

Actuator ID10S



Revision	2023.08_V2.1
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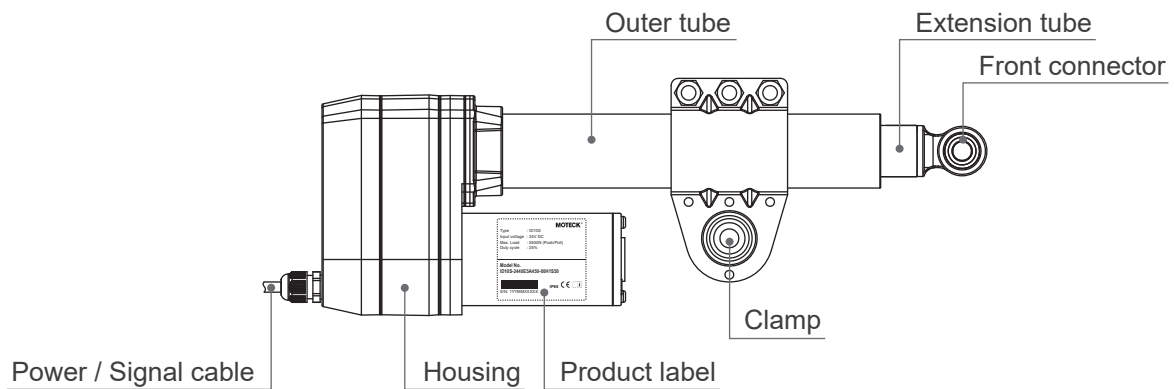
Technical changes may be made to improve the product without notice !

1. Important Information

- Only qualified personnel are allowed to carry out the mechanical and electrical installation of this product. Qualified personnel should be familiar with the mechanical or electrical installation work and have corresponding work qualifications.
- Do not perform mechanical installation when the actuator is powered. Complete the mechanical installation first, and then perform the electrical installation.
- Do not hold the extension tube when the actuator is powered.
- Never disconnect any wires or connectors during operation or when power is applied.
- If you find any malfunction or damage to the actuator, please stop using it immediately and notify qualified personnel to take corrective measures.

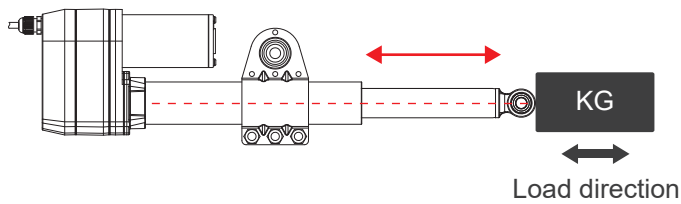
2. Installation

2.1 Terminology

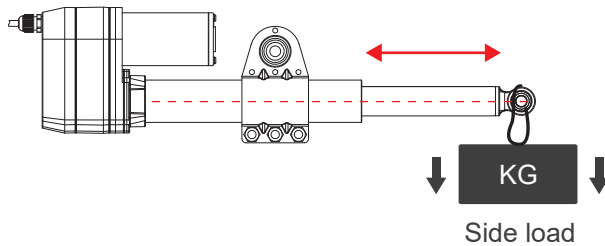


2.2 Mechanical installation

- (1) Be sure that the load acts on the actuator in the axial direction and it isn't recommended to apply side load to the actuator.

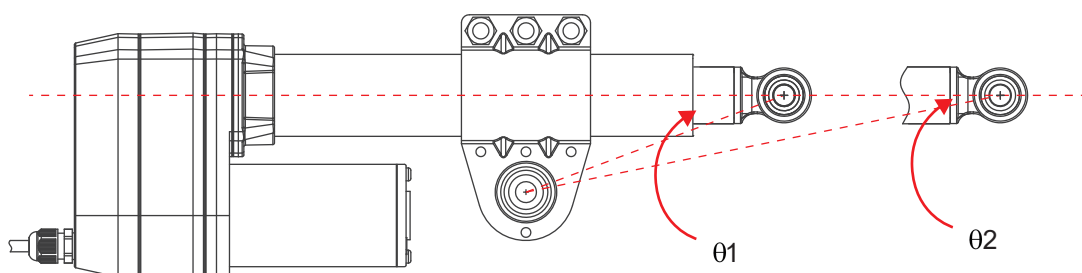


○
The load should be centered on the operating direction.



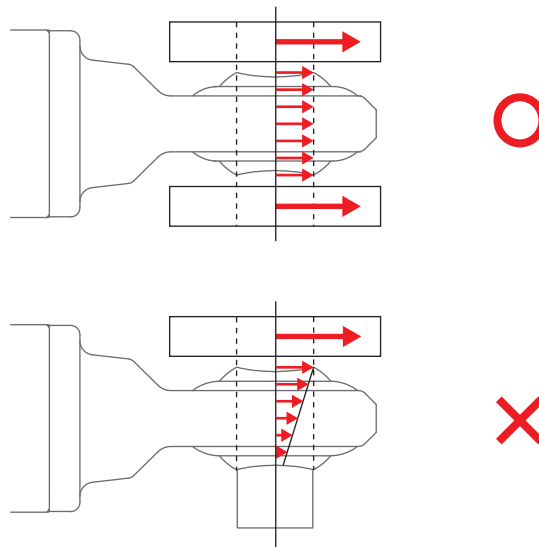
✗
Side load is NOT good for actuators.

- (2) If the actuator is jammed by an obstruction or the load is severely overweight, the actuator's clutch protection device will trip and run idly to protect the actuator or the customer's mechanical equipment from damage. Please be careful to avoid obstructions and do not exceed the rated load of the actuator.
- (3) Users are forbidden to open the outer cover of the limit switch so as not to affect the original protection level of the actuator, resulting in the immediate failure of the original factory protection commitment.
- (4) Since the fixed point of the clamp is not located on the moving axis of the actuator (off the axis), when the extension tube is moving outwards, the angle between the connecting line of the two fixed points and the axis will change ($\theta_1 \rightarrow \theta_2$). Therefore, please pay attention to the installation method to avoid mechanical interference.



- (5) Make sure all the mounting holes of front connector and clamp are at the right position, then lock all the screws, and then confirm all of them are tightened properly.

(6) Be sure that mounting pins are supported at both ends.



(7) If the actuator is used on the equipment to rotate with the mounting pin as the axis, it must be ensured the housing and other mechanical parts will not interfere and damage the actuator or equipment in the full range of movement.

2.4 Electrical installation

2.4.1 Wire definitions


- Basic (Without positioning feedback)

	Wire color	Definition	Description
Power wires	Red	DC Power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		

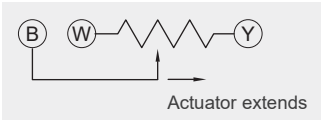
- With reed sensor positioning feedback

	Wire color	Definition	Description
Power wires	Red	DC Power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		
Signal wires	Yellow	Data	Resolution: 30ppi, 0.85mm/pulse (1.176pulses/mm)
	White	GND	

- With single Hall effect sensor positioning feedback

	Wire color	Definition	Description
Power wires	Red	DC Power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		
Signal wires	White	Vin	Voltage input range: 5 ~ 20V
	Yellow	Hall output	High= Input - 1.2V (±0.6V) Low= GND Hall signal data:  Resolution: 20PPI, 1.27mm/pulse (0.787pulses/mm)
	Blue	GND	

- With Potentiometer (POT) absolute positioning feedback

	Wire color	Definition	Description								
Power wires	Red	DC Power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.								
	Black										
Signal wires	Yellow	Vin	Input voltage: 70V max.								
	Blue	POT output	<p>1. Potentiometer specification:</p> <ul style="list-style-type: none"> - 10K ohm, 10 turns. - Tolerance ±5% <p>2. Output voltage: The voltage (resistance) between blue and white increases linearly from about 0 when the actuator extends, and decreases when it retracts.</p>  <p>3. There are different resolutions according to the stroke length (as table below)</p> <table border="1" data-bbox="687 1496 1441 1682"> <thead> <tr> <th>Stroke (mm)</th> <th>Resistance (tolerance: ±0.3KΩ)</th> </tr> </thead> <tbody> <tr> <td>450</td> <td>0.3 ~ 8.8K</td> </tr> <tr> <td>600</td> <td>0.3 ~ 9.4K</td> </tr> <tr> <td>900</td> <td>0.3 ~ 9.2K</td> </tr> </tbody> </table>	Stroke (mm)	Resistance (tolerance: ±0.3KΩ)	450	0.3 ~ 8.8K	600	0.3 ~ 9.4K	900	0.3 ~ 9.2K
	Stroke (mm)	Resistance (tolerance: ±0.3KΩ)									
450	0.3 ~ 8.8K										
600	0.3 ~ 9.4K										
900	0.3 ~ 9.2K										
White	GND										

2.4.2 Inrush current

- When the actuator starts, an inrush current will be generated for about 0.2 seconds. The starting inrush current of ID10S is as high as 3 times of the rated current of the actuator's maximum load.
- If a circuit board power supply is used, the specifications must be sufficient to handle the inrush current. And if batteries are used as the power source, the inrush current will not be a problem. Besides, the specifications of connectors, switches and relays provided by user must also be appropriate to be able to withstand the inrush current.