

VLA SERIES

Linear Coil Actuator

VLA-10-20 (Vacuum)

VLA-16-15

VLA-16-15 (Vacuum)

VLA-25-25

VLA-30-25

PRODUCT FEATURES

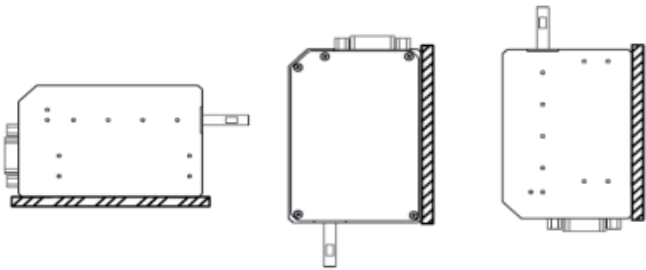
High Force Repeatability Soft Landing	Light, Thin, and Easy to use Adjustable Parameters	High-speed and High Frequency Long life over 100 Million Cycles
The thrust repeatability of VLA series of products is within ± 5 g, meeting the production and assembly requirements of semiconductors, optoelectronics, and other industries for high force control accuracy.	The product design is compact, light and thin, and has strong maneuverability. You can adjust the speed, thrust, and position parameters and set different modes through the control software.	With high response-ability, high speed, and high frequency, the frequency can reach more than 30 Hz without load. The service life is up to 100 million cycles, and it is stable and durable.

INSTALLATION METHOD

Install it using the screw holes on the back of the product

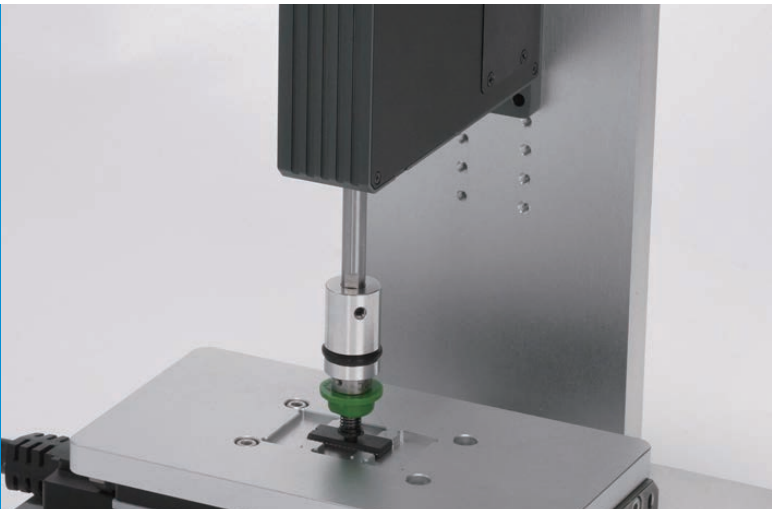
Installation Directions:

- Horizontal direction
- Vertical installation with the vertical rod pointing down
- Vertical installation with the vertical rod pointing up



APPLICATION SCENARIOS

The force repeatability of ± 5 g, micron-level resolution, and ultra-high motion frequency of the VLA series help to improve the efficiency and yield rate of quick pick-and-place, assembly, testing, and other scenarios in semiconductor, 3C electronics, optoelectronics, and other industries.



VLA-10-20 (Vacuum)

LINEAR COIL ACTUATOR

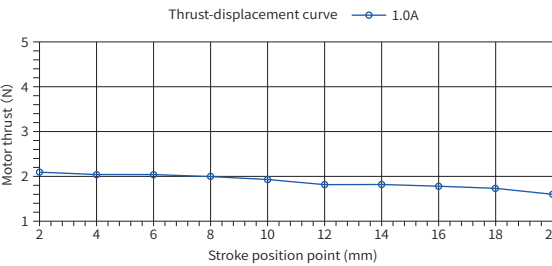
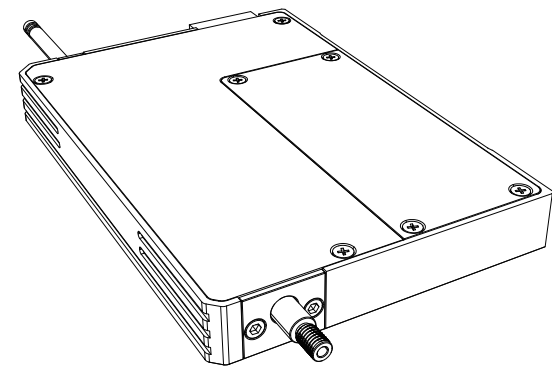
SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*
VLA	10	20	M2	24	BV	0
						0 No special customization 1 Special customization



*Note: For customization fees, consult the company's sales staff.

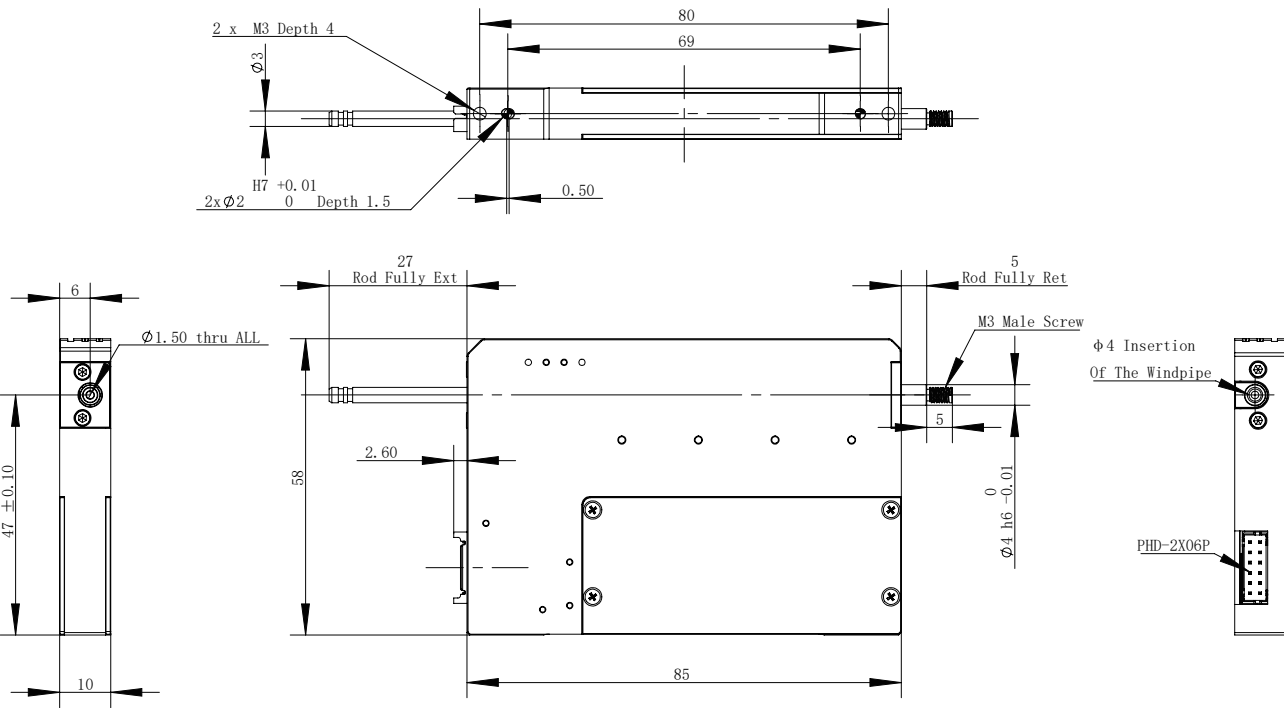
TECHNICAL SPECIFICATIONS



Performance Specifications	
Peak thrust	4 N
Continuous thrust* ^①	1.8 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=2.15-0.027 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	20 mm
Maximum speed	0.8 m/s
Force control accuracy* ^③	30 g ~100 g : ± 5 g
Force constant	1.8 N/A
Linear encoder resolution	1 μ m (Magnetic encoder)
Linear positioning repeatability	± 5 μ m
Mechanical Specifications	
Overall mass	130 g
Movable part mass	30 g
Size	85 mm x 58 mm x 10 mm
Recommended air pressure range* ^④	-0.1 Mpa ~ +0.2 Mpa
Operating Environment	
Operating voltage	24 V DC $\pm 10\%$
Continuous current	1.0 A
Peak current	2.2 A
Recommended load	< 30 g
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

*^① Motor output without protective spring;
*^② There is an error of ± 0.3 N between the theoretical calculation formula and the actual condition. For the output calculation of other installation methods, please consult DH-Robotics engineers;
*^③ It is the reference value under the recommended load. The actual force control accuracy is related to the load size, running tempo, etc. If you need a higher accuracy, please consult the DH-Robotics technical support;
*^④ If the air pressure is beyond the specified range, you can consult DH-Robotics engineers.

Dimensions



VLA-16-15

LINEAR COIL ACTUATOR

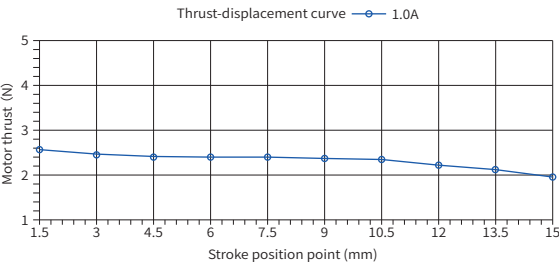
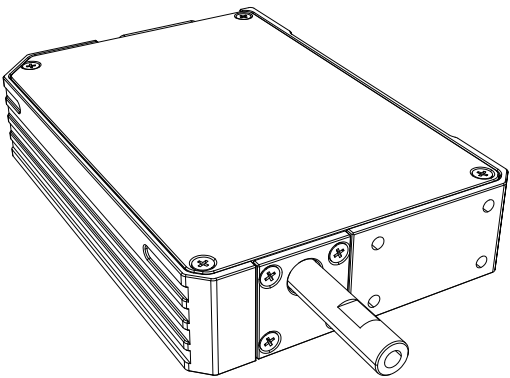
SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*			
VLA	16	15	M2	24	B	0			
			M2						
			M2 Magnetic encoder, 1 μm						
			B Bottom interface + Without vacuum						
						0 No special customization			
						1 Special customization			



*Note: For customization fees, consult the company's sales staff.

TECHNICAL SPECIFICATIONS



Performance Specifications

Peak thrust	6 N
Continuous thrust* ^①	3 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=2.60-0.032 \cdot L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	15 mm
Maximum speed	0.7 m/s
Force control accuracy* ^③	30 g ~ 200 g: ± 5 g
Force constant	3 N/A
Linear encoder resolution	1 μm (Magnetic encoder)
Linear positioning repeatability	± 5 μm

Mechanical Specifications

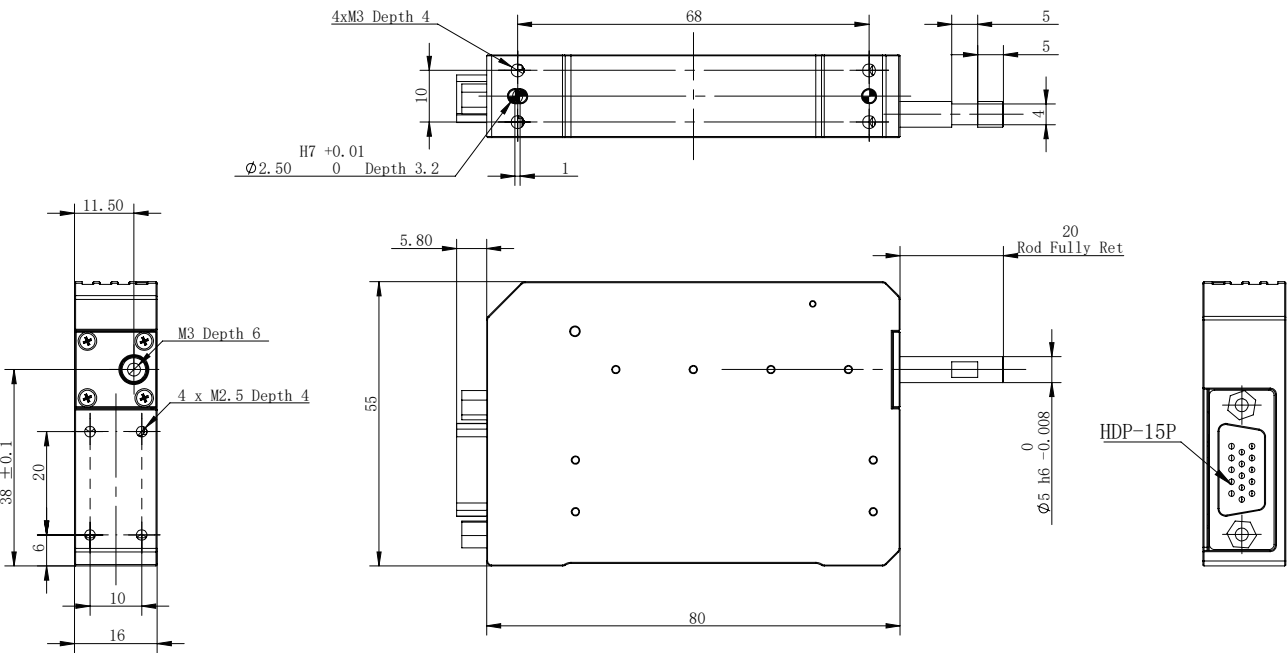
Overall mass	190 g
Movable part mass	30 g
Size	80 mm x 55 mm x 16 mm
Recommended air pressure range* ^④	Without vacuum

Operating Environment

Operating voltage	24 V DC $\pm 10\%$
Continuous current	1.0 A
Peak current	2.0 A
Recommended load	< 80 g
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

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Dimensions



VLA-16-15 (Vacuum)

LINEAR COIL ACTUATOR

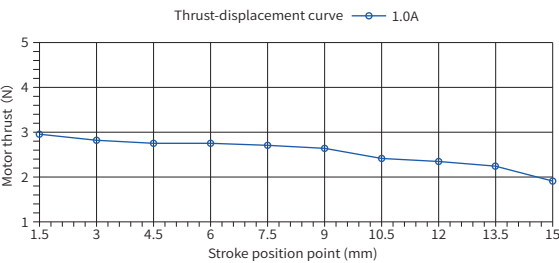
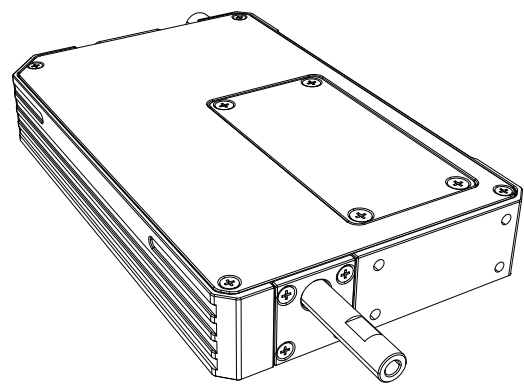
SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*
VLA	16	15	M2	24	BV	0
			M2	Magnetic encoder, 1 μm		
			BV	Bottom interface + vacuum		
					0	No special customization
					1	Special customization



*Note: For customization fees, consult the company's sales staff.

TECHNICAL SPECIFICATIONS



Performance Specifications

Peak thrust	6 N
Continuous thrust* ^①	3 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=2.15-0.027 \cdot L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	15 mm
Maximum speed	0.7 m/s
Force control accuracy* ^③	30 g ~ 200 g: ± 5 g
Force constant	3 N/A
Linear encoder resolution	1 μm (Magnetic encoder)
Linear positioning repeatability	± 5 μm

Mechanical Specifications

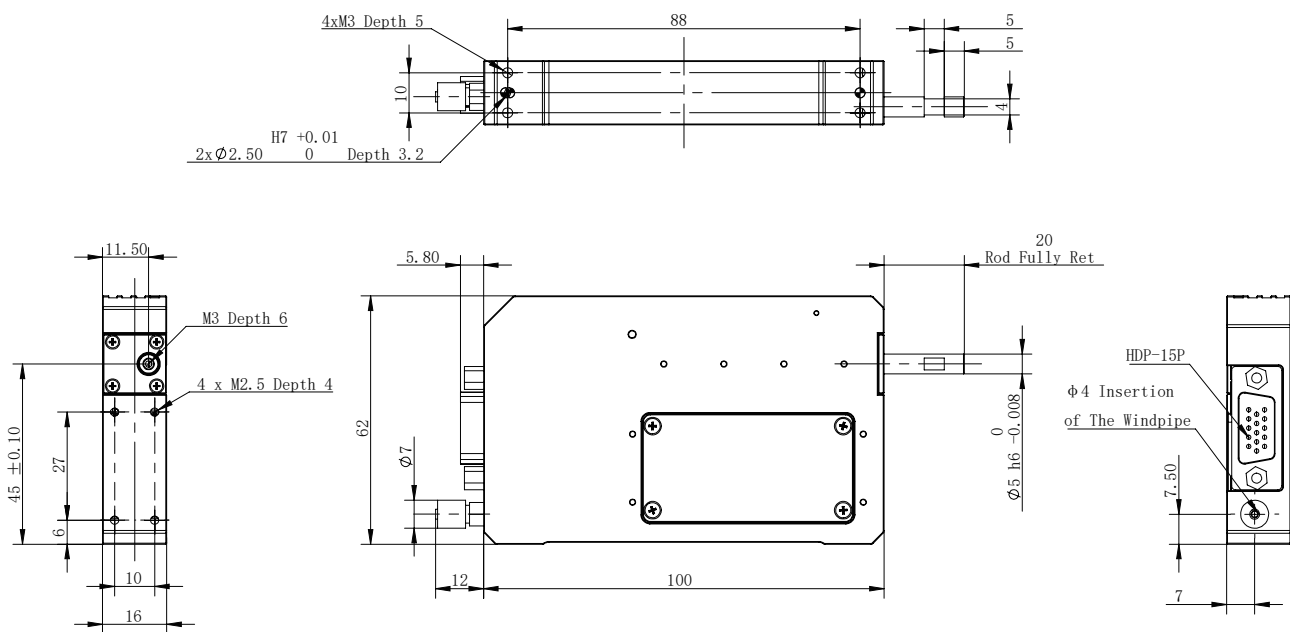
Overall mass	220 g
Movable part mass	30 g
Size	100 mm x 62 mm x 16 mm
Recommended air pressure range* ^④	-0.1 Mpa ~ +0.2 Mpa

Operating Environment

Operating voltage	24 V DC $\pm 10\%$
Continuous current	1.0 A
Peak current	2.0 A
Recommended load	< 80 g
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

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*^③ It is the reference value under the recommended load. The actual force control accuracy is related to the load size, running tempo, etc. If you need a higher accuracy, please consult the DH-Robotics technical support;
*^④ If the air pressure is beyond the specified range, you can consult DH-Robotics engineers.

Dimensions



VLA-25-25

LINEAR COIL ACTUATOR

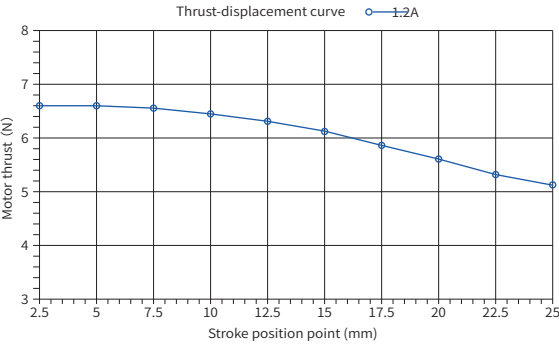
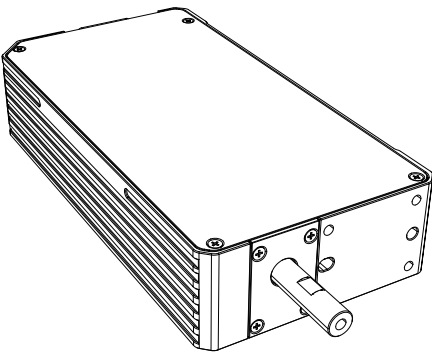
SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*
VLA	25	25	M2	24	B	0
			M2 Magnetic encoder, 1 μm		B Bottom interface + Without vacuum	0 No special customization 1 Special customization

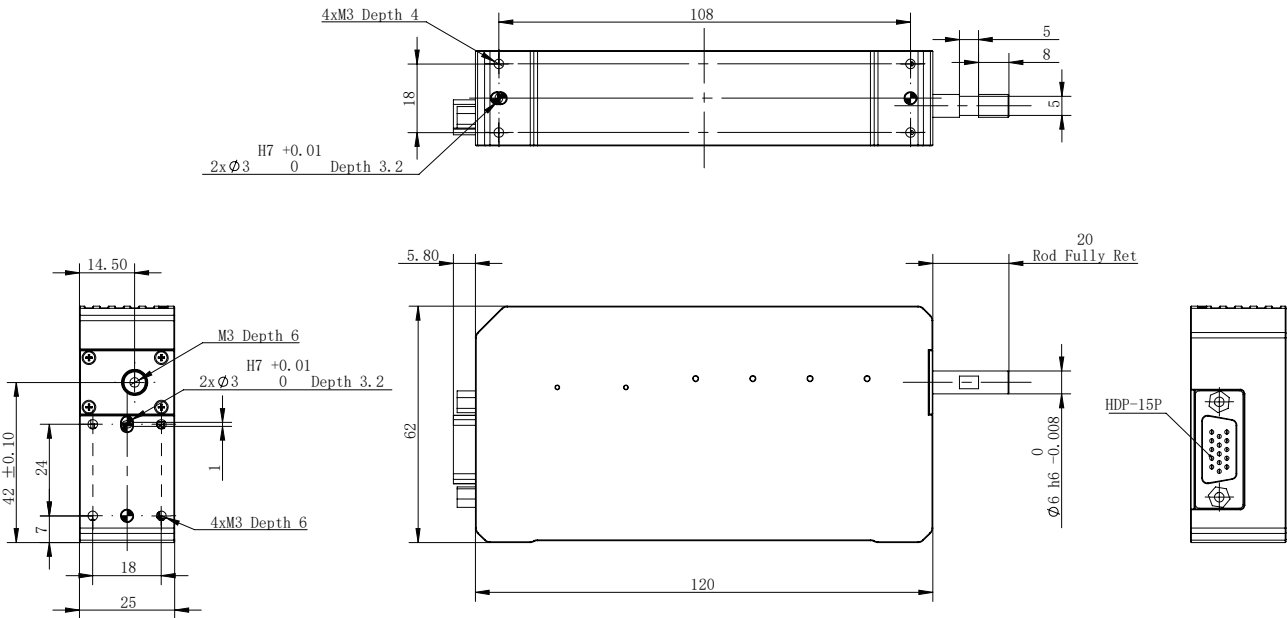


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TECHNICAL SPECIFICATIONS



Dimensions



Performance Specifications

Peak thrust	11 N
Continuous thrust* ^①	6 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=6.68-0.018 \cdot L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	25 mm
Maximum speed	1 m/s
Force control accuracy* ^③	100 g ~ 500 g: ± 5 g
Force constant	5 N/A
Linear encoder resolution	1 μm (Magnetic encoder)
Linear positioning repeatability	± 5 μm

Mechanical Specifications

Overall mass	510 g
Movable part mass	54 g
Size	120 mm x 60 mm x 25 mm
Recommended air pressure range* ^④	Without vacuum

Operating Environment

Operating voltage	24 V DC $\pm 10\%$
Continuous current	1.2 A
Peak current	2.2 A
Recommended load	< 150 g
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

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*^② There is an error of ± 0.3 N between the theoretical calculation formula and the actual condition. For the output calculation of other installation methods, please consult DH-Robotics engineers;
*^③ It is the reference value under the recommended load. The actual force control accuracy is related to the load size, running tempo, etc. If you need a higher accuracy, please consult the DH-Robotics technical support;
*^④ If the air pressure is beyond the specified range, you can consult DH-Robotics engineers.

