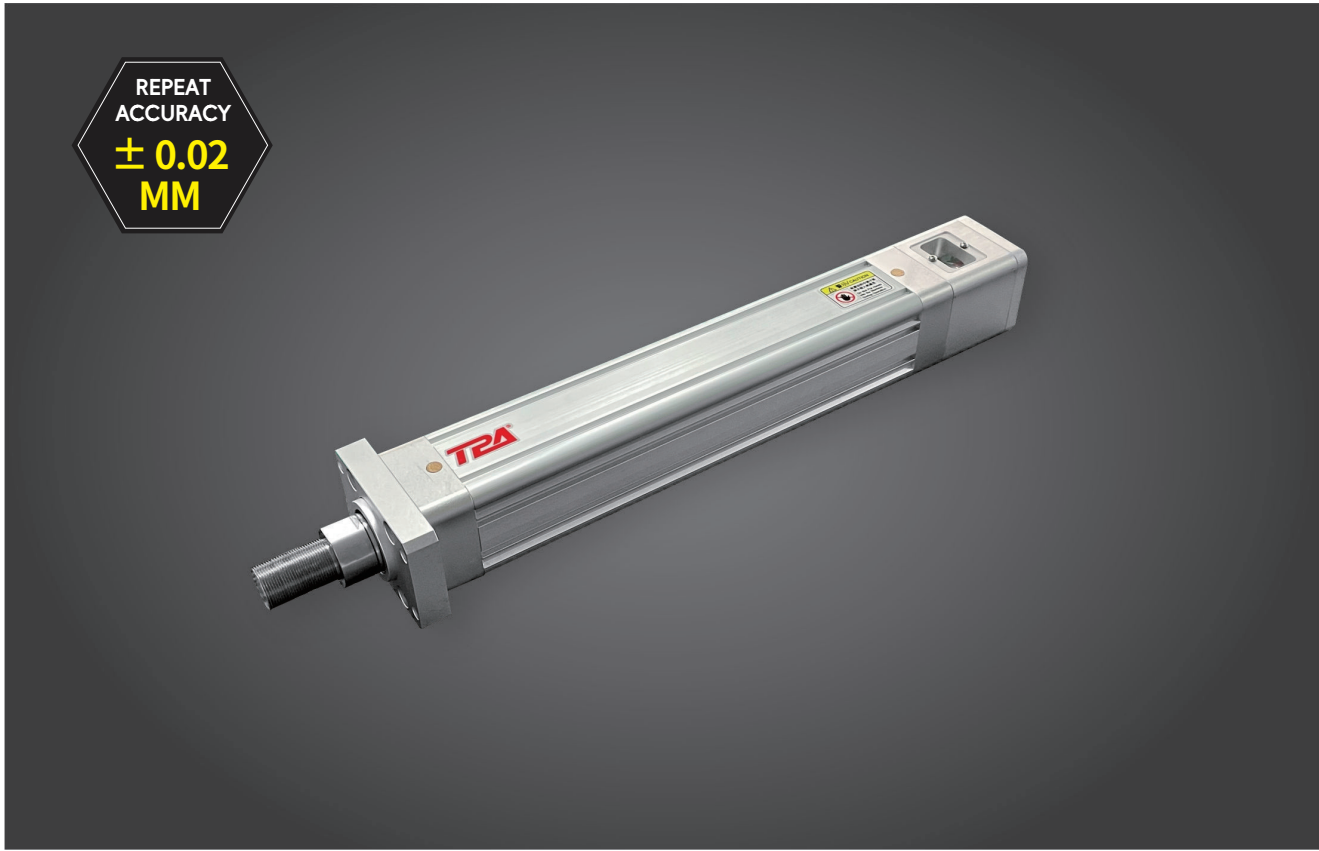
Unit:mm

LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.88	10.08	11.28	12.48	13.68	14.88	16.08	17.28	18.48	19.68



TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
	Weight (kg)	8.72	9.92	11.12	12.32	13.52	14.72	15.92	17.12	18.32	19.52

Note:Weight increases by 0.12 kg per 10 mm stroke.



Max Stroke	1500mm	Max Speed	500mm/s	Motor Power	750W	Ball Screw	Ø32mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Light Duty Electric Cylinder

Ball Screw Dia
Ø25mm

Lead
05mm
10mm

Stroke
10-2000mm

Installation Flange
Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Direction
M: Direct Coupled Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
75: 750W
1K: 1000W
1.5K: 1500W
2K: 2000W
3K: 3000W

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

ESR - 80 - 25 05 C - L100 - M - FA - W - P 75 B - J3 - C 3 - F

Inner Dia
25
40
50
63
80
100

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Brake
Gear Ratio
3, 4, 5Etc.

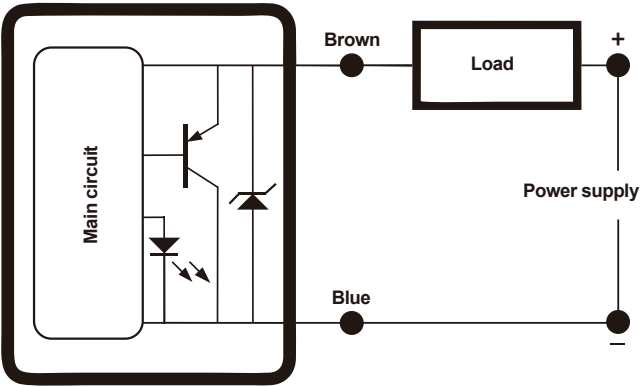
Quantity
1
2
3
No Mark:None

Custom

Datasheet

Spec	Repeated accuracy (mm)	±0.02							
	Rated speed of motor (RPM)	3000							
	Rated torque (N.m)	2.39		3.18		4.78		6.37	
	Motor power (W)	750		1000		1500		2000	
	Ball screw lead (mm)	5	10	5	10	5	10	5	10
	Rated speed (mm/s)	250	500	250	500	250	500	250	500
	Rated thrust (N)	2550	1275	3400	1700	5100	2550	6800	3400
	Max payload (KG)	1T							
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground							
	Valid stroke (mm)	10~1500mm							
Parts	Ball screw Ø (mm)	Ø25							
	Gearbox	Gear ratio: 3, 4, 5, 6, 7, 8, 10...							
	External material	Aluminium Profile							
	Sensor	Magnetic Switch							
Operating environment		-10 ~ 70°C , 85%RH, No condensation							

Sensor layout



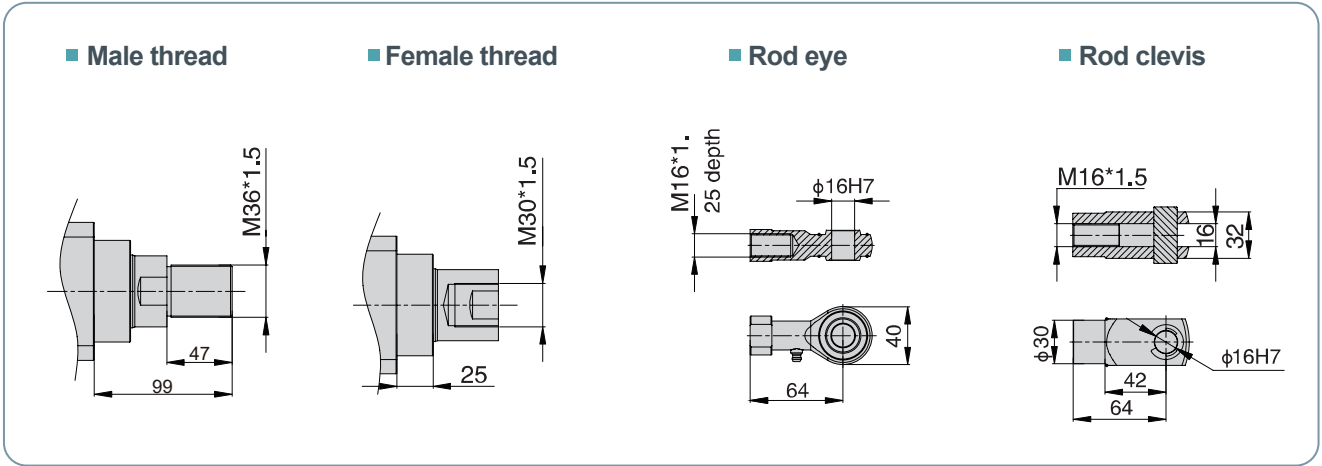
Thrust formula of electric cylinder

$F = T \times \eta \times 2\pi \times R / L$
F: Rated thrust of electric cylinder (KN)
T: Rated torque of motor (N-m)
 η : Efficiency (Usually 85%, depend on specific industry)
R: Gear / Pulley ratio
L: Ball screw lead (mm)

Suitable motor brand

Servo motor dimension																			
Power(W)	Brand	Model		LL	LL(Brake)	LA	LE	LZ	LC	LG	LW	RH	W	LR	S	LB	M	QK	QL
400W	Mitsubishi	HC-KFS43 □ K	B:With brake □ :No brake	124.5	165.5	70	3	5.8	62	7	-	-	-	30			-	-	-
	Panasonic	MSMJ042G1 □	V:With brake U:No brake	99	135	70	3	4.5	60	6.5	20	11	5h9	30			M5x10L	-	-
	Delta	ECMA-C20604 □ S	S:With brake R:No brake	130.7	166.6	70	3	5.5	60	7.5	20	11	5	30			M4x15L	-	-
		ECMA-C20804 □ S	S:With brake R:No brake	112.3	152.8	90	3	6.6	80	8	20	11	5	35			M4x15L	-	-

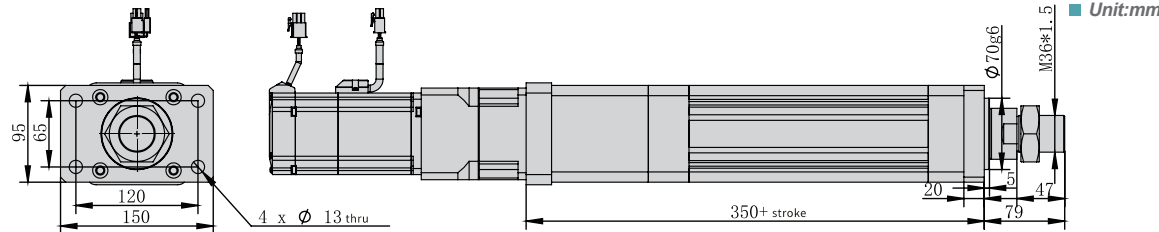
Front joint option



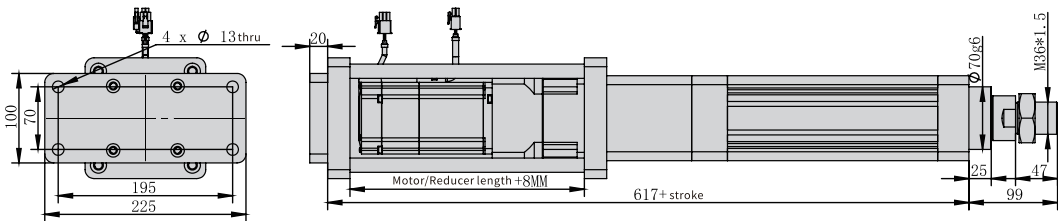


• Motor Direction

M Direct Coupled Mount



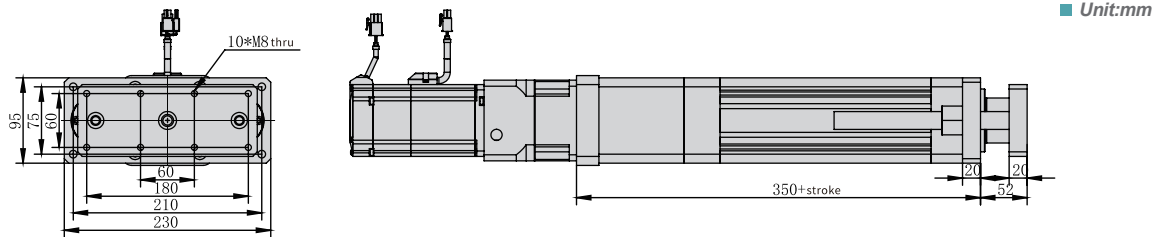
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		13.67	15.57	17.47	19.37	21.27	23.17	25.07	26.97	28.87	30.77	32.67	34.57	36.47	38.37	40.27



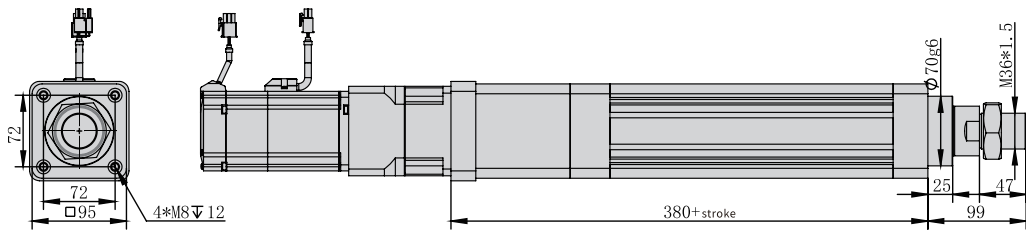
FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		16.8	18.7	20.6	22.5	24.4	26.3	28.2	30.1	32	33.9	35.8	37.7	39.6	41.5	43.4

Note: Weight increases by 0.19 kg per 10 mm stroke.

M Direct Coupled Mount



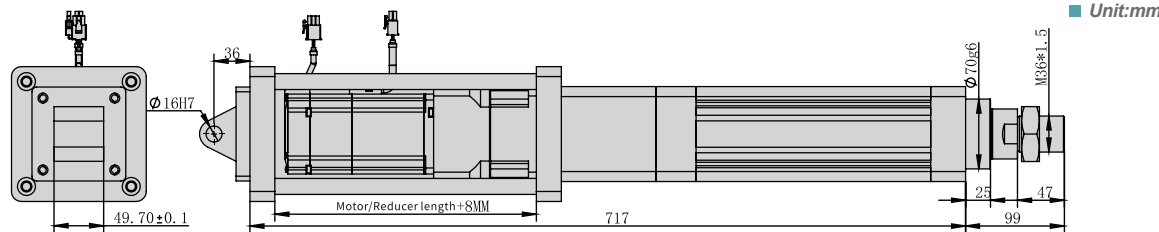
QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		15.01	16.91	18.81	20.71	22.61	24.51	26.41	28.31	30.21	32.11	34.01	35.91	37.81	39.71	41.61



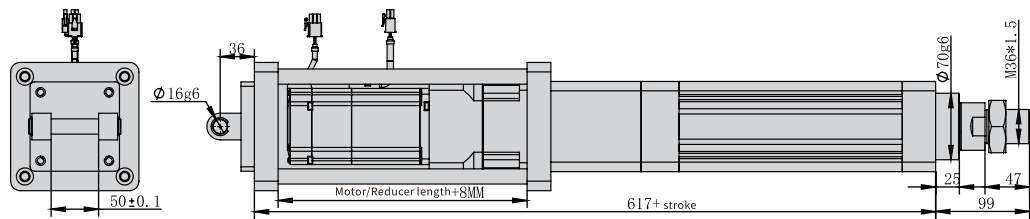
Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		13.26	15.16	17.06	18.96	20.86	22.76	24.66	26.56	28.46	30.36	32.26	34.16	36.06	37.96	39.86

Note: Weight increases by 0.19 kg per 10 mm stroke.

M Direct Coupled Mount



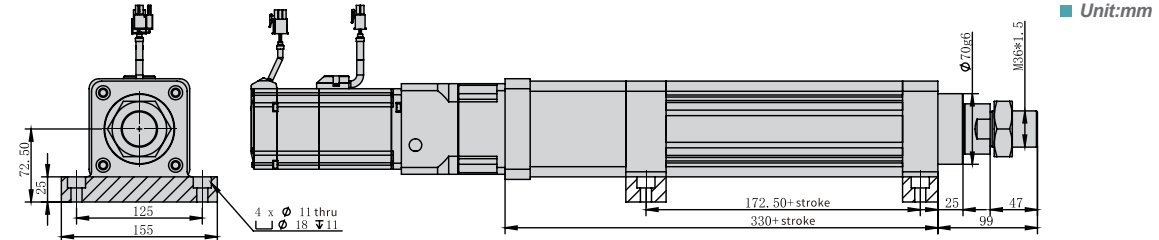
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		17.54	19.44	21.34	23.24	25.14	27.04	28.94	30.84	32.74	34.64	36.54	38.44	40.34	42.24	44.14



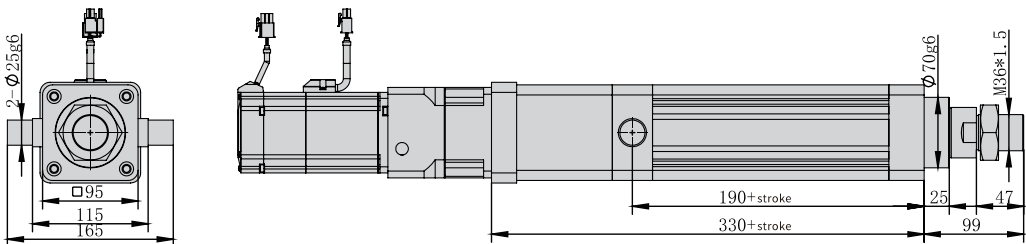
CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		17.52	19.42	21.32	23.22	25.12	27.02	28.92	30.82	32.72	34.62	36.52	38.42	40.32	42.22	44.12

Note: Weight increases by 0.19 kg per 10 mm stroke.

M Direct Coupled Mount



LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		13.59	15.49	17.39	19.29	21.19	23.09	24.99	26.89	28.79	30.69	32.59	34.49	36.39	38.29	40.19



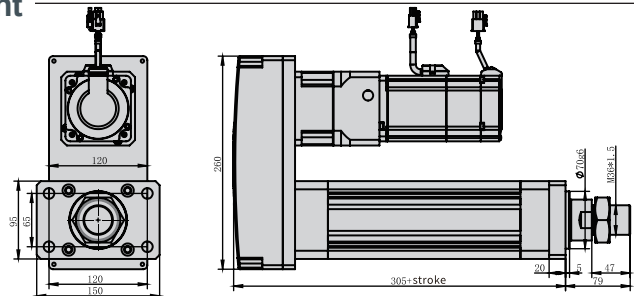
TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		13.45	15.35	17.25	19.15	21.05	22.95	24.85	26.75	28.65	30.55	32.45	34.35	36.25	38.15	40.05

Note: Weight increases by 0.19 kg per 10 mm stroke.



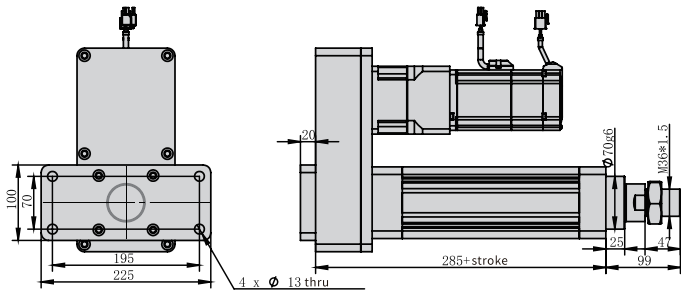
• Motor Direction

MR Parallel Mount



Unit:mm

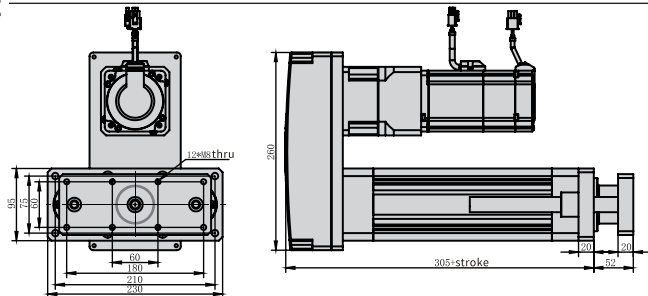
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		14.98	16.88	18.78	20.68	22.58	24.48	26.38	28.28	30.18	32.08	33.98	35.88	37.78	39.68	41.58



FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		15	16.9	18.8	20.7	22.6	24.5	26.4	28.3	30.2	32.1	34	35.9	37.8	39.7	41.6

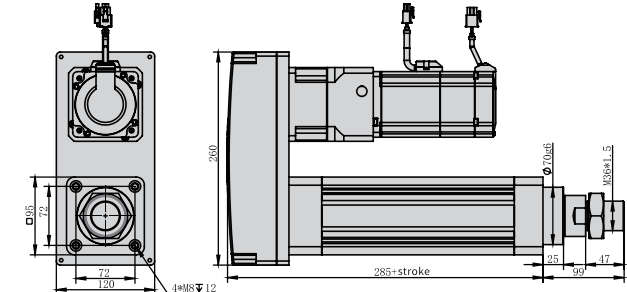
Note:Weight increases by 0.19 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

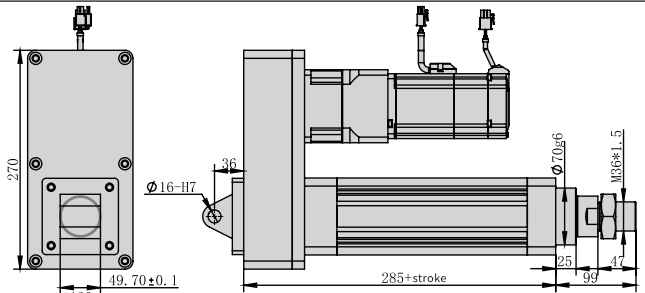
QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		16.3	18.2	20.1	22	23.9	25.8	27.7	29.6	31.5	33.4	35.3	37.2	39.1	41	42.9



Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		14.58	16.48	18.38	20.28	22.18	24.08	25.98	27.88	29.78	31.68	33.58	35.48	37.38	39.28	41.18

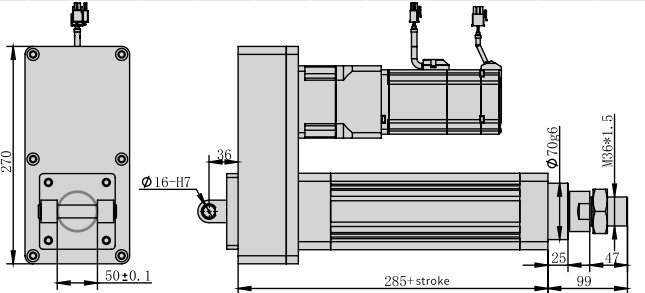
Note:Weight increases by 0.19 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

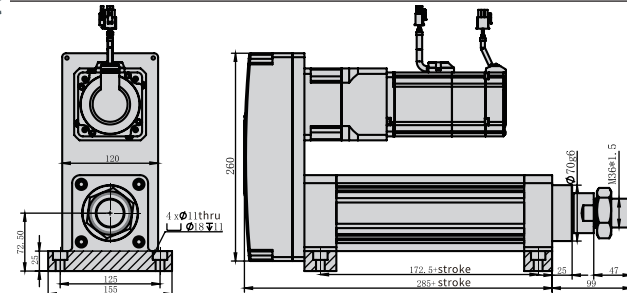
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		15.16	17.06	18.96	20.86	22.76	24.66	26.56	28.46	30.36	32.26	34.16	36.06	37.96	39.86	41.76



CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		15.1	17	18.9	20.8	22.7	24.6	26.5	28.4	30.3	32.2	34.1	36	37.9	39.8	41.7

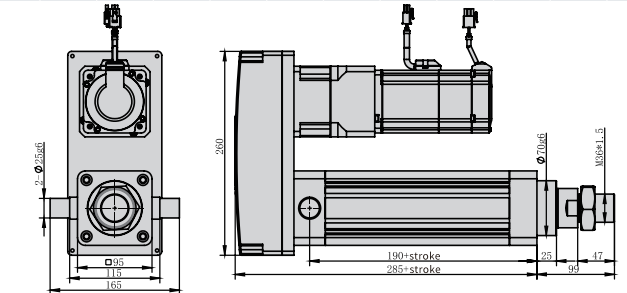
Note:Weight increases by 0.19 kg per 10 mm stroke.

MR Parallel Mount



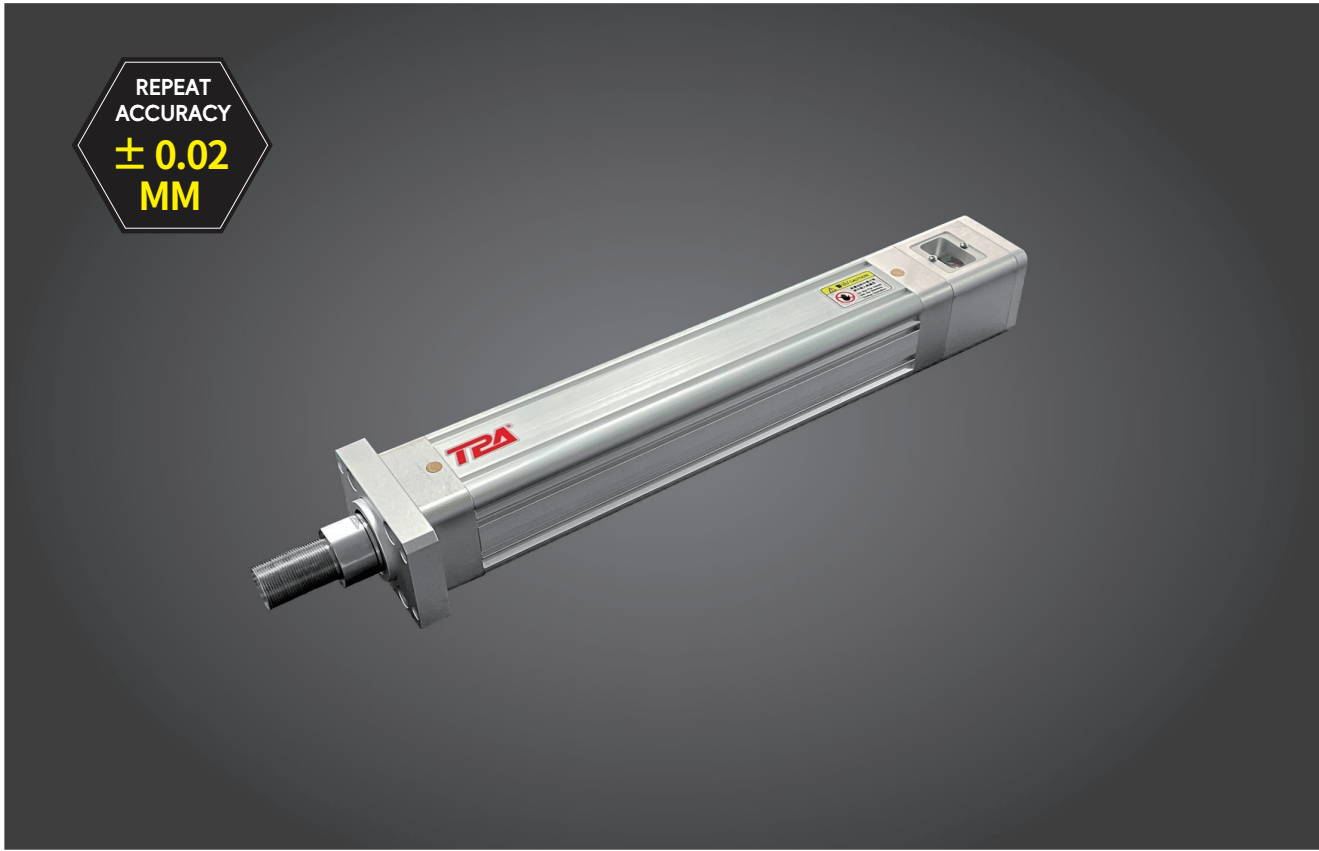
Unit:mm

LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		14.9	16.8	18.7	20.6	22.5	24.4	26.3	28.2	30.1	32	33.9	35.8	37.7	39.6	41.5



TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Weight (kg)		14.74	16.64	18.54	20.44	22.34	24.24	26.14	28.04	29.94	31.84	33.74	35.64	37.54	39.44	41.34

Note:Weight increases by 0.19 kg per 10 mm stroke.



Max Stroke	1000mm	Max Speed	500mm/s	Motor Power	750W	Ball Screw	Ø25mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Light Duty Electric
Cylinder

Ball Screw Dia
Ø32mm

Lead
05mm
10mm

Stroke
10-1000mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Direction
M: Direct Coupled
Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
75: 750W
1K: 1000W
1.5K: 1500W
2K: 2000W
3K: 3000W

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

ESR-100-32 05 C-L100-M-FA - W-P 75 B-J3 - C 3 - F

Inner Dia
25
40
50
63
80
100

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Brake
Gear Ratio
3, 4, 5Etc.

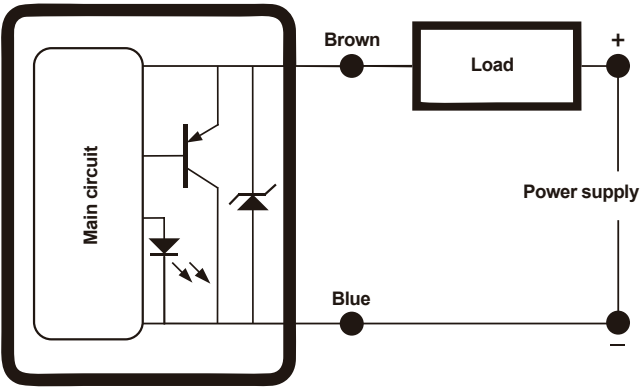
Quantity
1
2
3
No Mark:None

Custom

Datasheet

Spec	Repeated accuracy (mm)	±0.02							
	Rated speed of motor (RPM)	3000							
	Rated torque (N.m)	2.39		3.18		4.78		6.37	
	Motor power (W)	750		1000		1500		2000	
	Ball screw lead (mm)	5	10	5	10	5	10	5	10
	Rated speed (mm/s)	250	500	250	500	250	500	250	500
	Rated thrust (N)	2550	1275	3400	1700	5100	2550	6800	3400
	Max payload (KG)	1T							
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground							
	Valid stroke (mm)	10~1500mm							
Parts	Ball screw Ø (mm)	Ø25							
	Gearbox	Gear ratio: 3, 4, 5, 6, 7, 8, 10...							
	External material	Aluminium Profile							
	Sensor	Magnetic Switch							
	Operating environment	-10 ~ 70°C , 85%RH, No condensation							

Sensor layout



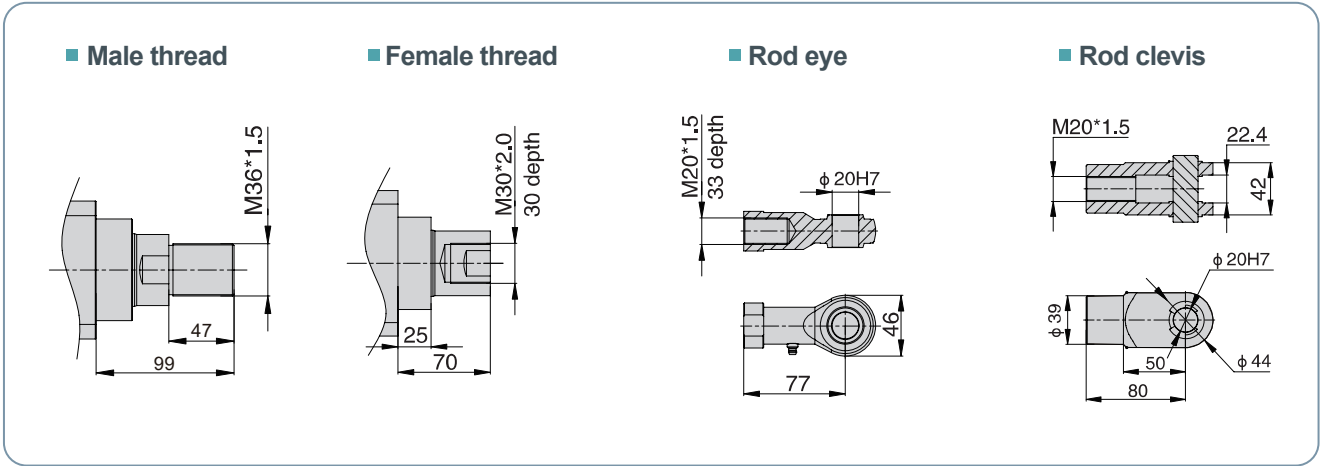
Thrust formula of electric cylinder

$F=T \times \eta \times 2 \pi \times R / L$
F: Rated thrust of electric cylinder (KN)
T: Rated torque of motor (N-m)
 η : Efficiency (Usually 85%, depend on specific industry)
R: Gear / Pulley ratio
L: Ball screw lead (mm)

Suitable motor brand

Servo motor dimension																			
Power(W)	Brand	Model		LL	LL(Brake)	LA	LE	LZ	LC	LG	LW	RH	W	LR	S	LB	M	QK	QL
400W	Mitsubishi	HC-KFS43 □ K	B:With brake □ :No brake	124.5	165.5	70	3	5.8	62	7	-	-	-	30			-	-	-
	Panasonic	MSMJ042G1 □	V:With brake U:No brake	99	135	70	3	4.5	60	6.5	20	11	5h9	30			M5x10L	-	-
	Delta	ECMA-C20604 □ S	S:With brake R:No brake	130.7	166.6	70	3	5.5	60	7.5	20	11	5	30			M4x15L	-	-
		ECMA-C20804 □ S	S:With brake R:No brake	112.3	152.8	90	3	6.6	80	8	20	11	5	35			M4x15L	-	-

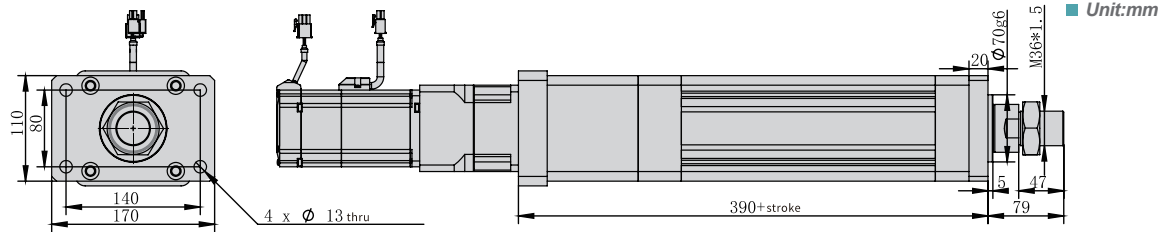
Front joint option



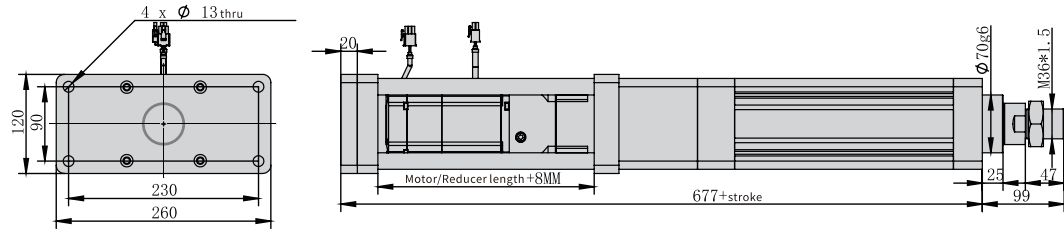


• Motor Direction

M Direct Coupled Mount



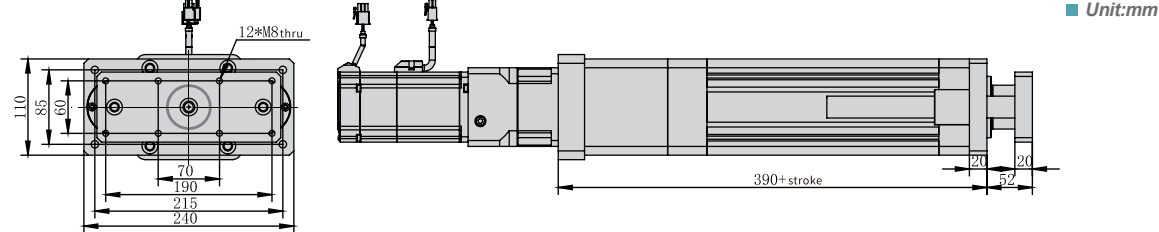
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		18.4	20.4	22.4	24.4	26.4	28.4	30.4	32.4	34.4	36.4	38.4	40.4	42.4	44.4	46.4	48.4	50.4	52.4	54.4	56.4



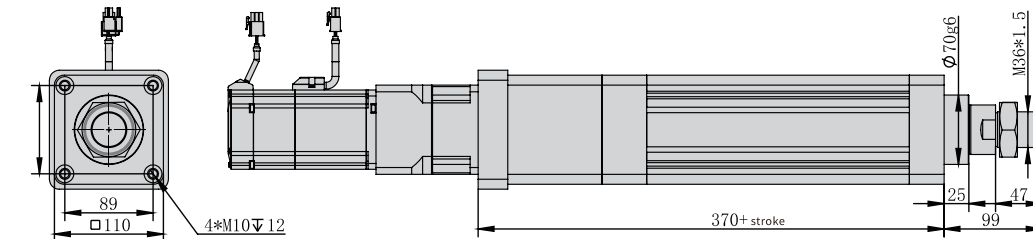
FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		21.65	23.65	25.65	27.65	29.65	31.65	33.65	35.65	37.65	39.65	41.65	43.65	45.65	47.65	49.65	51.65	53.65	55.65	57.65	59.65

Note:Weight increases by 0.2 kg per 10 mm stroke.

M Direct Coupled Mount



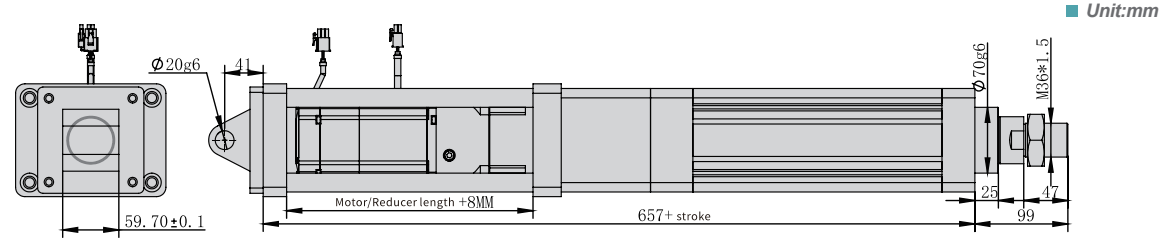
QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		18.96	20.96	22.96	24.96	26.96	28.96	30.96	32.96	34.96	36.96	38.96	40.96	42.96	44.96	46.96	48.96	50.96	52.96	54.96	56.96



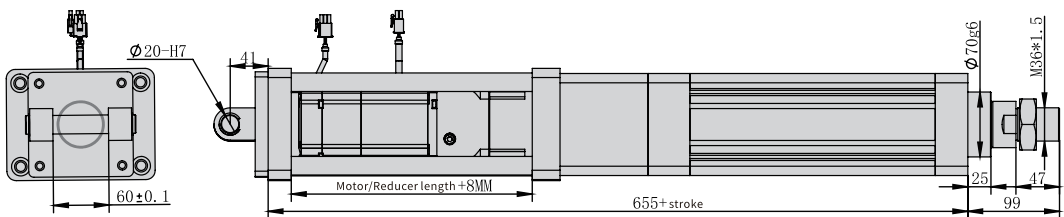
Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		18.34	20.34	22.34	24.34	26.34	28.34	30.34	32.34	34.34	36.34	38.34	40.34	42.34	44.34	46.34	48.34	50.34	52.34	54.34	56.34

Note:Weight increases by 0.2 kg per 10 mm stroke.

M Direct Coupled Mount



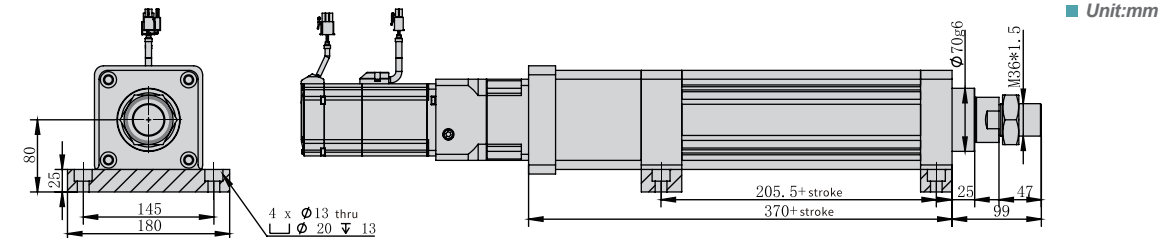
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		21.54	23.54	25.54	27.54	29.54	31.54	33.54	35.54	37.54	39.54	41.54	43.54	45.54	47.54	49.54	51.54	53.54	55.54	57.54	59.54



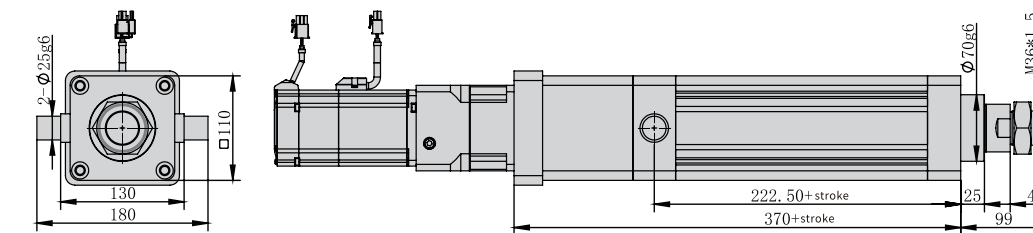
CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		21.5	23.5	25.5	27.5	29.5	31.5	33.5	35.5	37.5	39.5	41.5	43.5	45.5	47.5	49.5	51.5	53.5	55.5	57.5	59.5

Note:Weight increases by 0.2 kg per 10 mm stroke.

M Direct Coupled Mount



LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		18.5	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5	40.5	42.5	44.5	46.5	48.5	50.5	52.5	54.5	56.5



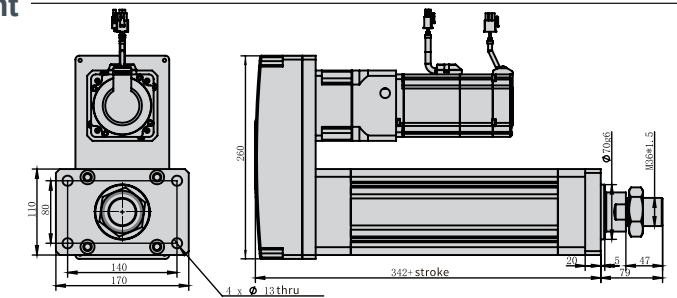
TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		18.36	20.36	22.36	24.36	26.36	28.36	30.36	32.36	34.36	36.36	38.36	40.36	42.36	44.36	46.36	48.36	50.36	52.36	54.36	56.36

Note:Weight increases by 0.2 kg per 10 mm stroke.



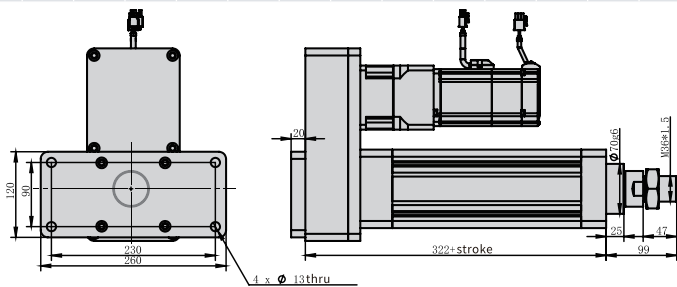
● Motor Direction

MR Parallel Mount



Unit:mm

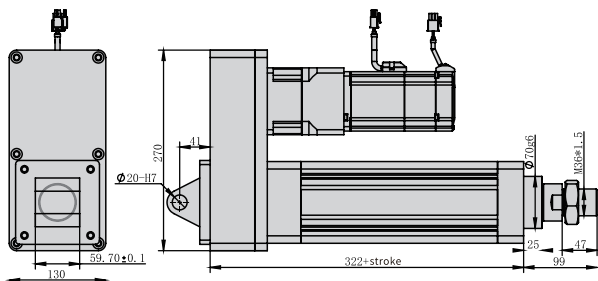
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		16.6	18.6	20.6	22.6	24.6	26.6	28.6	30.6	32.6	34.6	36.6	38.6	40.6	42.6	44.6	46.6	48.6	50.6	52.6	54.6



FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		16.71	18.71	20.71	22.71	24.71	26.71	28.71	30.71	32.71	34.71	36.71	38.71	40.71	42.71	44.71	46.71	48.71	50.71	52.71	54.71

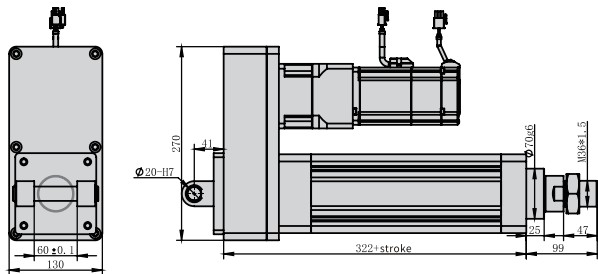
Note:Weight increases by 0.2 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

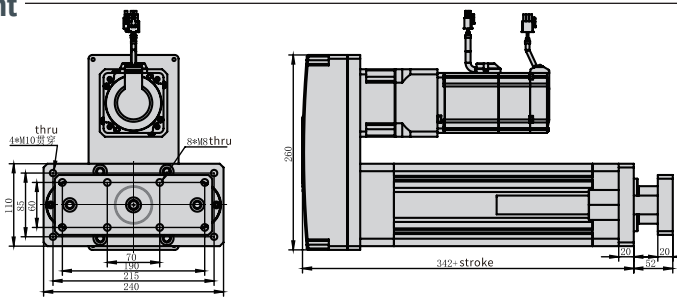
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		16.68	18.68	20.68	22.68	24.68	26.68	28.68	30.68	32.68	34.68	36.68	38.68	40.68	42.68	44.68	46.68	48.68	50.68	52.68	54.68



CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		16.66	18.66	20.66	22.66	24.66	26.66	28.66	30.66	32.66	34.66	36.66	38.66	40.66	42.66	44.66	46.66	48.66	50.66	52.66	54.66

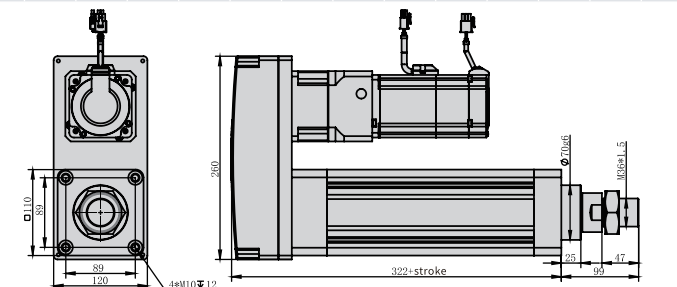
Note:Weight increases by 0.2 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

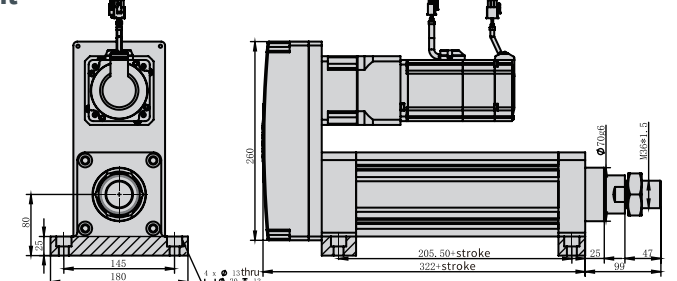
QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		17.16	19.16	21.16	23.16	25.16	27.16	29.16	31.16	33.16	35.16	37.16	39.16	41.16	43.16	45.16	47.16	49.16	51.16	53.16	55.16



Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		16.54	18.54	20.54	22.54	24.54	26.54	28.54	30.54	32.54	34.54	36.54	38.54	40.54	42.54	44.54	46.54	48.54	50.54	52.54	54.54

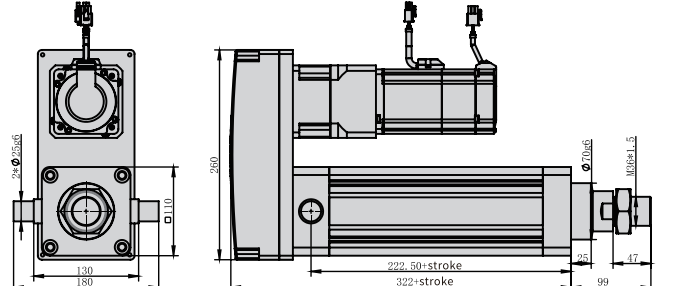
Note:Weight increases by 0.2 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		16.7	18.7	20.7	22.7	24.7	26.7	28.7	30.7	32.7	34.7	36.7	38.7	40.7	42.7	44.7	46.7	48.7	50.7	52.7	54.7



TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		16.56	18.56	20.56	22.56	24.56	26.56	28.56	30.56	32.56	34.56	36.56	38.56	40.56	42.56	44.56	46.56	48.56	50.56	52.56	54.56

Note:Weight increases by 0.2 kg per 10 mm stroke.



Max Stroke	1800mm	Max Speed	1000mm/s	Motor Power	750W	Ball Screw	Ø32mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Medium Duty
Electric Cylinder

Ball Screw Dia
Ø32mm

Lead
10mm
20mm

Stroke
50-1800mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Direction
M: Direct Coupled
Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
75:750W
1K: 1000W
1.5K: 1500W
2K: 2000W
3.5K: 3500W

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

EMR-80-32 10 C-L100-M-FA - W-P 75 B-J3 - C 3 - F

Inner Dia
80
100
125

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Brake
Gear Ratio
3、4、5Etc.

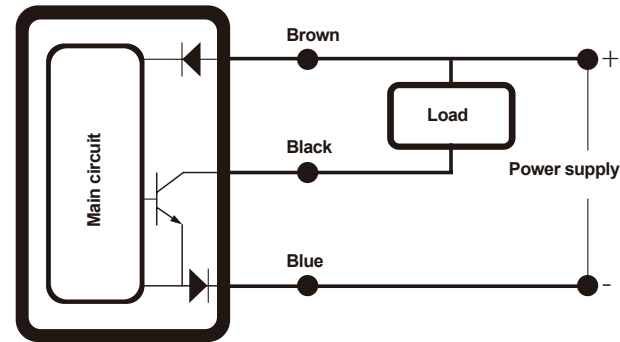
Quantity
1
2
3
No Mark:None

Custom

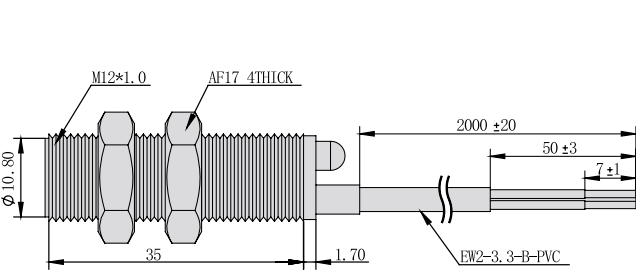
Datasheet

Spec	Repeated accuracy (mm)	±0.02														
	Rated speed of motor (RPM)	3000														
	Ball screw Ø (mm)	Ø32														
	Rated torque (N.m)	2.39					3.18					6.37				
	Motor power (W)	750					1000					2000				
	Ball screw lead (mm)	10			20			10			20			10		
	Rated speed (mm/s)	500			1000			500			1000			500		
	Rated thrust (KN)	1.275			0.6375			1.7			0.85			3.4		
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	3.825	6.375	8.925	1.9125	3.1875	4.4625	5.1	8.5	11.9	2.55	4.25	5.95	10.2	17	23.8
	Speed with Gearbox(mm/s)	167	100	71	333	200	143	167	100	71	333	200	143	167	100	71
	Valid stroke (mm)	50~1800mm														
	Sensor	Magnetic Switch														
	Driven system	Ball Screw C7 Rolled (Standard) /C5 Ground														
	Max payload (KG)	3T														

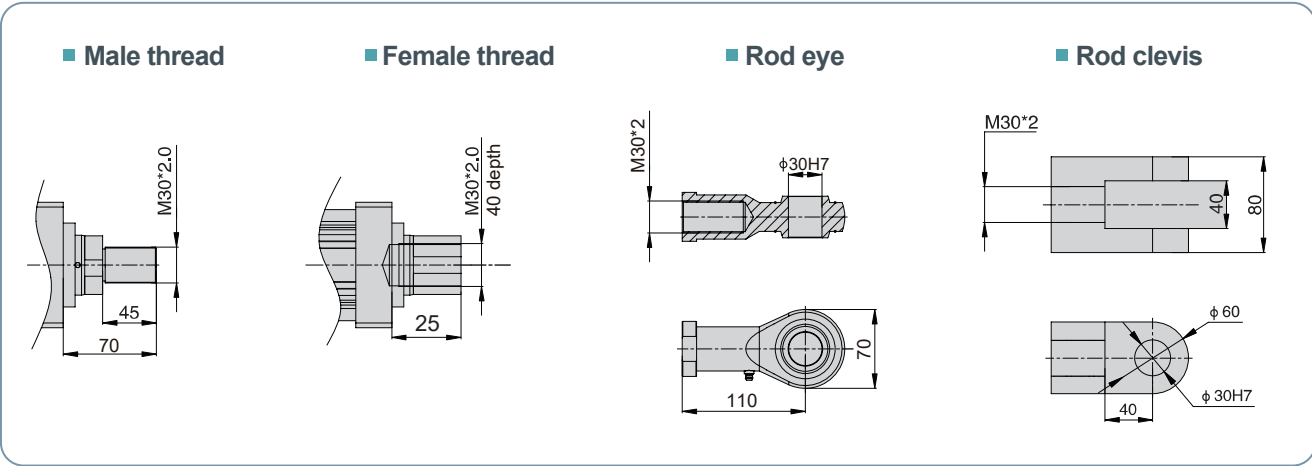
Sensor layout



Size diagram of proximity switch



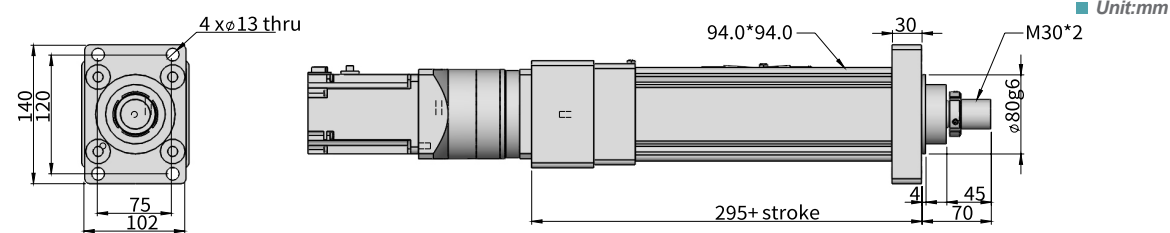
Front joint option



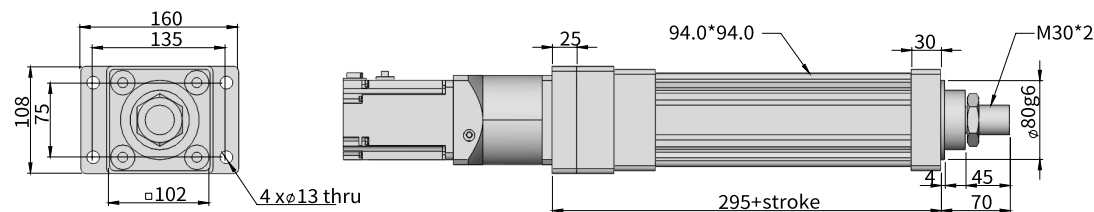


• Motor Direction

M Direct Coupled Mount



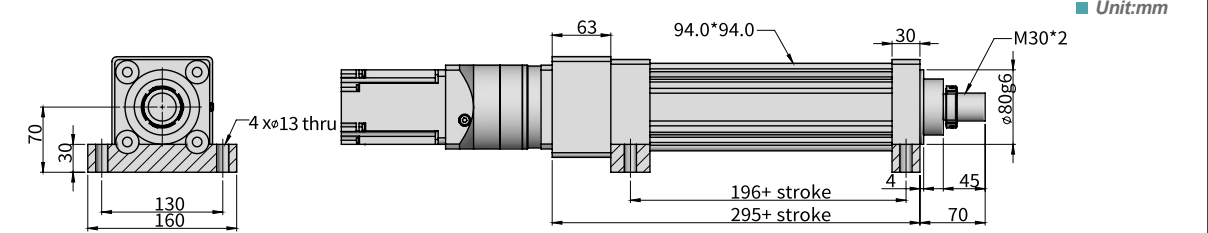
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		13.5	15.5	17.5	19.5	21.5	23.5	25.5	27.5	29.5	31.5	33.5	35.5	37.5	39.5	41.5	43.5	45.5	47.5



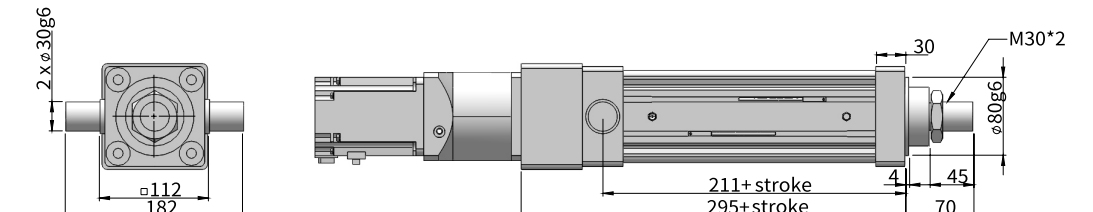
FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		13.6	15.6	17.6	19.6	21.6	23.6	25.6	27.6	29.6	31.6	33.6	35.6	37.6	39.6	41.6	43.6	45.6	47.6

Note: The above data excludes gearbox and servo motor. Weight increases by 0.2 kg per 10 mm stroke.

M Direct Coupled Mount



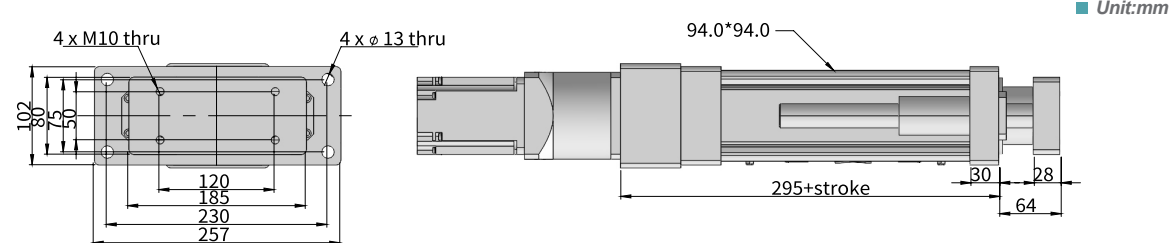
LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		13.7	15.7	17.7	19.7	21.7	23.7	25.7	27.7	29.7	31.7	33.7	35.7	37.7	39.7	41.7	43.7	45.7	47.7



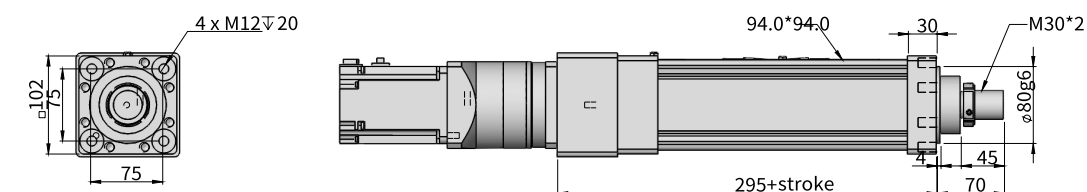
TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		13.9	15.9	17.9	19.9	21.9	23.9	25.9	27.9	29.9	31.9	33.9	35.9	37.9	39.9	41.9	43.9	45.9	47.9

Note: The above data excludes gearbox and servo motor. Weight increases by 0.2 kg per 10 mm stroke.

M Direct Coupled Mount



QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		14.7	16.7	18.7	20.7	22.7	24.7	26.7	28.7	30.7	32.7	34.7	36.7	38.7	40.7	42.7	44.7	46.7	48.7



Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		12.9	14.9	16.9	18.9	20.9	22.9	24.9	26.9	28.9	30.9	32.9	34.9	36.9	38.9	40.9	42.9	44.9	46.9

Note: The above data excludes gearbox and servo motor. Weight increases by 0.2 kg per 10 mm stroke.

ESR

EMR

EHR

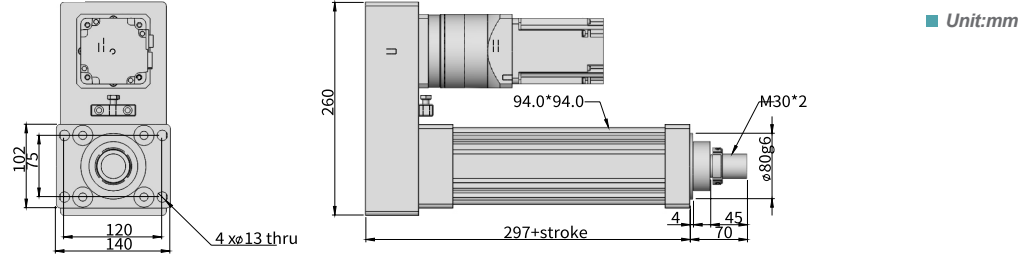
EQR

Reference

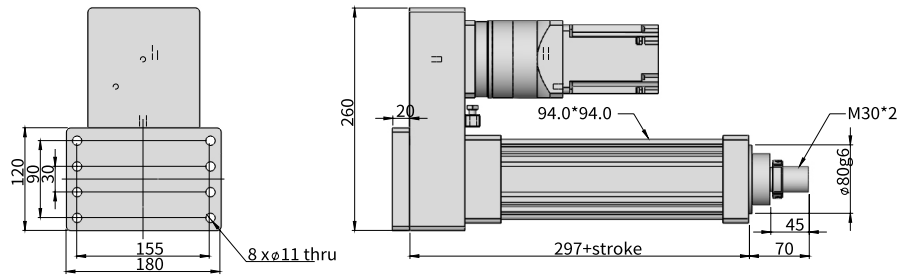


• Motor Direction

MR Parallel Mount



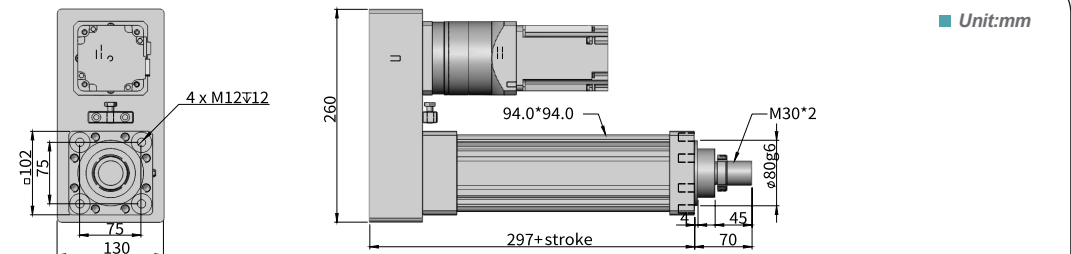
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		14.2	16.2	18.2	20.2	22.2	24.2	26.2	28.2	30.2	32.2	34.2	36.2	38.2	40.2	42.2	44.2	46.2	48.2



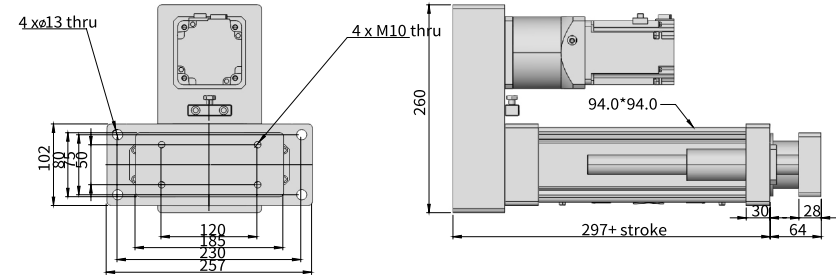
FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		14.3	16.3	18.3	20.3	22.3	24.3	26.3	28.3	30.3	32.3	34.3	36.3	38.3	40.3	42.3	44.3	46.3	48.3

Note: The above data excludes gearbox and servo motor. Weight increases by 0.2 kg per 10 mm stroke.

MR Parallel Mount



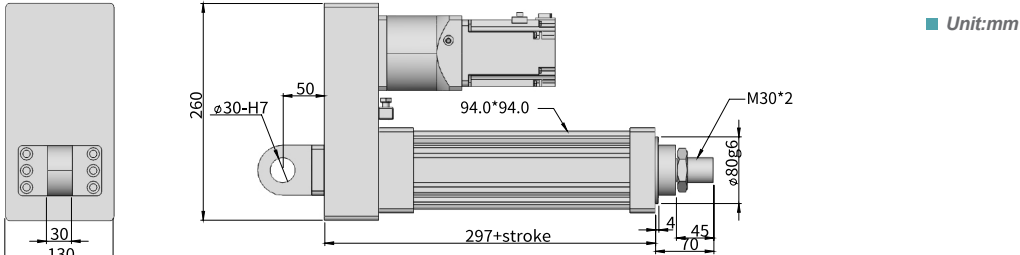
Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		13.6	15.6	17.6	19.6	21.6	23.6	25.6	27.6	29.6	31.6	33.6	35.6	37.6	39.6	41.6	43.6	45.6	47.6



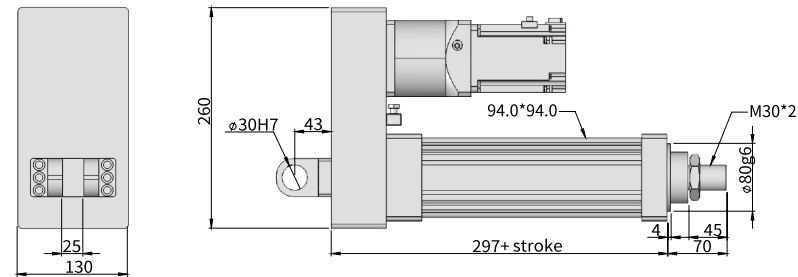
QDX Front guidanc	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		15.4	17.4	19.4	21.4	23.4	25.4	27.4	29.4	31.4	33.4	35.4	37.4	39.4	41.4	43.4	45.4	47.4	49.4

Note: The above data excludes gearbox and servo motor. Weight increases by 0.2 kg per 10 mm stroke.

MR Parallel Mount



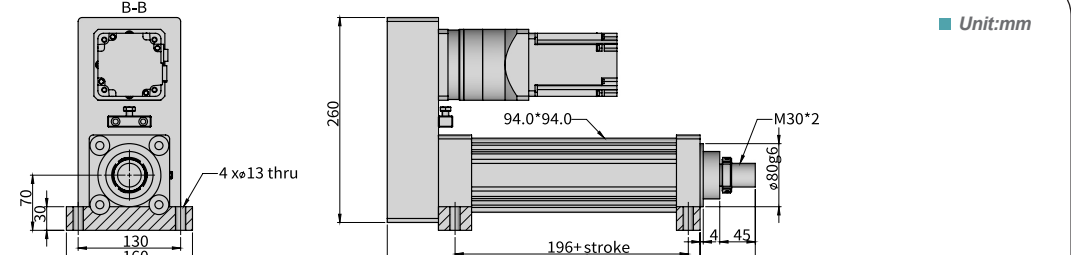
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		14.6	16.6	18.6	20.6	22.6	24.6	26.6	28.6	30.6	32.6	34.6	36.6	38.6	40.6	42.6	44.6	46.6	48.6



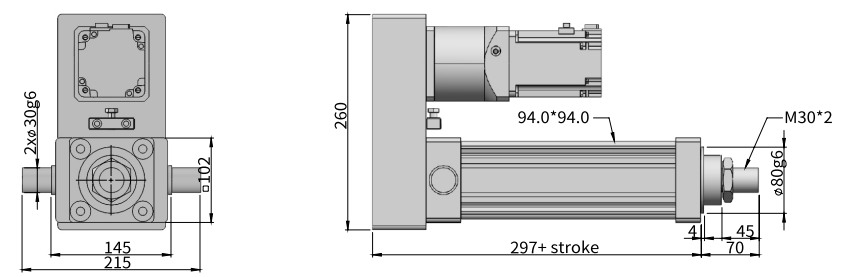
CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		15.1	17.1	19.1	21.1	23.1	25.1	27.1	29.1	31.1	33.1	35.1	37.1	39.1	41.1	43.1	45.1	47.1	49.1

Note: The above data excludes gearbox and servo motor. Weight increases by 0.2 kg per 10 mm stroke.

MR Parallel Mount



LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		14.4	16.4	18.4	20.4	22.4	24.4	26.4	28.4	30.4	32.4	34.4	36.4	38.4	40.4	42.4	44.4	46.4	48.4



TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		14.6	16.6	18.6	20.6	22.6	24.6	26.6	28.6	30.6	32.6	34.6	36.6	38.6	40.6	42.6	44.6	46.6	48.6

Note: The above data excludes gearbox and servo motor. Weight increases by 1 kg per 50 mm stroke.



Max Stroke	1800mm	Max Speed	1000mm/s	Motor Power	1500W	Ball Screw	Ø40mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Medium Duty Electric Cylinder

EMR-100-40 10 C-L100-M-FA - W-P 1.5K B-J3- C 3 - F

Ball Screw Dia
Ø40mm

Lead
10mm
20mm

Stroke
50-1800mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side Mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Direction
M: Direct Coupled Mount
MR: Parallel Mount

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
1.5K: 1500W
2K: 2000W
3K: 3000W
3.5K: 3500W
5.5K: 5500W

Brake
3、4、5Etc.

Gear Ratio
3、4、5Etc.

Quantity
1
2
3
No Mark:None

Custom

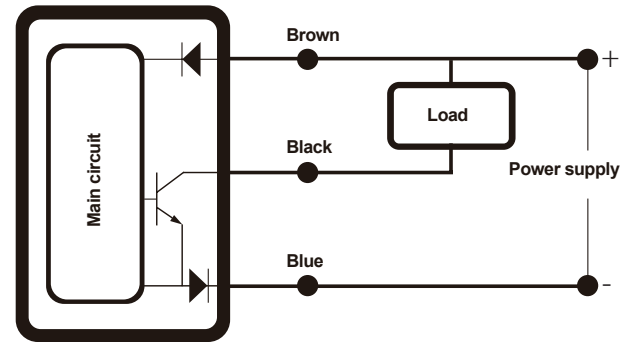
Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

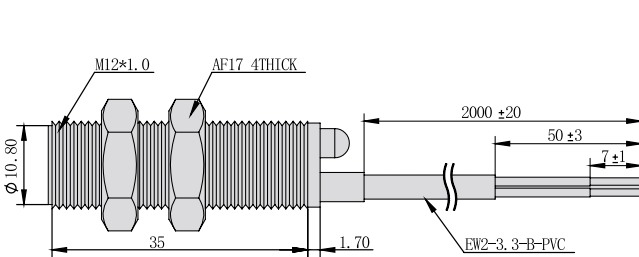
Datasheet

Spec	Repeated accuracy (mm)	±0.02															
	Rated speed of motor (RPM)	3000															
	Ball screw Ø (mm)	Ø40															
	Rated torque (N.m)	4.78				6.37				11.15				17.52			
	Motor power (W)	1500				2000				3500				5500			
	Ball screw lead (mm)	10		20		10		20		10		20		10		20	
	Rated speed (mm/s)	500		1000		500		1000		500		1000		500		1000	
	Rated thrust (KN)	2.55		1.275		3.4		1.7		5.95		2.975		9.35		4.675	
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7	3
	Thrust with Gearbox(KN)	7.65	12.75	17.85	3.825	6.375	8.925	10.2	17	23.8	5.1	8.5	11.9	17.85	29.75	41.65	8.93
	Speed with Gearbox(mm/s)	167	100	71	333	200	143	167	100	71	333	200	143	167	100	71	333
	Valid stroke (mm)	50~1800mm															
	Sensor	Magnetic Switch															
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground															
	Max payload (KG)	4T															

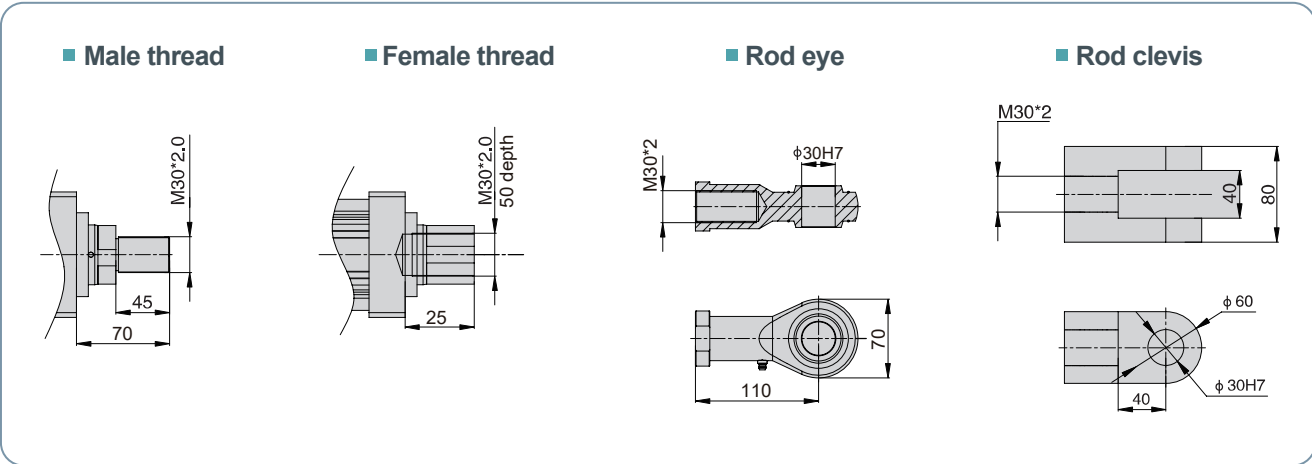
Sensor layout



Size diagram of proximity switch



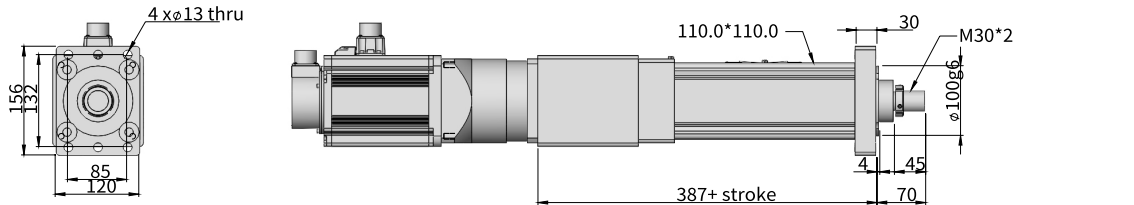
Front joint option



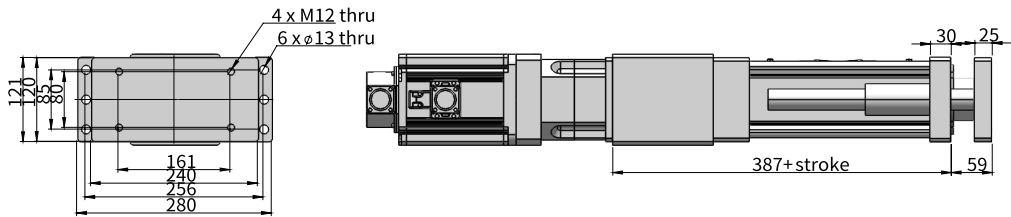


• Motor Direction

M Direct Coupled Mount



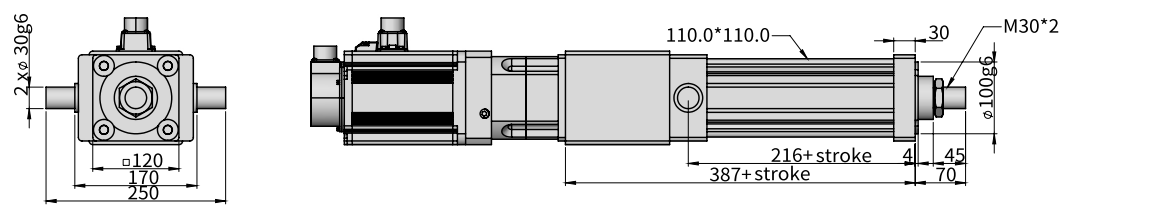
FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Front flange	Weight (kg)	19.23	22.13	25.03	27.93	30.83	33.73	36.63	39.53	42.43	45.33	48.23	51.13	54.03	56.93	59.83	62.73	65.63	68.53



QDX	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Front guidance	Weight (kg)	20.43	23.33	26.23	29.13	32.03	34.93	37.83	40.73	43.63	46.53	49.43	52.33	55.23	58.13	61.03	63.93	66.83	69.73

Note: The above data excludes gearbox and servo motor. Weight increases by 0.29 kg per 10 mm stroke.

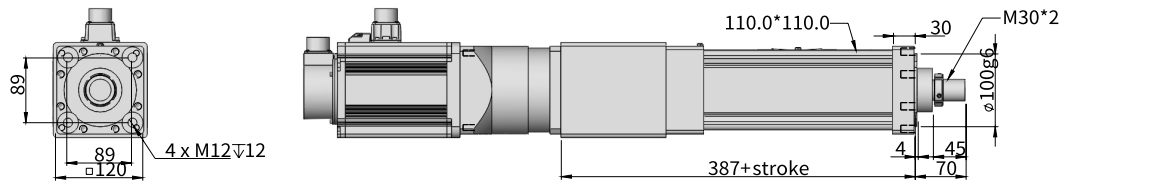
M Direct Coupled Mount



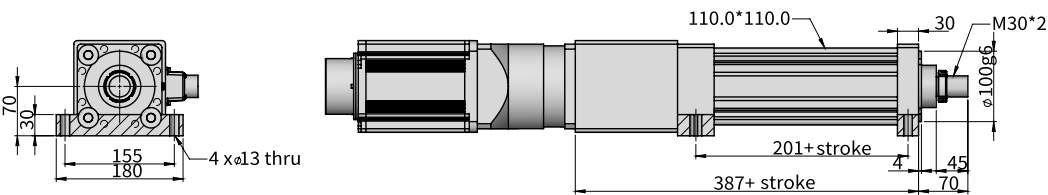
TC	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Trunnion	Weight (kg)	19.53	22.43	25.33	28.23	31.13	34.03	36.93	39.83	42.73	45.63	48.53	51.43	54.33	57.23	60.13	63.03	65.93	68.83

Note: The above data excludes gearbox and servo motor. Weight increases by 0.29 kg per 10 mm stroke.

M Direct Coupled Mount



Standard	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Cylinder base	Weight (kg)	18.53	21.43	24.33	27.23	30.13	33.03	35.93	38.83	41.73	44.63	47.53	50.43	53.33	56.23	59.13	62.03	64.93	67.83



LB	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Side mounting	Weight (kg)	19.33	22.23	25.13	28.03	30.93	33.83	36.73	39.63	42.53	45.43	48.33	51.23	54.13	57.03	59.93	62.83	65.73	68.63

Note: The above data excludes gearbox and servo motor. Weight increases by 0.29 kg per 10 mm stroke.

ESR

EMR

EHR

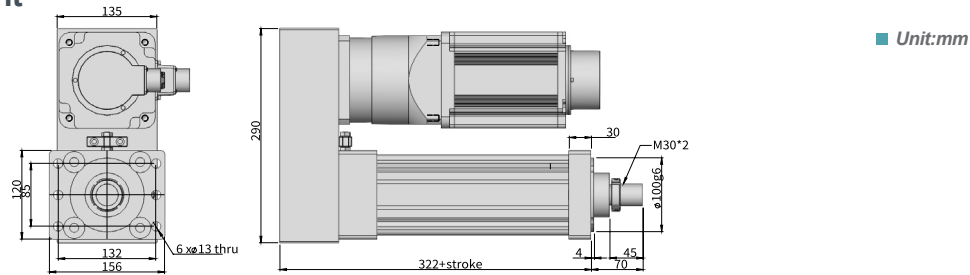
EQR

Reference



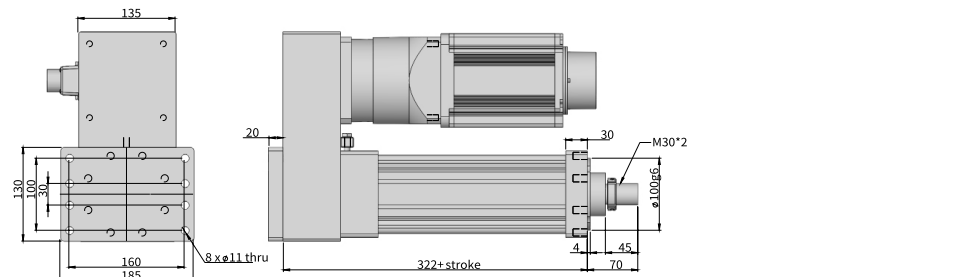
• Motor Direction

MR Parallel Mount



Unit:mm

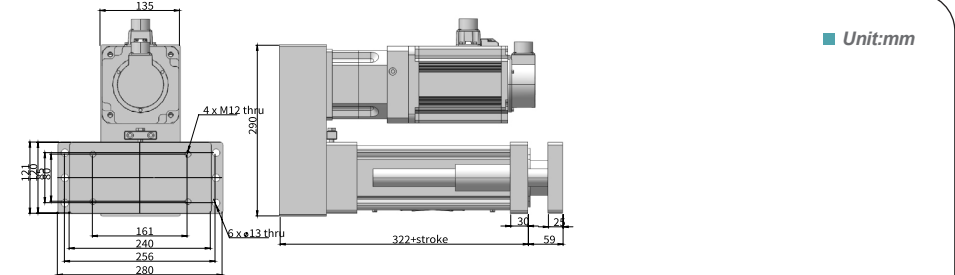
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		20.53	23.43	26.33	29.23	32.13	35.03	37.93	40.83	43.73	46.63	49.53	52.43	55.33	58.23	61.13	64.03	66.93	69.83



FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		20.63	23.53	26.43	29.33	32.23	35.13	38.03	40.93	43.83	46.73	49.63	52.53	55.43	58.33	61.23	64.13	67.03	69.93

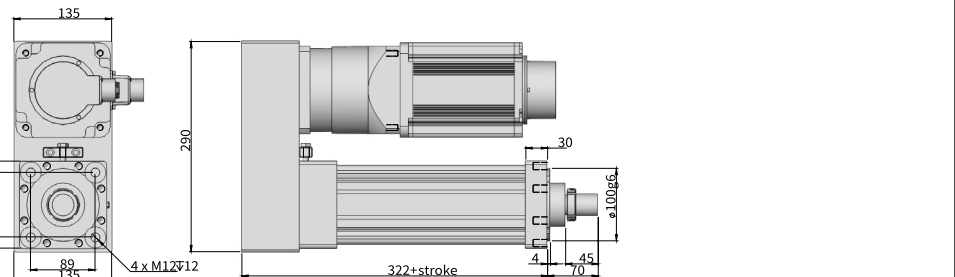
Note: The above data excludes gearbox and servo motor. Weight increases by 0.29 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

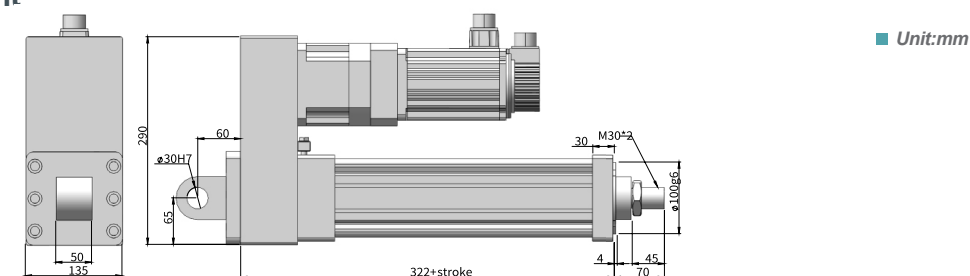
QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		21.73	24.63	27.53	30.43	33.33	36.23	39.13	42.03	44.93	47.83	50.73	53.63	56.53	59.43	62.33	65.23	68.13	71.03



Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		19.83	22.73	25.63	28.53	31.43	34.33	37.23	40.13	43.03	45.93	48.83	51.73	54.63	57.53	60.43	63.33	66.23	69.13

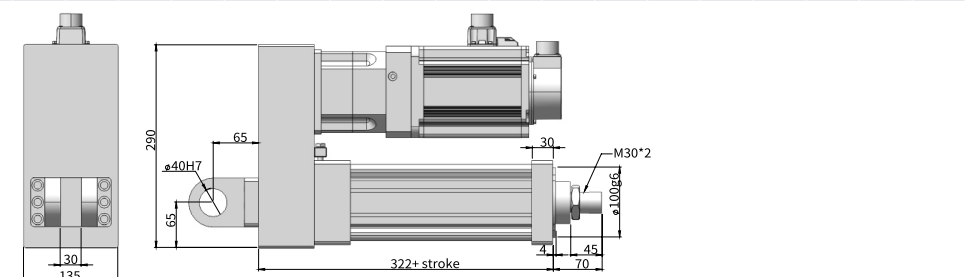
Note: The above data excludes gearbox and servo motor. Weight increases by 0.29 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

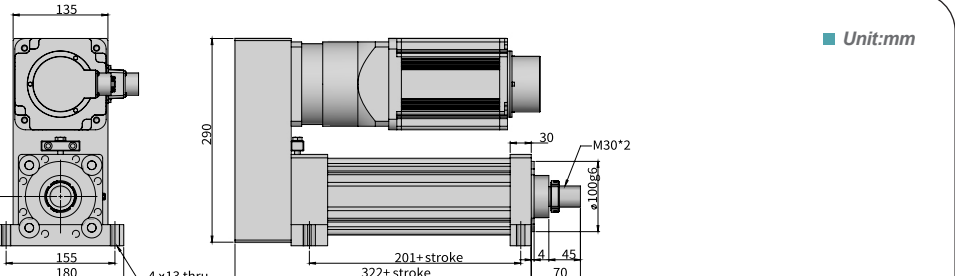
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		20.93	23.83	26.73	29.63	32.53	35.43	38.33	41.23	44.13	47.03	49.93	52.83	55.73	58.63	61.53	64.43	67.33	70.23



CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		21.43	24.33	27.23	30.13	33.03	35.93	38.83	41.73	44.63	47.53	50.43	53.33	56.23	59.13	62.03	64.93	67.83	70.73

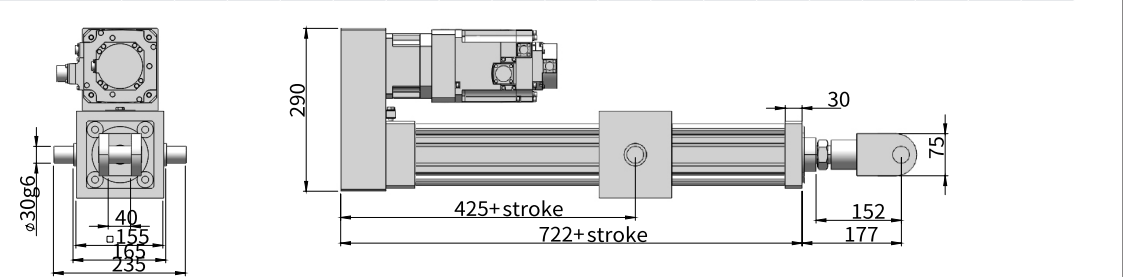
Note: The above data excludes gearbox and servo motor. Weight increases by 0.29 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		20.63	23.53	26.43	29.33	32.23	35.13	38.03	40.93	43.83	46.73	49.63	52.53	55.43	58.33	61.23	64.13	67.03	69.93



TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Weight (kg)		20.83	23.73	26.63	29.53	32.43	35.33	38.23	41.13	44.03	46.93	49.83	52.73	55.63	58.53	61.43	64.33	67.23	70.13

Note: The above data excludes gearbox and servo motor. Weight increases by 0.29 kg per 10 mm stroke.



Max Stroke	2000mm	Max Speed	1000mm/s	Motor Power	1500W	Ball Screw	Ø50mm
------------	--------	-----------	----------	-------------	-------	------------	-------

*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Medium Duty Electric Cylinder

EMR-125 -50 10 C-L100-M-FA - W-P 3K B-J3 - C 3 - F

Inner Dia
80
100
125

Lead
10mm
20mm

Stroke
50-2000mm

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Ball Screw Dia
Ø50mm

Motor Direction
M: Direct Coupled Mount
MR: Parallel Mount

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion
No mark: Standard
Cylinder base

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
1.5K: 1500W
2K: 2000W
3K: 3000W
3.5K: 3500W
7.5K: 7500W

Brake
3, 4, 5Etc.

Gear Ratio
3, 4, 5Etc.

Quantity
1
2
3
No Mark:None

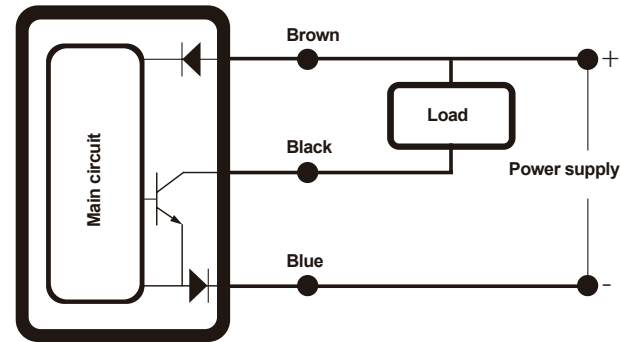
Custom

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

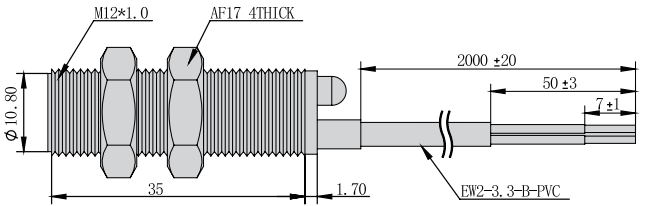
Datasheet

Spec	Repeated accuracy (mm)	±0.02															
	Rated speed of motor (RPM)	3000															
	Ball screw Ø (mm)	Ø50															
	Rated torque (N.m)	4.78				6.37				11.15				23.89			
	Motor power (W)	1500				2000				3500				7500			
	Ball screw lead (mm)	10		20		10		20		10		20		10		20	
	Rated speed (mm/s)	500		1000		500		1000		500		1000		500		1000	
	Rated thrust (KN)	2.55		1.275		3.4		1.7		5.95		2.975		12.75		6.375	
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7	3
	Thrust with Gearbox(KN)	7.65	12.75	17.85	3.825	6.375	8.925	10.2	17	23.8	5.1	8.5	11.9	17.85	29.75	41.65	8.925
	Speed with Gearbox(mm/s)	167	100	71	333	200	143	167	100	71	333	200	143	167	100	71	333
	Valid stroke (mm)	50~2000															
	Sensor	Magnetic Switch															
	Driven system	BallScrew C7 Rolled (Standard) /C5 Ground															
	Max payload (KG)	6T															

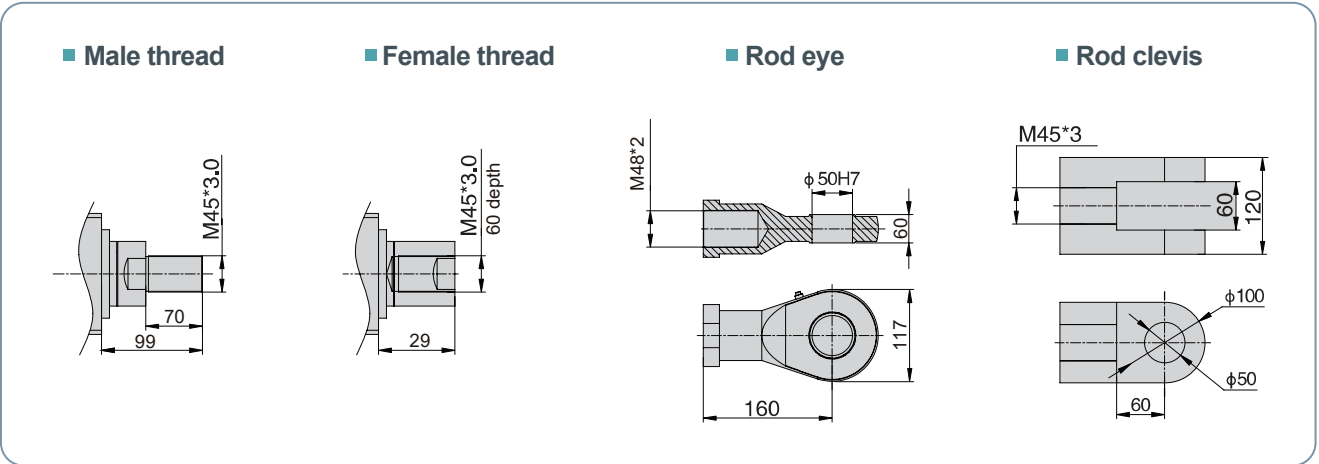
Sensor layout



Size diagram of proximity switch



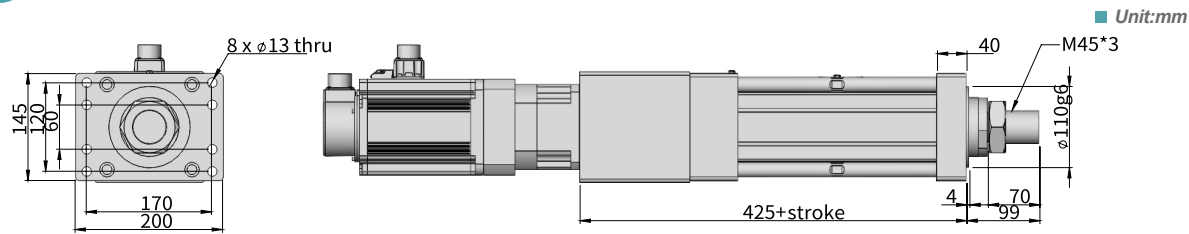
Front joint option



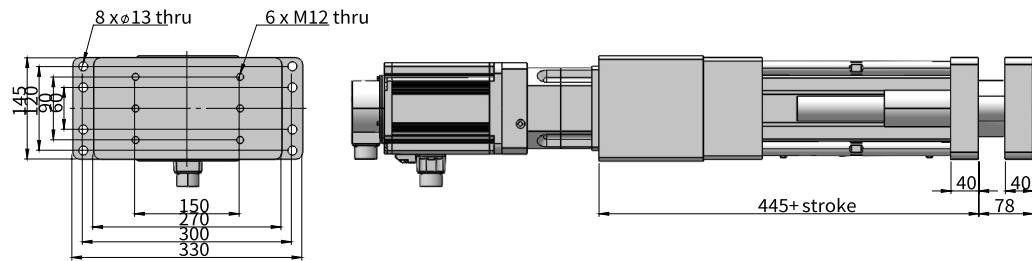


• Motor Direction

M Direct Coupled Mount



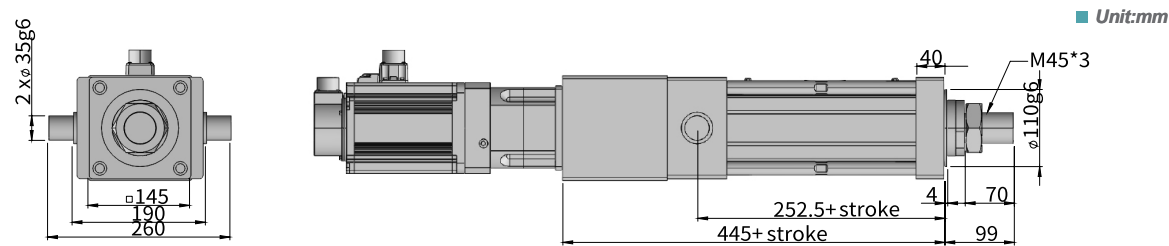
FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Front flange	Weight (kg)	70.6	75.4	80.2	85	89.8	94.6	99.4	104.2	109	113.8	118.6	123.4	128.2	133	137.8	142.6	147.4	152.2	157	161.8



QDX	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Front guidance	Weight (kg)	71.8	76.6	81.4	86.2	91	95.8	100.6	105.4	110.2	115	119.8	124.6	129.4	134.2	139	143.8	148.6	153.4	158.2	163

Note: The above data excludes gearbox and servo motor. Weight increases by 0.48 kg per 10 mm stroke.

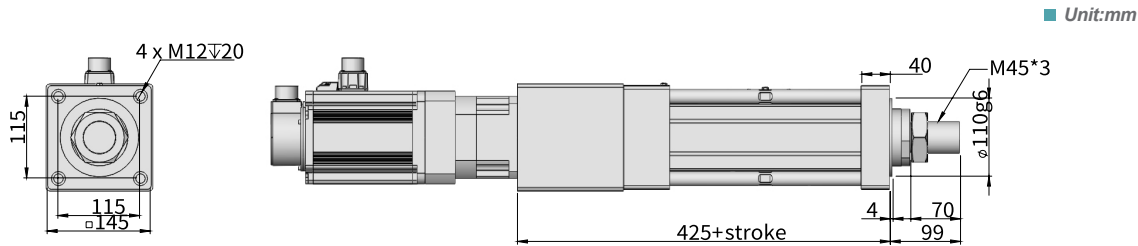
M Direct Coupled Mount



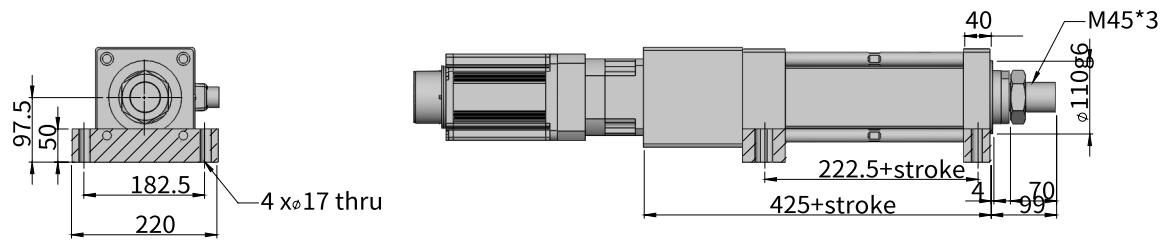
TC	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Trunnion	Weight (kg)	70.9	75.7	80.5	85.3	90.1	94.9	99.7	104.5	109.3	114.1	118.9	123.7	128.5	133.3	138.1	142.9	147.7	152.5	157.3	162.1

Note: The above data excludes gearbox and servo motor. Weight increases by 0.48 kg per 10 mm stroke.

M Direct Coupled Mount



Standard	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Cylinder base	Weight (kg)	69.8	74.6	79.4	84.2	89	93.8	98.6	103.4	108.2	113	117.8	122.6	127.4	132.2	137	141.8	146.6	151.4	156.2	161



LB	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Side mounting	Weight (kg)	70.7	75.5	80.3	85.1	89.9	94.7	99.5	104.3	109.1	113.9	118.7	123.5	128.3	133.1	137.9	142.7	147.5	152.3	157.1	161.9

Note: The above data excludes gearbox and servo motor. Weight increases by 0.48 kg per 10 mm stroke.

ESR

EMR

EHR

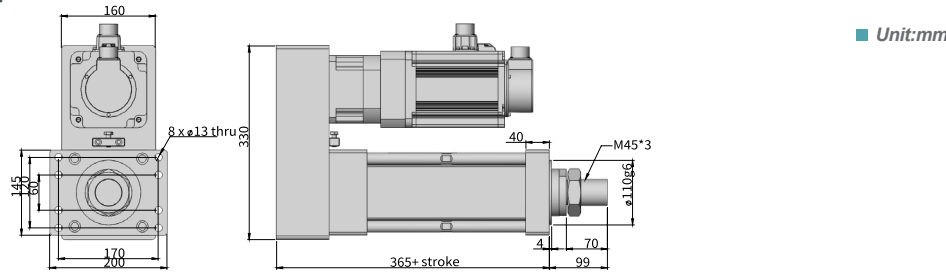
EQR

Reference



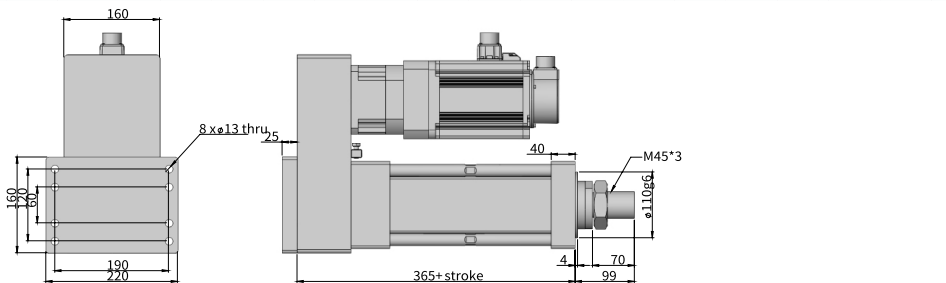
• Motor Direction

MR Parallel Mount



Unit:mm

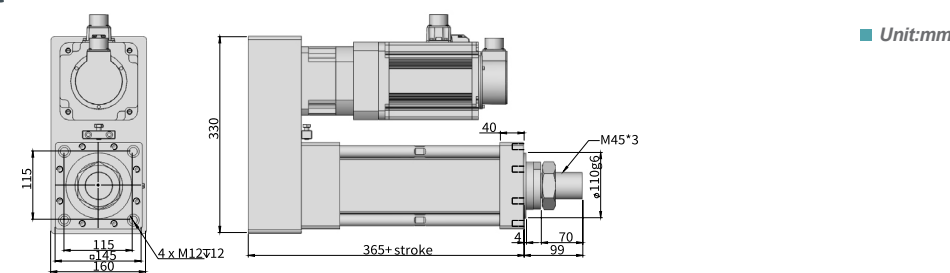
FA Front flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		76.6	81.4	86.2	91	95.8	100.6	105.4	110.2	115	119.8	124.6	129.4	134.2	139	143.8	148.6	153.4	158.2	163	167.8



FB Rear flange	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		76.7	81.5	86.3	91.1	95.9	100.7	105.5	110.3	115.1	119.9	124.7	129.5	134.3	139.1	143.9	148.7	153.5	158.3	163.1	167.9

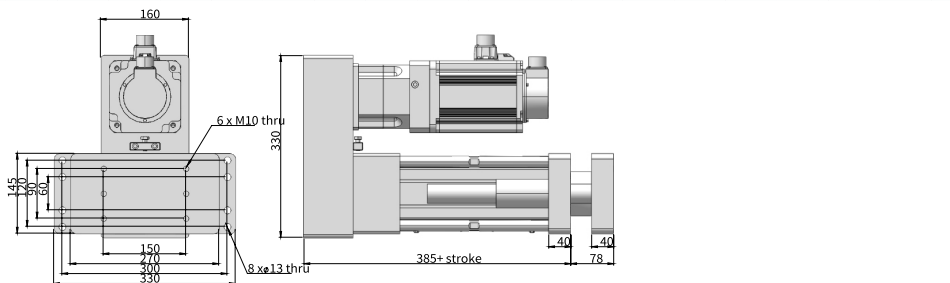
Note: The above data excludes gearbox and servo motor. Weight increases by 0.48 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

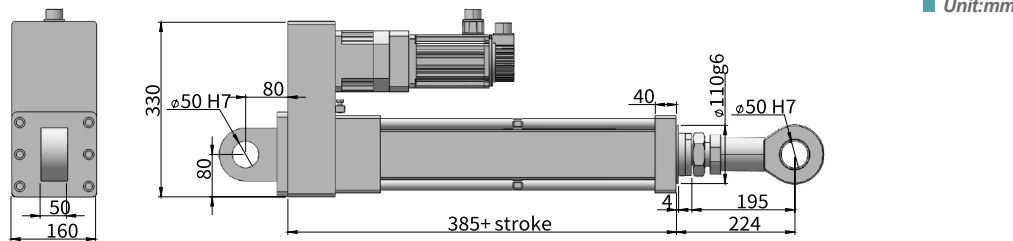
Standard Cylinder base	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		75.8	80.6	85.4	90.2	95	99.8	104.6	109.4	114.2	119	123.8	128.6	133.4	138.2	143	147.8	152.6	157.4	162.2	167



QDX Front guidance	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		77.8	82.6	87.4	92.2	97	101.8	106.6	111.4	116.2	121	125.8	130.6	135.4	140.2	145	149.8	154.6	159.4	164.2	169

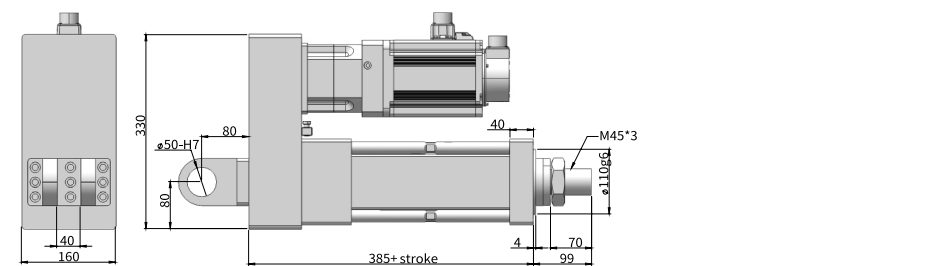
Note: The above data excludes gearbox and servo motor. Weight increases by 0.48 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

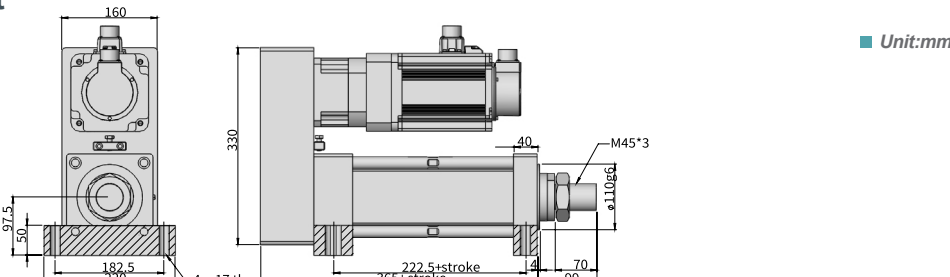
CA Rear eye	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		77	81.8	86.6	91.4	96.2	101	105.8	110.6	115.4	120.2	125	129.8	134.6	139.4	144.2	149	153.8	158.6	163.4	168.2



CB Rear clevis	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		77.5	82.3	87.1	91.9	96.7	101.5	106.3	111.1	115.9	120.7	125.5	130.3	135.1	139.9	144.7	149.5	154.3	159.1	163.9	168.7

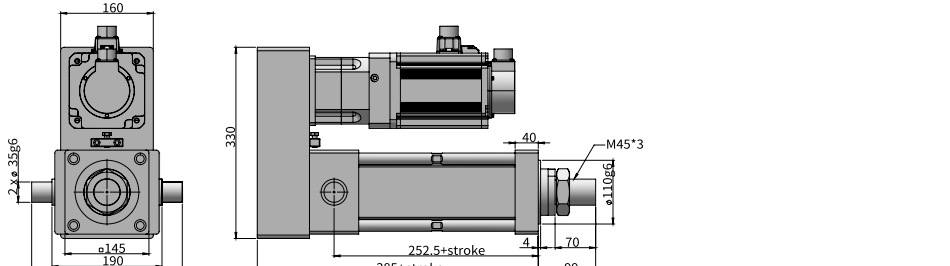
Note: The above data excludes gearbox and servo motor. Weight increases by 0.48 kg per 10 mm stroke.

MR Parallel Mount



Unit:mm

LB Side mounting	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		76.7	81.5	86.3	91.1	95.9	100.7	105.5	110.3	115.1	119.9	124.7	129.5	134.3	139.1	143.9	148.7	153.5	158.3	163.1	167.9



TC Trunnion	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Weight (kg)		76.9	81.7	86.5	91.3	96.1	100.9	105.7	110.5	115.3	120.1	124.9	129.7	134.5	139.3	144.1	148.9	153.7	158.5	163.3	168.1

Note: The above data excludes gearbox and servo motor. Weight increases by 0.48 kg per 10 mm stroke.



Max Stroke	1000mm	Max Speed	1000mm/s	Motor Power	2000W	Ball Screw	Ø40mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty Electric Cylinder

Ball Screw Dia
Ø40mm

Lead
10mm
20mm

Stroke
10-1000mm

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Motor Direction
M: Direct Coupled Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
2K: 2000W
3K: 3000W
3.5K: 3500W
4.5K: 4500W
5.5K: 5500W
7.5K: 7500W

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

Quantity
1
2
3
No Mark:None

Custom

EHR-120-40 10 C-L100-M-FA - W-P 3K B -J3 - C 3 - F

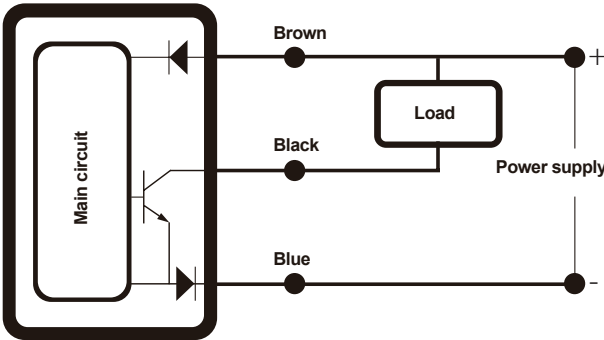
Inner Dia
120
140E1
140E2
140E3
180
220
280
320

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

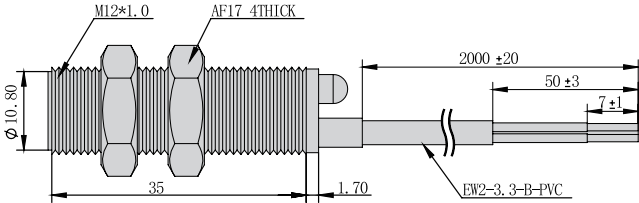
Datasheet

Spec	Repeated accuracy (mm)	±0.02											
	Rated speed of motor (RPM)	3000											
	Ball screw Ø (mm)	Ø40											
	Rated torque (N.m)	6.37			9.55			17.52			23.89		
	Motor power (W)	2000			3000			5500			7500		
	Ball screw lead (mm)	10			10			10			10		
	Rated speed (mm/s)	500			500			500			500		
	Rated thrust (KN)	3.4			5.1			9.35			12.75		
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	10.2	17	23.8	15.3	25.5	35.7	28.05	46.75	65.45	38.25	63.75	89.25
	Speed with Gearbox(mm/s)	167	100	71	167	100	71	167	100	71	167	100	71
	Valid stroke (mm)	10~1000mm											
	Sensor	Proximity Switch											
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground											
	Max payload (KG)	7T											

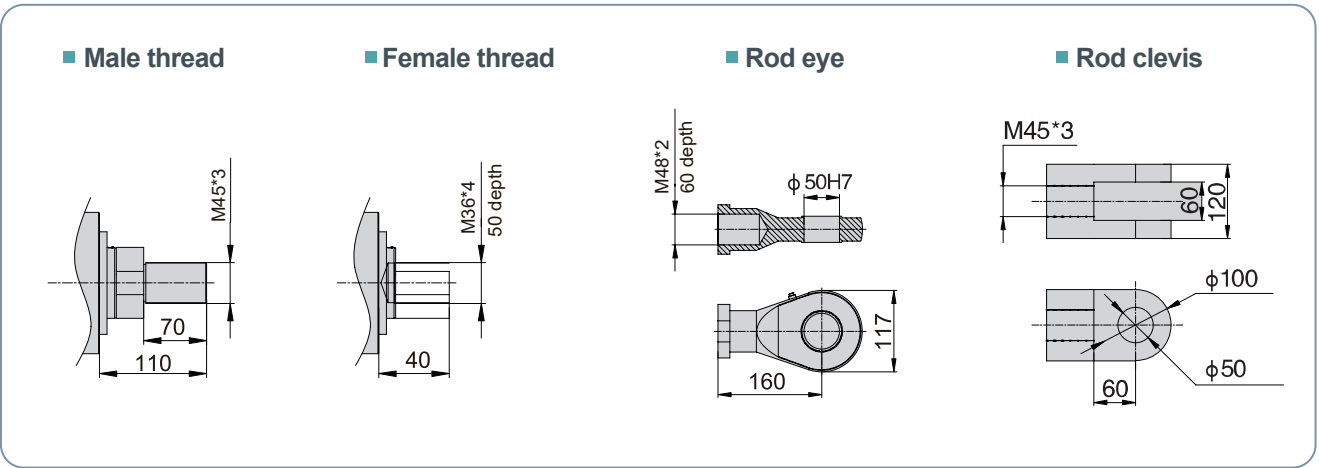
Sensor layout



Size diagram of proximity switch



Front joint option

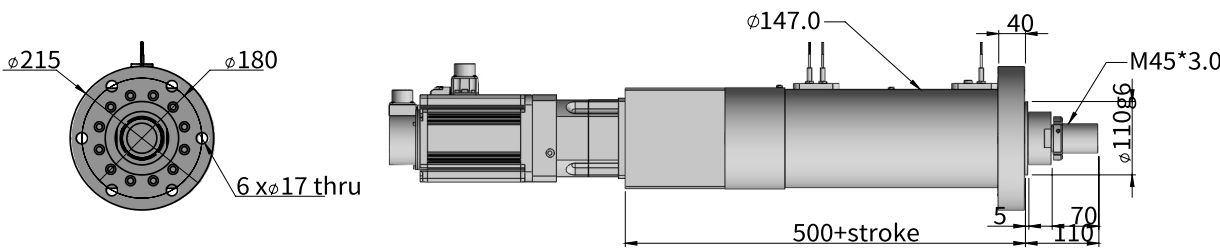




• Motor Direction

M Direct Coupled Mount

Unit:mm

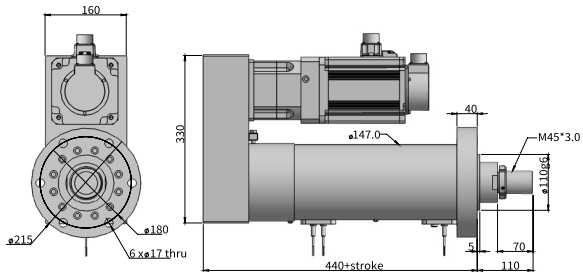


FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	73.9	81.4	88.9	96.4	103.9	111.4	118.9	126.4	133.9	141.4

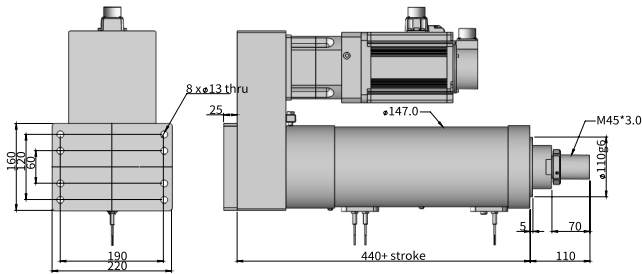
Note: The above data excludes gearbox and servo motor. Weight increases by 0.75 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	75.1	82.6	90.1	97.6	105.1	112.6	120.1	127.6	135.1	142.6



FB	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Rear flange	Weight (kg)	75.2	82.7	90.2	97.7	105.2	112.7	120.2	127.7	135.2	142.7

Note: The above data excludes gearbox and servo motor. Weight increases by 0.75 kg per 10 mm stroke.

MEMO

ESR
EMR
EHR
EQR
Reference



Max Stroke	1000mm	Max Speed	1000mm/s	Motor Power	5500W	Ball Screw	Ø63mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty
Electric Cylinder

Model Series
EHR-140E1-63 20 C-L100-M-FA - W-P 5.5K B-J3 - C 3 - F

Inner Dia
120
140E1
140E2
140E3

Ball Screw Dia
Ø63mm

Lead
10mm
20mm

Stroke
10-1000mm

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Direction
M: Direct Coupled Mount
MR: Parallel Mount

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
5.5K: 5500W
7.5K: 7500W
11K: 11000W
15K: 15000W

Brake
Gear Ratio
3、4、5Etc.

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

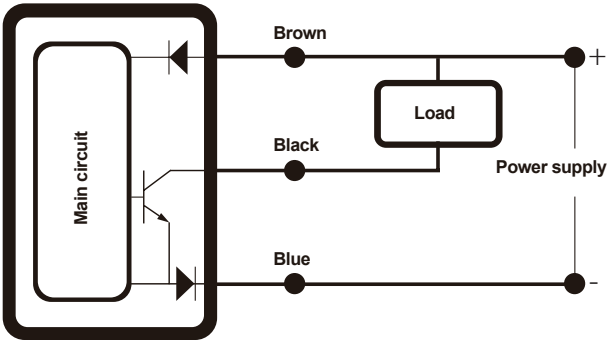
Quantity
1
2
3
No Mark:None

Custom

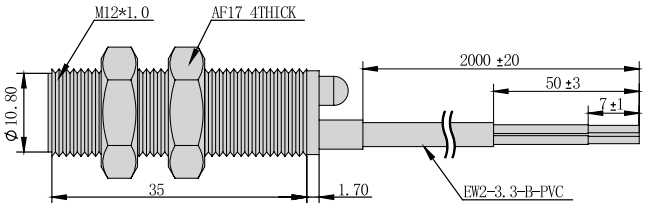
Datasheet

Spec	Repeated accuracy (mm)	±0.02											
	Rated speed of motor (RPM)	3000											
	Ball screw Ø (mm)	Ø63											
	Rated torque (N.m)	17.52			23.89			35.03			47.77		
	Motor power (W)	5500			7500			11000			15000		
	Ball screw lead (mm)	20			20			20			20		
	Rated speed (mm/s)	1000			1000			1000			1000		
	Rated thrust (KN)	4.675			6.375			9.35			12.75		
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	14.025	23.375	32.725	19.125	31.875	44.625	28.05	46.75	65.45	38.25	63.75	89.25
	Speed with Gearbox(mm/s)	333	200	143	333	200	143	333	200	143	333	200	143
	Valid stroke (mm)	10~1000mm											
	Sensor	Proximity Switch											
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground											
Max payload (KG)	12T												

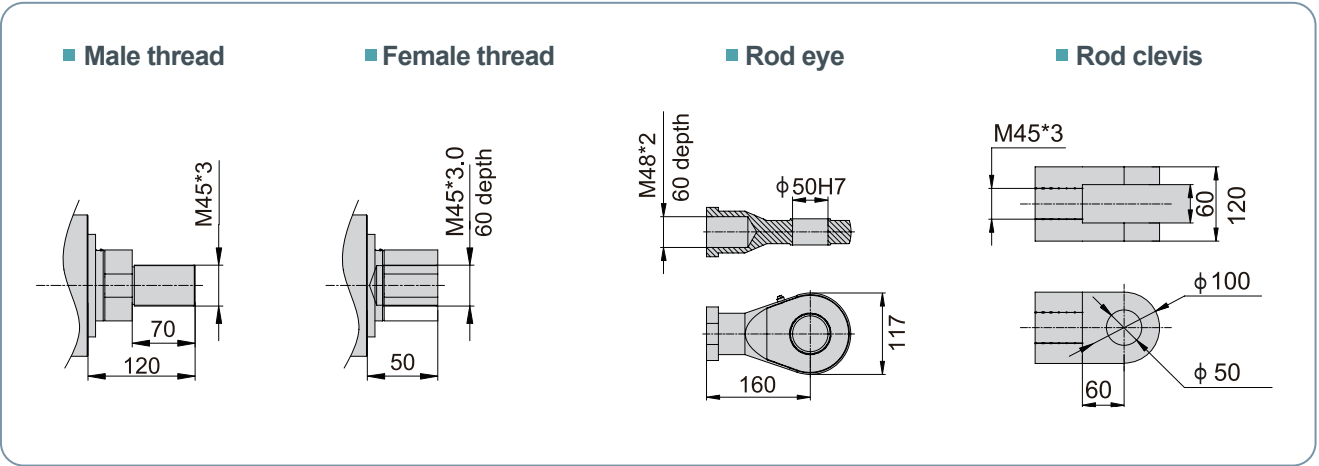
Sensor layout



Size diagram of proximity switch



Front joint option

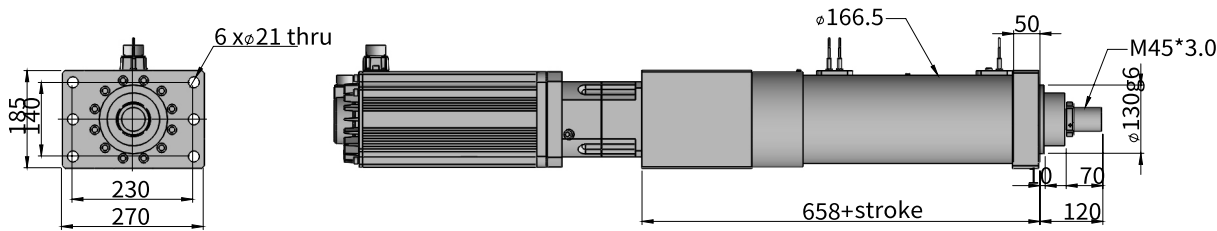




• Motor Direction

M Direct Coupled Mount

Unit:mm

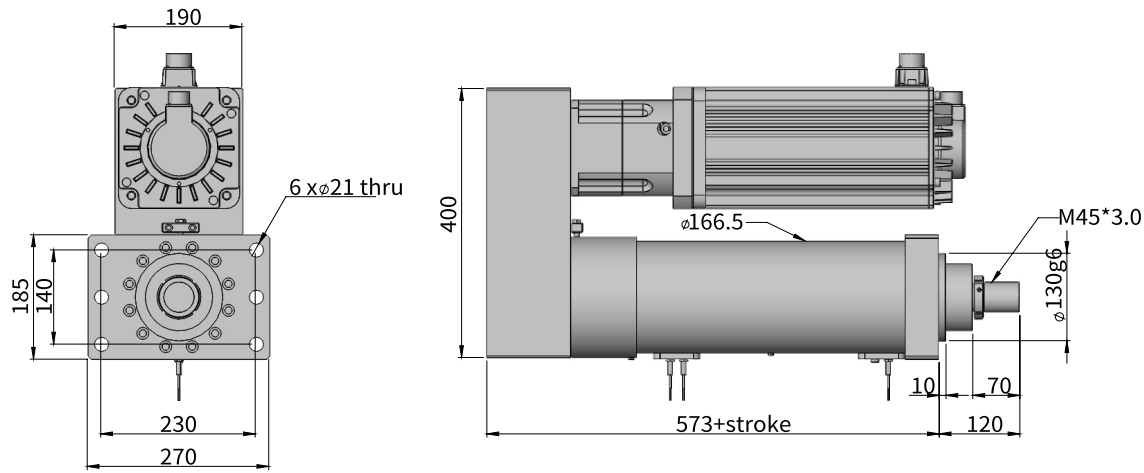


FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	123.3	133.5	143.7	153.9	164.1	174.3	184.5	194.7	204.9	215.1

Note: The above data excludes gearbox and servo motor. Weight increases by 1.02 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	147.3	157.5	167.7	177.9	188.1	198.3	208.5	218.7	228.9	239.1

Note: The above data excludes gearbox and servo motor. Weight increases by 1.02 kg per 10 mm stroke.

MEMO

ESR
EMR
EHR
EQR
Reference



Max Stroke	1000mm	Max Speed	1000mm/s	Motor Power	7500W	Ball Screw	Ø63mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty
Electric Cylinder

Inner Dia
120
140E1
140E2
140E3
180
220
280
320

Ball Screw Dia
Ø63mm

Lead
16mm
20mm

Stroke
10-1000mm

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Motor Direction
M: Direct Coupled
Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
7.5K: 7500W
11K: 11000W
15K: 15000W
22K: 22000W

Brake
Gear Ratio
3、 4、 5Etc.

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

Quantity
1
2
3
No Mark:None

Custom

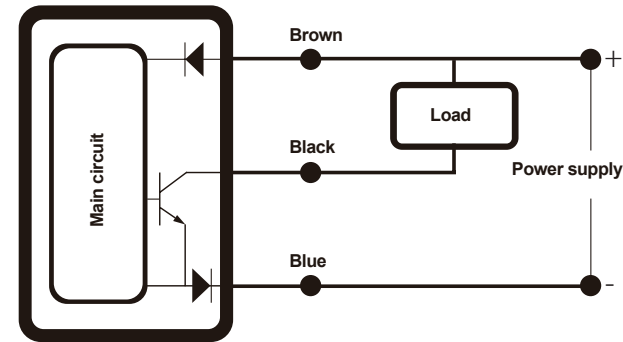
EHR-140E2-63 20 C-L100-M-FA - W-P 7.5K B-J3 - C 3 - F

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

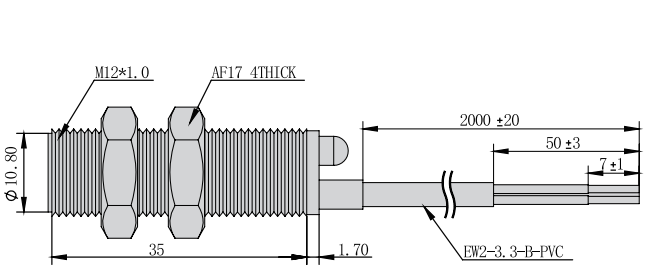
Datasheet

Spec	Repeated accuracy (mm)	±0.02											
	Rated speed of motor (RPM)	3000											
	Ball screw Ø (mm)	Ø63											
	Rated torque (N.m)	23.89			35.03			47.77			70.06		
	Motor power (W)	7500			11000			15000			22000		
	Ball screw lead (mm)	20			20			20			20		
	Rated speed (mm/s)	1000			1000			1000			1000		
	Rated thrust (KN)	6.375			9.35			12.75			18.7		
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	19.125	31.875	44.625	28.05	46.75	65.45	38.25	63.75	89.25	56.1	93.5	130.9
	Speed with Gearbox(mm/s)	333	200	143	333	200	143	333	200	143	333	200	143
	Valid stroke (mm)	10~1000mm											
	Sensor	Proximity Switch											
	Driven system	Heavy-Duty Ball Screw											
	Max payload (KG)	18T											

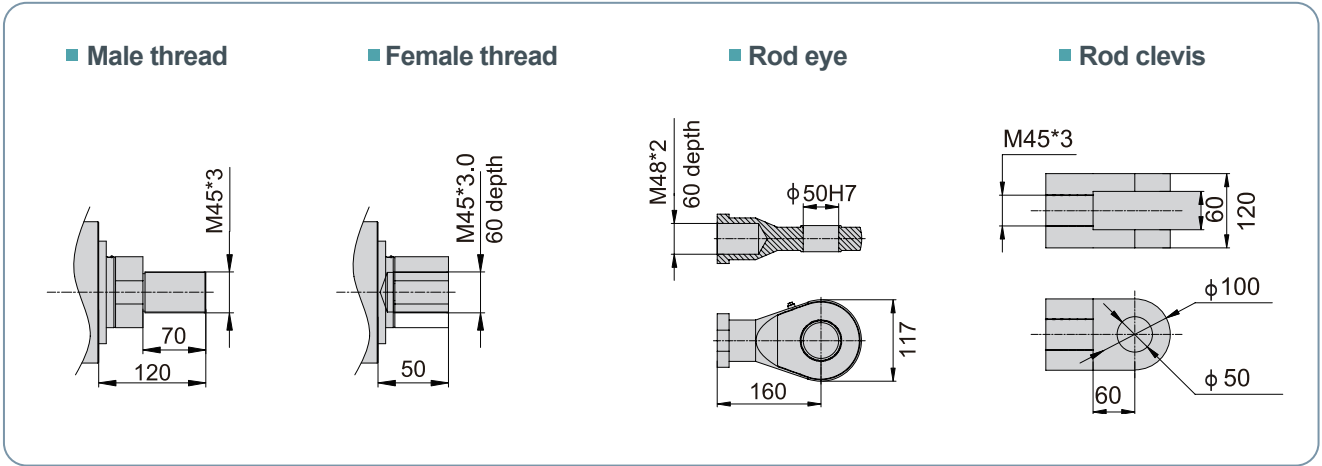
Sensor layout



Size diagram of proximity switch

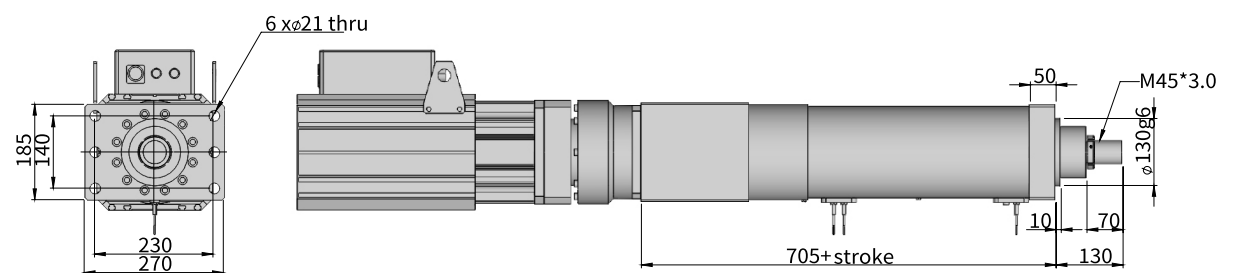


Front joint option



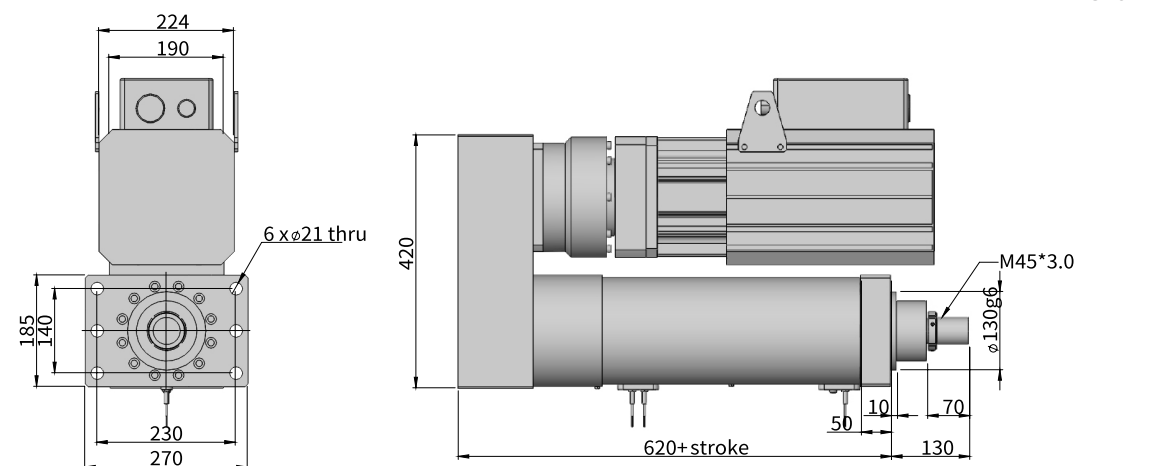
- **Motor Direction**

M Direct Coupled Mount



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	133.3	143.5	153.7	163.9	174.1	184.3	194.5	204.7	214.9	225.1

Note: The above data excludes gearbox and servo motor. Weight increases by 1.02 kg per 10 mm stroke.

 Parallel Mount

FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	157.3	167.5	177.7	187.9	198.1	208.3	218.5	228.7	238.9	249.1

Note: The above data excludes gearbox and servo motor. Weight increases by 1.02 kg per 10 mm stroke.

MEMO



REPEAT
ACCURACY
**± 0.02
MM**

Max Stroke	1000mm	Max Speed	1000mm/s	Motor Power	7500W	Ball Screw	Ø63mm
------------	--------	-----------	----------	-------------	-------	------------	-------

*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty
Electric Cylinder

Inner Dia
120
140E1
140E2
140E3
180
220
280
320

Ball Screw Dia
Ø63mm

Lead
16mm
20mm

Stroke
10-1000mm

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Direction
M: Direct Coupled
Mount
MR: Parallel Mount

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
7.5K: 7500W
11K: 11000W
15K: 15000W
22K: 22000W

Brake
3、4、 5Etc.

Gear Ratio
3、 4、 5Etc.

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

Quantity
1
2
3
No Mark:None

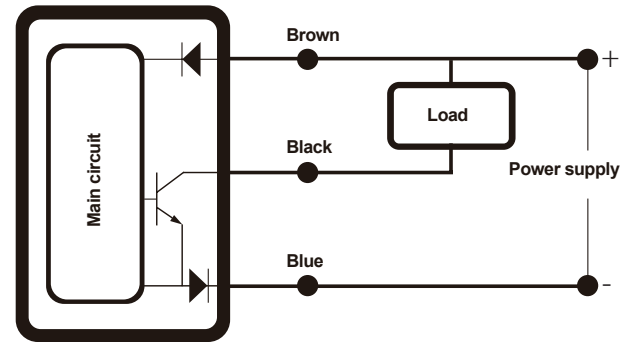
Custom

EHR-140E3-63 20 C-L100-M-FA - W-P 7.5K B-J3 - C 3 - F

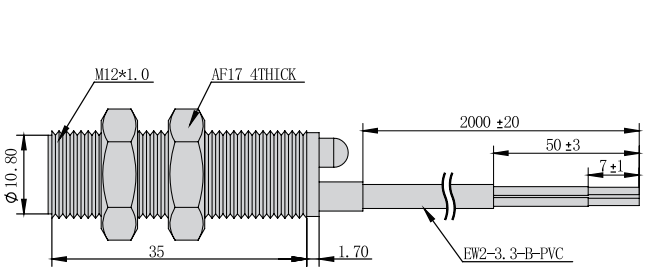
Datasheet

Spec	Repeated accuracy (mm)	±0.02											
	Rated speed of motor (RPM)	3000											
	Ball screw Ø (mm)	Ø63											
	Rated torque (N.m)	23.89			35.03			47.77			70.06		
	Motor power (W)	7500			11000			15000			22000		
	Ball screw lead (mm)	20			20			20			20		
	Rated speed (mm/s)	1000			1000			1000			1000		
	Rated thrust (KN)	6.375			9.35			12.75			18.7		
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	19.125	31.875	44.625	28.05	46.75	65.45	38.25	63.75	89.25	56.1	93.5	130.9
	Speed with Gearbox(mm/s)	333	200	143	333	200	143	333	200	143	333	200	143
	Valid stroke (mm)	10~1000mm											
	Sensor	Proximity Switch											
	Driven system	Heavy-Duty Ball Screw											
Max payload (KG)	18T												

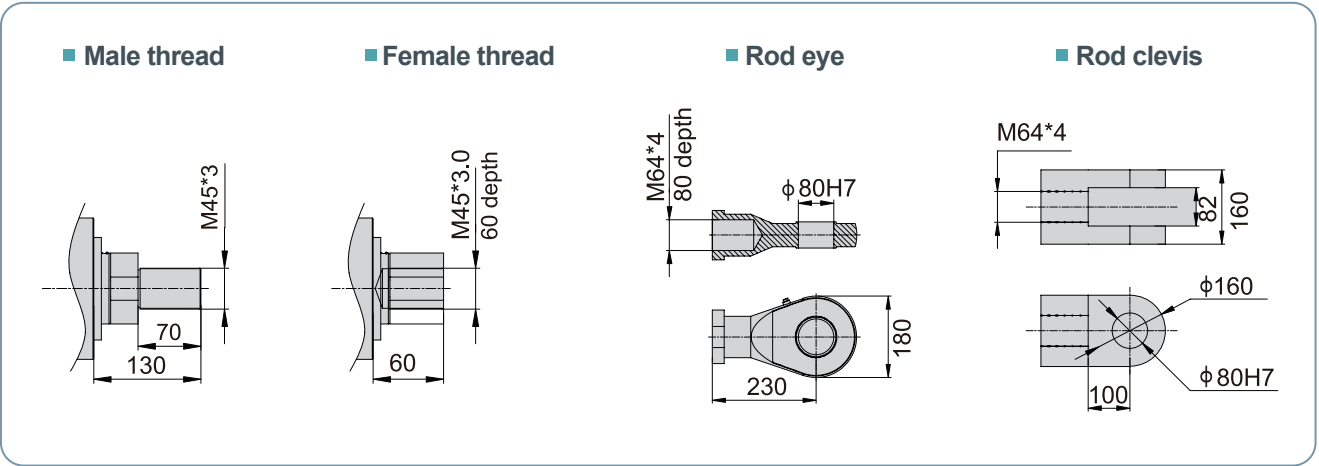
Sensor layout



Size diagram of proximity switch



Front joint option

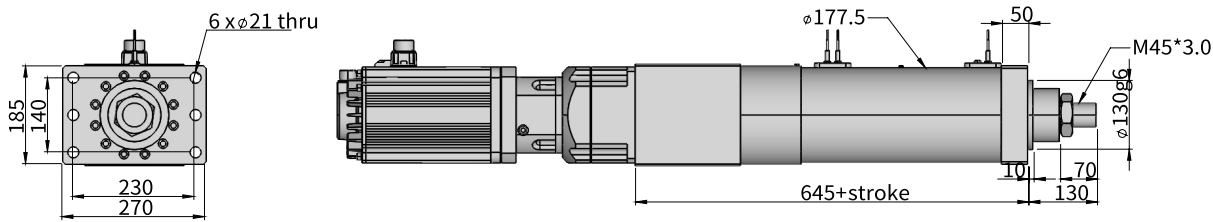




• Motor Direction

M Direct Coupled Mount

Unit:mm

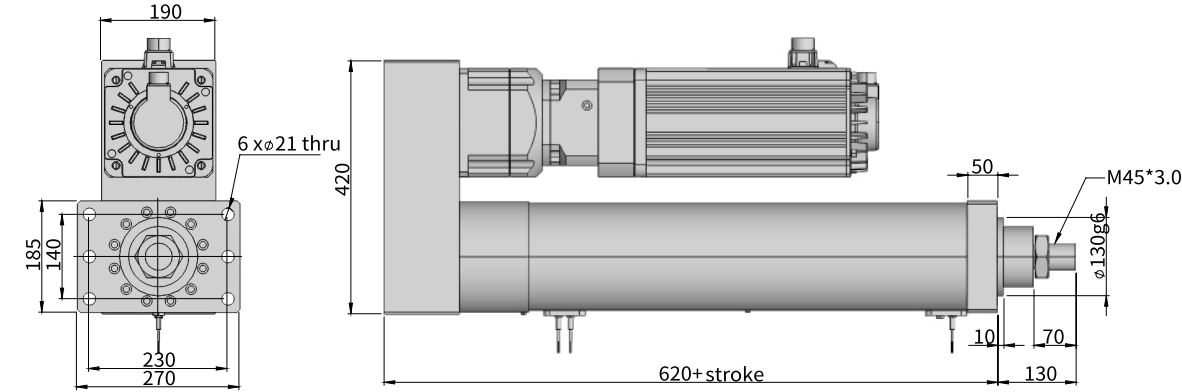


FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	143.4	153.6	163.8	174	184.2	194.4	204.6	214.8	225	235.2

Note: The above data excludes gearbox and servo motor.Weight increases by 1.02 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	176.4	186.6	196.8	207	217.2	227.4	237.6	247.8	258	268.2

Note: The above data excludes gearbox and servo motor.Weight increases by 1.02 kg per 10 mm stroke.

MEMO



REPEAT
ACCURACY
**± 0.02
MM**

Max Stroke	1000mm	Max Speed	1000mm/s	Motor Power	11000W	Ball Screw	Ø83mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty
Electric Cylinder

Ball Screw Dia
Ø80mm

Motor Direction
M: Direct Coupled
Mount
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
11K: 11000W
15K: 15000W
22K: 22000W
30K: 30000W

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

EHR-180 - 80 20 C-L100-M-FA - W-P 11K B-J3 - C 3 - F

Inner Dia
120
140E1
140E2
140E3
180
220
280
320

Lead
20mm

Stroke
10-1000mm

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Brake
3、 4、 5Etc.

Gear Ratio
3、 4、 5Etc.

Quantity
1
2
3
No Mark:None

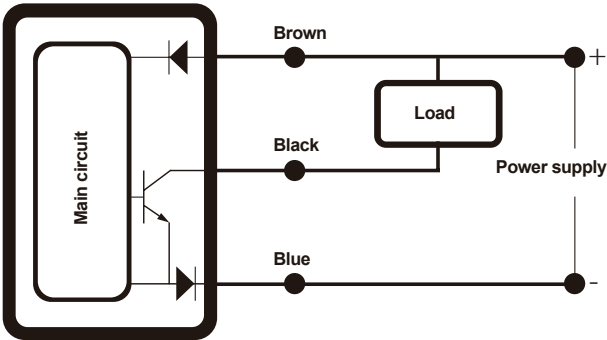
Costom

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

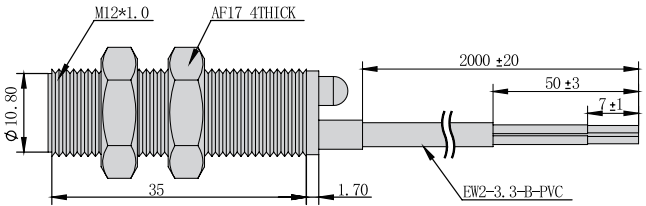
Datasheet

Spec	Repeated accuracy (mm)	±0.02											
	Rated speed of motor (RPM)	3000											
	Ball screw Ø (mm)	Ø80											
	Rated torque (N.m)	35.03			47.77			70.06			95.54		
	Motor power (W)	11000			15000			22000			30000		
	Ball screw lead (mm)	20			20			20			20		
	Rated speed (mm/s)	1000			1000			1000			1000		
	Rated thrust (KN)	9.35			12.75			18.7			25.5		
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	28.05	46.75	65.45	38.25	63.75	89.25	56.1	93.5	130.9	76.5	127.5	178.5
	Speed with Gearbox(mm/s)	333	200	143	333	200	143	333	200	143	333	200	143
	Valid stroke (mm)	10~1000mm											
Sensor	Proximity Switch												
Driven system	Heavy-Duty Ball Screw												
Max payload (KG)	30T												

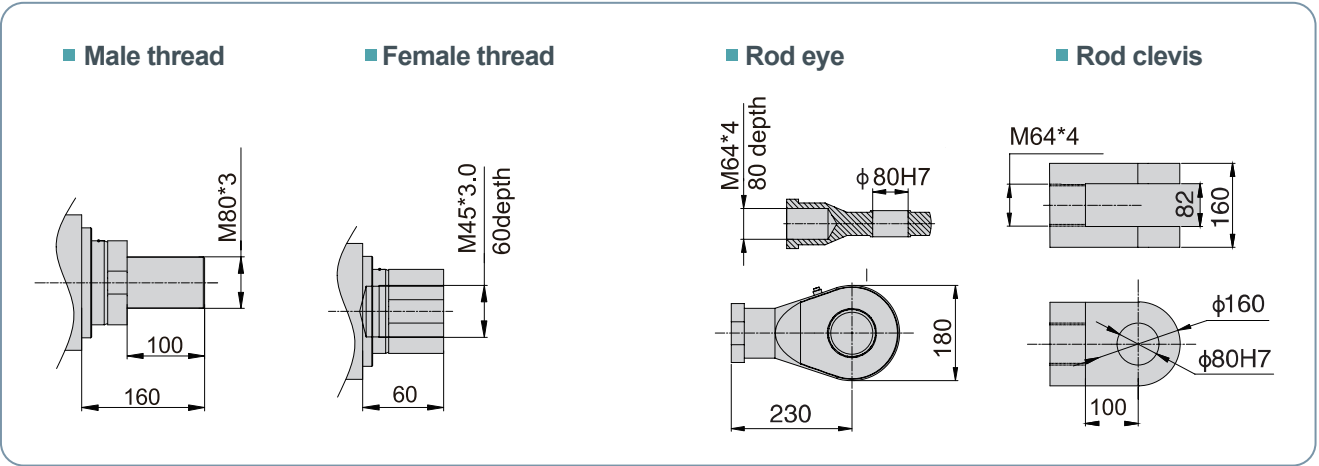
Sensor layout



Size diagram of proximity switch



Front joint option

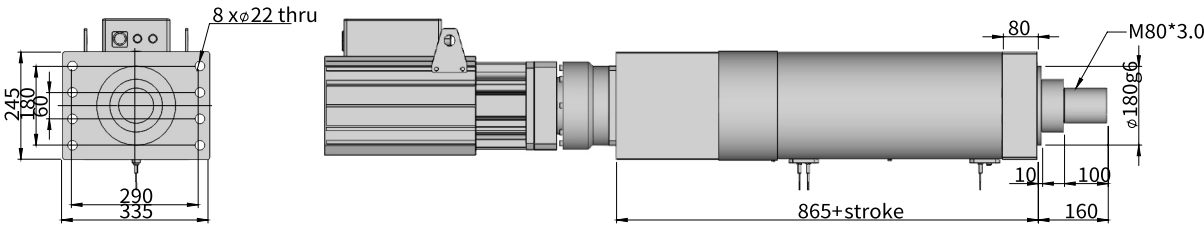




• Motor Direction

M Direct Coupled Mount

Unit:mm

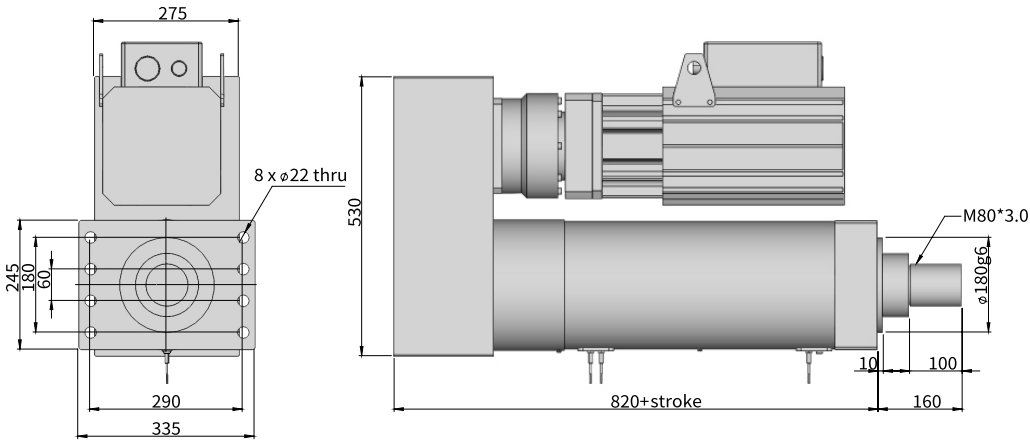


FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	298.3	316.3	334.3	352.3	370.3	388.3	406.3	424.3	442.3	460.3

Note: The above data excludes gearbox and servo motor.Weight increases by 1.8 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	335.3	353.3	371.3	389.3	407.3	425.3	443.3	461.3	479.3	497.3

Note: The above data excludes gearbox and servo motor.Weight increases by 1.8 kg per 10 mm stroke.

MEMO



Max Stroke	1000mm	Max Speed	1250mm/s	Motor Power	15000W	Ball Screw	Ø100mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty Electric Cylinder

Ball Screw Dia
Ø100mm

Inner Dia
120
140E1
140E2
140E3
180
220
280
320

Lead
20mm
25mm

Stroke
10-1000mm

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Direction
M: Direct Coupled Mount
MR: Parallel Mount

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
15K: 15000W
22K: 22000W
30K: 30000W
45K: 45000W

Brake
3、 4、 5Etc.

Gear Ratio
3、 4、 5Etc.

Quantity
1
2
3
No Mark:None

Custom

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

EHR-200-100

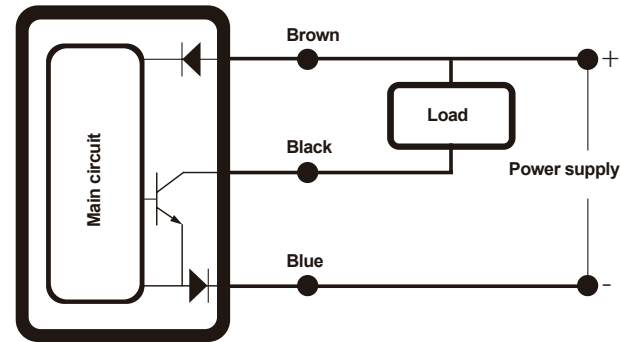
20 C-L100-M-FA - W-P

15K B-J3 - C 3 - F

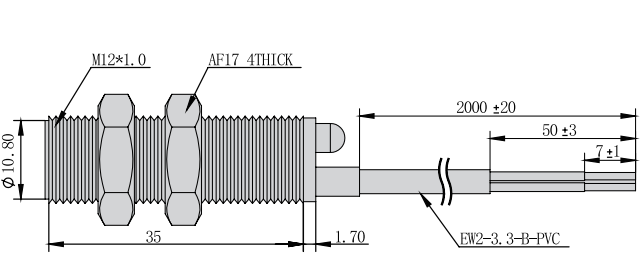
Datasheet

Spec	Repeated accuracy (mm)	±0.02															
	Rated speed of motor (RPM)	3000															
	Ball screw Ø (mm)	Ø100															
	Rated torque (N.m)	47.77				63.69				95.54				143.31			
	Motor power (W)	15000				20000				30000				45000			
	Ball screw lead (mm)	20		25		20		25		20		25		20		25	
	Rated speed (mm/s)	1000		1250		1000		1250		1000		1000		1000		1250	
	Rated thrust (KN)	12.75		10.2		17		13.6		25.50		20.4		38.25		30.6	
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7	3
	Thrust with Gearbox(KN)	38.3	63.8	89.3	30.6	51.0	71.4	51.0	85.0	119.0	40.8	68	95.2	76.5	127.5	178.5	61.2
	Speed with Gearbox(mm/s)	333	200	143	417	250	179	333	200	143	417	250	179	333	200	143	417
	Valid stroke (mm)	10~1000mm															
	Sensor	Proximity Switch															
	Driven system	Heavy-Duty Ball Screw															
	Max payload (KG)	50T															

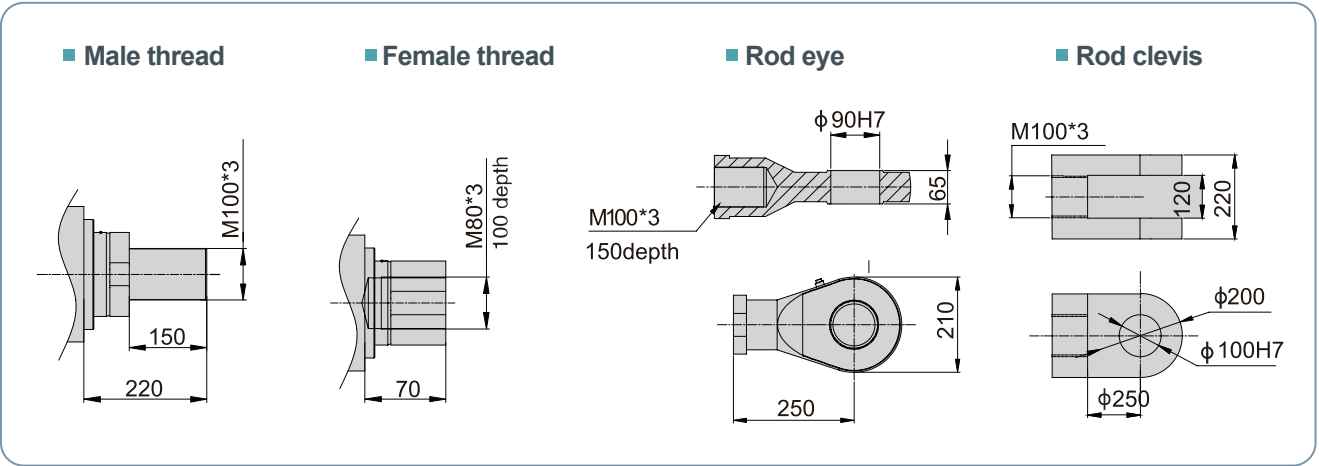
Sensor layout



Size diagram of proximity switch



Front joint option

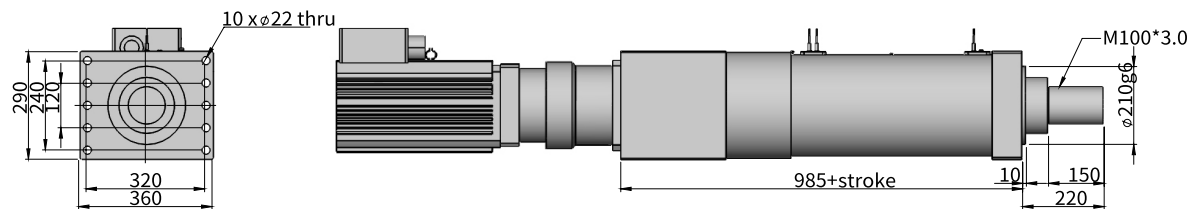




• Motor Direction

M Direct Coupled Mount

Unit:mm

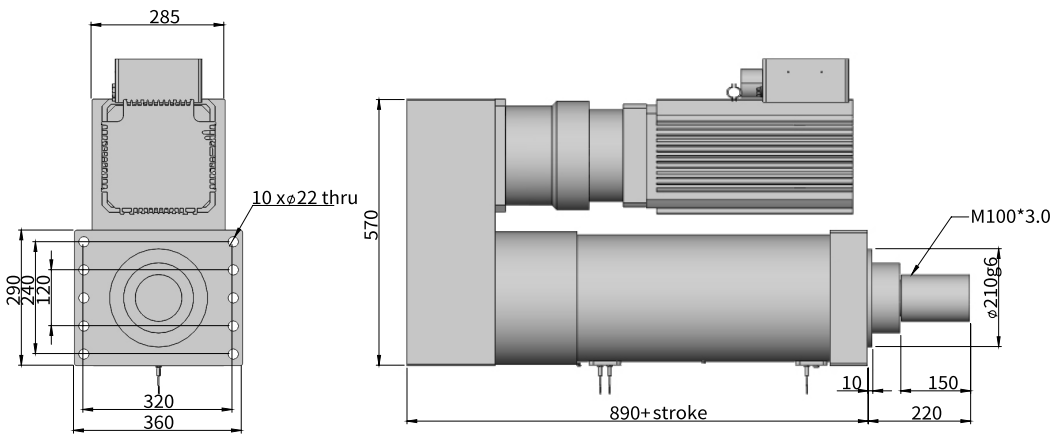


FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	409.4	435.4	461.4	487.4	513.4	539.4	565.4	591.4	617.4	643.4

aNote: The above data excludes gearbox and servo motor.Weight increases by 2.6 kg per 10 mm stroke.

MR Parallel Mount

Unit:mm



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	434.4	460.4	486.4	512.4	538.4	564.4	590.4	616.4	642.4	668.4

Note: The above data excludes gearbox and servo motor.Weight increases by 2.6 kg per 10 mm stroke.

MEMO

ESR
EMR
EHR
EQR
Reference



Max Stroke	1000mm	Max Speed	800mm/s	Motor Power	15000W	Ball Screw	Ø100mm / Ø125mm
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*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty Electric Cylinder

Inner Dia
120
140E1
140E2
140E3
180
220
280
320

Ball Screw Dia
Ø100mm
Ø125mm

Lead
25mm
32mm

Stroke
10-1000mm

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Motor Direction
MR: Parallel Mount

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
15K: 15000W
22K: 22000W
30K: 30000W
45K: 45000W

Brake
3、 4、 5Etc.

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

Quantity
1
2
3
No Mark:None

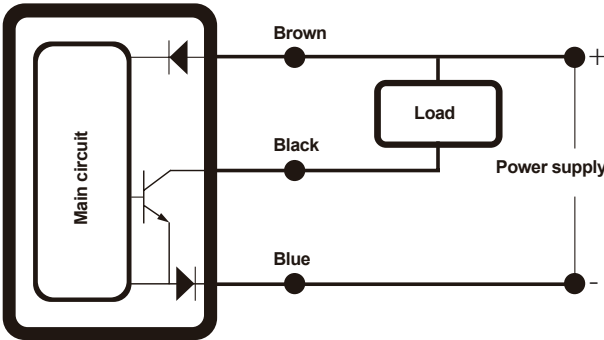
Costom

EHR-280-100 25 C-L100-MR-FA - W-P 15K B-J3 - C 3 - F

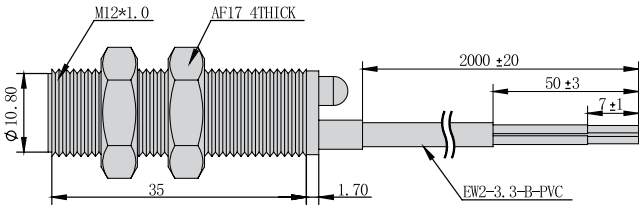
Datasheet

Spec	Repeated accuracy (mm)	±0.02											
	Rated speed of motor (RPM)	1500											
	Ball screw Ø (mm)	Ø100/Ø125											
	Rated torque (N.m)	95.54			127.39			191.08			286.62		
	Motor power (W)	15000			20000			30000			45000		
	Ball screw lead (mm)	25		32		25		32		25		32	
	Rated speed (mm/s)	625		800		625		800		625		800	
	Rated thrust (KN)	20.4		15.94		27.2		21.25		40.8		31.88	
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	61.2	102.0	142.8	47.8	79.7	111.6	81.6	136	190.4	63.8	106.3	148.8
	Speed with Gearbox(mm/s)	208	125	89	267	160	114	208	125	89	267	160	114
	Valid stroke (mm)	10~1000mm											
	Sensor	Proximity Switch											
	Driven system	Heavy-Duty Ball Screw											
	Max payload (KG)	90T											

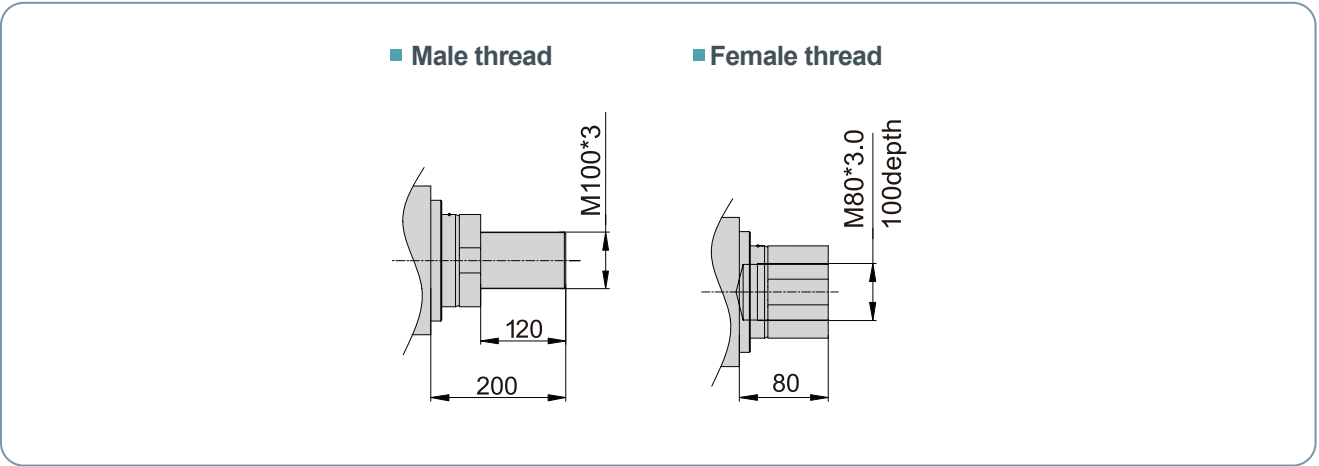
Sensor layout



Size diagram of proximity switch



Front joint option

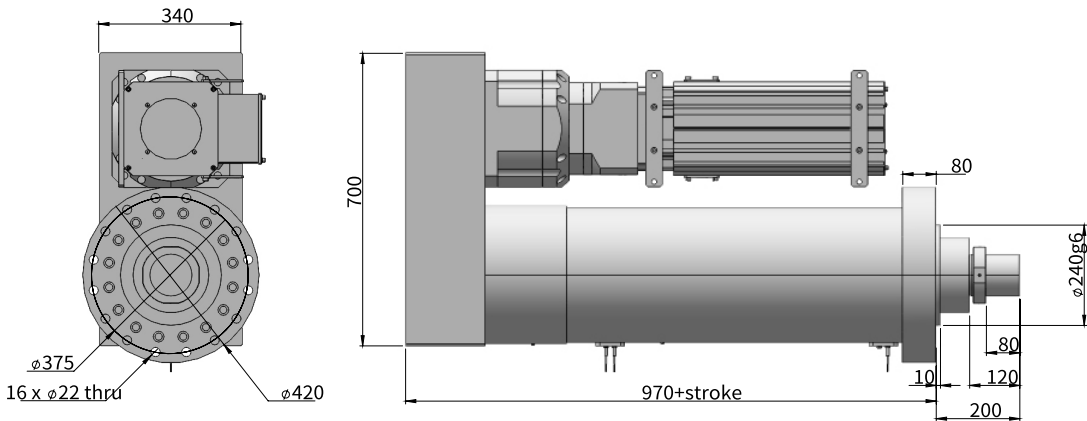




• Motor Direction

MR Parallel Mount

Unit:mm



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	600	650	700
Front flange	Weight (kg)	623.1	652.7	683.3	713.9	744.5	775.1	805.7	836.3	866.9	897.5	775.1	790.4	805.7

Note: The above data excludes gearbox and servo motor.Weight increases by 3.06 kg per 10 mm stroke.

MEMO



Max Stroke	1000mm	Max Speed	1000mm/s	Motor Power	20000W	Ball Screw	Ø160mm
------------	--------	-----------	----------	-------------	--------	------------	--------

*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Heavy Duty Electric Cylinde

Ball Screw Dia
Ø160mm

Motor Direction
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
20K: 20000W
30K: 30000W
45K: 45000W
52K: 50000W

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

EHR-320-160

32

C-L100-MR-FA

- W-P

20K B-J3 - C 3 - F

Lead
32mm
40mm

Stroke
10-1000mm

Installation Flange
FA: Front flange

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Brake
3、4、 5Etc.

Gear Ratio
3、4、 5Etc.

Quantity
1
2
3
No Mark:None

Costom

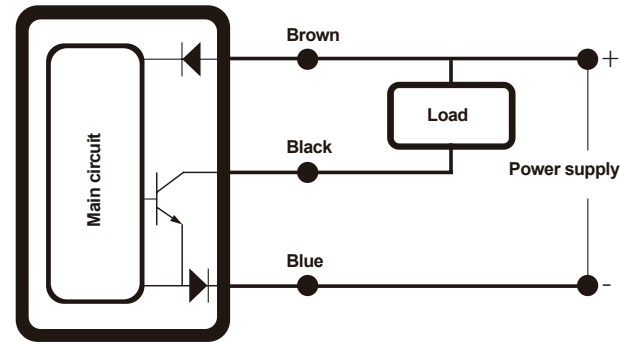
Inner Dia
120
140E1
140E2
140E3
180
220
280
320

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

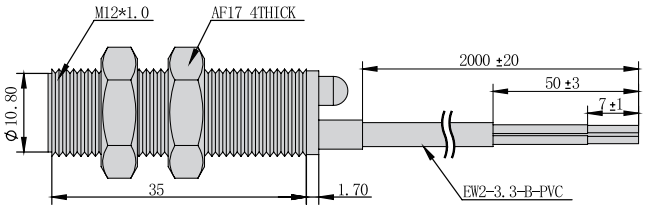
Datasheet

Spec	Repeated accuracy (mm)	±0.02																							
	Rated speed of motor (RPM)	1500																							
	Ball screw Ø (mm)	Ø160																							
	Rated torque (N.m)	127.39				191.08				286.62				331.21											
	Motor power (W)	20000				30000				45000				52000											
	Ball screw lead (mm)	32		40		32		40		32		40		32		40									
	Rated speed (mm/s)	800		1000		800		1000		800		1000		800		1000									
	Rated thrust (KN)	21.25		17.00		31.875		25.50		47.81		38.25		55.25		44.20									
	Gearbox ratio	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7	3	5	7
	Thrust with Gearbox(KN)	63.75	106.25	148.75	51.00	85.00	119.00	95.625	159.375	223.125	76.50	127.50	178.50	143.44	239.06	334.69	114.75	191.25	267.75	165.75	276.25	386.75	132.60	221.00	309.40
	Speed with Gearbox(mm/s)	267	160	114	333	200	143	267	160	114	333	200	143	267	160	114	333	200	143	267	160	114	333	200	143
	Valid stroke (mm)	10~1000mm																							
	Sensor	Proximity Switch																							
	Driven system	Heavy-Duty Ball Screw																							
	Max payload (KG)	120T																							

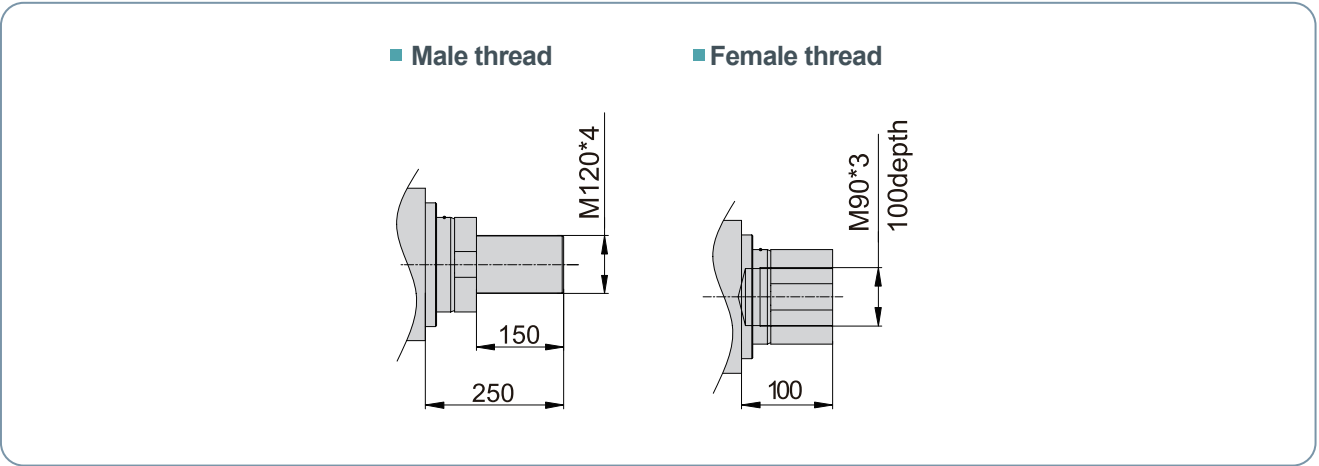
Sensor layout



Size diagram of proximity switch



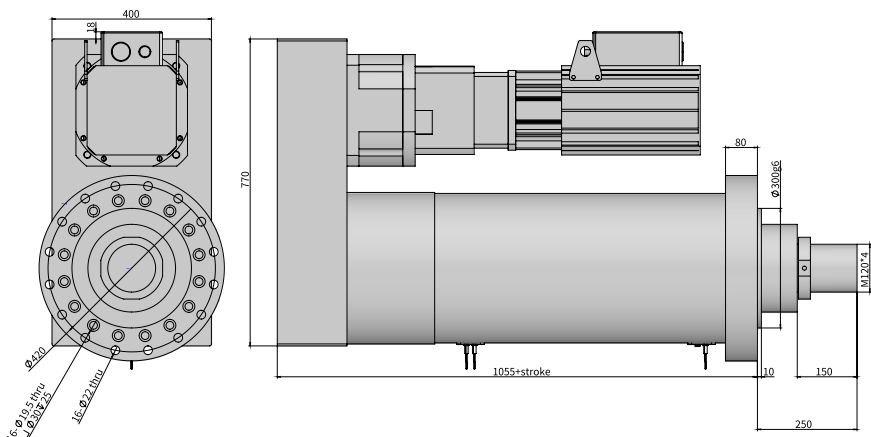
Front joint option





• Motor Direction

MR Parallel Mount



FA	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
Front flange	Weight (kg)	693.8	729	764.2	799.4	834.6	869.8	905	940.2	975.4	1010.6

Note: The above data excludes gearbox and servo motor.Weight increases by 3.06 kg per 10 mm stroke.

MEMO



Max Stroke	2000mm	Max Speed	500mm/s	Motor Power	750W	Ball Screw	Ø32mm / Ø16mm
------------	--------	-----------	---------	-------------	------	------------	---------------

*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Multi-Stage
Telescopic Electric
Cylinder

Inner Dia
70
115

Ball Screw Dia
Ø32mm

Lead
10mm

Stroke
10-2000mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Power
75: 750W

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

Brake
3、4、 5Etc.

Gear Ratio
3、4、 5Etc.

Quantity
1
2
3
No Mark:None

Custom

EQR - 70 - 32 10 C-L100-MR-FA - W-P 75 B-J3 - C 3 - F

Repeated Accuracy
C: Common ±0.02mm
P: Precision ±0.01mm

Datasheet

Spec	Repeated accuracy (mm)	±0.02	
	Rated speed of motor (RPM)	3000	
	Ball screw Ø (mm)	Ø16	Ø32
	Rated torque (N.m)	2.39	
	Motor power (W)	750	
	Ball screw lead (mm)	10	
	Rated speed (mm/s)	500	
	Rated thrust (KN)	1.275	
	Gearbox ratio	5	
	Thrust with Gearbox (KN)	6.375	
	Speed with Gearbox (mm/s)	100	
	Valid stroke (mm)	10~2000mm	
	Retracted Length L1 (mm)	579	
	Cylinder Body Material	Q235	
	Number of Stages	3-stage	
	Sensor	Proximity Switch	
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground	

The inner stroke, thrust and speed can be customized according to actual working conditions.

The stroke of multi-stage telescopic electric cylinder can reach up to 20 meters, with a maximum thrust of 20 ton

Motor Direction

MR Parallel Mount

Unit:mm



Max Stroke	2000mm	Max Speed	1000mm/s	Motor Power	750W	Ball Screw	Ø40mm/Ø20mm
------------	--------	-----------	----------	-------------	------	------------	-------------

*The parameters are for reference only, please contact TPA for more details.

ORDERING GUIDANCE

Model Series
Multi-Stage
Telescopic Electric
Cylinder

Inner Dia
70
115

Ball Screw Dia
Ø40mm

Lead
20mm

Stroke
10-2000mm

Installation Flange
FA: Front flange
FB: Rear flange
CA: Rear eye
CB: Rear clevis
LB: Side mounting
QDX: Front guidance
TC: Trunnion

Motor Direction
MR: Parallel Mount

Front Joint Option
Y: Rod clevis
G: Rod eye
W: Male thread
N: Female thread

Motor Flange
P: Panasonic
M: Mitsubishi
Y: Yaskawa
H: HCFA
T: Delta
HC: Inovance

Motor Power
75: 750W

Brake
B

Gear Ratio
3、 4、 5Etc.

Quantity
1
2
3
No Mark:None

Custom
F

Magnetic Switch
C: 2-wire universal
NO: 3-wire NPN NO
NC: 3-wire NPN NC
PO: 3-wire PNP NO
PC: 3-wire PNP NC

EQR-115 - 40 20 C-L100-MR-FA - W-P 75 B-J3 - C 3 - F

Repeated Accuracy
C: Common ±0.02mm

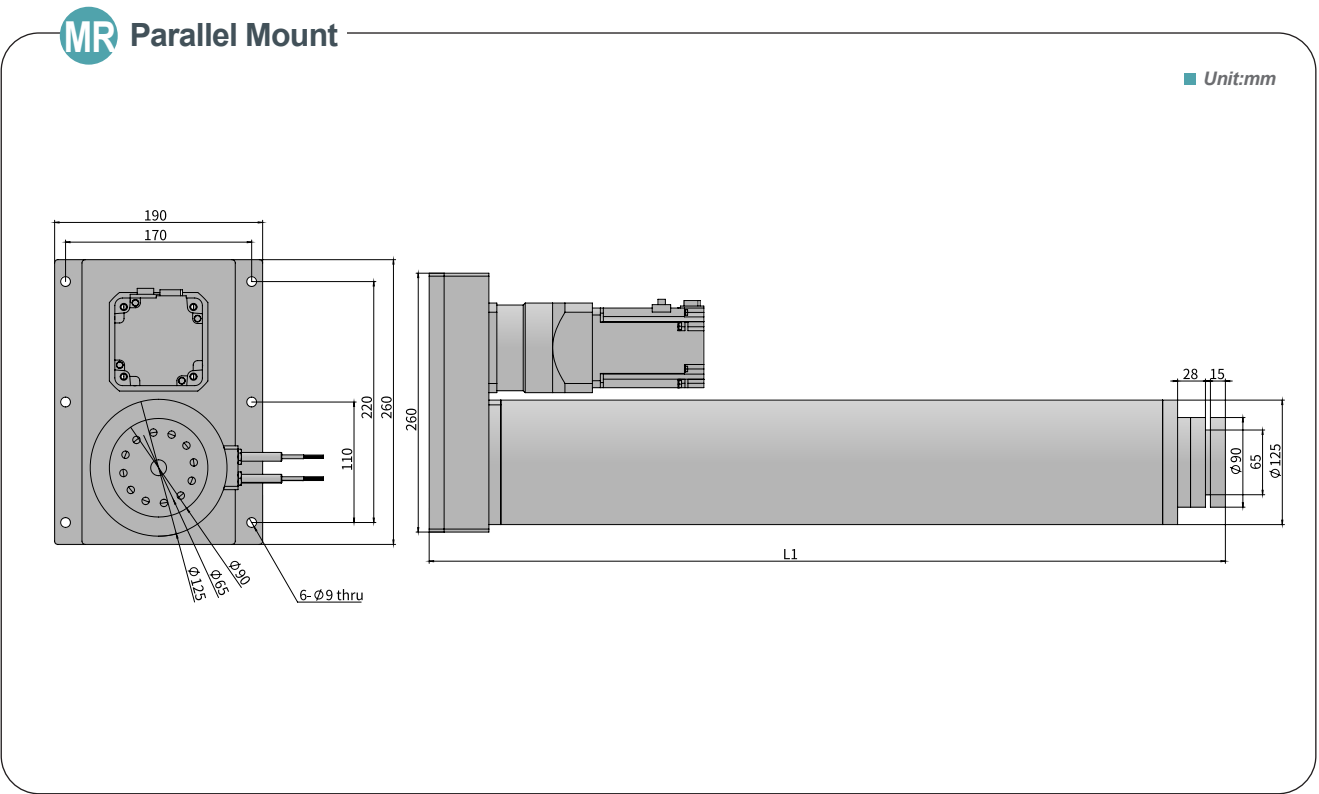
Datasheet

Spec	Repeated accuracy (mm)	±0.02	
	Rated speed of motor (RPM)	3000	
	Ball screw Ø (mm)	Ø20	Ø40
	Rated torque (N.m)	2.39	
	Motor power (W)	750	
	Ball screw lead (mm)	20	
	Rated speed (mm/s)	1000	
	Rated thrust (KN)	0.6375	
	Gearbox ratio	15	
	Thrust with Gearbox (KN)	9.5625	
	Speed with Gearbox (mm/s)	67	
	Valid stroke (mm)	100~2000mm	
	Retracted Length L1 (mm)	800	
	Cylinder Body Material	Q235	
	Number of Stages	3-stage	
	Sensor	Proximity Switch	
	Driven system	Ball Screw C7 Rolled (Standard) / C5 Ground	

The inner stroke, thrust and speed can be customized according to actual working conditions.

The stroke of multi-stage telescopic electric cylinder can reach up to 20 meters, with a maximum thrust of 20 ton

Motor Direction





• Gearbox

When there is a need for low-speed operation, a gearbox can be used to reduce the rotation speed of the motor, and unstable operation at low speed can be avoided. In addition, the gearbox can improve the output torque. The output ratio is multiplied by the reduction ratio according to the motor output, and attention should be paid in the selection not to exceed the rated torque of the gearbox.

Example of deceleration: 3000rpm motor, matched with gearbox with 1:5 upper reduction ratio, that is, $3000/5 = 600\text{rpm} = 10\text{RPS}$.
Its speed is: (lead x rotation speed) $200 \times 10 = 2000\text{MM/s}$.

※There is high temperature in the deceleration opportunity, and it may cause scalding if contacted. Therefore, please cut off the power supply of the controller and be quiet during contact inspection. Wait for a moment and make contact after confirming the temperature drop. If you have any questions about the matching of gearboxes, please contact our company.

Gearbox reference



Brand	Model
APEX	AB060
	AB090
TWPX	PS060
	PS090
CST	RH060
	RH092
PHT	DS060
GTC	GNP60

When selecting the sliding table, you can choose to install the reducer according to the use requirements. The attached table above shows the brand and model of the reducer. And its detailed specification and size information, Please refer to the specifications of each brand.

• Calculations about Servo Motors

► A-Motor torque calculation formula:

$$T = 9.5 \times P / N$$

T=motor torque
P=motor power
N=motor speed

► B-Screw thrust calculation formula:

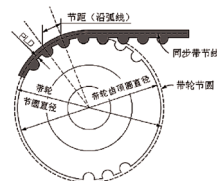
$$F = T_m \times 2 \times \pi \times \eta / S$$

F=Ball screw thrust
T_m=Force torque
η=Positive efficiency of motor
S=Lead of ball screw

► C-Pulley lead calculation formula:

$$PD = \text{Pitch} \times Z / \pi$$

PD = Pitch Diameter
Pitch = Circular Pitch
Z = Number of Teeth



• Ball Screw Accuracy Grade



Ball screw (schematic diagram)

International standard accuracy grade of ball screw (Unit: 0.001mm)

International standard accuracy grade of ball screw (Unit: 0.001mm)

Class		Grinding grade							Rolling grade		
		C0	C1	C2	C3	C4	C5	C6	C7	C8	C10
V300	ISO,DIN	-	6	-	12	-	23	-	52	-	210
	TBI/PMI	3.5	5	-	8	-	18	-	50	-	210
	HIWIN	3.5	5	6	8	12	18	23	50	100	210

Diameter, accuracy and manufacturing length of ball screw (unit: mm)

Accuracy	Diameter								
	6	8	10	12	16	20	25	28	32
C3	170	250	500	630	1000	1400	1800	2000	2500
C4	170	250	500	630	1000	1400	1800	2000	2500
C5	170	250	500	630	1410	1700	2400	2500	3000
C6	400	800	1000	1200	1500	1800	2500	3000	3000
C7	400	800	1000	1200	3000	3000	4000	4000	4500

Accuracy	Diameter								
	36	40	45	50	55	63	70	80	100
C3	3200	3500	4000	4500	5000	6000	7100	10000	10000
C4	3200	3500	4000	4500	5000	6000	7100	10000	10000
C5	3200	3800	4000	5000	5500	6900	7100	10000	10000
C6	4000	4000	4000	5600	5600	6900	7100	10000	10000
C7	4500	5600	5600	5600	5600	6900	7100	10000	10000

When selecting the screw slide table, the screw grade can be selected according to the actual use requirements. The following table is the recommendation table for the use of screw grade.

Use	Accuracy	
	C5	C7
Special machine	●	
Woodworking machine		●
Robot Arm (General Grade)	●	●
Traditional machinery	●	
Transport device	●	●
X-Y stage	●	
Valve		●
Power steering gear		●
Glass grinder	●	
Surface grinder	●	
Semiconductor equipment		●
All electric injection molding	●	●



• Coupling

Notes on Installation of Diaphragm Coupling

Locking force when locking screws, please refer to the following table, do not overexert or unlocked.

When the clamping screw is loose, please confirm whether the coupling can move slightly in the axial and rotational directions. If you can't move smoothly, you need to readjust two. Concentricity of shaft (motor locking screw).

If the concentricity of the 2 axes is too large, it will cause abnormal sound or cause damage to the coupling.

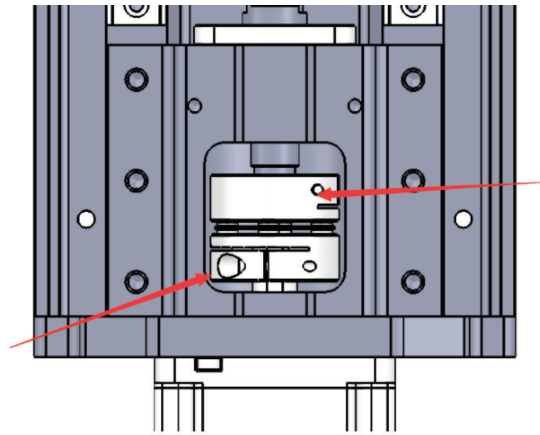


Figure1

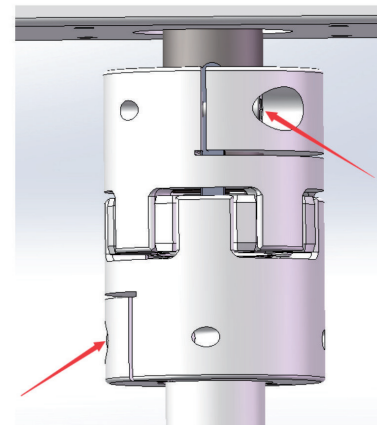


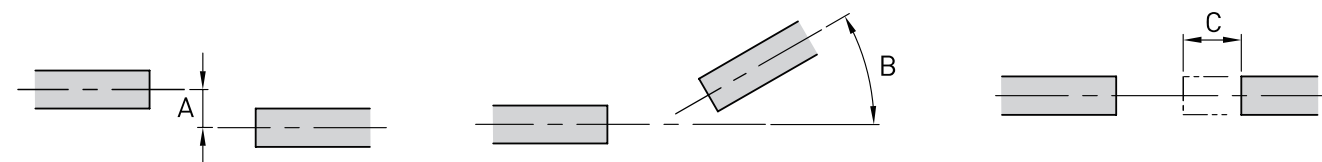
Figure2

Size	Clamping bolt	Locking torque(N·m)
20	M2.5	1.0-1.1
25	M2.5	1.0-1.1
30	M3	1.5-1.9
35	M4	3.4-4.1
40	M4	3.4-4.1
50	M5	7.0-8.5

As shown in figure 1、2, first put on the coupling, turn it by hand to detect the concentricity, and then lock the screw according to the torsional force in the left figure.

Assembly Deviations Between Screw and Motor Shaft

When assembling the ball screw and motor shaft, the following three basic deviations should be paid attention to. The illustration is as follows.



1、(A) Eccentricity

2、(B) Deflection

3、(C) Axial displacement

If you purchase the motor for installation by yourself, pay special attention to the following points when installing the coupling:

● Please refer to the right table for the corresponding locking force when locking screws. Do not apply excessive force or unlock them.

● Although the clamping screw is loose, please confirm whether the coupling can be light in the axial and rotational directions. Move lightly. If it can't move smoothly, it is necessary to readjust the concentricity of the two shafts (motor locking screws).

● If the concentricity of two shafts is too different, abnormal sound will be produced or the coupling will be damaged.
※ If there is any problem in adjusting the alignment of two axes, please contact our company.

The clamping bolt	Locking torque(N·m)
M2.5	1.0-1.1
M2.5	1.0-1.1
M3	1.5-1.9
M4	3.4-4.1
M4	3.4-4.1
M5	7.0-8.5

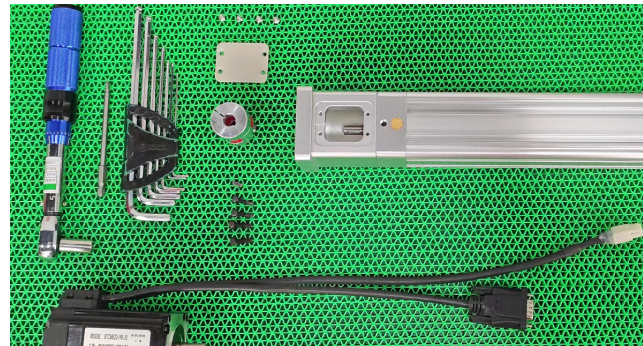
Reference Data of Coupling

Model	Permissible torque [N·m]	Maximum permissible error			Max speed [min ⁻¹]	Torsional elasticity [N·m/red]	Axial elasticity [N·m/red]	Moment of inertia [kg·m ²]	Weight [kg]
		Eccentricity [mm]	Declination [°]	Axial displacement [mm]					
SFC-005SA2	0.5	0.02	0.5	±0.05	10000	500	140	0.25x10 ⁻⁶	0.007
SFC-010SA2	0.8	0.02	1	±0.1	10000	1400	140	0.58x10 ⁻⁶	0.011
SFC-020SA2	1.5	0.02	1	±0.15	10000	3700	64	2.36x10 ⁻⁶	0.025
SFC-030SA2	4	0.02	1	±0.2	10000	8000	64	4.00x10 ⁻⁶	0.033
								6.06x10 ⁻⁶	0.041
								8.12x10 ⁻⁶	0.049
SFC-035SA2	6	0.02	1	±0.25	10000	18000	112	18.43x10 ⁻⁶	0.084
SFC-040SA2	10	0.02	1	±0.3	10000	20000	80	16.42x10 ⁻⁶	0.076
								22.98x10 ⁻⁶	0.09
								29.53x10 ⁻⁶	0.105
SFC-050SA2	25	0.02	1	±0.4	10000	32000	48	54.88x10 ⁻⁶	0.156
								77.10x10 ⁻⁶	0.185
								99.33x10 ⁻⁶	0.214
SFC-060SA2	60	0.02	1	±0.45	10000	70000	76.4	143.7x10 ⁻⁶	0.279
								206.1x10 ⁻⁶	0.337
								268.5x10 ⁻⁶	0.396
SFC-080SA2	100	0.02	1	±0.55	10000	140000	125	709.3x10 ⁻⁶	0.727
SFC-090SA2	180	0.02	1	±0.65	10000	100000	108	1227x10 ⁻⁶	0.959
SFC-100SA2	250	0.02	1	±0.74	10000	120000	111	1858x10 ⁻⁶	1.181

※ The moment of inertia and mass in the table are the values at the maximum aperture.
The values of torsional elasticity constants in the table are only the values of individual components.



Motor direct coupled mount



- **Step 1** Prepare the coupling, motor, key, hex wrench, torque wrench, and related accessories.



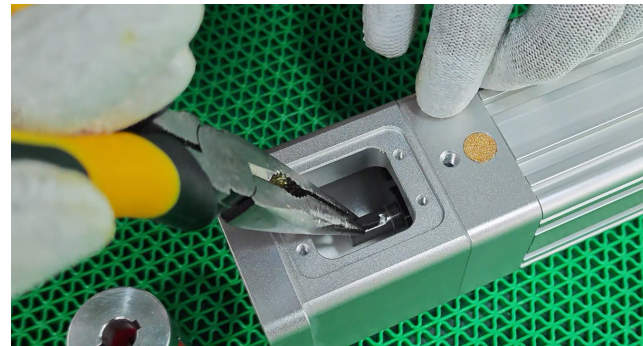
- **Step 3** Install the key into the motor shaft keyway.



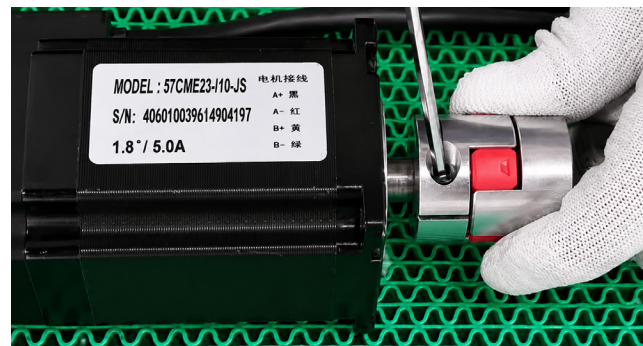
- **Step 5** Mount the motor assembly onto the screw shaft end. Pre-tighten the four motor mounting bolts in a diagonal sequence, then tighten them to the specified torque.



- **Step 7** Install and secure the coupling cover.



- **Step 2** Install the key into the screw shaft keyway.



- **Step 4** Pre-tighten the motor-side coupling screws and tighten them to the specified torque.



- **Step 6** Tighten the screw-side coupling screws to the specified torque.

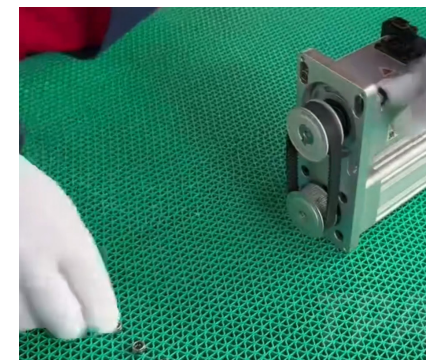


- **Step 8** Manually move the piston rod to verify smooth operation and ensure there is no abnormal noise or binding.

Motor parallel mount



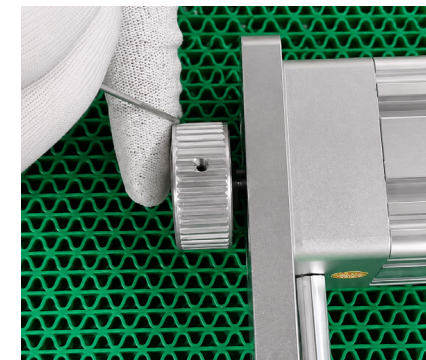
- **Step 1** Secure the turning plate to the bearing housing and tighten the mounting screws.



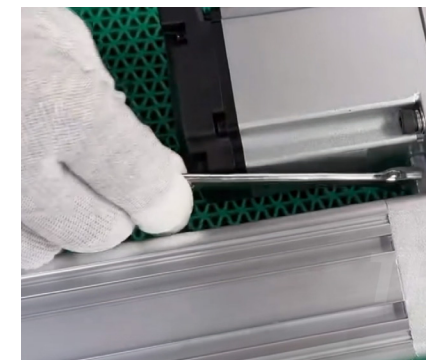
- **Step 4** Center the timing belt and pre-tighten the motor-side lock nuts.



- **Step 7** Tighten the four motor mounting screws.



- **Step 2** Install the set screws into the timing pulley and secure the pulley to the screw shaft end.



- **Step 5** Adjust the timing belt tension using a wrench.



- **Step 8** Manually move the piston rod to check for abnormal noise, binding, or belt misalignment.



- **Step 3** Install the motor-side timing pulley and ensure both pulleys are properly aligned.



- **Step 6** Measure and adjust the belt tension frequency to approximately 180 Hz.



- **Step 9** Install the motor cover and tighten the corresponding screws.



• Safety use and cautions

Here are a few Suggestions to prevent problems during product use.

In order to prevent accidents and safety maintenance, before you use the company's product,you must understand the characteristics of the products and use conditions,installation instructions.

Please use the product of this model within the selected parameter range, and do not use it beyond the parameter range, otherwise it will cause unpredictable danger. If it is used under special conditions, it must be confirmed that it is within the controllable safety performance before it can be used. If you have any questions about the product parameters, you can consult the relevant technology of our company before you use it.

Please note: When the product is installed vertically, please pay attention to whether the slide object will drop by itself when the motor is disassembled. It is recommended to remove the slide object. Lower to the lowest end before disassembly.

Before running the product, check whether the cable terminals are in good contact or not, otherwise the motor will become hot and run poorly.

When debugging the parameters of the motor, we need to consider the reasons of inertia, acceleration and deceleration. We should control the motor manually and move it back and forth to prevent the inappropriate debugging and damage the object. It is not allowed to contact hands and other objects to maintain a safe distance and prevent accidental injury.

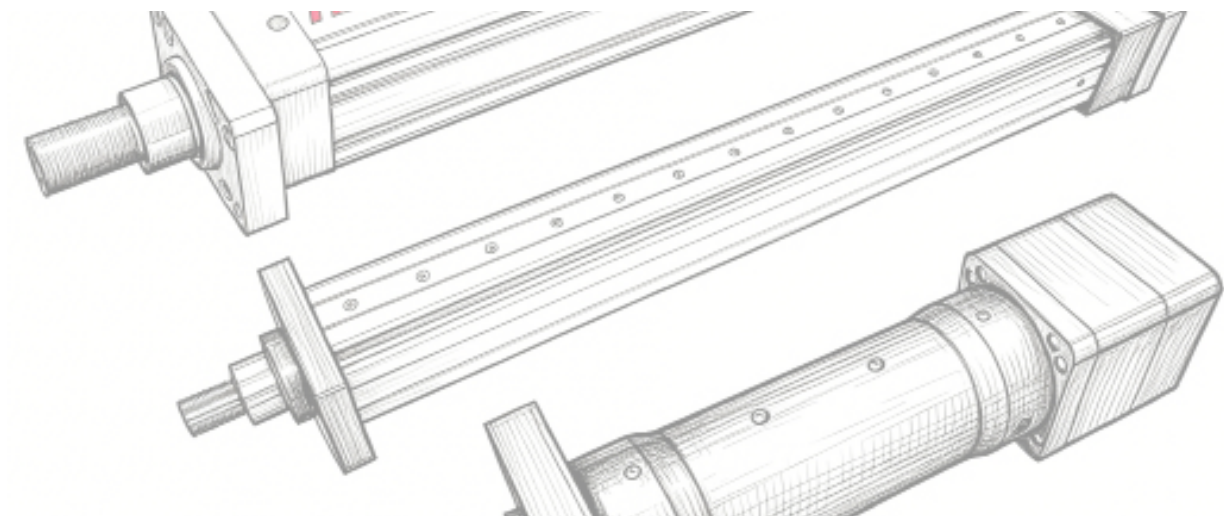
When the screw drive product is selected,if the slenderness ratio parameter of the screw exceeds, resonance may occur, so the moving speed should be reduced. Choose a belt. When the product is driven, such as the motor alarm, the product will not move. At this time, the reducer is added to adjust the rigidity of the motor and increase the torque, so as to run smoothly.

When installing this product, please make sure that all screws are locked as required, otherwise the product may be in danger during operation.

Please do not disassemble the product or parts when the power is turned on, otherwise electric shock, malfunction or other dangers may occur.

It is forbidden to tear off the warning signs, or the warning signs are blocked by other objects, otherwise the accident may occur because you don't see the warning.

This note can not cover all the problems. Please be sure to understand the product and its instructions in detail. comply with relevant safety codes, and take necessary protective measures to avoid product damage or personal safety problems. If you have any other related questions, you can consult us.



Maintenance manual

► 1.Daily inspection items

Electric cylinder is a common transmission mechanism, which is widely used in all kinds of equipment in actual operation. It needs to be checked and maintained in time because of the different environment and working conditions.

Daily inspection items	
1. Check the surface of parts for damage, indentation and friction.	2. Is there any abnormal vibration or noise in the screw,piston rod and bearing.
3. Whether the motor, coupling/synchronous wheel have abnormal vibration or noise.	4. See if there are any unknown dust, oil stains, traces, etc.

► 2.Periodic maintenance project

Electric cylinder is a common transmission mechanism, which is widely used in all kinds of equipment in actual operation. It needs to be checked and maintained in time because of the different environment and working conditions.

Parts	Maintenance scheme	Maintenance cycle	Specific operation
Ball screw	Add grease (viscosity: 30-40cts).	Once a month or every 100KM distance.	Pass the new grease through the syringe (the hole of the profile body). On the inner ball screw of the electric cylinder.
Piston rod	Add grease (viscosity: 30-150cts) Clean up old grease and inject new grease.	Once a month or every 100KM distance.	Wipe the surface of the piston rod directly with a dust-free cloth, and directly apply new grease to the surface of the piston rod.

► 3.Exceptions and solutions

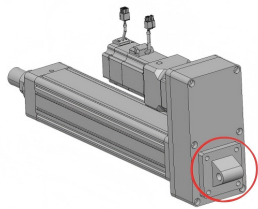
Abnormal condition of electric cylinder	Maintenance and troubleshooting methods
Abnormal sound is produced when the power supply is connected.	1. Adjust the value of the servo drive parameter "mechanical resonance suppression". 2. Adjust the value of Auto tuning in the servo driver.
Abnormal sound is produced when the motor rotates.	1. Adjust the value of the servo drive parameter "mechanical resonance suppression". 2. Adjust the value of Auto tuning in the servo driver. 3. Check whether the motor brake release. 4. Check whether the mechanism is deformed due to overload.
The piston rod is not smooth when the motor is running.	1. Check the brake release. 2. Separate the motor from the electric cylinder, and pull the slide bar by hand to determine the cause of the problem. 3. Check the coupling setting screws for loosening. 4. Check the moving area of the electric cylinder for foreign objects falling.
The walking distance of the electric cylinder is inconsistent with the actual distance.	1. Check whether the input walking value is correct. 2. Check whether the lead input value is correct.
The motor is ON, and the piston rod does not move.	1. Check the brake release. 2. Check whether the coupling fixing screw is loose. 3. Separate the motor from the electric cylinder, and judge the problem and reason.

In addition, the company is responsible for the fault maintenance of its own goods, and is not responsible for other losses caused by product failure.

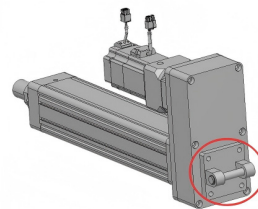


Electric Cylinder Layout

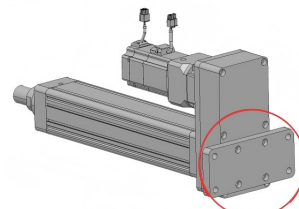
Installation flange



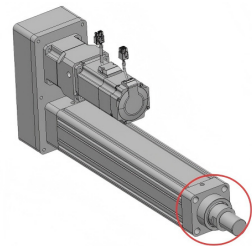
CA--Rear eye



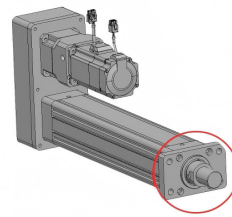
CB--Rear clevis



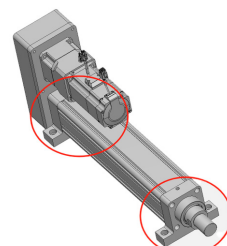
FB--Rear flange



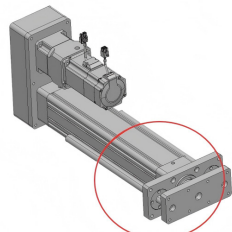
Unmarked--
Standard cylinder base



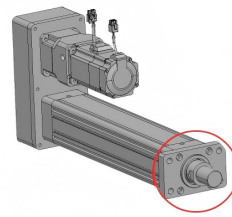
FA--Front flange



LB--Side mounting



QDX--Front guidance

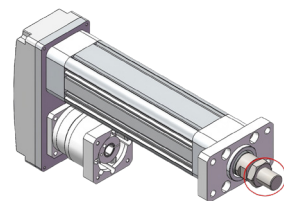


TC--Trunnion

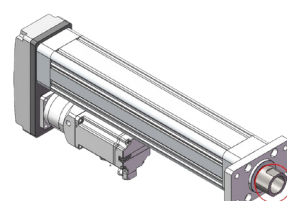


Motor Parallel
Mount Type

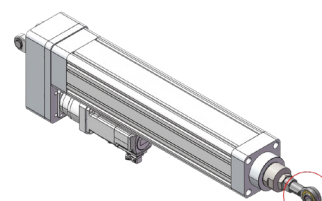
Front joint option



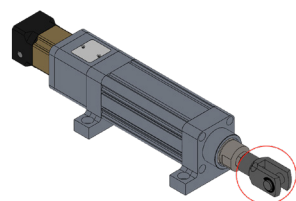
W--Male thread



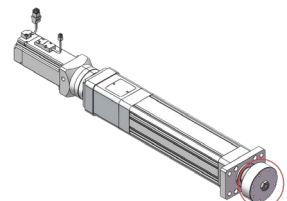
N--Female thread



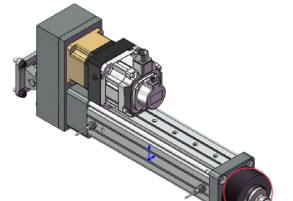
G--Rod eye



Y--Rod clevis



YL--Load cell



FQ--Bellow cover

Electric Cylinder Model Selection

Company:				Email
Contact:				
Basic Spec of Electric Cylinder				
No.	Description	Selection		Note
1	Max thrust (KN) / payload (KG)			
2	Valid stroke (mm)			
3	Max speed (mm/s)			
4	Repeatability (mm)	☐ ±0.02mm (C) ☐ ±0.01mm (P)		
5	Motor direction	☐ Direct coupled mount (M) ☐ Parallel mount (MR)		
6	Installation flange	☐ Front flange (FA) ☐ Rear flange (FB) ☐ Side mounting (LB) ☐ Trunnion (TC) ☐ Front guidance (QDX) ☐ Rear eye (CA) ☐ Rear clevis (CB) ☐ Standard cylinder base (No mark)		
7	Front joint option	☐ Rod clevis (Y)	☐ Rod eye (G) ☐ Male thread (W) ☐ Female thread (N)	
8	Industry	☐ Automotive ☐ Food processing ☐ Machining ☐ Medical equipment ☐ Entertainment /Simulation ☐ Military industry ☐ Plastics ☐ Else		
9	Application	☐ Servo pressing ☐ Material Handling ☐ Metal Forming ☐ Positioning ☐ Cutting ☐ Broaching ☐ Lifting ☐ Else		
10	Frequency of use	Working time / Day		Duty cycle
Optional Accessories				
No.	Description	Selection		Note
1	Motor	☐ Manufacturer provide ☐ User provide ☐ Panasonic (P) ☐ Mitsubishi (M) ☐ Delta (T) Model _____ ☐ HCFA (H) ☐ Step motor (BJ) ☐ Else (Brand / Power / RPM)		
2	Gearbox	☐ Manufacturer provide ☐ User provide ☐ Helical gear ☐ Spur gear Model / Dimension _____		
3	Limit switch	☐ 3 PCS ☐ 2 PCS ☐ 1 PCS ☐ None	1. Default: 2-wire universal 2. Option: 3-wire NO: NPN NO NC: NPN NC PO: PNP NO PC: PNP NC	
4	Bellow cover	☐ Yes (FQ) ☐ No (No mark)		1. Suitable for high dust and liquid environments 2. Will occupy some stroke
5	Load cell	☐ Yes (YL) ☐ No (No mark) ☐ Voltage ☐ Current ☐ RS232 ☐ RS485 N/A		1. Pressure measurement component 2. Usually use with transmitter
Remark:				