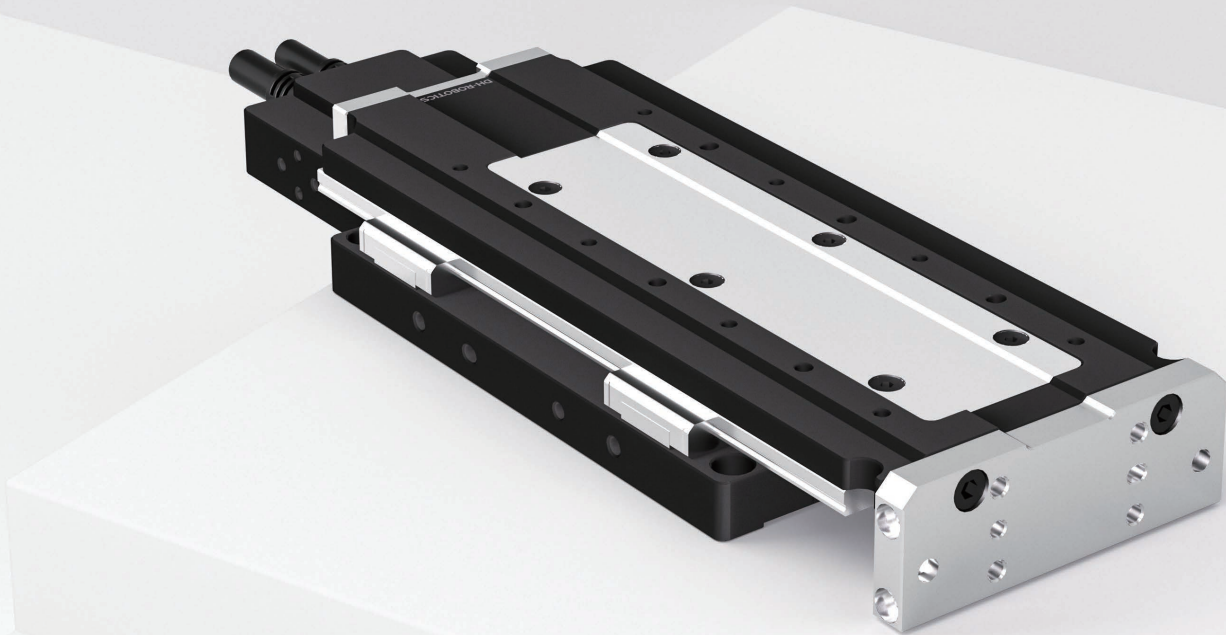


DLE SERIES

Direct Drive Linear Module

DLE-79-30
DLE-79-50



PRODUCT FEATURES

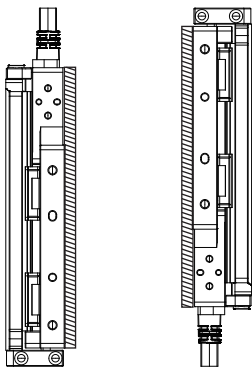
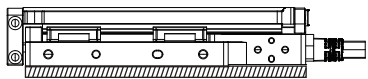
High Speed High Accuracy	High Energy Density High Stability and Reliability	Compact Design parameters adjustable
The direct drive technology guarantees higher speed and accuracy, that is, the maximum speed of 1.6 m/s, the maximum acceleration of 4 g, and positioning repeatability of $\pm 2 \mu\text{m}$, 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

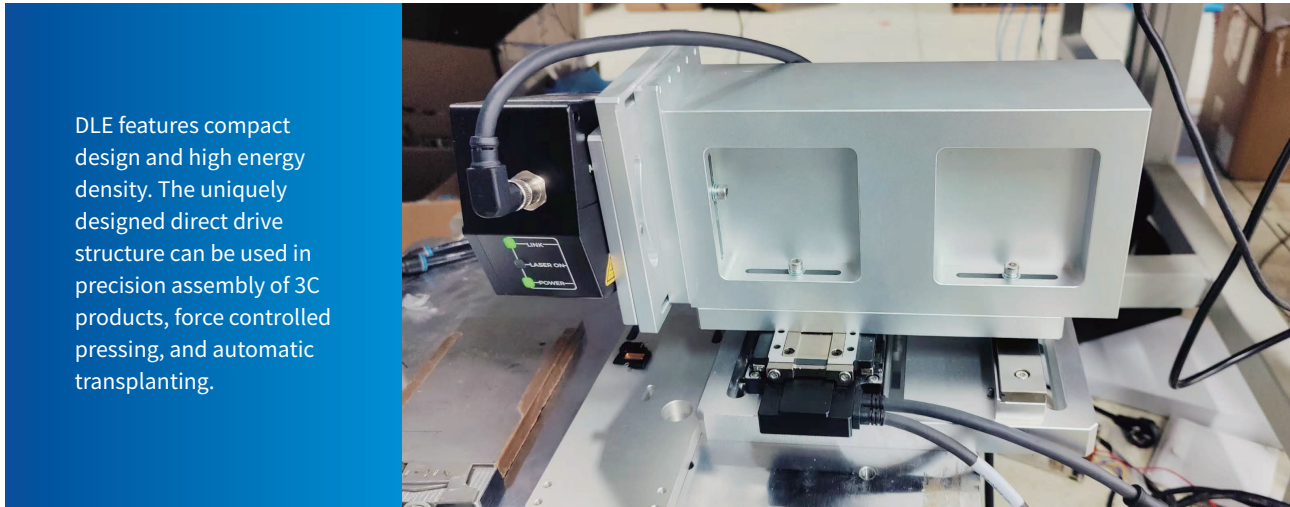
Install it using the screw holes on the back of the product.

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

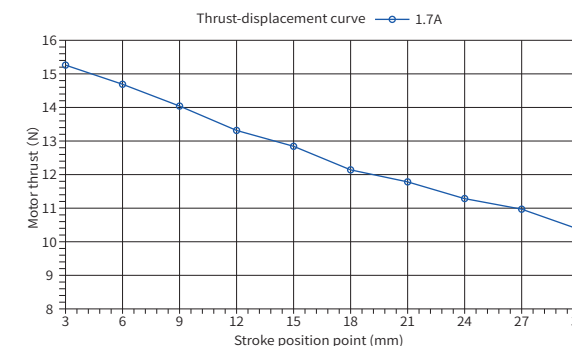
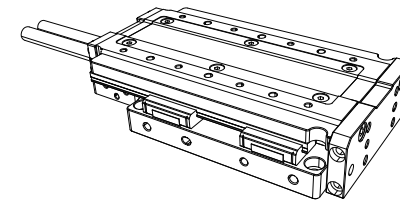
DIRECT DRIVE LINEAR MODULE

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)

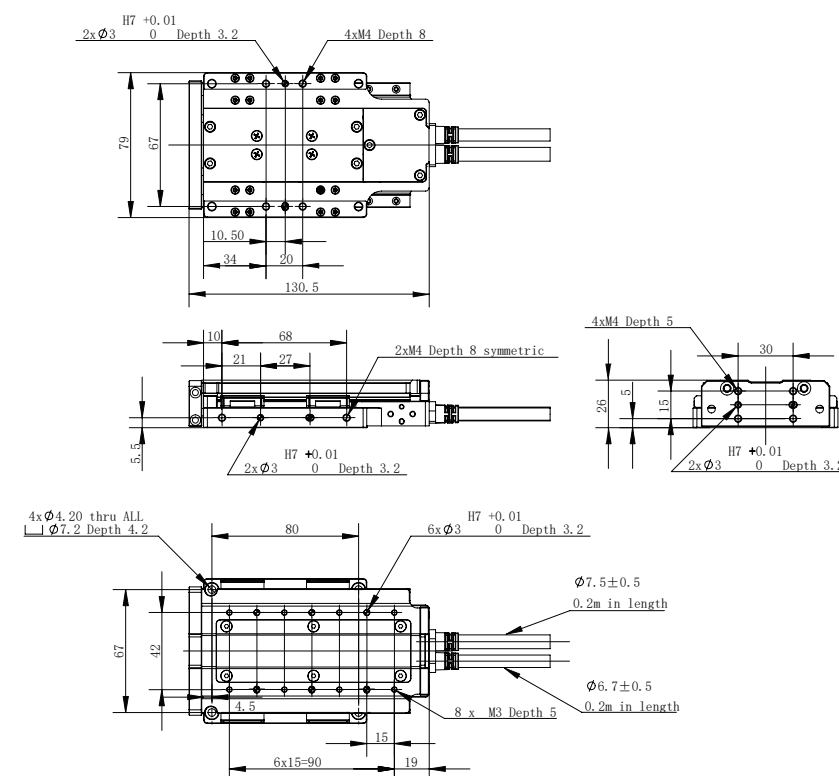
Mechanical Specifications

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

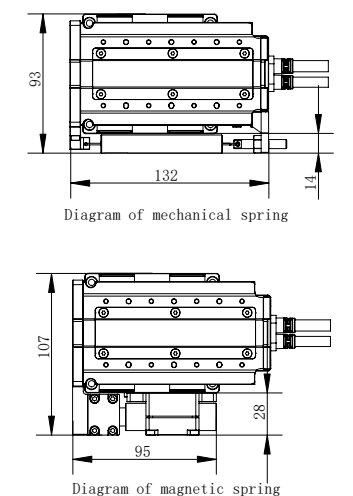
Operating Environment

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.

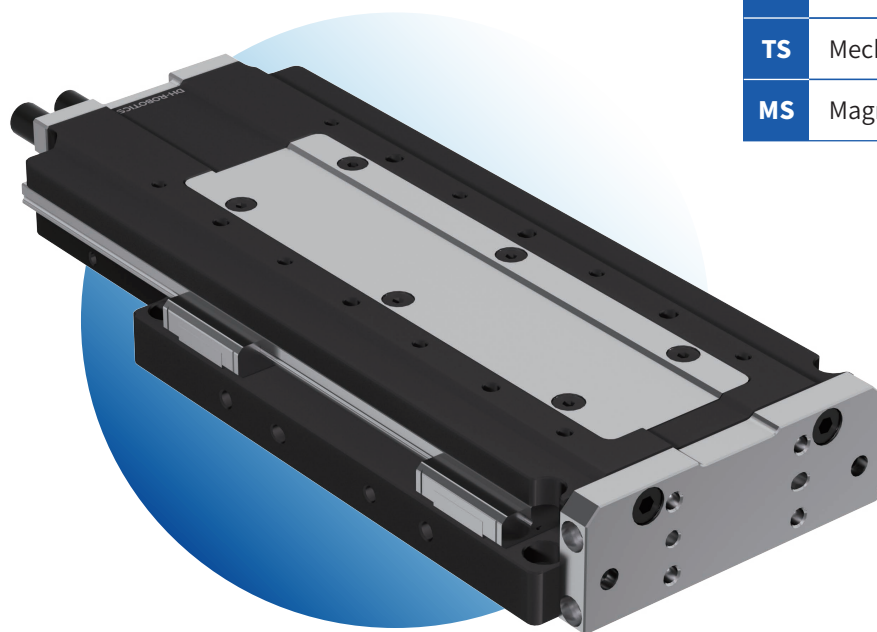
DIRECT DRIVE LINEAR MODULEZ

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

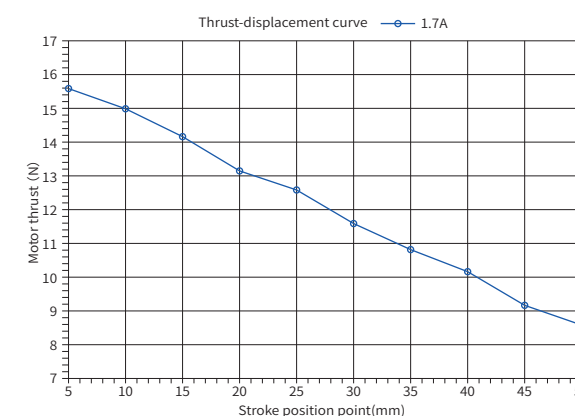
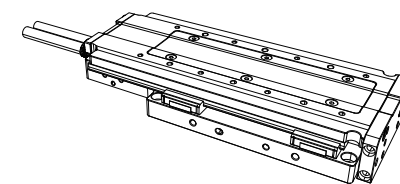
H1	Optical encoder, 0.5 μm
M2	Magnetic encoder, 1 μm

0	Without spring
TS	Mechanical spring
MS	Magnetic spring

0	No special customization
1	Special customization

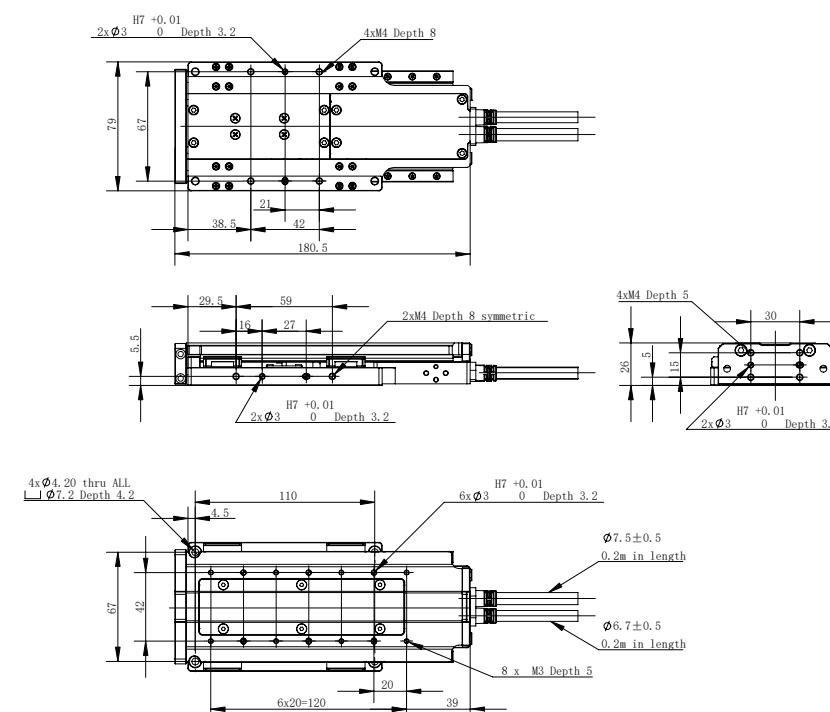


TECHNICAL SPECIFICATIONS



- *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 $\pm 0.5\text{ N}$ 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 time, 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

Schematic diagram of spring selection

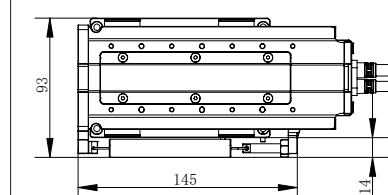


Diagram of mechanical spring

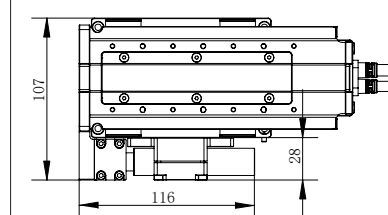


Diagram of magnetic spring