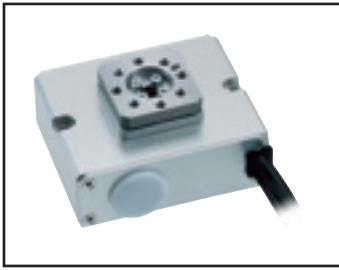


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FGRC Series variation

Model No.	Motor size	Max. torque (N·m)	Max. angular speed (deg/s)
FGRC-10	□ 20	0.89	200
FGRC-30	□ 25	2.71	
FGRC-50	□ 35	4.66	



Electric actuator Rotary FGRC-10

20 stepper motor

For applicable controller ECR, 48 V and 24 V power supplies can be used.

For applicable controller ECG, 24 V power supplies can be used.



How to order

FGRC - **10** **G** **360 N** **C** **N - F** **S03**

A Size	10
B Applicable controller *1	G ECG Blank ECR
C Encoder	C Incremental encoder
D Relay cable *2	N00 None S01 Fixing cable 1 m S03 Fixing cable 3 m S05 Fixing cable 5 m S10 Fixing cable 10 m R01 Movable cable 1 m R03 Movable cable 3 m R05 Movable cable 5 m R10 Movable cable 10 m

*1 Select the controller from page 45 or page 59.

*2 Refer to page 55 or page 70 for relay cable dimensions.

Specifications

Motor	<input type="checkbox"/> 20 stepper motor
Encoder type	Incremental encoder
Drive method	Worm gear + belt
Travel angle *1	360
Max. output torque *2 N·m	0.89
Repeatability deg	±0.05
Backlash *3 deg	±0.3
Lost motion deg	0.3 or less
Operation angular speed range deg/s	20 to 200
Pressing operation angular speed range deg/s	20 to 30
Allowable moment of inertia *2 kg·m ²	0.0057
Allowable thrust load N	80
Allowable radial load N	80
Allowable moment N·m	2.5
Motor power supply voltage	24 VDC ±10% or 48 VDC ±10%
Motor section maximum instantaneous current A	1.4
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP40
Weight kg	0.65

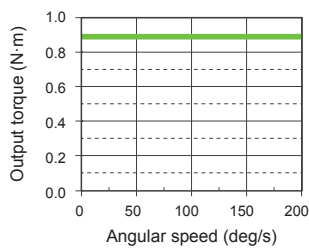
*1 Movable angle is up to 359.9° via travel instructions.

*2 Rotation torque and allowable moment of inertia change in accordance with angular speed and angular acceleration/deceleration. Refer to the table at right for details.

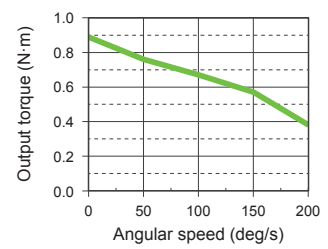
*3 When stopping precision is required, stop with an external stopper, etc., and complete positioning with pressing operation.

Angular speed and output torque

[At 48 VDC]

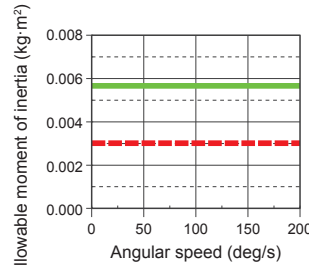


[At 24 VDC]

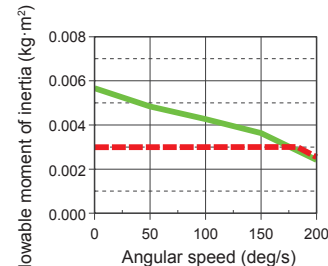


Angular speed and allowable moment of inertia

[At 48 VDC]

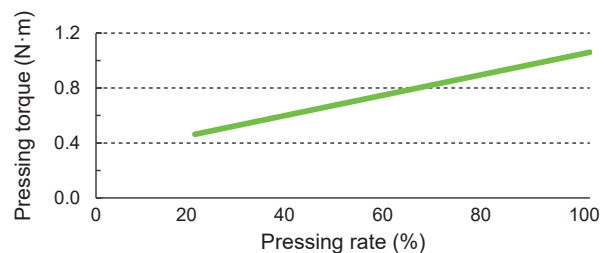


[At 24 VDC]



* When angular acceleration/deceleration is greater than 1700deg/s², operate below the dashed line.

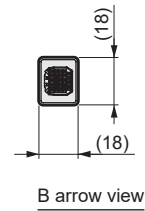
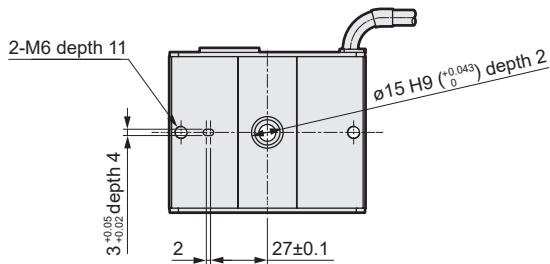
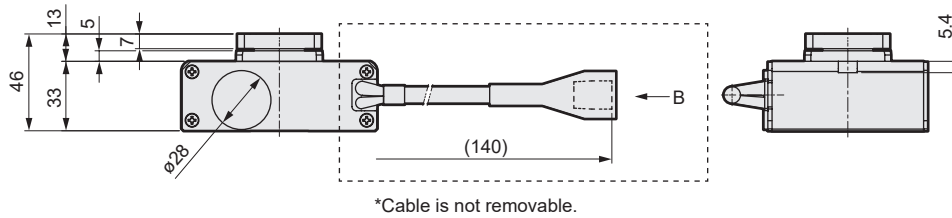
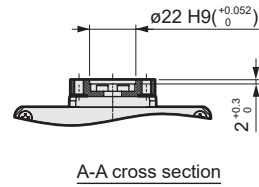
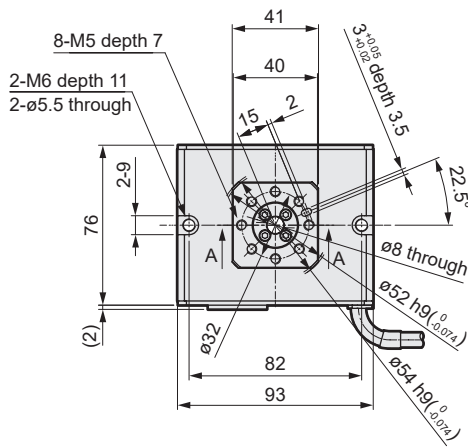
Pressing torque



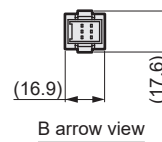
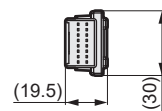
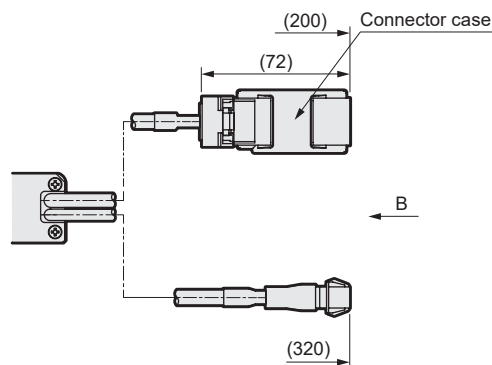
* The pressing torque and pressing rate are merely guidelines. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.

Dimensions

● FGRC-10

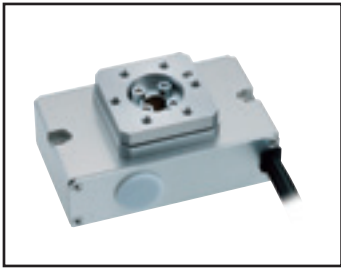


* When ECR is connected, the dotted line will be as shown below.



FLSH
FLCR
FGRC
ECR (controller)
ECG-B (controller)

Safety precautions



Electric actuator Rotary FGRC-30

25 stepper motor

For applicable controller ECR, 48 V and 24 V power supplies can be used.

For applicable controller ECG, 24 V power supplies can be used.



How to order

FGRC - **30** **G** **360 N** **C** **N - F** **S03**

A Size	30
B Applicable controller *1	G ECG Blank ECR
C Encoder	C Incremental encoder
D Relay cable *2	N00 None S01 Fixing cable 1 m S03 Fixing cable 3 m S05 Fixing cable 5 m S10 Fixing cable 10 m R01 Movable cable 1 m R03 Movable cable 3 m R05 Movable cable 5 m R10 Movable cable 10 m

*1 Select the controller from page 45 or page 59.

*2 Refer to page 55 or page 70 for relay cable dimensions.

Specifications

Motor	<input type="checkbox"/> 25 stepper motor
Encoder type	Incremental encoder
Drive method	Worm gear + belt
Travel angle *1	360
Max. output torque *2 N·m	2.71
Repeatability deg	±0.05
Backlash *3 deg	±0.2
Lost motion deg	0.3 or less
Operation angular speed range deg/s	20 to 200
Pressing operation angular speed range deg/s	20 to 30
Allowable moment of inertia *2 kg·m ²	0.0173
Allowable thrust load N	200
Allowable radial load N	200
Allowable moment N·m	5.5
Motor power supply voltage	24 VDC ±10% or 48 VDC ±10%
Motor section maximum instantaneous current A	3
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP40
Weight kg	1.05

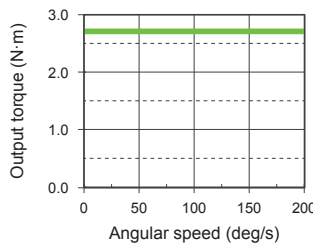
*1 Movable angle is up to 359.9° via travel instructions.

*2 Rotation torque and allowable moment of inertia change in accordance with angular speed and angular acceleration/deceleration. Refer to the table at right for details.

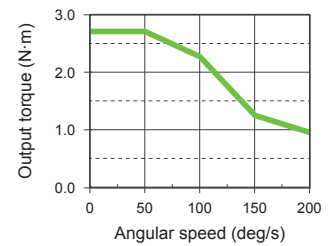
*3 When stopping precision is required, stop with an external stopper, etc., and complete positioning with pressing operation.

Angular speed and output torque

[At 48 VDC]

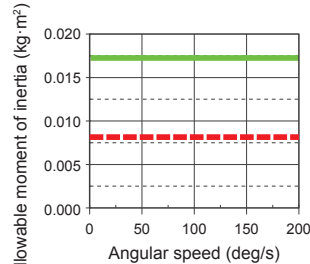


[At 24 VDC]

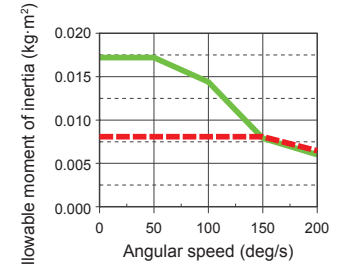


Angular speed and allowable moment of inertia

[At 48 VDC]

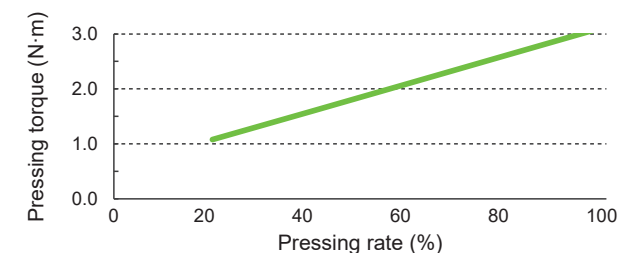


[At 24 VDC]



* When angular acceleration/deceleration is greater than 1700deg/s², operate below the dashed line.

Pressing torque

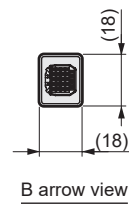
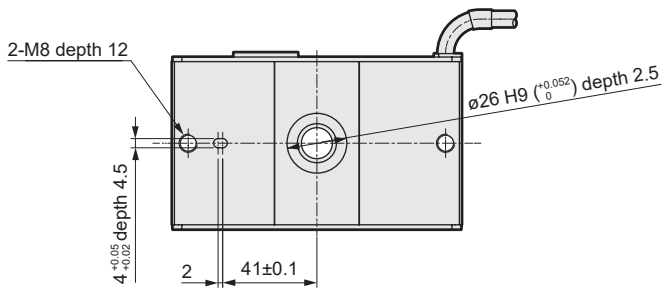
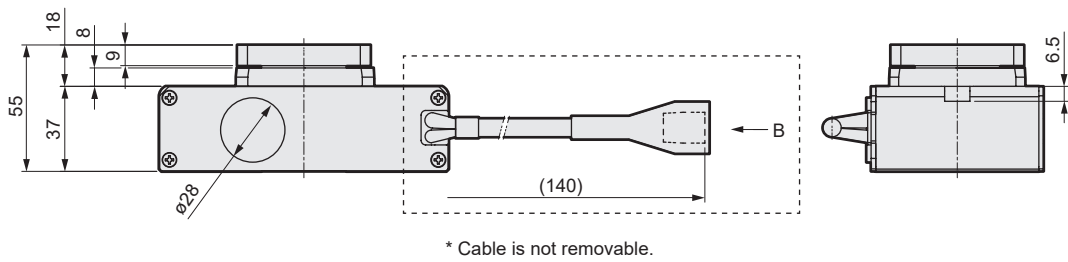
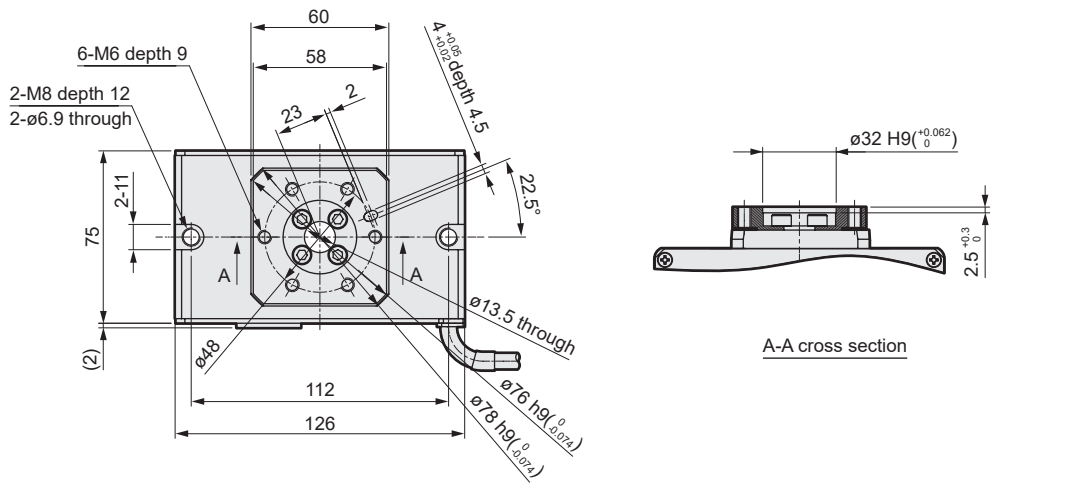


* The pressing torque and pressing rate are merely guidelines.

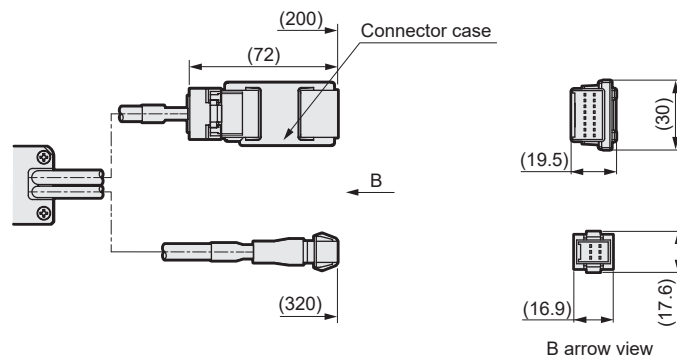
Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.

Dimensions

● FGRC-30

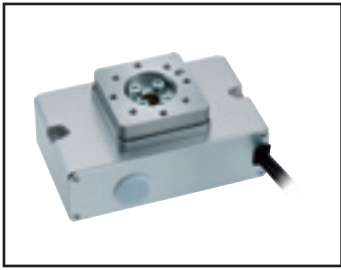


* When ECR is connected, the dotted line will be as shown below.



FLSH
FLCR
FGRC
ECR (controller)
ECG-B (controller)

Safety precautions



Electric actuator Rotary FGRC-50

35 stepper motor

For applicable controller ECR, 48 V and 24 V power supplies can be used.

For applicable controller ECG, 24 V power supplies can be used.



How to order

FGRC - **50** **G** **360 N** **C** **N - F** **S03**

A Size

50

B Applicable controller *1

G	ECG
Blank	ECR

C Encoder

C	Incremental encoder
---	---------------------

D Relay cable *1*2

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 45 or page 59.

*2 Refer to page 55 or page 70 for relay cable dimensions.

Specifications

Motor	<input type="checkbox"/> 35 stepper motor
Encoder type	Incremental encoder
Drive method	Worm gear + belt
Travel angle *1	360
Max. output torque *2 N·m	4.66
Repeatability deg	±0.05
Backlash *3 deg	±0.2
Lost motion deg	0.3 or less
Operation angular speed range deg/s	20 to 200
Pressing operation angular speed range deg/s	20 to 30
Allowable moment of inertia *2 kg·m ²	0.0297
Allowable thrust load N	450
Allowable radial load N	320
Allowable moment N·m	10
Motor power supply voltage	24 VDC ±10% or 48 VDC ±10%
Motor section maximum instantaneous current A	4.2
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP40
Weight kg	1.85

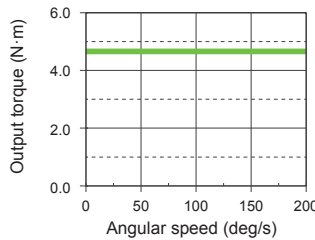
*1 Movable angle is up to 359.9° via travel instructions.

*2 Rotation torque and allowable moment of inertia change in accordance with angular speed and angular acceleration/deceleration. Refer to the table at right for details.

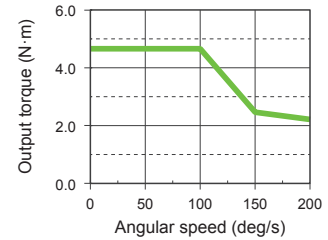
*3 When stopping precision is required, stop with an external stopper, etc., and complete positioning with pressing operation.

Angular speed and output torque

[At 48 VDC]

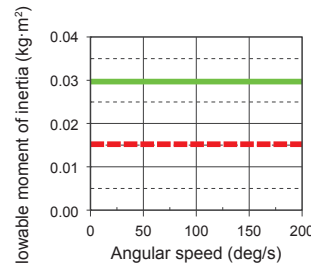


[At 24 VDC]

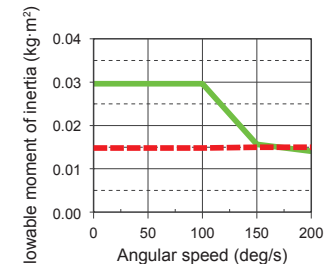


Angular speed and allowable moment of inertia

[At 48 VDC]

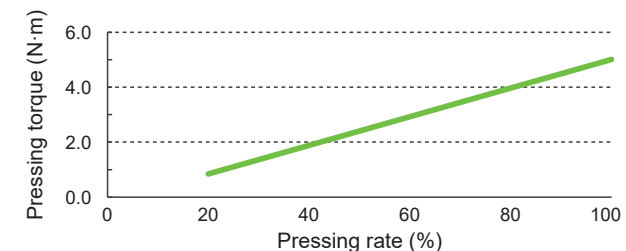


[At 24 VDC]



* When angular acceleration/deceleration is greater than 1700deg/s², operate below the dashed line.

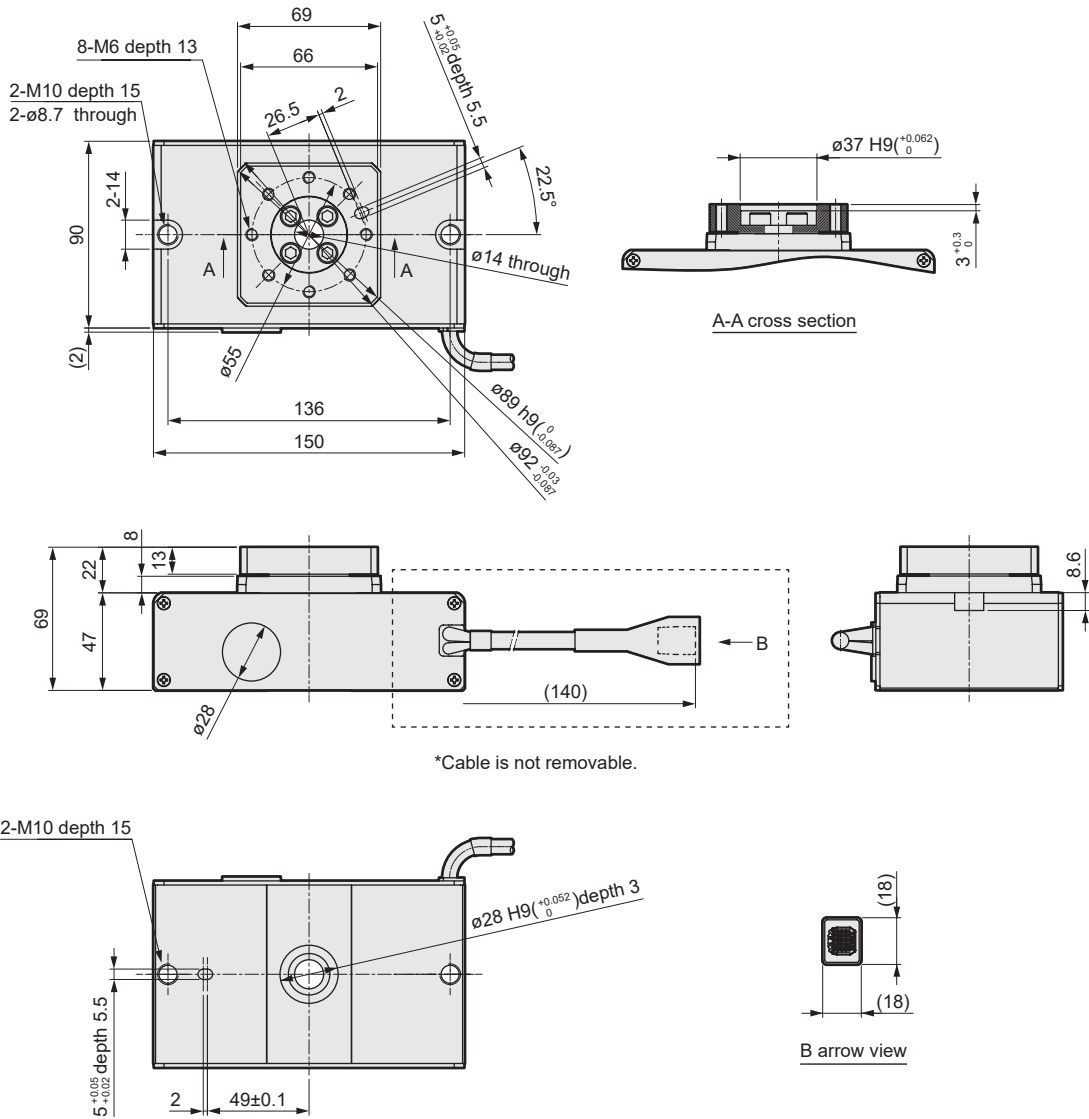
Pressing torque



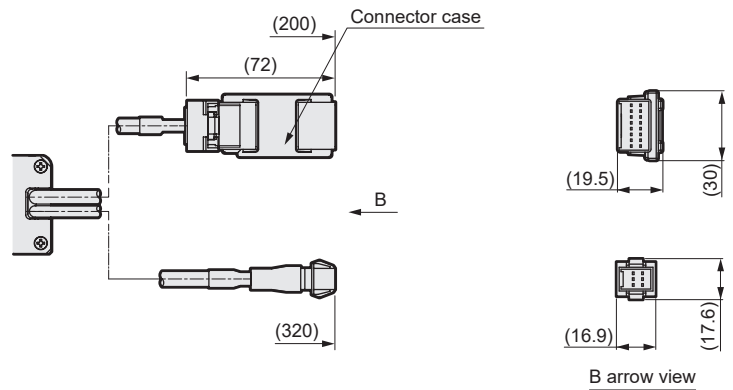
* The pressing torque and pressing rate are merely guidelines. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.

Dimensions

● FGRC-50



* When ECR is connected, the dotted line will be as shown below.



FLSH
FLCR
FGRC
ECR (controller)
ECG-B (controller)

Safety precautions