

## TUBULAR ACTUATOR



*Antuator, Makes your project straight forward!*

**ANTUATOR SERIES**

**SHANGHAI SITO MOTOR CO.,LTD**

2015 version

6000N  
MAX. LOAD

65mm/s  
MAX. SPEED

# 99%

unique demands can be satisfied, which means Sito actuator can be used to various areas such as rehabilitation medical, car tailgate, home appliance, construction, automatic industry etc.

# 100%

high quality is promised, All Sito products are with proprietary intellectual property rights and CE certification. Sito obtains ISO9001:2008 quality management system certificate and has registered its trademark in EU with approval of European market. Sito actuators are water and dust proof with small size, high load capacity while can realize precision and synchronous control.

# 101%

customer satisfaction is surveyed and Sito will make its best effort to create more and more value for customers!



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## Company Brief Introduction



Established in 2010, SHANGHAI SITO MOTOR CO., LIMITED, a professional manufacturer which is committed to designing, researching & developing, producing and selling tubular actuator series products. Its marketing center is set up in Shanghai Pudong Jinqiao Import & Export Processing Zone while the production base is located in Hangzhou City, Zhejiang Province. SITO's qualified products, prompt delivery time and excellent service are guaranteed by its strong technical force, professional production equipment and complete testing instruments.

As leader and innovator of tubular actuator manufacturing, SITO devoted itself to combination of human aesthetic and high-performance of tubular actuators from the very beginning. Its target is to provide the most perfect solution to health auxiliary equipment and automation devices for intelligent life to mid-aged, old and disabled, and assist customers to improve the competitiveness of terminal products.

**We are dedicated and professional**

We are dedicated to developing and producing tubular actuators and providing all kinds of solutions based on different demands of different application areas.

**We have leading technology**

We already have a number of technical invention patents and put 20% - 30% of annual revenue into technology research and development in order to keep leading technology.

**We process scientific management**

The company has passed ISO9001:2008 quality management system (issued by DNV) and strives to practice 5 s on-site management.

**We pursue insistence**

We established in 2010 and would strive to become a global technology leader and the best supplier in the field of tubular actuator .



Power of better life



# Antuator ,makes your project straight forward!

## Product Introduction

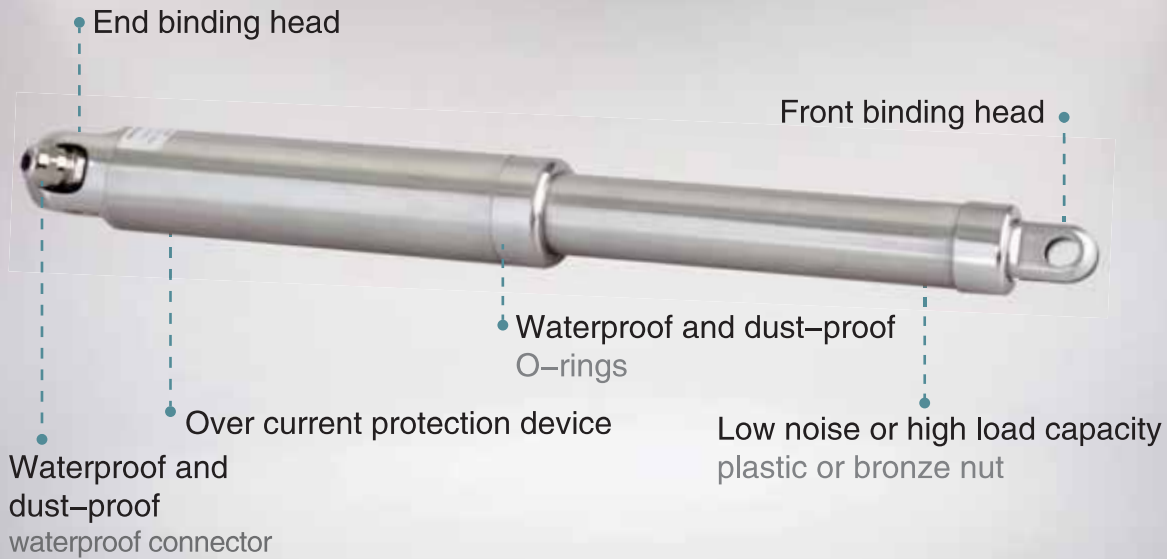


At present,the main actuator products of Sito are ANTUATOR (diameters are 26mm,35mm,38mm,45mm and 52mm) and CARTUATOR(car tailgate actuator) series and aluminum, powder coated steel and stainless steel materials are available. The actuators' load force of pushing,pulling,raising and lowering range from 100N to 6000N and the fastest speed is 65mm/s while the stroke lengths from 50mm to 400mm.The products are equipped with circuit (over current) protection device and also can add inner limit switches and hall sensors. The perfect combination of high performance and linear structure can not only replace conventional L type and bread type actuators,but also be used to simple-designed and room-limited areas.From home to medical,machinery and construction,from shutter to cabinet and electric sofa,from power wheelchair to medical bed and equipment,from production automation equipment to vehicle and lifting platform,etc.Sito tubular actuator exists ubiquitous to make your life more powerful and colorful!





# ANT-26



Diameter 26mm actuator's material is aluminum  
Voltage can make 12V or 24V DC;  
Duty cycle:  
working 2mins with 18mins rest

ANTUATOR SERIES

## Diameter 26 mm actuator classification

26mm actuator > Without over current protection

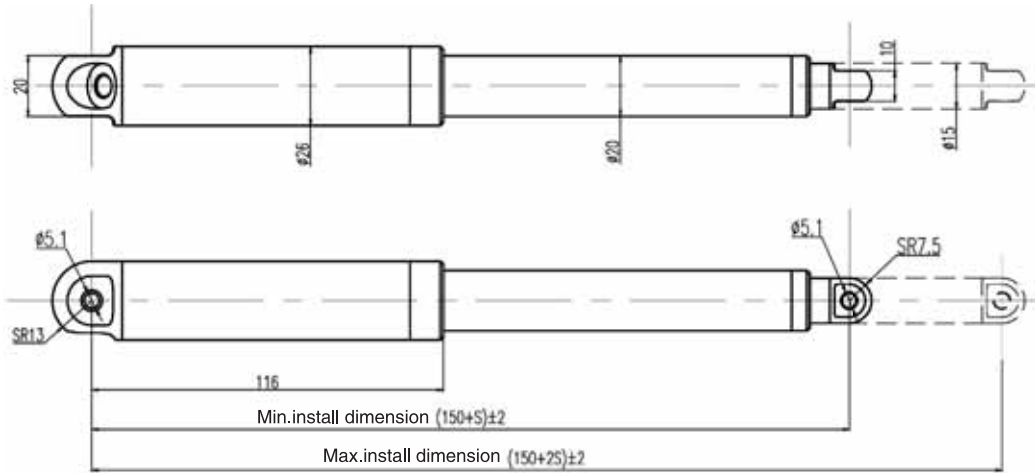
26mm actuator > With over current protection



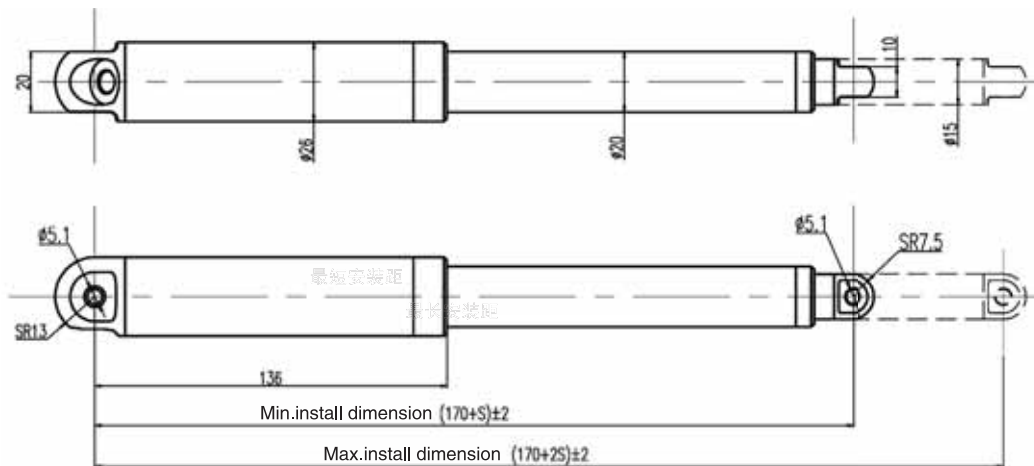
Aluminum

# Load: 0–500N

Without over current protection, the min.install dimension is 150mm+S,S stands for stroke



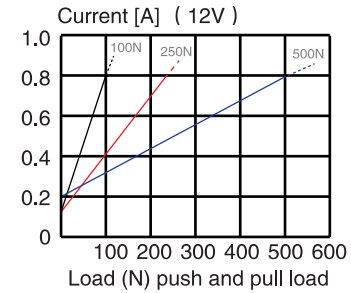
With over current protection, the min.install dimension is 170mm+S,S stands for stroke



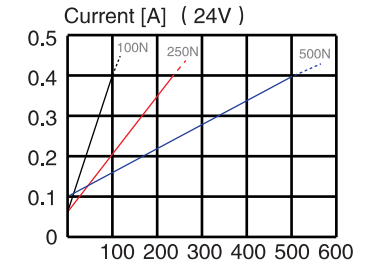
## Data sheet

Max.Load(N)	100	250	500
Speed(mm/s)	11	6.5	3.5

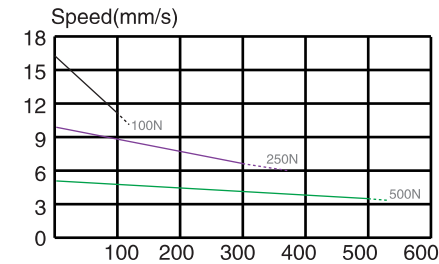
### Curve(Force/current)



### Curve(Force/current)



### Curve(Speed/force)



Accuracy: ± 10% In general,application in the dashed are not recommended.

## Available controllers



Single unit controller



Asynchronous controller  
(backup battery type)  
connect 2pcs actuators



Asynchronous controller  
(transformer type)  
connect 3pcs actuators



# ANT-35

Diameter 35mm actuator has three different materials:  
 powder coated steel, aluminum and stainless steel;  
 Voltage can make 12V or 24V DC;  
 Duty cycle:  
 working 2mins with 18mins rest



## Diameter 35mm actuator classification

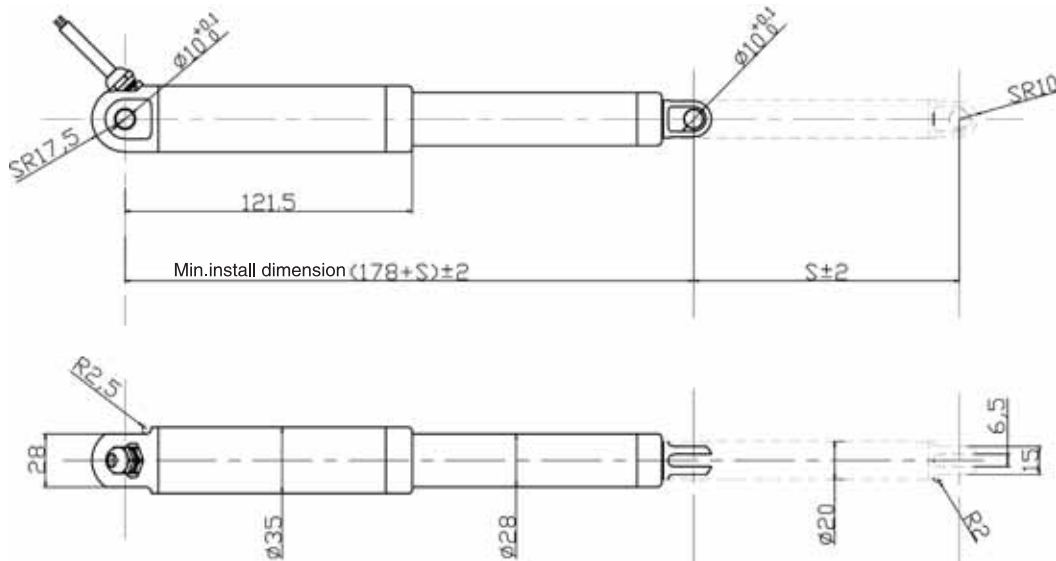
- |                                     |  |
|-------------------------------------|--|
| 1、2 stage ratio<br>(stroke 0~400mm) | > without over current protection or hall sensor |
|                                     | > with over current protection or hall sensor    |
| 1、2 stage ratio<br>(stroke >400mm)  | > without over current protection or hall sensor |
|                                     | > with over current protection or hall sensor    |
| 3 stage ratio<br>(stroke 0~400mm)   | > without over current protection or hall sensor |
|                                     | > with over current protection or hall sensor    |



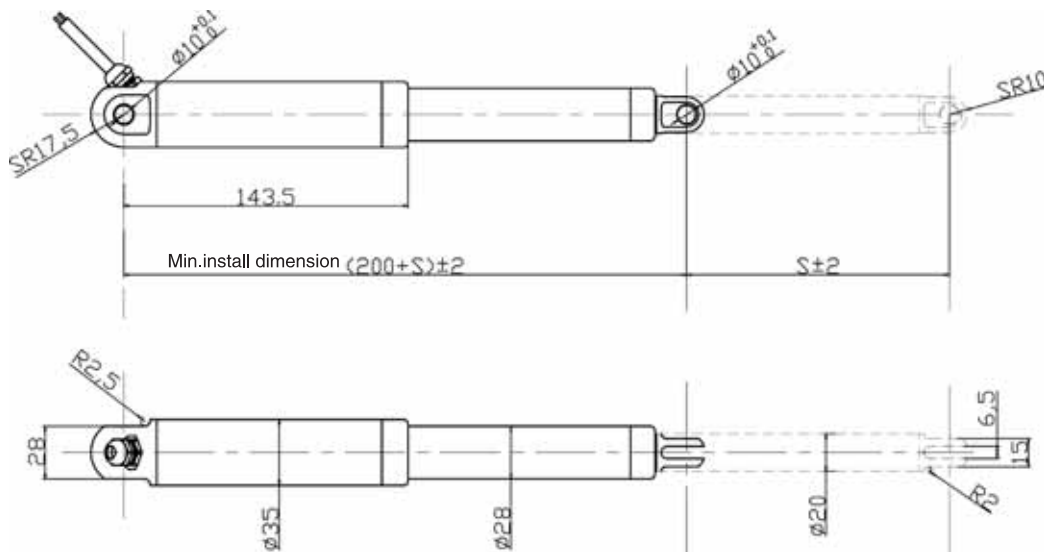


# 1、2 stage ratio( $\leq 800\text{N}$ ),stroke 0~400mm

Without over current protection or hall sensor;the min.install dimension is  $178\text{mm}+S$ ,S stands for stroke.



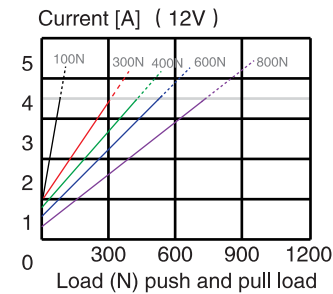
With over current protection or hall sensor;the min,install dimension is  $200\text{mm}+S$ ,S stands for stroke.



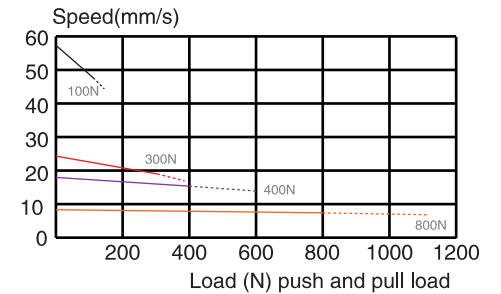
## Data sheet

Max.Load(N)	100	300	400	600	800
Speed(mm/s)	43	17	13	9	7

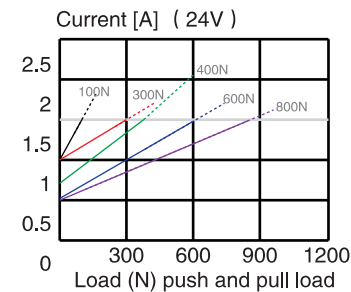
### Curve(Force/current)



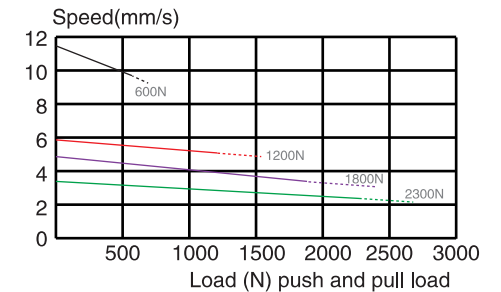
### Curve(Speed/force)



### Curve(Force/current)



### Curve(Speed/force)



Accuracy:  $\pm 10\%$  In general,application in the dashed are not recommended.

## Available controllers



Single unit controller (transformer type)

Single unit controller (backup battery type)  
Asynchronous controller (backup battery type)  
connect 2pcs actuators  
Synchronous controller (backup battery type)

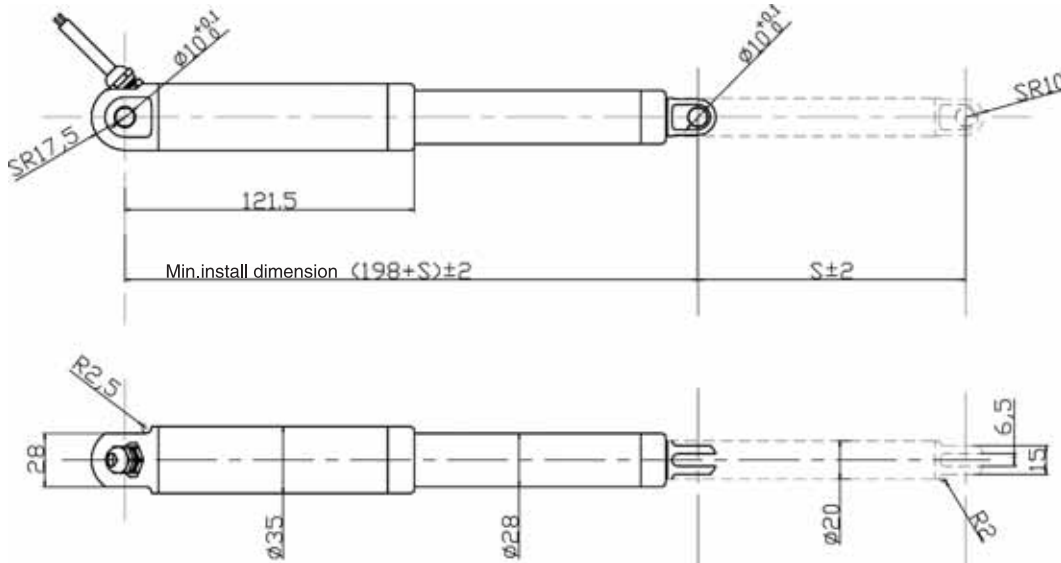
Synchronous controller (transformer type)  
Asynchronous controller (transformer type)  
connect 3pcs actuators

Precision controller

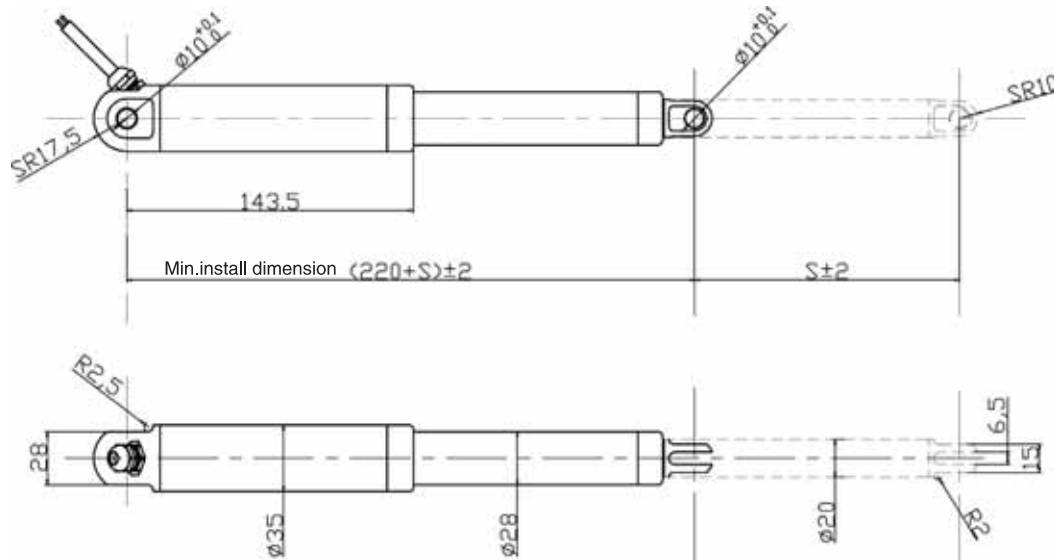


# 1、2 stage ratio( $\leq 800N$ ),stroke $>400mm$

Without over current protection OR hall sensor;the min.install dimension is  $198mm+S$ ,S stands for stroke;  
Stroke range: $S=v*t$ ,v stands for speed and t for time



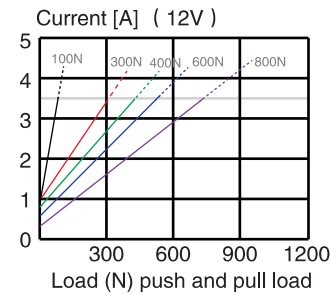
With over current protection OR hall sensor;the min.install dimension is  $220mm+S$ ,S stands for stroke;  
Stroke range: $S=v*t$ ,v stands for speed and t for time



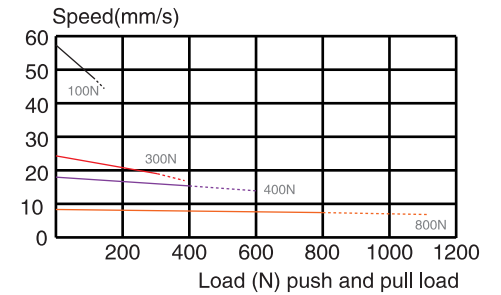
## Data sheet

Max.Load(N)	100	300	400	600	800
Speed(mm/s)	43	17	13	9	7

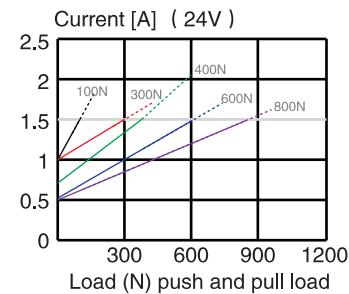
### Curve(Force/current)



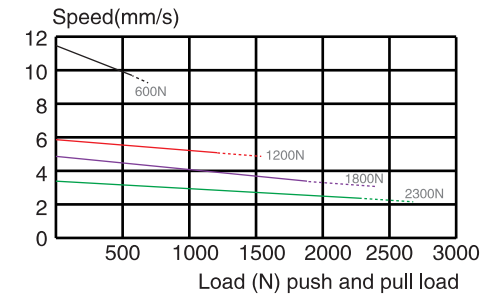
### Curve(Speed/force)



### Curve(Force/current)



### Curve(Speed/force)



Accuracy:  $\pm 10\%$  In general,application in the dashed are not recommended.

## Available controllers



Single unit controller (transformer type)

Single unit controller (backup battery type)  
Asynchronous controller (backup battery type)  
Synchronous controller (backup battery type)

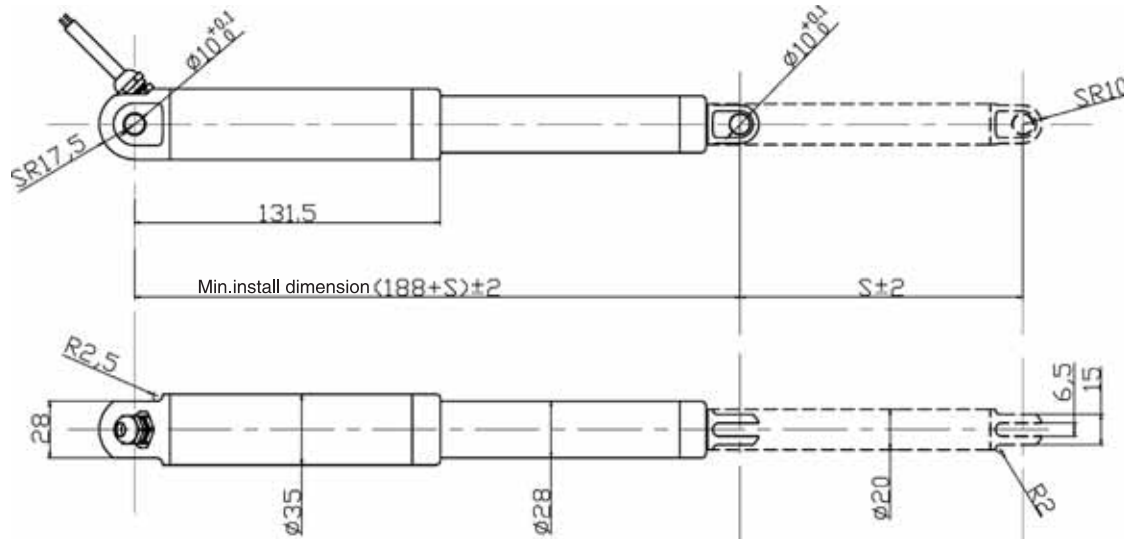
Synchronous controller (transformer type)  
Asynchronous controller (transformer type)  
connect 3pcs actuators

Precision controller

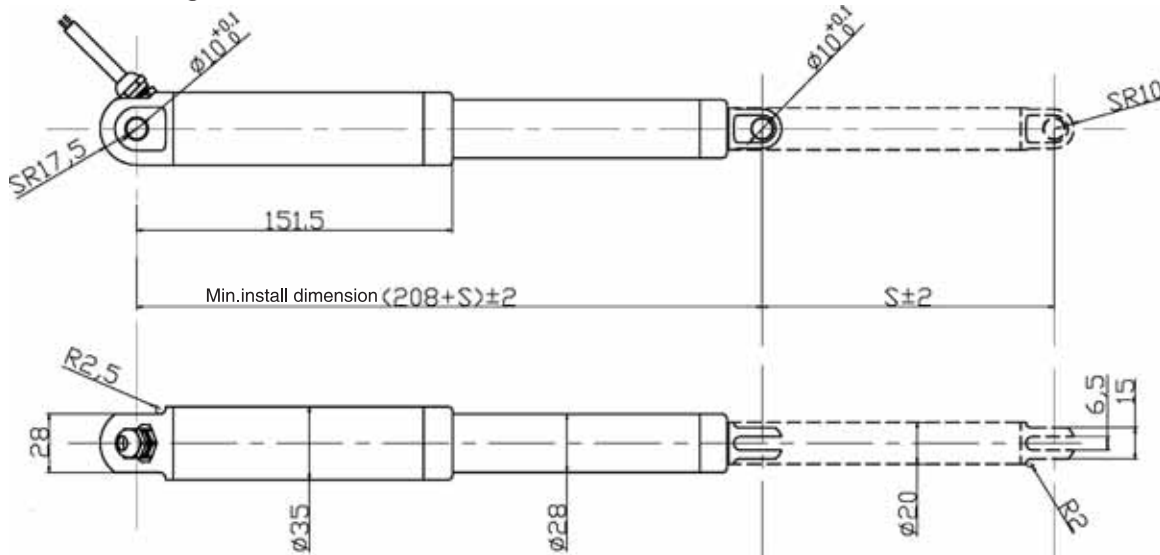


# 3 stage ratio(>800N),stroke<400mm

Without over current protection OR hall sensor;the min.install dimension is 188mm+S,S stands for stroke;  
Load range:900N~2300N



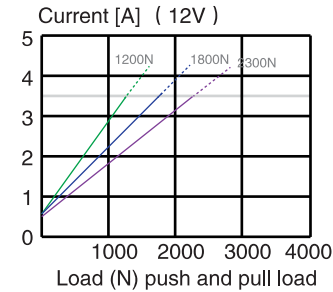
With over current protection or hall sensor;the min.install dimension is 208mm+S,S stands for stroke;  
Load range:900N~2300N



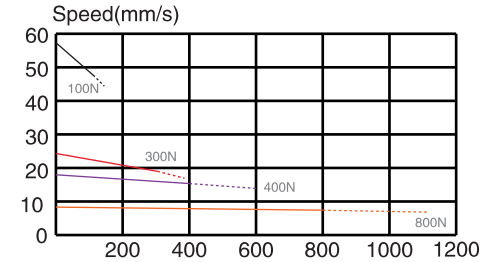
## Data sheet

Max.Load(N)	1200	1800	2300
Speed(mm/s)	4.5	3	2.3
Max.Stroke(mm)	400	300	200

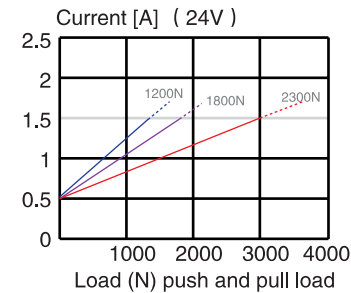
### Curve(Force/current)



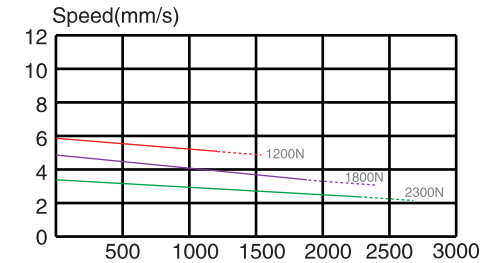
### Curve(Speed/force)



### Curve(Force/current)



### Curve(Speed/force)



Accuracy: ± 10% In general,application in the dashed are not recommended.

## Available controllers



Single unit controller (transformer type)



Single unit controller (backup battery type)  
Asynchronous controller (backup battery type) connect 2pcs actuators  
Synchronous controller (backup battery type)



Synchronous controller (transformer type)  
Asynchronous controller (transformer type) connect 3pcs actuators



Precision controller



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Power of better life





# ANT-38

Diameter 38mm actuator's material is powder coated aluminum and it has built-in limit switch;

Voltage can make 12V or 24V DC;

Duty cycle:  
working 2mins with 18mins rest



ANTUATOR SERIES

## Diameter 38mm actuator classification

Built-in limit switch

- 1、2 stage ratio > without over current protection or hall sensor
- Built-in limit switch > with over current protection or hall sensor

- 3 stage ratio > without over current protection or hall sensor
- Built-in limit switch > with over current protection or hall sensor

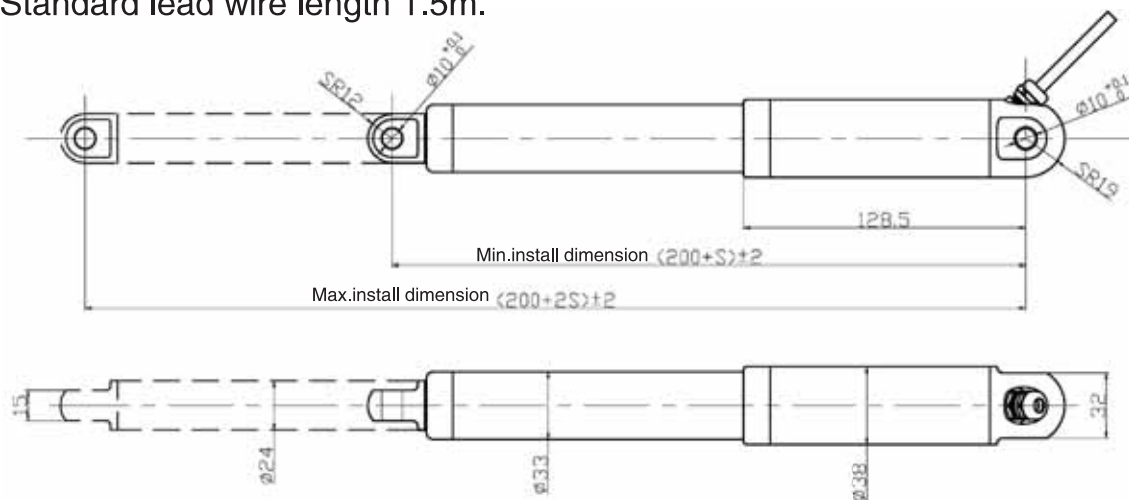


Different strokes diameter 38mm powder coated aluminum actuator

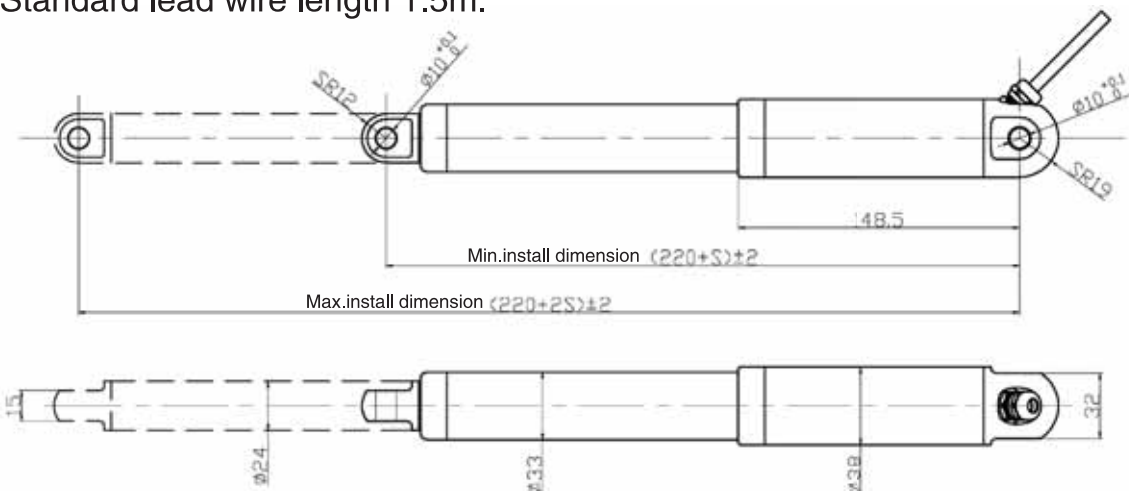


# 1、2 stage ratio( $\leq 800\text{N}$ ),stroke 0~300mm

Without over current protection or hall sensor,  
the min.install dimension is  $200\text{mm}+S$ ,load range:0~800N  
Standard lead wire length 1.5m.



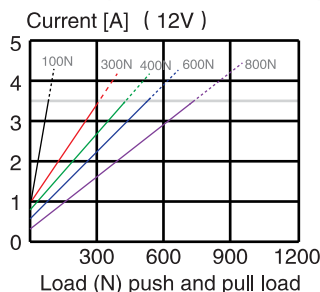
With over current protection or hall sensor,  
the min.install dimension is  $220\text{mm}+S$ ,load range:0~800N  
Standard lead wire length 1.5m.



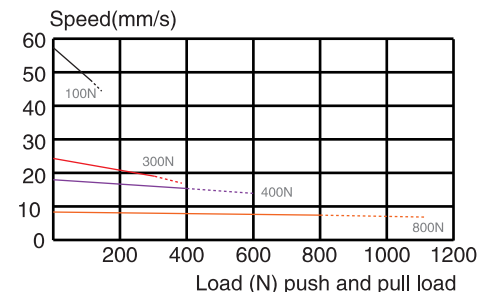
## Data sheet

Max.Load(N)	100	300	400	600	800
Speed(mm/s)	43	17	13	9	7

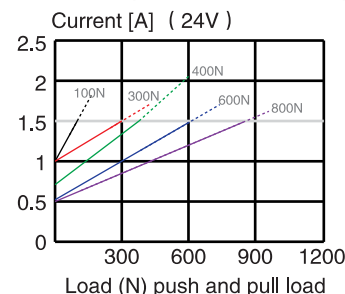
## Curve(Force/current)



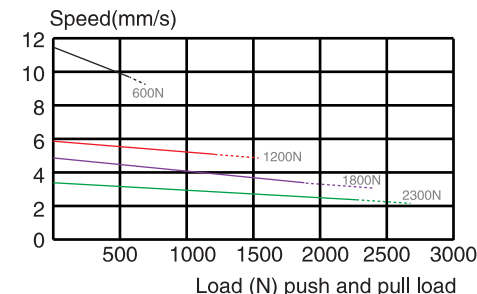
## Curve(Speed/force)



## Curve(Force/current)



## Curve(Speed/force)



Accuracy:  $\pm 10\%$  In general,application in the dashed are not recommended.

## Available controllers



Single unit controller  
(transformer type)

Single unit controller  
(backup battery type)  
Asynchronous controller  
(backup battery type)  
Synchronous controller  
(backup battery type)

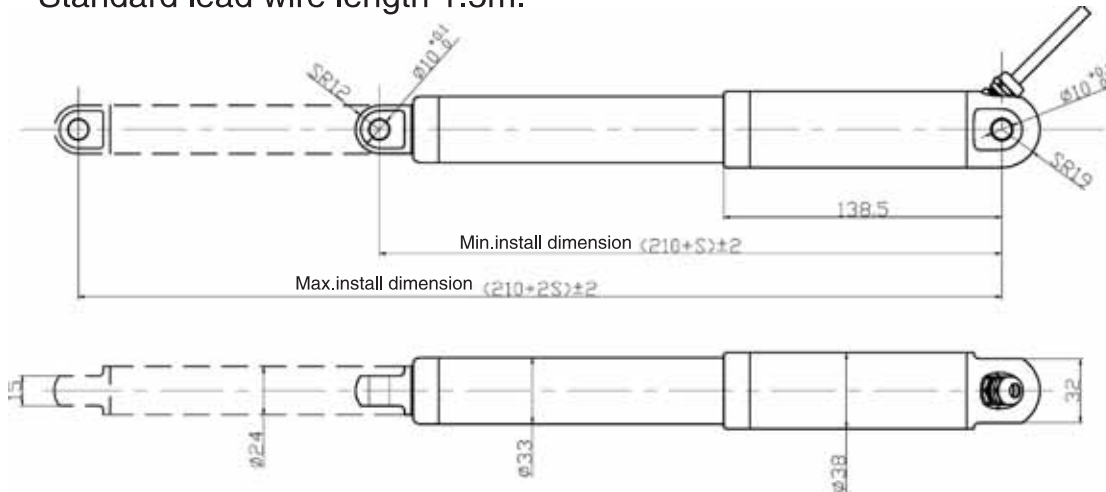
Synchronous controller  
(transformer type)  
Asynchronous controller  
(transformer type)  
connect 3pcs actuators

Precision controller

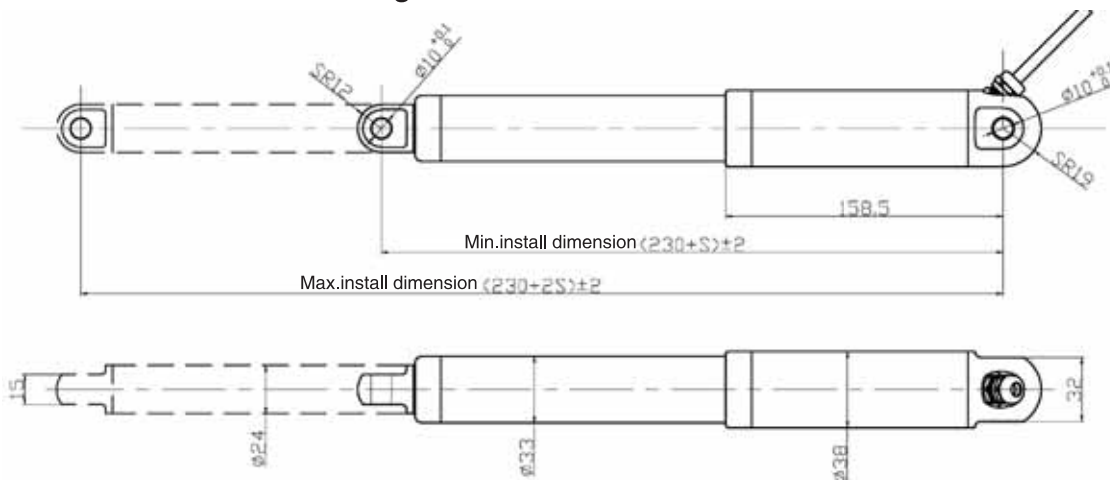


# 3 stage ratio(>800N),stroke 0~300mm

Without over current protection or hall sensor,  
the min.install dimension is 210mm+S,Load range 900~2300N.  
Standard lead wire length 1.5m.



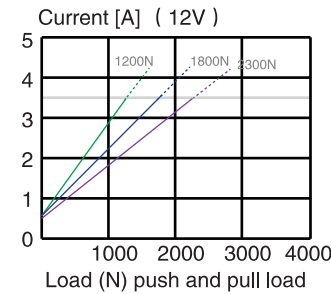
With over current protection or hall sensor,  
the min.install dimension is 230mm+S,Load 900~2300N.  
Standard lead wire length 1.5m.



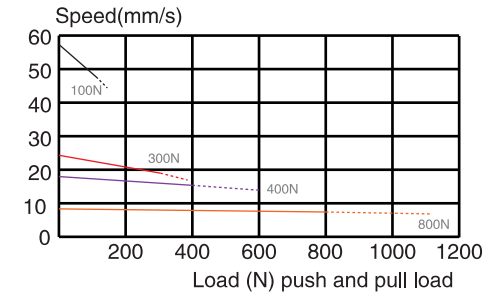
## Data sheet

Max.Load(N)	1200	1800	2300
Speed(mm/s)	4.5	3	2.3

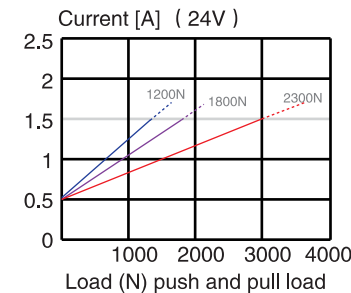
### Curve(Force/current)



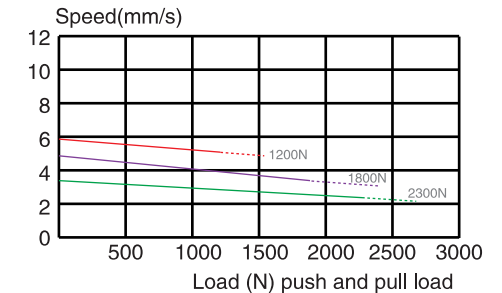
### Curve(Speed/force)



### Curve(Force/current)



### Curve(Speed/force)



Accuracy: ± 10% In general,application in the dashed are not recommended.

## 适配控制器



Single unit controller  
(transformer type)



Single unit controller  
(backup battery type)  
Asynchronous controller  
(backup battery type)  
connect 2pcs actuators



Synchronous controller  
(transformer type)  
Asynchronous controller  
(transformer type)  
connect 3pcs actuators



Precision controller



# ANTUATOR SERIES

## ANT-45

Diameter 45mm actuator's material is powder coated steel, stroke ranges from 0 to 400mm, Voltage can make 12V or 24V DC; Duty cycle: working 2mins with 18mins rest



Different strokes diameter 45mm powder coated aluminum actuator

Front binding head

End binding head



Low noise or high load capacity plastic or bronze nut

Waterproof and dust-proof O-rings

Waterproof and dust-proof waterproof connector

Precision and synchronous control hall sensor or over current protection device

### Diameter 45mm actuator classification

1、2 stage ratio (0-1600N)

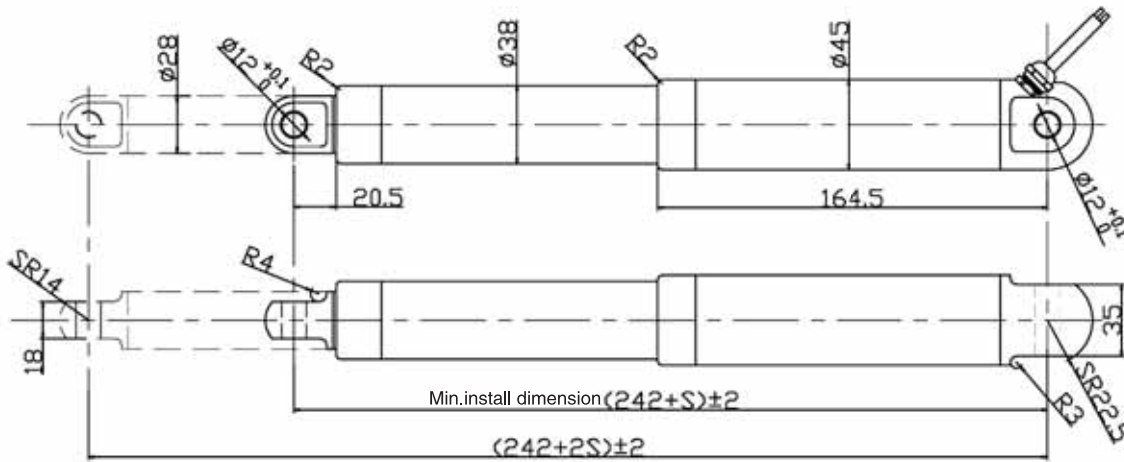
- > without over current protection or hall sensor
- > with over current protection or hall sensor

3 stage ratio (1600-3800N)

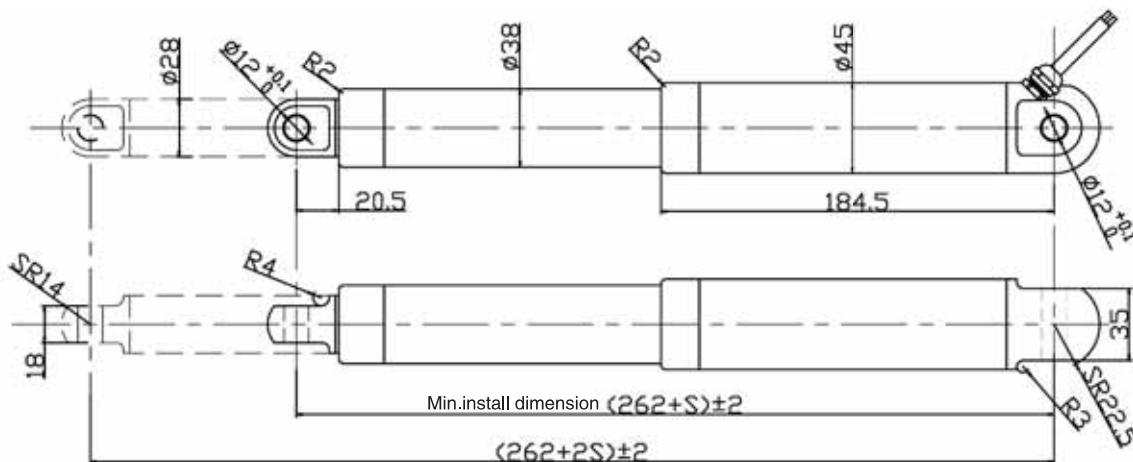
- > without over current protection or hall sensor
- > with over current protection or hall sensor

# 1、2 stage ratio, stroke range:0~400mm

Without over current protection or hall sensor;the min.install dimension is 242mm+S,S stands for stroke



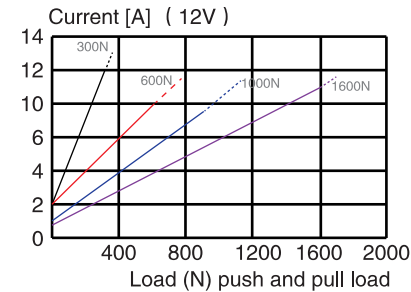
With over current protection or hall sensor;the min.install dimension is 262mm+S,S stands for stroke



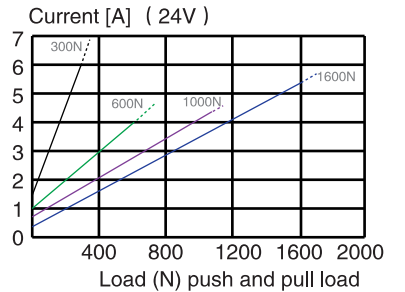
## Data sheet

Max.Load(N)	300	600	1000	1600
Speed(mm/s)	45	24	16	11

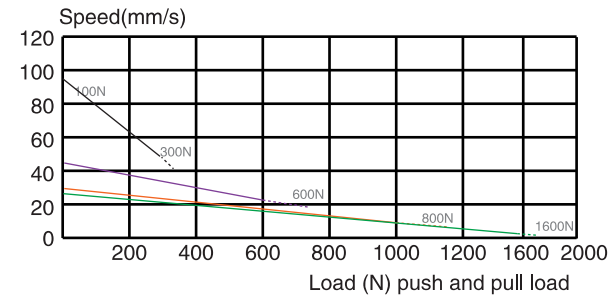
## Curve(Force/current)



## Curve(Force/current)



## Curve(Speed/force)



Accuracy: ± 10% In general,application in the dashed are not recommended.

## Available controllers

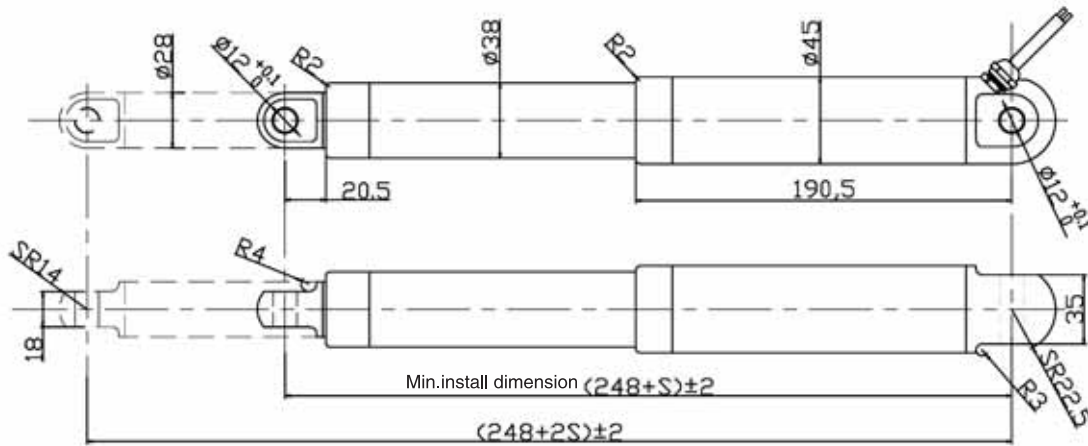


Asynchronous controller  
(transformer type)  
connect 3pcs actuators

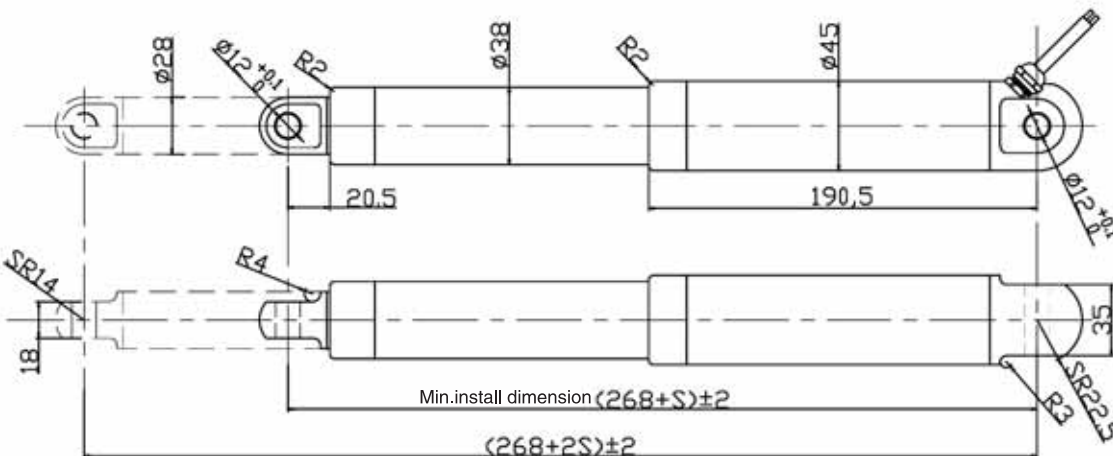


# 3 stage ratio, stroke range:0~400mm

Without over current protection or hall sensor;the min.install dimension is 248mm+S,S stands for stroke



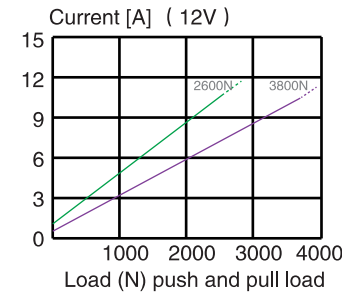
With over current protection or hall sensor;the min.install dimension is 268mm+S,S stands for stroke



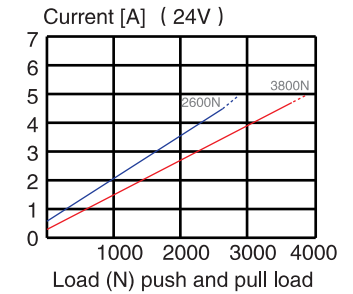
## Data sheet

Max.Load(N)	2600	3800
Speed(mm/s)	5.5	4

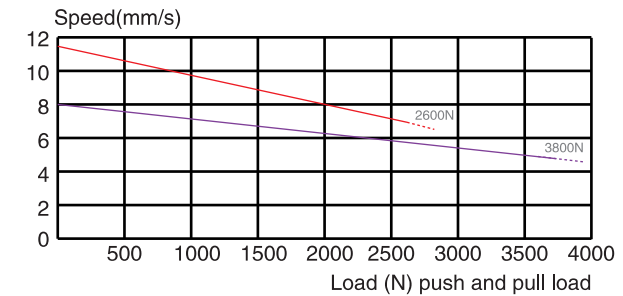
## Curve(Force/current)



## Curve(Force/current)



## Curve(Speed/force)



Accuracy: ± 10% In general,application in the dashed are not recommended.

## Available controllers



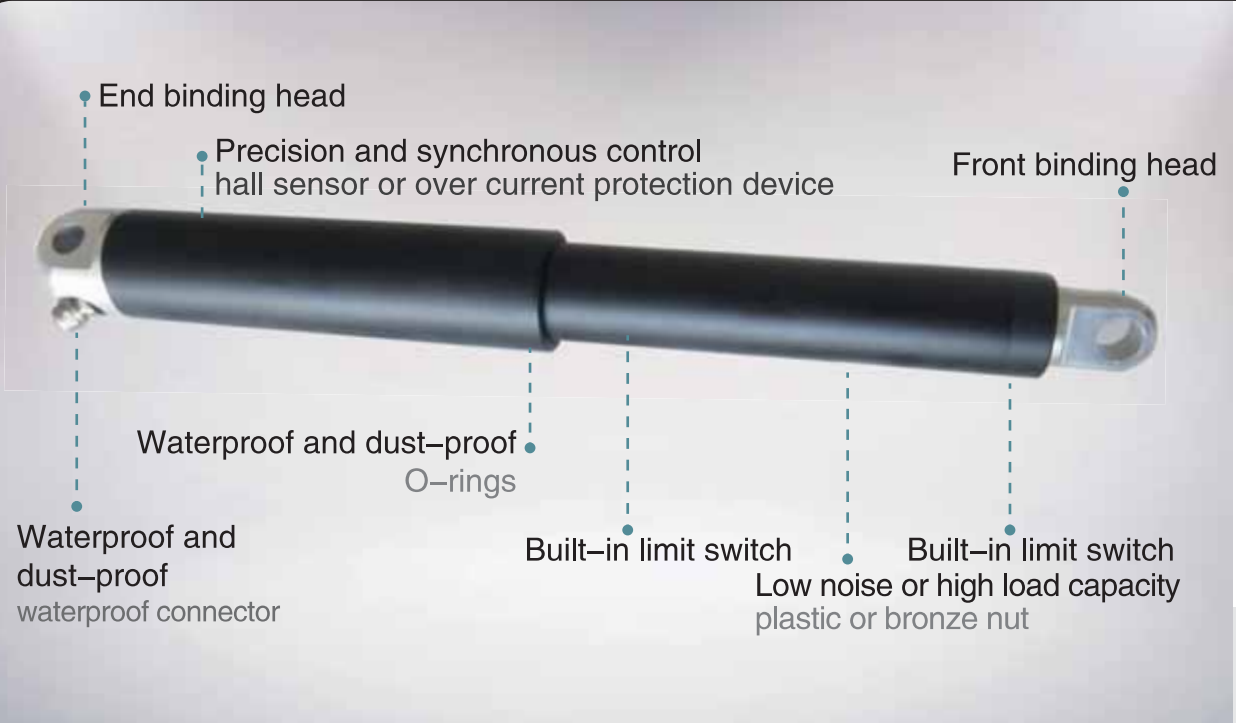
Asynchronous controller  
(transformer type)  
connect 3pcs actuators



# ANT-52

Diameter 52mm actuator's material is powder coated aluminum and it has built-in limit switch;  
 Voltage can make 12V or 24V DC;  
 Duty cycle:  
 working 2mins with 18mins rest.

ANTUATOR SERIES



## Diameter 52mm actuator classification

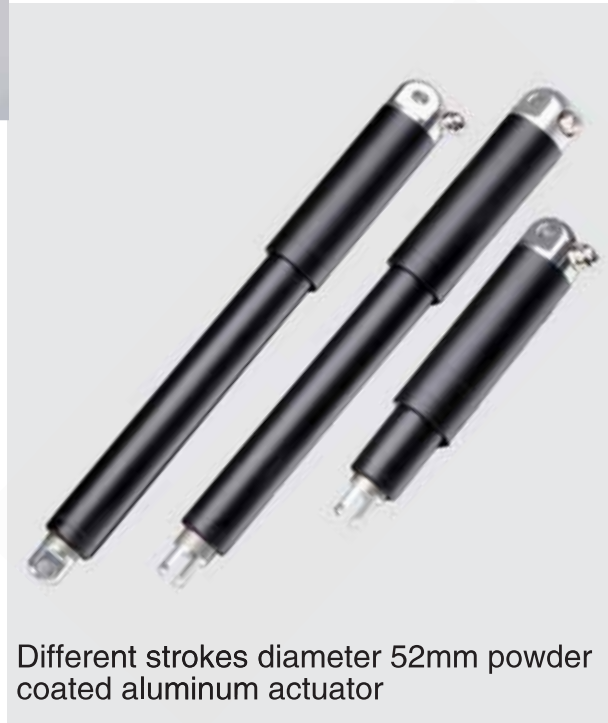
Built-in limit switch

Diameter 52mm actuator

- > without over current protection or hall sensor
- > with over current protection or hall sensor

Diameter 52mm actuator

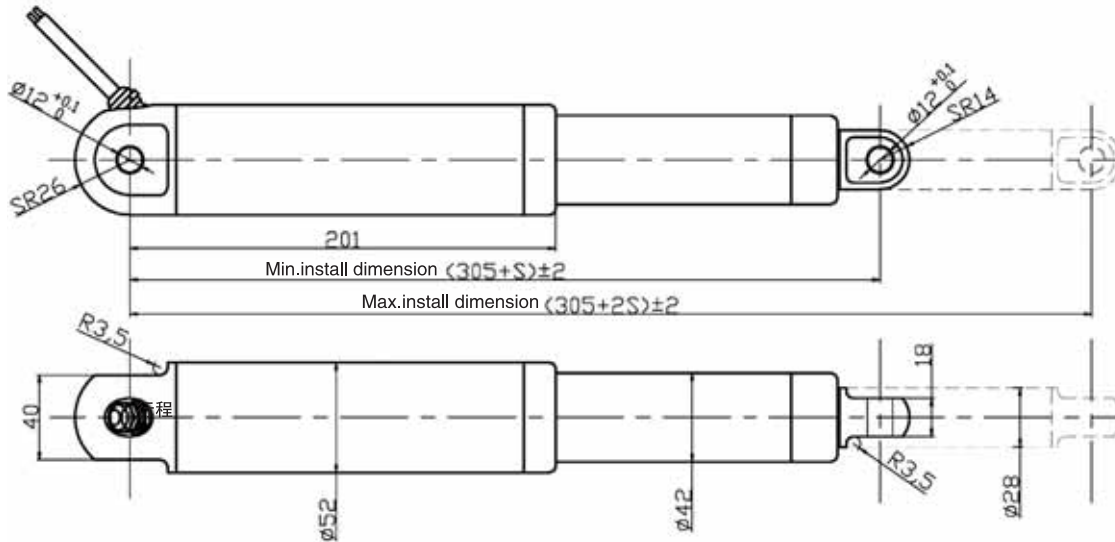
- > without over current protection or hall sensor
- > with over current protection or hall sensor



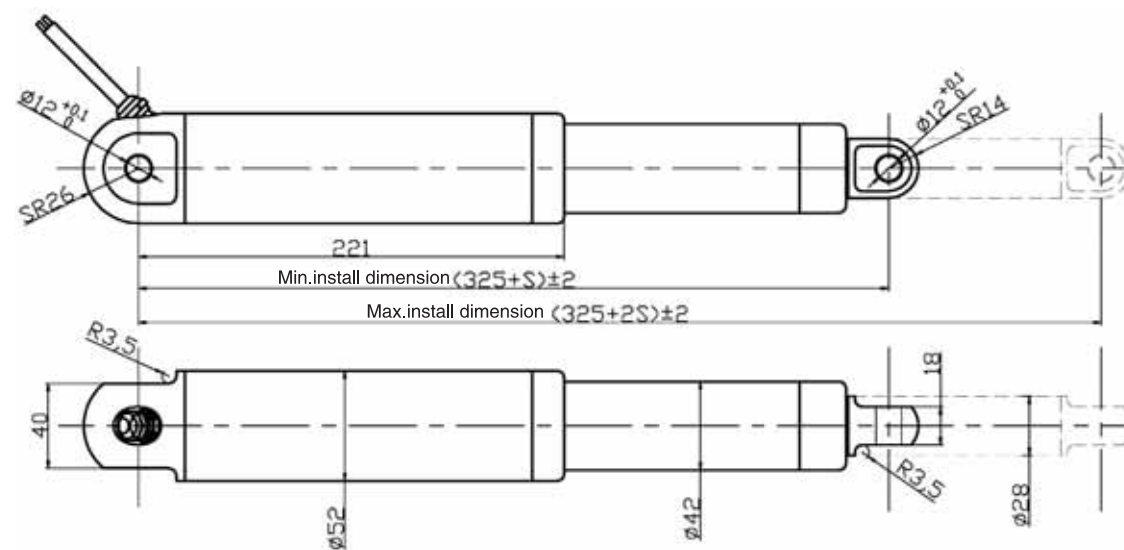
Different strokes diameter 52mm powder coated aluminum actuator

# 52mm actuator

Without over current protection or hall sensor,  
the min.install dimension is 305mm+S.



With over current protection or hall sensor,  
the min.install dimension is 325mm+S.



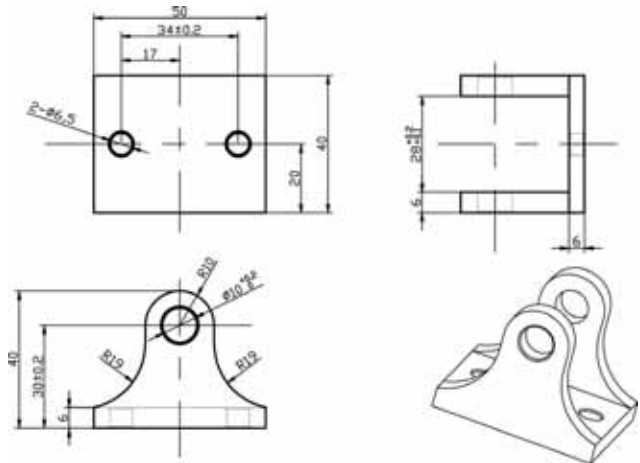
Still under testing,  
the specifications will come out soon

## Available controllers



Asynchronous controller  
connect 3pcs actuators

## End mount bracket



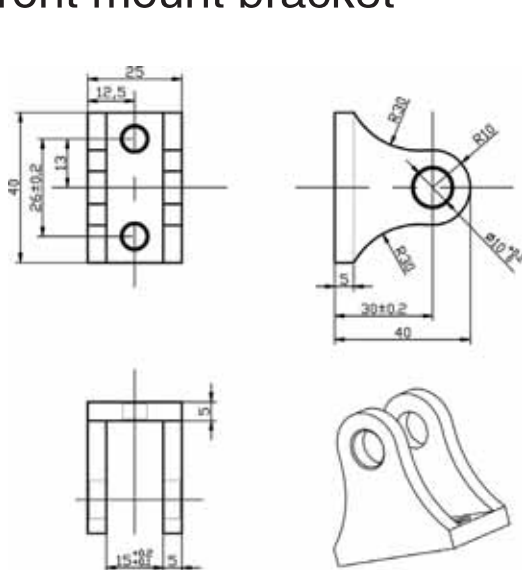
Type1

# Accessories

## — Mounting Bracket

Currently we have three types of mounting brackets: type 1, 2 and 3. Type 1 is fixed to actuator's end while type 2 or type 3 is fixed to actuator's front. And nut holes on the bottom are used to mount the brackets.

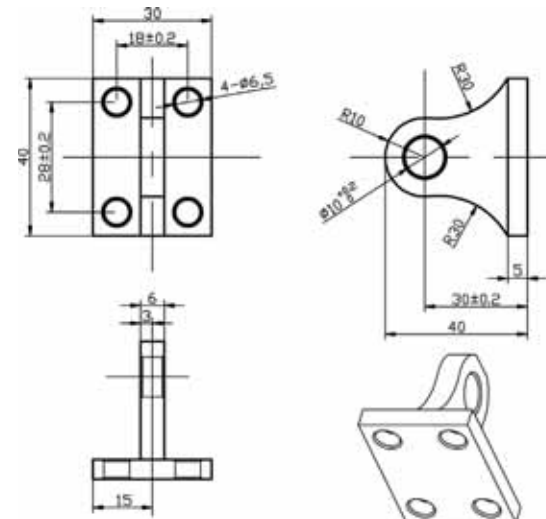
## Front mount bracket



Type2



Type3



Lead wire connector



4 pins for over current protection



6 pins for hall sensor

# Accessories

## — Lead wire connector

Currently we have two kinds of connectors:  
 4pins and 6pins.  
 4pins connector is used to actuator without hall sensor and matches with Sito single unit or asynchronous controller.  
 6pins connector is used to actuator with hall sensor and matches with Sito synchronous or precision controller.

Actuator binding head



U type  
(front)



Universal joint type  
(front)



O type  
(front)



Ball joint type  
(front)



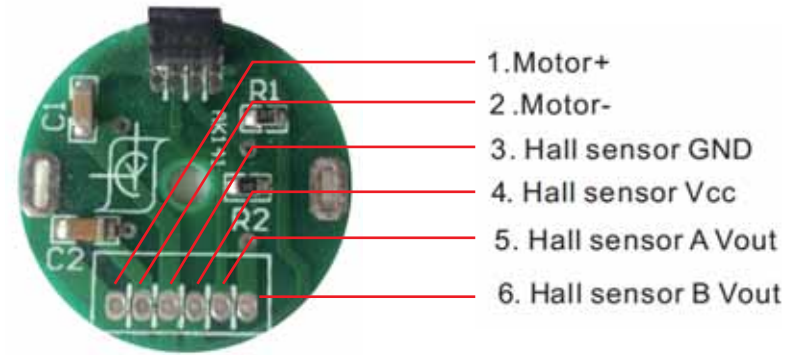
End

# Hall Sensor



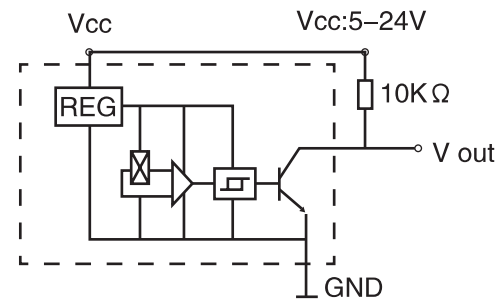
Hall sensor can be added to the actuator and the function of hall sensor is to provide a signal feedback to the receiver to judge the motor speed.

If we know how many signals hall sensor can produce in one circle, we will know how many signals the hall sensor can provide to the receiver when the motor runs one circle and then we can control the actuator speed and stroke precisely.

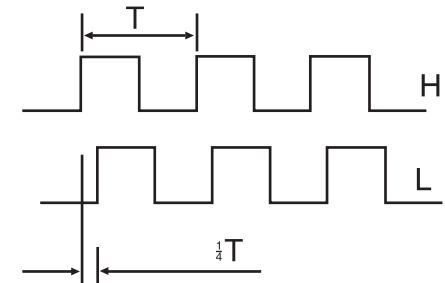


## Specification of hall sensor circuit

Output circuit



Output wave



## Hall sensor specifications

Characteristic	Code name	Test condition	Min	Mid	Max	Units
Input voltage	Vcc	—	4.5	—	24	V
Output voltage	Ic	Vce=12V; Gauss<-170	—	<0.1	20	MA

## Over current protection



Over current protection can be added to the actuator, when the actuator extends to full stroke or overloaded, it will protect the actuator by limiting motor's current. The function of over current protection is to protect the actuator from damage.

### Specification

(Circuit breaking current A)

	26mm	35/38mm	45/52mm
DC12V	1	5.0–5.5	14
DC24V	0.5	2.5–3.0	7



1. The anode(+) and cathode(-) for input and output circuit can be interchangeable, input voltage is DC12V or DC24V.
2. The circuit breaking response time is 0.1–0.5s

### Notes

1. The ambient temperature range must be +5° C to +40° C, and storage temperature is -40° C to +70° C
2. Max duty cycle is 10% or 2 minutes in use followed by 18 minutes rest

## Limit switch

Limit switch can be added to the actuator to test whether the actuator moves to the limit position. The principle is that when the object touches the limit switch, the normally open point of the switch closes and the normally closed point turns off to control circuit or receive signals.

### Notes

1. Special accessories can be customized as required.
2. Actuator size will change and inform separately.

# Ordering key

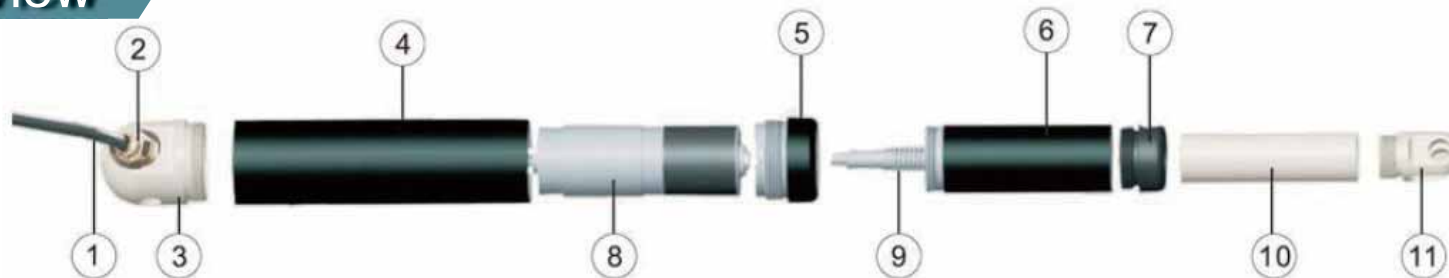


**ANT-35S-B-12-120-33-100-B-H**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- |                       |   |
|-----------------------|---|
| ① Brand               | ANT=ANTUATOR  |
| ② Diameter            | 26=26mm, 35=35mm, 38=38mm, 45=45mm, 52=52mm                             |
| ③ Material            | S=powder coated steel AL=aluminum S/S=stainless steel                   |
| ④ Type of inner motor | B=brush motor   |
| ⑤ Input voltage       | 12=12VDC,24=24VDC   |
| ⑥ Load capacity       | X=N   |
| ⑦ Load speed          | X=mm/s  |
| ⑧ Stroke              | X=mm  |
| ⑨ Color               | B=Black, S=Sliver, C=Custommized  |
| ⑩ Added function      | C=over current protection<br>H=hall sensor<br>LS=limit switch<br>N=none |

## Exploded View



Patent No.:ZL201020525178.5&ZL201030514981.4

- |              |                         |          |                 |                    |           |
|--------------|-------------------------|----------|-----------------|--------------------|-----------|
| (1)Lead wire | (2)Waterproof connector | (3)End   | (4)Motor casing | (5)connecting set  |           |
| (6)Casing    | (7)Locating piece       | (8)Motor | (9)Lead screw   | (10)Expansion link | (11)Front |





----- Some of Sito's patent certificates



ISO certificate verified by DNV



CE certificate verified by BV



----- Trademark registered in EU

**Sito relies on the quality to win your trust!**

Thank you very much for your support to Sito motor products  
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Put your card or fill your information here,we will contact you asap!

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