Aovita®

OVERALL SOLUTIONS FOR ROBOTIC END-EFFECTOR

★ EOAT FOR STAMPING

· EOAT FOR TANDEM PRESS LINE

· EOAT FOR TRANSFER LINE

· EOAT FOR HOT FORMING LINE

★ PNEUMATIC GRIPPERS

★ ELECTRIC GRIPPERS

★ ROBOTIC TOOL CHANGERS

★ HYDRAULIC CLAMPS

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Learn more

Ver. 2026-05

ELECTRIC GRIPPER

Since 2000

Jinan Aotto Technologies Co., Ltd.

Aotto

Aovita®

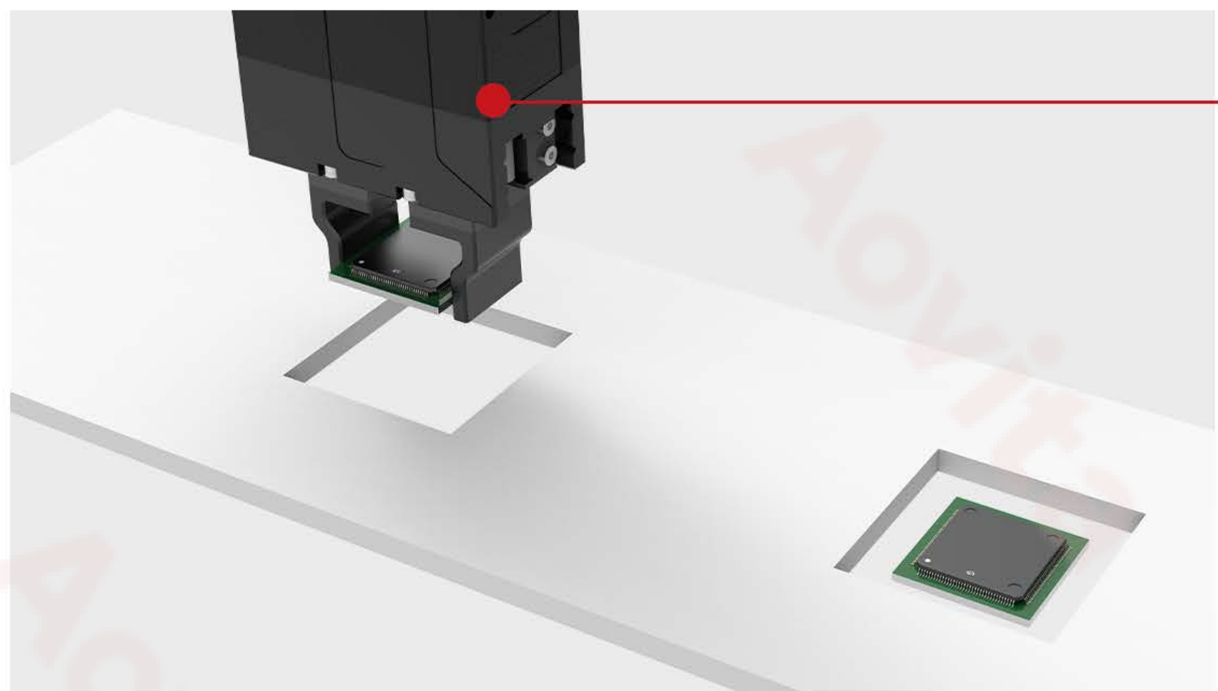
Jinan Aotto Tooling Team implements the mission of "promoting industrial upgrading with advanced automation products and services, creating value for customers and society", and strives to create **Aovita®** intelligent grabbing products.

The **Aovita®** team adheres to the core concept of Aotto "dedication to innovation and pursuit of excellence", using the "high reliability" of the product to improve the startup rate of automatic lines, reduce maintenance costs, and use the "high cost-effectiveness" of the product to reduce overall equipment investment, promoting the popularization of automation. We are committed to creating a one-stop supply platform for intelligent grabbing products. We have products with robot tool changer, vacuum products, gripper products, magnetic suction products, needle grabbing products, and could provide overall intelligent gripping solutions.

CONTENTS

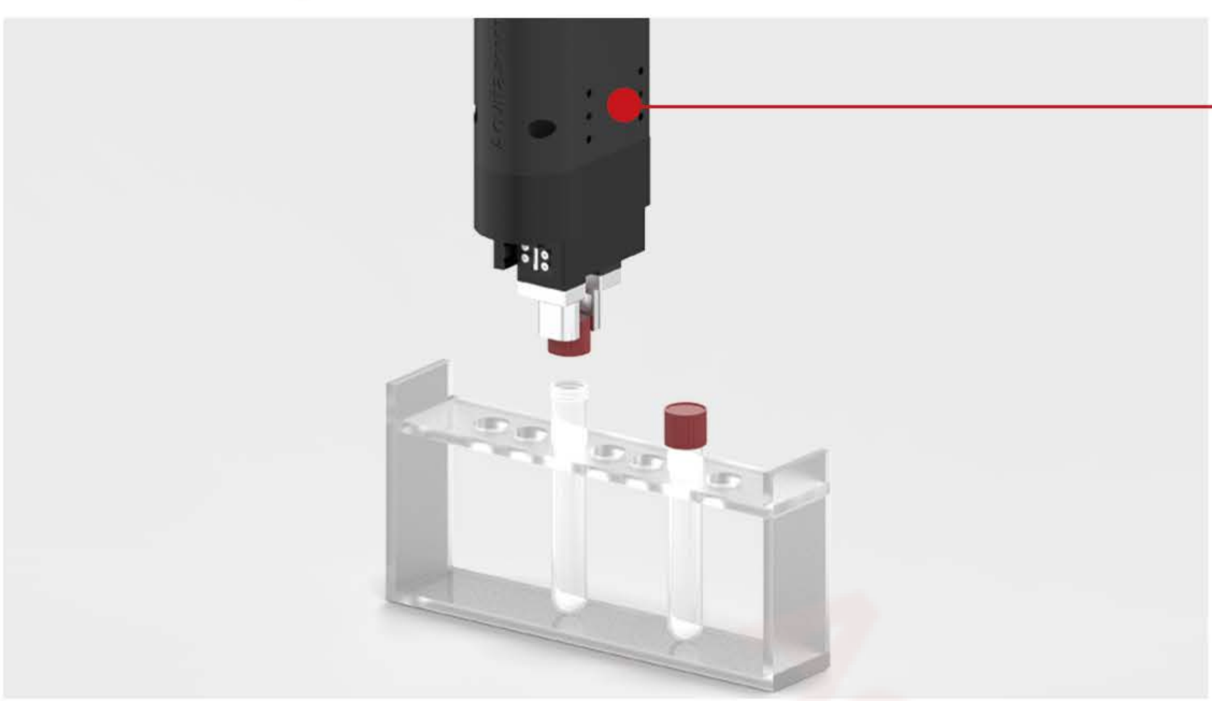
Electric gripper

Aovita® Electric grippers are high-performance servo-driven end effectors. Mounted on the end of robot, they enable precise and reliable gripping and handling of various units through flexible parameter configuration.



Parallel Electric Gripper:

Works with gripping fingers to pick&place workpieces of different shapes.



Rotary Electric Gripper:

Grips and rotates to adjust angle and position while holding the workpiece.

Aovita What it can do


Gripping


Pick&Place


Handling


Positioning


Assembly


Loading /Unloading


Rotating


Opening/Closing covers

Advantages

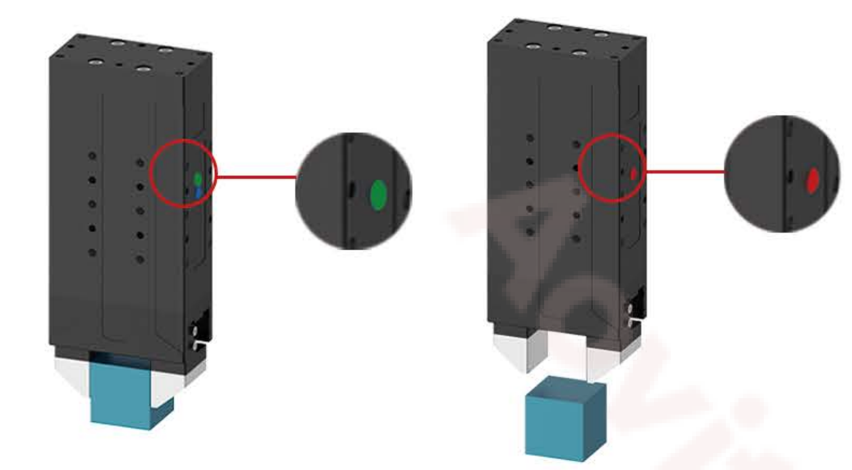
Flexible Production

—The gripping force, running speed, and stroke are all adjustable to perform a variety of tasks.

Smart Monitoring

—During debugging, the operator can determine the gripper's operating status by the color of the indicator light.

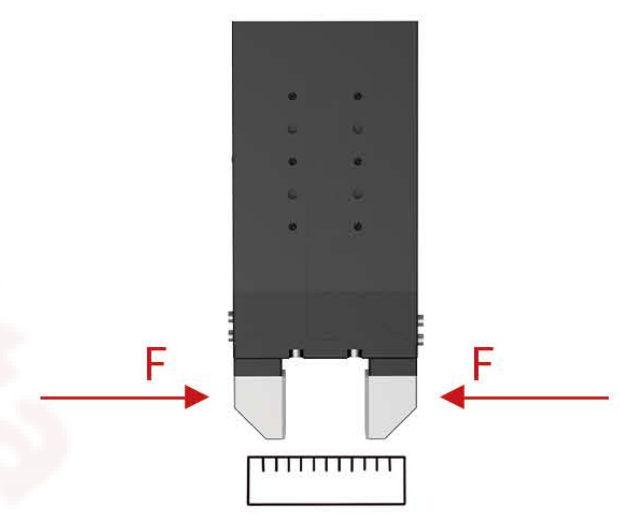
—Supports I/O signal feedback for real-time monitoring of the gripper's operating status.



Precise Positioning

—Repeatability: up to ±0.02 mm.

—Force control repeatability: up to ±0.1 N.



Easy Integration

—Power and communication via a single cable for efficient installation.

—Integrated drive and control design creates a compact structure and saves installation space.

—Visual debugging interface for easy setup.

Advantages

Reliable Quality

—Full-process quality management with complete traceability; products certified to ISO standards.

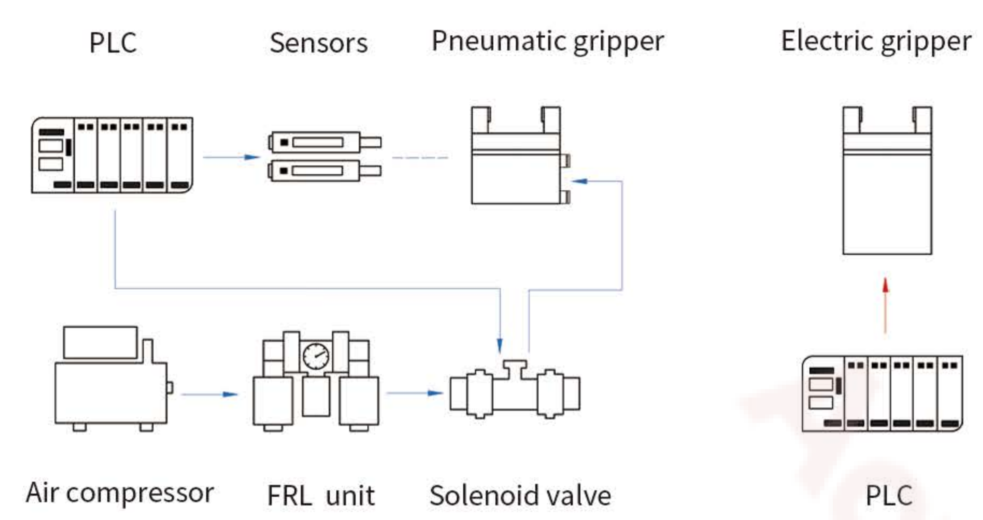
—Product-oriented management and batch production ensure lower costs, shorter lead times, and consistent quality.

—Focused on delivering high value robotic peripheral products.

Lower Operating Costs

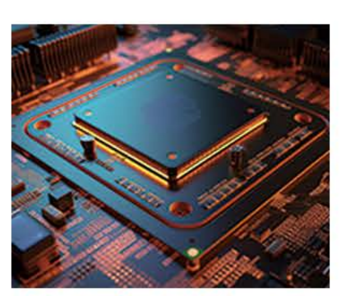
—Lower energy consumption with simplified wiring, reducing operational and maintenance costs.

—Simple design and installation that shortens project timelines and enables rapid commissioning.

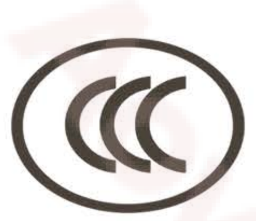


Application

Aovita® Electric grippers are ideal for handling and assembly of small to medium-sized parts .



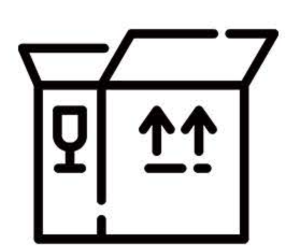




3C Electronics


Medical testing


Automotive

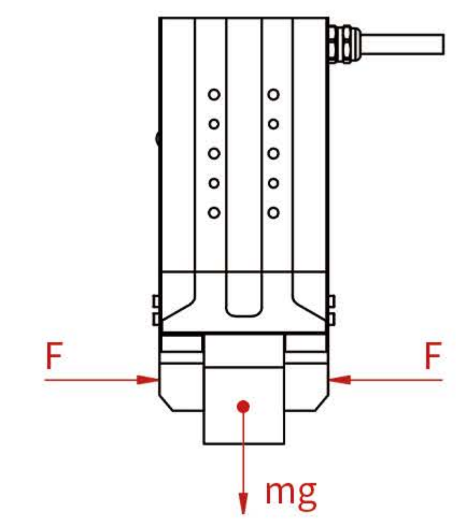

New energy


Packaging


Education & Research

Selection Steps

01 Gripping Force

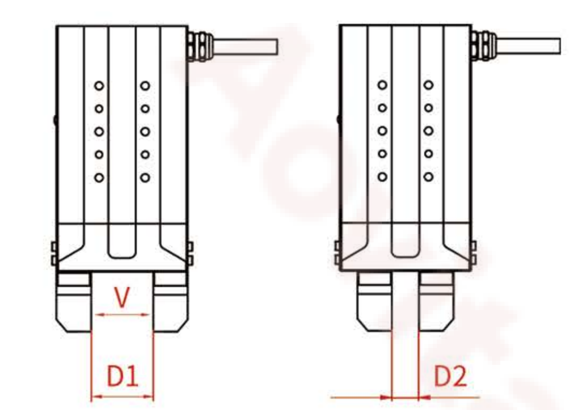


The permissible weight of workpieces to be held depends on the finger's friction coefficient. It is generally recommended that the gripping force be at least 10 times the weight of the workpiece.

When the workpiece being held is subject to high acceleration/deceleration or impact forces during movement, it is necessary to select grippers with larger holding force.

For specific calculation methods and precautions, please refer to P05.

02 Stroke & Speed



Specify the max. required travel range and speed/cycle time requirements.

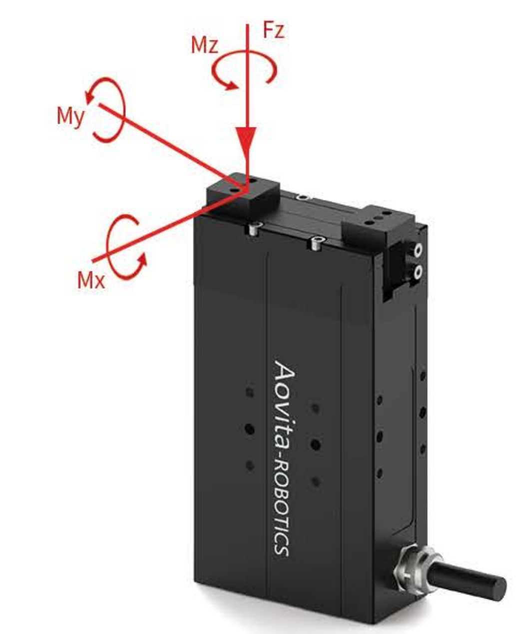
Stroke: During selection, the electric gripper’ s rated stroke should exceed the actual travel distance.

*Stroke = Max. workpiece diameter (D1) – Min. workpiece diameter (D2)

*Grippers with short strokes can handle large-diameter workpieces by changing gripper finger.

Speed: If specific opening/closing speeds or cycle times are required, please refer to the minimum opening/closing times at the target stroke in the product specificatio.

03 Dynamic Load and Allowable Moment



Users can design and customize gripping fingers according to actual application.

When designing fingers, it is essential to consider the permissible moment (Mx, My, Mz).

Exceeding the maximum allowable load will shorten the service life of the mechanical structure.For calculation methods and precautions, please refer to page 5.

04 Control Mode

Select the appropriate control mode according to actual conditions.

Supported control modes for standard electric grippers are listed on the corresponding product selection pages.

For I/O control: Confirm the required number of I/O signals and control mode.

For bus control: Confirm the supported fieldbus protocol.

Bus control

I/O

Selection Notes

Note 1: Confirm the required gripping force and workpiece weight

As shown in the figure, under normal handling conditions with impact conditions, the gripping force shall be at least 10 times the weight of the workpiece (safety factor a=4).

As shown in the figure:

F: Gripping force (N)

μ: Friction coefficient

m: Workpiece weight (kg)

g: Gravitational acceleration (=9.8 m/s²)

Conditions for workpiece not to fall:

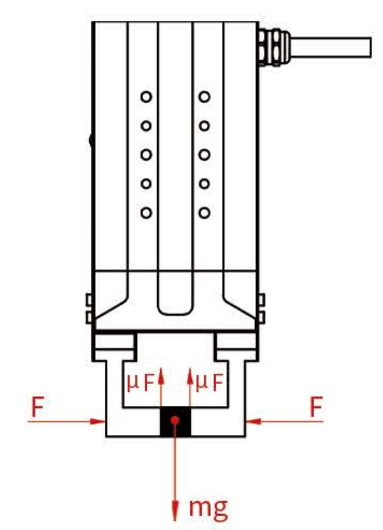
$2\times\mu F>mg$

Thus: $F>\frac{mg}{2\times\mu}$

Safety factor a

Thus: $F=\frac{mg}{2\times\mu}\times a$

Friction Coefficient (μ)	Finger and Workpiece Material (Reference)
0.1	Metal (surface roughness under Rz 3.2)
0.2	Metal
>0.2	Rubber, resin, etc.



Note: When μ > 0.2, for safety, it is recommended to select the gripping force at least 10 times the weight of the gripped item. For high acceleration and impact applications, a larger safety factor is required.

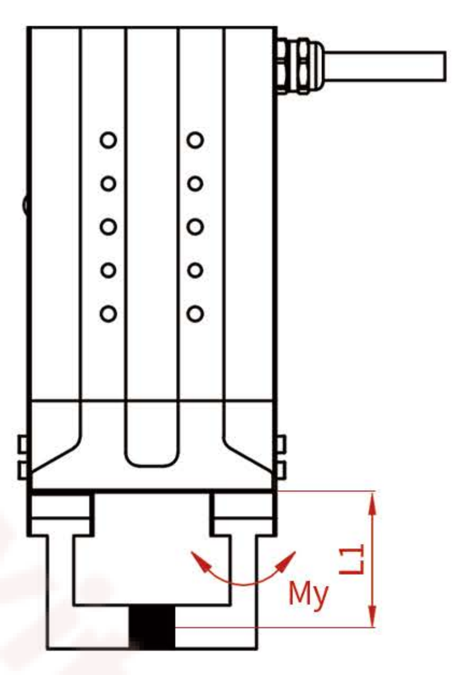
Note 2: Verify the external forces on the gripper

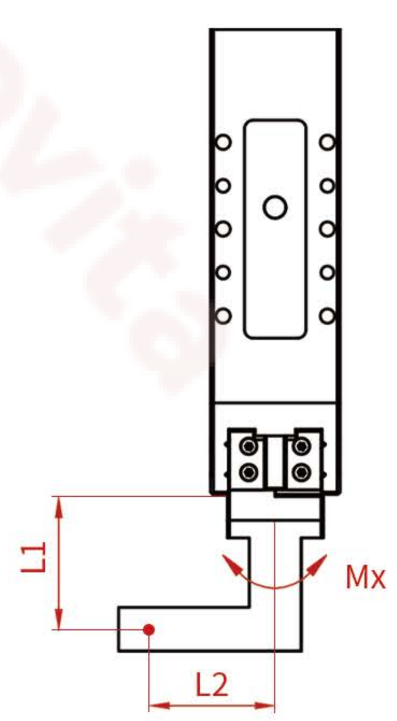
The vertical load acting on the gripper must be within the allowable load.

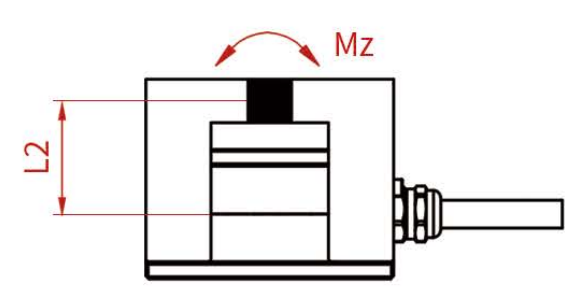
The moment applied to the gripper must be within the maximum allowable moment.

$$F(N)=\frac{M\ (\text{Allowable Moment})\ (N\cdot m)}{L(mm)\times 10^{-3}}$$

Note: Mx and My are calculated from L1, and Mz from L2. Calculate the permissible external force that the gripper can withstand (based on the smaller F value obtained from Mx, My, and Mz).







Selection Guide

Series	Gripping Force	Stroke	Communication Protocol	Cable Direction	Cable Length
APEG	100	26	MA	S	05
P Parallel	100	26	MA Modbus(RS485)+I/O(PN)	S Side	05 0.5m
R Rotary	50 (P)	40 (P)	MB Modbus(RS485)+I/O(PP)	B Bottom	2 2m
	35 (R)	12 (R)	MC Modbus(RS485)+I/O(NP)		5 5m
	15 (P)		MD Modbus(RS485)+I/O(NN)		10 10m
	5 (P)		T TCP/IP		
			C CAN2.0A		
			E EtherCAT		
			P PROFINET		

I/O	Input/Output
I/O(PN)	PNP/NPN
I/O(PP)	PNP/PNP
I/O(NP)	NPN/PNP
I/O(NN)	NPN/NPN

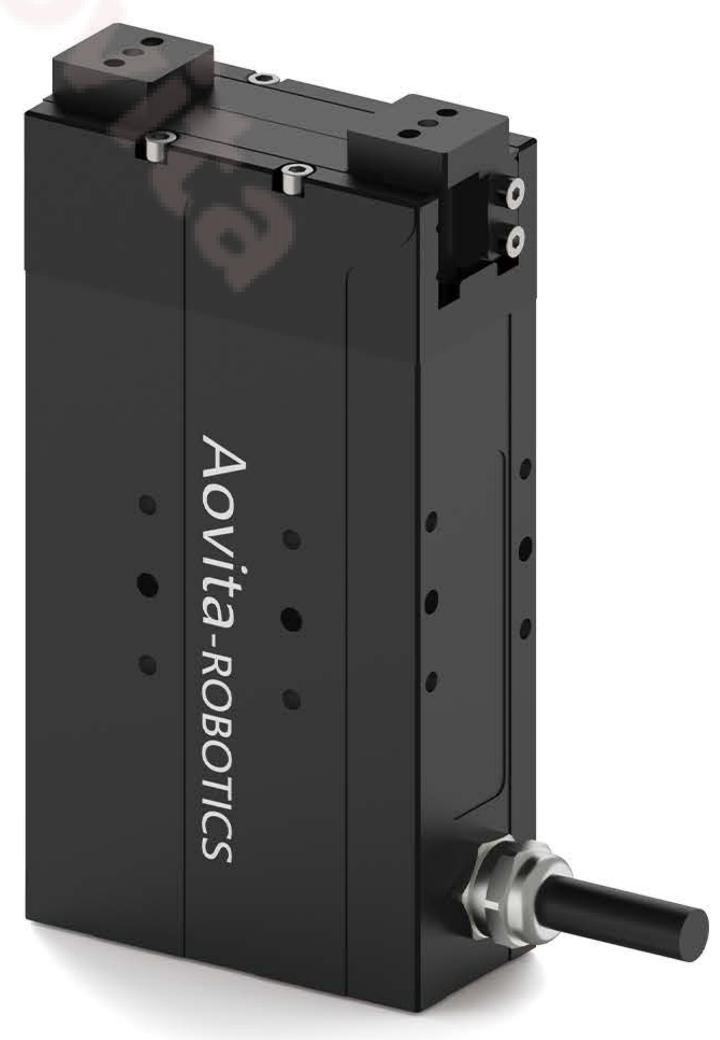
- It is not recommended to integrate more than 4 Aovita products on a single RS485 bus, as this may result in RS485 communication errors.
- Cables longer than 10m may increase communication interference risk.
- Default Configuration
  Parallel grippers: XXXX-X-X-MA-S-05 Rotary grippers: XXXX-X-X-MA-B-05
- NOTE: When selecting models, the gripping force and stroke specifications for parallel and rotary electric grippers are partially different.

Model

Model	Gripping force per side (N)	Stroke (mm)	Closing/Opening time(s)	Workpiece weight (kg)	Max. rotation speed (°/s)	Nominal torque (N·m)	Weight (kg)
APEG-5-26	5	26	0.3	0.1	—	—	0.4
APEG-15-26	15	26	0.35	0.25	—	—	0.4
APEG-15-40	15	40	0.45	0.25	—	—	0.45
APEG-50-26	50	26	0.45	1	—	—	0.47
APEG-50-40	50	40	0.6	1	—	—	0.55
APEG-100-26	100	26	0.5	1.5	—	—	0.6
APEG-100-40	100	40	0.65	1.5	—	—	0.7
AREG-35-12	35	12	0.6	0.5	2160	0.2	0.7
AREG-100-26	100	26	0.65	1.5	2160	0.5	1.5

APEG-5-26

Technical specification	
Stroke	26 mm
Gripping force (per jaw)	1~5 N
Recommended workpiece weight*①	0.1 kg
Opening / Closing time	0.3s/0.3s
Repeatability	±0.02mm
Noise	<40 dB
Weight	0.4 kg
Driving method	Rack and pinion + crossed roller guide
Size	105.5mm*55mm*26mm



Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	0.2 A(Nominal)/0.7 A(Peak)
Nominal power	4.8 W
IP class	IP 40
Operating environment	0-40°C，<85%RH

●	●	●	●	●
Build-in controller	Gripping force adjustable	Position adjustable	Speed adjustable	Drop detection

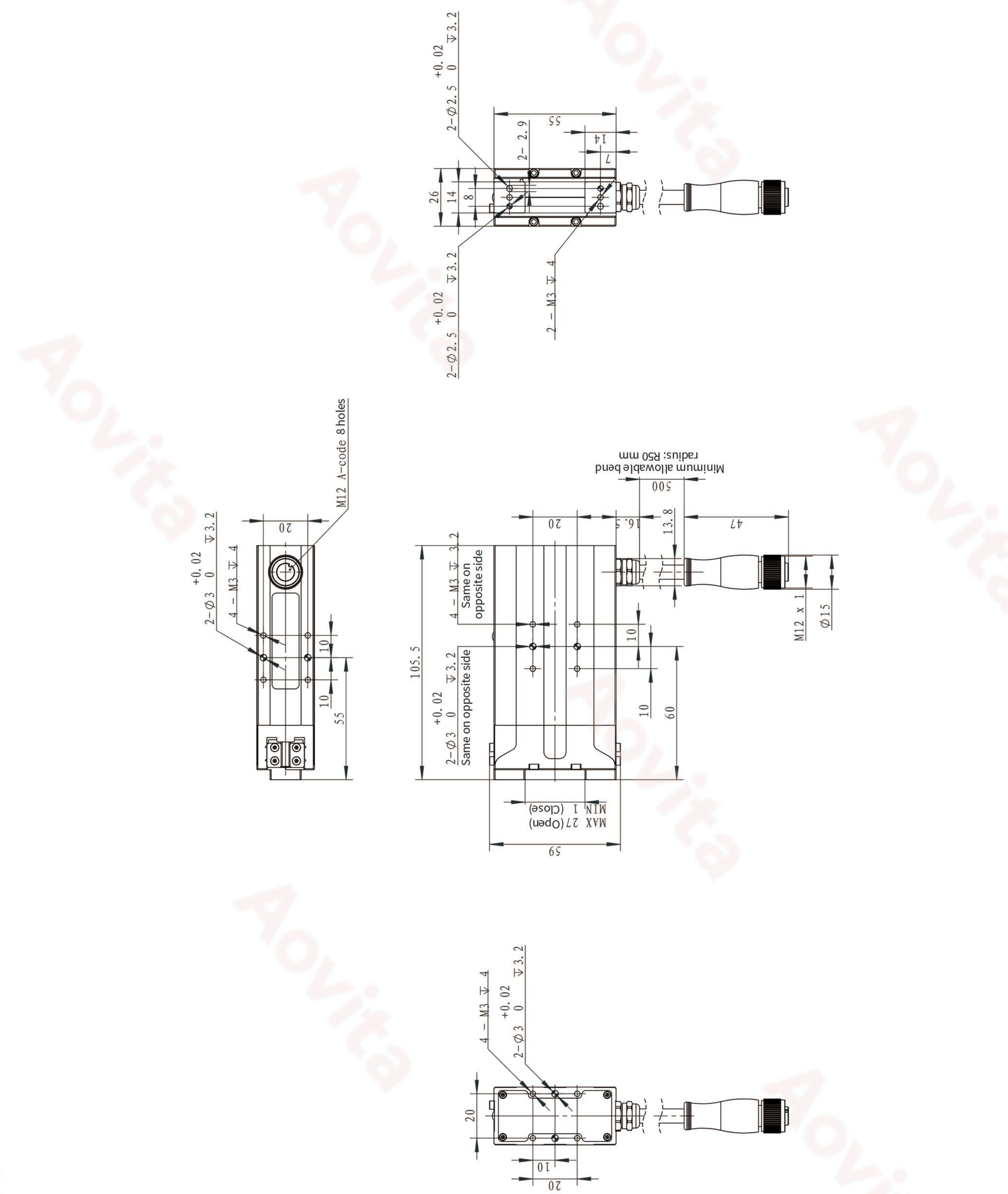
Allowable static load in vertical direction	
Fz	50 N

Allowable moment	
Mx	0.3 N•m
My	0.25 N•m
Mz	0.3 N•m

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object’ s center of gravity may also affect the load. Please consult technical staff if you have any questions.

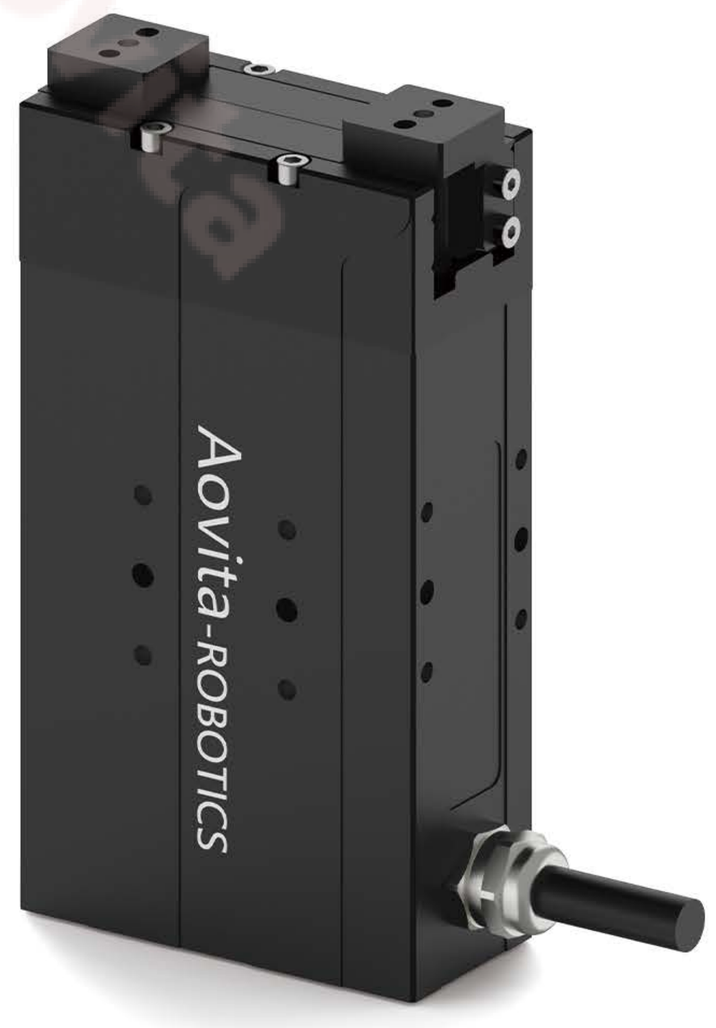
*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



APEG-15-26

Technical specification	
Stroke	26 mm
Gripping force (per jaw)	6~15 N
Recommended workpiece weight*①	0.25 kg
Opening / Closing time	0.35s/0.35s
Repeatability	±0.02mm
Noise	＜40 dB
Weight	0.4 kg
Driving method	Rack and pinion + crossed roller guide
Size	105.5mm*55mm*26mm



Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	0.25 A(Nominal)/0.5 A(Peak)
Nominal power	6 W
IP class	IP 40
Operating environment	0-40℃，＜85%RH

Allowable static load in vertical direction	
Fz	70 N

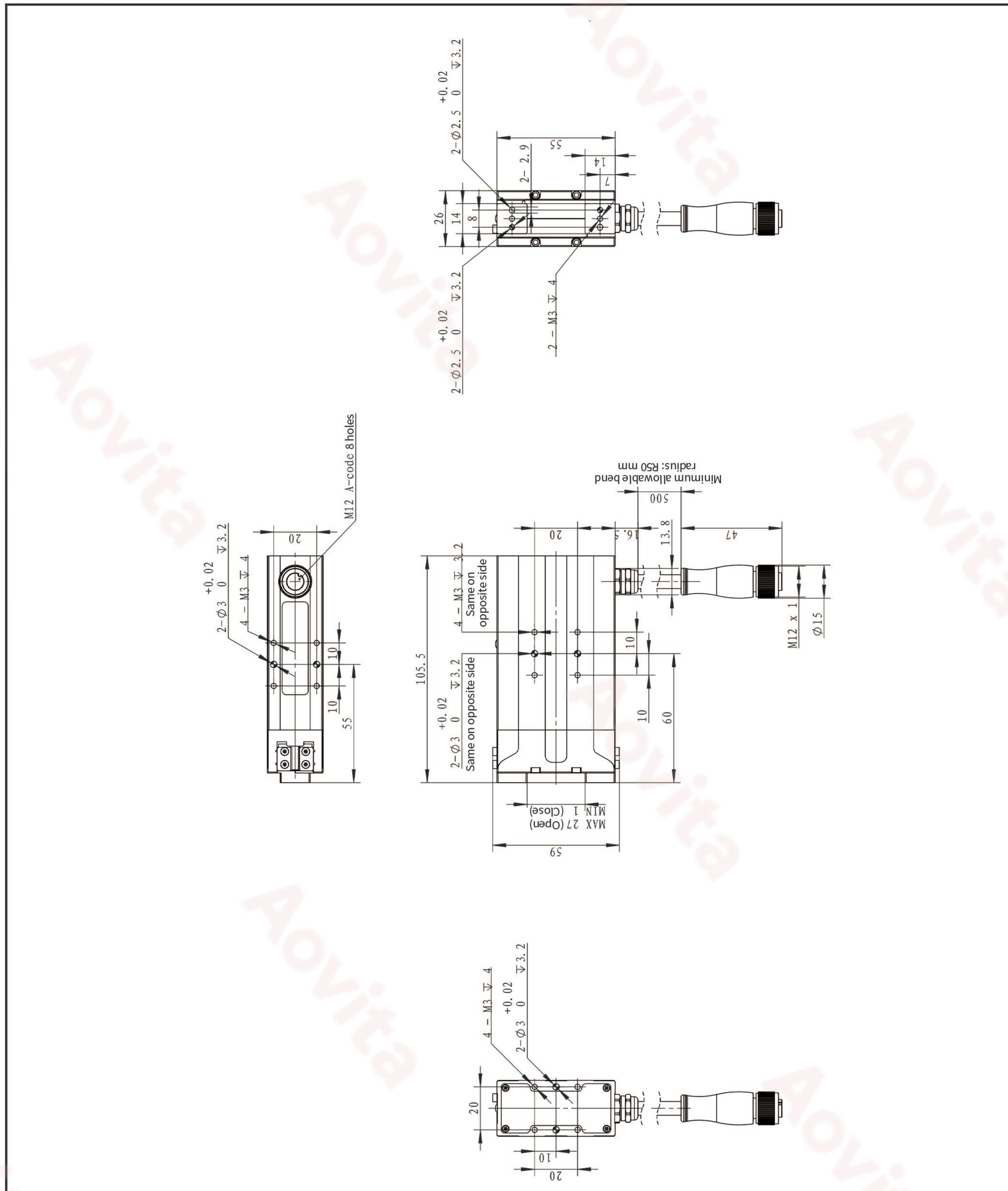
Allowable moment	
Mx	0.9 N•m
My	0.75 N•m
Mz	0.9 N•m

Build-in controller	Gripping force adjustable	Position adjustable	Speed adjustable	Drop detection
●	●	●	●	●

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object's center of gravity may also affect the load. Please consult technical staff if you have any questions.

*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



APEG-15-40

Technical specification	
Stroke	40 mm
Gripping force (per jaw)	6~15 N
Recommended workpiece weight*①	0.25 kg
Opening / Closing time	0.45s/0.45s
Repeatability	±0.02mm
Noise	＜40 dB
Weight	0.45 kg
Driving method	Rack and pinion + crossed roller guide
Size	105.5mm*73.8mm*26mm

Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	0.25 A(Nominal)/0.5 A(Peak)
Nominal power	6 W
IP class	IP 40
Operating environment	0-40°C，＜85%RH

Allowable static load in vertical direction	
Fz	130 N

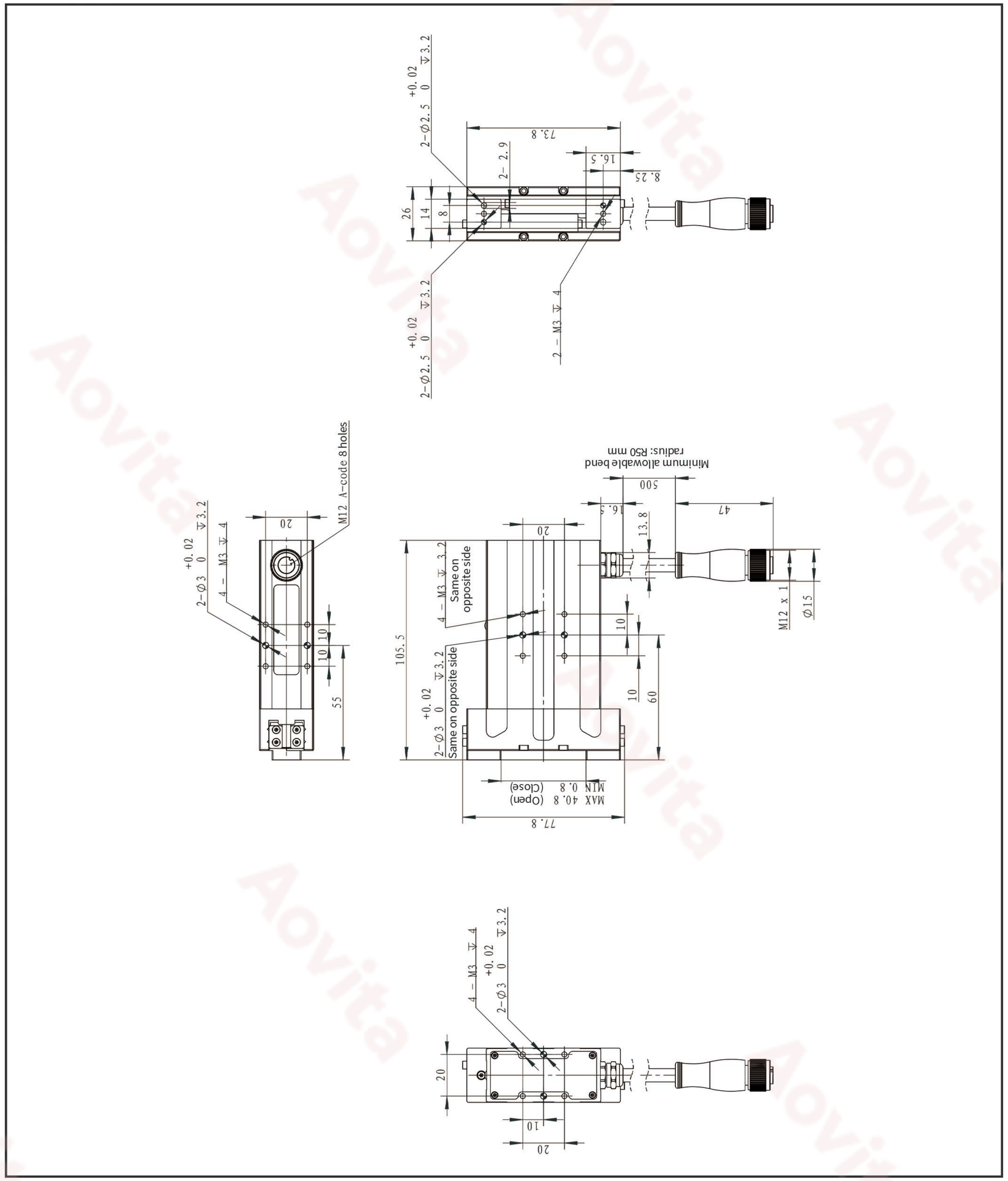
Allowable moment	
Mx	3.9 N•m
My	4.3 N•m
Mz	6 N•m

Build-in controller	Gripping force adjustable	Position adjustable	Speed adjustable	Drop detection
●	●	●	●	●

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object's center of gravity may also affect the load. Please consult technical staff if you have any questions.

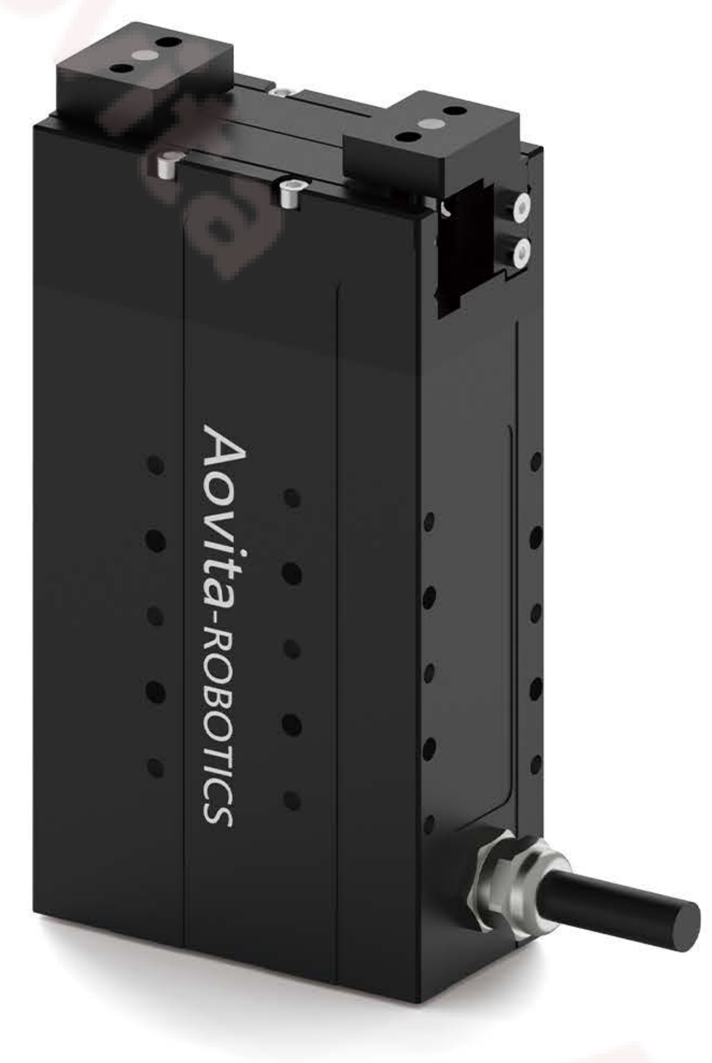
*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



APEG-50-26

Technical specification	
Stroke	26 mm
Gripping force (per jaw)	15~50 N
Recommended workpiece weight*①	1 kg
Opening / Closing time	0.45 s/0.45 s
Repeatability	±0.02mm
Noise	＜40 dB
Weight	0.47 kg
Driving method	Rack and pinion + crossed roller guide
Size	110 mm*57 mm*29 mm



Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	0.25 A(Nominal)/0.5 A(Peak)
Nominal power	6 W
IP class	IP 40
Operating environment	0-40℃，＜85%RH

Allowable static load in vertical direction	
Fz	150 N

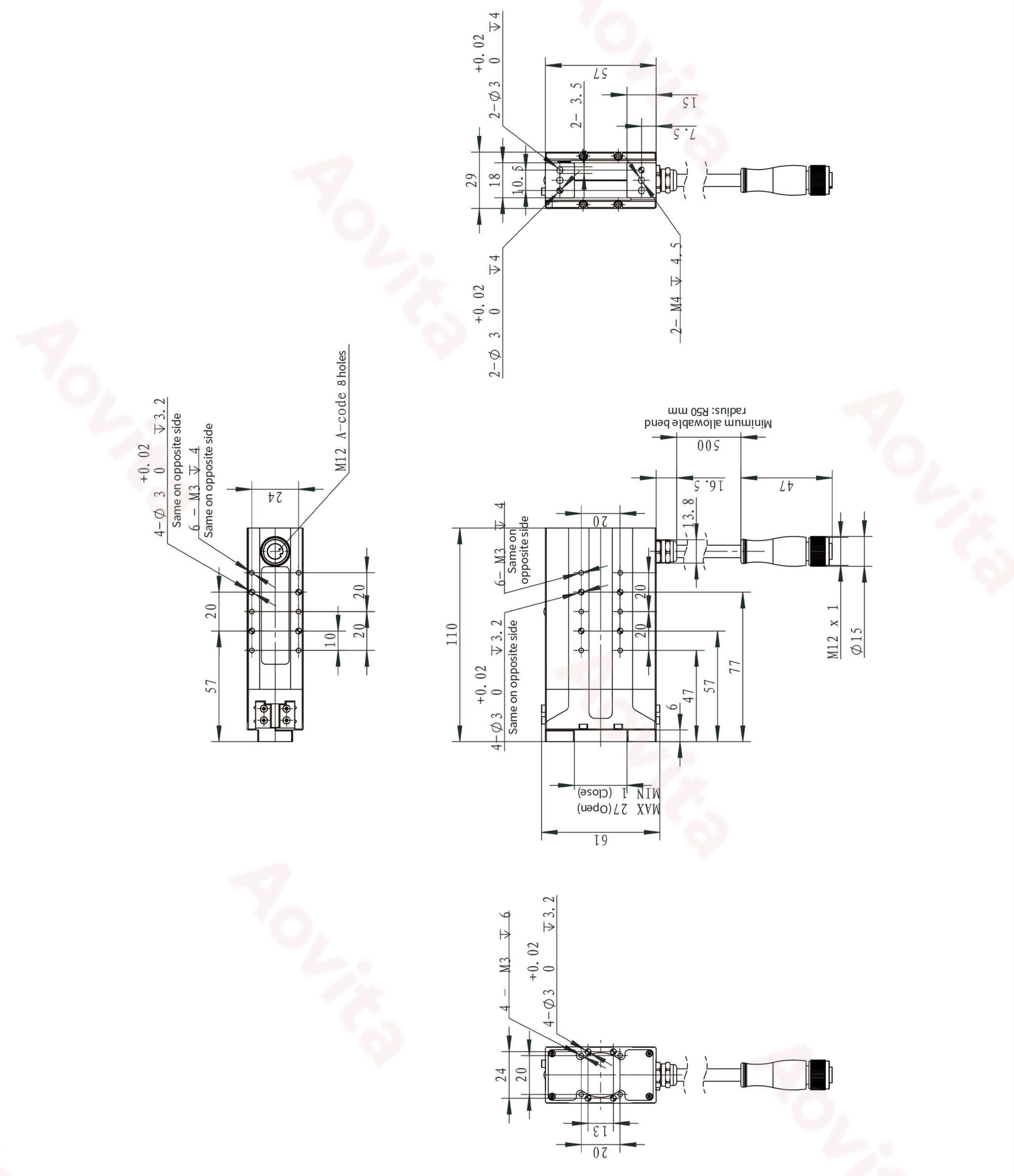
Allowable moment	
Mx	2.5 N•m
My	2 N•m
Mz	3 N•m

● Build-in controller	● Gripping force adjustable	● Position adjustable	● Speed adjustable	● Drop detection

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object' s center of gravity may also affect the load. Please consult technical staff if you have any questions.

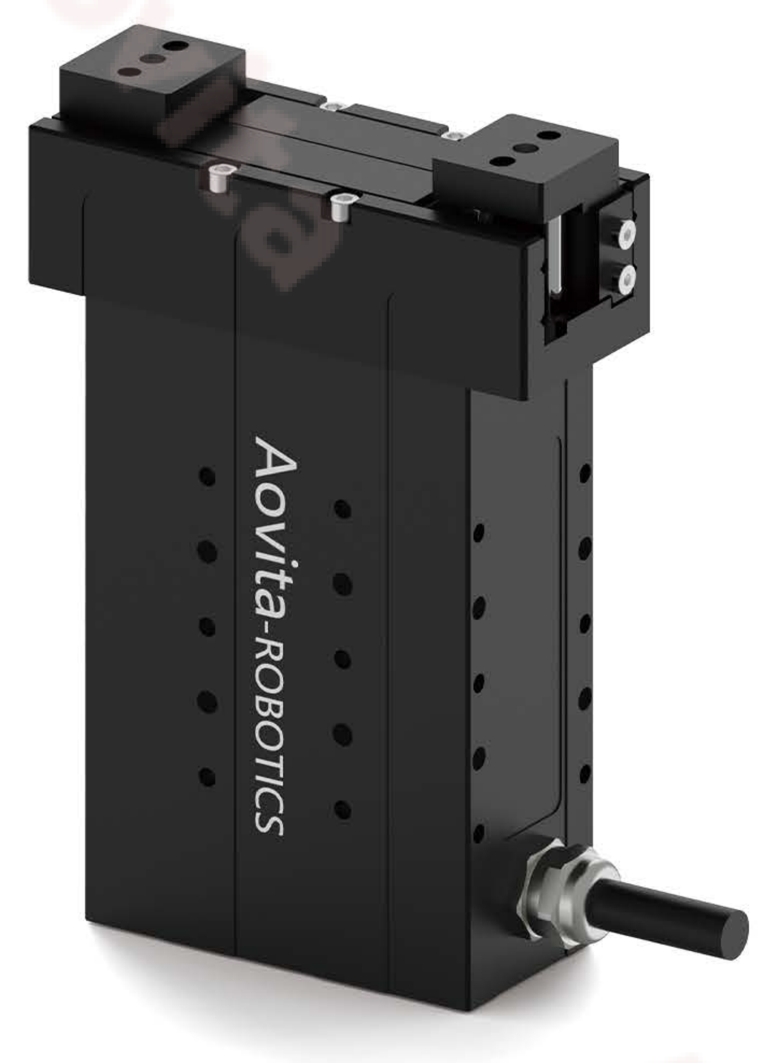
*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



APEG-50-40

Technical specification	
Stroke	40 mm
Gripping force (per jaw)	15~50 N
Recommended workpiece weight*①	1 kg
Opening / Closing time	0.6 s/0.6 s
Repeatability	±0.02mm
Noise	<40 dB
Weight	0.55 kg
Driving method	Rack and pinion + crossed roller guide
Size	110 mm*73.8 mm*29 mm



Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	0.25 A(Nominal)/0.5 A(Peak)
Nominal power	6 W
IP class	IP 40
Operating environment	0-40℃，<85%RH

Allowable static load in vertical direction	
Fz	150 N

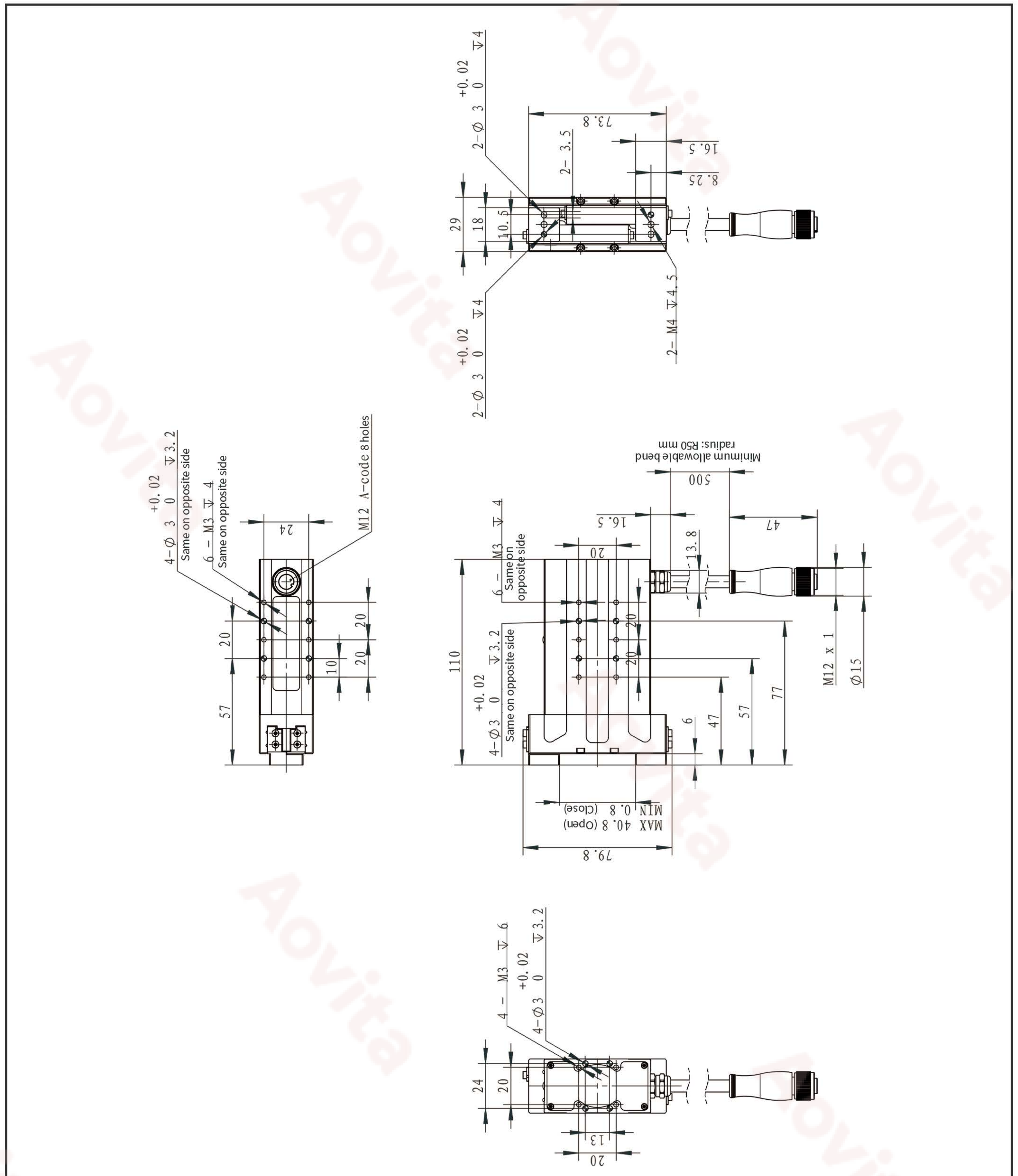
Allowable moment	
Mx	4.5 N•m
My	5 N•m
Mz	7 N•m

● Build-in controller	● Gripping force adjustable	● Position adjustable	● Speed adjustable	● Drop detection

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object’ s center of gravity may also affect the load. Please consult technical staff if you have any questions.

*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



APEG-100-26

Technical specification	
Stroke	26 mm
Gripping force (per jaw)	30~100 N
Recommended workpiece weight*①	1.5 kg
Opening / Closing time	0.5 s/0.5 s
Repeatability	±0.02mm
Noise	＜50 dB
Weight	0.6 kg
Driving method	Rack and pinion + crossed roller guide
Size	125 mm*57 mm*29.8 mm

Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	0.3 A(Nominal)/ 1 A(Peak)
Nominal power	7.2 W
IP class	IP 40
Operating environment	0-40℃，＜85%RH

Allowable static load in vertical direction	
Fz	150 N

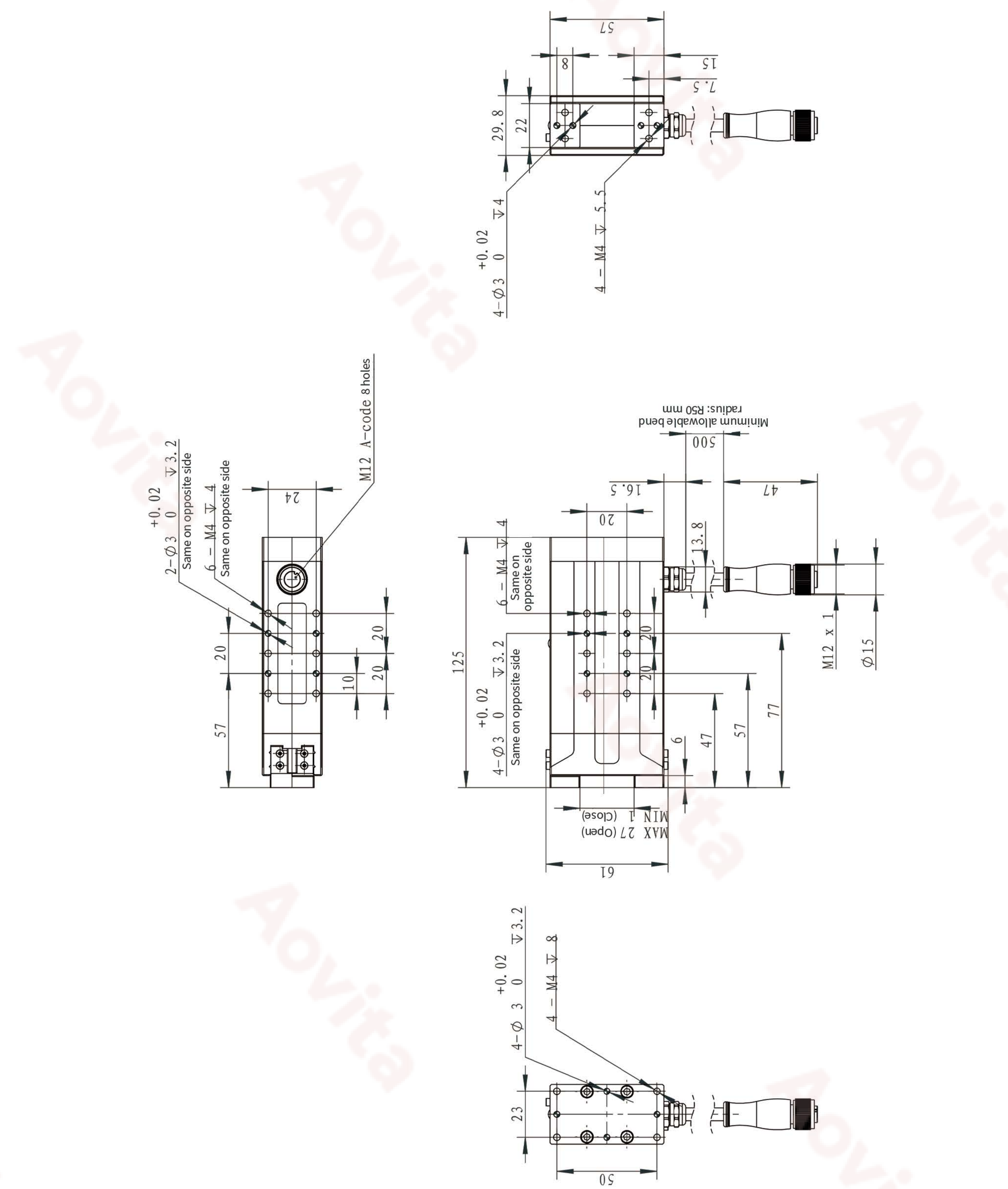
Allowable moment	
Mx	2.5 N•m
My	3 N•m
Mz	4 N•m

Build-in controller	Gripping force adjustable	Position adjustable	Speed adjustable	Drop detection
●	●	●	●	●

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object's center of gravity may also affect the load. Please consult technical staff if you have any questions.

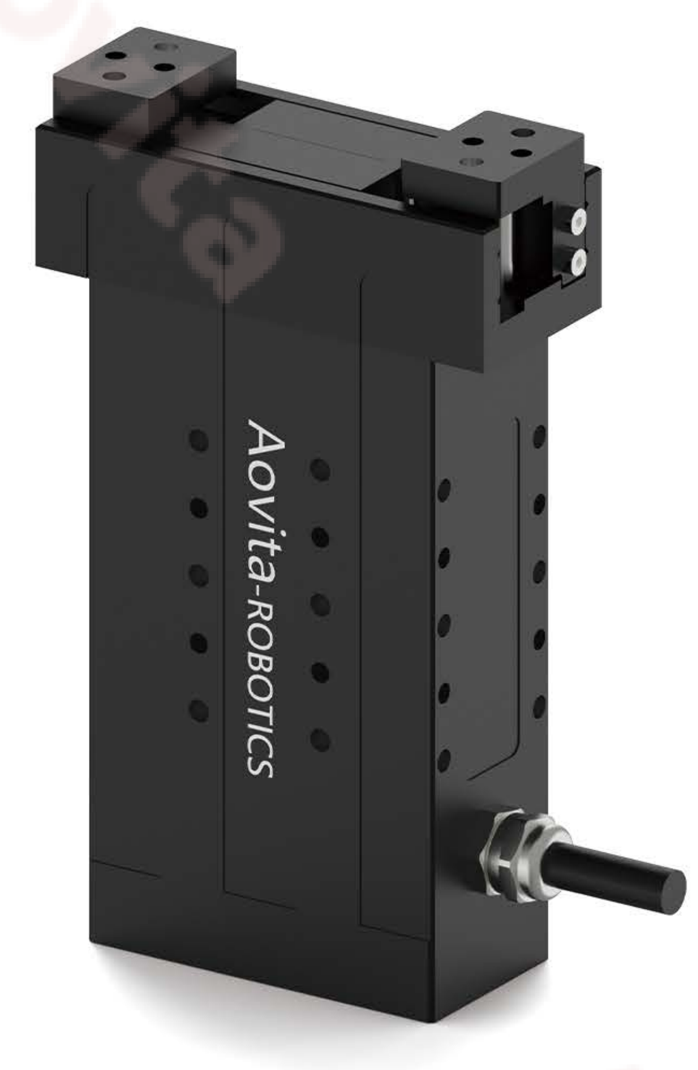
*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



APEG-100-40

Technical specification	
Stroke	40 mm
Gripping force (per jaw)	30~100 N
Recommended workpiece weight*①	1.5 kg
Opening / Closing time	0.65 s/0.65 s
Repeatability	±0.02mm
Noise	<50 dB
Weight	0.7 kg
Driving method	Rack and pinion + crossed roller guide
Size	125mm*73.8mm*29.8mm



Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	0.3 A(Nominal)/0.7 A(Peak)
Nominal power	7.2 W
IP class	IP 40
Operating environment	0-40°C，<85%RH

Allowable static load in vertical direction	
Fz	150 N

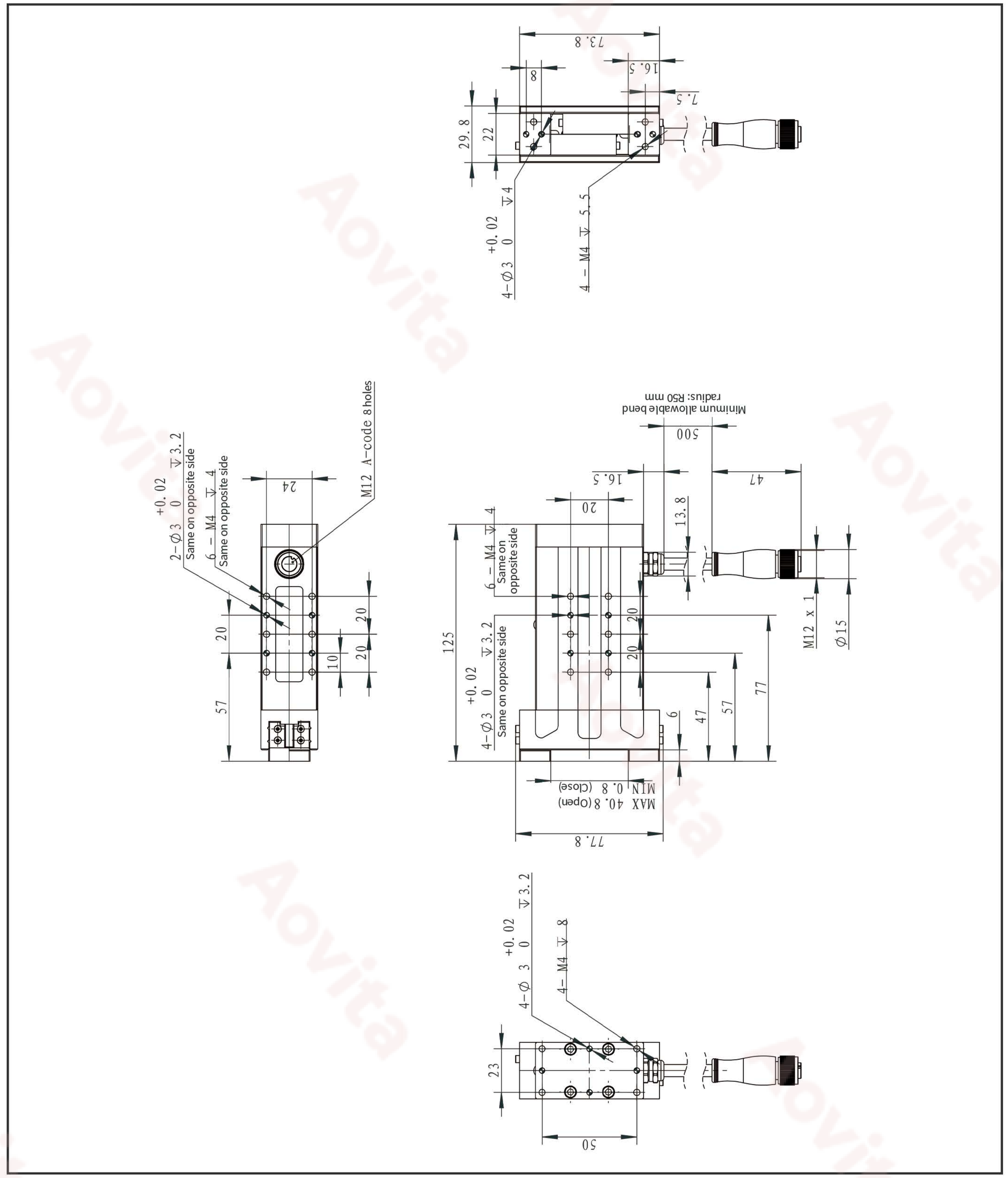
Allowable moment	
Mx	4.5 N•m
My	5 N•m
Mz	7 N•m

● Build-in controller	● Gripping force adjustable	● Position adjustable	● Speed adjustable	● Drop detection

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object's center of gravity may also affect the load. Please consult technical staff if you have any questions.

*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



AREG-35-12

Technical specification	
Stroke	12 mm
Gripping force (per jaw)	15~35 N
Rated torque	0.2 N·m
Peak torque	0.5 N·m
Rotary range	Infinite rotating
Recommended workpiece weight*①	0.5 kg
Max. rotation speed	2160°/s
Opening / Closing time	0.6 s/0.6 s
Rotational repeatability	±0.05°
Repeatability	±0.02 mm
Noise	＜50 dB
Weight	0.7 kg
Driving method	Rack and pinion + crossed roller guide
Size	165mm*53mm*34mm Rotation diameter:33mm

Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	1.7A(Nominal)/ 2.5 A(Peak)
Nominal power	40.8 W
IP class	IP 40
Operating environment	0-40°C，＜85%RH

Allowable static load in vertical direction	
Fz	100 N

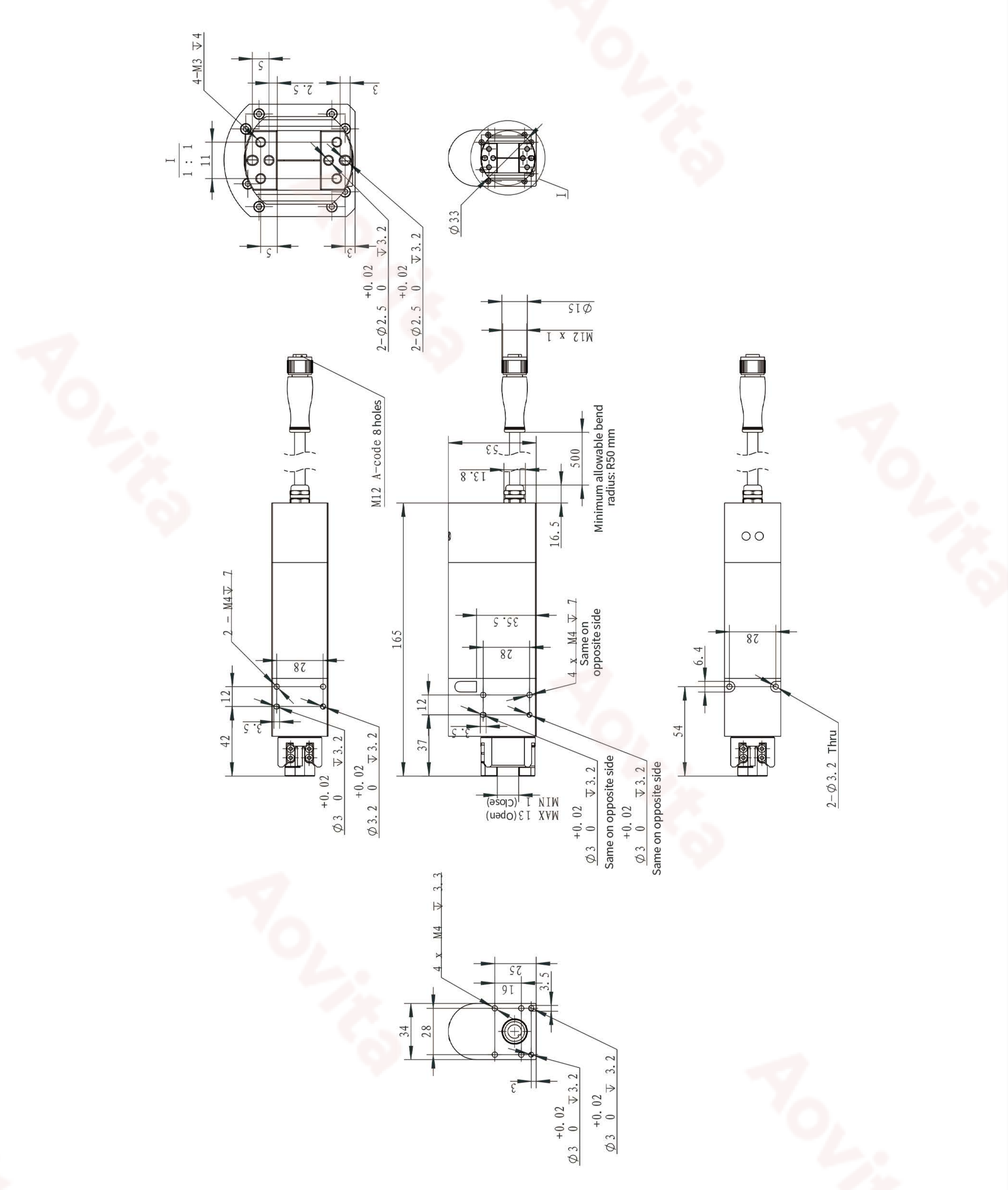
Allowable moment	
Mx	1.5 N•m
My	1.1 N•m
Mz	2.1 N•m

● Build-in controller	● Gripping force adjustable	● Position adjustable	● Speed adjustable	● Rotary adjustable	● Drop detection

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object' s center of gravity may also affect the load. Please consult technical staff if you have any questions.

*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions



AREG-100-26

Technical specification	
Stroke	26 mm
Gripping force (per jaw)	30~100 N
Rated torque	0.5 N·m
Peak torque	1.5 N·m
Rotary range	Infinite rotating
Recommended workpiece weight*①	1.5 kg
Max. rotation speed	2160°/s
Opening / Closing time	0.65 s/0.65 s
Rotational repeatability	±0.05°
Repeatability	±0.02 mm
Noise	<50 dB
Weight	1.5 kg
Driving method	Rack and pinion + crossed roller guide
Size	164mm*75.5mm*47mm Rotation diameter:67mm

Operating conditions	
Communication protocols	Standard:ModbusRTU（RS485）、Digital I/O Optional:EtherCAT*②、PROFINET、TCP/IP、CAN2.0A
Rated voltage	24 V DC ±10%
Current	1A(Nominal)4 A(Peak)
Nominal power	24 W
IP class	IP 40
Operating environment	0-40°C，<85%RH

Allowable static load in vertical direction	
Fz	150 N

Allowable moment	
Mx	2.5 N•m
My	3 N•m
Mz	4 N•m

●	●	●	●	●	●
Build-in controller	Gripping force adjustable	Position adjustable	Speed adjustable	Rotary adjustable	Drop detection

*① Depends on factors such as the shape of the object being gripped, the material of the contact surface, friction, and acceleration. Any deviation from the object' s center of gravity may also affect the load. Please consult technical staff if you have any questions.

*② Use the optional communication protocol. For external communication converter boxes, please consult sales for details.

Dimensions