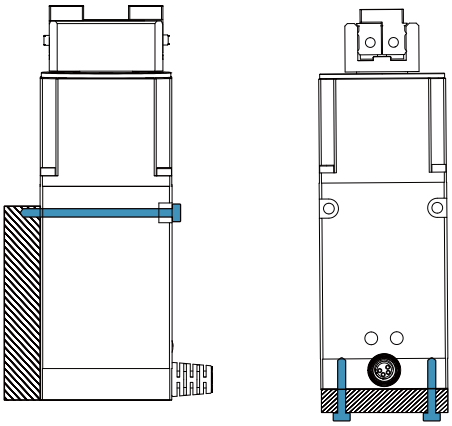
RGD Series
Electric Direct Drive
Rotary Gripper

RGD-5-14
RGD-5-30
RGD-35-14
RGD-35-30

The RGD direct-drive electric rotary gripper of DH-Robotics adopts a direct-drive backlash-free rotation module to improve therotary accuracy, and thus is perfectly suited for high-precision manufacturing applications.

Installation

1. Front installation: use front screw holes for installation
2. Bottom installation: use bottom screw holes for installation



Product Features

● Zero Rotary Backlash High Repeatability

The RGD series adopts direct-drive rotary motors to realize zero rotary backlash and a rotary resolution of up to 0.01°, which applies to rotary positioning scenarios in semiconduc tor production.

● High Dynamic Response High-speed Stability

The precision direct-drive technology, coupled with DH-Robotics' excellent drive control, realizes perfect control of gripping and rotation. The rotation speed is up to 1500° per second.

● All-in-one Design Power-off Protection

The gripper adopts the design of integrating the dual servo system of gripping and rotation with the drive control module, which is smaller and more compact, and applies to more scenarios. Brakes are optional to meet the require-ments of various applications.

Application

With the direct-drive technology, the RGD gripper can provide greatly improved rotary accuracy, which can be used in scenarios such as the high-precision positioning assembly, transport, and deflection correction of 3C electronics and semiconductors.

RGD-5

Direct Drive Rotary Gripper

Selection Method

Serie	Gripping Force	Stroke	Brake	Cable Direction	Communication Protocol	Cable Selection	Fingertip Selection	FLange selection	Other
RGD	5	14	O	S	M	L5	J0	F0	0

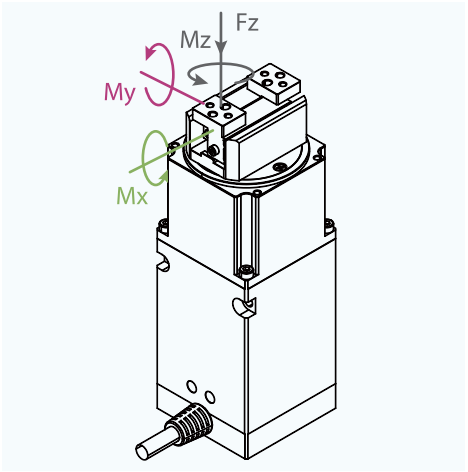
14 30	O Without Brake W With Brake	S Side B bottom	M Modbus (RS485) ★⑤	LX Without Extend Cable L1 1m Cable L3 3m Cable L5 5m Cable L10 10m Cable	J0 Without Fingertip J1 Standard Fingertip	F0 Without Flange	0 Without USB to RS-485 Converter 4 USB to RS-485 Converter	

*⑤ It is recommended that no more than 4units of DH-Robotics products be accessed on a single 485 bus, otherwise 485 communication anomalies may occur. If you need to access more than 4 devices, it is recommended to contact the sales staff for product adjustment.

RGD-5-14 Parameters

Product Parameter	
Stroke	14 mm
Gripping force (per jaw)	2-5.5 N
Rated torque	0.1 N·m
Peak torque*①	0.25 N·m
Rotary range	Infinite Rotating
Recommended workpiece weight*②	0.05 kg
Max. rotation speed	1500 °/s
Rotary backlash	Zero backlash
Repeat accuracy (swiveling)	± 0.1 °
Repeat accuracy (position)	± 0.02 mm
Opening/closing time	0.5 s/0.5 s
Noise emission	< 60 dB
Weight	0.86 kg(without brake) 0.88 kg(with brake)
Size	149 mm x 50 mm x 50 mm Rotaty Diameter：47 mm

Working Environment	
Communication interface	Modbus RTU (RS485) Optional: TCP/IP, EtherCAT *③
Rated voltage	24 V DC ± 10%
Current	1.2 A (Rated)/ 2.5 A (Peak) *④
Rated Power	60 W
IP class	IP 40
Recommended environment	0~40°C, under 85% RH
Certification	CE，FCC，RoHS



Static Vertical Allowable Load	
Fz	150 N

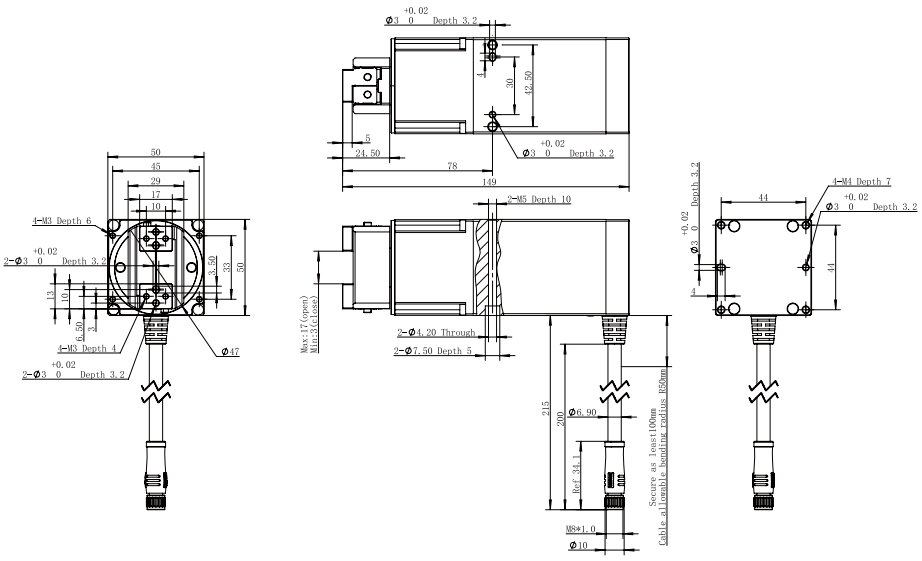
Allowable Loading Moment	
Mx	2 N·m
My	1.5 N·m
Mz	2.5 N·m

Build-in Controller | Gripping Force Adjustable | Position Adjustable | Speed Adjustable

Drop Detection | Rotary Adjustable | Self-locking Mechanism

*①The peak torque can be increased to a maximum of 0.5 N·m. For specific details, please consult with technical support personnel.
*②The gripping force on objects depends on factors such as the shape of the object, the material and friction of the contact surface, and the acceleration of movement. The displacement of the center of gravity of the grasped object can also affect the load. If you have any questions, please contact us.
*③Requires external communication convertor or customization, pleass contact sales or technical support.
*④When selecting the power supply, please select according to the peak current. If the current is lower than the parameter, it will cause the product can not work normally.

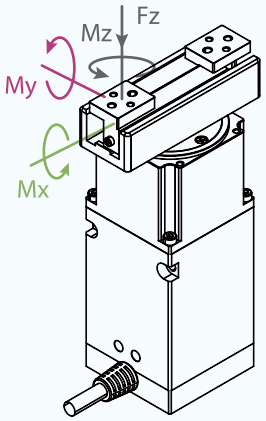
Technical Drawings



RGD-5-30 Parameters

Product Parameter	
Stroke	30 mm
Gripping force (per jaw)	2-5.5 N
Rated torque	0.1 N·m
Peak torque*①	0.25 N·m
Rotary range	Infinite Rotating
Recommended workpiece weight*②	0.05 kg
Max. rotation speed	1500 °/s
Rotary backlash	Zero backlash
Repeat accuracy (swiveling)	± 0.1 °
Repeat accuracy (position)	± 0.02 mm
Opening/closing time	0.5 s/0.5 s
Noise emission	< 60 dB
Weight	1 kg(without brake) 1.02 kg(with brake)
Size	149 mm x 50 mm x 50 mm Rotaty Diameter：83.6 mm

Working Environment	
Communication interface	Modbus RTU (RS485) Optional: TCP/IP, EtherCAT*③
Rated voltage	24 V DC ± 10%
Current	1.2 A (Rated)/ 2.5 A (Peak)*④
Rated Power	60 W
IP class	IP 40
Recommended environment	0~40°C, under 85% RH
Certification	CE，FCC，RoHS



Static Vertical Allowable Load	
Fz	150 N

Allowable Loading Moment	
Mx	2 N·m
My	1.5 N·m
Mz	2.5 N·m

Build-in Controller | Gripping Force Adjustable | Position Adjustable | Speed Adjustable

Drop Detection | Rotary Adjustable | Self-locking Mechanism (可选)

*①The peak torque can be increased to a maximum of 0.5 N·m. For specific details, please consult with technical support personnel.
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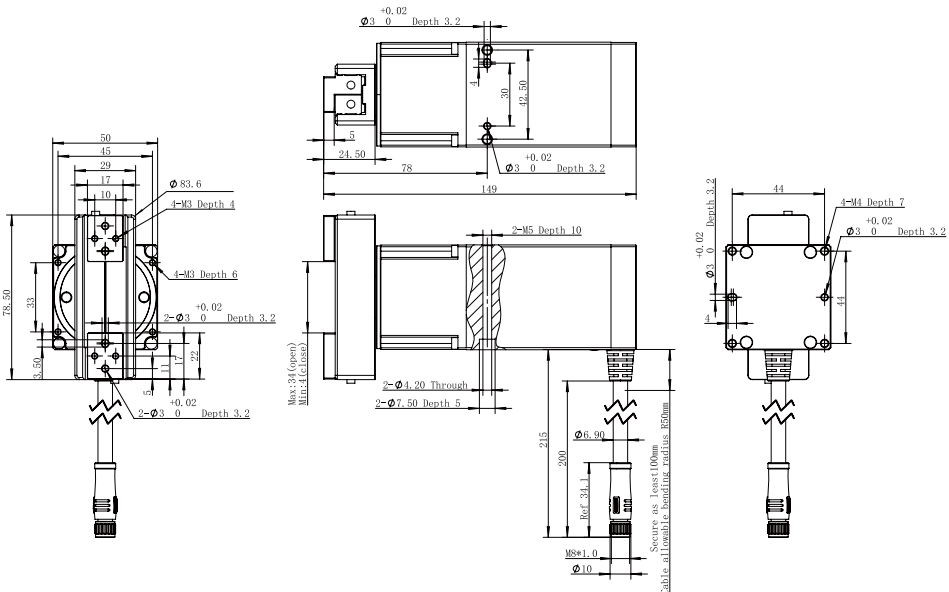

Parameter table of rotational time in place for different inertia loads

Reference Size/mm	Material	Weight/g	Corresponding Inertia/Kg · mm²	Actual Rotation Angle/°	Reference Correction Tme/ms
Unload	-	0	0	45	200
				90	200
				180	400
				360	500
				720	700
20*80*25	Aluminum Block	57	61	45	200
				90	300
				180	400
				360	500
				720	700
74.7*80*25	Aluminum Block	387	402	45	300
				90	350
				180	400
				360	550
				720	750
96.7*80*25	Aluminum Block	503	685	45	400
				90	450
				180	500
				360	650
				720	850
111.3*80*25	Aluminum Block	582	941	45	850
				90	1000
				180	1200
				360	1450
				720	1650
126*80*25	Aluminum Block	662	1263	45	1350
				90	1550
				180	1850
				360	1950
				720	2450

RGD-35

Direct Drive Rotary Gripper

Selection Method

Serie	Gripping Force	Stroke	Brake	Cable Direction	Communication Protocol	Cable Selection	Fingertip Selection	FLange selection	Other
RGD	35	14	O	S	M	L5	J0	F0	0

14 30	O Without Brake W With Brake	S Side B bottom	M Modbus (RS485) *⑤	LX Without Extend Cable L1 1m Cable L3 3m Cable L5 5m Cable L10 10m Cable	J0 Without Fingertip J1 Standard Fingertip	F0 Without Flange	0 Without USB to RS-485 Converter 4 USB to RS-485 Converter	

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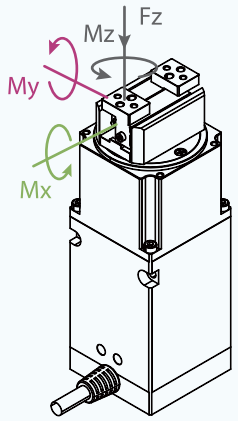
RGD-35-14 Parameters

Product Parameter	
Stroke	14 mm
Gripping force (per jaw)	10-35 N
Rated torque	0.1 N·m
Peak torque*①	0.25 N·m
Rotary range	Infinite Rotating
Recommended workpiece weight(Fingertip included)*②	0.35 kg
Max. rotation speed	1500 °/s
Rotary backlash	Zero backlash
Repeat accuracy (swiveling)	± 0.1 °
Repeat accuracy (position)	± 0.02 mm
Opening/closing time	0.5 s/0.5 s
Noise emission	< 60 dB
Weight	0.86 kg(without brake) 0.88 kg(with brake)
Size	159 mm x 50 mm x 50 mm Rotaty Diameter：47 mm

Working Environment	
Communication interface	Modbus RTU (RS485) Optional：TCP/IP、EtherCAT*③
Rated voltage	24 V DC ± 10%
Current	1.2 A (Rated)/ 2.5 A (Peak)*④
Rated Power	60 W
IP class	IP 40
Recommended environment	0~40°C, under 85% RH
Certification	CE，FCC，RoHS



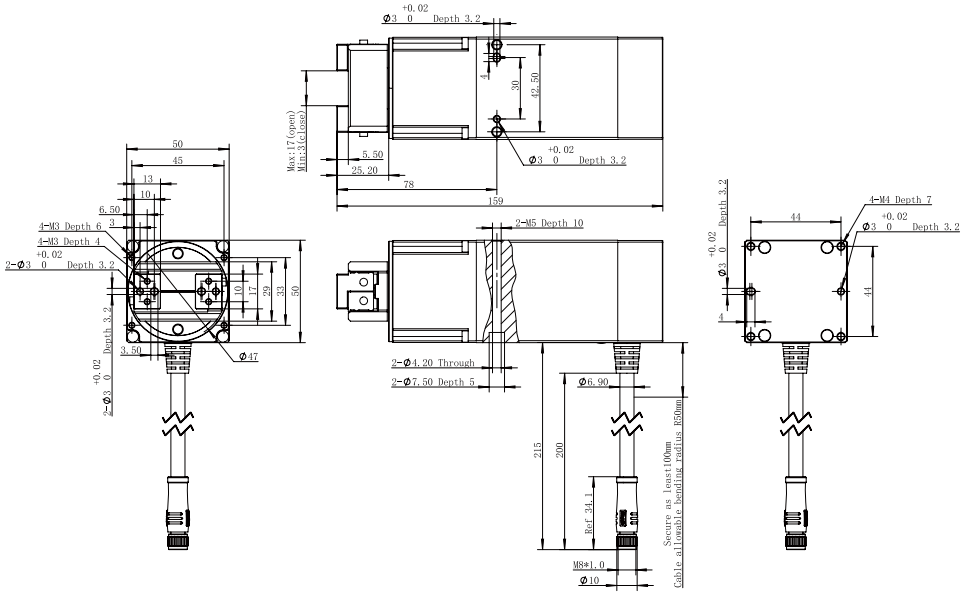
Static Vertical Allowable Load	
Fz	150 N

Allowable Loading Moment	
Mx	2 N·m
My	1.5 N·m
Mz	2.5 N·m

Build-in Controller	Gripping Force Adjustable	Position Adjustable	Speed Adjustable
Drop Detection	Rotary Adjustable	Self-locking Mechanism (可选)	

*①The peak torque can be increased to a maximum of 0.5 N·m. For specific details, please consult with technical support personnel.
*②The gripping force on objects depends on factors such as the shape of the object, the material and friction of the contact surface, and the acceleration of movement. The displacement of the center of gravity of the grasped object can also affect the load. If you have any questions, please contact us.
*③Requires external communication convertor or customization, pleass contact sales or technical support.
*④When selecting the power supply, please select according to the peak current. If the current is lower than the parameter, it will cause the product can not work normally.

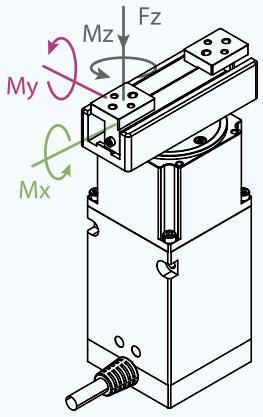
Technical Drawings



RGD-35-30 Parameters

Product Parameter	
Stroke	30 mm
Gripping force (per jaw)	10-35 N
Rated torque	0.1 N·m
Peak torque*①	0.25 N·m
Rotary range	Infinite Rotating
Recommended workpiece weight(Fingertip included)*②	0.35 kg
Max. rotation speed	1500 °/s
Rotary backlash	Zero backlash
Repeat accuracy (swiveling)	± 0.1 °
Repeat accuracy (position)	± 0.02 mm
Opening/closing time	0.7 s/0.7 s
Noise emission	< 60 dB
Weight	1 kg(without brake) 1.02 kg(with brake)
Size	159 mm x 50 mm x 50 mm Rotaty Diameter：83.6 mm

Working Environment	
Communication interface	Modbus RTU (RS485) Optional：TCP/IP、EtherCAT*③
Rated voltage	24 V DC ± 10%
Current	1.2 A (Rated)/ 2.5 A (Peak)*④
Rated Power	60 W
IP class	IP 40
Recommended environment	0~40°C, under 85% RH
Certification	CE，FCC，RoHS



Static Vertical Allowable Load

Fz	150 N

Allowable Loading Moment

Mx	2 N·m
My	1.5 N·m
Mz	2.5 N·m

Build-in Controller | Gripping Force Adjustable | Position Adjustable | Speed Adjustable

Drop Detection | Rotary Adjustable | Self-locking Mechanism (可选)

*①The peak torque can be increased to a maximum of 0.5 N·m. For specific details, please consult with technical support personnel.
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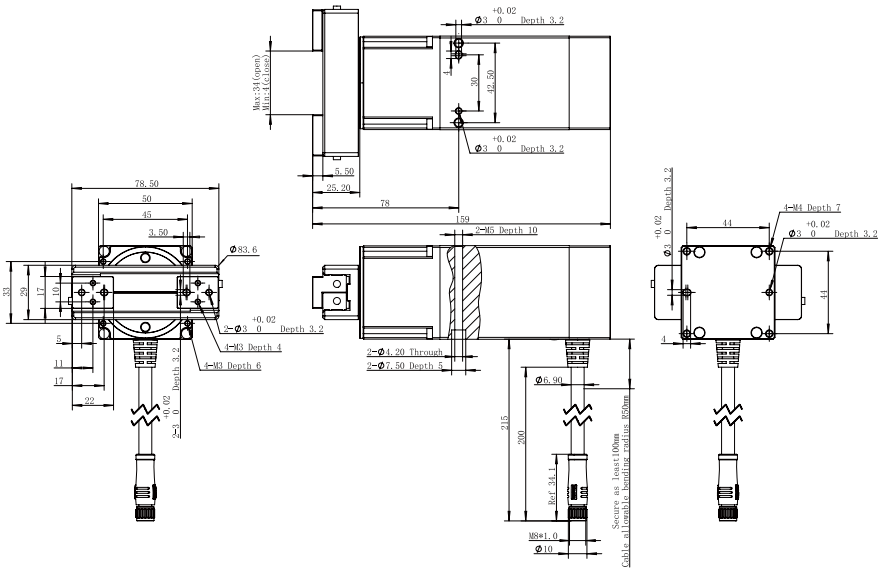

Parameter table of rotational time in place for different inertia loads

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				720	850
111.3*80*25	Aluminum Block	582	941	45	850
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				180	1200
				360	1450
				720	1650
126*80*25	Aluminum Block	662	1263	45	1350
				90	1550
				180	1850
				360	1950
				720	2450