



DH-ROBOTICS

LINEAR COIL ACTUATOR

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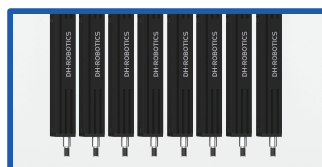
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FEATURES AND APPLICATIONS

Product Series	Drive Mode	Maximum Stroke	Maximum Thrust	Application Scenarios
VLA 	Linear Coil Motor	25mm	30N	3C testing industry: key testing of mobile phones and computers, panel testing, and watch strap testing.
				Automotive industry: key and switch testing of automotive centre stack.
				Semiconductor industry: chip testing, chip sorting, etc.
DLARA 	Linear motor + servo motor	60mm	64N	Semiconductor industry: IGBT die bonding, chip sorting, and testing processes.
				3C industry: Suitable for precision component assembly, smartphone lens assembly, force-controlled stud insertion, BTB connector engagement, automated transfer, loading and unloading, and auxiliary material placement.
DLSRA 	Linear motor + closed-loop stepper motor	50mm	27.5N	3C industry: Suitable for precision component assembly, force-controlled stud insertion, automated transfer, loading and unloading, auxiliary material placement, PCB insertion, and flexible circuit board mounting and reinforcement.
				New energy industry: Suitable for automated loading and unloading of small battery components.
DLE 	Linear Motor	50mm	54N	3C industry: precision parts assembly, line scanning detection, force controlled push and positioning, terminal snap-fit, automatic transplanting, loading and unloading, etc.
VLM 	Voice Coil Motor	10mm	30N	3C industry: Suitable for smartphone and computer key testing, as well as closed-loop force control testing.
				Semiconductor industry: Suitable for wafer cleaning, chip testing, and other semiconductor manufacturing processes.
Note: These are the product features and applications of standard Linear coil actuator products (excluding customized products) of DH-Robotics.				

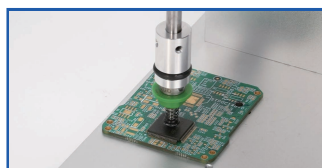
PRODUCT FEATURES

Compact design, thin and light. The thinnest product thickness is only **10 mm**



Soft Landing

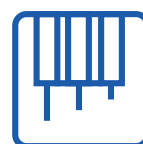
Contact the surface of an object with high speed and low force



3 Working Modes

- Velocity mode
- Torque mode
- Position mode

Application Scenarios



Hi-speed pick and place



Precision machining



Automated production line



- Force repeatability: ± 5 g
- Stroke resolution: up to $0.5 \mu\text{m}$
- Positioning repeatability: $\pm 2 \mu\text{m}$
- Rotary position resolution: 0.005°

The voice coil actuator adopts a direct-drive design complemented by precise control algorithms and high-performance linear guides, enabling a force control accuracy of ± 5 g, with some models achieving up to ± 2 g.

High-precision magnetic encoder with micron-level resolution. Optical encoder with $0.1 \mu\text{m}$ resolution, Magnetic grid encoder with $1 \mu\text{m}$ resolution.

The DH-Robotics voice coil actuator is a direct drive motor combined with a micron-level magnetic encoder. When it positions to the same point repeatedly, the accuracy deviation of the stop position is $\pm 2 \mu\text{m}$.

The DH-Robotics voice coil actuator is designed to be highly integrated, with a minimum thickness of 10 mm for the series of products, greatly saving the internal space of the module device and facilitating the arrangement of the multi-motor matrix combination.

The intelligent soft landing function enables the target object to be softly touched with precise force control. This technology reduces the scratch rate and fragmentation rate of precision fragile or high unit price parts. In this way, the yield rate and productivity are improved.

PRODUCT ADVANTAGES

± 5 g
Force Control Accuracy

$0.5 \mu\text{m}$
Stroke Resolution

$\pm 2 \mu\text{m}$
Positioning Repeatability

10 mm
Optimal Thickness

Soft Landing

ADVANTAGES OVER CONVENTIONAL SOLUTION

Take chip packaging as an example:

Pain Points		
The conventional chip pickup mechanism contacts the chip too fast, and the contact force is too large, which will cause the chip to be damaged due to excessive pressing. And it cannot achieve high force control, limiting the efficiency of the chip mounting process.		
	Conventional Solution	DH-Robotics Solution
Device Used	Combined mounting head	VLAR-20-25 voice coil linear rotary actuator
Motion Module	The module is integrated with: Linear motor Servo motor/stepper motor Voice coil motor (VCM)	All-in-one integrated module design
Repeatability	Positioning repeatability: $\pm 10\text{ }\mu\text{m}$ Rotation repeatability: $\pm 0.5^\circ$ Force control accuracy: $\pm 10\text{ g}$	Positioning repeatability: $\pm 2\text{ }\mu\text{m}$ ↑ Improved by more than 5 times Rotation repeatability: $\pm 0.02^\circ$ ↑ Improved by more than 10 times Force control accuracy: $\pm 5\text{ g}$ ↑ Improved by more than 2 times

The advantages of DH-Robotics voice coil actuator compared with the common combined mounting head are:



Integrated Design
Small Volume
Saving Device Space

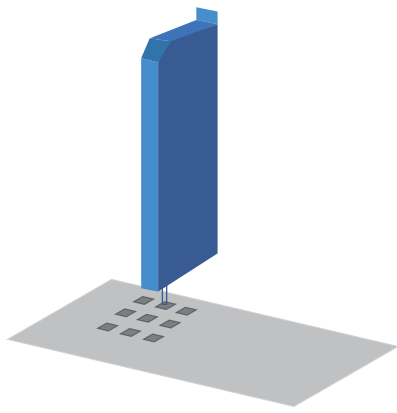


Higher Accuracy
Faster
More Stable Motion



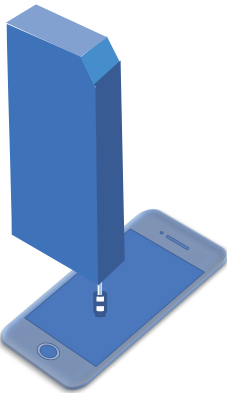
Precision Component
Less Wear
Longer Service Life

APPLICATIONS



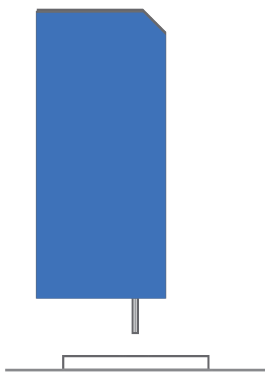
Flexible Pick and Place of Vulnerable Components

The voice coil actuator can provide accurate linear and rotary motions of the Z-axis while performing high-speed pick-and-place motions. With the soft landing function, it can touch precision components with a force of $\pm 5\text{ g}$ to protect the components from damage, for example, in chip packaging and camera module assembly.



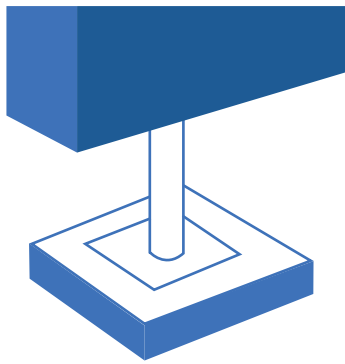
Electronics Testing

Highly integrated design, the minimum thickness can reach 10mm, suitable for multi-motor matrix combination arrangement, and can complete a variety of touch operation modes. The force control accuracy is $\pm 5\text{ g}$, the repeat accuracy (position) is $\pm 2\text{ }\mu\text{m}$, the product runs stably, so that the detection efficiency is improved. It can be applied to touch panel testing, keyboard testing, switch testing.



New Energy Battery Thickness Measurement

The thrust and speed of the actuator are set through the program, and the battery pack is pushed flexibly. When the set force is reached, the position is measured and the thickness information of the battery pack is output. The characteristics of high stability, high frequency and long life of the voice coil actuator can ensure long-term, efficient, accurate and stable execution of detection.



High-precision Parts Assembly

Miniature electronic components have high requirements for production and assembly, such as camera module assembly. The precise force control and soft landing capability of the voice coil linear rotary actuator can prevent parts from being damaged; high position repeatability ensures the accuracy of positioning and assembly and improves the overall assembly production yield.

Q&A

Q:How to quickly select a right Linear coil actuator?

A:Please select the Linear coil actuator according to the "Voice Coil Selection Procedure".

Q:What is the impact of different installation methods of a Linear coil actuator on its use?

A:Vertical installation with the vertical rod pointing down: In general usage scenarios, use the product as recommended. The product performance will not be affected.Horizontal or vertical installation with the vertical rod pointing up: in unconventional usage scenarios, there may be insufficient motor output. You are advised to remove the internal spring to reduce the load weight before use.

Q:What is the relationship between resolution, repeatability, and absolute positioning accuracy?

A:Resolution: refers to the smallest amount of change that the system can detect, that is, the minimum movement distance or minimum rotation angle that each axis of the system can achieve.The resolution directly affects the fine control ability of the system. A high resolution means that the system can more accurately control the motion to a smaller unit.

Positioning repeatability: refers to the consistency and stability that the system can maintain when the same action is repeated several times under the same conditions.The positioning repeatability determines the reliability of the system in dynamic or repeatable actions. A high positioning repeatability means that the system can maintain consistent performance when performing the same action for many times.

Absolute positioning accuracy: refers to how close the actual position of the system is to the ideal target position. This parameter reflects the positioning ability of the system under static conditions.The increase of positioning accuracy usually depends on the mechanical accuracy, electrical accuracy, and the optimization of control algorithm.

Increased resolution can directly improve positioning accuracy, as a higher resolution means the system can more accurately identify and control motion to a smaller unit.However, resolution may not be directly related to positioning accuracy, as the actual positioning accuracy is also affected by mechanical errors, electrical errors, and control algorithms.The positioning repeatability is related to the mechanical structure of the system, the error of the transmission system, the rigidity of the structure, and other factors, which will affect the repeatability of the system.

Q:What is soft landing?

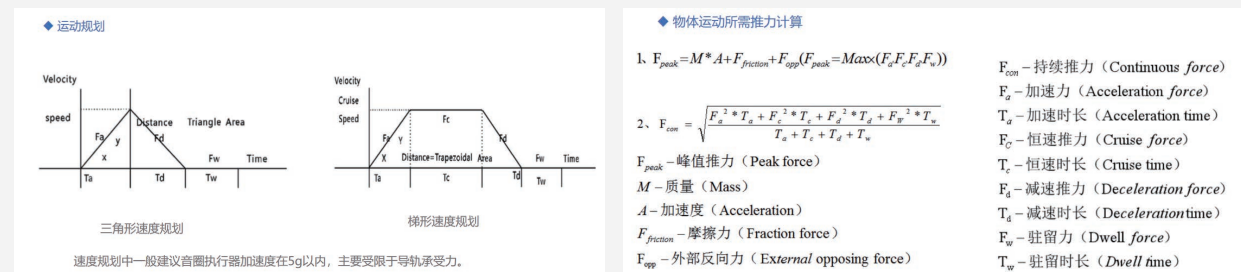
A: In velocity mode, the Linear coil motor controls the robot to approach the surface of an object at low force while continuously monitoring the position error. Once the robot contacts the surface of the object, the motor actuator shaft will remain in the position on the surface of the object when the position error increases to the pre-set value.The purpose of soft landing is to control force properly when the actuator contacts the machining part to prevent device damage or other pressure-induced problems.

Q: What is the force control accuracy of DH-Robotics Linear coil actuator and what factors are related to it?

A: The force control accuracy depends on product specifications. Under the rated load, the open-loop force control accuracy of a conventional linear/rotary actuator is within ± 10 g and can be up to ± 5 g, and the closed-loop force control accuracy is within ± 2 g.The force control accuracy is mainly related to actuator type, load size, running tempo, and controller performance.General-ly speaking, the higher the load, the higher the running tempo, the higher the control difficulty, the lower the force control accuracy. A voice coil is superior to A linear motor, and the higher the controller performance, the higher the force control accuracy.

Q:How does a Linear coil actuator calculate the output according to the cycle time?

A:The output can be calculated according to the following motion plan and formula. For more information, consult the DH-Ro-botics technical support.



Q:What is the difference between the VLAR series and the DLAR series?

A:These two series are linear/rotary actuators. The VLAR series is driven by a voice coil while the DLAR series is driven by a linear motor. The VLAR series features short stroke, small size, and light weight, while the DLAR series features both short and long stroke and larger size and weight.

Q:How long is the control cable?

A:As standard configurations, cable length options of DH-robotics Linear coil actuator include 3 m, 5 m, 7 m, and 10 m.

Q:Which control modes are supported for Linear coil actuator?

A:The commonly used control modes on the market are supported, such as EtherCAT, Modbus, Canopen and pulse control. However, translation gateways are required for Profinet and CC-Link.

Q:How much radial force can the vertical rod of the actuator withstand?

A:The Linear coil actuator is a precision device and the output end is a high-precision shaft. Therefore, try your best to avoid hard collision in the radial direction.The linear actuator can operates normally under a certain degree of sliding lateral force, and the lateral force is recommended to be less than 2 N.The linear/rotary actuator features a complex internal structure. Do not subject it to lateral force.

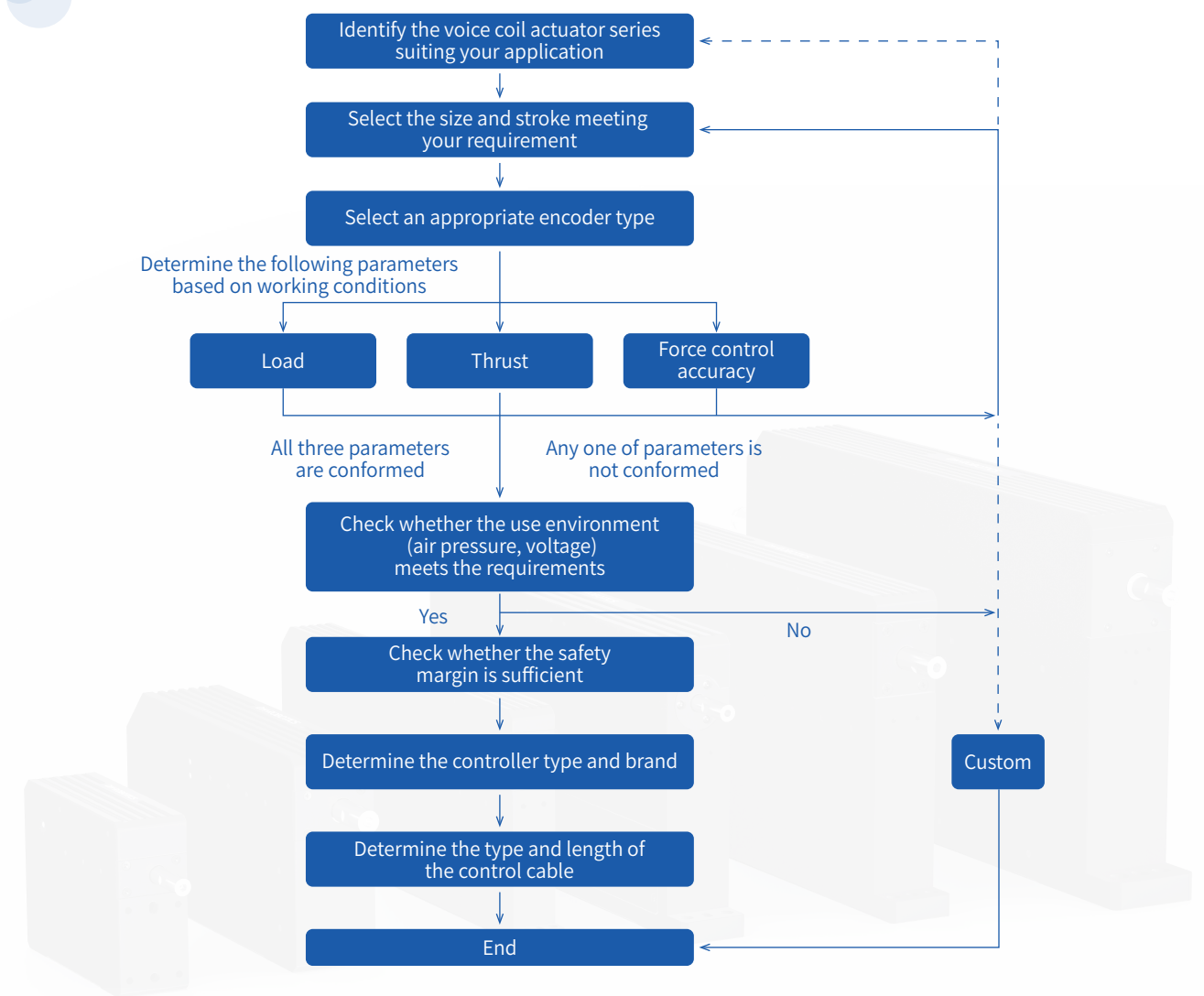
Q:What is the diameter of the control cables? What is the bending radius?

A:To minimize signal interference in the actuator, we have divided the control cables into two types: one is the power cable with a diameter of approximately 7mm, and the other is the signal cable with a diameter of approximately 9mm. According to the recommendations from the cable manufacturer, the bending radius requirement for the drag chain of the voice coil actuator control cables is $\geq 8D$, which equals 72mm.

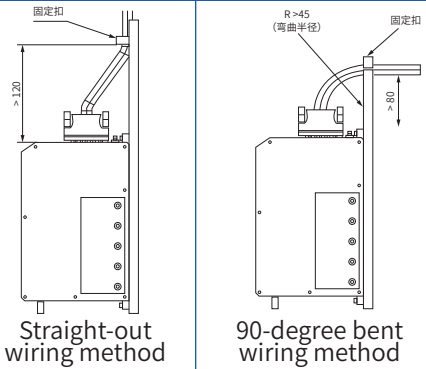
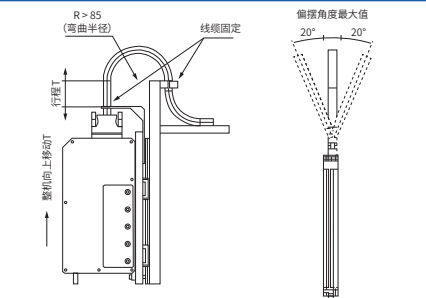
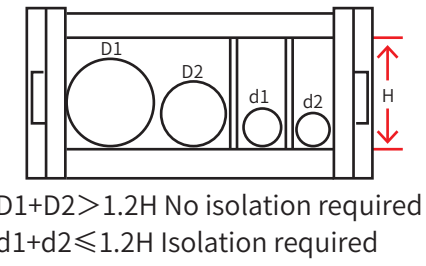
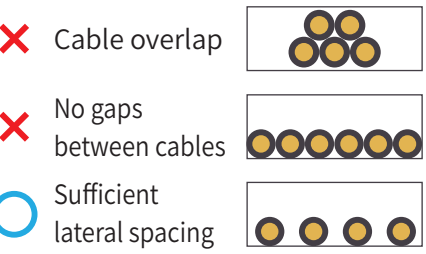
Q:What are the installation requirements for the control cables?

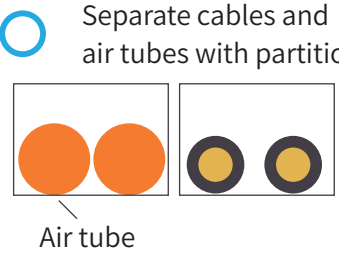
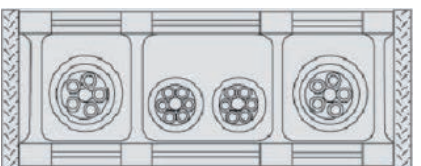
A:As a high-frequency moving component, drag chain cables operate under very stringent conditions. The bending radius of the drag chain must comply with the recommendations from the cable manufacturer. Naturally, a larger bending radius is more beneficial for extending the service life of the cables. The long-term stable operation of drag chain cables depends not only on the quality of the cables and drag chain brackets but also on proper and standardized installation and wiring, which play a decisive role. The installation requirements for control cables can be referred to in the 《Voice Coil Actuator Cable Installation Requirements》.

SELECTION PROCEDURE



INSTALLATION SPECIFICATIONS FOR LINEAR COIL ACTUATOR CABLES

Index Number	Installation Specifications	Illustrative Suggestion	Note
1	When the motor and cable remain stationary relative to each other, the cable can be routed straight out or bent at a 90-degree angle. Ensure that the cable is fixed without excessive tension, bending, or significant swinging. Refer to the recommended diagrams for proper cable fixing.	 Straight-out wiring method 90-degree bent wiring method	/
2	When the motor and cable move relative to each other, allowing the cable to bend, sufficient length must be reserved. At the same time, ensure that the lateral swing of the cable during machine operation is not too large. Refer to the recommended diagrams for proper cable fixing.	 Non-standard fixing methods: It is recommended to contact DH technical personnel for evaluation.	
3	Both ends of the cable must be fixed when entering or exiting the drag chain. Fixing points should be far from the bending points. The U-shaped plane formed by the natural bending of the cable should align as closely as possible with the U-shaped plane formed by the drag chain's natural curvature. The length of the cables within the drag chain should be appropriate—not too tight or too loose. Refer to the recommended diagrams for the "ideal wiring state."		/
4	If the sum of the diameters of two adjacent cables ($D1 + D2$) exceeds 1.2 times the inner height (H) of the drag chain bracket, no additional isolation devices are needed between them, as the cables will not entangle. Otherwise, install vertical or horizontal partitions between the adjacent cables to prevent crossover and contact wear.	 $D1+D2 > 1.2H$ No isolation required $d1+d2 \leq 1.2H$ Isolation required	/
5	To prevent mutual interference, cables must not overlap. When laying cables horizontally within the drag chain, maintain proper spacing with about 10% of the cable diameter left as free space between cables.		

Index Number	Installation Specifications	Illustrative Suggestion	Note
6	If there are air tubes or other rigid cables within the drag chain, install isolation devices between the air tubes and cables to prevent excessive compression and wear on the cables.	 Air tube	/
7	Cables must not be twisted during installation. Refer to the diagrams for guidance.		/
8	When arranging cables in the drag chain, distribute weight evenly. Avoid situations where one side is significantly heavier than the other. Refer to the recommended diagrams for proper balancing.		/

COMMON CABLE FAILURE MODES AND CAUSES

Index Number	Failure Mode	Common Causes
1	Conductor Breakage	a、Improper length, resulting in severe tension during operation. b、Excessive load. c、Fixing points located within the bending motion range.
2	Twisting and Insulation Damage	Incorrect cable selection with an excessively small bending radius. During bending, the inner side of the cable is compressed, while the outer side is under tension. Over time, excessive stress causes permanent deformation of the material. This creates distinct compression and tension zones in the conductor, leading to twisting.
3	Sheath Wear	Improper installation or incorrect cable selection. Insufficient free space (less than 10% of the cable diameter) between the cable and its surroundings.
4	Shielding Failure/EMC Issues	Typically caused by incorrect shielding angles or mechanical loads, resulting in damage to the shielding layer.

VLA SERIES

Linear Coil Actuator

VLA-10-20 (Vacuum)

VLA-16-15

VLA-16-15 (Vacuum)

VLA-25-25

VLA-30-25

PRODUCT FEATURES

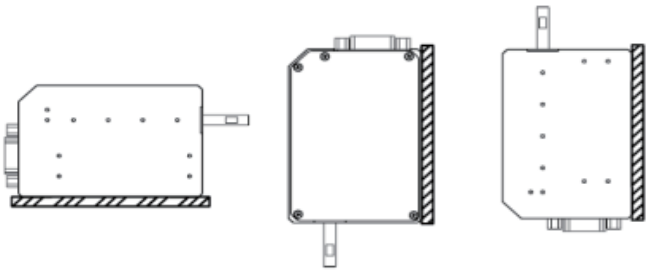
High Force Repeatability Soft Landing	Light, Thin, and Easy to use Adjustable Parameters	High-speed and High Frequency Long life over 100 Million Cycles
The thrust repeatability of VLA series of products is within ± 5 g, meeting the production and assembly requirements of semiconductors, optoelectronics, 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

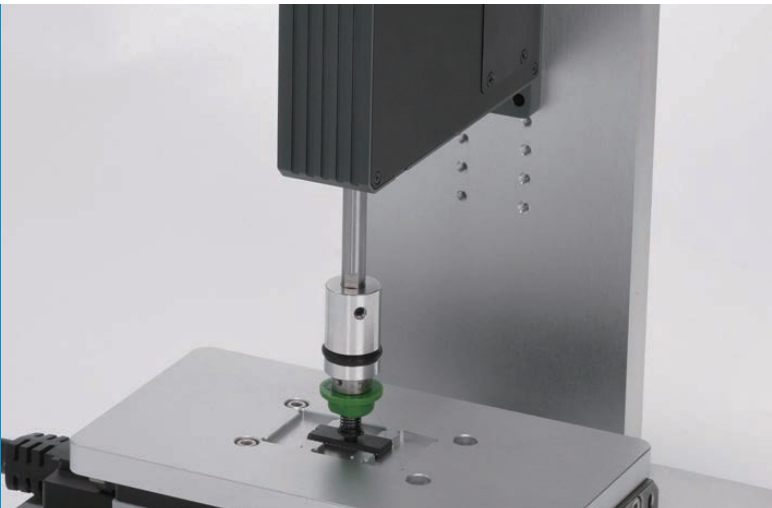
Installation Directions:

- 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

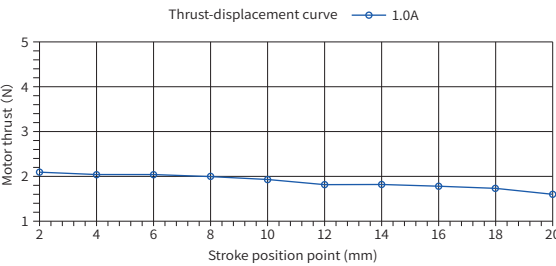
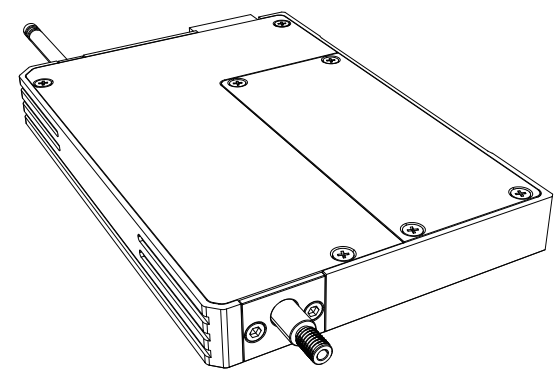
SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*
VLA	10	20	M2	24	BV	0
			M2	Magnetic encoder, 1 μm		
				BV	Bottom interface + vacuum	
						0 No special customization
						1 Special customization

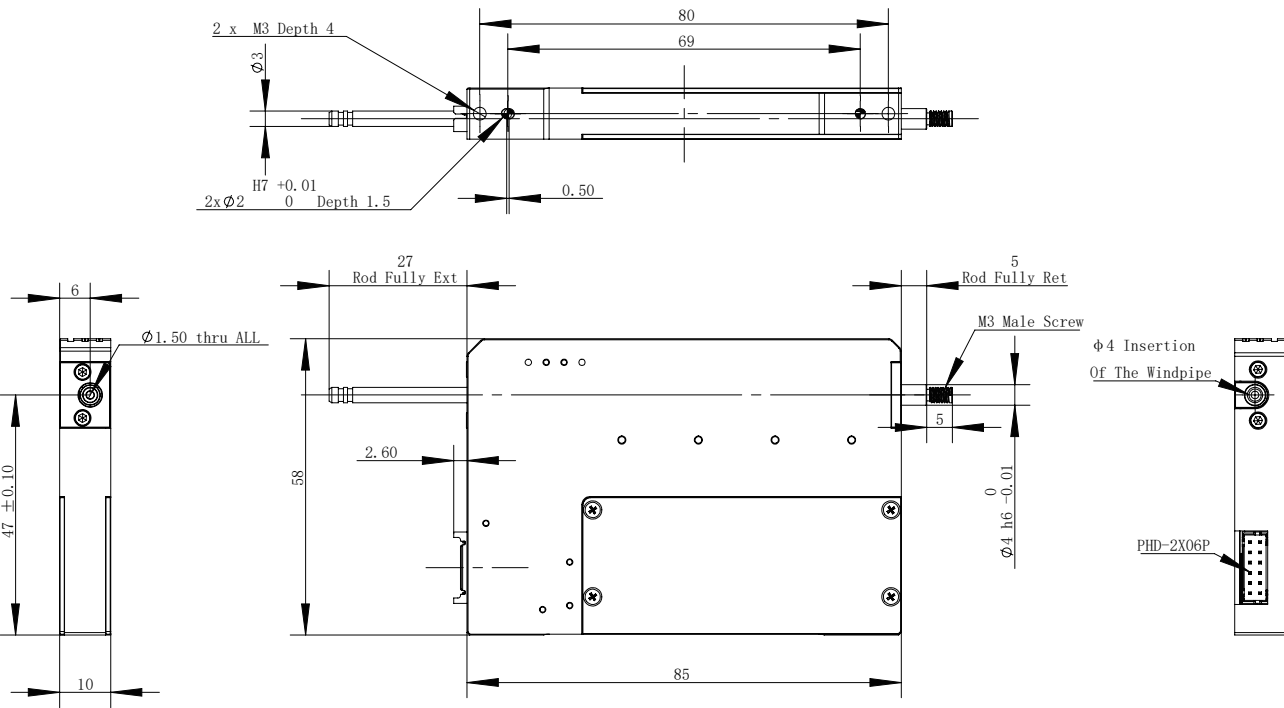


*Note: For customization fees, consult the company's sales staff.

TECHNICAL SPECIFICATIONS



Dimensions



Performance Specifications	
Peak thrust	4 N
Continuous thrust* ^①	1.8 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=2.15-0.027 \cdot L$ (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 μm (Magnetic encoder)
Linear positioning repeatability	±5 μm
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 ± 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.

VLA-16-15

LINEAR COIL ACTUATOR

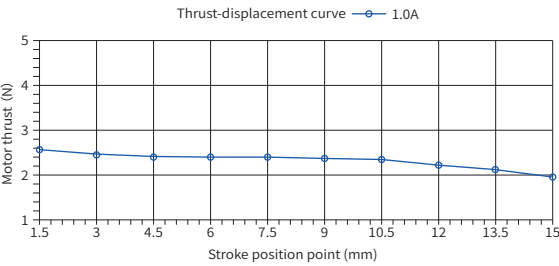
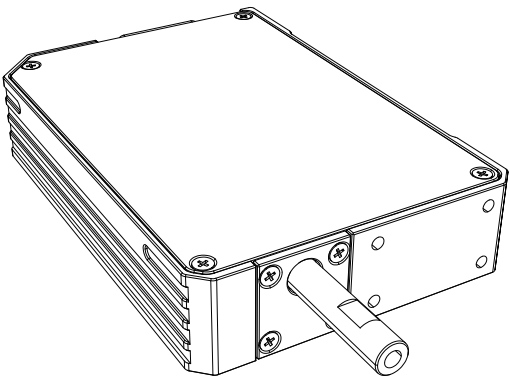
SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*
VLA	16	15	M2	24	B	0
			M2	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

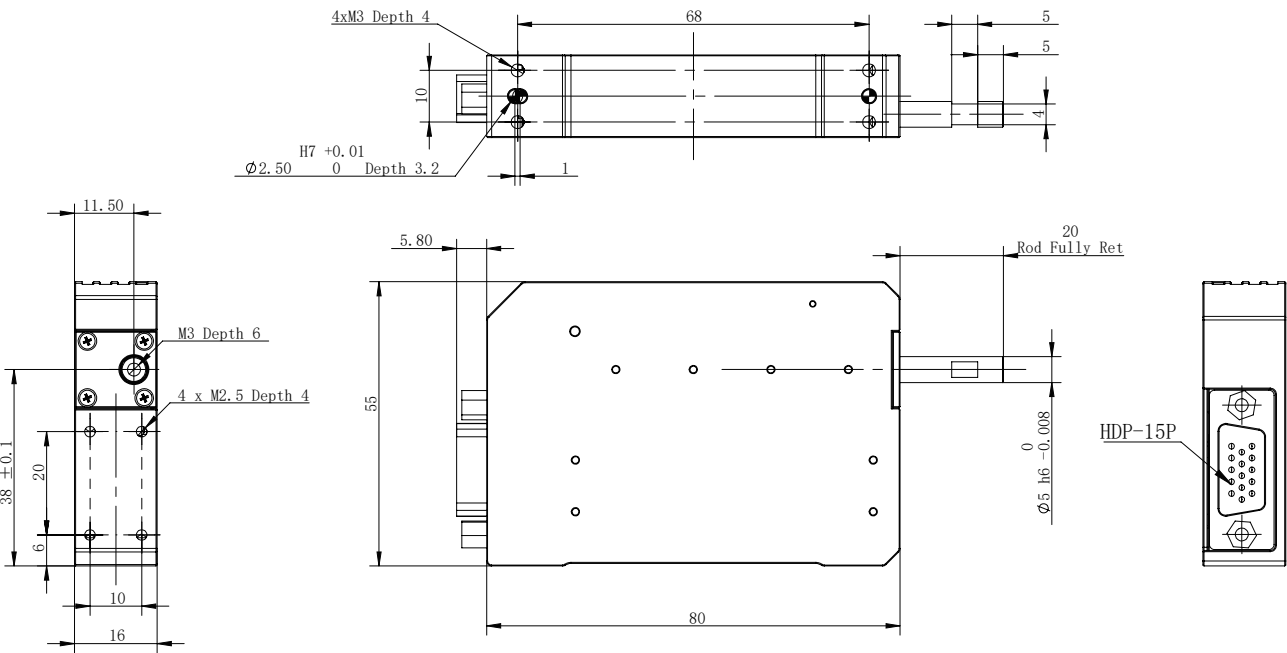
Overall mass	190 g
Movable part mass	30 g
Size	80 mm x 55 mm x 16 mm
Recommended air pressure range* ^④	Without vacuum

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

*^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 (Vacuum)

LINEAR COIL ACTUATOR

SELECTION METHOD

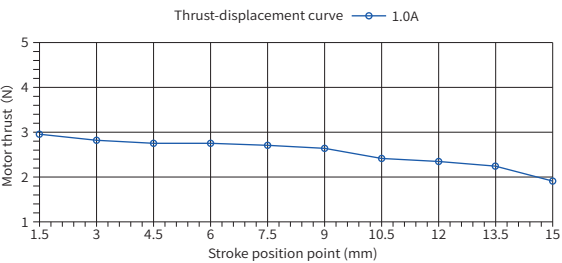
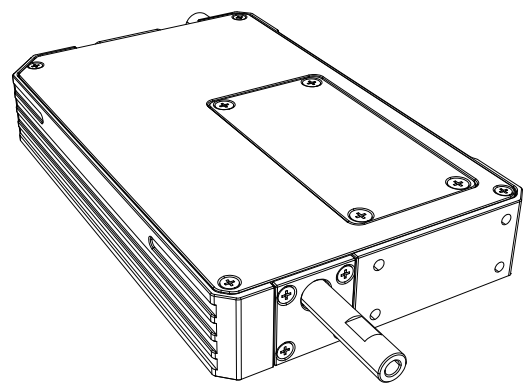
Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*
VLA	16	15	M2	24	BV	0
			M2	Magnetic encoder, 1 μm		
			BV	Bottom interface + vacuum		



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

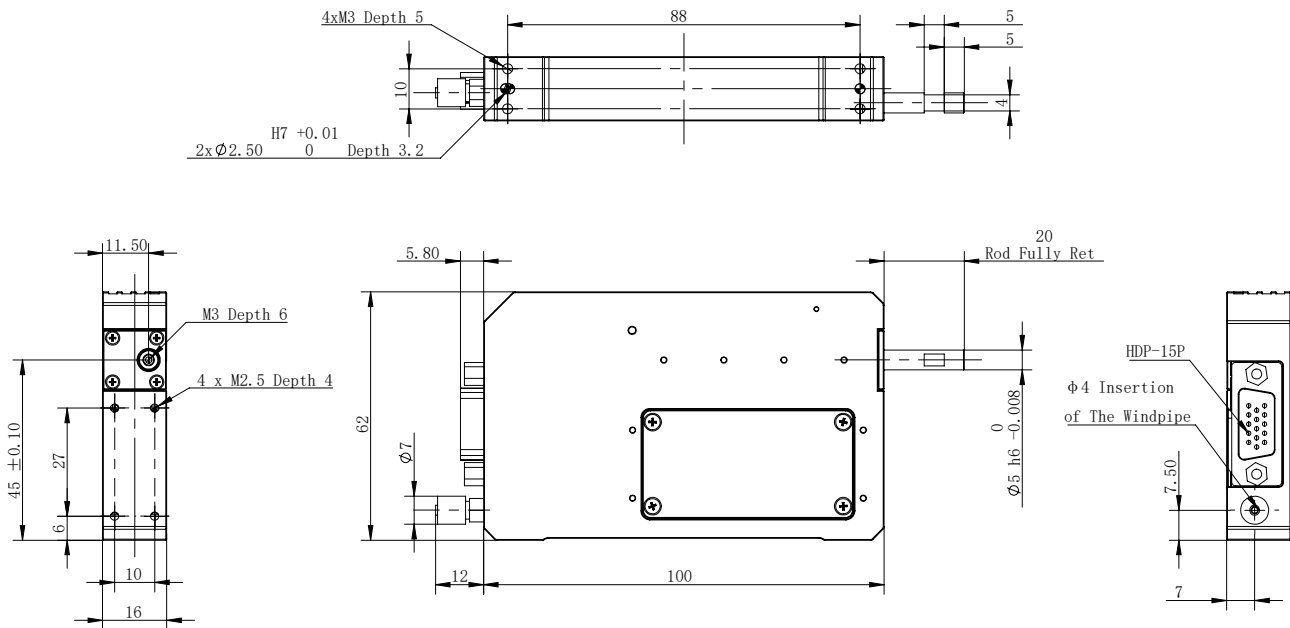
Overall mass	220 g
Movable part mass	30 g
Size	100 mm x 62 mm x 16 mm
Recommended air pressure range* ^④	-0.1 Mpa ~ +0.2 Mpa

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

*^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-25-25

LINEAR COIL ACTUATOR

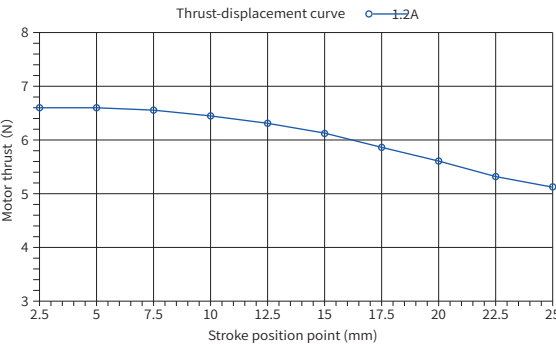
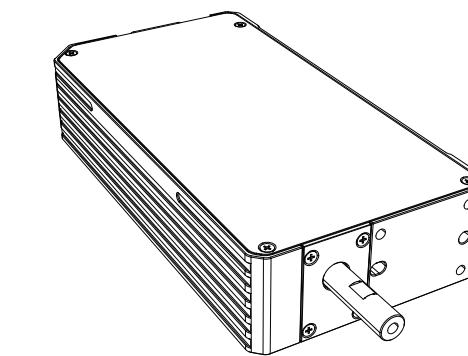
SELECTION METHOD

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

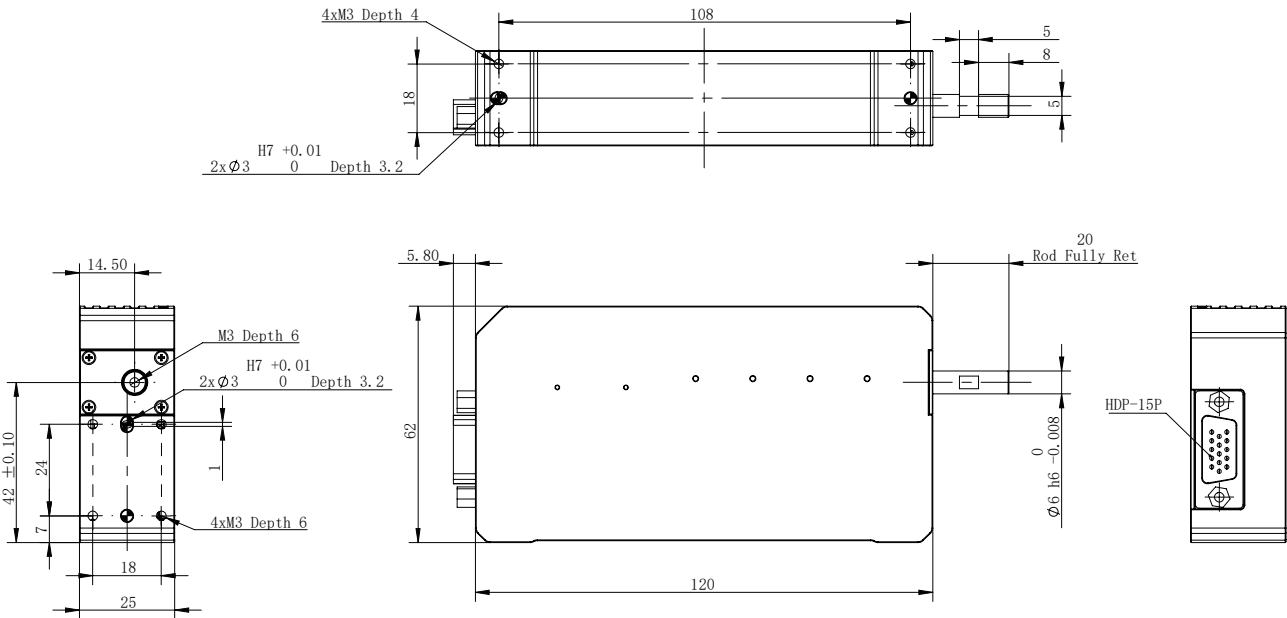


*Note: For customization fees, consult the company's sales staff.

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

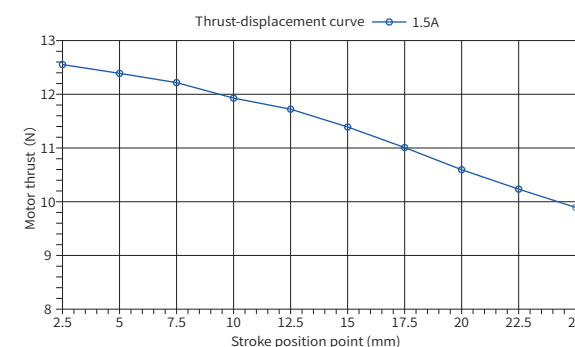
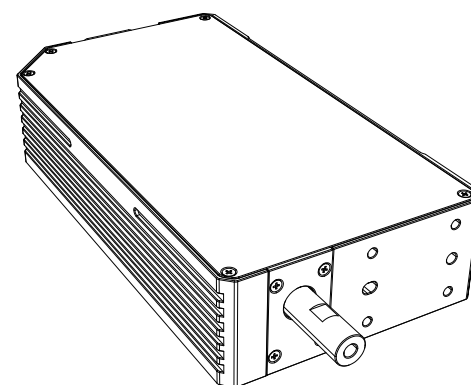
*^① Motor output without protective spring;
*^② There is an error of ± 0.3 N between the theoretical calculation formula and the actual condition. For the output calculation of other installation methods, please consult DH-Robotics engineers;
*^③ It is the reference value under the recommended load. 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.

LINEAR COIL ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location/ Vacuum	Customized*
VLA	30	25	H1	24U	B	0
		H1	Optical encoder, 0.5 μm			
		M2	Magnetic encoder, 1 μm			
			24U	24V main with 48V compatibility		
				B	Bottom interface + Without vacuum	
					0	No special customization
					1	Special customization



TECHNICAL SPECIFICATIONS



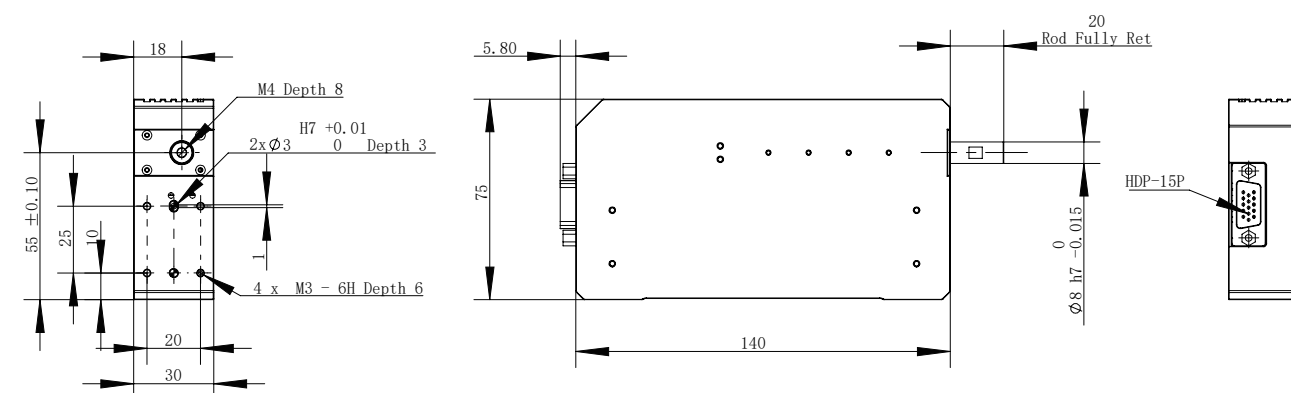
Peak thrust	24 N (24 V)	30 N (48 V)
Continuous thrust* ^①	12 N (24 V)	16 N (48 V)
Calculation formula for linear shaft motor output (vertically down)* ^②	F=12.67-0.044*L (For the actual output, refer to the thrust-displacement curve)	
Total stroke	25 mm	
Maximum speed	1 m/s	
Force control accuracy* ^③	30 g~100 g: ±5 g 100 g~800 g: ±5%	

Overall mass	860 g
Movable part mass	130 g
Size	140 mm x 75 mm x 30 mm
Recommended air pressure range* ^④	Without vacuum

Operating voltage	24 V DC $\pm 10\%$
Continuous current	1.5 A (24 V) 2.0 A (48 V)
Peak current	3.0 A (24 V) 4.0 A (48 V)
Recommended load	< 250 g
Maintenance interval	Refer to Maintenance Instructions for DH-Rob 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 $\pm 0.3 \text{ N}$ 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.

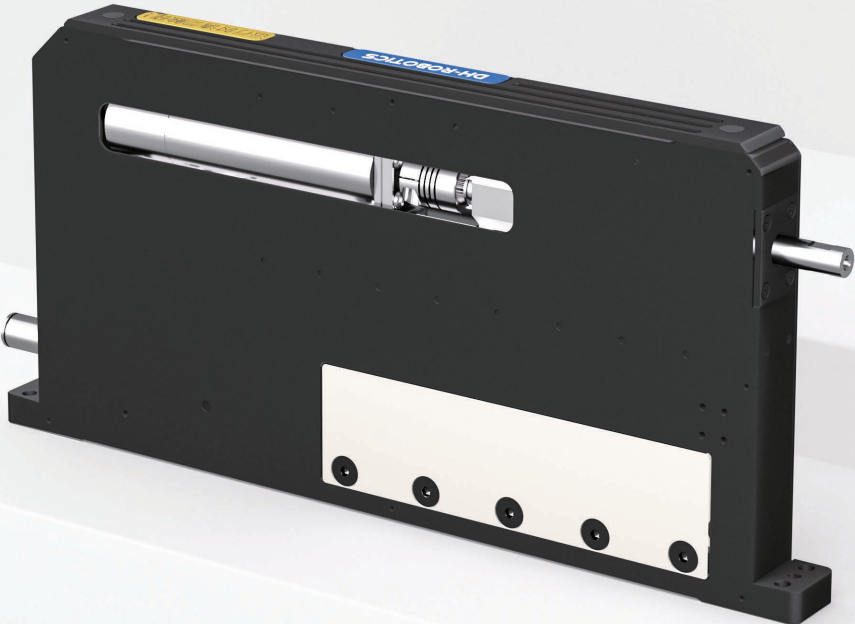
Technical drawing of a mechanical part, likely a bracket or support, showing dimensions and tolerances. The part has a main body with a width of 126 and a height of 20. It features a 4xM3 threaded hole with a depth of 6 on the left side. The right side has a flange with a thickness of 5 and a total width of 6.80. The bottom edge has a 2xØ3 hole with a depth of 3. The drawing includes various dimension lines and arrows indicating measurements.



DLARA SERIES

Direct Drive Linear Rotary Actuator

- DLARA-16-25
- DLARA-16-40
- DLARA-20-25
- DLARA-20-40
- DLARA-20-60
- DLARA-25-25
- DLARA-25-50
- DLARA-35-50



PRODUCT FEATURES

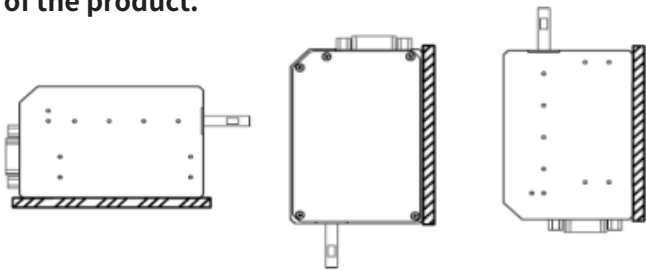
High Performance Linear/Rotary Motion Adjustable Parameters	Hollow Rod Soft Landing Power-off Protection	Precision Resolution Long Life over 100 Million Cycles
Provide accurate linear and rotary actions of the Z-axis during high-speed motion, with adjustable velocity, thrust, and position parameters, enabling complex actions requiring high frequency and high precision.	The product is compact, light, and thin. It employs a hollow rod design to support pick-and-place tasks. The intelligent soft landing function protects the picked and placed workpiece with precise force control. The Z-axis has a built-in spring to prevent the axis from falling off due to power-off during vertical operations.	Regarding this product, the stroke resolution is up to 0.5 μm , the rotary position resolution is 0.005°. With high-quality guide rail-level related components, it has a service life of 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.

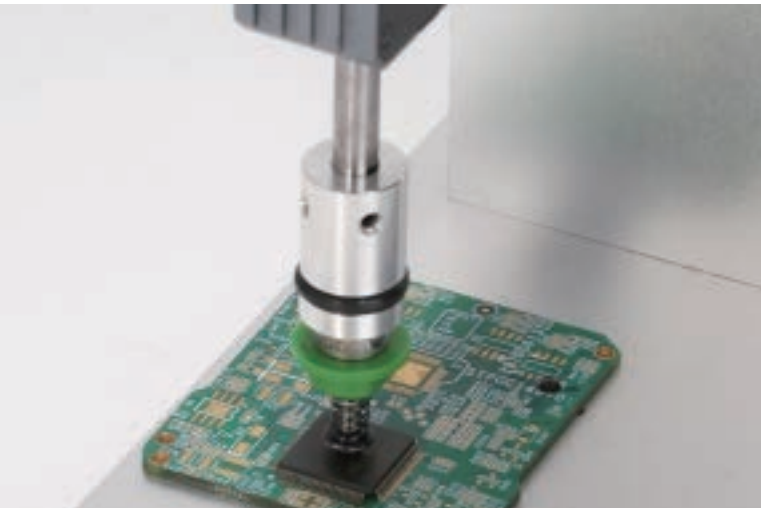
Installation Directions:

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



APPLICATION SCENARIOS

The force repeatability of $\pm 10\text{ g}$ and the micron-level resolution can be applied to the fast pick-and-place, assembly, testing, and other scenarios in semiconductors, 3C electronics, and other industries. The unique linear and rotary motions of the Z-axis of the VLAR series can adapt to more abundant industrial scenarios, such as positioning, correction, and assembly in medical automation, 3C, and packaging automation.



DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

Peak thrust	15 N
Continuous thrust* ^①	6 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=5.9-0.105 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	25 mm
Maximum speed	1 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 400 g: $\pm 5\%$
Force constant	6.7 N/Arms
Maximum torque	0.056 N.m
Rated torque	0.018 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μ m (Optical encoder) 0.5 μ m (Magnetic encoder)
Linear positioning repeatability	± 5 μ m (Optical encoder) ± 2 μ m (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	$\pm 0.1^\circ$ (Optical encoder) $\pm 0.02^\circ$ (Magnetic encoder)

Overall mass	700 g
Movable part mass	200 g
Radial deviation of shaft	0.01 mm
Size	185 mm x 98 mm x 16 mm
Recommended air pressure range* ⁽⁴⁾	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ⁽⁵⁾
Pressure Drop	0-5 Kpa
Flow Rate	≥ 6 L/min

Operating voltage	24 V DC $\pm 10\%$
Continuous current	(Linear) 0.9 Arms (Rotary) 0.6 Arms
Peak current	(Linear) 2.25 Arms (Rotary) 1.8 Arms
Recommended load	< 100 g
Recommended load inertia	10 g.cm ²
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

[illegible]

DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

Peak thrust	15 N
Continuous thrust* ①	6 N
Calculation formula for linear shaft motor output (vertically down)* ②	$F=6.31-0.105 \times l$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	40 mm
Maximum speed	1.1m/s
Force control accuracy* ③	50 g ~ 200 g: ± 10 g 200 g ~ 400 g: $\pm 5\%$
Force constant	6.7 N/Arms
Maximum torque	0.056 N.M
Rated torque	0.018 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μ m (Optical encoder) 0.5 μ m (Magnetic encoder)
Linear positioning repeatability	$\pm 5 \mu$ m (Optical encoder) $\pm 2 \mu$ m (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	$\pm 0.1^\circ$ (Optical encoder) $\pm 0.02^\circ$ (Magnetic encoder)

Overall mass	770 g
Movable part mass	203 g
Radial deviation of shaft	0.015 mm
Size	200 mm x 98 mm x 16 mm
Recommended air pressure range* ④	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa*⑤
Pressure Drop	0-5 Kpa
Flow Rate	≥ 6 L/min

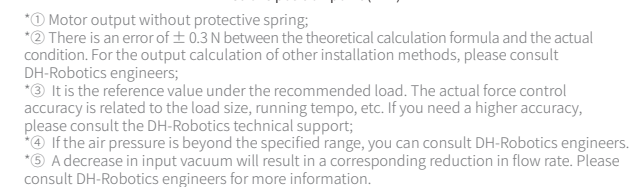
Operating voltage	24 V DC $\pm$ 10%
Continuous current	(Linear) 0.9 Arms (Rotary) 0.6 Arms
Peak current	(Linear) 2.25 Arms (Rotary) 1.8 Arms
Recommended load	< 100 g
Recommended load inertia	10 g.cm ²
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

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DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.



Peak thrust	24 N
Continuous thrust* ①	8 N
Calculation formula for linear shaft motor output (vertically down)*②	$F=9.06-0.105 \times l$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	25 mm
Maximum speed	1 m/s
Force control accuracy* ③	50 g ~ 200 g: ± 10 g 200 g ~ 600 g: $\pm 5\%$
Force constant	8.9 N/Arms
Maximum torque	0.056 N.m
Rated torque	0.018 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μ m (Optical encoder) 0.5 μ m (Magnetic encoder)
Linear positioning repeatability	± 5 μ m (Optical encoder) ± 2 μ m (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	$\pm 0.1^\circ$ (Optical encoder) $\pm 0.02^\circ$ (Magnetic encoder)

Overall mass	935 g
Movable part mass	230 g
Radial deviation of shaft	0.01 mm
Size	185 mm x 110 mm x 20 mm
Recommended air pressure range* ④	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa*⑤
Pressure Drop	0-5 Kpa
Flow Rate	≥ 6 L/min

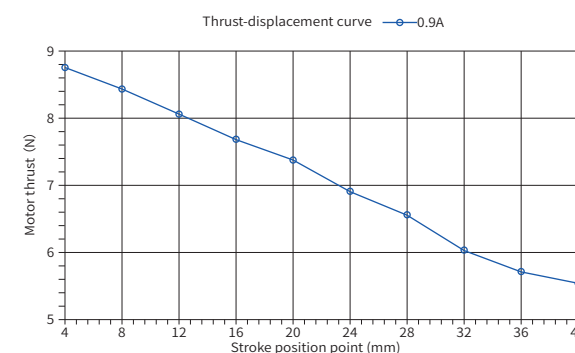
Operating voltage	24 V DC $\pm$ 10%
Continuous current	(Linear) 0.9 Arms (Rotary) 0.6 Arms
Peak current	(Linear) 2.7 Arms (Rotary) 1.8 Arms
Recommended load	< 100 g
Recommended load inertia	10 g.cm ²
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

An isometric line drawing of the EXLORION-HQ device. It is a rectangular unit with a front panel featuring a label that reads "EXLORION-HQ". On the left side of the front panel, there is a label that reads "LIMITE-MAX-18". The device has a top surface with a rectangular area marked by four screws. The front panel has a series of horizontal lines and a small circular indicator. The device is shown from a perspective that highlights its three-dimensional form.



- *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 actual 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
- *⑤ A decrease in input vacuum will result in a corresponding reduction in flow rate. Please consult DH-Robotics engineers for more information.

Peak thrust	24 N
Continuous thrust* ^①	8 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=9.42-0.105 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	40 mm
Maximum speed	1.3 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 600 g: $\pm 5\%$
Force constant	8.9 N/Arms
Maximum torque	0.056 N.m
Rated torque	0.018 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μ m (Optical encoder) 0.5 μ m (Magnetic encoder)
Linear positioning repeatability	± 5 μ m (Optical encoder) ± 2 μ m (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	$\pm 0.1^\circ$ (Optical encoder) $\pm 0.02^\circ$ (Magnetic encoder)

Overall mass	955 g
Movable part mass	233 g
Radial deviation of shaft	0.01 mm
Size	200 mm x 110 mm x 20 mm
Recommended air pressure range* ^④	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ^⑤
Pressure Drop	0-5 Kpa
Flow Rate	≥ 6 L/min

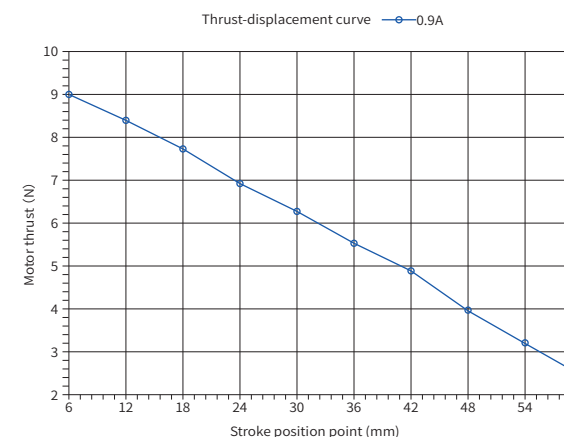
Operating voltage	24 V DC $\pm$ 10%
Continuous current	(Linear) 0.9 Arms (Rotary) 0.6 Arms
Peak current	(Linear) 2.7 Arms (Rotary) 1.8 Arms
Recommended load	< 100 g
Recommended load inertia	10 g.cm ²
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

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DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

[illegible]

- *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.
- *⑤ A decrease in input vacuum will result in a corresponding reduction in flow rate. Please consult DH-Robotics engineers for more information.

Peak thrust	24 N
Continuous thrust* ^①	8 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=9.63-0.116 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	60 mm
Maximum speed	1.8 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 600 g: $\pm 5\%$
Force constant	8.9 N/Arms
Maximum torque	0.056 N.m
Rated torque	0.018 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μ m (Optical encoder) 0.5 μ m (Magnetic encoder)
Linear positioning repeatability	$\pm 5 \mu$ m (Optical encoder) $\pm 2 \mu$ m (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	$\pm 0.1^\circ$ (Optical encoder) $\pm 0.02^\circ$ (Magnetic encoder)

Overall mass	1140 g
Movable part mass	237 g
Radial deviation of shaft	0.02 mm
Size	225mm x 110 mm x 20 mm
Recommended air pressure range* ⁽⁴⁾	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ⁽⁸⁾
Pressure Drop	0-5 Kpa
Flow Rate	≥ 6 L/min

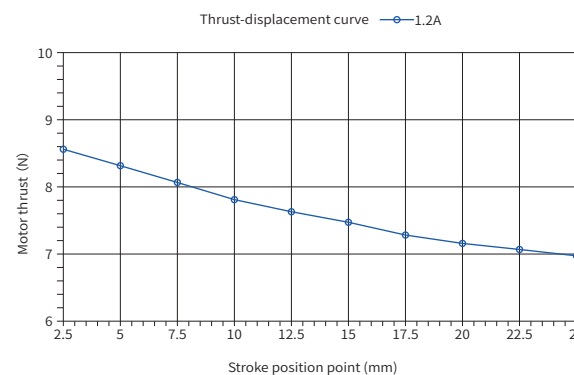
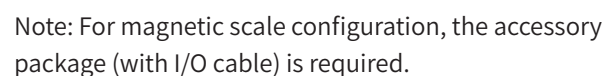
Operating voltage	24 V DC $\pm$ 10%
Continuous current	(Linear) 0.9 Arms (Rotary) 0.6 Arms
Peak current	(Linear) 2.7 Arms (Rotary) 1.8 Arms
Recommended load	< 100 g
Recommended load inertia	10 g.cm ²
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

[illegible]

DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
DLARA	25	25	ZH1	RH1	24U	BV	0	M L1

L1	1m Direct Cable Outlet
L3	3m Direct Cable Outlet
L5	5m Direct Cable Outlet
L7	7m Direct Cable Outlet
L10	10m Direct Cable Outlet
LX	No Cable Provided



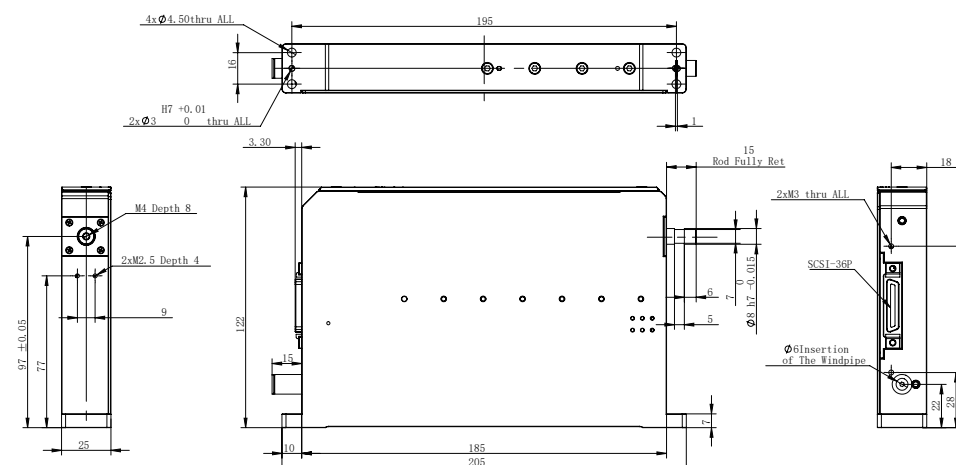
- *① Motor output without protective spring;
- *② There is an error of $\pm 0.3 \text{ N}$ between the theoretical calculation formula and the actual condition. For the output calculation of other installation methods, please consult DH-Robotics engineers;
- *③ It is the reference value under the recommended 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.
- *⑤ A decrease in input vacuum will result in a corresponding reduction in flow rate. Please consult DH-Robotics engineers for more information.

Peak thrust	27.5 N
Continuous thrust* ^①	10 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=8.39-0.056 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	25 mm
Maximum speed	1 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 800 g: $\pm 5\%$
Force constant	8.3 N/Arms
Maximum torque	0.042 N.m
Rated torque	0.02 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μ m (Optical encoder) 0.5 μ m (Magnetic encoder)
Linear positioning repeatability	$\pm 5 \mu$ m (Optical encoder) $\pm 2 \mu$ m (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	$\pm 0.1^\circ$ (Optical encoder) $\pm 0.02^\circ$ (Magnetic encoder)

Overall mass	1115g
Movable part mass	265 g
Radial deviation of shaft	0.01 mm
Size	185mm x 122 mm x 25 mm
Recommended air pressure range* ④	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa*⑤
Pressure Drop	0-5 Kpa
Flow Rate	≥ 8 L/min

Operating voltage	24 V DC $\pm$ 10%
Continuous current	(Linear) 1.2 Arms (Rotary) 0.9 Arms
Peak current	(Linear) 3.3 Arms (Rotary) 2 Arms
Recommended load	< 150 g
Recommended load inertia	20 g.cm ²
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

Dimensions



DLARA-25-50

DIRECT DRIVE LINEAR ROTARY ACTUATOR

SELECTION METHOD

Voice Coil Series

DLARA

Thickness (mm)

25

Stroke (mm)

50

Linear Encoder

ZH1

Rotary Encoder

RH1

Voltage (V)

24U

Interface Location/ Vacuum

BV

Accessories Bag

0

Drive /Cable

M L1

ZH1

Optical encoder, 0.5 μm

ZH2

Magnetic encoder, 1 μm

RH1

Optical encoder, 0.00275°

RM2

Magnetic encoder, 0.005°

24U

24V main with 48V compatibility

BV

Bottom interface + vacuum

0

Accessories Bag (without I/O Cable)

1

Accessories Bag (with I/O Cable)

N

No Accessories Bag

M

SAC2-NP1 (Single Axis Drive)

Y

SAC-NP2 (Dual-Axis Drive)

Z

SAC-NP4 (Four-Axis Drive)

L1

1m Direct Cable Outlet

L3

3m Direct Cable Outlet

L5

5m Direct Cable Outlet

L7

7m Direct Cable Outlet

L10

10m Direct Cable Outlet

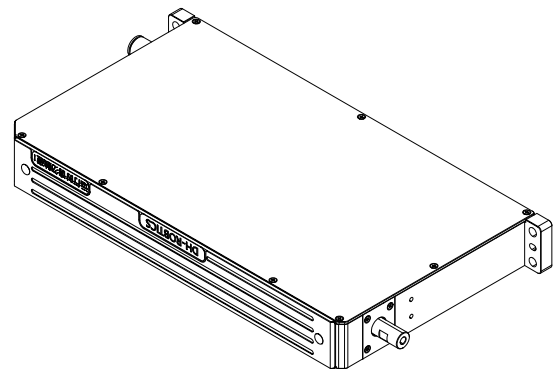
LX

No Cable Provided



Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

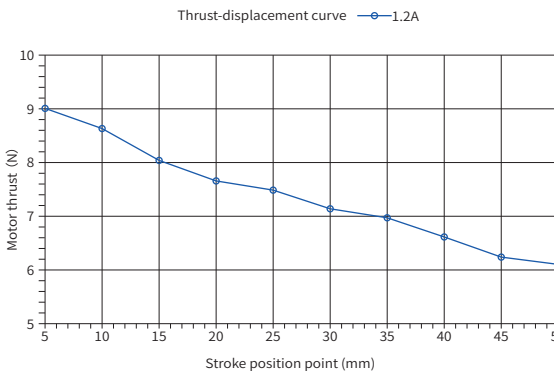
TECHNICAL SPECIFICATIONS



Intelligent Feedback

Adjustable Parameters

Long Life



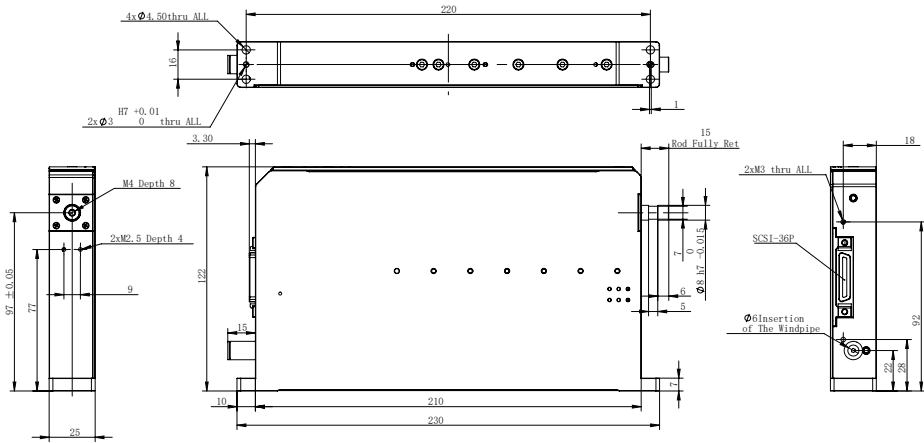
*① Motor output without protective spring;
*② There is an error of ± 0.3 N between the theoretical calculation formula and the actual condition. For the output calculation of other installation methods, please consult DH-Robotics engineers;
*③ It is the reference value under the recommended load. The 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.
*⑤ A decrease in input vacuum will result in a corresponding reduction in flow rate. Please consult DH-Robotics engineers for more information.

Performance Specifications	
Peak thrust	27.5 N
Continuous thrust* ①	10 N
Calculation formula for linear shaft motor output (vertically down)*②: $F=8.92-0.056 \times L$ (For the actual output, refer to the thrust-displacement curve)	
Total stroke	50 mm
Maximum speed	1.7 m/s
Force control accuracy* ③	50 g ~ 200 g: ±10 g
	200 g ~ 800 g: ±5%
Force constant	8.3 N/Arms
Maximum torque	0.042 N.m
Rated torque	0.02 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μm (Optical encoder) 0.5 μm (Magnetic encoder)
Linear positioning repeatability	±5 μm (Optical encoder) ±2 μm (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	±0.1° (Optical encoder) ±0.02° (Magnetic encoder)

Mechanical Specifications	
Overall mass	1265 g
Movable part mass	275 g
Radial deviation of shaft	0.015 mm
Size	210mm x 122 mm x 25 mm
Recommended air pressure range* ④	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa*⑤
Pressure Drop	0-5 Kpa
Flow Rate	≥ 8 L/min

Operating Environment	
Operating voltage	24 V DC ±10%
Continuous current	(Linear) 1.2 Arms (Rotary) 0.9 Arms
Peak current	(Linear) 3.3 Arms (Rotary) 2 Arms
Recommended load	< 150 g
Recommended load inertia	20 g.cm ²
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

Dimensions



DLARA-35-50

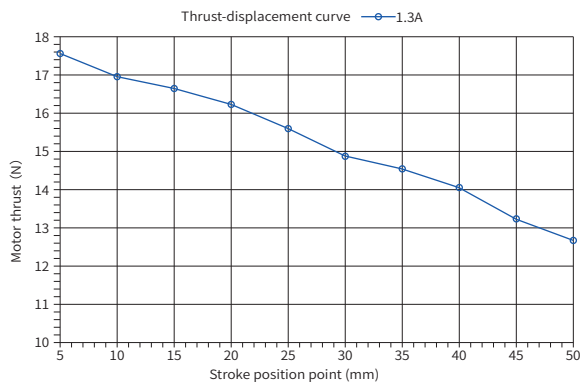
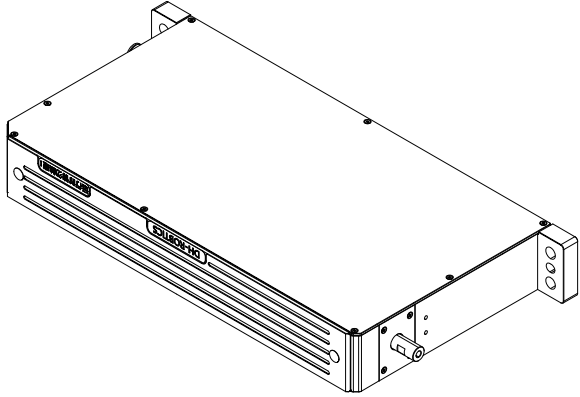
DIRECT DRIVE LINEAR ROTARY ACTUATOR

SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/Vacuum	Accessories Bag	Drive /Cable
DLARA	35	50	ZH1	RH1	48	BV	0	M L1
			ZH1 Optical encoder, 0.5 μm					
			ZH2 Magnetic encoder, 1 μm					
				RH1 Optical encoder, 0.00275°				
				RM2 Magnetic encoder, 0.005°				
					24U 24V main with 48V compatibility			
						BV Bottom interface + vacuum		
							0 Accessories Bag (without I/O Cable)	
							1 Accessories Bag (with I/O Cable)	
							N No Accessories Bag	
								M SAC2-NP1 (Single Axis Drive)
								Y SAC-NP2 (Dual-Axis Drive)
								Z SAC-NP4 (Four-Axis Drive)
								L1 1m Direct Cable Outlet
								L3 3m Direct Cable Outlet
								L5 5m Direct Cable Outlet
								L7 7m Direct Cable Outlet
								L10 10m Direct Cable Outlet
								LX No Cable Provided

Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

TECHNICAL SPECIFICATIONS



*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.
*⑤ A decrease in input vacuum will result in a corresponding reduction in flow rate. Please consult DH-Robotics engineers for more information.

Performance Specifications

Peak thrust	64 N
Continuous thrust* ①	19 N
Calculation formula for linear shaft motor output (vertically down)* ②	$F=17.96-0.1 \cdot L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	50 mm
Maximum speed	1.6 m/s
Force control accuracy* ③	50 g ~ 200 g: ±10 g 200 g ~ 1200 g: ±5%
Force constant	14.6 N/Arms
Maximum torque	0.14 N.m
Rated torque	0.035 N.m
Maximum speed	2000 rpm
Linear encoder resolution	1 μm (Optical encoder) 0.5 μm (Magnetic encoder)
Linear positioning repeatability	±5 μm (Optical encoder) ±2 μm (Magnetic encoder)
Rotary encoder resolution	0.005° (Optical encoder) 0.00275° (Magnetic encoder)
Rotary positioning repeatability	±0.1° (Optical encoder) ±0.02° (Magnetic encoder)

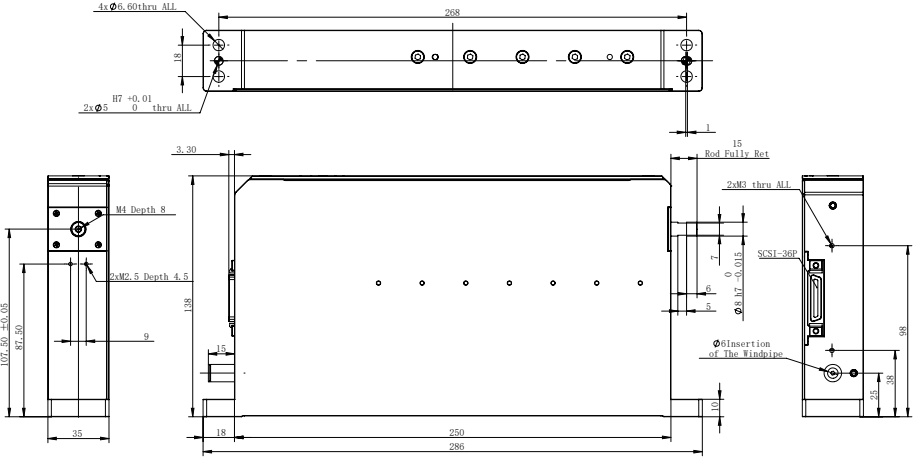
Mechanical Specifications

Overall mass	2370 g
Movable part mass	530 g
Radial deviation of shaft	0.015 mm
Size	250mm x 138 mm x 35 mm
Recommended air pressure range* ④	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ⑤
Pressure Drop	0-5 Kpa
Flow Rate	≥ 10 L/min

Operating Environment

Operating voltage	24 V DC ±10%
Continuous current	(Linear) 1.3 Arms (Rotary) 1.3 Arms
Peak current	(Linear) 4.2 Arms (Rotary) 3.5 Arms
Recommended load	< 300 g
Recommended load inertia	50 g.cm ²
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

Dimensions



DLSRA SERIES

Direct Drive Linear Rotary Actuator

DLSRA-25-25
DLSRA-25-50



PRODUCT FEATURES

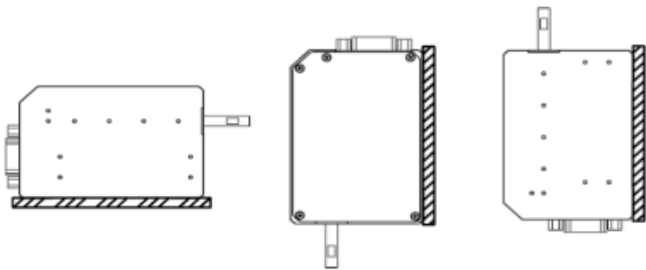
High Performance Linear/Rotary Motion Adjustable Parameters	Hollow Rod Soft Landing Power-off Protection	Precision Resolution Long Life over 100 Million Cycles
Provide accurate linear and rotary actions of the Z-axis during high-speed motion, with adjustable velocity, thrust, and position parameters, enabling complex actions requiring high frequency and high precision.	The product is compact, light, and thin. It employs a hollow rod design to support pick-and-place tasks. The intelligent soft landing function protects the picked and placed workpiece with precise force control. The Z-axis has a built-in spring to prevent the axis from falling off due to power-off during vertical operations.	Regarding this product, the stroke resolution is up to 0.5 μm , the rotary position resolution is 0.005°. With high-quality guide rail-level related components, it has a service life of 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

DLSRA features linear and rotary motion plus $\pm 0.1\text{ N}$ force repeatability, and can be applied in assembly and bonding of 3C products, automatic transplanting, handling, etc.

DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

An isometric line drawing of the SHIMON-HQ unit. It is a rectangular box with a front panel featuring a label that reads 'SHIMON-HQ'. The front panel has several horizontal slots and a small circular indicator. The top of the unit has a small protrusion on the left side. The right side of the unit shows a vertical panel with a circular connector and several small holes.

Peak thrust	27.5N
Continuous thrust* ^①	10 N
Calculation formula for linear shaft motor output (vertically down) ^{*②}	$F=8.35-0.056 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	25 mm
Maximum speed	1 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 800 g: $\pm 5\%$
Force constant	8.3 N/Arms
Holding torque	0.03 N.M
Maximum speed	800 rpm
Linear encoder resolution	1 μ m (Magnetic encoder) 0.5 μ m (Optical encoder)
Linear positioning repeatability	± 5 μ m (Magnetic encoder) ± 2 μ m (Optical encoder)
Rotary encoder resolution	8000p/r
Rotary positioning repeatability	$\pm 0.1^\circ$ (Magnetic encoder)

Overall mass	1170 g
Movable part mass	280 g
Radial deviation of shaft	0.01 mm
Size	185 mm x 122 mm x 25 mm
Recommended air pressure range* ⁽⁴⁾	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ⁽⁵⁾
Pressure Drop	0-5 Kpa
Flow Rate	≥ 8 L/min

Operating voltage	24 V DC $\pm 10\%$
Continuous current	(Linear) 1.2 Arms (Rotary) 0.9 Arms
Peak current	(Linear) 3.3 Arms
Recommended load	< 100 g
Recommended load inertia	20 g.cm ²
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

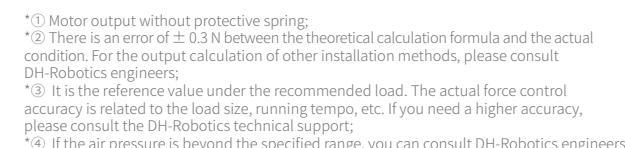
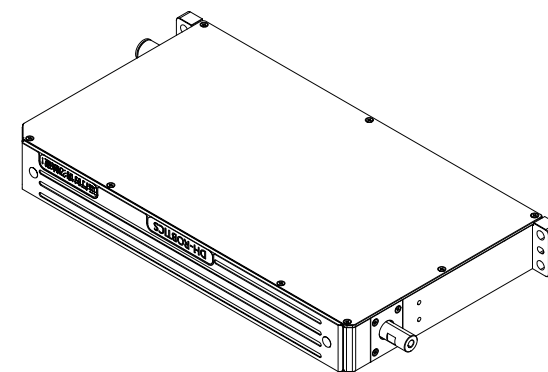
Technical drawing of the SCSi-36P windmill, showing three views: front, side, and top. The drawing includes the following dimensions and labels:

- Front View (Left):**
 - Overall height: 97 ± 0.05
 - Height to center of mounting holes: 77
 - Width: 25
 - Mounting holes: 4x Ø4.50 thru ALL
 - Central hole: Ø6
 - Label: M4 Depth 8
 - Label: 2x M2.5 Depth 4
 - Label: 9
 - Label: 1
- Side View (Middle):**
 - Overall width: 195
 - Height to center of mounting holes: 16
 - Height to center of central rod: 1
 - Label: 2x Ø3 H7 +0.01 0 thru ALL
 - Label: 3.30
 - Label: 15
 - Label: Rod Fully Ret
 - Label: 15
 - Label: 6
 - Label: 5
 - Label: 0.1 H7 -0.015
 - Label: 10
 - Label: 185
 - Label: 205
 - Label: 17
- Top View (Right):**
 - Overall width: 18
 - Height to center of mounting holes: 18
 - Height to center of central rod: 18
 - Label: 2x M3 thru ALL
 - Label: SCSi-36P
 - Label: Ø6 Insertion of The Windpile
 - Label: 22
 - Label: 3/8"

DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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TECHNICAL SPECIFICATIONS

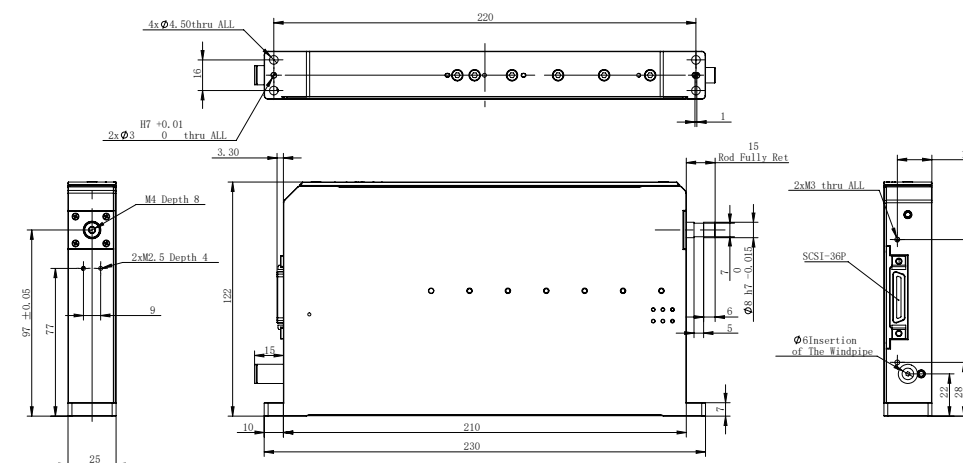


Peak thrust	27.5N
Continuous thrust* ^①	10 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=9.25-0.056 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	50 mm
Maximum speed	1.4 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 800 g: $\pm 5\%$
Force constant	8.3 N/Arms
Holding torque	0.03 N.M
Maximum speed	800 rpm
Linear encoder resolution	1 μ m (Magnetic encoder) 0.5 μ m (Optical encoder)
Linear positioning repeatability	± 5 μ m (Magnetic encoder) ± 2 μ m (Optical encoder)
Rotary encoder resolution	8000p/r
Rotary positioning repeatability	$\pm 0.1^\circ$ (Magnetic encoder)

Overall mass	1290 g
Movable part mass	290 g
Radial deviation of shaft	0.015 mm
Size	210 mm x 122 mm x 25 mm
Recommended air pressure range* ⁽⁴⁾	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ⁽⁵⁾
Pressure Drop	0-5 Kpa
Flow Rate	≥ 8 L/min

Operating voltage	24 V DC $\pm 10\%$
Continuous current	(Linear) 1.2 Arms (Rotary) 0.9 Arms
Peak current	(Linear) 3.3 Arms
Recommended load	< 100 g
Recommended load inertia	20 g.cm ²
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

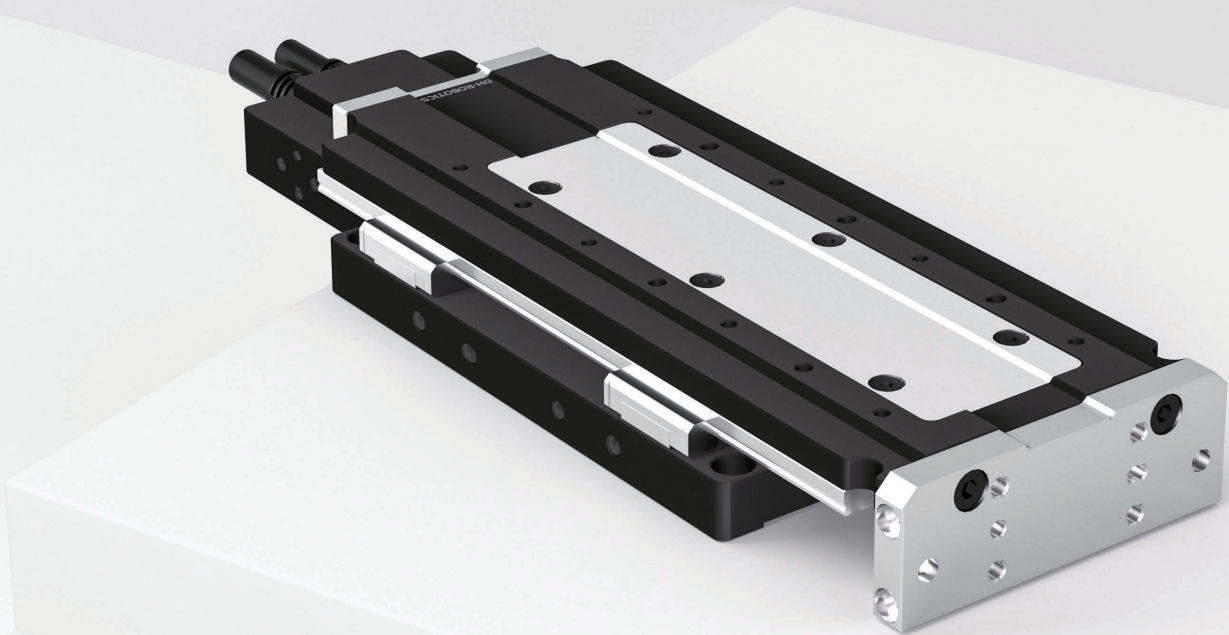
Dimensions



DLE SERIES

Direct Drive Linear Module

DLE-79-30
DLE-79-50



PRODUCT FEATURES

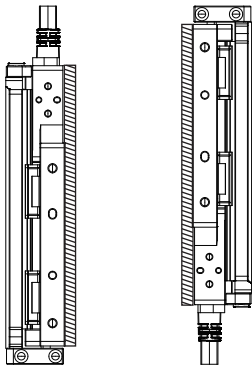
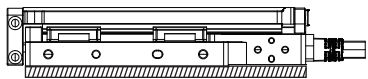
High Speed High Accuracy	High Energy Density High Stability and Reliability	Compact Design parameters adjustable
The direct drive technology guarantees higher speed and accuracy, that is, the maximum speed of 1.6 m/s, the maximum acceleration of 4 g, and positioning repeatability of $\pm 2 \mu\text{m}$, to meet motion control needs in high-end manufacturing industries including precision assembly and testing.	Small size, light weight, large thrust, high speed, stable and reliable, and industry-leading performance.	Featuring compact structure and lighter weight, the product can be easily deployed in a confined space. Bus or pulse control allows for adjustment of force, position and stroke parameters and ease of installation.

INSTALLATION METHOD

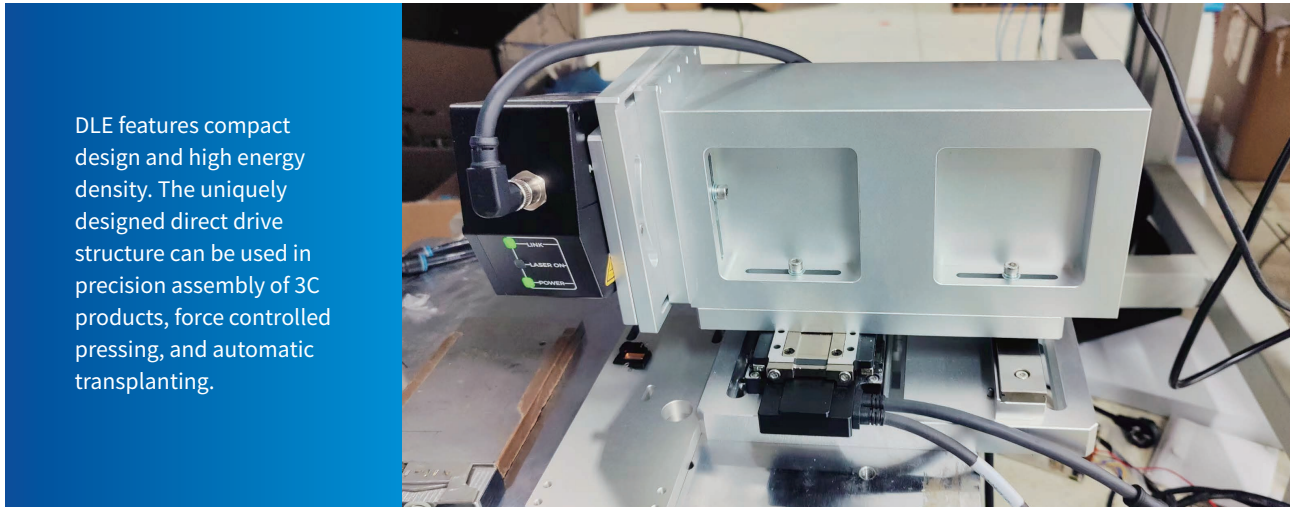
Install it using the screw holes on the back of the product.

Installation Directions:

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



APPLICATION SCENARIOS



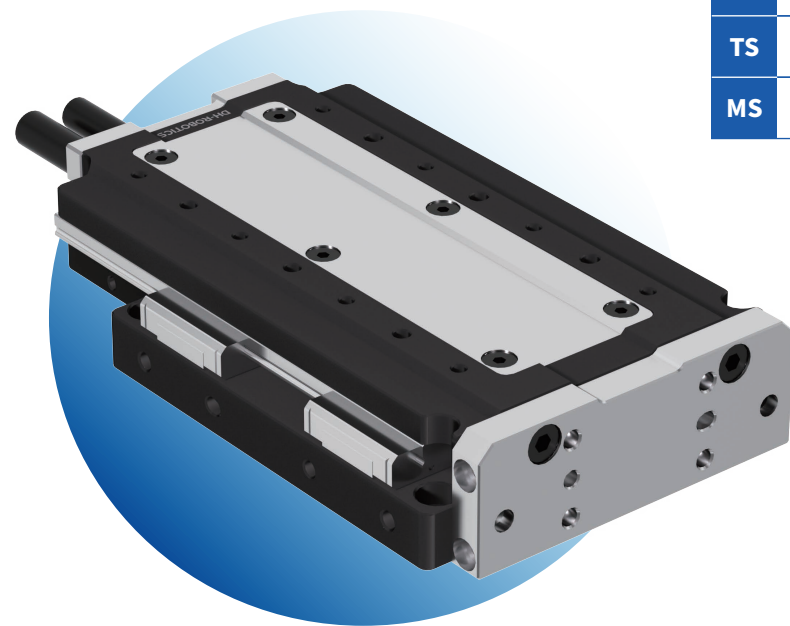
DLE features compact design and high energy density. The uniquely designed direct drive structure can be used in precision assembly of 3C products, force controlled pressing, and automatic transplanting.

DLE-79-30

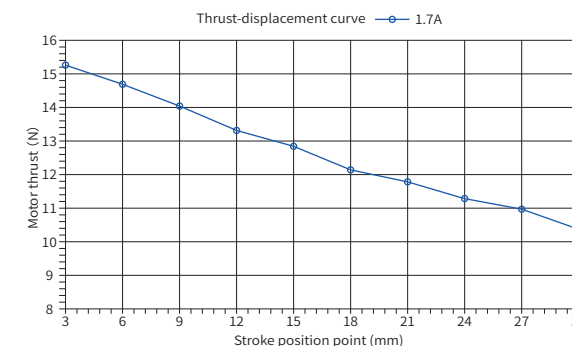
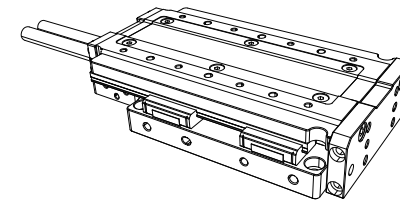
DIRECT DRIVE LINEAR MODULE

SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Spring configuration*	Customized*
DLE	79	30	H1	48	0	0
			H1		Optical encoder, 0.5 μm	
			M2		Magnetic encoder, 1 μm	
				0	Without spring	
				TS	Mechanical spring	
				MS	Magnetic spring	
				0	No special customization	
				1	Special customization	



TECHNICAL SPECIFICATIONS



*① Motor output without protective spring;
*② This formula is used to calculate the output when a mechanical spring is configured. There is an error of ± 0.5 N between the theoretical calculation formula and the actual condition. For 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.

Performance Specifications

Peak thrust	54 N
Continuous thrust* ^①	18 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=15.21-0.16 \cdot L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	30 mm
Maximum speed	1.2 m/s
Force control accuracy* ^③	2 N~20 N: ± 0.5 N
Force constant	10.6 N/A
Linear encoder resolution	0.5 μm (Optical encoder) 1 μm (Magnetic encoder)
Linear positioning repeatability	± 2 μm (Optical encoder) ± 5 μm (Magnetic encoder)

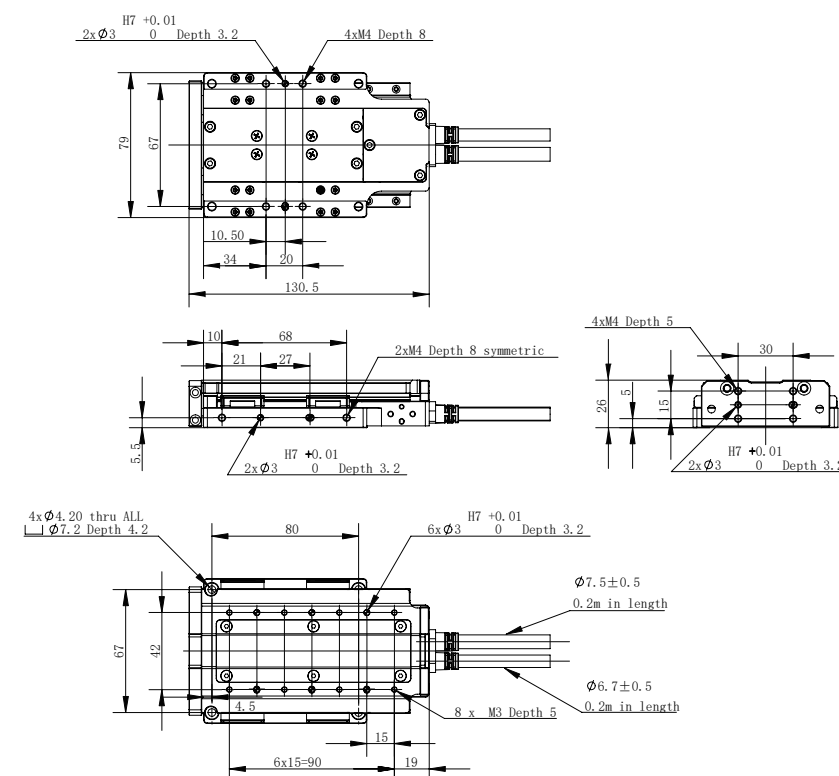
Mechanical Specifications

Overall mass	790 g
Movable part mass	340 g
Size	130.5 mm x 79 mm x 26 mm
Recommended air pressure range* ^④	Without vacuum

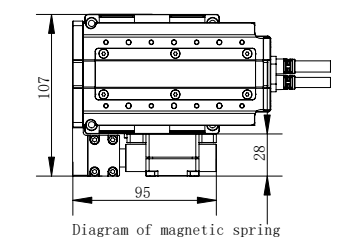
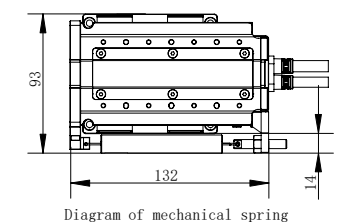
Operating Environment

Operating voltage	48 V DC $\pm 10\%$
Continuous current	(Linear) 1.7 A
Peak current	(Linear) 5.1 A
Recommended load	< 1000 g (for horizontal applications) < 500 g (for vertical applications)
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH以下
International standard compliance	CE, FCC, RoHS

Dimensions



Schematic diagram of spring selection



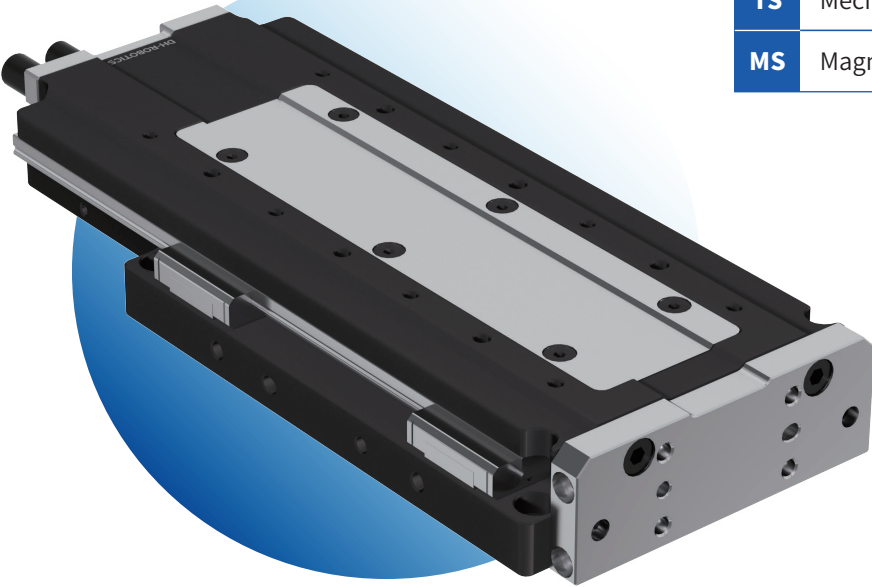
*Note: For customization fees, consult the company's sales staff.

DLE-79-50

DIRECT DRIVE LINEAR MODULEZ

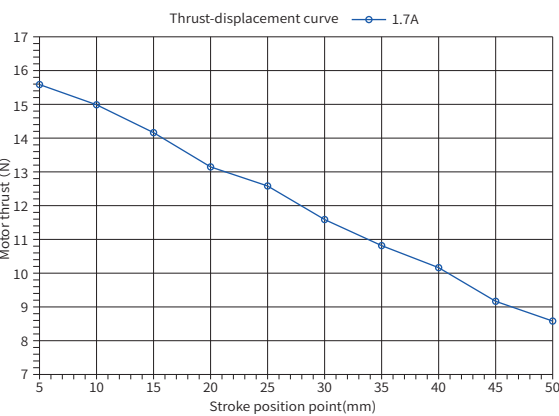
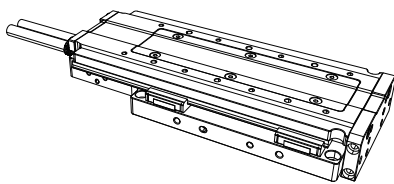
SELECTION METHOD

Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Spring configuration*	Customized*
DLE	79	50	H1	48	0	0
			H1			
			M2			
					0	
					TS	
					MS	
						0
						1



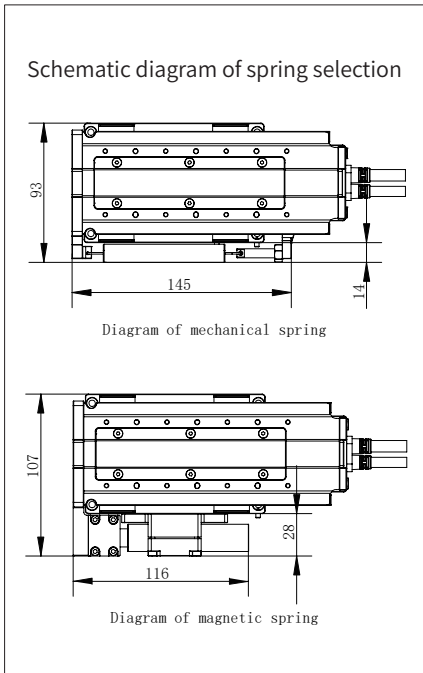
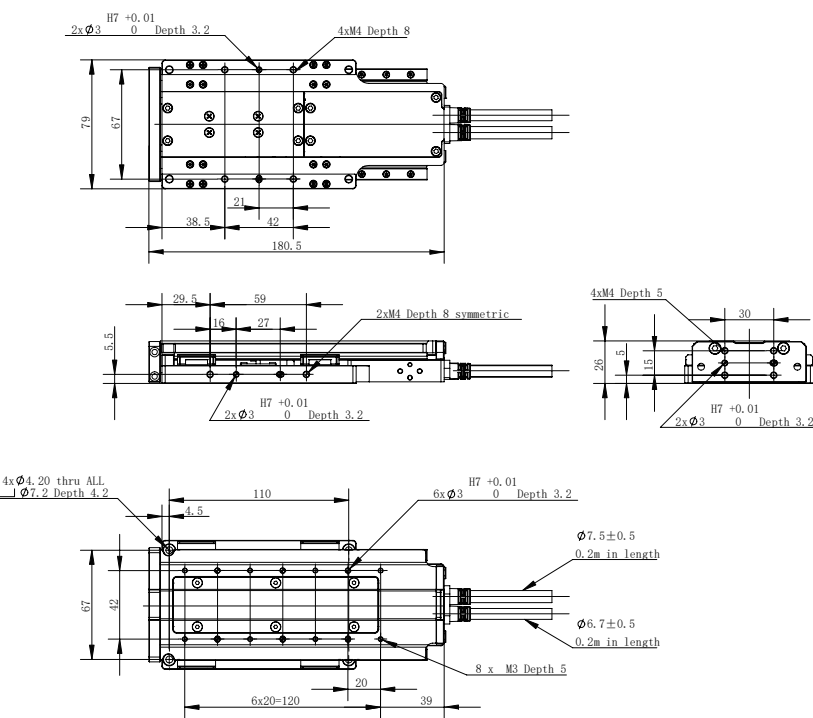
*Note: For customization fees, consult the company's sales staff.

TECHNICAL SPECIFICATIONS



*① Motor output without protective spring;
*② This formula is used to calculate the output when a mechanical spring is configured. There is an error of ± 0.5 N between the theoretical calculation formula and the actual condition. For 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



Performance Specifications

Peak thrust	54 N
Continuous thrust*①	18 N
Calculation formula for linear shaft motor output (vertically down)*②	$F=16.49-0.16 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	50 mm
Maximum speed	1.6 m/s
Force control accuracy*③	2 N~20 N: ± 0.5 N
Force constant	10.6 N/A
Linear encoder resolution	0.5 μ m (Optical encoder) 1 μ m (Magnetic encoder)
Linear positioning repeatability	± 2 μ m (Optical encoder) ± 5 μ m (Magnetic encoder)

Mechanical Specifications

Overall mass	970 g
Movable part mass	470 g
Size	180.5 mm x 79 mm x 26 mm
Recommended air pressure range*④	Without vacuum

Operating Environment

Operating voltage	48 V DC $\pm 10\%$
Continuous current	(Linear) 1.7 A
Peak current	(Linear) 5.1 A
Recommended load	< 900 g (for horizontal applications) < 400 g (for vertical applications)
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

VLM SERIES CIRCULAR VOICE COIL ACTUATOR

VLM (F) -50C-10



PRODUCT FEATURES

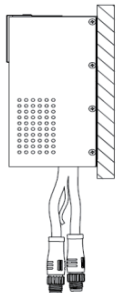
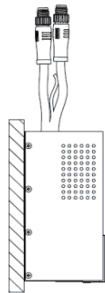
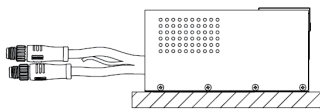
Compact and Refined Design High Dynamic Response Adjustable Parameters	Soft Landing High-Precision Force Control Enhanced by Intelligent Algorithms	Power-Off Protection High Durability
VLM-50C-10 Circular Voice Coil Actuator — featuring a compact structure with dimensions of 55 × 53.5 × 105 mm. Speed, thrust, and position are fully adjustable, enabling high-frequency, high-precision motion control.	Smart Soft-Landing Function enables gentle contact, preventing object damage. Built-in Force Sensor enables ±1 g Closed-Loop Force Control. Integrated High-Precision Grating Encoder with Micron-Level Position Accuracy	Built-in Magnetic Spring prevents vertical axis drop during power loss. Adopts Crossed Roller Guide with Service Life Over Tens of Millions of Cycles

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

VLM offers compact size and high performance. With an integrated force sensor for precise closed-loop force control, it is ideal for applications such as mobile button testing, keyboard inspection, and wafer cleaning force control.



VLMF-50C-10

DIRECT DRIVE LINEAR MODULE

SELECTION METHOD

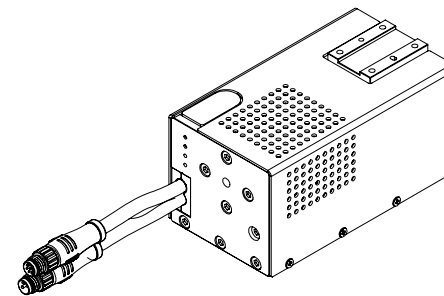
Voice Coil Series	Thickness (mm)	Stroke (mm)	Encoder	Voltage (V)	Interface Location	Force Sensor Range	Accessories* Bag	Drive /Cable
VLM ☐	50 C	10	H0	24U	B	S20	1	M L1
无 Without Force Sensor			H0 Optical encoder, 0.1 μm					
F With Force Sensor			H1 Optical encoder, 0.5 μm					
	50 Thickness: 50 mm		HN20 Optical encoder, 20nm					
	C Crossed Roller Guide		M2 Magnetic encoder, 1 μm					
	10 Effective Stroke: 10 mm		24U 24V main with 48V compatibility					
				B Rear Cable Outlet				
				S Front Cable Outlet				
				无 Leave Blank if No Force Sensor				
				S05 Measuring Range: 0.5 kg				
				S10 Measuring Range: 1 kg				
				S20 Measuring Range: 2 kg				
				0 Accessory Kit (Without I/O Cable)				
				1 Accessory Kit (With I/O Cable) + High Sampling Rate Amplifier				
				2 Accessory Kit (With I/O Cable) + General-Purpose Amplifier				
				N Without Accessory Kit				
							L1 1m Cable	
							L3 3m Cable	
							L5 5m Cable	
							L7 7m Cable	
							L10 10m Cable	
							LX Without Cable	

注：配件包选型

a、不带力传感器填“0”

b、高采样率放大器为进口品牌，采样频率最高支持4800HZ，通用型放大器为国产品牌，采样频率最高支持1920HZ。

TECHNICAL SPECIFICATIONS



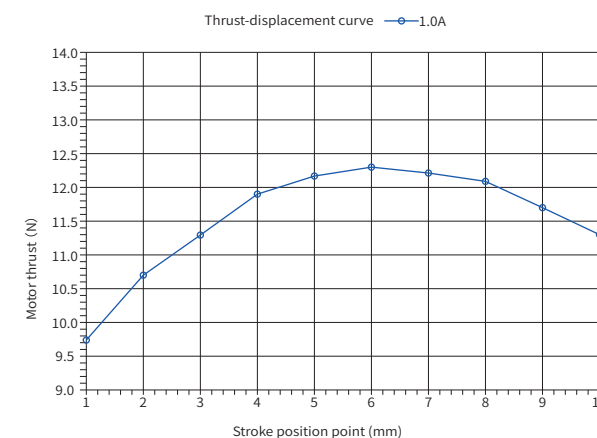
Performance Specifications	VLM-50C-10	VLMF-50C-10
Peak thrust		30N
Continuous thrust* ^①		10 N
Total stroke		10 mm
Maximum speed		0.8 m/s
Force constant		9.9 N/Arms
Force sensor range	— —	2 kg 1 kg 0.5 kg
Force control accuracy* ^②	20g~250g: ±5g 250g~1000g: ±2%	±1 g ±0.5 g ±0.3 g
Linear encoder resolution	1 μm (Magnetic encoder)	0.5 μm (Optical encoder)
Linear positioning repeatability	±5 μm (Magnetic encoder)	±2 μm (Optical encoder)

Mechanical Specifications

Overall mass	650 g
Movable part mass	240 g
Size	104.5 x 55 x 53.5 mm 105 x 55 x 53.5 mm

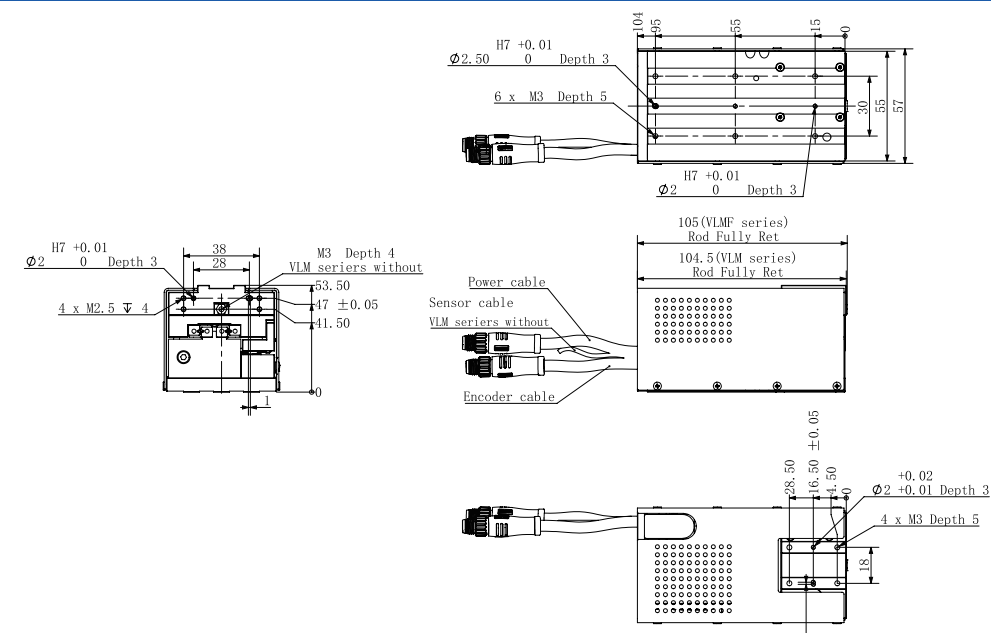
Operating Environment

Operating voltage	24 V DC ±10%
Continuous current	1.0 A
Peak current	3.0A
Recommended load	< 50 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 Recommended value under suggested load. The actual force control accuracy depends on factors such as load characteristics and motion cycle. For higher precision requirements, please consult DH Robotics technical support.

Dimensions



LINEAR COIL ACTUATOR DRIVE

The following table provides driver model options:

Drive	Communication Method	Operating Mode	I/O	Note	Model
SAC2-NP1 (DH single-axis actuator) 	USB	Position Mode Velocity Mode Torque Mode	5 Digital Inputs per Axis 2 Digital Outputs per Axis	Compact Design High Force Control Precision Supports Closed-Loop Force Control Equipped with Soft-Landing Capability Built-in Electronic Gear Ratio Function	SAC2-NP1-E C-A-03A2
	EtherCAT	Position Trajectory Mode Velocity Trajectory Mode Torque Trajectory Mode Cyclic Synchronous Position Mode (CSP) Cyclic Synchronous Velocity Mode (CSV) Cyclic Synchronous Torque Mode (CST)	1 Analog Input per Axis 1 Single-Ended Pulse Input 1 Single-Ended Direction Input		
SAC-NP2 (DH dual-axis actuator) 	USB	Position Mode Velocity Mode Torque Mode	5 Digital Inputs per Axis 2 Digital Outputs per Axis	Integrated Dual-Axis Control Compact Design High Force Control Precision Supports Closed-Loop Force Control Equipped with Soft-Landing Capability Built-in Electronic Gear Ratio Function	SAC-NP2-EC -U-03A1-03 A2
	EtherCAT	Position Trajectory Mode Velocity Trajectory Mode Torque Trajectory Mode Cyclic Synchronous Position Mode (CSP) Cyclic Synchronous Velocity Mode (CSV) Cyclic Synchronous Torque Mode (CST)	1 Analog Input per Axis 1 Single-Ended Pulse Input 1 Single-Ended Direction Input		
SINGLE-AXIS STEPPER 	USB	Position Trajectory Mode Velocity Trajectory Mode	4 Digital Inputs per Axis 2 Digital Outputs per Axis	Compact Design Easy Operation and Installation High Cost Performance	SSD2205PE -B1
	EtherCAT	Position Trajectory Mode Velocity Trajectory Mode Cyclic Synchronous Position Mode (CSP)			
DUAL-AXIS STEPPER DRIVER 	USB	Position Trajectory Mode Velocity Trajectory Mode	4 Digital Inputs per Axis 2 Digital Outputs per Axis	Dual-Axis Integrated Stepper Driver Compact Design Easy Operation and Installation High Cost Performance	MS-MINI3E- 2D
	EtherCAT	Position Trajectory Mode Velocity Trajectory Mode Cyclic Synchronous Position Mode (CSP)			
Note: If you need to select a third-party driver, please consult DH-ROBOTICS sales representatives.					

DRIVER & ACTUATOR CABLE MATCHING TABLE

Actuator Model (First 3 Digits)	Driver Model	Control Cable Length (m)	Control Cable Part Number	Actuator : driver : cable quantity ratio	Note
VLA-10-20	SAC2-NP1- EC-A-03A2	L01	X775-0716-D1	1:1:1	
		L03	X775-0717-D1		
		L05	X775-0718-D1		
		L07	X775-0719-D1		
		L10	X775-0720-D1		
VLA-16-15 VLA-25-10 VLA-25-25 VLA-30-25		L01	X775-0711-D1		
		L03	X775-0712-D1		
		L05	X775-0713-D1		
		L07	X775-0714-D1		
		L10	X775-0715-D1		
DLE-79-30 DLE-79-50		L01	X775-0559-D1+X775-0721-D1		
		L03	X775-0267-D1+X775-0722-D1		
		L05	X775-0274-D1+X775-0723-D1		
		L07	X775-0275-D1+X775-0724-D1		
		L10	X775-0276-D1+X775-0725-D1		
DLARA-13-25 / DLARA-13-45 DLARA-16-25 / DLARA-16-40 DLARA-20-25 / DLARA-20-40 DLARA-20-60 / DLARA-25-25 DLARA-25-50 / DLARA-35-50	SAC-NP2-EC- U-03A1-03A2	L01	X775-0701-D1		
		L03	X775-0702-D1		
		L05	X775-0703-D1		
		L07	X775-0704-D1		
		L10	X775-0705-D1		
DLSRA-25-25 DLSRA-25-50	SAC2-NP1-EC-A- 03A2+Yankong- SSD2205PE-B1	L01	X775-0706-D1	1:1:1	
		L03	X775-0707-D1		
		L05	X775-0708-D1		
		L07	X775-0709-D1		
		L10	X775-0710-D1		
	SAC-NP2-EC-U- 03A1-03A2+Yankong -MS-MINI3E	L01	X775-0706-D1	2:1:2	2 DLSRA motors with 1 set of drive components and 2 sets of control cables
		L03	X775-0707-D1		
		L05	X775-0708-D1		
		L07	X775-0709-D1		
		L10	X775-0710-D1		
Note: For third-party drive cable compatibility, please contact DH Robotics sales personnel. ZR model defaults to SAC-NP2; single Z model defaults to SAC2-NP1.					

CUSTOMER TRUST

More than 800 customers around the world are using DH-Robotics products
The number of customers continues to grow rapidly. . .



版本变更记录

修订日期	发布版本	变更记录
2025.10	CN.2510	· VLAR Series Discontinued · The DLAR series has been replaced by the DLARA series. · The DLSR series has been replaced by the DLSRA series.
2025.08	CN.2508	· Add selection options for VLM round voice coil actuators
2025.07	CN.2507	· The accessory kit code has been relocated before the driver/cable code in all finished product feature codes.

The content is subject to change without notice due to ongoing product upgrades by the company.
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