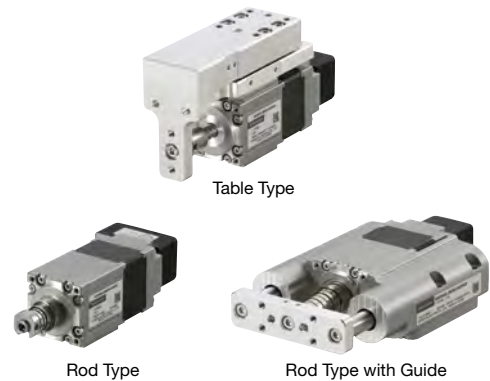


Compact Motorized Cylinder DR Series α STEP AZ Series Equipped

The compact and lightweight linear actuators consist of a stepper motor and an integrated ball screw.
The **AZ** Series drive motor is equipped with a battery-free absolute sensor, eliminating the need for external reference sensors or limit switches.



Reduced Commissioning Time

Linear Mechanism in a Compact Housing

As no additional parts are required, the time needed for design, component selection, and assembly can be reduced.

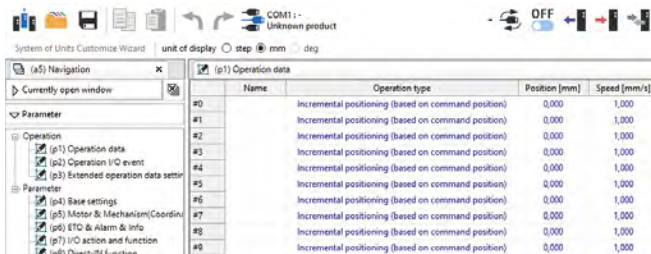
This reduction in commissioning time frees-up resources, increasing efficiency and productivity.

Preset Parameters

Resolution: 0,001 mm

Stroke Units: mm

Speed Units: mm/s

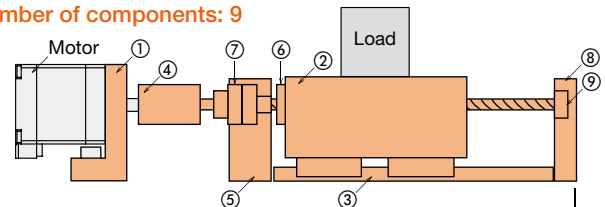


Comparison of the Number of Components

System configuration examples for moving a load with the same stroke length.

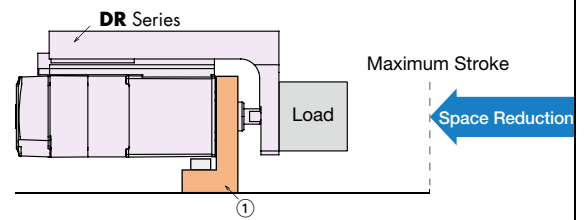
◇ In-House Design

Number of components: 9



◇ DR Series Table Type

Number of components: 1

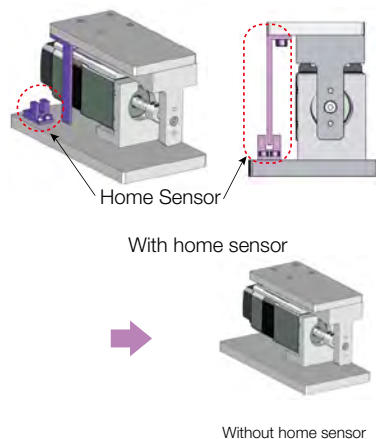


- [Parts Used]
- ① Installation plate, ② Transportation table,
 - ③ Linear guide, ④ Coupling, ⑤ Fixed-side block,
 - ⑥ Ball screw, ⑦ Fixed-side bearing,
 - ⑧ Support-side block, ⑨ Support-side bearing

Space Saving and Less Wiring with the **ABZO** Sensor

In addition to the compact and lightweight body, **AZ** Series motors use a battery-free absolute encoder, the **ABZO** sensor. This means that neither reference sensors nor limit switches are required. The costs are lower, wiring is simpler, and no maintenance is required.

Application Example

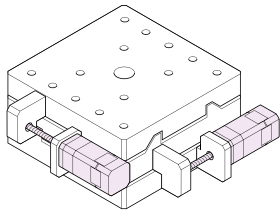


The **DR** Series uses the same drivers and cables as the α STEP **AZ** Series.

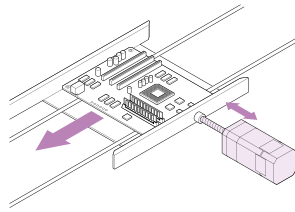
Details of the α STEP **AZ** Series can be found in the separate **AZ** Series catalogue.

Typical Applications

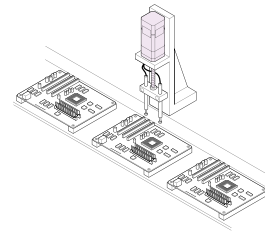
Automation of a micrometer stage



Alignment of a PCB



Vertical Positioning of Probes



Various mounting options are available

- Table Type

Mounting: front or side.

Products with a mounting plate (flange, foot*) can also be installed on the rear face using the flange or on the top face using the base.

*Materials: Aluminum Surface treatment: None











- Rod Type with Guide

Mounting: front, back and side.

When mounting from the side, the mounting screws can be tightened from above and below.

Configuration	Installation Methods			
Table Type Rod Type	<p>· Front mounting</p>	<p>· Side face mounting</p>	<p>· Flange Mounting (Table type only)</p>	<p>· Base Mounting</p>
Rod Type with Guide	<p>· Front mounting</p>	<p>· Rear face mounting</p>	<p>· Side face mounting A</p>	<p>· Side face mounting B</p>

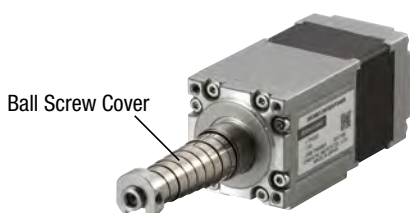
Product line

Compact Motorized Cylinder							Driver* (24 VDC)	Connection cable
Configuration	Frame Size	Stroke	Ball Screw Type		Cable Pull-Out Direction	Installation Plate		
			Version	Lead Screw Pitch				
Table Type  The load can be mounted directly on the linear table.	28 mm	30 mm	Precision / With precision cover	1 mm / 2.5 mm	Underside / Right / Left	- / With flange With foot	<ul style="list-style-type: none"> ● Built-in Controller Type  ● Pulse Input Type with RS-485 Communication  ● Pulse Input Type  ● With EtherCAT interface  EtherCAT ● With Ethernet/IP interface  EtherNet/IP ● With PROFINET interface  PROFINET 	
Rod Type with Guide  The load can be mounted directly on the guide rods.				2.5 mm	Top / Underside	-		
Rod Type  The load must be mounted on an external linear table or on a guide.				1 mm / 2.5 mm	Top / Underside Right / Left	- / With foot		

*Multi-axis drivers for 2 - 4 axes are available. For details, please refer to the separate **QSTEP AZ** Series catalogue.

● With Ball Screw Cover

Versions with a ball screw cover are available for increased dust protection.



- **EtherNet/IP™** is a trademark of ODVA (Open DeviceNet Vendor Association)
- **EtherCAT** is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany
- **PROFINET** is a registered trademark of PROFIBUS Nutzerorganisation e.V. (PNO)

Product Number

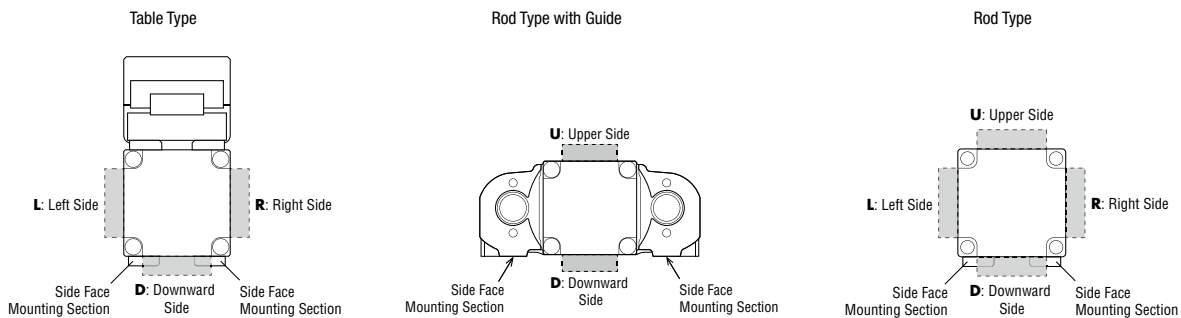
Compact Electric Cylinder

DR 28 T 2.5 BC 03 - AZ A K R - P

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
①	Series Name	DR: DR Series								
②	Frame Size	28: 28 mm								
③	Type	T: Table Type G: Rod Type with Guide R: Rod Type								
④	Ball Screw Lead	1: 1 mm 2.5: 2.5 mm								
⑤	Ball Screw Type	B: Precision Ball Screw BC: Precision Ball Screw with Cover								
⑥	Stroke	03: 30 mm								
⑦	Equipped Motor	AZ: AZ Series								
⑧	Additional Function	A: without Additional Function								
⑨	Power Supply Input	K: DC Power Supply Input								
⑩	Cable Outlet Direction*	U: Upper Side D: Downward Side R: Right Side L: Left Side								
⑪	Mounting Plate	Blank: without Mounting Plate F: with Flange P: with Foot								

* The cable outlet direction can be seen in the following illustrations.

Products viewed from the rear, mounting surfaces downward.



Driver

AZD - K D

①	②	③
①	Driver Type	AZD: AZ Series Driver
②	Power Supply Input	K: 24 VDC
③	Type	Blank: Pulse Input D: Built-in Controller Type X: Pulse Input Type with RS-485 Communication ED: With EtherCAT interface EP: With Ethernet/IP interface PN: With PROFINET interface

Connection Cable/Flexible Connection Cable

CC 050 V Z 2 F 2

①	②	③	④	⑤	⑥	⑦							
①	CC: Cable												
②	Length	005: 0.5 m	010: 1 m	015: 1.5 m	020: 2 m	025: 2.5 m	030: 3 m	040: 4 m	050: 5 m	070: 7 m	100: 10 m	150: 15 m	200: 20 m
④	Reference Number												
④	Applicable Model	Z: AZ Series											
⑤	Reference Number	2: Frame Size 20 mm, 28 mm											
⑥	Cable Type	F: Connection Cable R: Flexible Connection Cable											
⑦	Power Supply Cable	2: DC Power Supply Input											

Product Line

Compact Electric Cylinders

Table Type



• Precision Ball Screw

Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	-	DR28T1B03-AZAKD DR28T1B03-AZAKR DR28T1B03-AZAKL	1,180.00 €
	with Flange	DR28T1B03-AZAKD-F DR28T1B03-AZAKR-F DR28T1B03-AZAKL-F	1,218.00 €
	with Foot	DR28T1B03-AZAKD-P DR28T1B03-AZAKR-P DR28T1B03-AZAKL-P	
2.5	-	DR28T2.5B03-AZAKD DR28T2.5B03-AZAKR DR28T2.5B03-AZAKL	1,180.00 €
	with Flange	DR28T2.5B03-AZAKD-F DR28T2.5B03-AZAKR-F DR28T2.5B03-AZAKL-F	1,218.00 €
	with Foot	DR28T2.5B03-AZAKD-P DR28T2.5B03-AZAKR-P DR28T2.5B03-AZAKL-P	



• Precision Ball Screw with Cover

Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	-	DR28T1BC03-AZAKD DR28T1BC03-AZAKR DR28T1BC03-AZAKL	1,199.00 €
	with Flange	DR28T1BC03-AZAKD-F DR28T1BC03-AZAKR-F DR28T1BC03-AZAKL-F	1,238.00 €
	with Foot	DR28T1BC03-AZAKD-P DR28T1BC03-AZAKR-P DR28T1BC03-AZAKL-P	
2.5	-	DR28T2.5BC03-AZAKD DR28T2.5BC03-AZAKR DR28T2.5BC03-AZAKL	1,199.00 €
	with Flange	DR28T2.5BC03-AZAKD-F DR28T2.5BC03-AZAKR-F DR28T2.5BC03-AZAKL-F	1,238.00 €
	with Foot	DR28T2.5BC03-AZAKD-P DR28T2.5BC03-AZAKR-P DR28T2.5BC03-AZAKL-P	

Rod Type with Guide



• Precision Ball Screw

Ball Screw Lead [mm]	Product Name	List Price
2.5	DR28G2.5B03-AZAKU DR28G2.5B03-AZAKD	1,052.00 €



• Precision Ball Screw with Cover

Ball Screw Lead [mm]	Product Name	List Price
2.5	DR28G2.5BC03-AZAKU DR28G2.5BC03-AZAKD	1,072.00 €

Rod Type



• Precision Ball Screw

Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	-	DR28R1B03-AZAKU DR28R1B03-AZAKD DR28R1B03-AZAKR DR28R1B03-AZAKL	974.00 €
	with Foot	DR28R1B03-AZAKU-P DR28R1B03-AZAKD-P DR28R1B03-AZAKR-P DR28R1B03-AZAKL-P	1,012.00 €
2.5	-	DR28R2.5B03-AZAKU DR28R2.5B03-AZAKD DR28R2.5B03-AZAKR DR28R2.5B03-AZAKL	974.00 €
	with Foot	DR28R2.5B03-AZAKU-P DR28R2.5B03-AZAKD-P DR28R2.5B03-AZAKR-P DR28R2.5B03-AZAKL-P	1,012.00 €



• Precision Ball Screw with Cover

Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	-	DR28R1BC03-AZAKU DR28R1BC03-AZAKD DR28R1BC03-AZAKR DR28R1BC03-AZAKL	993.00 €
	with Foot	DR28R1BC03-AZAKU-P DR28R1BC03-AZAKD-P DR28R1BC03-AZAKR-P DR28R1BC03-AZAKL-P	1,032.00 €
2.5	-	DR28R2.5BC03-AZAKU DR28R2.5BC03-AZAKD DR28R2.5BC03-AZAKR DR28R2.5BC03-AZAKL	993.00 €
	with Foot	DR28R2.5BC03-AZAKU-P DR28R2.5BC03-AZAKD-P DR28R2.5BC03-AZAKR-P DR28R2.5BC03-AZAKL-P	1,032.00 €

● Driver

◇ Built-in Controller Type



◇ Pulse Input Type with RS-485 Communication



◇ Pulse Input Type



Product Name	List Price
AZD-KD	396,00 €

Product Name	List Price
AZD-KX	396,00 €

Product Name	List Price
AZD-K	341,00 €

◇ With EtherCAT interface



◇ With Ethernet/IP interface



◇ With PROFINET interface



Product Name	List Price
AZD-KED	440,00 €

Product Name	List Price
AZD-KEP	440,00 €

Product Name	List Price
AZD-KPN	440,00 €

■ Connection Cables/Flexible Connection Cables

Use a flexible connection cable for applications in which the cables are in motion.



◇ Cable for Motor/Cable for Encoder

Product Line	Length [m]	Product Name	List Price
Connection Cable	0.5	CC005VZ2F2	32,00 €
	1	CC010VZ2F2	32,00 €
	1.5	CC015VZ2F2	36,00 €
	2	CC020VZ2F2	42,00 €
	2.5	CC025VZ2F2	47,00 €
	3	CC030VZ2F2	53,00 €
	4	CC040VZ2F2	82,00 €
	5	CC050VZ2F2	92,00 €
	7	CC070VZ2F2	114,00 €
	10	CC100VZ2F2	149,00 €
	15	CC150VZ2F2	206,00 €
20	CC200VZ2F2	261,00 €	

Product Line	Length [m]	Product Name	List Price
Flexible Connection Cable	0.5	CC005VZ2R2	72,00 €
	1	CC010VZ2R2	72,00 €
	1.5	CC015VZ2R2	77,00 €
	2	CC020VZ2R2	83,00 €
	2.5	CC025VZ2R2	89,00 €
	3	CC030VZ2R2	93,00 €
	4	CC040VZ2R2	107,00 €
	5	CC050VZ2R2	119,00 €
	7	CC070VZ2R2	152,00 €
	10	CC100VZ2R2	200,00 €
	15	CC150VZ2R2	280,00 €
20	CC200VZ2R2	359,00 €	

■ Included

● Compact Electric Cylinders

Type	Included
Common to All Types	Operating Manual 1 Copy

● Drivers

Type	Included
Common to All Types	Connector Operating Manual CN4 Connector (1 pc.) CN1 Connector (1 pc.) 1 Copy

● Connection Cables/Flexible

Type	Included
Connection Cable	-
Flexible Connection Cable	1 Copy

How to Read Specifications Table

Compact Electric Cylinder Specifications

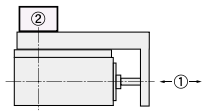
Actuator Product Name	Ball Screw	DR28T2.5B03-AZAK□-□	
	Ball Screw with Cover	DR28T2.5BC03-AZAK□-□	
① Ball Screw Pitch	mm	2,5	
Ball Screw Type		Precision	
Repetitive Positioning Accuracy	① Table Tip	mm	±0,003
	② Upper Side	mm	±0,005
③ Lost Motion	mm	0,02 max.	
④ Minimum Travel Amount	mm	0,001	
⑤ Permissible Moment	Statisch	Nm	Mp: 0,30 My: 0,24 Mr: 1,5
	Dynamisch	Nm	Mp: 0,30 My: 0,24 Mr: 1,5
⑥ Transportable Mass	Horizontal	kg	4
	Vertikal	kg	2
⑦ Thrust	N	20	
⑧ Push Force	N	50	
⑨ Holding Force	N	20	
⑩ Stroke	mm	30	
⑪ Maximum Speed	mm/s	100	
⑫ Maximum Acceleration	m/s ²	0,5	

① Ball Screw Pitch

Linear distance travelled by the ball screw per motor revolution.

② Repetitive Positioning Accuracy

This value indicates the degree of deviation that is generated when repeatedly approaching a position from the same direction. (The specification applies to a constant temperature and constant load.)



- ① Repeat positioning accuracy of the table end.
- ② Repeat positioning accuracy on the table top. If there is no distinction between ① and ②, values for the repetitive positioning accuracy are the same.

③ Lost Motion

This value indicates the degree of deviation that is generated when repeatedly approaching the same position from different directions. (The specification applies to a constant temperature and constant load.)

④ Minimum Travel Amount

Factory setting for the travel distance per pulse.

⑤ Permissible Moment

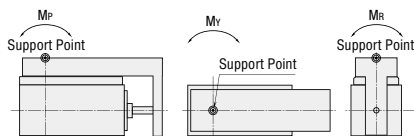
The maximum force that can be applied to the guide if the centre of gravity of the actuator and the load do not match.

The dynamic permissible moment refers to the moment while in motion.

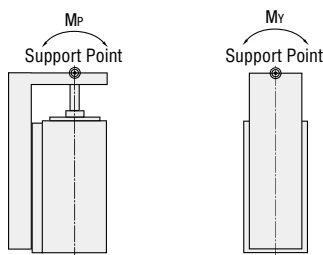
The static moment refers to the moment while at a standstill.

•Table Type

Horizontal Direction

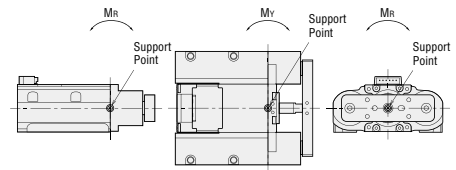


Vertical Direction

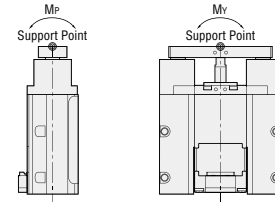


•Rod Type

Horizontal Direction



Vertical Direction

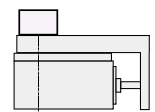


⑥ Transportable Mass

• Horizontal Direction (Figure A)

Maximum transport load when used in a horizontal direction.

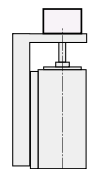
Figure A



• Vertical Direction (Figure B)

Maximum transport load when used in a vertical direction.

Figure B



⑦ Thrust

Maximum force with which a load can be pushed at maximum speed.

⑧ Push Force

Maximum force that can be applied when pressing or clamping.

⑨ Holding Force

Maximum holding force of the motor at standstill with reduced standstill current in effect (50% rated current).

⑩ Stroke

Maximum travel distance.

⑪ Maximum Speed

Maximum adjustable speed.

⑫ Maximum Acceleration

Maximum adjustable acceleration.

Compact Electric Cylinder Specifications



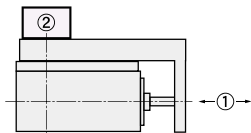
Table Type

Actuator Product Name	Ball Screw	DR28T1B03-AZAK □-□	DR28T2.5B03-AZAK □-□
	Ball Screw with Cover	DR28T1BC03-AZAK □-□	DR28T2.5BC03-AZAK □-□
Ball Screw Lead	mm	1	2.5
Ball Screw Type		Precision	
Repetitive Positioning Accuracy	① Table Tip Position on Ball Screw Shaft	mm	±0.003
	② Upper Side of Linear Guide	mm	±0.005
Lost Motion	mm	0.02 max.	
Minimum Travel Amount	mm	0.001	
Permissible Moment	Static Permissible Moment	Nm	Mp: 0.30 MY: 0.24 Mr: 1.5
	Dynamic Permissible Moment	Nm	
Transportable Mass	Horizontal Direction	kg	4
	Vertical Direction	kg	4
Thrust	N	40	20
Push Force	N	-	50
Holding Force	N	40	20
Stroke	mm	30	
Maximum Speed	mm/s	40	100
Maximum Acceleration	m/s ²	0.2	0.5

- Either **D** (downward side), **R** (right side), or **L** (left side) indicating the cable outlet direction is entered where the box □ is located within the product name.
Either **F** (with flange) or **P** (with foot) indicating the mounting plate is entered where the box □ is located within the product name.

Note

- The maximum speed may be lower depending on the ambient temperature and the length of the motor cable.
- Repetitive Positioning Accuracy



- ① Repeat positioning accuracy at the tip.
- ② Repeat positioning accuracy on the top.

Rod Type with Guide



Actuator Product Name	Ball Screw		DR28G2.5B03-AZAK □
	Ball Screw with Cover		DR28G2.5BC03-AZAK □
Ball Screw Lead		mm	2.5
Ball Screw Type			Precision
Repetitive Positioning Accuracy		mm	±0.005
Lost Motion		mm	0.05 max.
Minimum Travel Amount		mm	0.001
Permissible Moment	Static Permissible Moment	Nm	MP: 0.15 MY: 0.15 MR: 0.1
	Dynamic Permissible Moment	Nm	
Transportable Mass	Horizontal Direction	kg	0.2 (4)*
	Vertical Direction	kg	2
Thrust		N	20
Push Force		N	50
Holding Force		N	20
Stroke		mm	30
Maximum Speed		mm/s	100
Maximum Acceleration		m/s ²	0.5

● Either **U** (upper side) or **D** (downward side) indicating the cable outlet direction is entered where the box □ is located within the product name.

* When using an external linear guide, refer to the specifications indicated in brackets.

Note

● The maximum speed may be lower depending on the ambient temperature and the length of the motor cable.

Rod Type



Actuator Product Name	Ball Screw		DR28R1B03-AZAK □-□	DR28R2.5B03-AZAK □-□
			DR28R1BC03-AZAK □-□	DR28R2.5BC03-AZAK □-□
Ball Screw Lead		mm	1	2.5
Ball Screw Type			Precision	
Repetitive Positioning Accuracy		mm	±0.003	
Lost Motion		mm	0.02 max.	
Minimum Travel Amount		mm	0.001	
Transportable Mass	Horizontal Direction	kg	4*	
	Vertical Direction	kg	4	2
Thrust		N	40	20
Push Force		N	-	50
Holding Force		N	40	20
Stroke		mm	30	
Maximum Speed		mm/s	40	100
Maximum Acceleration		m/s ²	0.2	0.5

● Either **U** (upper side), **D** (downward side), **R** (right side), or **L** (left side) indicating the cable outlet direction is entered where the box □ is located within the product name. **P** (with foot) indicating the mounting plate is entered where the box □ is located within the product name.

If the product is not supplied with a mounting plate, there will be no □ within the product name.

* The specified horizontal transport load is applicable when using an external linear guide.

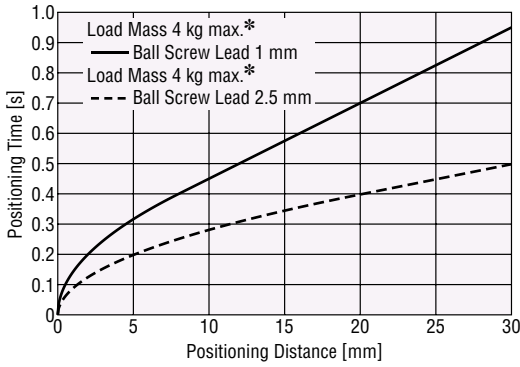
Note

● The maximum speed may be lower depending on the ambient temperature and the length of the motor cable.

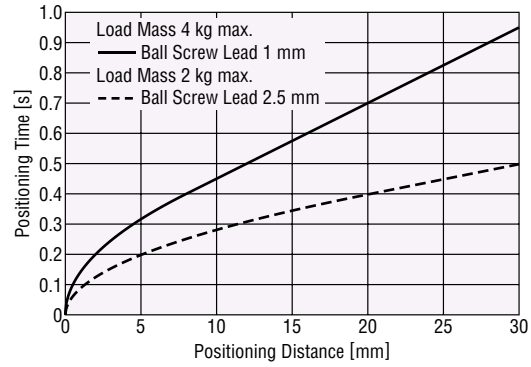
Positioning Distance—Positioning Time

All Types

Horizontal Installation



Vertical Installation

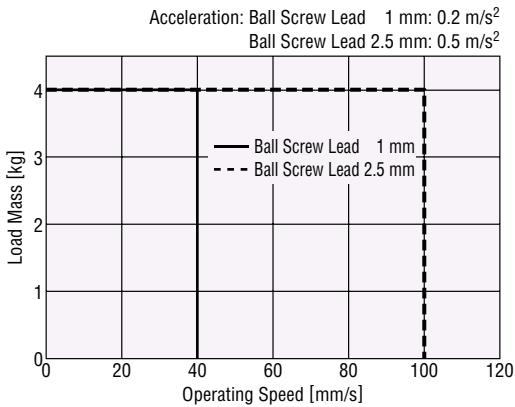


*If the rod type with guide is not used in combination with an external linear guide, the transportable mass is 0.2 kg.

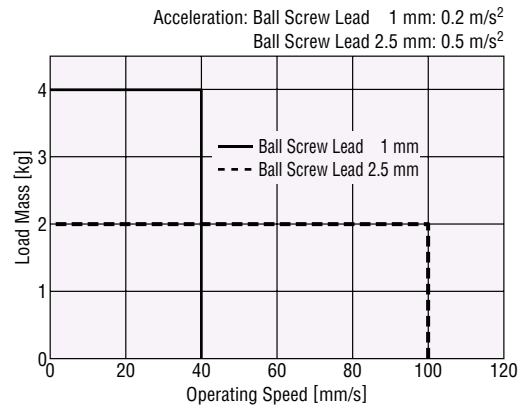
Operating Speed—Load Mass

Table Type, Rod Type*

Horizontal Installation



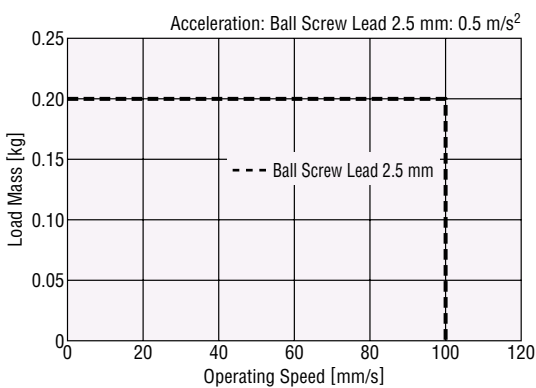
Vertical Installation



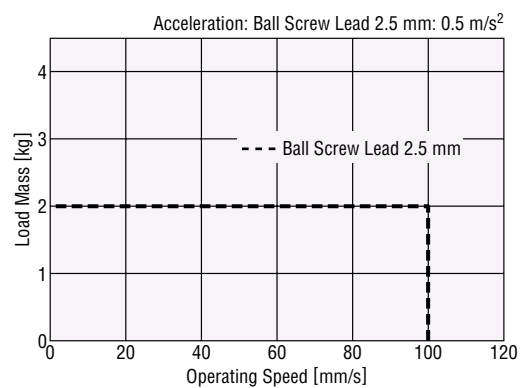
*The standard version must not be used in a horizontal orientation without an external linear guide.

Rod Type with Guide

Horizontal Installation*

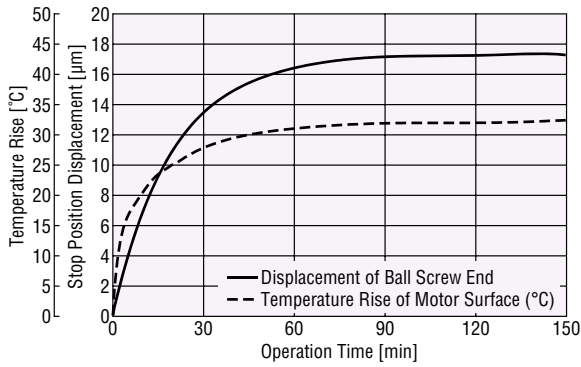


Vertical Installation

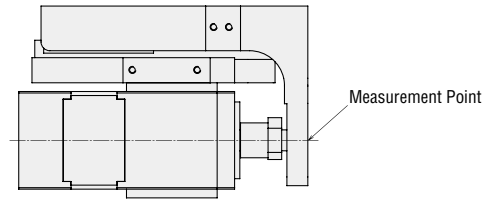


*The characteristics when used in combination with an external linear guide will be the same as the table type.

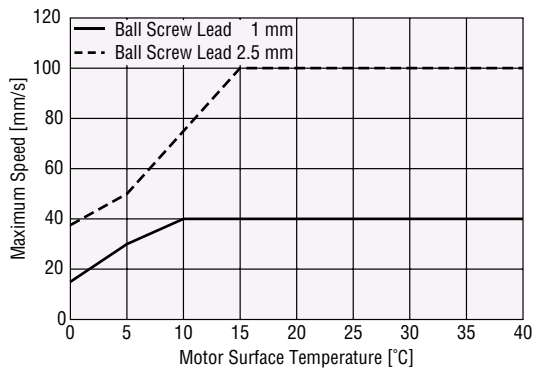
Positional Displacement Due to Temperature Rise (Reference Value)



Conditions:
 Operating Duty: 90%
 Operating Current Ratio: 100% (Factory Setting)
 Stop Current Ratio: 50% (Factory Setting)
 Measurement Position: 30 mm from home position
 Measuring Method: Measured by laser displacement meter

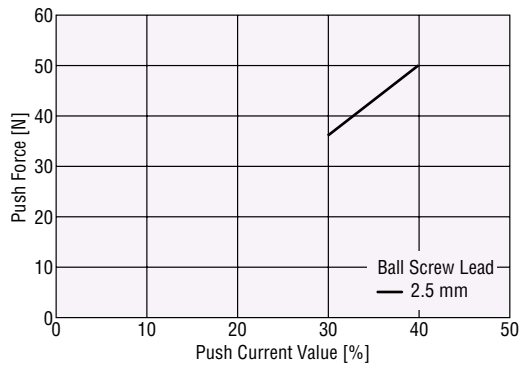


Maximum Speed with Temperature Variance (Reference Value)



Actual Push Force

The following table shows reference data for the push current and compressive force of the **DR28**. It is recommended to check the actual compressive force when using the product.



- The above characteristic diagram shows the results of the pressure measurement of the **DR28** in horizontal operation.
- The relationship between the push current value and the push force varies depending on the following conditions:
 - Installation Condition (Horizontal Installation or Vertical Installation)
 - Load Condition of the Equipment
 - Cable Length
 - Ambient Temperature
- The upper speed limit of the push-motion operation is 6 mm/s.

Note

- Push-motion operation is not permitted for the **DR28** with 1 mm pitch.

Driver Specifications

Product Name	AZD-KD, AZD-KX, AZD-K, AZD-KED, AZD-KEP, AZD-KPN	
Power Supply Input	Voltage	24 VDC±5%
	Input Current	A 1.4

General Specifications

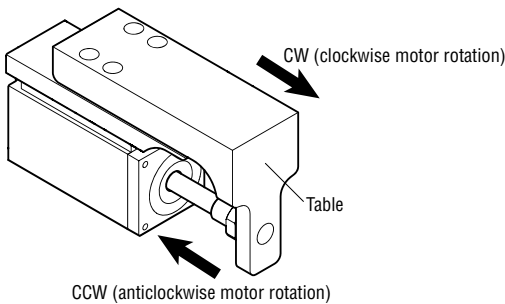
	Compact Electric Cylinder	Driver
Thermal Class	130 (B)	—
Insulation Resistance	100 MΩ or more when a 500 VDC megger is applied between the following places: · Case - Motor Windings	100 MΩ or more when a 500 VDC megger is applied between the following places: · Protective Earth Terminal - Power Supply Terminal
Dielectric Strength	Sufficient to withstand the following for 1 minute: · Case - Motor Windings 0.5 kVAC, 50 Hz or 60 Hz	—
Operating Environment (In Operation)	Ambient Temperature	0 to +40°C (Non-freezing)
	Ambient Humidity	85% or less (Non-condensing)
Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.	
Degree of Protection	—	IP10

Note

- Disconnect the motor and driver when taking an insulation resistance measurement or performing a dielectric voltage withstand test. Do not perform these tests on the absolute sensor part of the motor.

Movement Direction

The factory default movement direction is as shown.

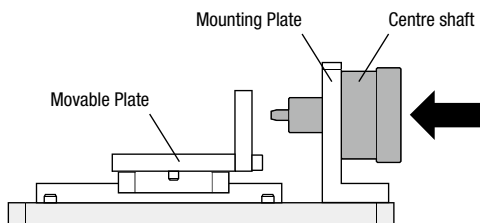


Installing the Rod Type

Center alignment

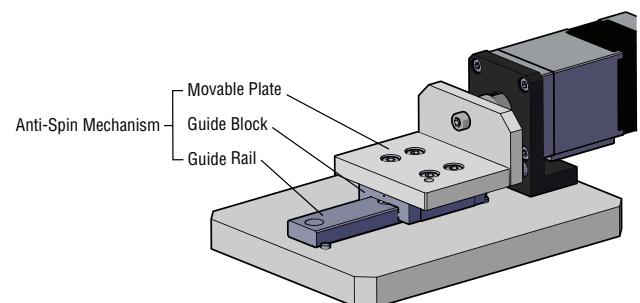
In the standard version, the axis of the ball screw must be in alignment with the movement direction of the load.

- For details on the centre alignment flange, see page 19.



Mounting

When installing the rod type, the spindle must be fixed in place for correct operation. A linear guide consisting of a guide rail, slide and table is required.



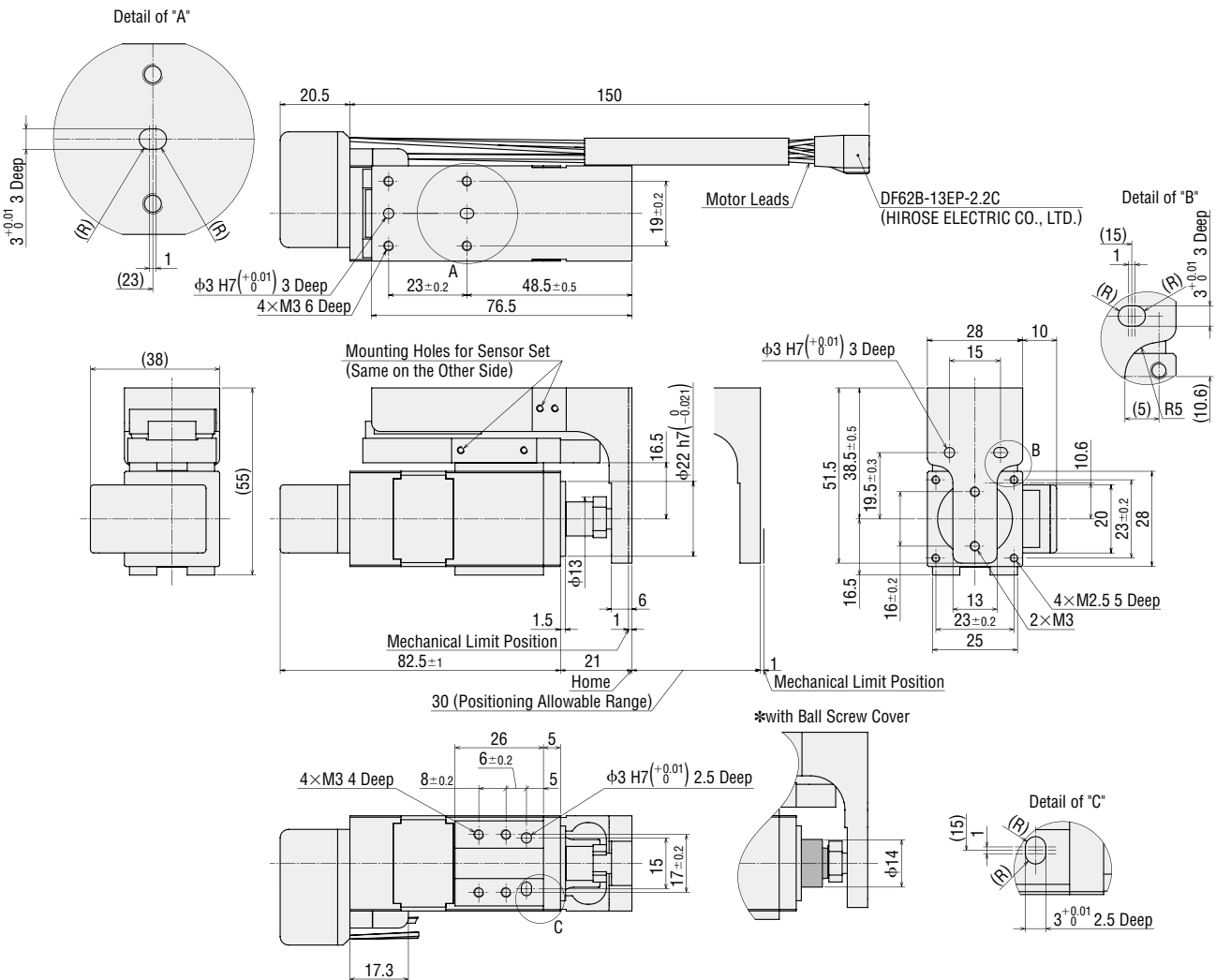
Dimensions (All dimensions in mm)

Table Type

Mounting Plate	Product Name	Mass [kg]
without Mounting Plate	DR28T1B03-AZAK□	0.39
	DR28T1BC03-AZAK□	
	DR28T2.5B03-AZAK□	
	DR28T2.5BC03-AZAK□	
with Flange	DR28T1B03-AZAK□-F	0.42
	DR28T1BC03-AZAK□-F	
	DR28T2.5B03-AZAK□-F	
	DR28T2.5BC03-AZAK□-F	
with Foot	DR28T1B03-AZAK□-P	0.42
	DR28T1BC03-AZAK□-P	
	DR28T2.5B03-AZAK□-P	
	DR28T2.5BC03-AZAK□-P	

● Either **D** (downward side), **R** (right side), or **L** (left side) indicating the cable outlet direction is entered where the box □ is located within the product name.

◇ Without Mounting Plate

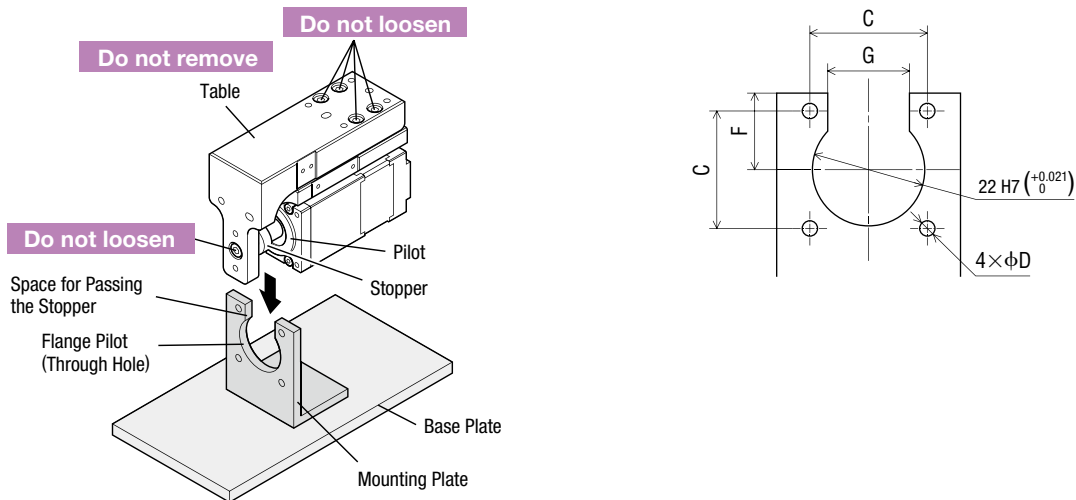


Note

- The reference point can be freely selected within the stroke. It must be ensured that a minimum distance of 1 mm to the mechanical end positions is maintained.
- The color part represents the ball screw cover.

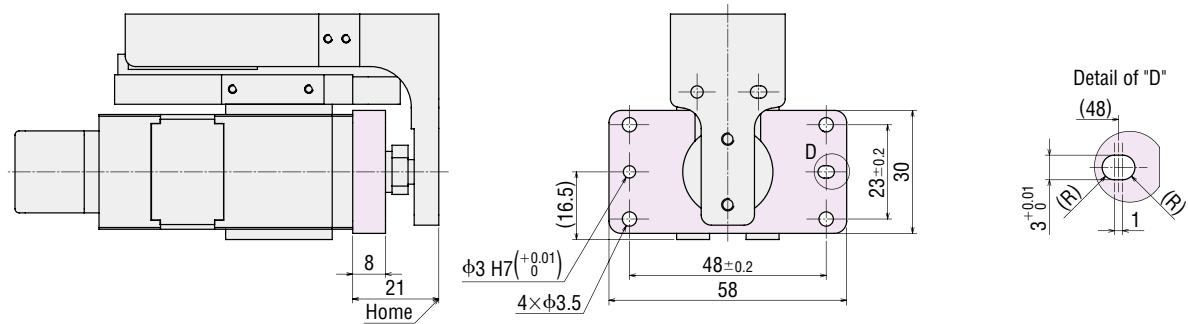
● **Mounting Plate Reference Dimensions (All dimensions in mm)**

When front mounting, a recess must be provided in the mounting plate to accommodate the stopper (ball screw cover).

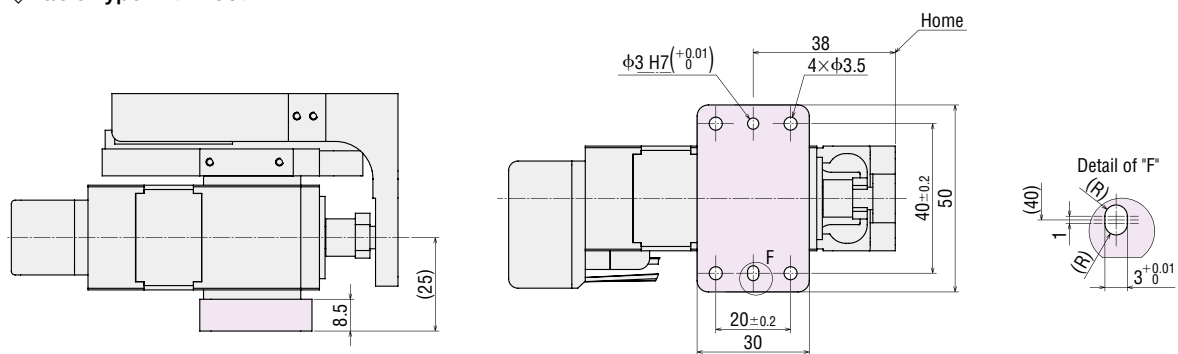


● Refer to the operating manual for installation.

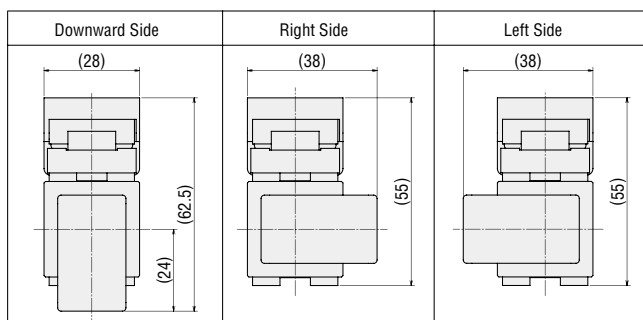
◇ **Table Type with Flange**



◇ **Table Type with Foot**



Cable Outlet Direction

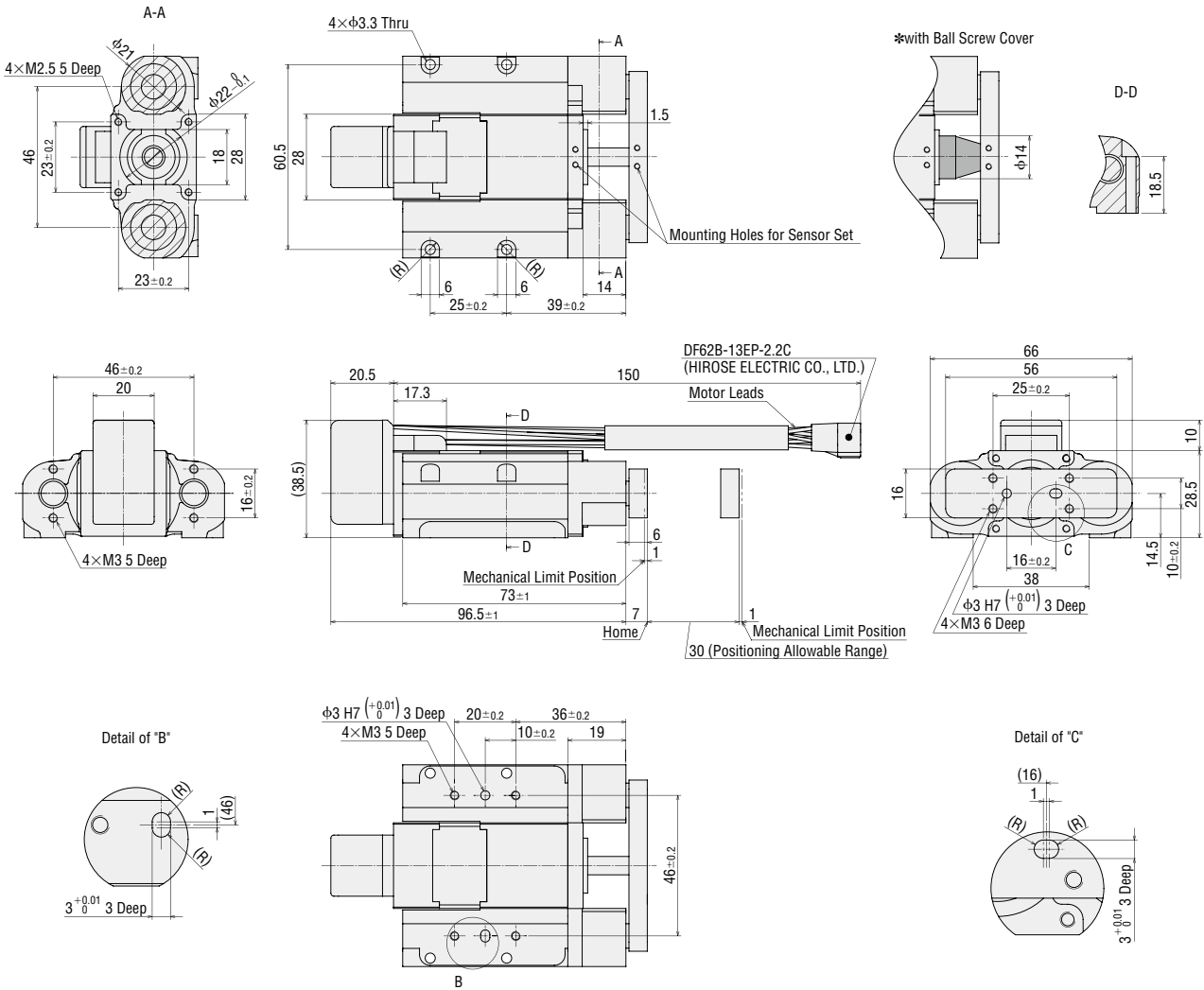


● The color part represents the mounting plate.

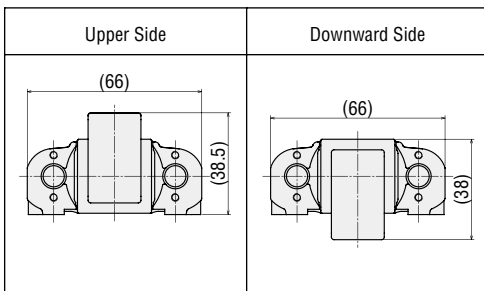
Rod Type with Guide

Product Name	Mass [kg]
DR28G2.5B03-AZAK□	0.43
DR28G2.5BC03-AZAK□	

● Either **U** (upper side) or **D** (downward side) indicating the cable outlet direction is entered where the box □ is located within the product name.



Cable Outlet Direction



Note

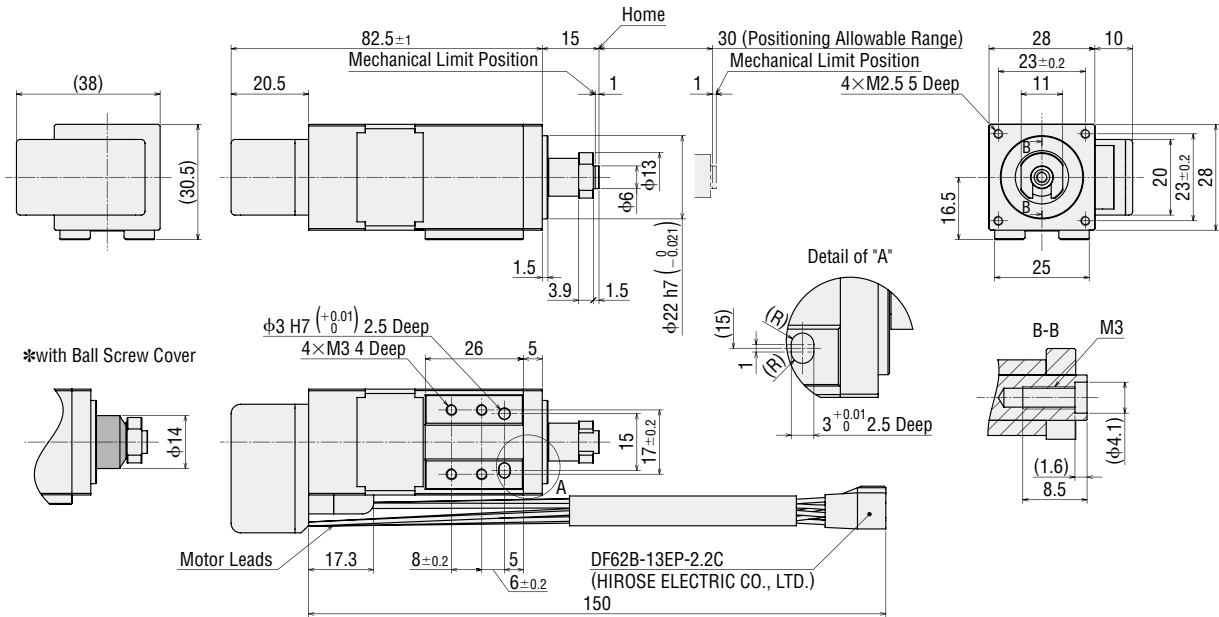
- The reference point can be freely selected within the stroke. It must be ensured that a minimum distance of 1 mm to the mechanical end positions is maintained.
- The color part represents the ball screw cover.

Rod Type

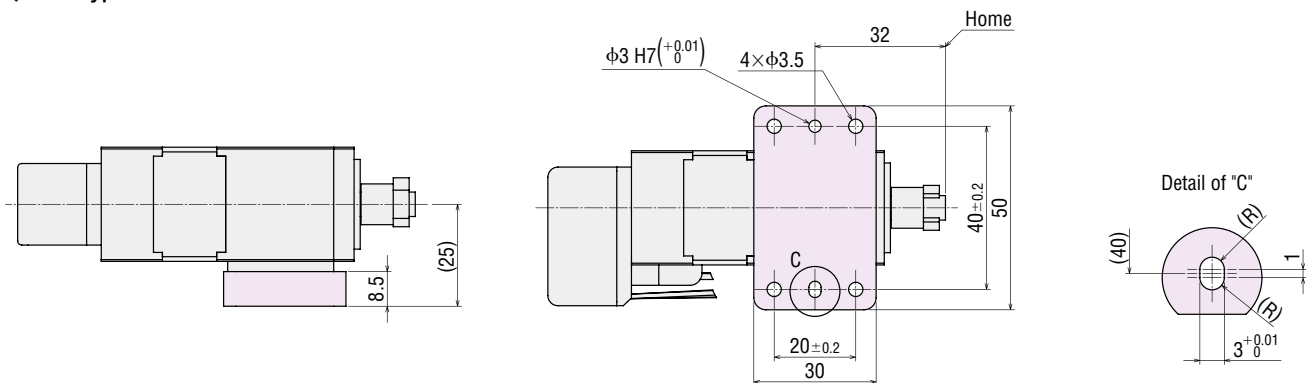
Mounting Plate	Product Name	Mass [kg]
without Mounting Plate	DR28R1B03-AZAK□	0.23
	DR28R1BC03-AZAK□	
	DR28R2.5B03-AZAK□	
	DR28R2.5BC03-AZAK□	
with Foot	DR28R1B03-AZAK□-P	0.26
	DR28R1BC03-AZAK□-P	
	DR28R2.5B03-AZAK□-P	
	DR28R2.5BC03-AZAK□-P	

● Either **U** (upper side), **D** (downward side), **R** (right side), or **L** (left side) indicating the cable outlet direction is entered where the box □ is located within the product name.

◇ Without Mounting Plate



◇ Rod Type with Foot



Cable Outlet Direction

Upper Side	Downward Side	Right Side	Left Side

Note

- The reference point can be freely selected within the stroke. It must be ensured that a minimum distance of 1 mm to the mechanical end positions is maintained.
- The color part represents the ball screw cover.
- The color part represents the mounting plate.

Accessories

Sensor Sets

These are sensor sets dedicated to the **DR28** table type and rod type with guide. Photomicrosensor (with a sensor cable of 1 m), sensor plate, and shielding plate are included as a set. Screws needed for installation are also included.

● A sensor for detecting an overrun is not supplied with the product.



Product Line

Applicable Product	Product Name	Sensor Output	List Price
Table Type	PADR-SN28T	NPN	58,00 €
	PADR-SP28T	PNP	

Specifications

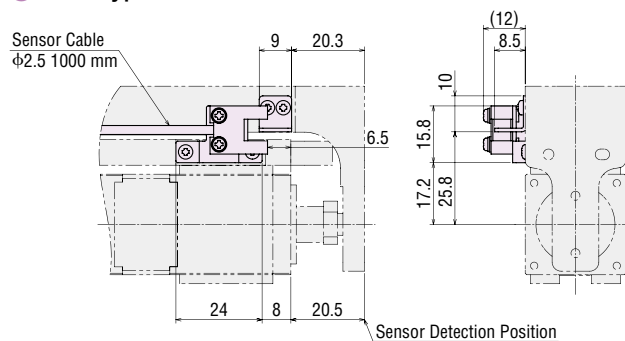
Product Name	PADR-SN28T	PADR-SP28T
Sensor Product Name	PM-U25 (Panasonic Industrial Devices SUNX Co., Ltd.)	PM-U25-P (Panasonic Industrial Devices SUNX Co., Ltd.)
Repetitive Positioning Accuracy	±0.01 mm (Measured value at a constant temperature)	
Power Supply Voltage	5 to 24 VDC ±10% Ripple (Peak to Peak) 10% max.	
Consumption Current	15 mA max.	
Control Output	NPN Transistor, Open-Collector Output 30 VDC max., 50 mA max. Residual Voltage: 2 VDC max. Load Current: 50 mA	PNP Transistor, Open-Collector Output 30 VDC max., 50 mA max. Residual Voltage: 2 VDC max. Load Current: 50 mA
Indicator LED	Detection Indication (Orange)	
Sensor Logic	Normally Open/Normally Closed (Possible to switch by connection)	
Cable	4-Core Cable 0.09 mm ²	

Sensor Set Installation

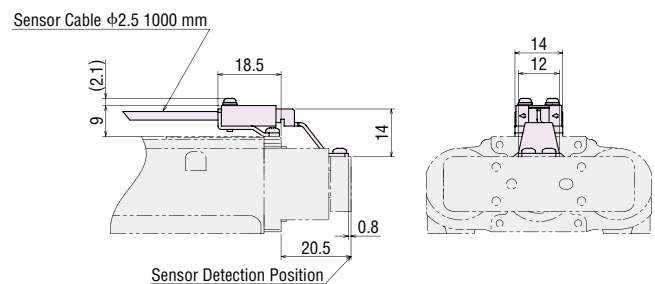
Set the operating conditions so that the motor surface temperature of the actuator is 55°C or lower.

Reference Dimensions for Sensor Installation Position (All dimensions in mm)

Table Type



Rod Type with Guide



● For the table type product, the sensor and the shielding plate can also be installed on the opposite side of the dimensions.

● The color part represents the sensor set.

*α*STEP

AZ Series Multi-Axis Driver

DC Input

EtherCAT Drive Profile-Compatible

EtherCAT®



4-Axis Type

Multi-Axis Drivers can connect **AZ** Series DC input motors and the linear and rotary actuators equipped with them. Available for all products compatible with the EtherCAT drive profiles.



3-Axis Type



NEW 2-Axis Type

- **Multi-Axis Drivers connect directly to the host network and can control up to 4 axes simultaneously**
One driver can control multiple axes. Connections with the host network and the power supply are combined in a single driver, resulting in less wiring and lower costs.
- **Multi-Axis Drivers (2-Axis Type, 4-Axis Type) are compact and save space by aligning Single-Axis Drivers**
Multi-Axis Drivers can reduce installation space by aligning network-compatible Single-Axis Drivers.

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These products are manufactured at plants certified with the international standards **ISO 9001** (for quality assurance) and **ISO 14001** (for systems of environmental management).

Specifications are subject to change without notice. This catalogue was published in May 2022.

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