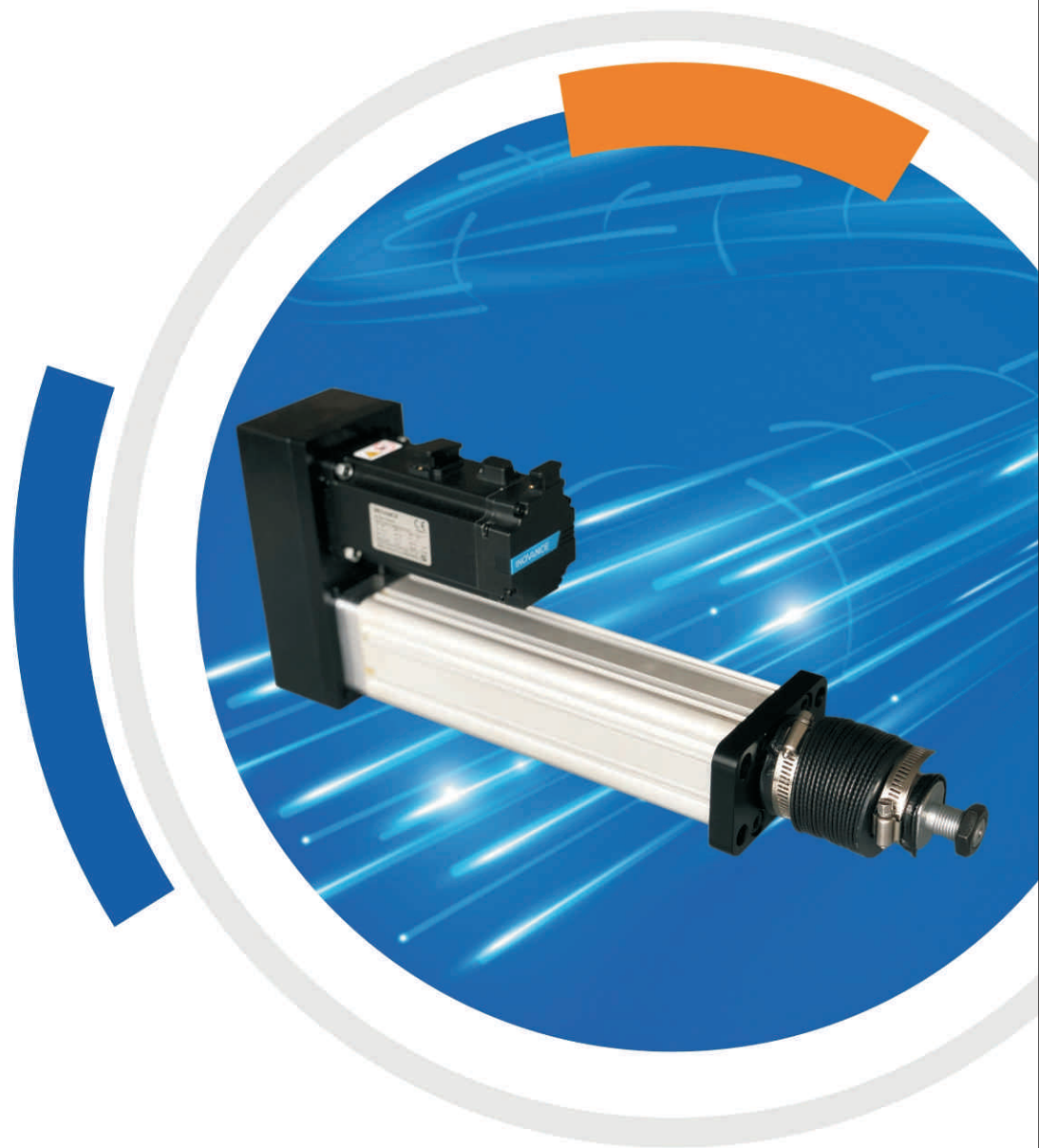


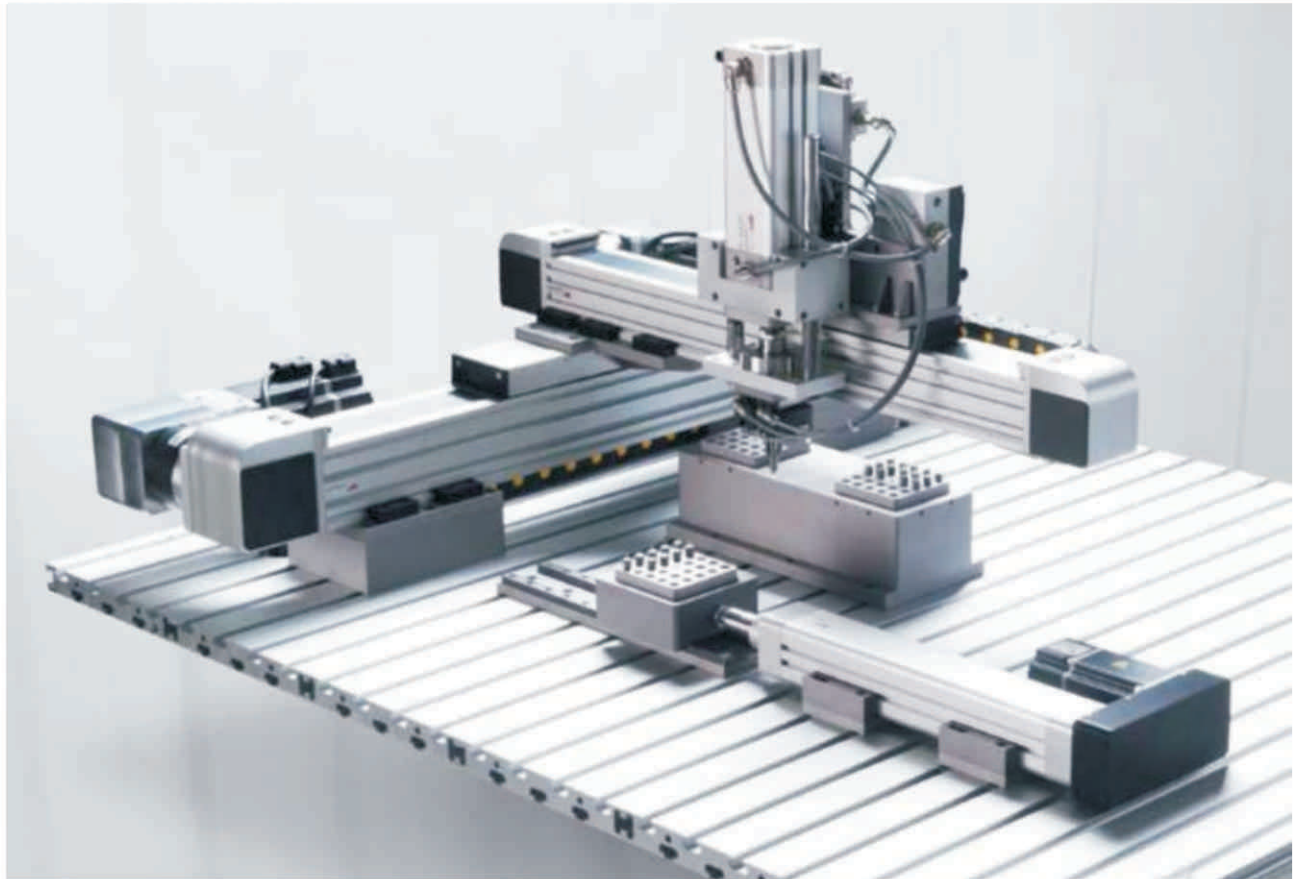


Electric Cylinder
Servo Press Machine
Multi Degree Of Freedom Motion Platform



**SUZHOU FENGDA AUTOMATION
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About Us >>>

Founded in 2003, we are a company focus on designing and manufacturing the power transmission equipment, mainly containing the electric cylinder, motion base platform, press machine which are widely used in the industrial automation and artificial intelligence research.

Long lasting lifetime, more efficient working mode, lower labor cost. We are intended to help the customers to realize the revolution in the production. With the features of precise repeat positioning, adjustable speed and torque, strong impact resistance, compact structure, low inertia, high response, low friction, low noise, good stability and maintenance-free, competitive price and good quality, our product now is always the preferred by our customers.

In order to meet the various needs of customers, we offer the integrated technical services of providing complete sets of optimal power transmission control solutions to save time and cost for our customers.

From the inquiry about the product before selling to the industry leading delivery when placing the order and then to the application problem of the equipment after sale, our customer service team is always standing by you to solve all the problems.

CATALOGUE



Electric Cylinder

01-26



**Multi Degree of Freedom Motion
Simulation Platform**

27-29



Servo Press Machine

30-38

Electric Cylinder

► Working Principle

Electric cylinder is a modular product designed by integrating servo motor and ball screw, which converts the rotary motion of servo motor into linear motion, and at the same time optimizes the advantages of servo motor - precise speed control, precise rotation control and precise torque control is transformed into precise speed control, precise rotation control and precise thrust control. This is a new revolutionary product for high precision linear motion series. The best substitute for pneumatic cylinder and hydraulic cylinder.

► Electric Cylinder Applications

Industrial automation: food packing machinery, welding equipment, ceramic producing machine, elevator platform.
Auto part producing: pressing auto parts
Aviation: Flight simulation, VR simulation
Multiple degrees of freedom simulation machinery, like game platform
Precision machinery
Test equipment and laboratory research
Dynamic 3D 4D entertainment facilities
Artificial intelligence, robots

► Electric Cylinder Advantages

Competitive price
High speed, high precision
Quick response, stable performance
Water proof, dust proof
Low noise
Energy saving, long service life
Low maintenance cost, environment friendly.

► Servo Motor Mounting Types

Linear Electric Cylinder

This series of electric cylinder with the feature such as compact structure, low inertness, quick response, low noise and long lifetime integrate the technology of alternating AC servo motor & driver, high-precision ball screw and modular design. Transmiss-ion screws and AC servo motor are connected directly so that the encoder of AC servo motor will feedback the offset of movable piston of electric cylinder, which will improve the control ability and precision without the inertness and interval of intermediate link. AC Servo motor and electric cylinder are connected entirely for easy assembling, simple setting and convenient use. All the main components are imported product of famous brands with stable performance, low fault rate and high reliability.



Parallel Electric Cylinder

Parallel electric cylinder with short size apply to the relatively small installation site. Synchronous belt adopted in this project is possessed of high strength, small interval and long lifetime so that the electric cylinder have the high control ability and precision. AC Servo motor and electric cylinder can match flexibly for easy assembling, simple setting and convenient use.



How to Select the Cylinder

1、 The relationship between the motor output torque and the output force of the electric cylinder

$$F = T \times \eta \times 2\pi \times R / L$$

F : electric cylinder output force, Units: Kn

T : motor output torque, Units: Nm

R : Reduction ratio

L : screw lead, Units: mm

η : efficiency (generally opt for electric cylinder, the total the total efficiency of 85% , but the efficiency is based on the actual use conditions are subject to change, please note)

2、 The electric cylinder of life calculated

The life of the electric cylinder is generally refers to the internal use of the electric cylinder screw command, can be divided into two parts, one screw of the fatigue life, it can be calculated; another life; depending on the conditions of use (such as temperature, dust, using the type of lubrication, and periodically add frequency, etc.)

Life is often drawn from the experience. The following is a calculation method of the fatigue life of the electric cylinder.

$$L_{10} = (C_a / F_m)^3 \times L$$

L₁₀ : The life of the electric cylinder, Units: Km

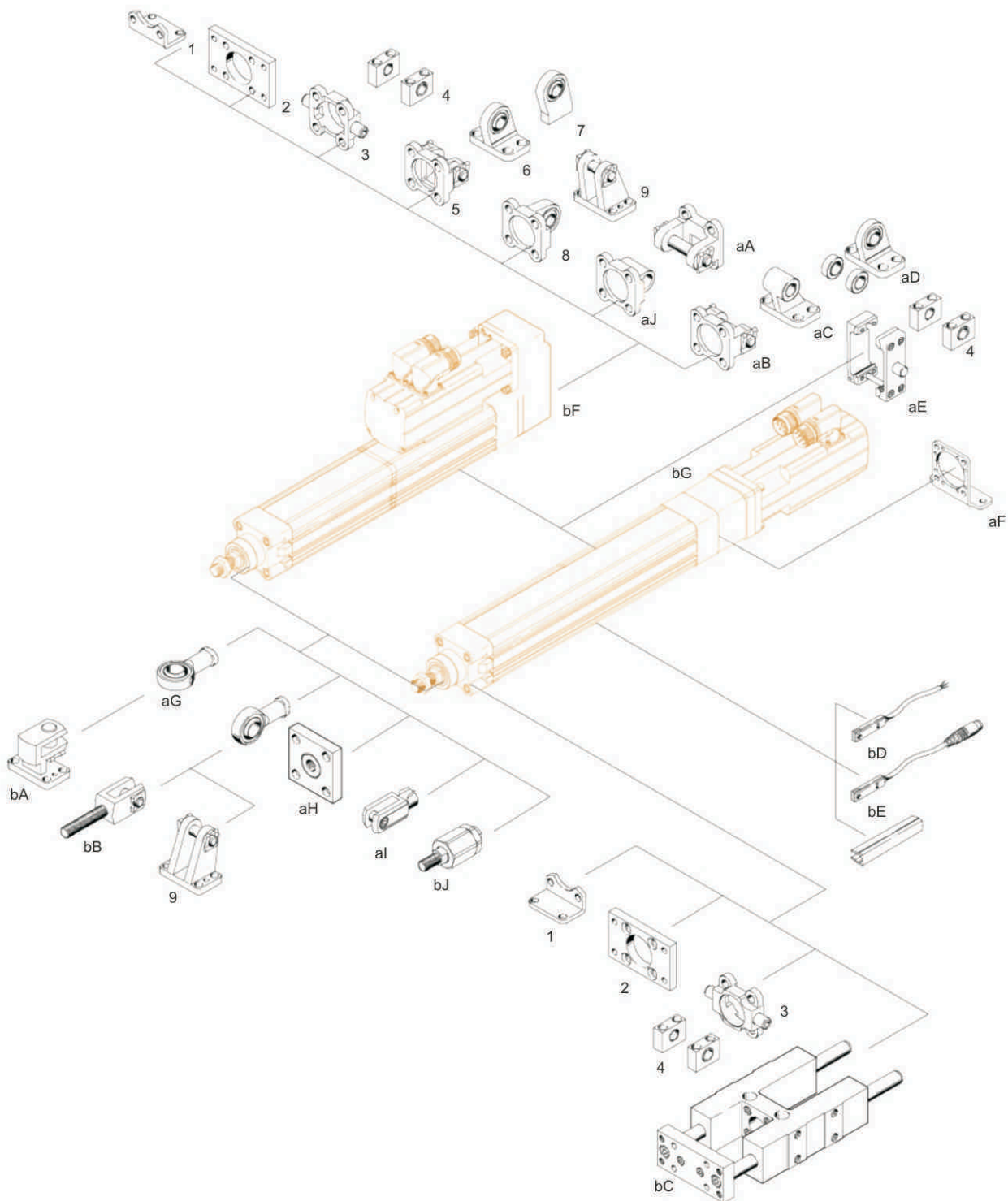
F_m : Electric cylinder is exposed to the average load, Units: Kn

C_a : Screw nut basic dynamic load, Units: Kn

(By screw samples to detect)

L : screw lead, Units: mm

The Electric Cylinder Bearing and Accessories List



Installation Accessories and Attachments

Name	Explain
1-HNC/CRHNC Foot mounting	The motor parallel installation for installation of bearings and reducer end caps Motor axial mounting for installation bearings cover
2-FNC/CRFNG Flange mounting	The motor parallel installation for installation of bearings and reducer end caps Motor axial mounting for installation bearings cover
3-ZNCF/CRZNG Trunnion mounting	The motor parallel installation for installation of bearings and reducer end caps Motor axial mounting for installation bearings cover
4-LNZG/CRLNZG Trunnion bearing	For trunnion mounting attached to the cylinder block
5-SNC Trunnion bearing	For parallel motor mounting
6-LSNG Clevis foot	For parallel motor mounting, spherical bearing
7-LSNSG Clevis foot	For parallel motor mounting, weld-on, spherical bearing
8-SNCS Clevis mounting	For parallel motor mounting, spherical bearing
9-LBG Clevis	For parallel motor mounting, spherical bearing
aJ-Clevis mounting SNCL	For parallel motor mounting
aA-Clevis mounting SNCB/SNCB-...-R3	For parallel motor mounting, spherical bearing
aB-Clevis mounting SNCB/SNCB-...-R3	For parallel motor mounting
aC-Clevis LNG/CRLNG	For parallel motor mounting
aD-Clevis foot LSN	For parallel motor mounting, spherical bearing
aE-Trunnion mounting kit ZNCM	For mounting to an arbitrary position of the cylinder. For parallel motor mounting, installation location is not near the motor
aF-Foot mounting HNCE	For parallel motor mounting
aG-Bearing joints SGS/CRSGS	Spherical bearing
aH-Connecting flange KSZ	For compensating radial deviations
aI-Clevis SG/CRSG	Use for the cylinder for swinging movement in a plane
bJ-Self in connection FK	For compensating radial and angular deviations
bA-Straight corner clevis foot LQG	For bearing joints
bB-Clevis SGA	For cylinder swing installation
bC-Guide unit FENG	Prevent cylinder torsion under high torque
bD-Proximity Switches SME/SMT-8	For position sensing, may be integrated in the sensor mounting groove, projecting portion
bE-Slot cover ABP-5-S	For preventing dust from entering
bF-Parallel installation components EAMM-U	For parallel motor mounting
bG-Axially mounted components EAMM-A	For parallel motor mounting

FDR Series Electric Cylinder Model Definition

FDR075 S100 B 07 R 05 A M C 2 05

FDR075

FDR Series Electric Model Numbers

FDR040: ϕ 40mm
FDR044: ϕ 44mm
FDR075: ϕ 75mm
FDR095: ϕ 95mm
FDR110: ϕ 110mm
FDR135: ϕ 135mm
FDR270: ϕ 270mm

S100

S: Stroke Range(mm)

FDR040: 50-200mm
FDR065: 50-500mm
FDR075: 50-1200mm
FDR095: 50-1500mm
FDR135: 50-2000mm
FDR270: Customized

B

Screw Code Name

A: Acme Screw
B: Ball Screw
C: Roller Screw

07

Motor Power Definition

04: 400W
07: 750W
10: 1000W
15: 1500W
...

R

Anti-rotation

R: Without anti-rotation
T: With Anti-rotation

05

Screw Lead

04.05.10.16
20.25.32.40

A

Motor Mounting

A: Linear mounting
B: Parallel mounting

M

Cylinder Mounting Options:

M1: Double side mounting
M2: Side trunnion mounting
M3: Front flange mounting
M4: Rear flange mounting
M5: Rear shaft mounting
MX: Customized mounting

C

Rod End Mounting

C1: Male thread
C2: Female thread
C3: Clevis
C4: Spherical rod end
CX: Customized mounting

2

Number of Limit Switches

2: 2 pieces
3: 3 pieces

05

Reduction Ratio

03: Three-to-one
05: Five-to-one
10: Ten-to-one
15: Fifteen-to-one
20: Twenty-to-one
25: Twenty five-to-one
30: Thirty-to-one



FDR Series Cylinder Performance Overview--Performance by Cylinder Size and Screw Lead

FDR Cylinder Series	Thrust (N)	Stroke (mm)	Speed (mm/s)	Screw Lead (mm)	Rod Dia. (mm)
FDR044	≤ 1000	≤ 200	≤ 250	$\phi 12$	$\phi 20$
FDR065	≤ 4500	≤ 500	≤ 800	$\phi 16$	$\phi 40$
FDR075	≤ 10000	≤ 1200	≤ 1000	$\phi 20$	$\phi 40$
FDR095	≤ 30000	≤ 1700	≤ 1600	$\phi 32$	$\phi 55$
FDR110	≤ 50000	≤ 1700	≤ 1600	$\phi 40$	$\phi 63$
FDR135	≤ 50000	≤ 2000	≤ 2080	$\phi 40$	$\phi 63$
FDR180	≤ 100000		≤ 500	$\phi 63$	$\phi 80$
FDR270	≤ 200000		≤ 50	$\phi 80$	$\phi 145$



Mark:1. In order to ensure the effective stroke, Two ends reserved 5mm space;
2. The sensor on the other side when the motor is parallel mount.

FDR044 Series Electric Servo Cylinder Drive Torque and Power Selection Table

▶ Motor power : 100W

Screw Lead	[mm]	4			
Planetary Gear Reduction Ratio		1	2	4	5
Servo Motor Power	[KW]	0.1			
Servo Motor Rated Torque	[N.M]	0.32			
Servo Motor Rated Speed	[r/min]	3000			
Electric Cylinder Rated Output	[KN]	0.42	0.84	1.7	2.14
Electric Cylinder Maximum Output	[KN]	1			
Electric Cylinder Maximum Speed	[mm/s]	200	100	50	40

▶ Motor power : 200W

Screw Lead	[mm]	4			
Planetary Gear Reduction Ratio		1	2	4	5
Servo Motor Power	[KW]	0.2			
Servo Motor Rated Torque	[N.M]	0.64			
Servo Motor Rated Speed	[r/min]	3000			
Electric Cylinder Rated Output	[KN]	0.85	1.71	3.42	4.27
Electric Cylinder Maximum Output	[KN]	1			
Electric Cylinder Maximum Speed	[mm/s]	200	100	50	40

FDR065 Series Electric Servo Cylinder Drive Torque and Power Selection Table

▶ Motor power : 400W

Screw Lead	[mm]	5				10				16				20			
Planetary Gear Reduction Ratio		1	2	3	4	1	2	5	10	1	2	5	10	1	2	5	10
Servo Motor Power	[KW]	0.4															
Servo Motor Rated Torque	[N.M]	1.27															
Servo Motor Rated Speed	[r/min]	3000															
Electric Cylinder Rated Output	[KN]	1.3	2.7	4	5.4	0.6	1.3	3.3	6	0.4	0.8	2	4.2	0.3	0.6	1.6	3.3
Electric Cylinder Maximum Output	[KN]	6															
Electric Cylinder Maximum Speed	[mm/s]	250	125	80	60	500	250	100	50	800	400	160	80	1000	500	200	100

▶ Motor power : 750W

Screw Lead	[mm]	5				10				16				20			
Planetary Gear Reduction Ratio		1	2	3	4	1	2	3	5	1	2	5	10	1	2	5	10
Servo Motor Power	[KW]	0.75															
Servo Motor Rated Torque	[N.M]	2.39															
Servo Motor Rated Speed	[r/min]	3000															
Electric Cylinder Rated Output	[KN]	2.5	5.1	6	6	1.2	2.5	3.8	6	0.7	1.5	3.9	6	0.6	1.2	3	6
Electric Cylinder Maximum Output	[KN]	6															
Electric Cylinder Maximum Speed	[mm/s]	250	125	80	60	500	250	160	100	800	400	160	80	1000	500	200	100

FDR075 Series Electric Servo Cylinder Drive Torque and Power Selection Table

► Motor power : 750W

Screw Lead	[mm]	5					10					20					
Planetary Gear Reduction Ratio		1	1.5	2	3	5	1	1.5	2	3	5	10	1	2	3	5	10
Servo Motor Power	[KW]	0.75															
Servo Motor Rated Torque	[N.M]	2.39															
Servo Motor Rated Speed	[r/min]	3000															
Electric Cylinder Rated Output	[KN]	2.5	3.6	5	7.5	10	1.2	1.9	2.5	3.8	6.3	10	0.6	1.2	1.9	3	6.3
Electric Cylinder Maximum Output	[KN]	10															
Electric Cylinder Maximum Speed	[mm/s]	250	150	125	80	50	500	330	250	160	100	50	1000	500	330	200	100

► Motor power : 1KW

Screw Lead	[mm]	5					10						20				
Planetary Gear Reduction Ratio		1	1.5	2	3	5	1	1.5	2	3	5	10	1	2	3	5	10
Servo Motor Power	[KW]	1															
Servo Motor Rated Torque	[N.M]	3.18															
Servo Motor Rated Speed	[r/min]	3000															
Electric Cylinder Rated Output	[KN]	3.3	5	6.6	9.5	10	1.6	2.4	3.2	4.8	8	10	0.8	1.6	2.4	4	8.4
Electric Cylinder Maximum Output	[KN]	10															
Electric Cylinder Maximum Speed	[mm/s]	250	150	125	80	50	500	330	250	160	100	50	1000	500	330	200	100

► Motor power : 1.5KW

Screw Lead	[mm]	5					10					20					
Planetary Gear Reduction Ratio		1	1.5	2	3	5	1	1.5	2	3	5	10	1	2	3	5	10
Servo Motor Power	[KW]	1.5															
Servo Motor Rated Torque	[N.M]	4.77															
Servo Motor Rated Speed	[r/min]	3000															
Electric Cylinder Rated Output	[KN]	5	7.6	10	10	10	2.5	3.8	5	7.6	10	10	1.2	2.4	3.8	6	10
Electric Cylinder Maximum Output	[KN]	10															
Electric Cylinder Maximum Speed	[mm/s]	250	150	125	80	50	500	330	250	160	100	50	1000	500	330	220	100

FDR095 Series Electric Servo Cylinder Drive Torque and Power Selection Table

Motor power : 1.5KW

Screw Lead	[mm]	5				10				20				32			
Planetary Gear Reduction Ratio		1	1.2	3	5	1	3	5	10	1	3	5	10	1	3	5	10
Servo Motor Power	[KW]	1.5															
Servo Motor Rated Torque	[N.M]	7.16															
Servo Motor Rated Speed	[r/min]	2000															
Electric Cylinder Rated Output	[KN]	7.6	9	22	30	3.8	11	19	30	1.9	5.5	9.5	19	11	3.4	5.5	11
Electric Cylinder Maximum Output	[KN]	30															
Electric Cylinder Maximum Speed	[mm/s]	160	130	50	30	330	110	60	30	660	220	130	65	1066	350	210	100

► Motor power : 3KW

Screw Lead	[mm]	5				10				20				32			
Planetary Gear Reduction Ratio		1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
Servo Motor Power	[KW]	3															
Servo Motor Rated Torque	[N.M]	9.55															
Servo Motor Rated Speed	[r/min]	3000															
Electric Cylinder Rated Output	[KN]	10	30	30	30	5	15	25	30	2.5	7.6	12.5	25	1.5	4.7	7.5	15
Electric Cylinder Maximum Output	[KN]	30															
Electric Cylinder Maximum Speed	[mm/s]	250	80	50	25	500	160	100	50	1000	330	200	100	1600	530	320	160

FDR135 Series Electric Servo Cylinder Drive Torque and Power Selection Table

► Motor power : 3KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	3															
Servo Motor Rated Torque	[N.M]	14.3															
Servo Motor Rated Speed	[r/min]	2000															
Electric Cylinder Rated Output	[KN]	7.6	22	38	50	50	50	50	50	3.8	11	19	30	38	45	50	50
Electric Cylinder Maximum Output	[KN]	50															
Electric Cylinder Maximum Speed	[mm/s]	330	110	66	40	30	27	20	15	660	220	130	80	65	55	40	30

► Motor power : 5.5KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	5.5															
Servo Motor Rated Torque	[N.M]	35															
Servo Motor Rated Speed	[r/min]	1500															
Electric Cylinder Rated Output	[KN]	18	50	50	50	50	50	50	50	9.3	28	46	50	50	50	50	50
Electric Cylinder Maximum Output	[KN]	50															
Electric Cylinder Maximum Speed	[mm/s]	250	80	50	30	25	20	15	12	500	160	100	60	50	40	30	25

FDR110 Series Electric Servo Cylinder Drive Torque and Power Selection Table

► Motor power : 2KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	2															
Servo Motor Rated Torque	[N.M]	6.37															
Servo Motor Rated Speed	[r/min]	3000															
Electric Cylinder Rated Output	[KN]	3.4	10	17	27	34	40	50	50	1.7	5	8.7	13.5	17	20	25	34
Electric Cylinder Maximum Output	[KN]	50															
Electric Cylinder Maximum Speed	[mm/s]	500	160	100	60	50	40	30	25	1000	330	200	125	100	80	65	50

► Motor power : 3KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	3															
Servo Motor Rated Torque	[N.M]	14.3															
Servo Motor Rated Speed	[r/min]	2000															
Electric Cylinder Rated Output	[KN]	7.6	22	38	50	50	50	50	50	3.8	11	19	30	38	45	50	50
Electric Cylinder Maximum Output	[KN]	50															
Electric Cylinder Maximum Speed	[mm/s]	330	110	66	40	30	27	20	15	660	220	130	80	65	55	40	30

► Motor power : 4.5KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	4.5															
Servo Motor Rated Torque	[N.M]	21															
Servo Motor Rated Speed	[r/min]	2000															
Electric Cylinder Rated Output	[KN]	11	33	50	50	50	50	50	50	5.6	16	28	44	50	50	50	50
Electric Cylinder Maximum Output	[KN]	50															
Electric Cylinder Maximum Speed	[mm/s]	330	110	66	40	30	27	20	15	660	220	130	80	65	55	40	30

FDR180 Series Electric Servo Cylinder Drive Torque and Power Selection Table

▶ Motor power : 5.5KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	5.5															
Servo Motor Rated Torque	[N.M]	35															
Servo Motor Rated Speed	[r/min]	1500															
Electric Cylinder Rated Output	[KN]	18	56	93	100	100	100	100	100	9.3	28	46	74	93	100	100	100
Electric Cylinder Maximum Output	[KN]	100															
Electric Cylinder Maximum Speed	[mm/s]	250	80	50	30	25	20	15	12	500	160	100	60	50	40	30	25

▶ Motor power : 7.5KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	7.5															
Servo Motor Rated Torque	[N.M]	45															
Servo Motor Rated Speed	[r/min]	1500															
Electric Cylinder Rated Output	[KN]	24	72	100	100	100	100	100	100	12	36	60	96	100	100	100	100
Electric Cylinder Maximum Output	[KN]	100															
Electric Cylinder Maximum Speed	[mm/s]	250	80	50	30	25	20	15	12	500	160	100	60	50	40	30	25

FDR270 Series Electric Servo Cylinder Drive Torque and Power Selection Table

▶ Motor power : 7.5KW

Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	7.5															
Servo Motor Rated Torque	[N.M]	45															
Servo Motor Rated Speed	[r/min]	1500															
Electric Cylinder Rated Output	[KN]	24	72	120	192	200	200	200	200	12	36	60	96	120	144	180	200
Electric Cylinder Maximum Output	[KN]	200															
Electric Cylinder Maximum Speed	[mm/s]	250	80	50	30	25	20	15	12	500	160	100	60	50	40	30	25

▶ Motor power : 15KW

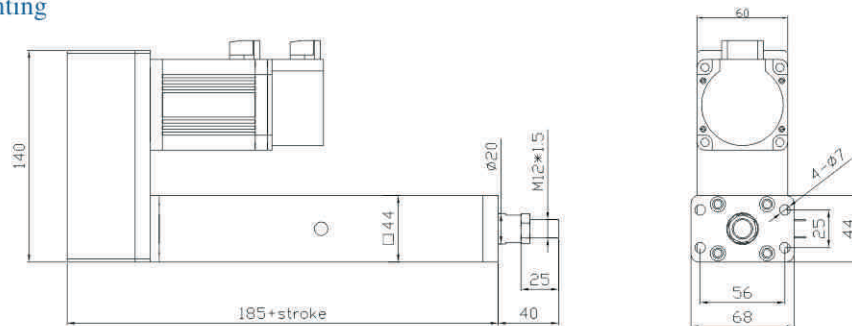
Screw Lead	[mm]	10								20							
Planetary Gear Reduction Ratio		1	3	5	8	10	12	15	20	1	3	5	8	10	12	15	20
Servo Motor Power	[KW]	15															
Servo Motor Rated Torque	[N.M]	95.4															
Servo Motor Rated Speed	[r/min]	1500															
Electric Cylinder Rated Output	[KN]	50	152	200	200	200	200	200	200	25	75	125	200	200	200	200	200
Electric Cylinder Maximum Output	[KN]	200															
Electric Cylinder Maximum Speed	[mm/s]	250	80	50	30	25	20	15	12	500	160	100	60	50	40	30	25

FDR Series Electric Cylinder Motor Mounting and Cylinder Mounting Options

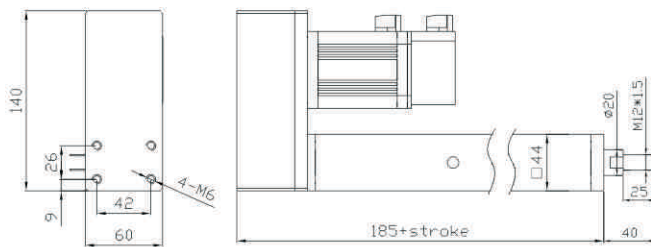
FDR044 Parallel outline drawing

(mm)

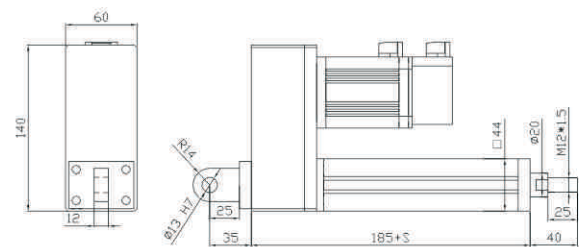
M3 Front flange mounting



M4 Rear flange mounting



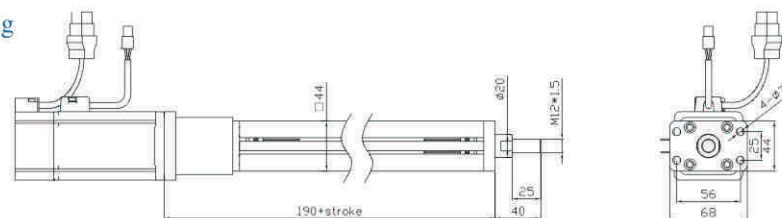
M5 Rear shaft mounting



FDR044 Linear outline drawing

(mm)

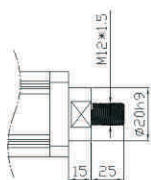
M3 Front flange mounting



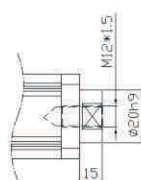
FDR044 Rod End Options

(mm)

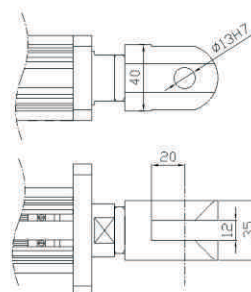
C1 Male thread



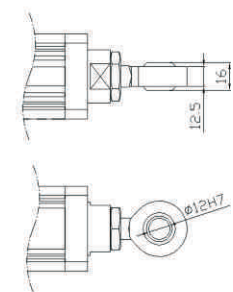
C2 Female thread



C3 Clevis

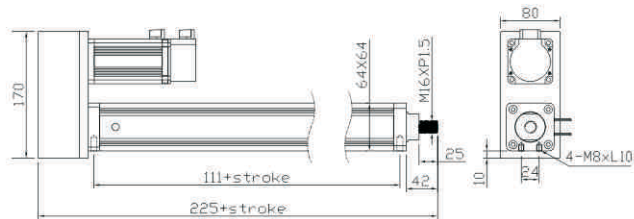


C4 Spherical rod end

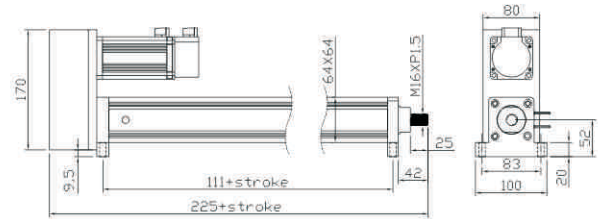


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order; need specific dimensions, please contact the manufacturer.

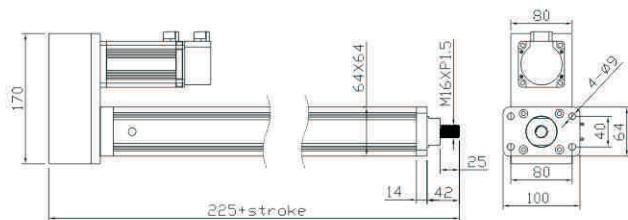
M1 Double side mounting



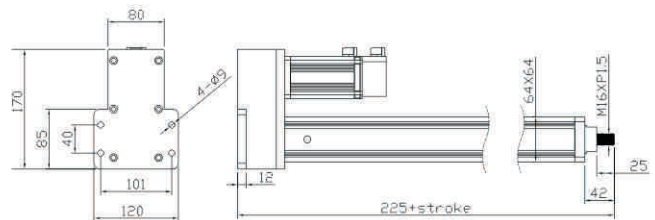
M2 Side trunnion mounting



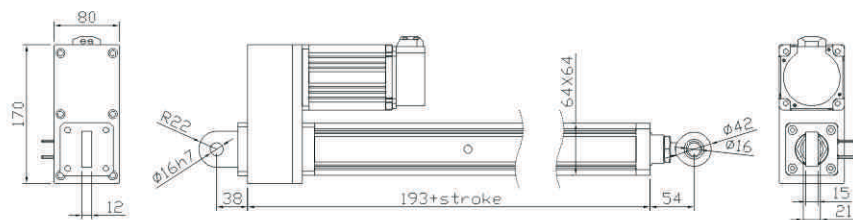
M3 Front flange mounting



M4 Rear flange mounting



M5 Rear shaft mounting

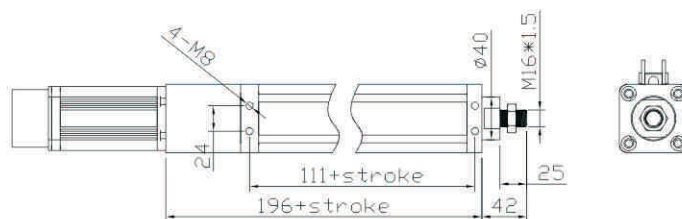


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

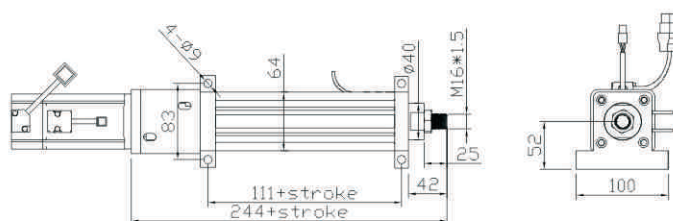
FDR065 Linear outline drawing

(mm)

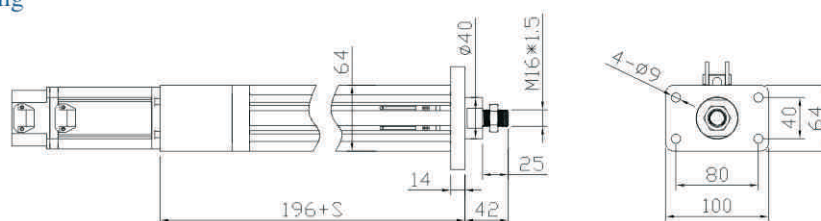
M1 Double side mounting



M2 Side trunnion mounting



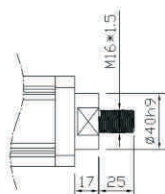
M3 Front flange mounting



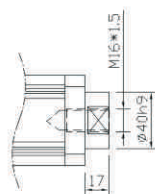
FDR065 Rod End Options

(mm)

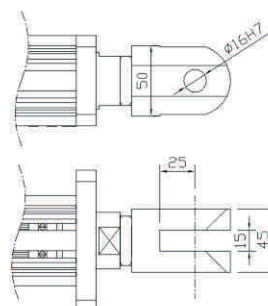
C1 Male thread



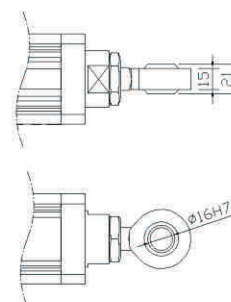
C2 Female thread



C3 Clevis

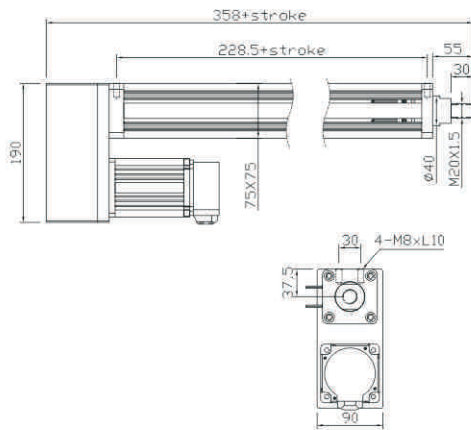


C4 Spherical rod end

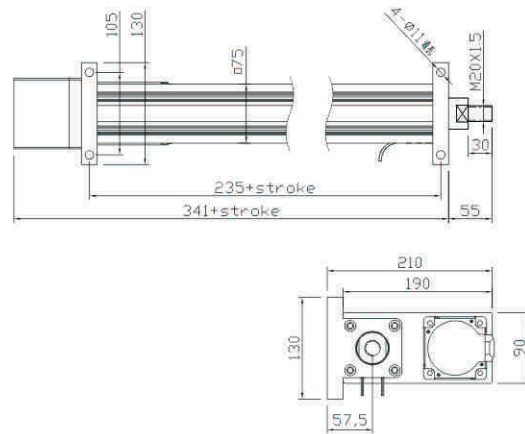


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

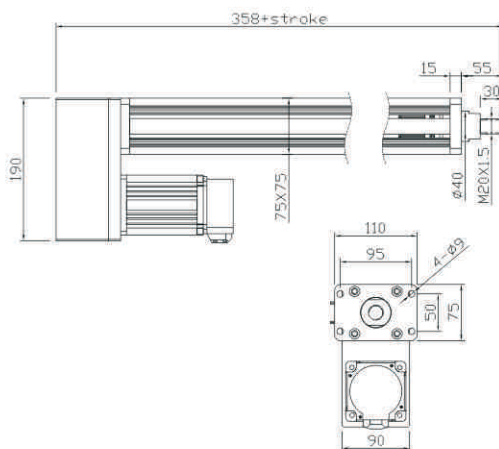
M1 Double side mounting



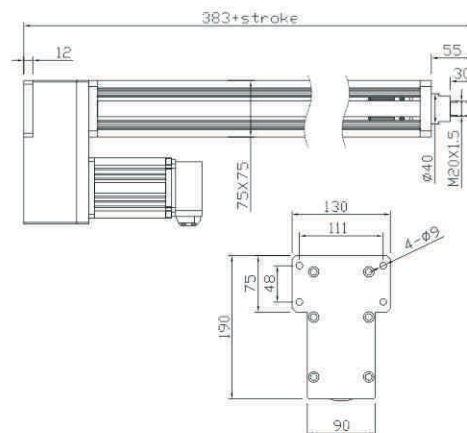
M2 Side trunnion mounting



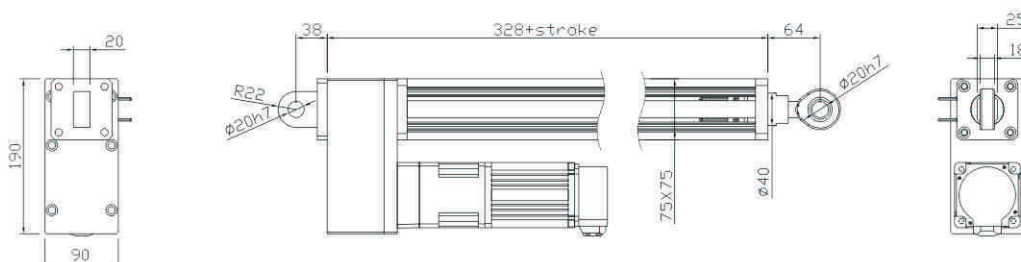
M3 Front flange mounting



M4 Rear flange mounting



M5 Rear shaft mounting

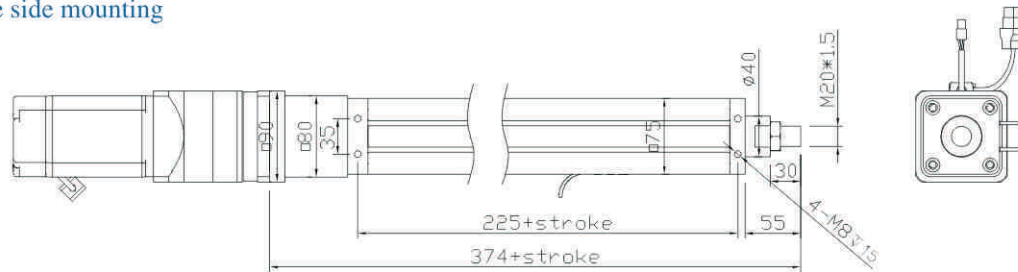


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

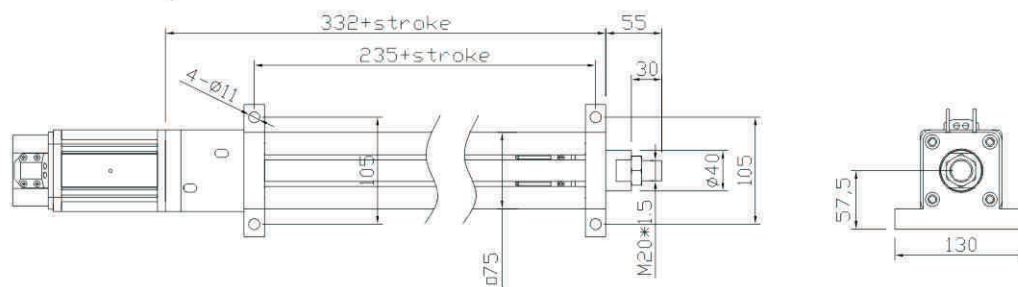
FDR075 Linear outline drawing

(mm)

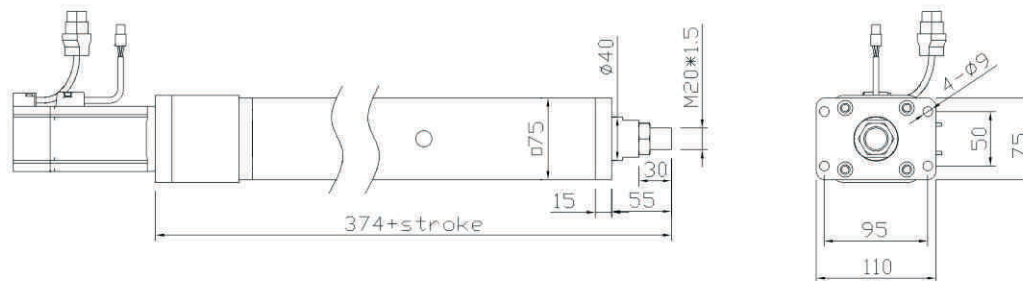
M1 Double side mounting



M2 Side trunnion mounting



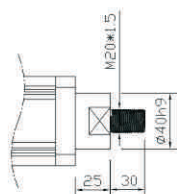
M3 Front flange mounting



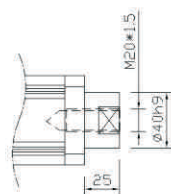
FDR075 Rod End Options

(mm)

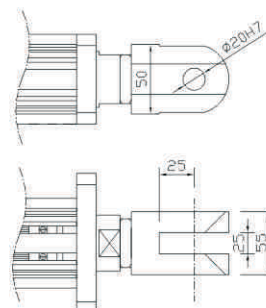
C1 Male thread



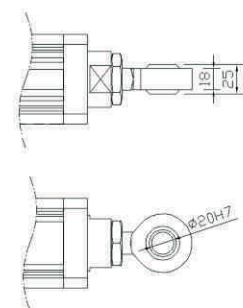
C2 Female thread



C3 Clevis

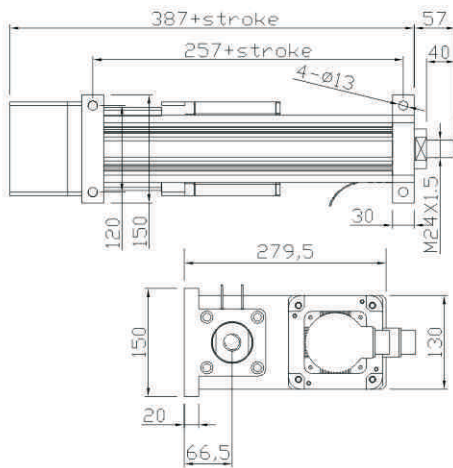


C4 Spherical rod end

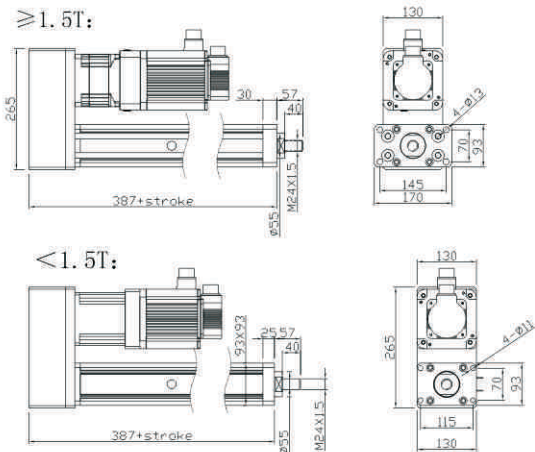


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

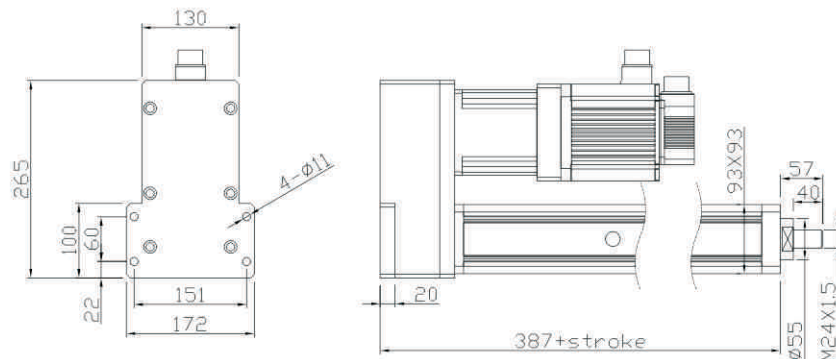
M2 Side trunnion mounting



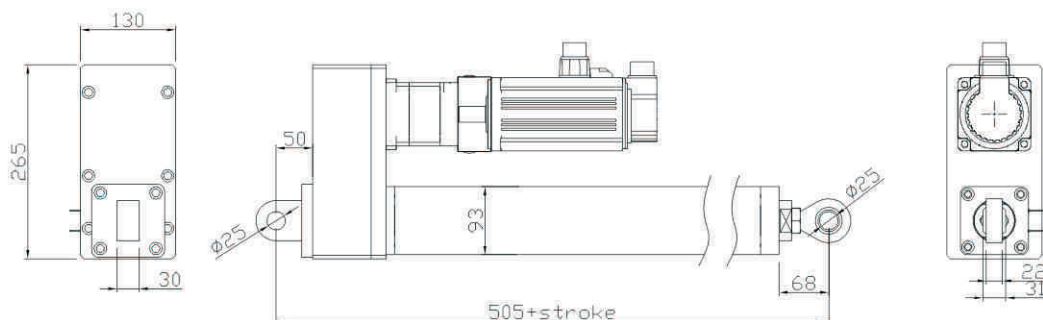
M3 Front flange mounting



M4 Rear flange mounting



M5 Rear shaft mounting

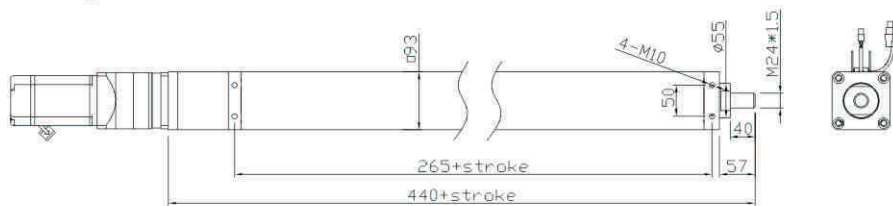


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

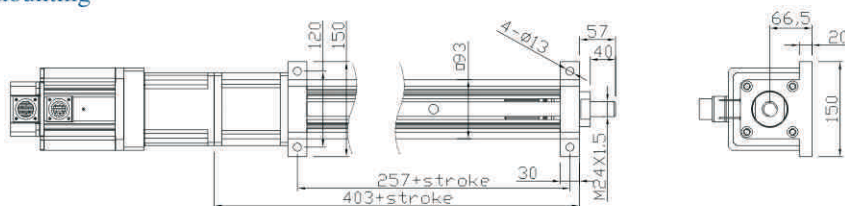
FDR095 Linear outline drawing

(mm)

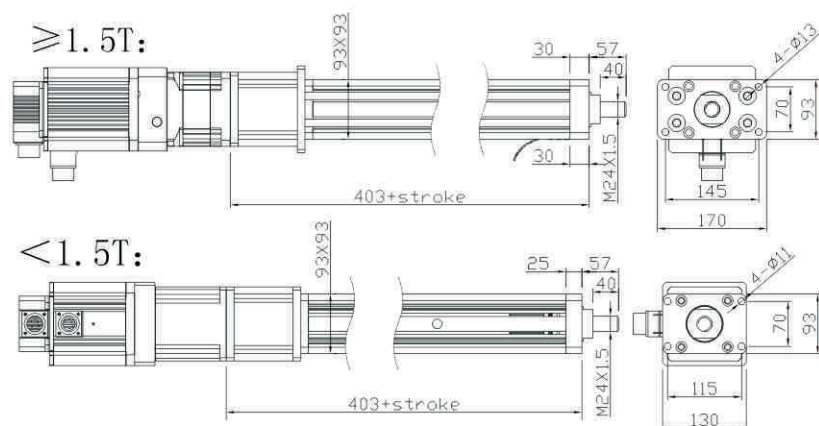
M1 Double side mounting



M2 Side trunnion mounting



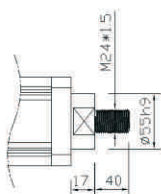
M3 Front flange mounting



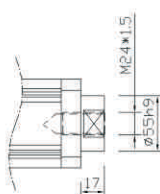
FDR095 Rod End Options

(mm)

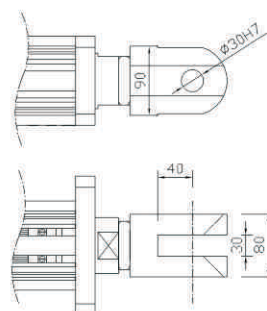
C1 Male thread



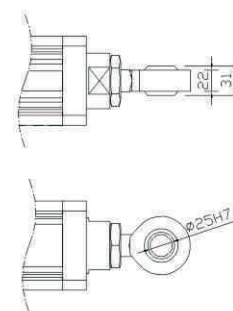
C2 Female thread



C3 Clevis

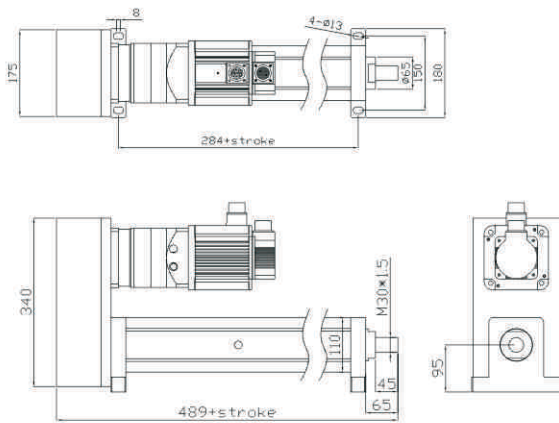


C4 Spherical rod end

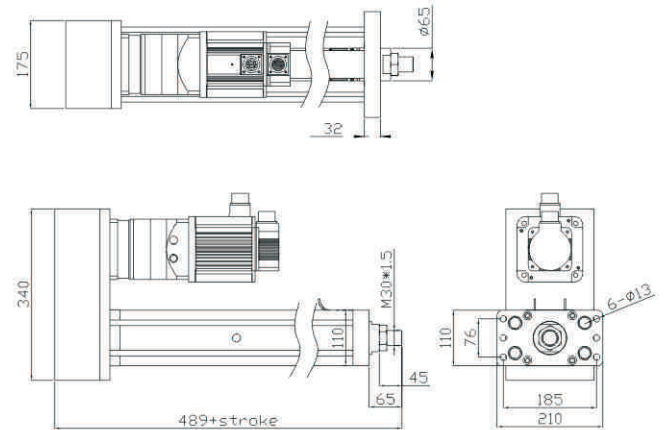


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

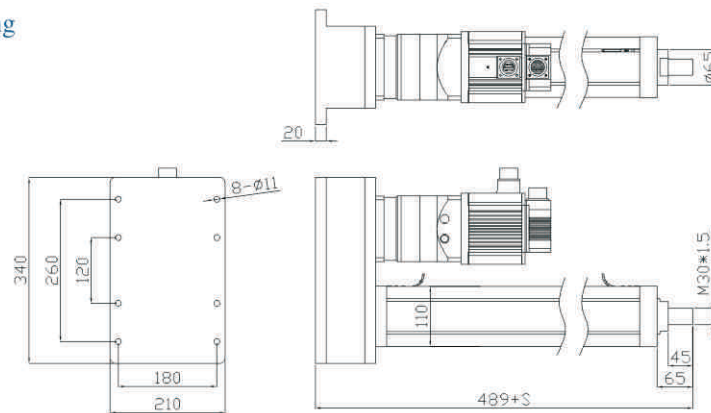
M2 Side trunnion mounting



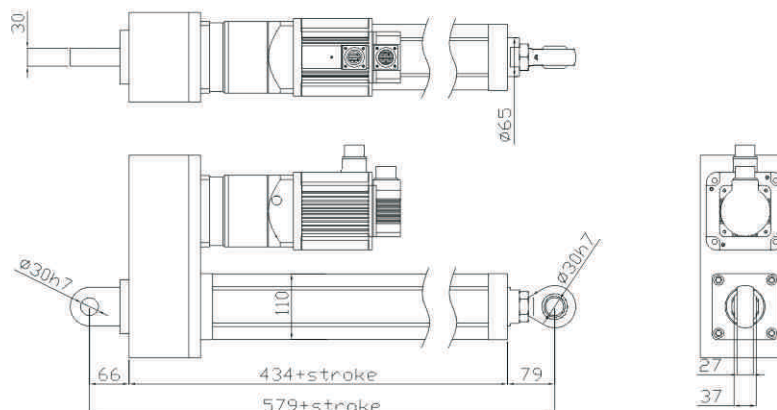
M3 Front flange mounting



M4 Rear flange mounting



M5 Rear shaft mounting

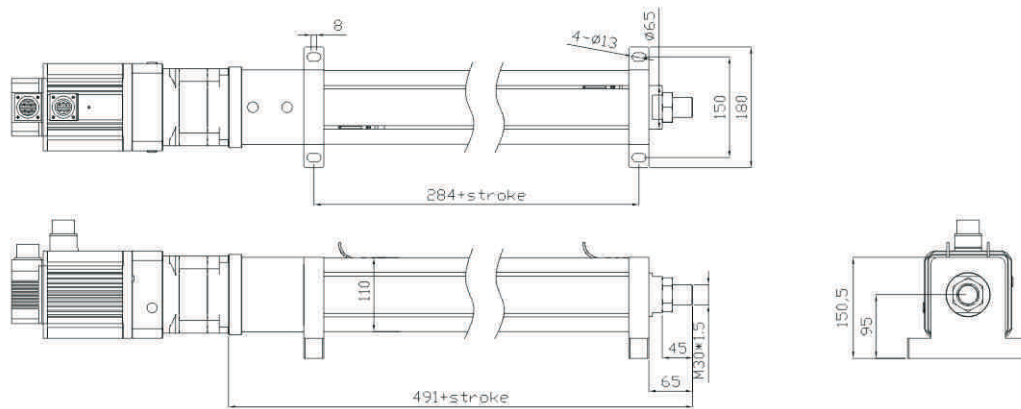


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

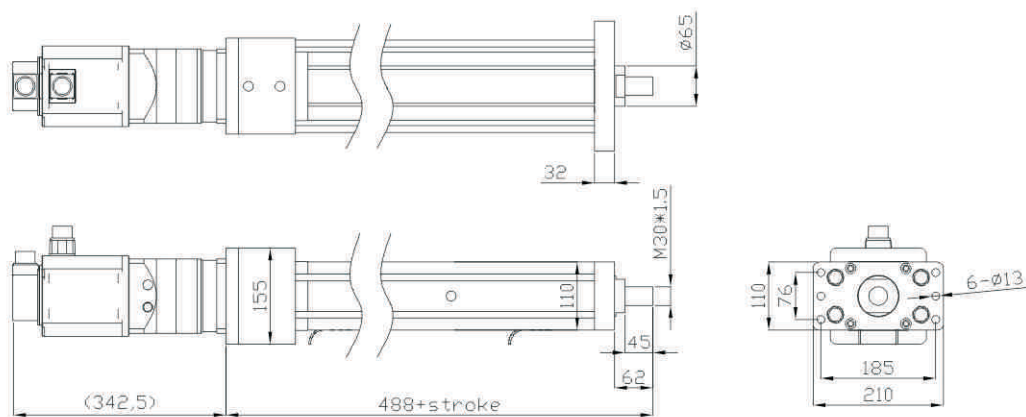
FDR110 Linear outline drawing

(mm)

M2 Side trunnion mounting



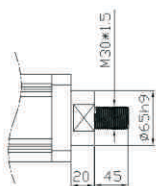
M3 Front flange mounting



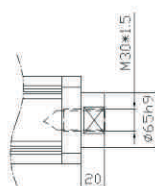
FDR110 Rod End Options

(mm)

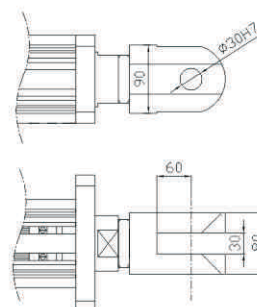
C1 Male thread



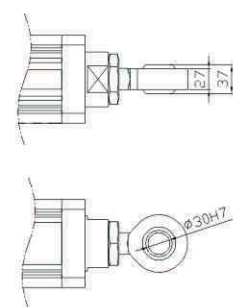
C2 Female thread



C3 Clevis

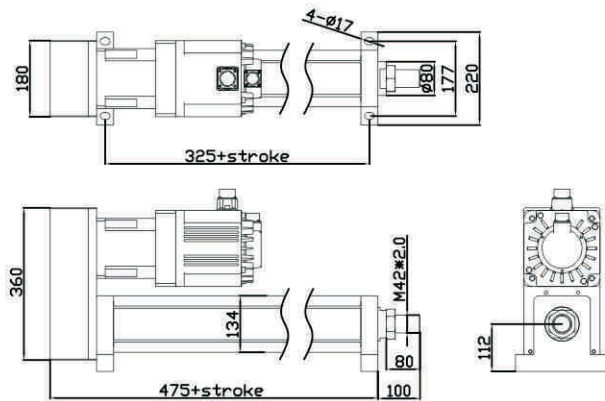


C4 Spherical rod end

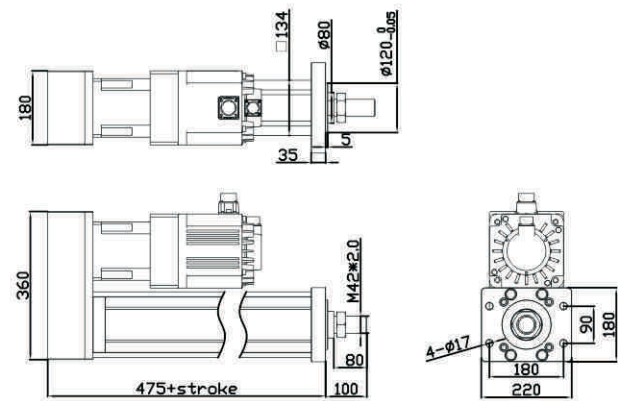


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

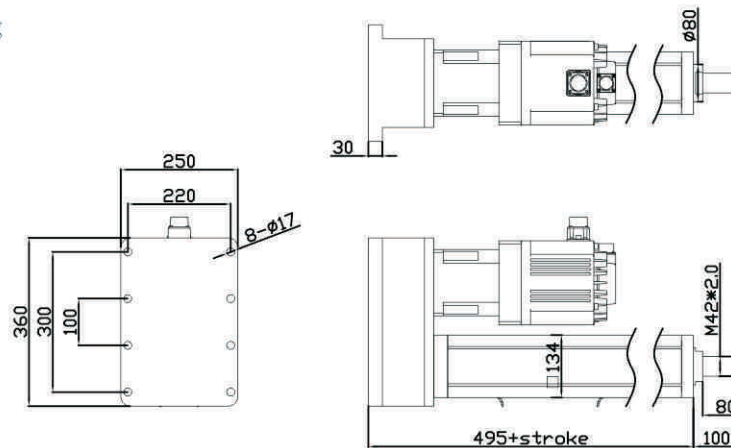
M2 Side trunnion mounting



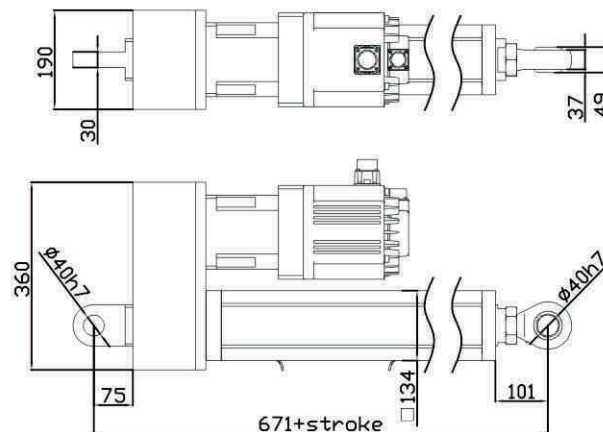
M3 Front flange mounting



M4 Rear flange mounting



M5 Rear shaft mounting

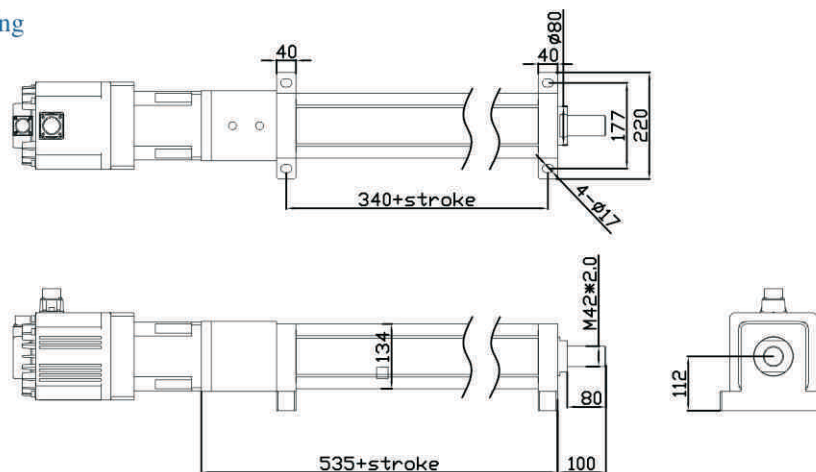


The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

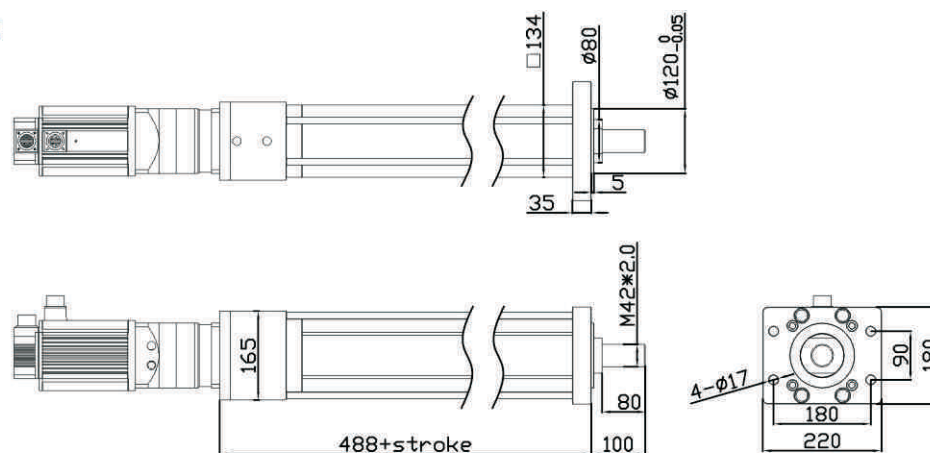
FDR135 Linear outline drawing

(mm)

M2 Side trunnion mounting



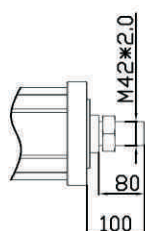
M3 Front flange mounting



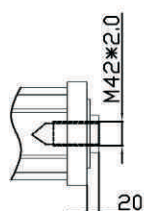
FDR135 Rod End Options

(mm)

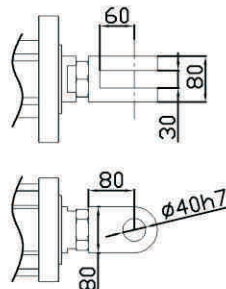
C1 Male thread



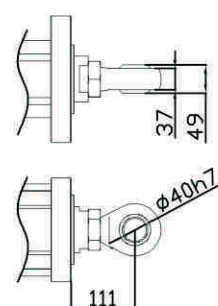
C2 Female thread



C3 Clevis

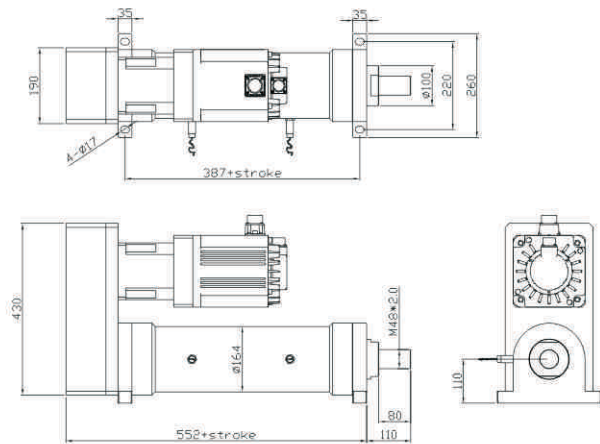


C4 Spherical rod end

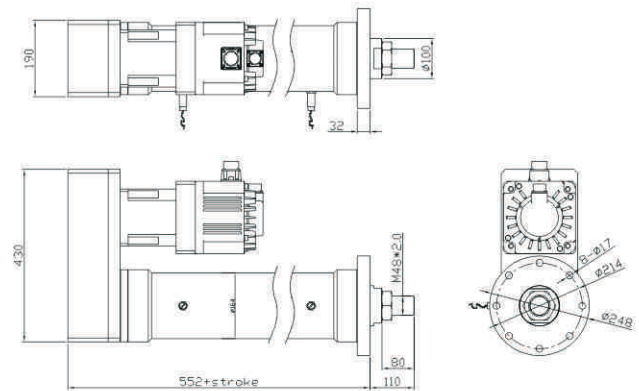


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

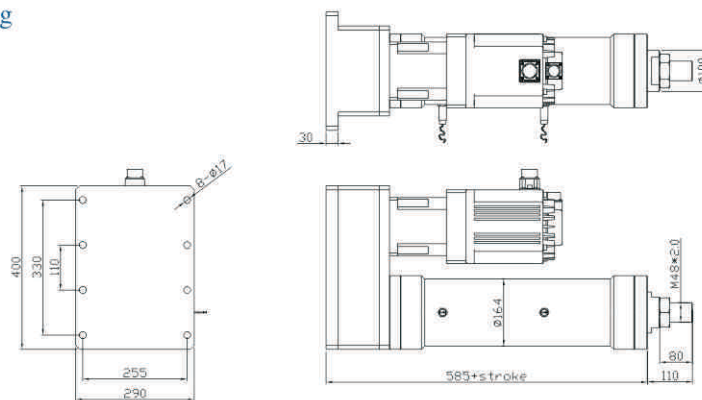
M2 Side trunnion mounting



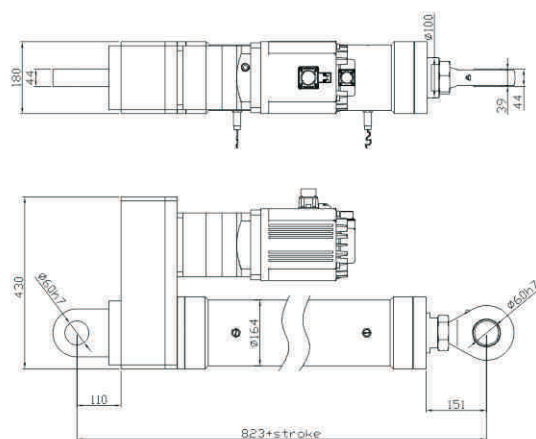
M3 Front flange mounting



M4 Rear flange mounting



M5 Rear shaft mounting

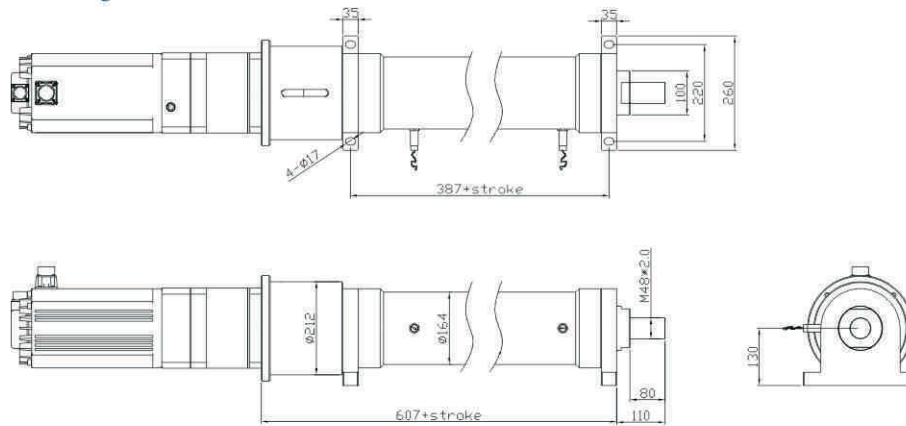


Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

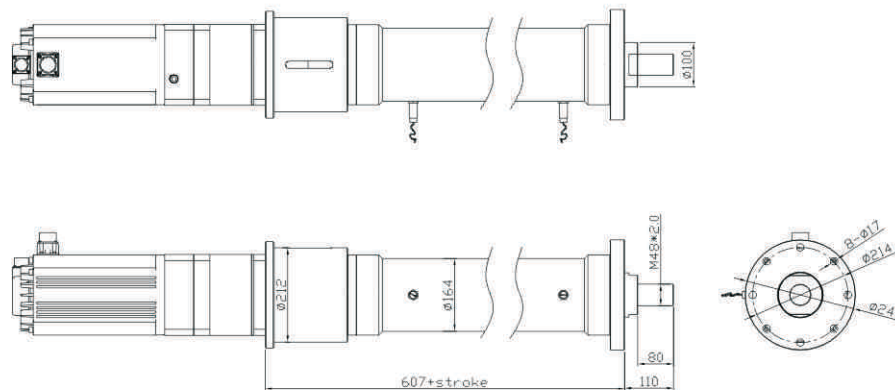
FDR180 Linear outline drawing

(mm)

M2 Side trunnion mounting



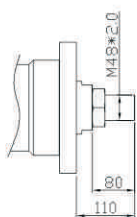
M3 Front flange mounting



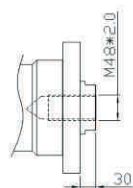
FDR180 Rod End Options

(mm)

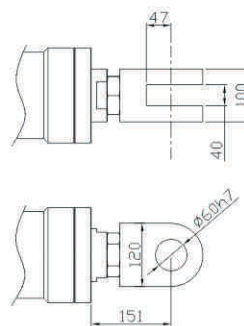
C1 Male thread



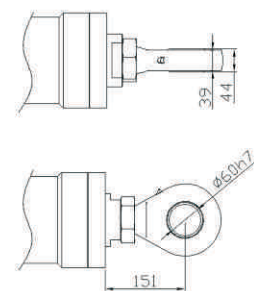
C2 Female thread



C3 Clevis



C4 Spherical rod end



Notice: The servo motor and servo motor plate cylinder block is based at the servo motor flange size order, need specific dimensions, please contact the manufacturer.

Comparison of the electric cylinder and The traditional hydraulic cylinders,cylinder

	Items	Electric cylinders	Hydraulic cylinders	Pneumatic cylinders
Cost Contest	Operations	Easy	Complex	Complex
	Environmental	Pollution-free	Hydraulic Fluid Leaks	High Noise Levels
	Safety	Safe	Hidden Danger/Oil	Hidden Danger/Gas
	Energy	Save	Waste(Oil)	Waste(Gas)
	Lifetime	Long	Can be long with proper maintenance	Can be long with proper maintenance
	Maintenance	Low	Very High	Very High
	Prices	High	Moderate	Low
Function Contest	Velocity	Very High	Moderate	High
	Acceleration	Very High	Moderate	High
	Rigidity	Very High	Moderate	Low
	Load Ability	Strong	Strong	Moderate
	Shock Load	Strong	Strong	Moderate
	Efficiency	> 90%	<50%	<50%
	Location Control	Easy	Hard	Hard
	Location Precision	Very High	Moderate	Moderate

Service life and maintenance

Lifetime of electric cylinders depend on the ball screw and bearing ' s lifetime. In our design, loading ability of the bearing more than ball screw, metal fatigue is the main influencing factors, but the different of speed、load、acceleration、working time will also affect its lifetime cycle, so its too hard to accurately calculate. It is a suggestion for estimating to calculate by 90% of the service life as the same screw is running under the same environment.

- Electric cylinder is refueled with lubrication grease GB7324-1994 general lithium base 3 lubricating grease when leaves factory.
- After electric cylinder has run for 300 hours, refill the lubricating grease. Refueling frequency, per 2000 hours one time as usual, is determined on basis of the operating environment and day-to-day operational time.
- Refuelling method: open the filler hole on the shell of electric cylinder, turn the screw to find the filler hole on the screw nut and refuel lubricating grease.
- Requirement for lubricating grease: GB7324-1994 general lithium base 3 lubricating grease.

► FDR cylinder Safety Instruction

The electric cylinder is customized product. Cylinder with different parameter need to match to appropriated servo motor. Please confirm the motor parameters before using to avoid malfunctions such as motor burnout or abnormal use.

The main structure of the cylinder body is established with steel, aluminum alloy and other metal materials, and the product has a certain weight, so during the installation and commissioning process, the users should take safety measures to avoid product fall or other accidents.

When debugging the equipment, please ensure that the axial direction of the piston rod is not directing to anyone or any objects to avoid any accident duo to the improper setting.

► Notes for installing and using

Electric cylinder is a high precise and sophisticated electric-mechanical product, before using it, please read carefully its instructions and also the instruction of the concerned servo motor and drive. Please don't disassemble the cylinder without the authorization of manufacturer; we won't be responsible for any problem caused due to that.

Electric cylinder is a maintenance-free product. For any replacement of accessories need to be processed with the permission of the manufacturer, if not, we won't be responsible for any problem caused due to that.

Please do not dismount the servo motor without communicating with the manufacturer; the incorrect operating method may cause the damage of the cylinder.

The radial direction of the piston rod can't stand the force from outside which will affect the precision of the cylinder or even cause the damage.

Before installing the drive, please ensure that the entire electrical source is cut off.

Please begin with low speed to test the cylinder to avoid any damage, if it works normally, then increase the speed.

Please do not touch the cylinder during the working time and keep away from safety distance.

► Warranty

Warranty period: 12 months. We offer the free maintenance service within 1 year.

For any problems with our equipment, please contact us via email, telephone, or other communication method.

The following circumstances are not covered by the warranty:

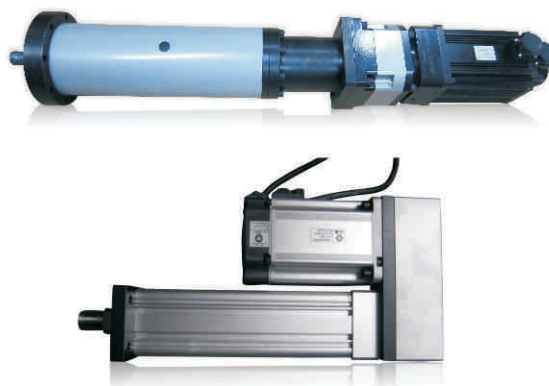
Damage of equipment caused by wrong dismounting.

Malfunction of the equipment due to the wrong operation.

Malfunction of the equipment caused by non resistable factors.

► Customized Cylinder Available

- Special installation, preservation, dust prevention
- High low temperature environment
- Waterproof at sea, anti-explosion work
- Linear displacement sensor
- Pressure sensor
- Resistance swing mechanism
- Planetary gearbox
- Motor: AC servo motor, DC brushless motor, stepping motor, DC motor, AC frequency conversion motor, etc.



Multi Degree of Freedom Motion Simulation Platform



► A brief introduction to the multi degree of freedom platform

The multi degree of freedom motion simulation platform is composed of three, six or multiple electric cylinders connected with hinge and two platforms, the upper platform and the lower platform.

► Product features

- 1) Full digital closed loop servo control, professional multi axis motion control card ensures smoothness of motion and high fidelity, reduces dynamic drift and distortion.
- 2) Brand new modular combination and free and flexible system integration to meet the different needs of customers.
- 3) High-precision, high-rigid electric cylinder drive system and platform combination to ensure that the platform system is highly rigid and efficient.
- 4) Multiple mechanical and electrical safety protection, ensuring the absolute safety of the platform system.
- 5) High response, high speed, high speed and low noise to meet the requirements of various operating environments.
- 6) Friendly man-machine interface, easy to set and simple to operate.
- 7) Energy saving, easy maintenance and long service life.

3DOF (Degree of Freedom) Motion Simulation platform

The three-degree-of-freedom platform is mostly used for simulation experiments. It has obvious safety, economy, and operability. As it is not limited by the space and meteorological conditions, so it has the advantage of safe, economical, operational and efficient.

In addition, as it has less drive joints, less freedom, and is easy to control, it is widely used in driving simulation training, flight simulator, space docking simulation, shipboard and vehicle motion simulation, and structural force loading. The platform can form large shocks and sway, simulate the complex road conditions of the car, the ship's waves and bumps, and earthquake scenes.



3DOF Motion Simulation Platform Performance Overview

Payload	50kg-20000kg		
Posture	Displacement	Speed	Acceleration
Horizontal (X)	$\pm 3^{\circ} \sim \pm 30^{\circ}$	$\leq 30^{\circ}/s$	$\leq 650^{\circ}/s^2$
Vertical (Y)	$\pm 3^{\circ} \sim \pm 30^{\circ}$	$\leq 30^{\circ}/s$	$\leq 650^{\circ}/s^2$
Vertical Lift (Z)	$\pm 10mm \sim \pm 500mm$	$\leq 500mm/s$	$\leq 1.0g$
System response efficiency	0Hz-20Hz		
Drift amount	The platform system runs continuously for more than 12 hours, and the position drift of any one of the electric cylinders does not exceed 0.00025m.		

※For your information: the parameter above is for our standard product, we could customize the nonstandard product according to the exact requirements of our customers.

Advantages:

- Competitive price
- High speed, high precision
- Quick response, stable performance
- Water proof, dust proof
- Low noise
- Energy saving, long service life
- Low maintenance cost, environment friendly

6DOF (Degree of Freedom) Motion Simulation Platform

Based on our electric cylinder, we designed and manufactured the 6 DOF (6 Degree of Freedom) motion base platforms.

The six-degree-of-freedom motion platform consists of six electric cylinders, six upper and lower universal hinges and two upper and lower platforms. The lower platform is fixed on the floor or on other specific platform, with the telescopic movement of six cylinders; the platform simulates variety of motion postures in space. The platform moves in six degrees of freedom (X, Y, Z, α , β , γ) in space, which can simulate various spatial motion postures, so it's widely used in lots of domains as the training simulators such as flight simulators, ship moving simulators, naval helicopter takeoff and landing simulation platforms, tank simulators, car driving simulators, train driving simulators, seismic simulators, and motion movies, entertainment equipment, etc. It can even be used for the docking of space spacecraft and the refueling docking of aerial tankers. In the processing industry, it can be made into a six-axis linkage machine, a smart robot, and the like. Due to the development of the six-degree-of-freedom motion platform, it involves mechanical, hydraulic, electrical, control, computer, sensor, space motion mathematical model, real-time signal transmission processing, graphic display, dynamic simulation, etc., and thus a six-degree-of-freedom movement. The development of the platform has become an iconic symbol of the level in research of hydraulics and control in universities and research institutes.



6DOF Motion Simulation Platform Performance Overview

Payload	50kg-20000kg				
Posture	Displacement	Speed	Acceleration	Accuracy	Repeat Accuracy
Pitch(α)	$\pm 5^\circ \sim \pm 35^\circ$	$\leq 60^\circ/\text{s}$	$\leq 200^\circ/\text{s}^2$	0.03°	0.01°
Rolling(β)	$\pm 5^\circ \sim \pm 35^\circ$	$\leq 60^\circ/\text{s}$	$\leq 200^\circ/\text{s}^2$	0.03°	0.01°
Yam (γ)	$\pm 5^\circ \sim \pm 35^\circ$	$\leq 60^\circ/\text{s}$	$\leq 200^\circ/\text{s}^2$	0.03°	0.01°
Vertical Lift	$\pm 10\text{mm} \sim \pm 500\text{mm}$	$\leq 1000\text{mm}/\text{s}$	$\leq 1.0\text{g}$	0.03mm	0.1mm
Surge (Y)	$\pm 10\text{mm} \sim \pm 500\text{mm}$	$\leq 1000\text{mm}/\text{s}$	$\leq 1.0\text{g}$	0.03mm	0.1mm
Sway(x)	$\pm 10\text{mm} \sim \pm 500\text{mm}$	$\leq 1000\text{mm}/\text{s}$	$\leq 1.0\text{g}$	0.03mm	0.1mm
System response efficiency	0Hz-20Hz				
Drift amount	The platform system runs continuously for more than 12 hours, and the position drift of any one of the electric cylinders does not exceed 0.00025m.				
Control System	1.The motion platform control system consists of a motion controller with CanOpen bus communication and digital input and output functions, full digital motor and specific software, etc. 2.The control of the motion platform is intuitive through the graphical interface that allows the operator to learn and implement in short time. 3.The control software can copy the motion program generated by the motion design software.				

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Advantages of the 6 DOF motion base platform:

- High speed, high precision
- Stable performance
- Water proof, dust proof
- Low noise
- Energy saving, long service life
- Low maintenance cost, environment friendly
- OEM parameters customized platform size.



► Intelligent press machine

Driven by servo motor, the pressure assembly and pressure displacement monitoring function are implemented by high-precision ball screw output force. The built-in high precise pressure sensors and encoders accurately measure speed, pressure and position. The professionally developed control software can ensure the precise control of the pressing force, stop position, press-fit speed and holding time in the whole process, and achieve the whole digital control management.

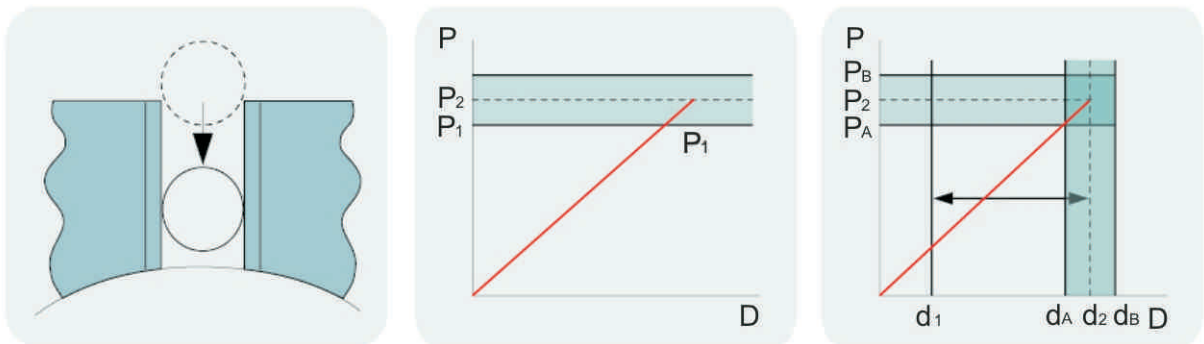
► Basic Operation

1. On the operation interface includes options such as data display, working mode, manual operation, and screen switching.
2. The parameter setting interface mainly includes the setting of process parameters and the editing and saving of options.
3. On the curve interface, you can view the relationship between the current workpiece position and the pressure.

► Press machine Function Application:

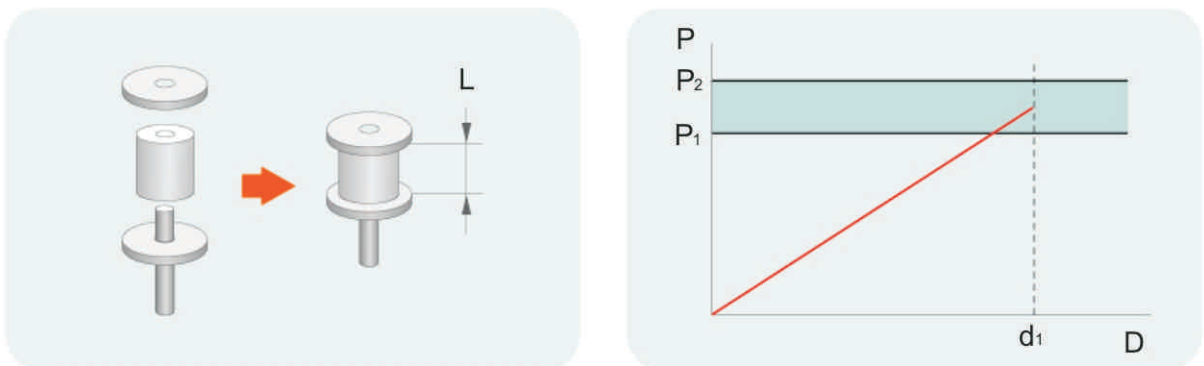
Control pressing mounting assembly size precisely

1. Servo pressing mounting machine can test the pressure precisely according to the set pressed depth and compensate workpiece size tolerance to make sure the precision.
2. It can also set pressure and displacement quality judgement region at the same time and detect online to ensure the product pressing mounting 100% qualified.



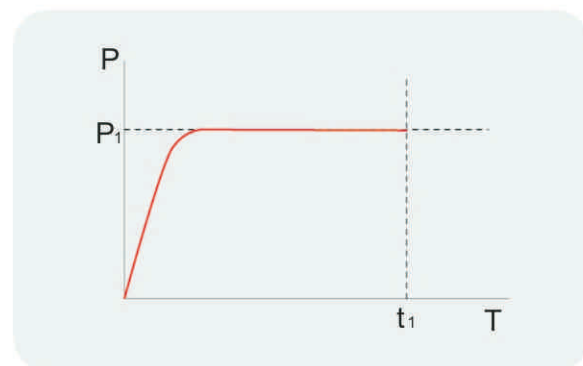
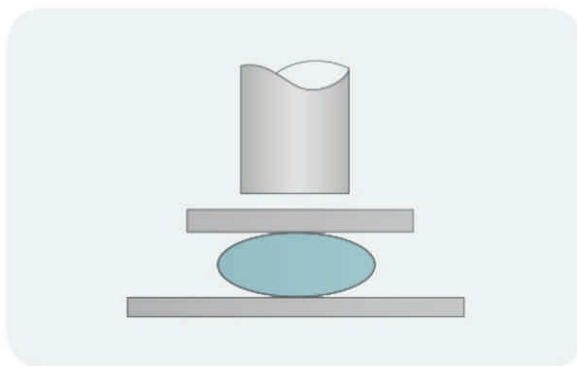
Control pressing mounting stop position precisely

1. The guide wheels is assembled between 2 positioning pallets. The pallets need to be mounted precisely during the assembly to ensure the size.
2. Set precise stop position and detect stop pressure.



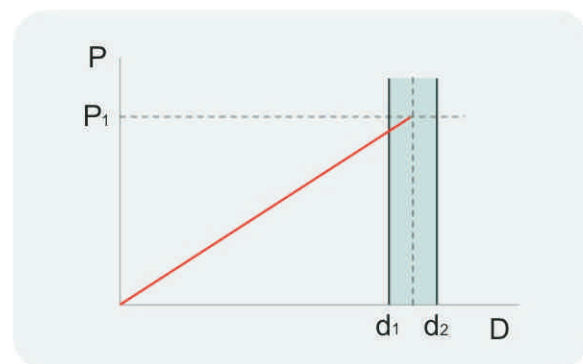
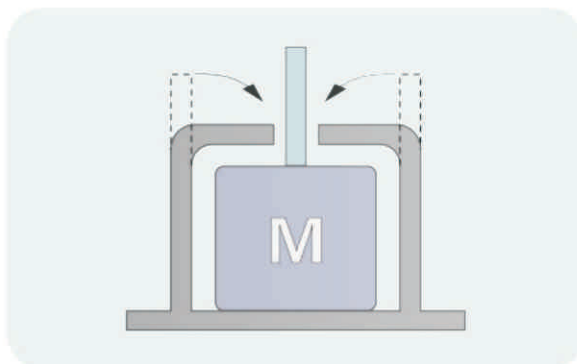
Control pressing mounting time and pressure

1. Servo pressing machine can conduct precise regular time and pressure operation to ensure the safe and reliable bond.
2. It is widely used in the bonding operation and the ultrasonic welding.



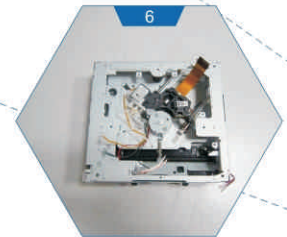
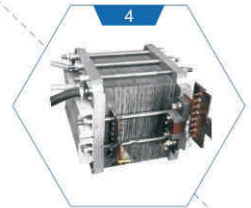
Control pressing mounting stop force precisely

1. The encapsulation of aluminum casing needs precise force and displacement control.
2. Set the pressure accurately and control the stop position to avoid the motor being damaged by pressure.



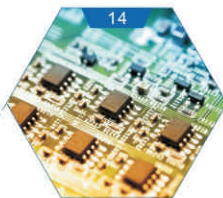
► Press Machine Components

- 1 Press mounting bearing
Precise control pressure and displacement
- 2 Hydraulic motor and pump component
Precise control pressure and displacement
- 3 Precise press mounting motor
- 4 Precise press mounting fuel cell
- 5 Press mounting read/write heads
- 6 Press mounting movement of DVD, Turn lable
- 7 Precise press mounting movement of clocks
- 8 Assembling micromotor and servo motor component
- 9 Pressure encapsulating plug
Precise pressure encapsulating to avoid the damage of the plastic parts
- 10 Precision press mounting gearbox component
- 11 Assembling generator component
- 12 Precise press mounting sealing element
- 13 Elncapsulating relay accessories
- 14 Press mounting electrical element
Precise control pressure and displacement
- 15 Precise assembling auto water pump component
- 16 Pressure measurement
Precise measuring pressure and displacement
- 17 Press mounting column pin / sleeve
Precise control pressure and pressed depth



More applications please contact us

Functional characteristics of intelligence servo pressure machine ◀



Electric cylinder control: 1
Can directly control the servo system operation

Running monitoring: 2
For setting parameters to monitor the pressure and displacement at all times

Parameter Settings: 3
Run programs can be set up separately according to process requirements

Pressing mode: 4
Have a variety of compression mode, available for selection

Data storage: 5
Each assembly data is stored separately and can be traced retroactively

Curve display: 6
Using a double variable curve, showing the pressure displacement state

Program retrieval: 7
Store multiple sets of programs, easy to call

Decision setting: 8
Set the lower limit of the decision according to the product process requirements

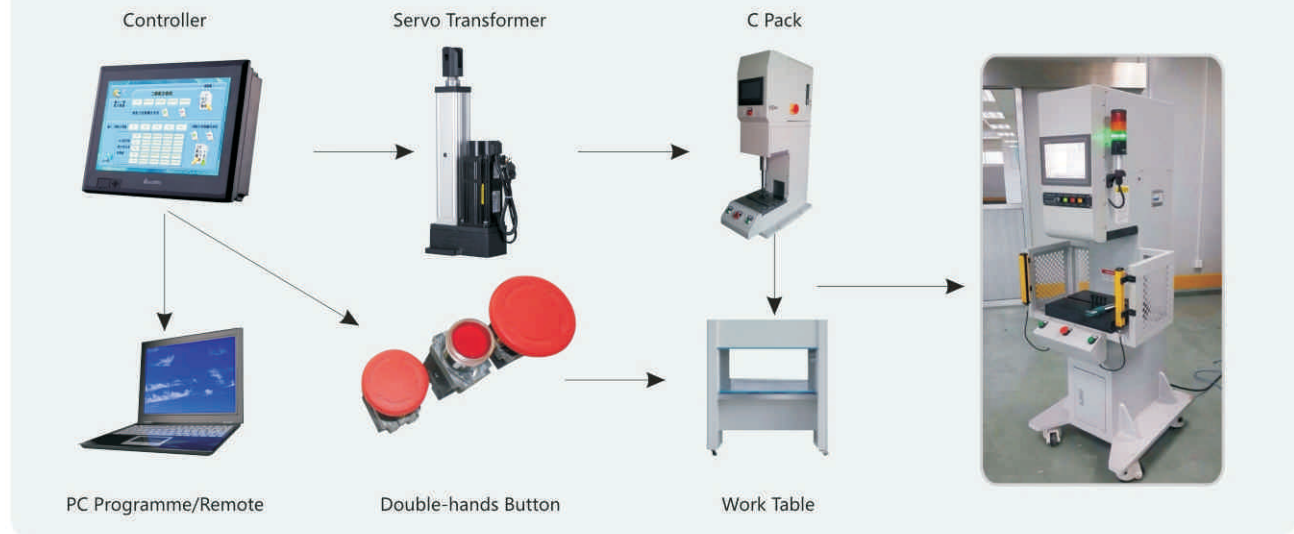
Pressure collection: 9
Pressure during the process of loading the current pressure from time to time to collect

Displacement collection: 10
The current displacement during the process of pressure collection from time to time

Automatic compensation accuracy: 11
To meet the specific conditions of the precision assembly requirements

Communication function: 12
With rs485 or rs232 communication with the host computer

SERVO PRESSING MACHINE SERIES



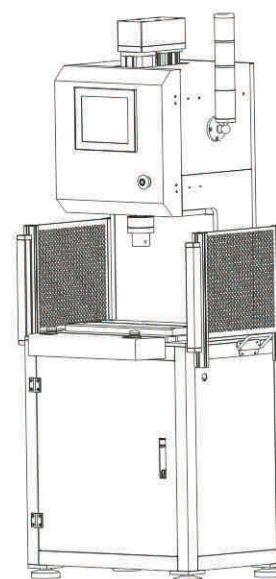
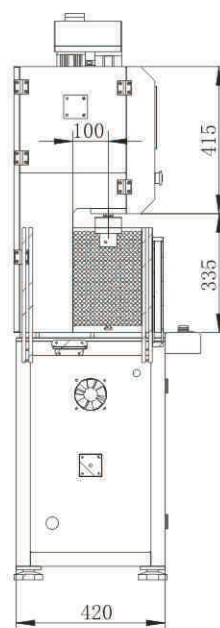
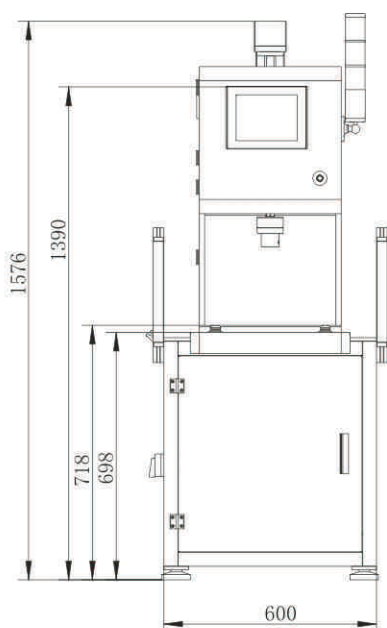
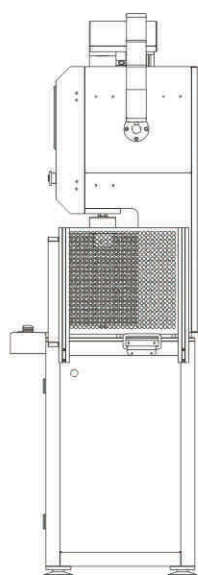
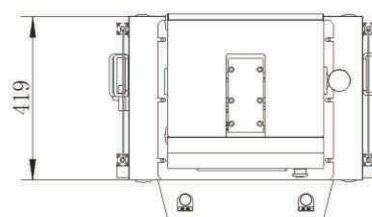
Press Machine Models and Technical Parameters

Project		Model	Unit	FDR -01	FDR -05	FDR -10	FDR -20	FDR -30	FDR -50	FDR -70	FDR -100	FDR -150	FDR -200	FDR -250	FDR -300
Pressure Range	Maximum Value	KN	1	5	10	20	30	50	70	100	150	200	250	300	
	Allowable Range	KN	0.1-1	0.5-5	1-10.	2-20.	3-30.	5-50	7-70	10-100	15-150	20-200	25-250	30-100	
	Unit Setting	N	1	1	1	1	1	1	1	1	1	1	1	1	
Stroke	Maximum Value	mm	200	200	200	200	250	350	350	500	500	500	500	500	
	Unit Setting	mm	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Speed	Press Mounting	mm/s	0-35	0-35	0-35	0-35	0-35	0-35	0-35	0-35	0-30	0-25	0-20	0-15	
	Fast Forward/ Return	mm/s	0-100	0-100	0-100	0-100	0-100	0-100	0-100	0-100	0-100	0-50	0-50	0-30	
	Unit Setting	mm/s	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Compressing Time	Maximum Value	s	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
	Unit Setting	s	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Repeat Precision		mm	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	
Motor Power		KW	0.4	0.75	1.5	2.2	3.5	5.5	7.5	7.5	7.5	7.5	11	11	
Voltage	Three-phase	V	380/220	380/220	380/220	380/220	380/220	380/220	380/220	380/220	380/220	380/220	380/220	380/220	

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Design Drawing of Servo Press Machine with Thrust 5000N

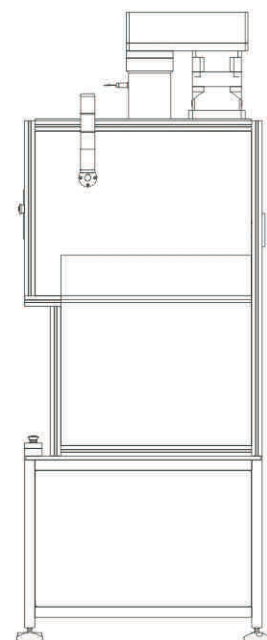
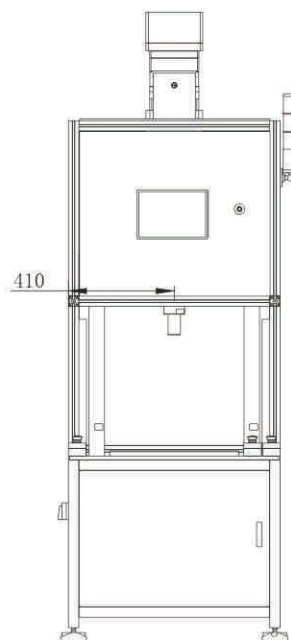
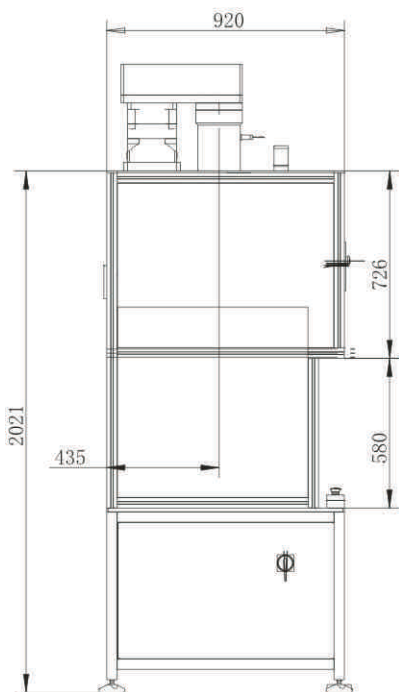
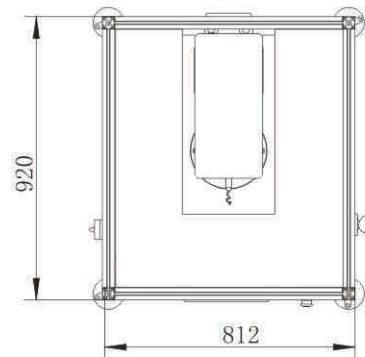
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Design Drawing of Servo Press Machine with Thrust 50000N

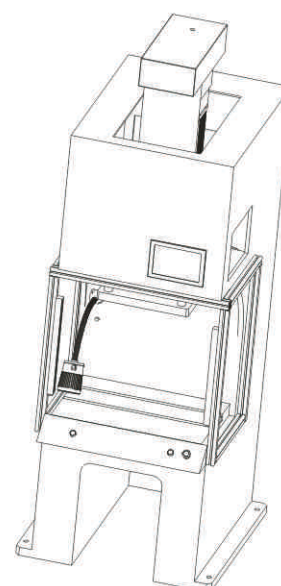
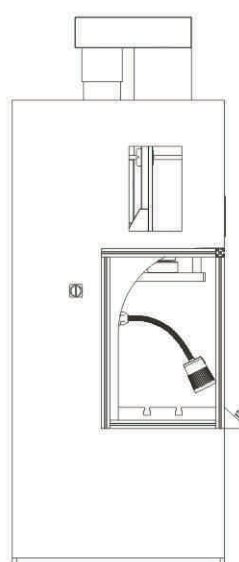
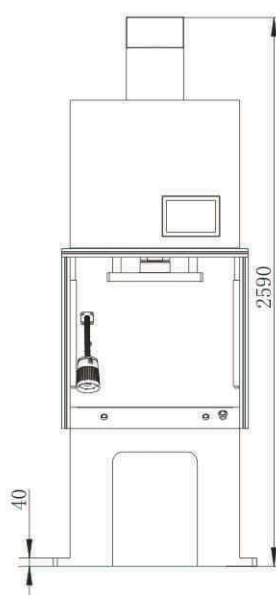
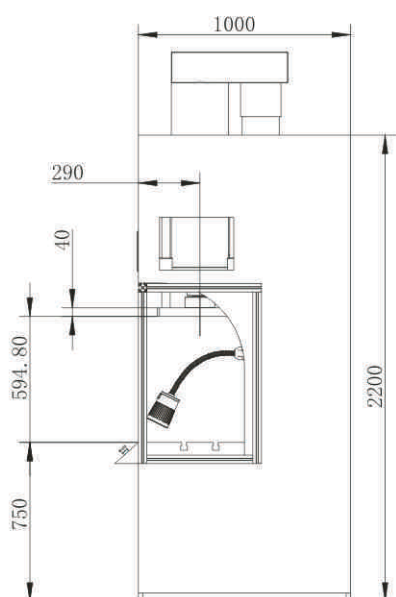
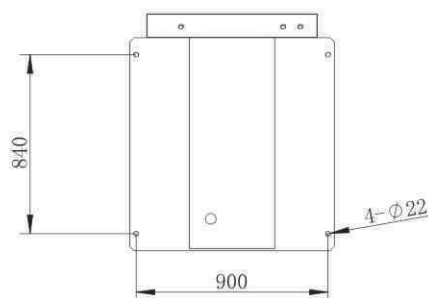
(mm)



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Design Drawing of Servo Press Machine with Thrust 150KN

(mm)



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